



FINAL

April 13, 2026



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• **Thank you to everyone who helped with this plan. This project was funded as part of a Safe Streets and Roads for All Grant provided by the United States Department of Transportation.**

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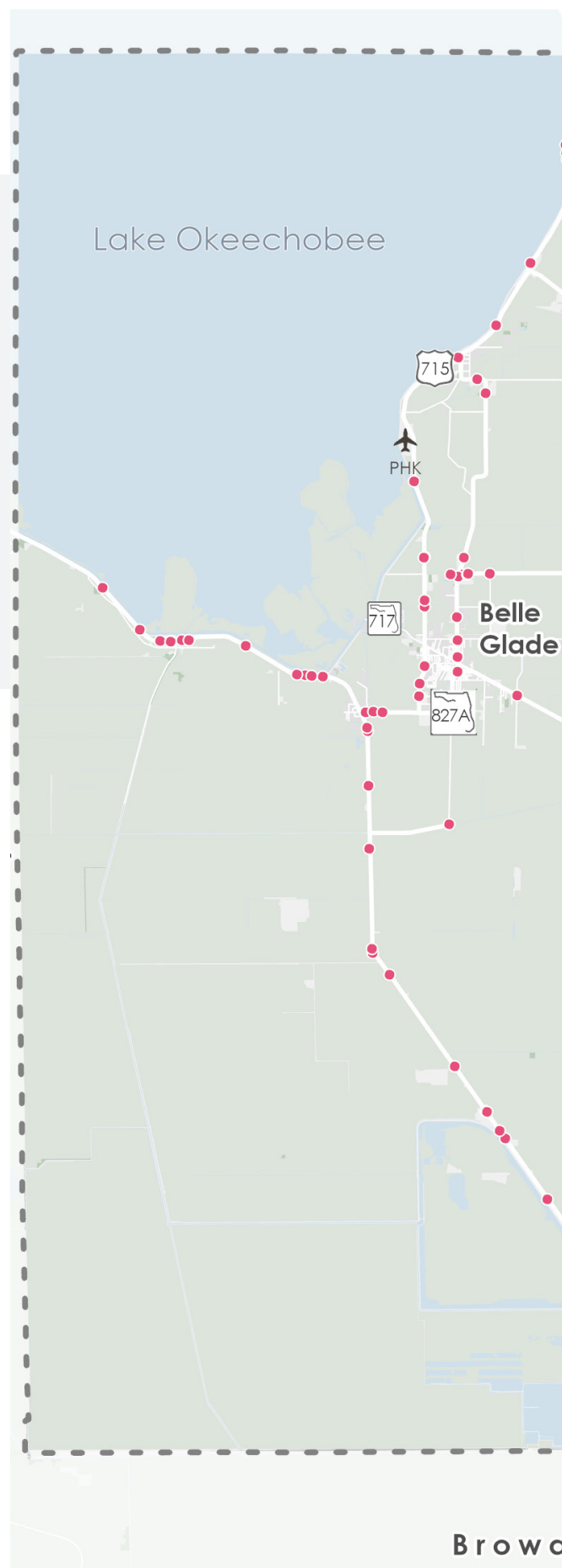
EXECUTIVE SUMMARY

Every trip in Palm Beach County — whether driving to work, walking to school, biking to the store, or riding transit — should begin and end safely. Yet every year, preventable traffic crashes result in the loss of life and life-changing injuries on roads throughout the county. These crashes are not random. They tend to occur in predictable locations, involve similar roadway conditions, and disproportionately affect people walking, biking, and riding motorcycles.

The Palm Beach County Safety Action Plan (referred to as the “Plan”) lays out a clear path to change this. The Plan identifies where safety risks are highest, outlines proven strategies to reduce serious crashes, and explains how safety improvements can move from planning to implementation over time. It is designed to support near-term action while building a foundation for lasting safety improvements across the county.

A FOUNDATION FOR SAFER TRAVEL

- **From 2019 to 2023, Palm Beach County recorded 712 fatal crashes and 2,480 serious injury crashes on State- and County-maintained roads. These numbers reflect the experiences of real people traveling our roads every day: neighbors, coworkers, students, and families. Palm Beach County, together with its regional partners and the support of the U.S. Department of Transportation’s Safe Streets and Roads for All program, developed this Plan to better understand where and why severe crashes occur, and to chart a data-informed course toward safer travel for everyone in the county.**



Leadership Commitment

Palm Beach County is committed to eliminating traffic fatalities and serious injuries on State- and County-maintained roadways. This commitment reflects a shared understanding that traffic deaths are preventable and that no loss of life on our transportation system is acceptable.

Through this Plan, the County commits to:

- Focusing safety investments where risk is highest
- Applying proven safety strategies consistently across the roadway network
- Coordinating with partner agencies, jurisdictions, and the community
- Tracking progress and adjusting strategies over time

LONG-TERM SAFETY GOAL

Eliminate traffic fatalities and serious injuries on State- and County-maintained roadways.

WHY THIS PLAN EXISTS AND HOW IT IS FUNDED

The Palm Beach County Safety Action Plan was developed with funding from the U.S. Department of Transportation's **Safe Streets and Roads for All (SS4A)** program. SS4A is a federal initiative created to help communities prevent roadway deaths and serious injuries by supporting data-informed planning and implementation.

Because this Plan was funded through SS4A, it follows national guidance that shapes what the Plan includes. SS4A requires communities to:

- Commit to eliminating traffic fatalities and serious injuries
- Use a Safe System approach that designs roads to account for human error
- Analyze crash data to understand where and why severe crashes occur
- Identify a High Injury Network (HIN) to focus attention on the most dangerous locations
- Recommend systemic safety strategies, not just one-off fixes
- Provide a clear path from planning to implementation

These requirements ensure that Safety Action Plans focus on prevention and long-term impact, rather than reacting only after crashes occur.



A SAFE SYSTEM APPROACH TO ROADWAY SAFETY

This Plan is guided by the **Safe System Approach**, which recognizes that people make mistakes and that the transportation system should be designed so those mistakes do not result in death or serious injury. Instead of relying on a single solution, the Safe System Approach layers protections across the roadway environment.

While safety involves many partners, this Plan focuses on areas where Palm Beach County can have the greatest influence:

- **Safer roads** through design and operations
- **Safer speeds** through context-appropriate speed management
- **Safer road users** through better crossings, visibility, and supportive programs



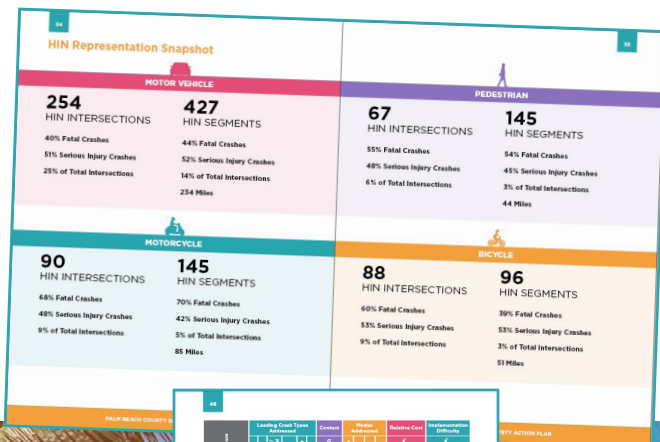
SYSTEMIC SAFETY STRATEGIES

Rather than addressing safety one location at a time, the Plan uses a systemic approach to reduce serious crashes across the roadway network. This approach focuses on common crash patterns and roadway contexts so improvements can be applied consistently and efficiently.

Two key tools guide this work:

- **High Injury Network:** Identifies roadway segments and intersections with a disproportionate number of fatal and serious injury crashes.
- **Systemic Countermeasure Matrix:** Matches Palm Beach County's most common severe crash types with proven safety treatments that can be applied across similar roadway conditions.

Together, these tools help the County move from understanding risk to selecting effective safety solutions.



Countermeasure	Leading Crash Types	Context	Motor Vehicle	Pedestrian	Bicyclist	Motorcyclist	Intersection	Severity
Crash Type	Intersection	Non-Intersection	Intersection	Non-Intersection	Intersection	Non-Intersection	Intersection	Severity
Improve visibility of crosswalks and PIVs with high-contrast paint and bollards	X		N/A	X		Medium	Medium	
Install pedestrian bollards at crosswalks			X	N/A	X		Low	
Improve crosswalk lighting			X	N/A	X		Medium	
Improve crosswalk signage			X	N/A	X		Low	
Improve crosswalk pavement			X	N/A	X		Medium	
Improve crosswalk lighting			X	N/A	X		Low	
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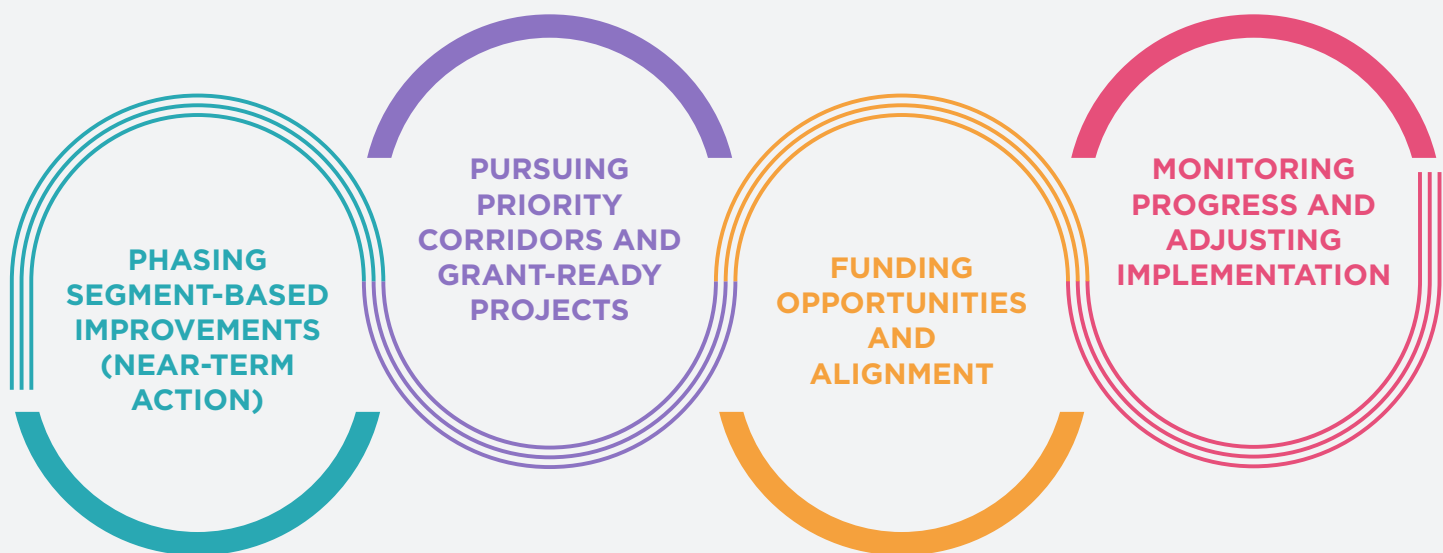
HOW THE PLAN SUPPORTS IMPLEMENTATION

The Safety Action Plan is a planning and prioritization document. It identifies where risk is concentrated and what strategies are most effective, but it does not replace project-level engineering, traffic analysis, or design.

To support implementation, the Plan:

- Identifies near-term safety countermeasures that can move quickly from planning to action
- Highlights priority corridors that are positioned for grant funding and coordinated investment
- Proposes policy and program changes for systemic countywide safety improvements countywide
- Outlines a practical approach to implementation, monitoring progress, and sharing updates with the public

By clearly defining how recommendations move forward, the Plan helps Palm Beach County turn analysis into action while remaining flexible as projects advance.



COLLABORATION IS KEY TO A CULTURE OF SAFETY

Through close coordination with state- and countywide agencies such as of the Florida Department of Transportation, the Palm Beach Metropolitan Planning Organization, the Sheriff's Office, and the School District, Palm Beach County is working towards a future where every road user regardless of age, ability, income, or mode of travel can safely move through our community.

Together, we can all work to reach zero fatalities and serious injuries in Palm Beach County.

Key Partners for a Safe System Include:





SECTION 1. INTRODUCTION

Safety Action Plan Background and Purpose

Crashes that result in death or serious injury are not random events. They tend to happen in the same places, under similar conditions, and often involve the same types of roadway design challenges. By understanding where these patterns exist and how people experience the roadway every day, communities can take action before tragedies occur.

The Palm Beach County Safety Action Plan brings together data, local knowledge, and proven safety strategies to focus attention on where it can make the greatest difference. It is designed to help the County move from understanding risk to delivering safety improvements that reduce the likelihood and severity of crashes over time.

PURPOSE OF THE PLAN

- **Palm Beach County commits to a strategy to eliminate all traffic fatalities and severe injuries, while increasing healthy, safe mobility for all.**



50% reduction in fatal and serious injury crashes by 2035 on the High Injury Network and to achieve a goal of zero fatal and serious injury crashes by 2045.



Achieve zero fatal and serious injury crashes within Palm Beach County.



Reassess data and targets to make significant and continuous progress in achieving zero fatal and serious injury crashes.

Palm Beach County's Safety Commitment

The Safe System Approach

The Safe System approach includes five key areas: Safer Roads, Safer Speeds, Safer Vehicles, Safer Road Users, and Post-Crash Care that together create a layered approach to roadway safety. This plan focuses on Safer Roads, Safer Speeds, and Safer Road Users, since Palm Beach County can most directly influence these areas through planning, engineering, and coordination with partners. The other areas, Safer Vehicles and Post-Crash Care, are addressed through efforts led by other agencies such as law enforcement, emergency response, and state and federal partners.

The SS4A grant program is guided by the Safe System approach, and Safety Action Plans that receive SS4A grant funding are required to follow the Safe System approach framework. The Safe System approach influences this plan through its focus on reducing fatal and serious injuries, designing for human error, and emphasizing safer speed and safer crossings. The Safe System approach has also guided the crash analysis, the High Injury Network development, the systemic strategies, and corridor exploration and prioritization sections of this plan.

SAFE SYSTEM APPROACH ELEMENTS



Safer Roads

Design streets to reduce the chance and severity of crashes.



Safer Speeds

Set speed limits and manage speeds to protect people in the event of a crash.



Safer Vehicles

Use technology and design features that protect drivers, passengers, and people outside the vehicle.



Safer Road Users

Support safe behavior through education, enforcement, and encouragement.



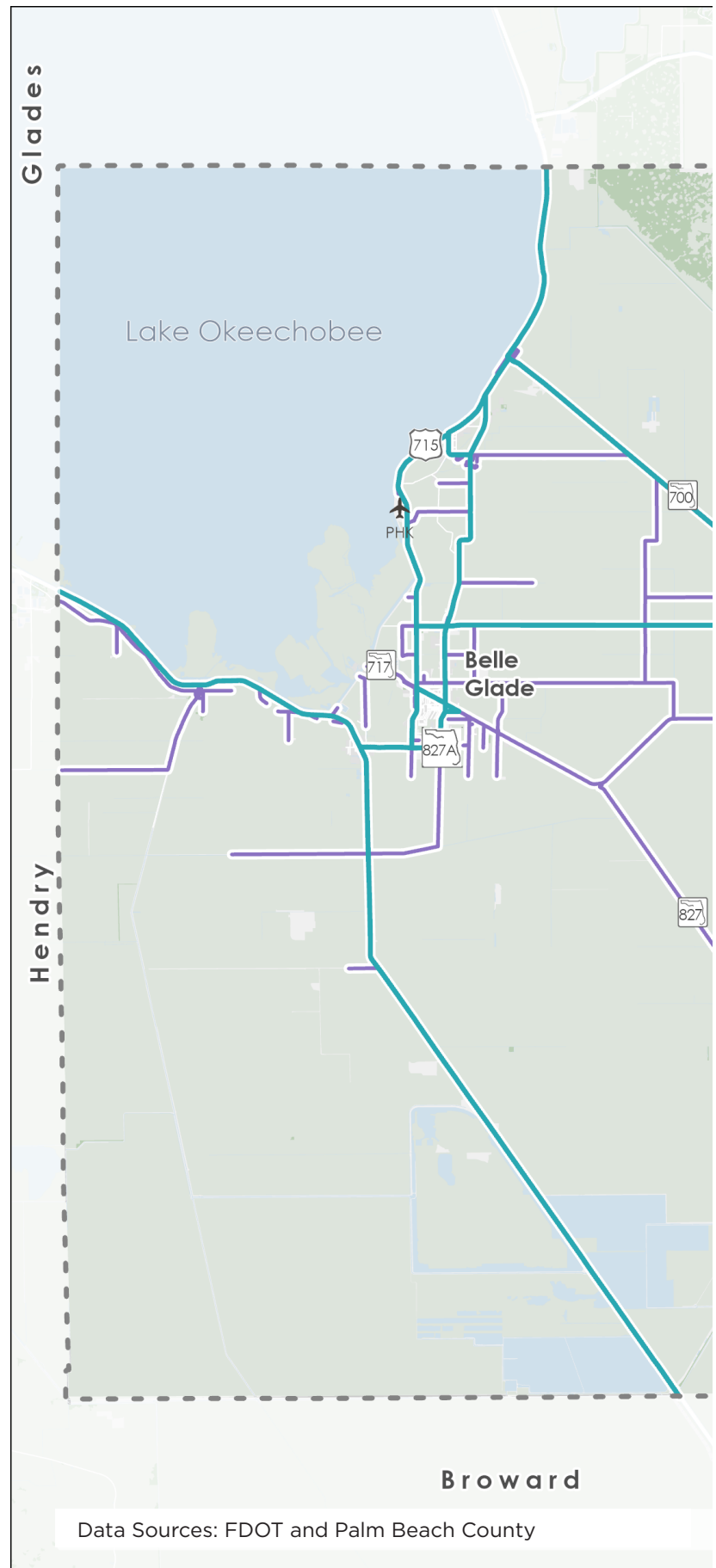
Post-Crash Care

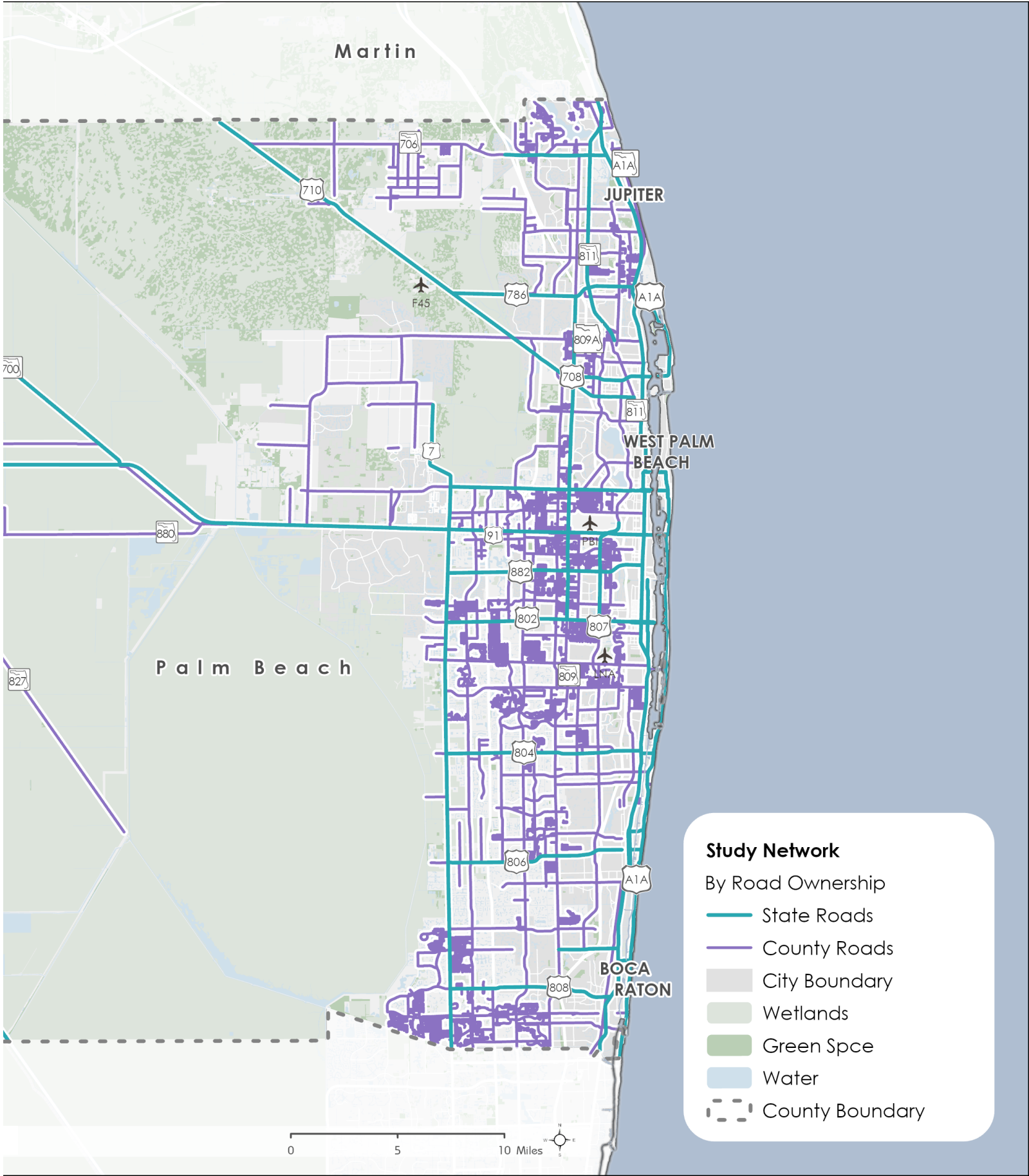
Ensure fast, effective emergency response and medical care after a crash.

Study Area and Why It Was Selected

The Palm Beach County Safety Action Plan applies countywide, with a focus on **County-maintained** roadways where the County has direct authority over planning, design, operations, and investment decisions. Safety priorities and strategies identified in this Plan are informed by local context, surrounding land uses, and travel patterns throughout the study area. For added context, **State-maintained** roadways were reviewed within the existing conditions crash analysis phase and results were shared with the County's transportation partner - the Florida Department of Transportation (FDOT).

This Plan complements a countywide Vision Zero Action Plan, last update completed in 2025, by the County's regional partner - the Palm Beach Metropolitan Planning Organization's (MPO). The MPO boundary and County boundary are identical and include 39 local municipalities. The MPO Vision Zero Action Plan considered all streets in the region. This plan builds on that work by guiding the County in identifying safety needs and opportunities unique to roads they have influence over. Although local roads were not a focus of this Plan, coordination occurred with the municipalities to gain input and feedback on the system as a whole.





What the Plan Includes

1. **Introduction:** Introduces the Palm Beach Safety Action Plan, the Safe Streets for All program, and the Safe System approach.
2. **By and For Palm Beach County:** Describes the community engagement activities conducted, as well as key takeaways and learnings that informed the development of the Plan.
3. **Safety Analysis:** Summarizes the Countywide crash analysis and findings, and highlights people-focused insights from the analysis.
4. **High Injury Network:** Outlines the High Injury Network methodology and shows the mode-specific HIN maps.
5. **Systemic Safety Countermeasures:** Describes the Countermeasures Matrix, a tool to address recurring crash patterns by both segments and corridors.
6. **Priority Corridor Screening, Prioritization, and Deep Dives:** Summarizes the corridor screening and prioritization methodology, and reports details of select key safety corridors.
7. **Policies and Programs:** Highlights the policy review findings and additional non-engineering and technology strategies.
8. **What Happens Next:** Describes the Implementation Framework and the Dashboard for Performance Tracking of the Safety Action Plan.

Project Development, Coordination, and Oversight

The Palm Beach County Safety Action Plan was developed under the direction of the County's Traffic Engineering Division. Additionally, a multi-agency Task Force comprised of County departments, Palm Beach MPO, Florida Department of Transportation (FDOT) District 4, the Sheriff's Office, Office of Community Revitalization (OCR), and the School District provided input at key milestones. Other safety-related countywide plans available at the time this Plan was developed include:



Palm Beach MPO's Vision Zero Action Plan (2025)

The countywide action plan update supports its commitment to eliminate traffic-related fatalities and serious injuries across Palm Beach County.



Palm Beach MPO's Long Range Transportation Plan (LRTP): Vision 2050 (2024)

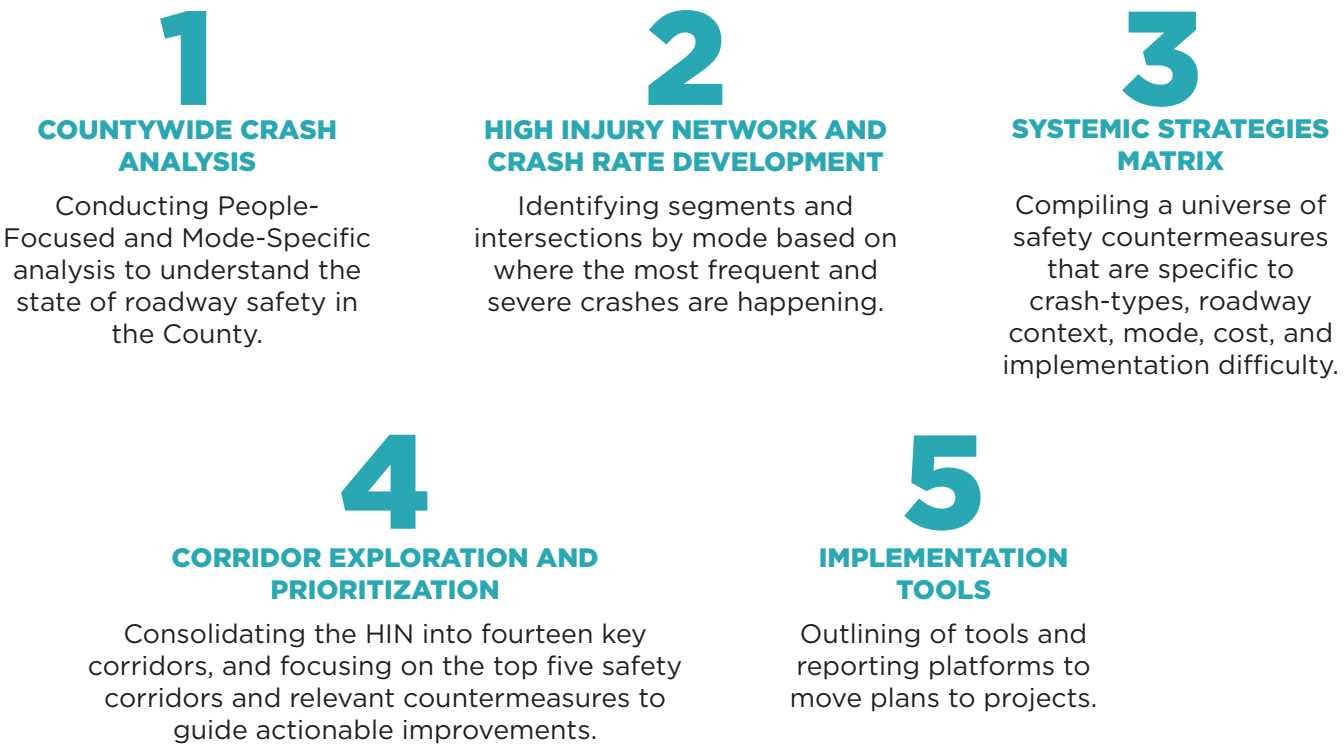
Palm Beach Countywide Transportation Master Plan (CTMP) (in development)

The goal of the CTMP is to establish a planning framework that provides for a countywide vision for transportation and mobility that safely connects people to places and provides for a multijurisdictional process. The CTMP was being developed at the time this Plan was being developed. Coordination occurred throughout the process and follow-up coordination will occur prior to any projects being implemented.

The 25-year vision for transportation in Palm Beach County, updated every five years. It forecasts where people will live and work, evaluates the existing transportation network, and identifies projects that will serve the needs of county residents in the future.

Coordination between these partners supported data sharing, review of findings, and refinement of strategies in the creation of this plan. Additional collaboration is expected during implementation and through the development of the Palm Beach Countywide Transportation Master Plan.

The plan was developed with the following workflow:



SECTION 2. BY AND FOR PALM BEACH COUNTY

Data-driven analysis plays a critical role in identifying safety issues, but it does not fully reflect the experiences of those who use the roads in Palm Beach County every day. As a result, the County prioritized meaningful public engagement during plan development to better understand community needs, lived experiences, and safety concerns.

Engagement Activities

Various forms of engagement activities with the community members and organizations were conducted throughout plan development. They included:

Stakeholder Interviews, held during September and October 2025. More than **20 interviews with 36 participants** from municipalities and agencies throughout Palm Beach County, including Commission Districts, Palm Beach County MPO, the School District of Palm Beach County, and Palm Beach Sheriff's Office. They took place in the form of direct interviews, district level meetings, or follow-up coordination.

Task Force Meetings, held twice during the Plan's development, that included representation from Palm Beach County Engineering and Public Works Department, Palm Tran, Palm beach County School District, Palm Beach County Sheriff's Office, Palm Beach County Office of Community Revitalization, Palm Beach MPO, and the Florida Department of Transportation.

- **Meeting #1** - This meeting was virtually held on June 17, 2025 and covered an Safety Action Plan Overview, Task Force Roles & Expectations, Existing Conditions & Data Review, Understanding Barriers to Safety, Related Efforts & Initiatives, and Next Steps & Action Items.
- **Meeting #2** - This meeting was virtually held on November 13, 2025 and covered an Outreach Update, Overview of Recommendations, Systemic Safety Recommendations, Priority Corridor Recommendations, and Next Steps.

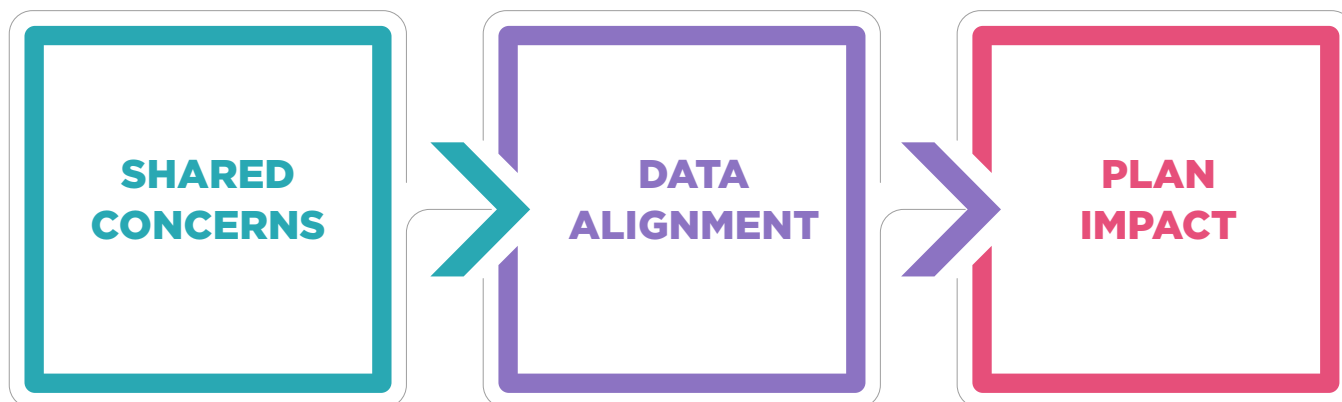
An **Online Open House** launched October 24, 2025, which was publicly available to all residents and received 60+ responses from the following components:

- A **5-minute online survey**, asking residents about multi-modal safety priorities and concerns.
- An **online map**, which allows residents to place pins to highlight locations where safety improvements are needed.
- A **Pledge** to do one's part to be a safer traveler in Palm Beach County.

APPENDIX A contains the Task Force Meeting agendas and presentations, the stakeholder interview notes, and the open house map comments.

What We Heard and How it Informed the Plan

Public and stakeholder engagement identified consistent safety concerns across Palm Beach County. These themes generally aligned with crash data findings and directly informed the systemic strategies and priority corridors described in sections 3, 5, and 6.



SAFE CROSSINGS AND INTERSECTIONS ARE A COUNTYWIDE PRIORITY

Community members consistently cited difficult crossings, wide intersections, high speeds, and inadequate lighting. These concerns were especially common on multi-lane arterials with long crossing distances.

- **Data alignment:** Nearly half of fatal and serious injury crashes occurred at intersections, and most severe pedestrian crashes occurred either midblock or at wide, high-speed intersections.
- **How it informed the Plan:** Intersection safety improvements were emphasized through the development of the High Injury Network and targeted countermeasures.

HIGH SPEEDS AND AGGRESSIVE DRIVING INCREASE CRASH SEVERITY

Speeding and aggressive driving were among the most frequently raised concerns, particularly along major arterials throughout the County.

- **Data alignment:** While a small share of total crashes, speeding-related crashes account for a disproportionate share of fatalities and serious injuries. Additionally, speeding is not consistently reported as a crash factor; many more crashes are likely related to speeding.
- **How it informed the Plan:** Context-appropriate speed management strategies were incorporated into recommended countermeasures and policy and program changes.

GAPS IN SIDEWALK AND BICYCLE NETWORKS LIMIT SAFE TRAVEL

Participants identified missing sidewalks, incomplete bicycle facilities, and a lack of physical separation from traffic, especially near schools, parks, transit stops, and older suburban areas.

- **Data alignment:** Most fatal and serious pedestrian and bicyclist crashes occurred on high-speed, multi-lane roads, and many bicyclist crashes occurred where no bike facility was present.
- **How it informed the Plan:** Multiple countermeasures include the improvement of pedestrian and bicycle facilities to increase visibility and comfort on the pedestrian and bicycle network.

SCHOOL ZONES FACE ONGOING SAFETY AND MOBILITY CHALLENGES

Communities noted congestion, complex pick-up and drop-off patterns, limited walking and biking infrastructure, and increased micromobility activity around schools.

- **Data alignment:** Crashes in school zones were assessed spatially, with clusters in coastal areas and along major east-west corridors.
- **How it informed the Plan:** School zone safety and access improvements were incorporated into policy and program recommendations.

ADDITIONAL SYSTEMIC SAFETY CONCERNS

Stakeholders also highlighted broader issues that affect safety and implementation across the County. These issues shaped recommended policies, partnerships, and implementation strategies to improve systemic safety and support long-term project delivery:



Rail safety: Ongoing concerns related to fencing, crossings, and pedestrian conflicts near rail corridors.



Flooding and drainage: Stormwater and king tide flooding affecting roadway safety and reliability, particularly in coastal and western areas.



Coordination and funding: A need for clearer processes, stronger interagency coordination, and support securing safety funding.



Micromobility: Rapid growth in e-bikes, scooters, and golf carts outpacing existing policies and infrastructure.



Freight movement: Balancing essential freight activity with community safety and roadway constraints.



SECTION 3. SAFETY ANALYSIS

Countywide Crash Findings

To improve safety for all roadway users in Palm Beach County, it is critical to understand where and why crashes occur. Analyzing crash locations and contributing factors allows the County to proactively identify effective safety solutions.

Crash data from 2019 through 2023 were analyzed to identify crash patterns and common trends on State- and County-maintained roads in Palm Beach County. The analysis considered multiple factors including demographics, modes, roadway characteristics, crash movements, and crash causes. The full report with detailed analysis can be found in **APPENDIX B**.

From **2019-2023**, over 205,000 crashes occurred on streets in Palm Beach County and **135,000** crashes occurred on State- and County-maintained roads. Of these, **3,192** crashes resulted in fatalities or serious injuries. This means that every day, **2 people** are killed or seriously injured on State- and County-maintained roads in Palm Beach County. This impact is experienced disproportionately by the road's most vulnerable users: while pedestrians, motorcyclists, and bicyclists are involved in **5%** of total crashes, they account for **37%** of total fatal and severe injury crashes.

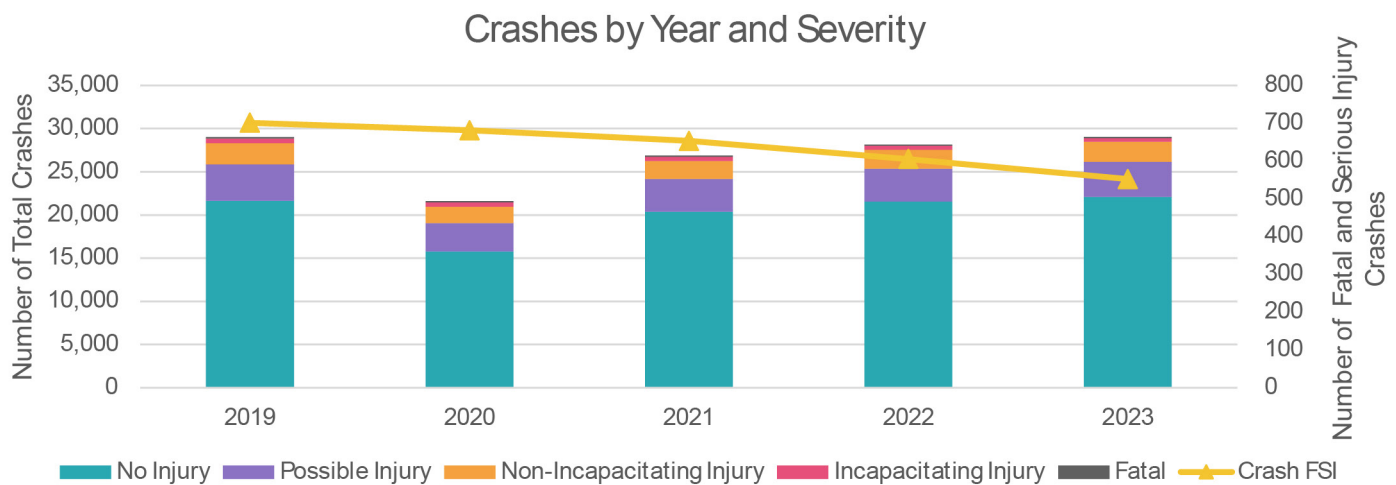


135,000
TOTAL CRASHES
(ON STATE- AND COUNTY-
MAINTAINED ROADS)

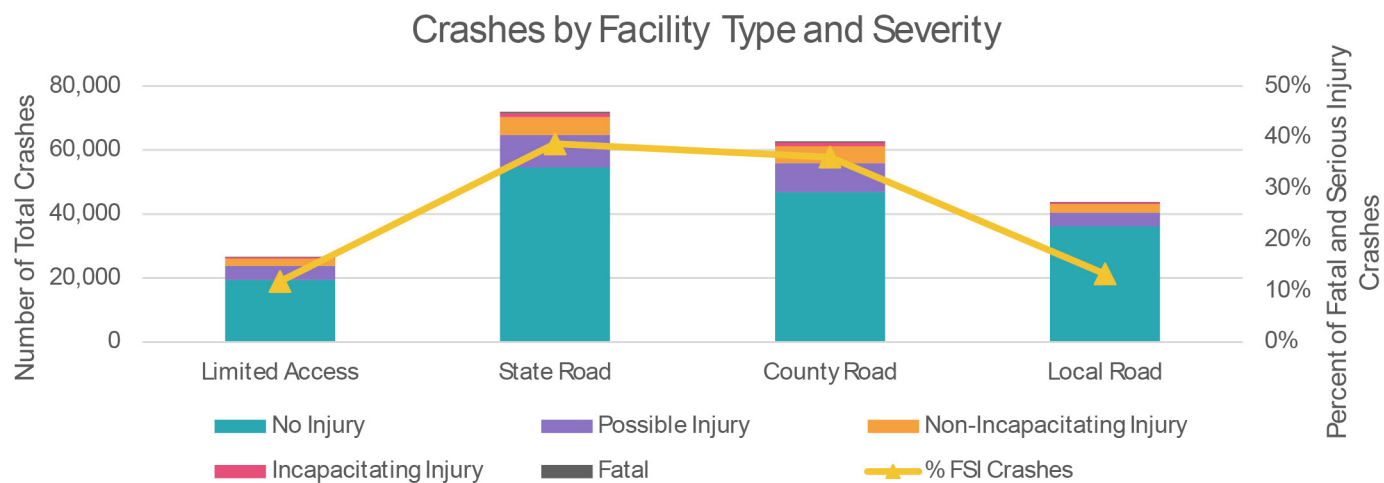
712
FATAL

2,480
SERIOUS
INJURY

Total Crashes on all Streets in Palm Beach County by year and severity



Total Crashes on only State- and County-maintained roads by facility type and severity



Modal percentage of all crashes on State- and County-maintained roads

1.6% BICYCLING



8% of fatal or serious injury crashes

1.2% WALKING



14% of fatal or serious injury crashes

1.5% MOTORCYCLING



14% of fatal or serious injury crashes

95.7% DRIVING



64% of fatal or serious injury crashes

Florida’s Strategic Highway Safety Plan (SHSP), authored by FDOT, identifies emphasis areas based on crash types, roadway characteristics, and behaviors most often associated with fatal and serious injury crashes. These emphasis areas help align local safety analysis and strategies with state and federal priorities. In Palm Beach County, intersection-related crashes represent the leading emphasis area. Crashes involving aging road users are the most common road user-related concern. While distracted driving is the most frequent behavioral factor across all crashes, lack of occupant protection such as improper seatbelt use is the leading contributing factor in fatal and serious injury crashes.

Crashes by emphasis area

FSI Crashes			Total Crashes	
47%	1,517	INTERSECTION	39%	52,668
25%	783	LANE DEPARTURE	22%	29,866
28%	900	AGING ROAD USERS	25%	34,292
22%	713	PEDESTRIANS AND BICYCLISTS	3%	3,702
14%	459	MOTORCYCLISTS AND MOPED RIDERS	2%	2,082
10%	314	TEEN DRIVERS	12%	16,363
6%	179	COMMERCIAL MOTOR VEHICLE OPERATORS	5%	6,977
15%	464	OCCUPANT PROTECTION	2%	2,824
14%	432	SPEEDING AND AGGRESSIVE DRIVING	6%	7,584
12%	385	DISTRACTED DRIVING	13%	17,367
9%	300	IMPAIRED DRIVING	2%	3,172

CRASH CATEGORY LEGEND

Roadways

Road Users

User Behavior

RAIL NETWORK

From 2019–2024, there were **24 rail-car-involved crashes countywide**. Of these, 16 were intersection-related and occurred at signalized intersections, spanning 14 unique intersections. Two intersections experienced multiple crashes: US 1/S Dixie Hwy & Hypoluxo Rd and US 1/S Dixie Hwy & 12th Ave S, each with two crashes.

Intersection-related rail-car crashes averaged 2–3 per year from 2019 through 2023, followed by a notable increase to 7 crashes in 2024. Among these signalized intersection crashes, 7 resulted in fatal or serious injuries (FSI), leading to 4 fatalities and 6 injuries, while 9 involved no reported injuries. Aging drivers were involved in approximately half of the intersection crashes, and half occurred during nighttime conditions. In addition, five intersection crashes involved distracted driving.

Overall, these patterns highlight signalized intersections on the rail network as priority locations for further evaluation, particularly with respect to nighttime visibility, driver attention, and aging-driver considerations.

How Severe Crashes Happen

Crashes resulting in deaths and serious injuries often follow typical patterns or occur in areas with similar characteristics. The following pages provide a summary of key findings related to the types of crashes that often result in deaths and serious injuries, systemic trends found in the data, and common profiles that describe factors most often associated with fatal and serious injury crashes.



LANE DEPARTURES

30% of fatal and serious vehicle and motorcycle crashes are lane departures



LEFT TURNS

40% of fatal and serious intersection crashes involve left turns



PEDESTRIAN

73% of fatal and serious pedestrian segment crashes occur midblock

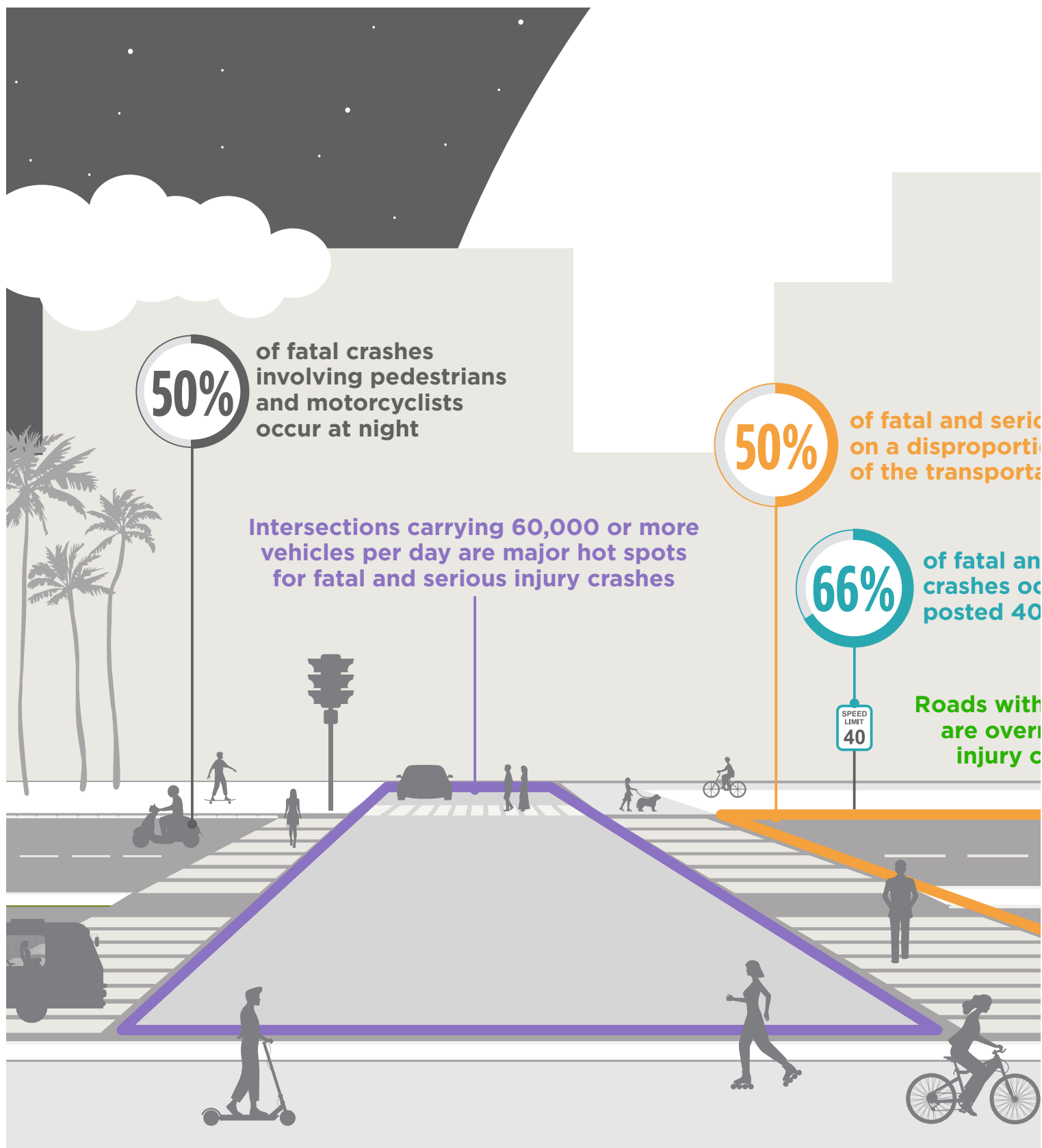


BICYCLE

Over 50% of severe bicycle crashes occur where no bike facility is present



Systemic Risk Context



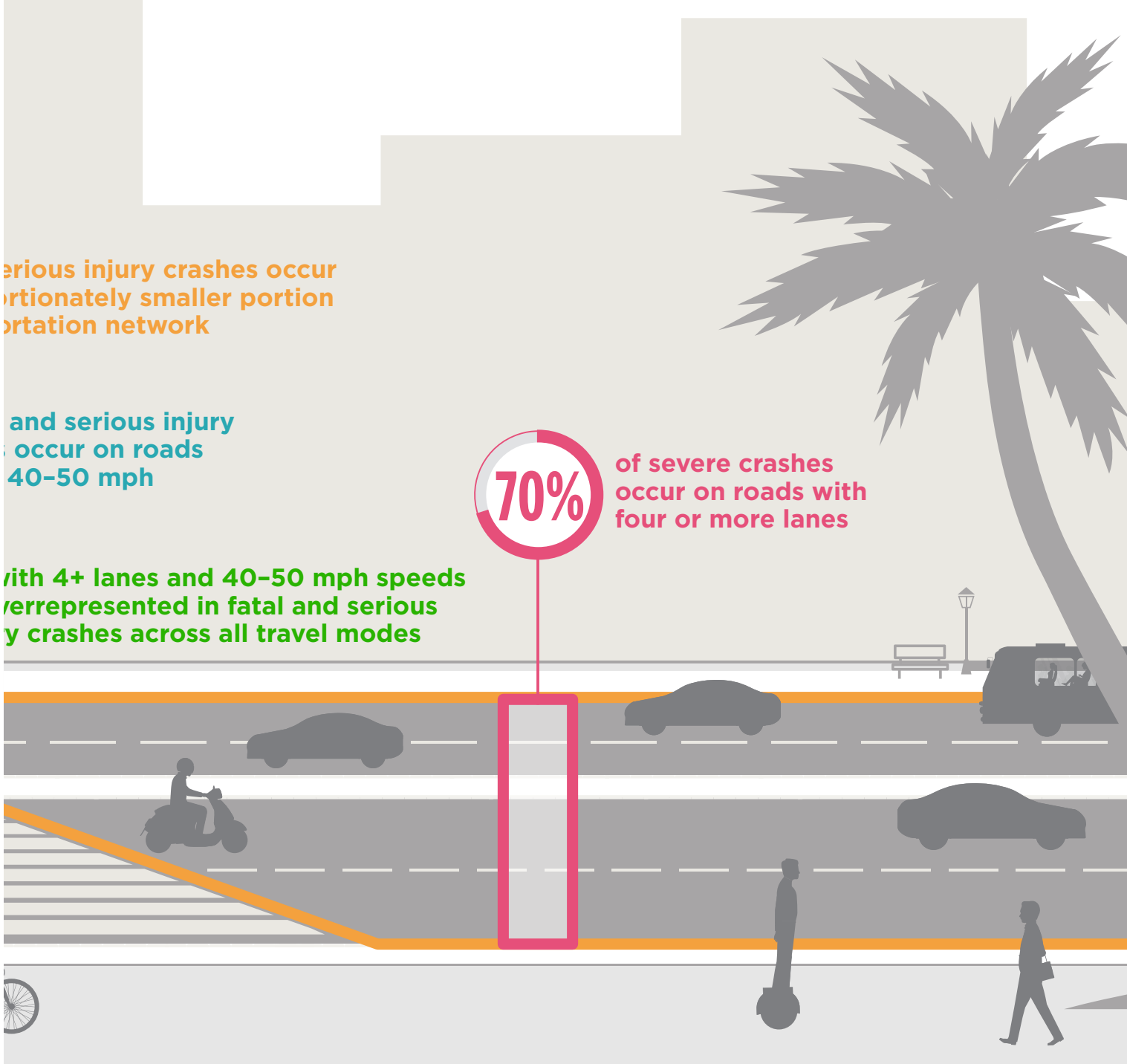
serious injury crashes occur
on a proportionately smaller portion
of the transportation network

fatal and serious injury
crashes occur on roads
with 40-50 mph

roads with 4+ lanes and 40-50 mph speeds
are overrepresented in fatal and serious
injury crashes across all travel modes



of severe crashes
occur on roads with
four or more lanes



Common Crash Profiles



MOTOR VEHICLE CRASH PROFILES

Lane Departure on High-Speed Roads

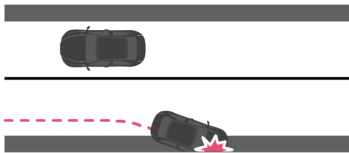
30%

of fatal and serious injury motor vehicle crashes are lane-departure (run-off-road) crashes.



WHAT IT LOOKS LIKE

A single driver leaves the travel lane and strikes a curb, median, tree, or fixed object.



WHERE IT MOST OFTEN HAPPENS

4-7 lane roads posted 40-50 mph, often at night, with AADT between 20,000 and 40,000.

Left-Turn Conflicts at Wide Intersections

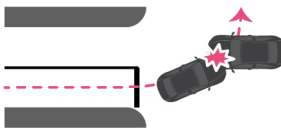
40%

of fatal and serious injury crashes at intersections involve left-turn movements.



WHAT IT LOOKS LIKE

A left-turning vehicle collides with opposing through traffic.



WHERE IT MOST OFTEN HAPPENS

Signalized intersections with wide approaches, especially where 6+ lane roads intersect other 4-5 lane roads and entering traffic volumes are 60,000 or more.



BICYCLE CRASH PROFILES

High-Speed Roads Without Bike Facilities

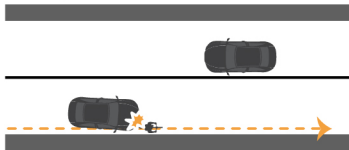
50%

of fatal and serious injury bicycle crashes occur on roads with no dedicated bike facility.



WHAT IT LOOKS LIKE

A person biking straight ahead is struck by a person driving straight ahead.



WHERE IT MOST OFTEN HAPPENS

40-50 mph arterials with 4+ lanes and lacking physical separation for people biking.

Turning Conflicts at Intersections

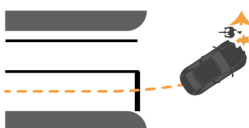
25%

of fatal and serious injury bicycle crashes that happen at an intersection involve a turning motor vehicle.



WHAT IT LOOKS LIKE

A turning driver strikes a person biking through the intersection.



WHERE IT MOST OFTEN HAPPENS

Signalized intersections on multi-lane roads, especially when one or more road has a posted speed of 40-50 mph.



PEDESTRIAN CRASH PROFILES

Midblock Crossings on Wide Roads

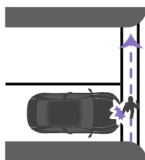
73%

of fatal and serious injury pedestrian segment crashes occur midblock.



WHAT IT LOOKS LIKE

A person crossing between intersections is struck by a driver traveling straight ahead.



WHERE IT MOST OFTEN HAPPENS

4+ lane roads posted 40-50 mph, often where marked crossings are spaced far apart.

Turning Conflicts at Large Intersections

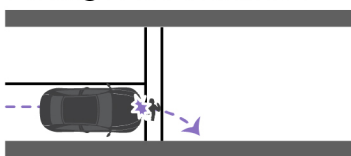
58%

of fatal and serious injury pedestrian intersection crashes occur at signalized locations with wide approaches.



WHAT IT LOOKS LIKE

A turning driver strikes a person walking in the crosswalk.



WHERE IT MOST OFTEN HAPPENS

Wide, high-volume intersections, especially where 6+ lane roads intersect other roadways of where there are complex turning movements.



MOTORCYCLE CRASH PROFILES

Run-Off-Road Motorcycle Crashes

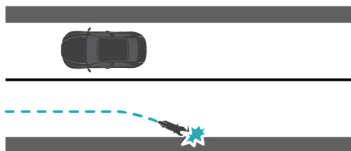
31%

of fatal and serious injury motorcycle crashes are run-off-road crashes.



WHAT IT LOOKS LIKE

A motorcyclist leaves the roadway and crashes without another vehicle involved.



WHERE IT MOST OFTEN HAPPENS

4-7 lane roads posted 40-50 mph, often at night, and frequently involving single-vehicle crashes.

Motorcycle Left-Turn Conflicts at High-Volume Intersections

30%

of fatal and serious injury motorcycle intersection crashes involve left-turn movements.



WHAT IT LOOKS LIKE

A motorcyclist traveling straight is struck by a turning driver.



WHERE IT MOST OFTEN HAPPENS

Signalized intersections where 6+ lane roads intersect ≤ 3 -lane roads, especially with entering traffic volumes of 60,000 or greater.

People-Focused Insights

Every person, whether walking to school, riding transit, or traveling through their neighborhood, deserves to reach their destination safely. By understanding where crashes happen and who is most at risk, the County can prioritize safety improvements, reduce disproportionate impacts on vulnerable populations, and focus resources where they will make the greatest difference.

SCHOOL ZONES

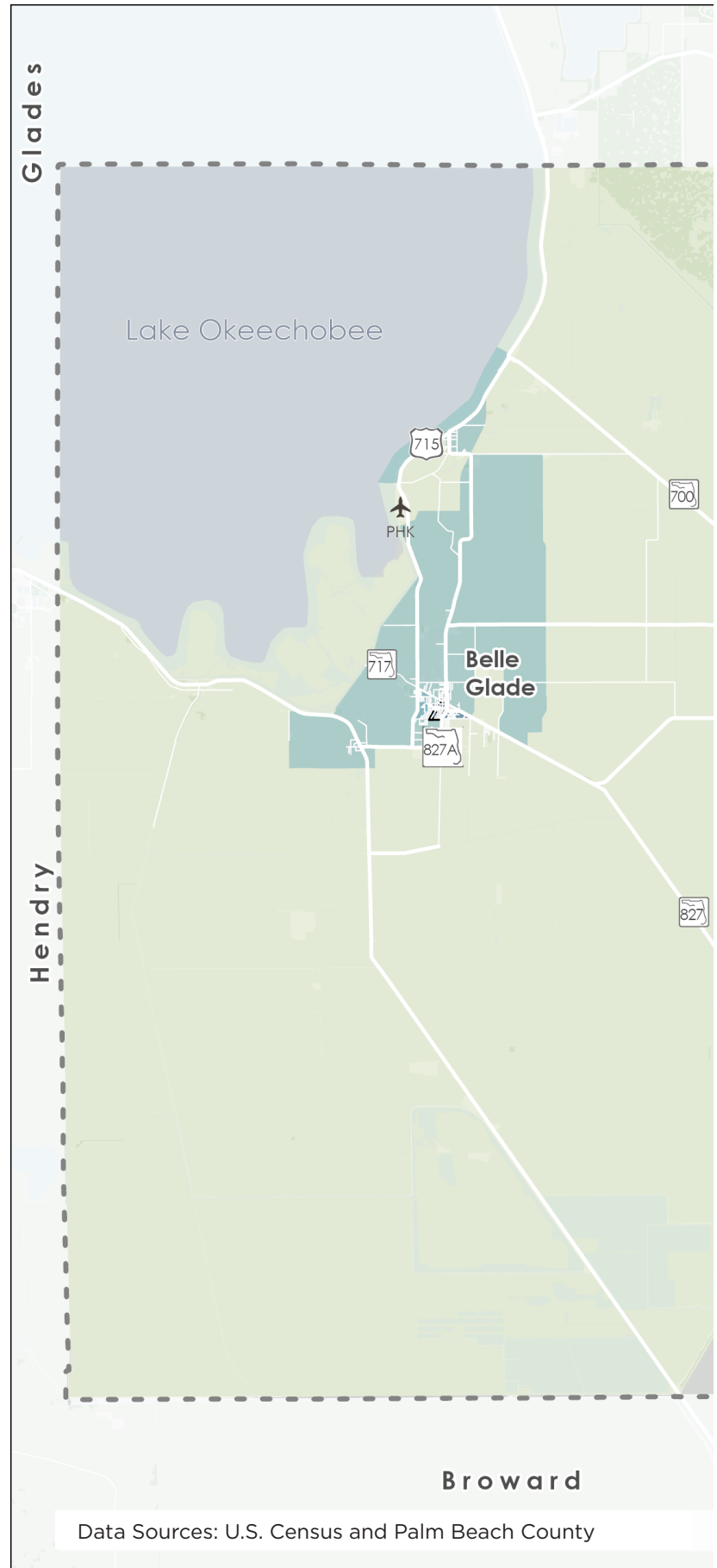
Safer access to schools was a top concern in public engagement. Most children who walk to school live within two miles of their school, so the analysis focused on two-mile school zones around public and private schools. Compared to the countywide average of 29.4 crashes per square mile, the highest-risk zones (over 40 crashes per square mile) were located along the coastline from North Palm Beach to Boca Raton and in clusters along both sides of Southern Boulevard.

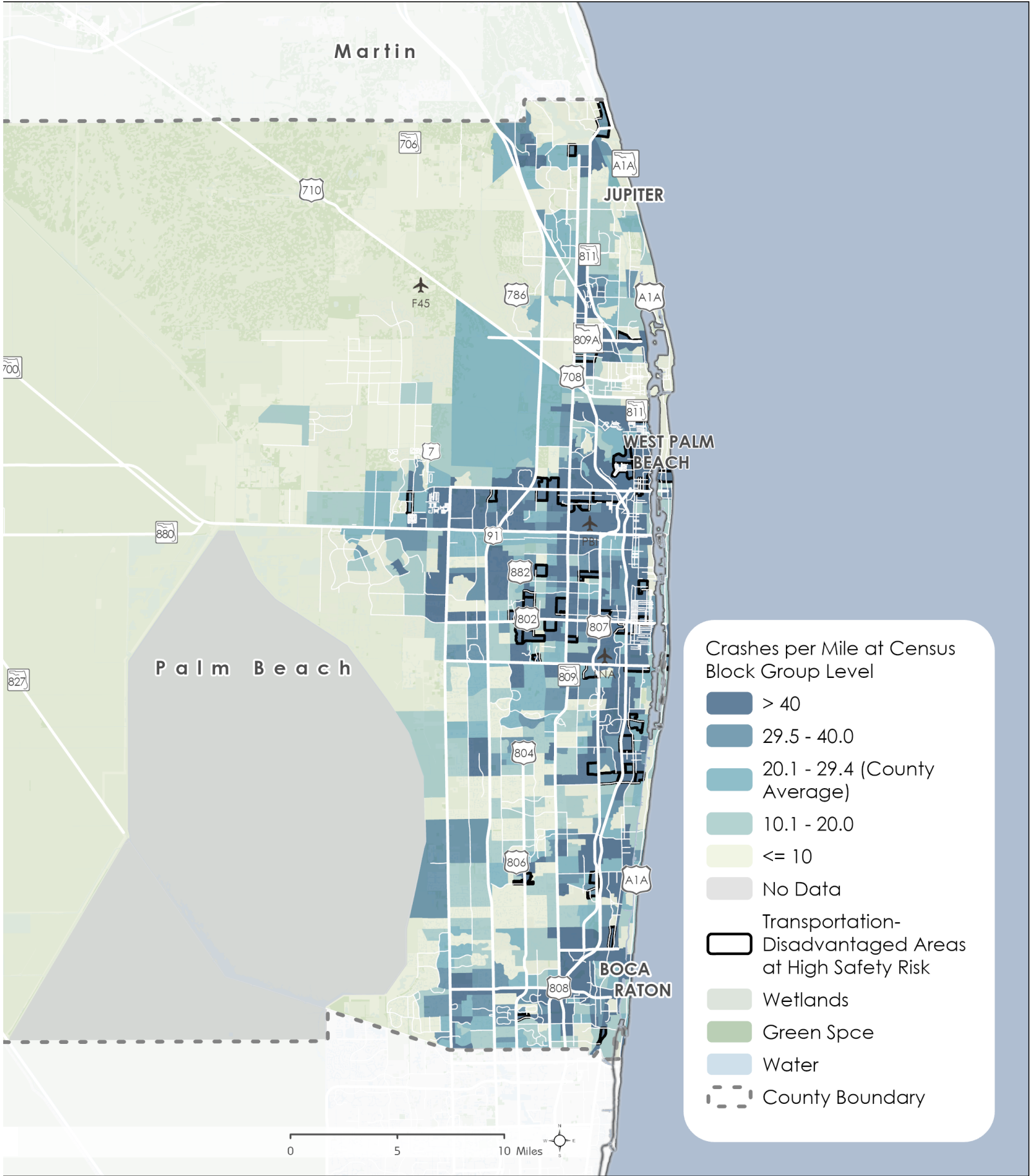
TRANSIT STOPS

Public feedback also highlighted safety challenges near transit stops, including high traffic volumes, limited crossings, and roadway design features that put vulnerable users at risk. Within half-mile transit buffers, most roadway segments exceeded the countywide average of 29.4 crashes per mile. The highest-risk areas are concentrated along major corridors in denser urban centers, including downtown West Palm Beach, Palm Springs, and Lake Worth Beach.

PERSISTENT POVERTY AREAS

Applying a Safe System approach means prioritizing the safety of people who face higher exposure or barriers to mobility. Transportation-disadvantaged areas—where households are more likely to be low-income or without a vehicle—often have crash rates above the county average. These areas are concentrated along corridors such as Okeechobee Boulevard, Lake Worth Road, South Jog Road near Lake Worth Road, and West Woolbright Road in Boynton Beach.





Innovative Tool Application - INRIX Safety View

The INRIX Safety View tool is a cloud-based analytics tool developed by INRIX and GM that provides safety data and analytics with the goal of helping public agencies create informed safety plans. It combines crash, vehicle, vulnerable road user, and demographic data to visualize trends on roadway segments. The tool is intended to support the evaluation of safety projects and application process for safety-related funding.

Throughout the development of the Safety Action Plan, the study team along with County staff attended several training sessions to identify opportunities for application. It was anticipated that the tool would be helpful in identifying high risk locations using the hard braking, near miss, and speed data provided with the subscription.

The following crash data attributes were provided by the study team and uploaded to the Safety View application to allow an overlay of the historical crash data and the additional metrics provided through Safety View:

- Total Crashes
- Crash Severity
- Crash Type
- Count of Pedestrians Involved
- Count of Bicycles Involved
- Count of Motorcycles Involved
- Count of Vehicles Involved
- Speeding Involved
- Alcohol Involved
- Drugs Involved
- Lighting Condition
- Road Surface Condition
- Weather Condition
- Intersection Related

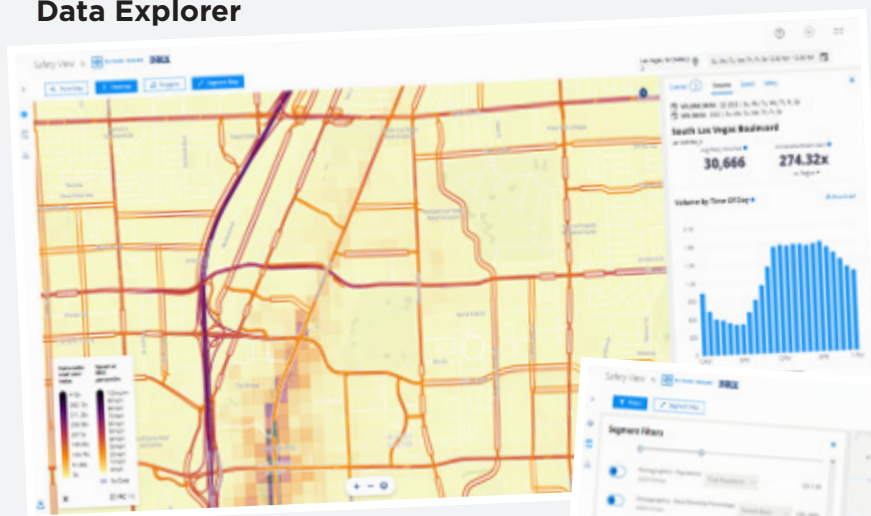
During use of the Safety View application, it was determined that the following metrics could be extracted and overlayed with other data to support identifying trends and patterns to inform safety decisions:

- Vehicle exceeding speed limit +10mph: 0% - 100%
- Speed at 85th percentile: 0kph - 100kph
- Total Risk Score: 0 - 25
- Seatbelt Risk Score: 0 - 5
- Hard Braking Risk Score: 0 - 5
- Speed Risk Score: 0 - 5
- Body Type Risk Score: 0 - 5

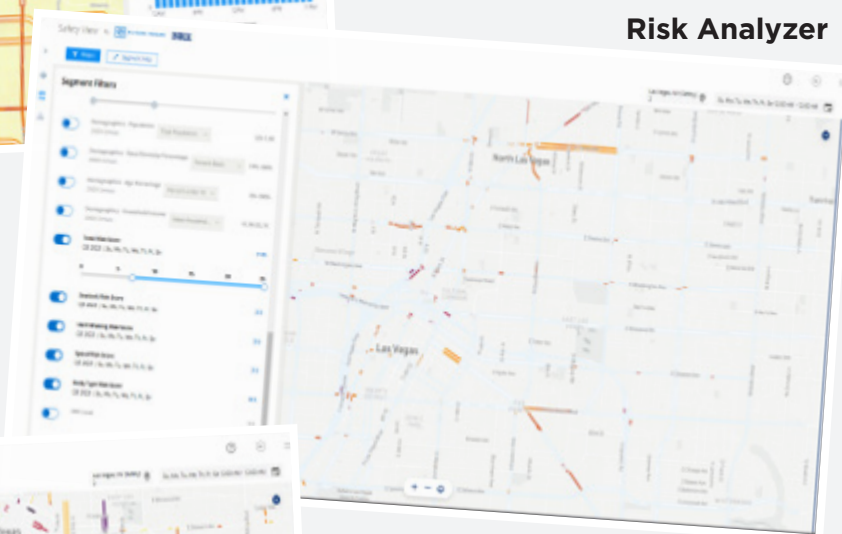
Ultimately, the study team leaned more heavily on the traditional data sources to inform the development and evaluation of the High Injury Network. INRIX Safety View was used to corroborate safety risks of prioritized high injury corridors. The data from the Safety View tool available during the period purchased was downloaded and can be accessed as needed for future analysis efforts.



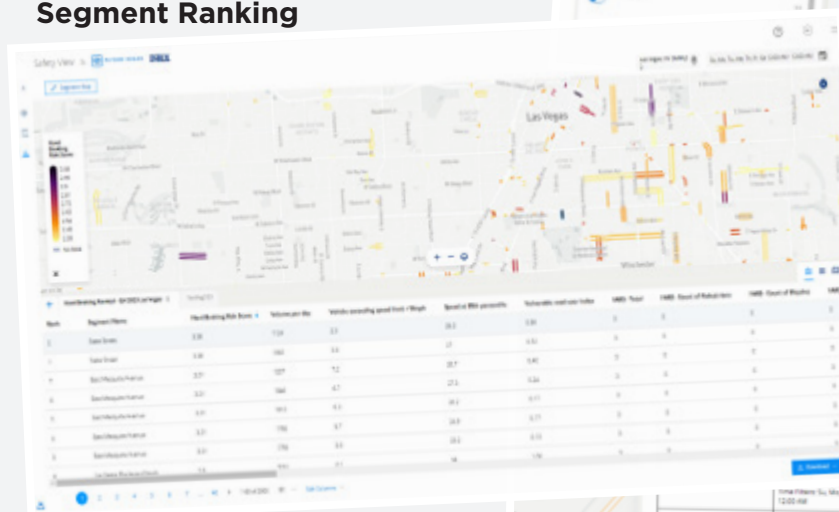
Data Explorer



Risk Analyzer



Segment Ranking



Data Downloader

New Download

Region: Time: Filter:

Submit

Choose a Region and name your report.

Region: Name:

My Report:

2019-10-27 10:10:10

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Volume per Day: 1000 - 10000

Please allow a few minutes for your report to process before it is ready. You will receive an email with instructions to complete your download.

Submit

SECTION 4. HIGH INJURY NETWORK

Methodology and Background

Utilizing countywide crash data, the High Injury Network (HIN) identifies roadway segments and intersections in Palm Beach County using a combination of crash frequency, severity, and exposure-based measures.

The HIN is designed to be a screening tool to support segment-level improvements and corridor-level strategy development. It is not a comprehensive list of safety improvement projects for the County. The HIN will instead help to direct future studies and design work by focusing in on those segments and intersections where crashes have been most concentrated.

Separate HINs were developed for motor vehicle, pedestrian, bicycle, and motorcycle crashes, considering both segments and intersections for each mode. Each segment HIN is based on four key metrics: crash frequency, severity score, frequency rate (normalized by traffic volume) and severity rate (normalized by traffic volume). Intersection HINs are based on crash frequency and severity score only. For more information, the full methodology for the HIN development and the scoring approach can be found in **APPENDIX C. APPENDIX C** also provides a breakdown of each type of HIN by Council District.



HIN Representation Snapshot

MOTOR VEHICLE

254 HIN INTERSECTIONS

40% Fatal Crashes
51% Serious Injury Crashes
25% of Total Intersections

427 HIN SEGMENTS

44% Fatal Crashes
52% Serious Injury Crashes
14% of Total Segments
234 Miles

MOTORCYCLE

90 HIN INTERSECTIONS

68% Fatal Crashes
48% Serious Injury Crashes
9% of Total Intersections

145 HIN SEGMENTS

70% Fatal Crashes
42% Serious Injury Crashes
5% of Total Segments
85 Miles

PEDESTRIAN

67 HIN INTERSECTIONS

55% Fatal Crashes
48% Serious Injury Crashes
6% of Total Intersections

145 HIN SEGMENTS

54% Fatal Crashes
45% Serious Injury Crashes
3% of Total Segments
44 Miles

BICYCLE

88 HIN INTERSECTIONS

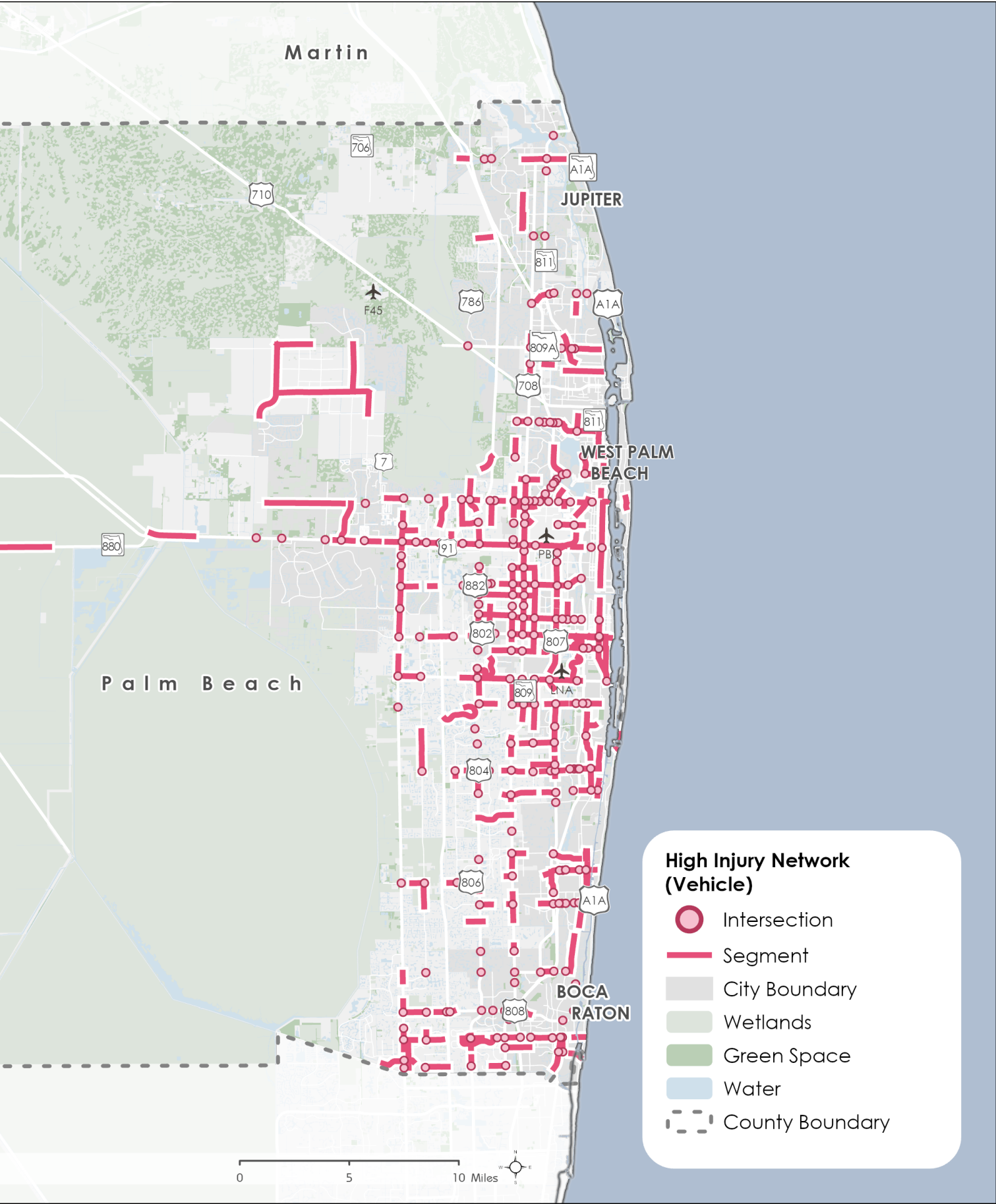
60% Fatal Crashes
53% Serious Injury Crashes
9% of Total Intersections

96 HIN SEGMENTS

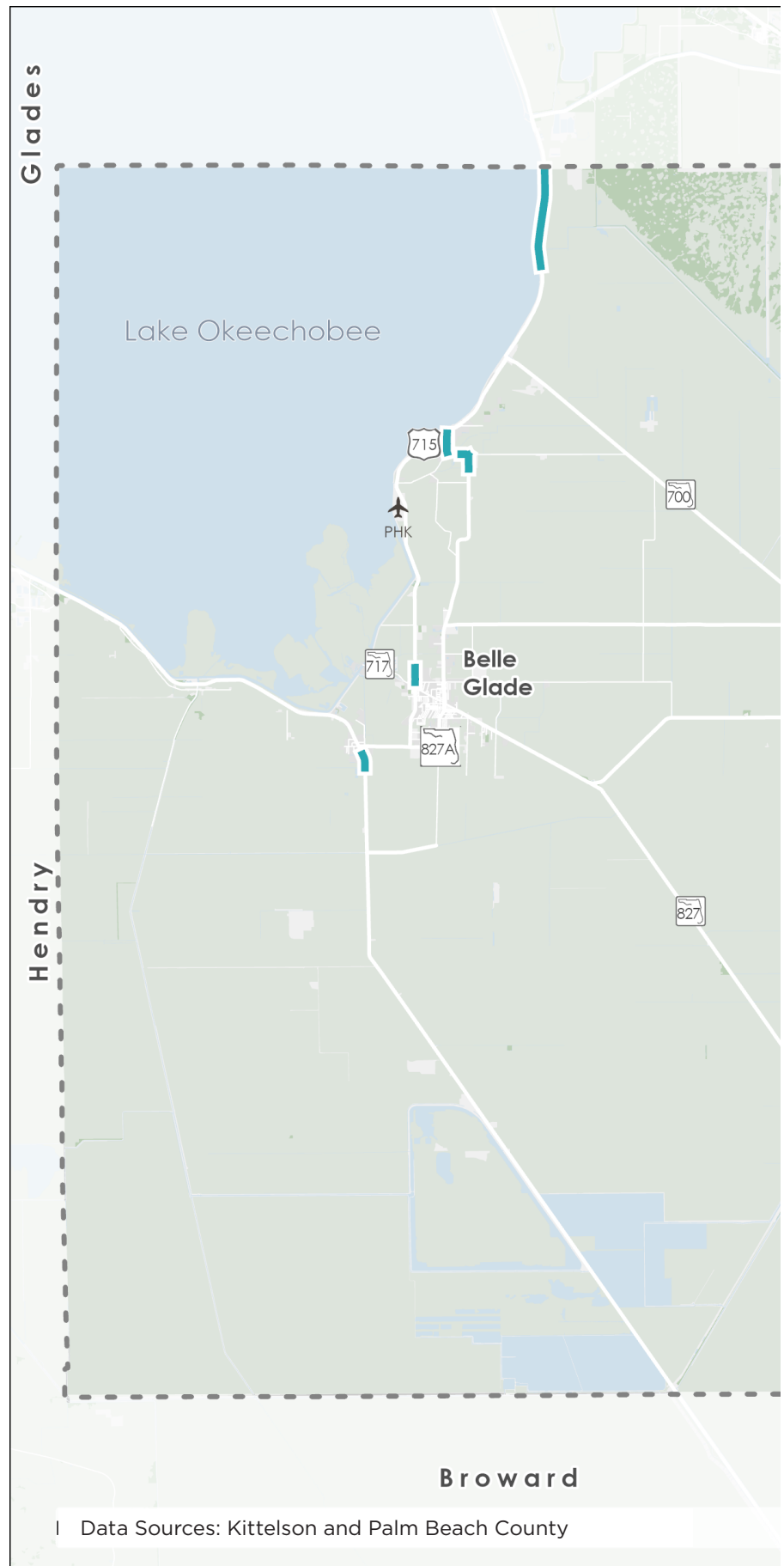
39% Fatal Crashes
53% Serious Injury Crashes
3% of Total Segments
51 Miles

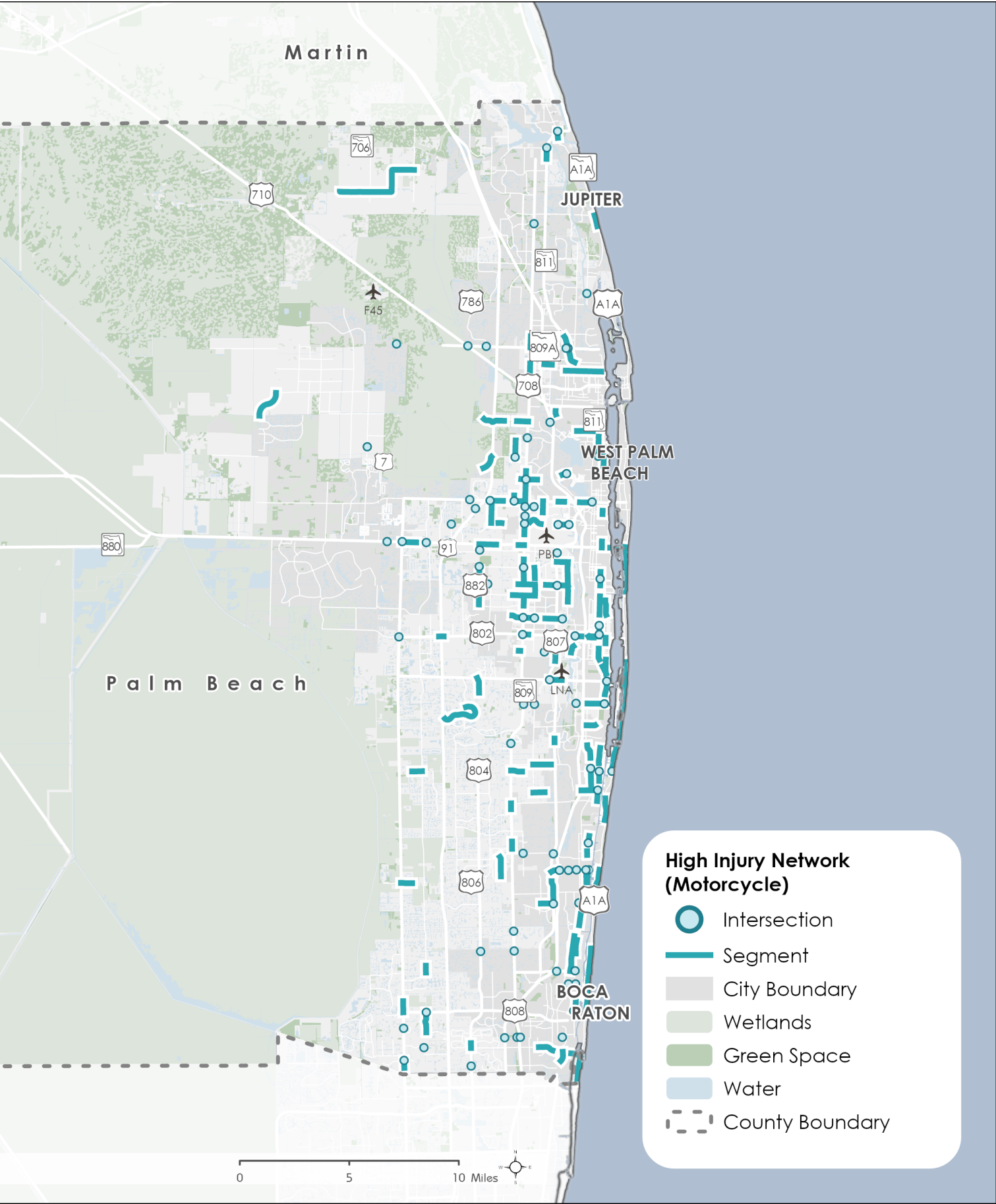
This map represents the Motor Vehicle HIN, for both segments and intersections. Each HIN segment is based on four key metrics: crash frequency, severity score, frequency rate (normalized by traffic volume) and severity rate (normalized by traffic volume). HIN intersections are based on crash frequency and severity score only.





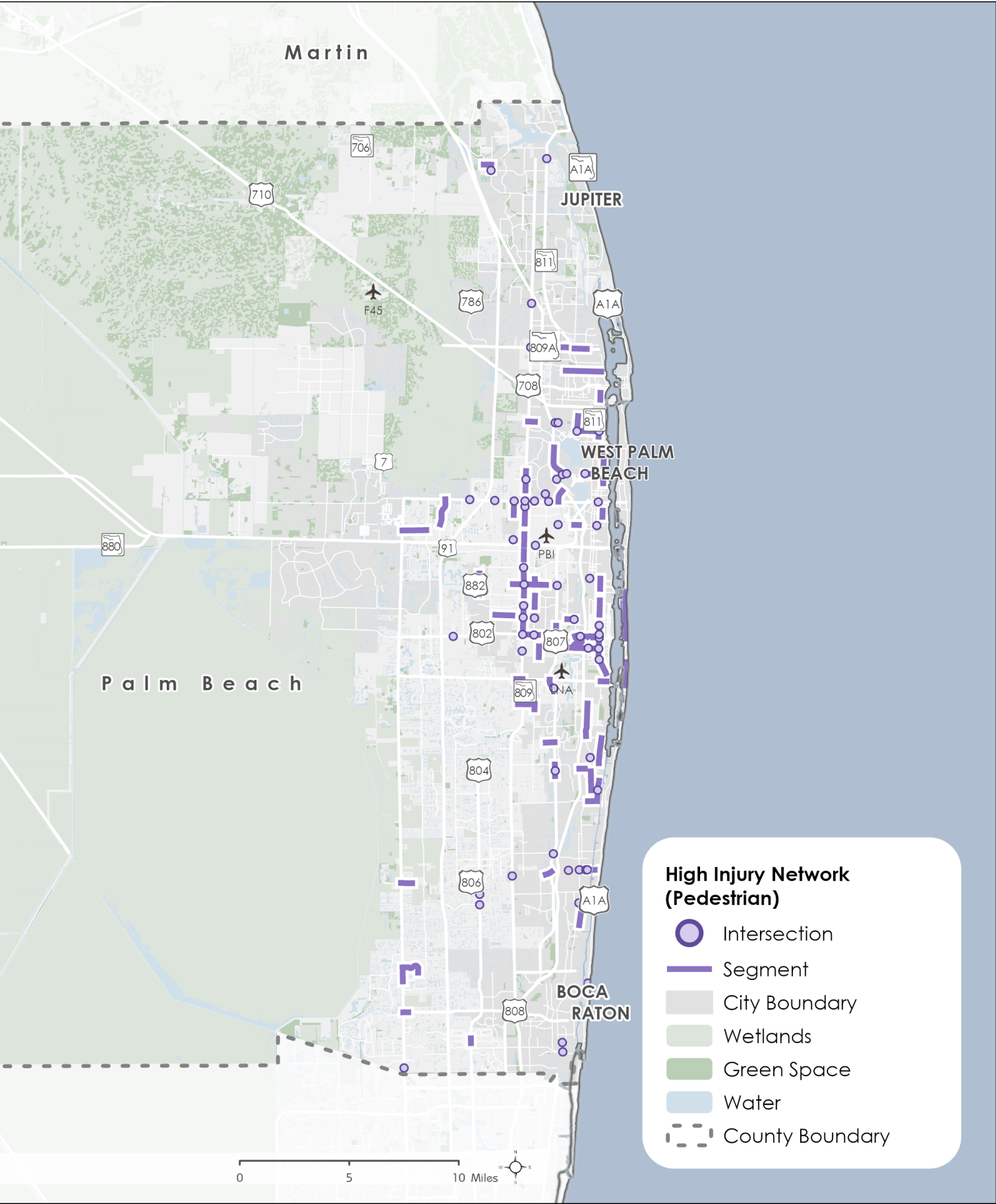
This map represents the Motorcycle HIN, for both segments and intersections. Each HIN segment is based on four key metrics: crash frequency, severity score, frequency rate (normalized by traffic volume) and severity rate (normalized by traffic volume). HIN intersections are based on crash frequency and severity score only.



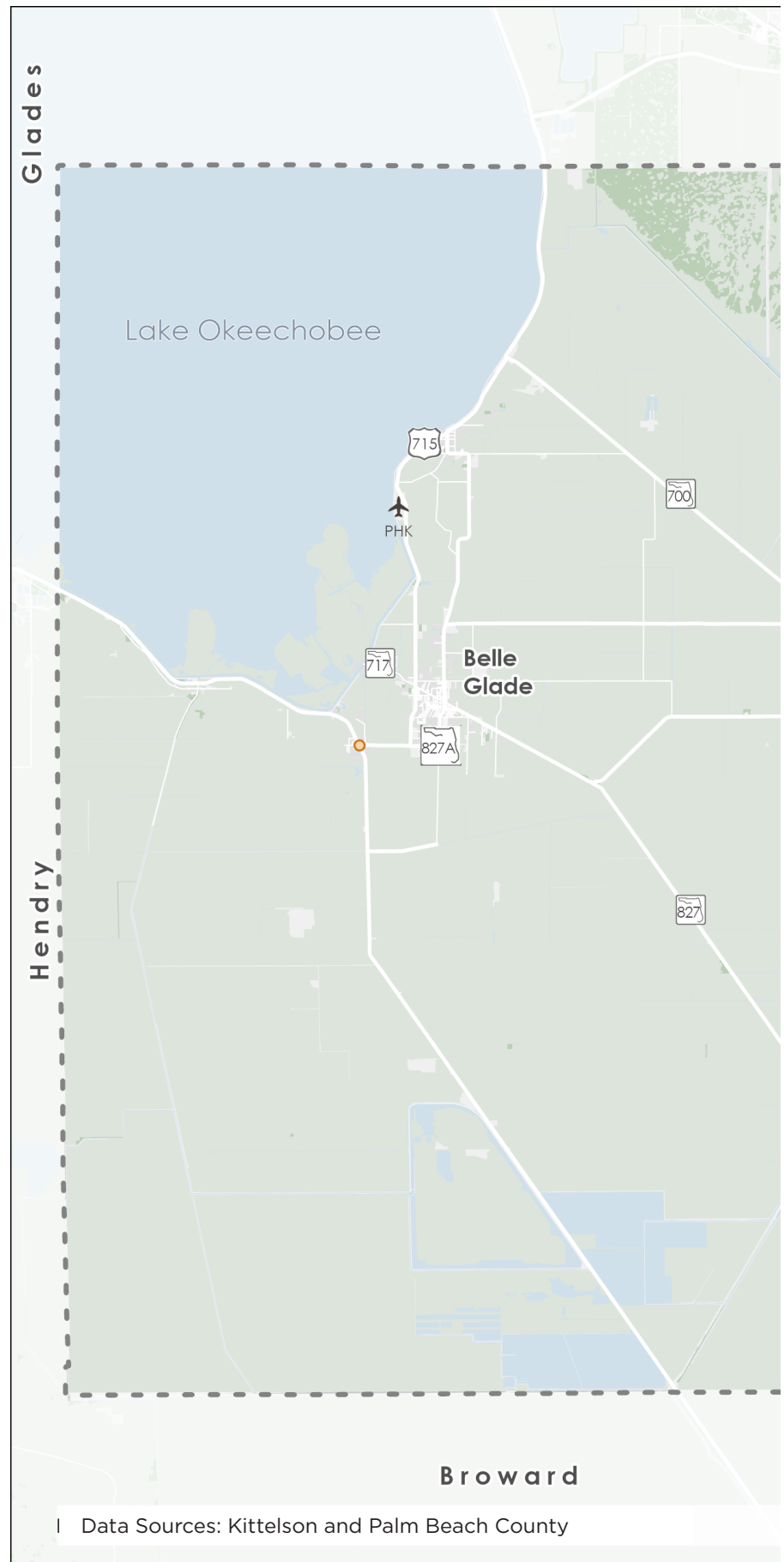


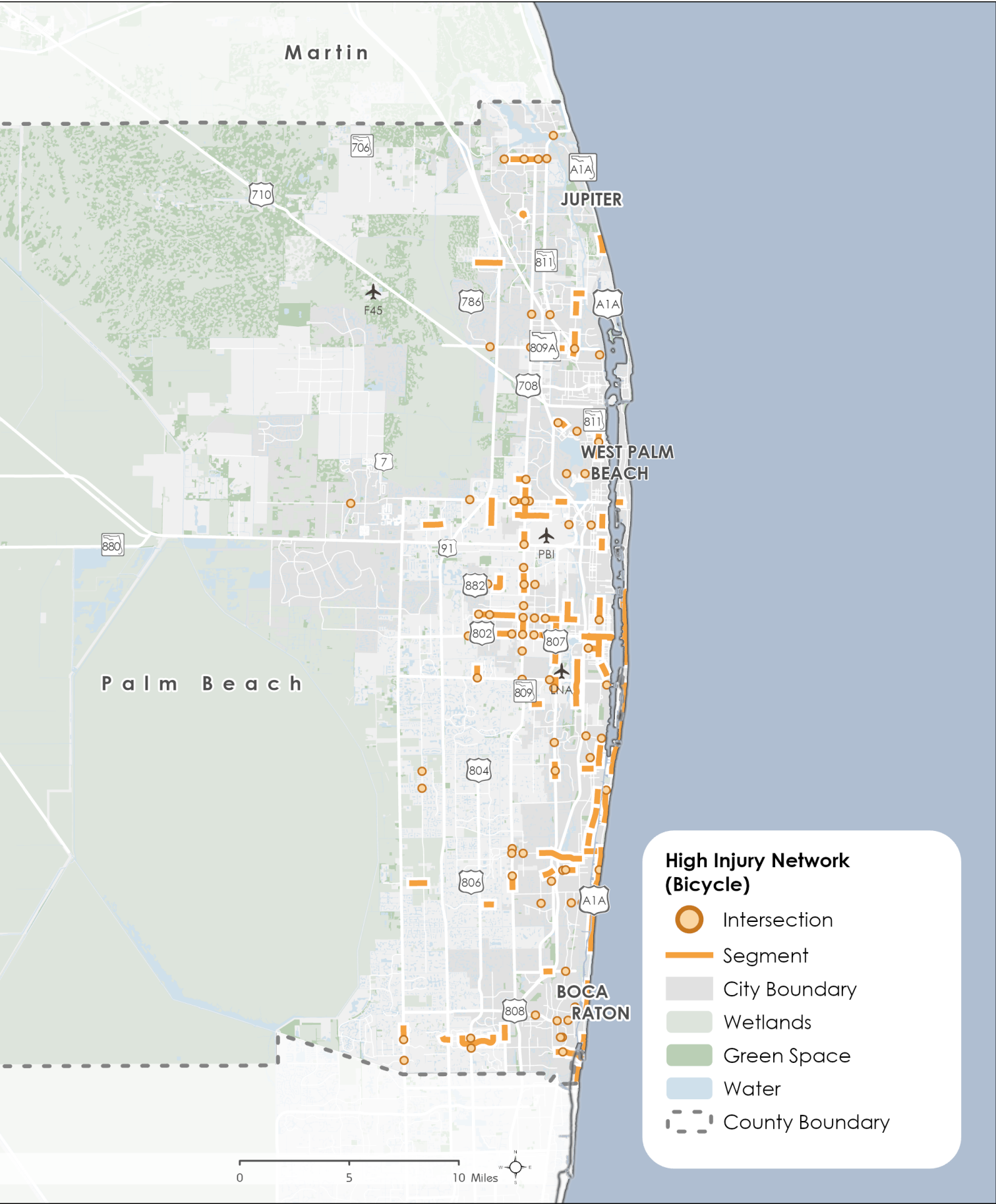
This map represents the Pedestrian HIN, for both segments and intersections. Each HIN segment is based on four key metrics: crash frequency, severity score, frequency rate (normalized by traffic volume) and severity rate (normalized by traffic volume). HIN intersections are based on crash frequency and severity score only.





This map represents the Bicycle HIN, for both segments and intersections. Each HIN segment is based on four key metrics: crash frequency, severity score, frequency rate (normalized by traffic volume) and severity rate (normalized by traffic volume). HIN intersections are based on crash frequency and severity score only.





SECTION 5. SYSTEMIC SAFETY COUNTERMEASURES

Countermeasures Matrix

The Safety Analysis identifies the types of crashes occurring in Palm Beach County, while the High Injury Network shows where the most frequent and severe crashes occur. Together, these analyses inform the Systemic Countermeasures in this plan; a set of people-focused strategies to reduce serious injuries and fatalities.

These countermeasures follow the Safe System approach, prioritizing safer roads, safer speeds, and safer road users by addressing the highest-risk conditions across the roadway network while considering feasibility and implementation.

The recommended countermeasures are grounded in research and best practices and are most effective when implemented in combination with multiple treatments and tailored to local conditions. Project-level evaluation is still required to ensure that selected treatments respond to on-the-ground context and community needs. Where available, a crash modification factor (CMF) was documented per countermeasure in **APPENDIX D**. Before implementation of any Systemic Countermeasure, a location specific crash analysis and evaluation of appropriate countermeasure is needed to ensure the best solution is provided to enhance safety.

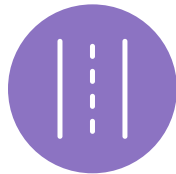
The Systemic Countermeasure Matrix is organized by five key factors:



Crash Type: the six leading fatal and severe injury crash types across all modes and facility types



Relative Cost: Based on infrastructure cost estimates



Roadway Context: Urban or Rural



Implementation Difficulty:

Low: Low-cost projects funded within existing department budgets; minimal coordination; completed in under one year.

Medium: Moderately priced projects requiring local funding and advance budget planning; some coordination; completed in one to three years.

High: High-cost projects, often needing state or federal funding; significant coordination; take more than three years to complete.



Mode: Motor Vehicle, Motorcycle, Bicycle, or Pedestrian

For each leading crash type, associated leading crash causes (for example, operated carelessly, ran red light) were determined. Based on either an urban or rural roadway context, recommended countermeasures were compiled for each of these causes. These countermeasures comprise the following Systemic Countermeasure Matrix. The list of countermeasures are options that still require further analysis of the specific locations where projects are being recommended. Additional methodology details can be found in **APPENDIX D**.

Countermeasure	Leading Crash Types Addressed						Context	Modes Addressed				Relative Cost	Implementation Difficulty
	Rear-End	Left Turn	Fixed Object/Lane Departure	Traveling Straight	Turning Right	Angle	(Urban, Rural)	Motor Vehicle	Motorcycle	Bicycle	Pedestrian	(Low, Medium, High)	(Low, Medium, High)
Speeding Enforcement			X			X	Urban	X	X			Low	Low
Improve sign/marking retroreflectivity/visibility			X				Urban	X				Low	Low
Improve pavement friction			X				Rural	X				Low	Low
Install rumble strips/audible pavement markings			X				Rural	X				High	High
Remove/relocate/shield hazards within clear zone			X				Rural	X				Low	Low
Install/Improve lighting and/or remove obstructions to lighting such as trimming overgrown trees			X	X			Rural, Urban	X			X	Medium	Medium
Improve signal timing and coordination (reduce stop and go conditions)	X						Urban	X				Medium	Medium
Install "Next Signal" signs	X						Urban	X				Low	Low
Install warning sign (e.g., hidden driveways, signal ahead)	X						Rural	X				Low	Low
Provide a positive offset of left turn lanes	X						N/A	X	X			High	High
Remove/Improve sight line obstructions for turning vehicles	X				X		N/A	X	X	X	X	Medium	Medium
Install left turn lanes	X						N/A	X				High	High

Countermeasure	Leading Crash Types Addressed						Context	Modes Addressed				Relative Cost	Implementation Difficulty
	Rear-End	Left Turn	Fixed Object/Lane Departure	Traveling Straight	Turning Right	Angle	(Urban, Rural)	Motor Vehicle	Motorcycle	Bicycle	Pedestrian	(Low, Medium, High)	(Low, Medium, High)
Implement flashing yellow arrow (FYA) and FYA with left-turn omit for pedestrians (where applicable)	X						N/A	X			X	Medium	Medium
Add (flexible) backplates with retroreflective border						X	N/A	X				Low	Low
Provide one signal head per lane						X	N/A	X	X			Medium	Medium
Improve all red interval						X	N/A	X				Low	Low
Roadway maintenance (e.g. remove debris and repair potholes)			X				N/A		X			Medium	Medium
Safety awareness campaigns (e.g., wear helmets, bright clothing at night)	X	X	X				N/A		X	X	X	Low	Low
Confirm motorcycle detection by signal	X					X	N/A		X			Low	Low
Install Pedestrian (W11-2) warning signs				X			N/A				X	Low	Low
Relocate bus stops closer to intersections/crosswalks				X			N/A				X	Medium	Medium

Countermeasure	Leading Crash Types Addressed						Context	Modes Addressed				Relative Cost	Implementation Difficulty
	Rear-End	Left Turn	Fixed Object/Lane Departure	Traveling Straight	Turning Right	Angle	(Urban, Rural)	Motor Vehicle	Motorcycle	Bicycle	Pedestrian	(Low, Medium, High)	(Low, Medium, High)
Review pedestrian clearance interval				X			N/A				X	Low	Low
Install countdown pedestrian signals				X			N/A				X	Low	Low
Reduce delays by prioritizing pedestrian signal actuations				X			N/A				X	Low	Low
Install audible push buttons				X			N/A				X	Low	Low
Install passive detection of pedestrians				X			N/A				X	High	Medium
Improve intersection lighting				X			N/A				X	High	Medium
Install "Turning Vehicles Stop for Pedestrian/Bicycle" (R10-15a) signs	X				X		N/A			X	X	Low	Low
Install hardened centerline	X						N/A				X	High	High
Tighten curb radius					X		N/A				X	High	High
Implement leading pedestrian interval (LPI)					X		N/A				X	Low	Low
Add sharrow pavement markings with optional black background				X	X		N/A			X		Low	Low

Countermeasure	Leading Crash Types Addressed						Context	Modes Addressed				Relative Cost	Implementation Difficulty
	Rear-End	Left Turn	Fixed Object/Lane Departure	Traveling Straight	Turning Right	Angle	(Urban, Rural)	Motor Vehicle	Motorcycle	Bicycle	Pedestrian	(Low, Medium, High)	(Low, Medium, High)
Install "Bicycles allowed use of full lane" (R9-20) sign				X	X		N/A			X		Low	Low
Install W11-15 Pedestrian/Bicycle warning sign with "Look" plaque facing driveways to notify drivers to expect cyclists on sidewalk				X	X		N/A			X	X	Low	Low
Add bike boxes	X				X		N/A			X		Low	Low
Install "Bike Lane" (R3-17) signs				X	X		N/A			X		Low	Low
Install "Begin right turn lane yield to bikes" (R4-4) signs				X	X		N/A			X		Low	Low
Add buffer between travel lane and bicycle lane				X	X		N/A			X		High	High
Extend bicycle lane markings through intersection				X			N/A			X		Low	Low
Add bicycle signals and/or detection				X			N/A			X		Low	Low



SECTION 6. PRIORITY CORRIDOR SCREENING, PRIORITIZATION, AND DEEP DIVES

Corridor Screening

To meaningfully improve roadway safety in Palm Beach County, this section focuses on actionable recommendations that move from analysis to implementation. Building on the High Injury Network and Systemic Strategies, the Plan identifies five priority corridors where targeted safety investments can deliver the greatest and most immediate impact.

The corridors were identified using the HIN, incorporating segments and intersections across all four travel modes: walking, biking, motorcycling, and driving. These segments were grouped into logical project extents, and each corridor was ranked based on the total number of serious injury and fatal crashes to target locations with the highest concentration of severe crashes.

Fourteen corridors were initially identified. Then, the five highest-ranked corridors were selected for detailed analysis and the development of targeted safety countermeasures. The top five priority corridors are:

- 10th Ave North
- South Jog Road
- Linton Boulevard
- 6th Ave / Melaleuca Lane
- South Military Trail

These five corridors account for approximately **20%** of all FSI crashes on State- and County-maintained roads in Palm Beach County.

For each of the top five priority corridors, safety countermeasures were formulated in response to crash types, contributing factors, and the needs of diverse road users. The recommendations encompass both intersection- and segment-based interventions as well as systemic and long-term initiatives. Moving forward, it is recommended that each corridor undergo more detailed design and analysis to determine the appropriate timing and methods for implementing both short-term and long-term measures. The analysis is to include an operational analysis and a thorough crash analysis to verify the crash trend and appropriate countermeasures are selected.

Lastly, a single corridor, 10th Avenue North, was selected as the top-ranked corridor for grant application consideration. Notably, the scores across all corridors were closely aligned, signifying comparable levels of priority. This final step was done using three key criteria:

- **Safety Opportunity:** Evaluates the extent to which a project addresses fatal and serious injury (FSI) crashes involving both drivers and vulnerable road users.
- **Community Benefit:** Assesses the corridor's proximity and access to community assets such as parks, schools, transit stops, and places of worship.
- **Benefit-Cost:** Measures the anticipated return on investment for proposed countermeasures.

The map and corridor summaries that follow provide detailed analysis for the five highest-ranked priority corridors. Looking ahead, Palm Beach County may submit a single corridor for grant funding or consolidate all five projects into one comprehensive grant application. Selection of projects for submission should be strategically informed by alignment with grant funding criteria to maximize competitiveness. By focusing on these corridors, the Plan aims to maximize impact and effectiveness in reducing and ultimately eliminating severe crashes in the County.

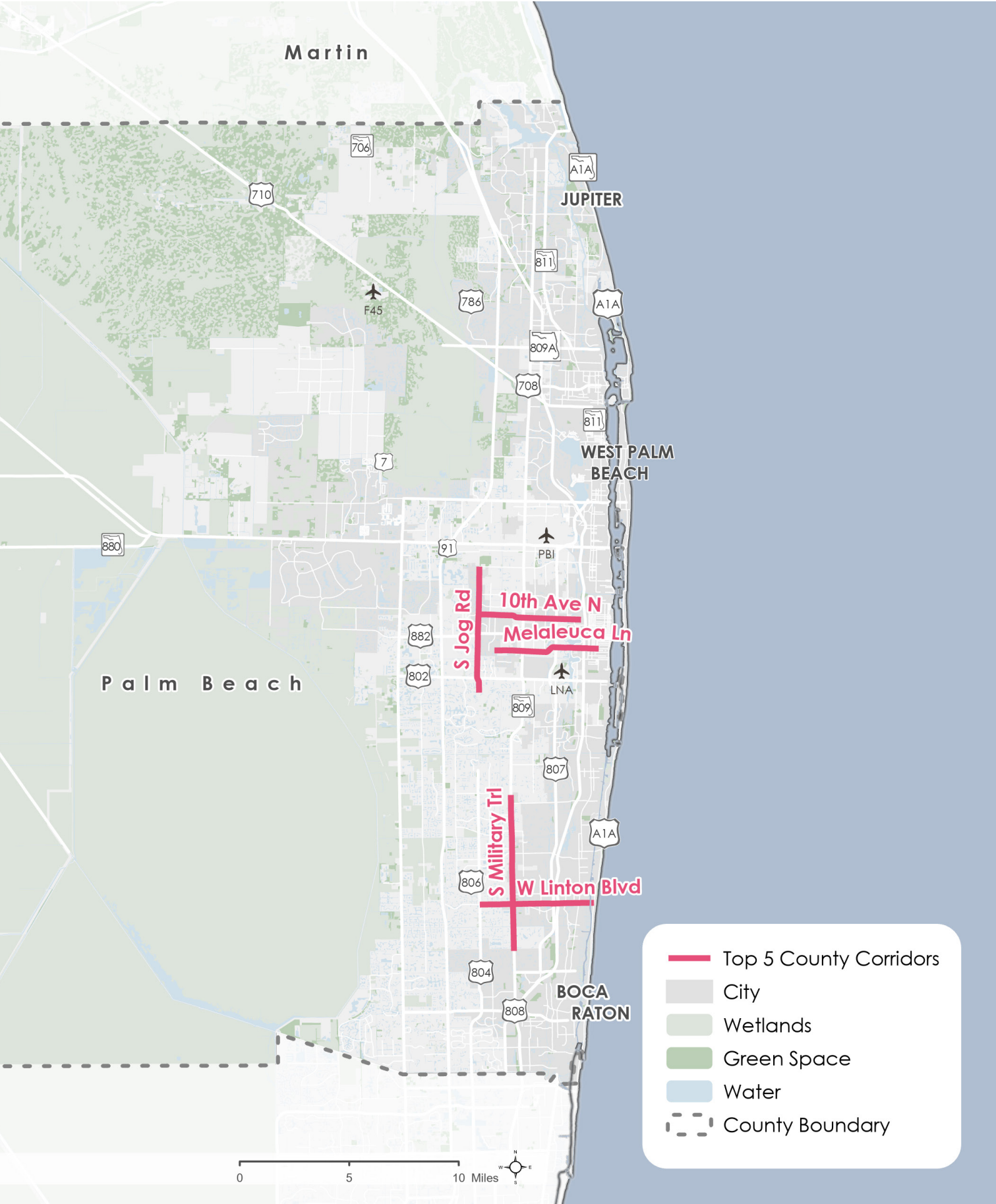


Corridor Summaries

Each 2-page spread includes the following (refer to **APPENDIX D** for full details).

- Corridor context map and description.
- Crash hot spots.
- Key issues and opportunities map.
- Recommended countermeasures map.
- Implementation notes.





6TH AVENUE/MELALEUCA LANE

Corridor Description

6th Avenue/Melaleuca Lane serves as a principal east-west thoroughfare in central Palm Beach County. The corridor connects multiple residential neighborhoods and provides connections to major north-south routes, including Military Trail, Congress Avenue, I-95, and US-1. The surrounding land use is primarily residential in nature, with main entrances to cul-de-sacs and neighborhood enclaves feeding into the roadway. These residential communities often intersect with the roadway at unsignalized intersections that provide turning movements in all directions. Along the corridor, notable civic destinations and substantial job destinations are present, such as churches, K-12 public and private schools, Select Specialty Hospital, Palm Beach State College, and several parks, including John Prince Park. Unlike most of the other priority corridors, 6th Avenue/Melaleuca Lane does not contain many commercial attractors. Rather, the corridor represents a commuter and workforce traffic route.

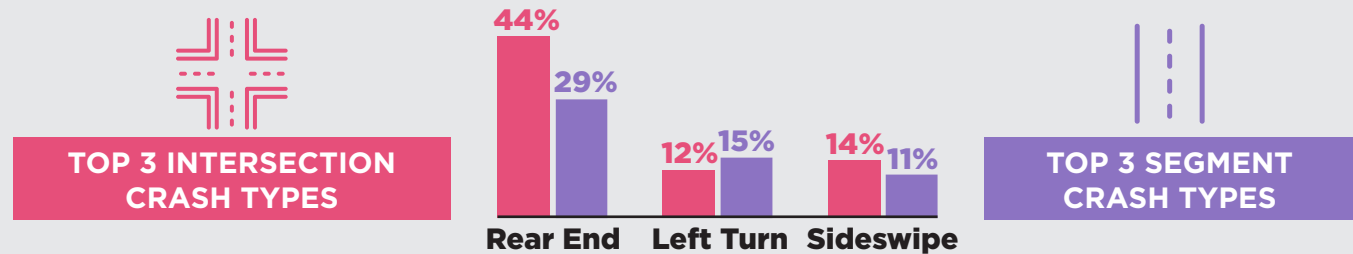
Crash Profile (2019 to 2023)

- **Total Crashes:** 2,066
- **FSIs:** 62
- **Fatalities:** 12
- **Vulnerable Road User Crashes:** 113

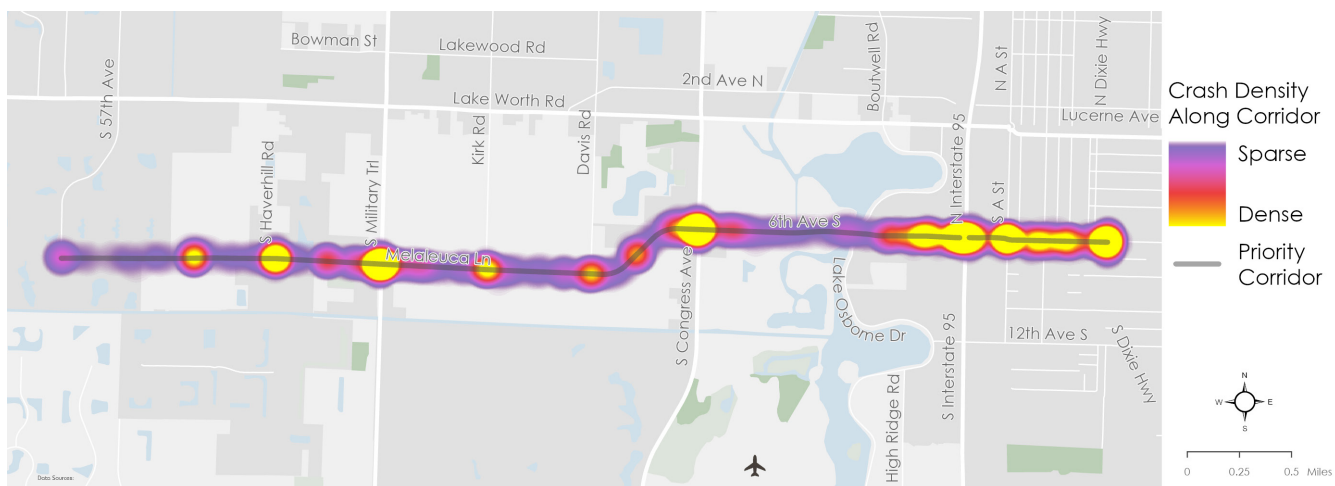
Corridor Context

- **Extent:** Pine Hov Circle to US 1
- **Corridor Length:** 4.8 miles
- **Roadway Classification:** Urban, Major Arterial
- **# of Lanes:** 4-5 Lanes
- **Road Width:** 80-110 feet
- **Posted Speed:** 35 to 45 MPH posted speed
- **AADT:** 12,400 to 34,000 AADT (FDOT, 2024)

Top Crash Types



6th Avenue/Melaleuca Lane Crash Heatmap



Recommendations Summary

The top safety concerns for segments along this corridor are rear end, left turn and angle crashes. Intersections along this corridor experience similar crashes with the addition of sideswipe crashes. The following safety recommendations were identified to resolve safety concerns with these crash types experienced on this corridor. To enhance safety at intersections, the implementation of high visibility crosswalks and Leading Pedestrian Intervals are proposed for pedestrian and bicyclist safety, while retroreflective backplates on signals would help increase signal visibility. Updating signal timing for protected left-turn phasing aims to minimize left entering crashes.

Between intersections, directional median conversions are proposed to restrict vehicle turning movements at specific locations.

Standalone and long-term projects include hardened centerlines at one key intersection to protect pedestrians and cyclists, construction of new lighting infrastructure along the corridor to decrease nighttime crashes, and separated bike lanes to reduce conflicts between cyclists and vehicles.

Short-Term Projects

INTERSECTIONS

- **Leading Pedestrian Intervals** evaluate for bicyclist and pedestrian safety (CMF: 0.41). Cost: \$18,000. Locations: 7.
- **Evaluate signal timing** in accordance with County standards, consider protected left-turn phasing to prevent left entering crashes (CMF: 0.45). Cost: \$203,000. Locations: 5.
- **Backplates with retroreflective borders** to increase signal visibility and prevent rear end crashes (CMF: 0.85). Cost: \$72,000. Locations: 7.

SEGMENTS

- **Directional Median Conversions** to restrict vehicle turning movements at specific locations and prevent left turn and angle crashes (CMF:0.43). Cost: \$569,000. Locations: 13.

Standalone and Long-Term Projects

INTERSECTIONS*

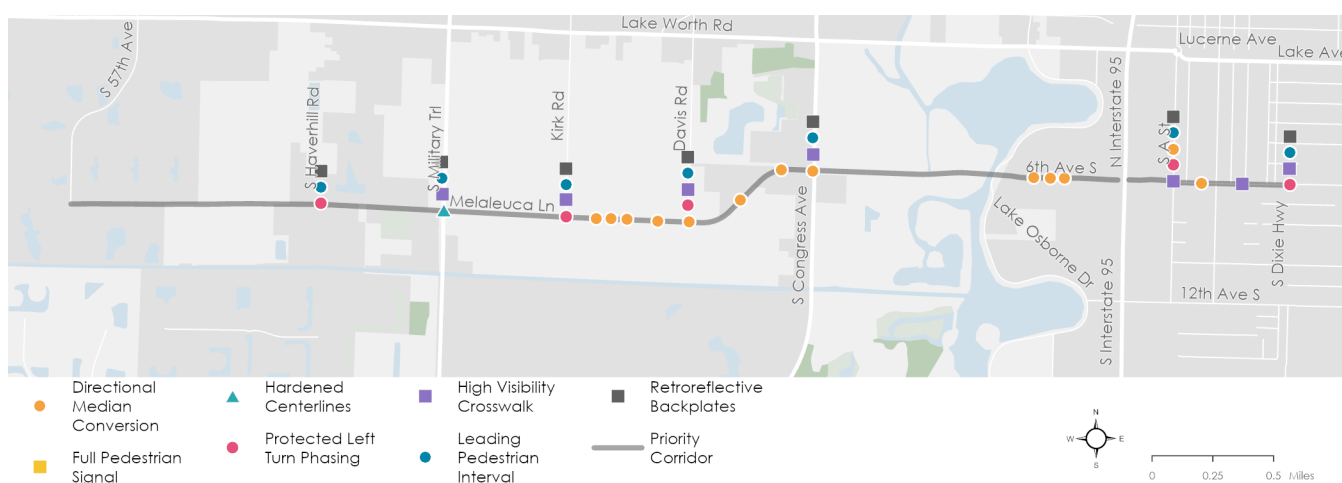
- **Hardened Centerlines** evaluate effectiveness and benefits of implementation at key intersections to reduce risk for pedestrians and cyclists within the crosswalk. Cost: \$143,000. Locations: 1.
- **Intersection Control Evaluation** for 6 key intersections on corridor that are also on County HIN. Locations: 6.

SEGMENTS

- **Installation and construction of new lighting infrastructure** evaluate existing lighting along the length of the corridor to identify any new lights needed to reduce frequency of nighttime crashes.
- **Separated Bike Lane** evaluate for where to implement along the length of the corridor to reduce cyclist and vehicle conflict. Cost: \$26,362,000.

Note: Costs do not include right-of-way

6th Avenue/Melaleuca Lane Recommendations Map



* A **hardened centerline** is a type of left turn hardening that uses **modular curbs, barriers, or other vertical delineators** placed where the **centerline meets the intersection to reduce left turning vehicle speeds and prevent "corner cutting"**

An **Intersection Control Evaluation (ICE)** is a **data-driven, performance-based framework** used to objectively screen and compare different intersection control alternatives, with the goal of identifying the **optimal geometric and control solution** for a given location

10TH AVENUE NORTH

Corridor Description

10th Avenue North serves as a principal east-west thoroughfare within central Palm Beach County. This corridor links residential neighborhoods and connects to major north-south routes, such as Jog Road, Military Trail, Congress Avenue, and I-95. Bus transit service is also along the corridor.

The adjacent land use is predominantly residential but contains many civic and commercial uses. Notably, the corridor differs from other priority corridors by passing through three school zones: John I. Leonard High School, Palm Springs Elementary School, and Lake Worth Middle School. These schools often contribute to high amounts of multimodal traffic during peak commute times. In addition, the corridor features several commercial and retail clusters, including Walmart and ALDI. The commercial clusters are located at major intersections with north/south roadways, creating a strong attraction of traffic. Another unique aspect of 10th Avenue North is that there are many minor north/south through roads that offer alternate routes or connect residential neighborhoods, representing a wider opportunity for cross travel along the corridor.

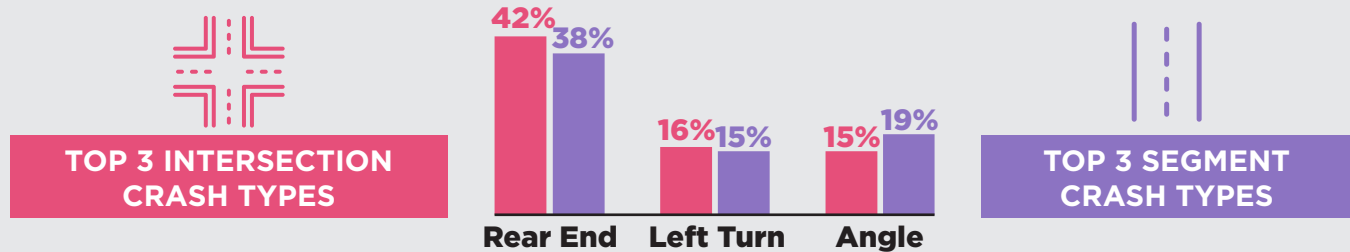
Crash Profile (2019 to 2023)

- **Total Crashes:** 2,922
- **FSIs:** 67
- **Fatalities:** 18
- **Vulnerable Road User Crashes:** 130

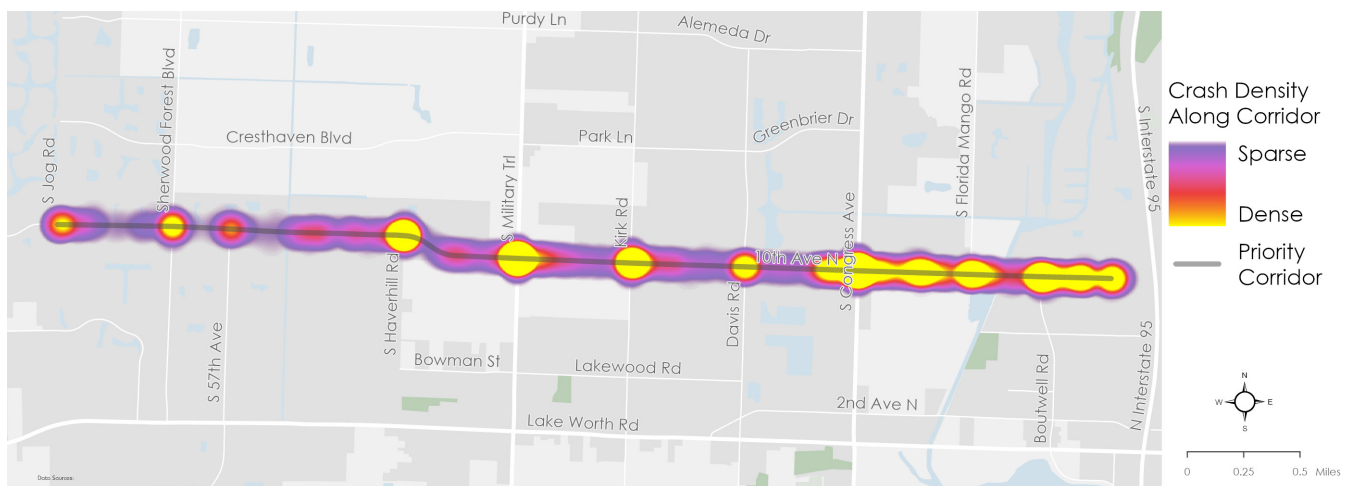
Corridor Context

- **Extent:** South Jog Road to Barnett Drive
- **Corridor Length:** 4.7 miles
- **Roadway Classification:** Urban, Major Arterial
- **# of Lanes:** 4-5 Lanes
- **Road Width:** 80-120 feet
- **Posted Speed:** 40 MPH posted speed
- **AADT:** 12,400 to 34,000 AADT (FDOT, 2024)

Top Crash Types



10th Avenue North Crash Heatmap



Recommendations Summary

The top safety concerns for this corridor and intersections on this corridor are rear end, left turn, and angle crashes. The following safety recommendations were identified to address safety concerns with the crash types experienced on this corridor. To enhance safety at intersections, the implementation of high visibility crosswalks and Leading Pedestrian Intervals are proposed for pedestrian and bicyclist safety, while retroreflective backplates on signals would help increase signal visibility. Updating signal timing for protected left-turn phasing aims to minimize left entering crashes.

Between intersections, directional median conversions are proposed to restrict vehicle turning movements at specific locations, and a full traffic signal is recommended to lessen risks for road users at an unsignalized midblock location.

Standalone and long-term projects include hardened centerlines at four intersections to safeguard pedestrians and cyclists and the installation of new lighting infrastructure along the corridor to decrease nighttime crashes.

Short-Term Projects

INTERSECTIONS

- **Leading Pedestrian Intervals** evaluate for bicyclist and pedestrian safety (CMF: 0.41). Cost: \$31,000. Locations: 12.
- **Evaluate signal timing** in accordance with County standards, consider protected left-turn phasing to prevent left entering crashes (CMF: 0.45). Cost: \$407,000. Locations: 10.
- **Backplates with retroreflective borders** to increase signal visibility and prevent rear end crashes (CMF: 0.85). Cost: \$124,000. Locations: 12.

SEGMENTS

- **Directional Median Conversions** to restrict vehicle turning movements at specific locations and prevent left turn, angle and sideswipe crashes (CMF:0.43). Cost: \$657,000. Locations: 15.
- **Evaluate Pedestrian Traffic Signal** in accordance with County standards, consider installation of a pedestrian traffic signal to reduce vulnerable road user risks at unsignalized midblock location (CMF: 0.50). Cost: \$1,000,000. Locations: 1.

Standalone and Long-Term Projects

INTERSECTIONS

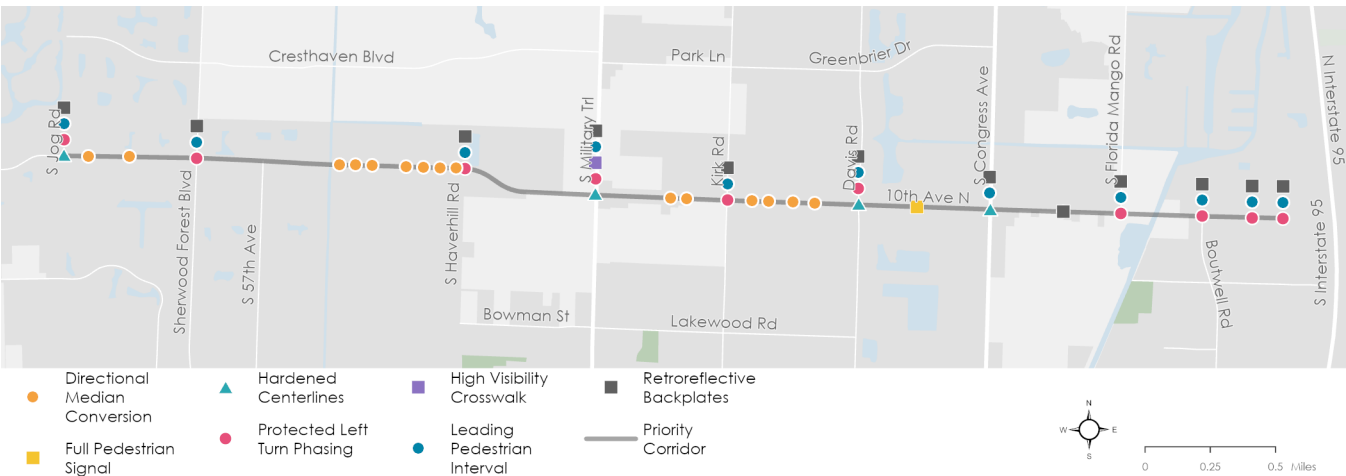
- **Hardened Centerlines** evaluate effectiveness and benefits of implementation at key intersections to reduce risk for pedestrians and cyclists within the crosswalk. Cost: \$571,000. Locations: 4.
- **Intersection Control Evaluation** for 11 key intersections on corridor that are also on County HIN. Locations: 11.

SEGMENTS

- **Installation and construction of new lighting infrastructure** evaluate existing lighting along the length of the corridor to identify any new lights needed to reduce frequency of nighttime crashes.

Note: Costs do not include right-of-way

10th Avenue North Recommendations Map



LINTON BOULEVARD

Corridor Description

Linton Boulevard functions as a key east-west thoroughfare in Southern Palm Beach County, providing connectivity between residential neighborhoods and major north-south routes including Jog Road, Military Trail, Congress Avenue, I-95, US-1, and A1A. Bus transit service is also along the corridor.

West of I-95, the corridor is primarily bordered by residential land uses, with notable institutions such as Delray Medical Center and American Heritage Schools Palm Beach located nearby. East of I-95, the area transitions to predominantly retail and commercial uses. This segment of the corridor also experiences the highest AADT for the corridor, representing a very high travel route. As the corridor approaches its terminus at the intracoastal waterway, A1A, and the beach, land use reverts to mainly residential.

The corridor represents a highly traveled commuting route as well as a vital connection to the interstate. It connects neighborhoods to shopping and job destinations in the region.

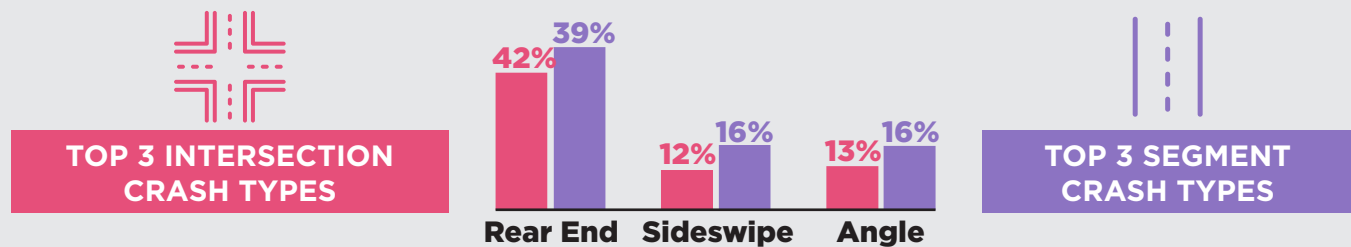
Crash Profile (2019 to 2023)

- **Total Crashes:** 2,555
- **FSIs:** 83
- **Fatalities:** 7
- **Vulnerable Road User Crashes:** 81

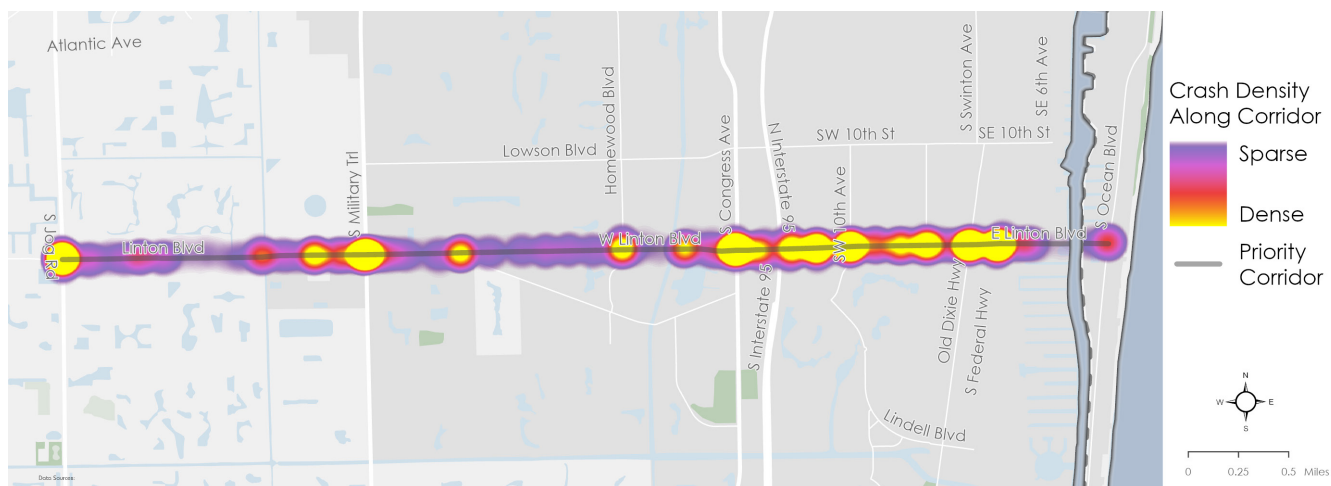
Corridor Context

- **Extent:** South Jog Road to A1A
- **Corridor Length:** 5.2 miles
- **Roadway Classification:** Urban, Major Arterial
- **# of Lanes:** 4-6 Lanes
- **Road Width:** 120 feet
- **Posted Speed:** 40 to 45 MPH posted speed
- **AADT:** 14,400 to 45,000 AADT (FDOT, 2024)

Top Crash Types



Linton Boulevard Crash Heatmap



Recommendations Summary

The top safety concerns for this corridor and intersections on this corridor are rear end, angle, and sideswipe crashes. The following safety recommendations were identified to address safety concerns with the crash types experienced on this corridor. To enhance safety at intersections, the implementation of Leading Pedestrian Intervals are proposed for pedestrian and bicyclist safety, while retroreflective backplates on signals would help increase signal visibility. Updating signal timing for protected left-turn phasing aims to minimize left entering crashes.

Between intersections, directional median conversions are proposed to restrict vehicle turning movements at specific locations.

Standalone and long-term projects include hardened centerlines at nine intersections to protect pedestrians and cyclists and creating a separated bike lane to reduce conflicts between cyclists and vehicles.

Short-Term Projects

INTERSECTIONS

- **Leading Pedestrian Intervals** evaluate for bicyclist and pedestrian safety (CMF: 0.41). Cost: \$31,000. Locations: 12.
- **Evaluate signal timing** in accordance with County standards, consider protected left-turn phasing to prevent left entering crashes (CMF: 0.45). Cost: \$366,000. Locations: 9.
- **Backplates with retroreflective borders** to increase signal visibility and prevent rear end crashes (CMF: 0.85). Cost: \$124,000. Locations: 12.

SEGMENTS

- **Directional Median Conversions** to restrict vehicle turning movements at specific locations and prevent angle and sideswipe crashes (CMF:0.43). Cost: \$438,000. Locations: 10.

Standalone and Long-Term Projects

INTERSECTIONS

- **Hardened Centerlines** evaluate effectiveness and benefits of implementation at key intersections to reduce risk for pedestrians and cyclists within the crosswalk. Cost: \$1,285,000. Locations: 9.
- **Intersection Control Evaluation** for 12 key intersections on corridor that are also on County HIN. Locations: 12.

SEGMENTS

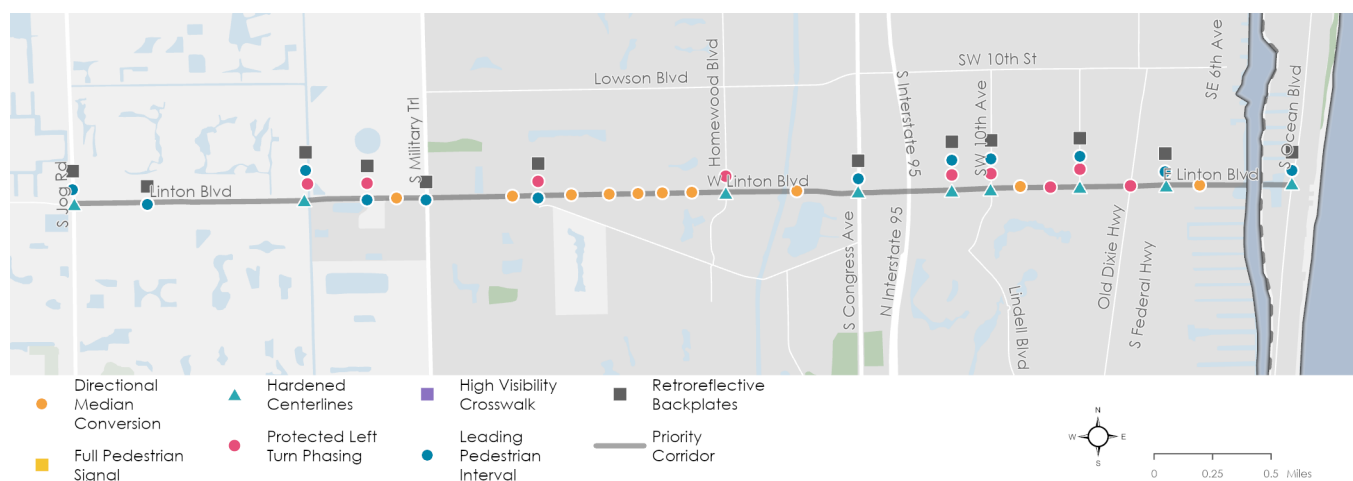
- **Separated Bike Lane** evaluate for where to implement along the length of the corridor to reduce cyclist and vehicle conflict. Cost: \$28,559,000

COORDINATION

- Collaborate with FDOT on planned intersection improvements to A1A.

Note: Costs do not include right-of-way

Linton Boulevard Recommendations Map



SOUTH JOG ROAD

Corridor Description

South Jog Road is a key north-south route in Central Palm Beach County that links several cities and connects to major east-west roads like Lantana Road, Lake Worth Road, Forest Hill Boulevard, and Summit Boulevard. Bus transit service is also along the corridor.

The area along Jog Road features a mix of residential neighborhoods, large shopping centers, smaller retail and commercial businesses, as well as civic spaces such as the Greenacres Library. While neighborhood road connections are frequent throughout the corridor, signalized intersections tend to be spaced far apart.

The corridor is used for commuting, shopping, accessing services, and public transit. It connects several cities with major east-west roads and features a mix of residential neighborhoods, commercial businesses, and civic spaces. This route is essential for neighborhood connectivity and supports connectivity to daily destinations.

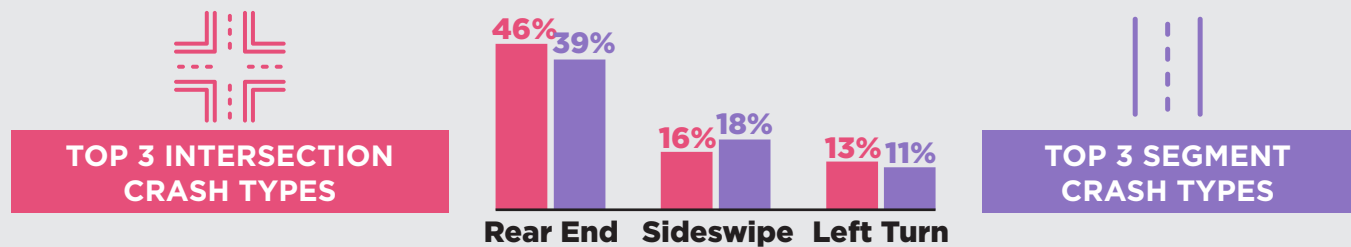
Crash Profile (2019 to 2023)

- **Total Crashes:** 3,133
- **FSIs:** 60
- **Fatalities:** 10
- **Vulnerable Road User Crashes:** 124

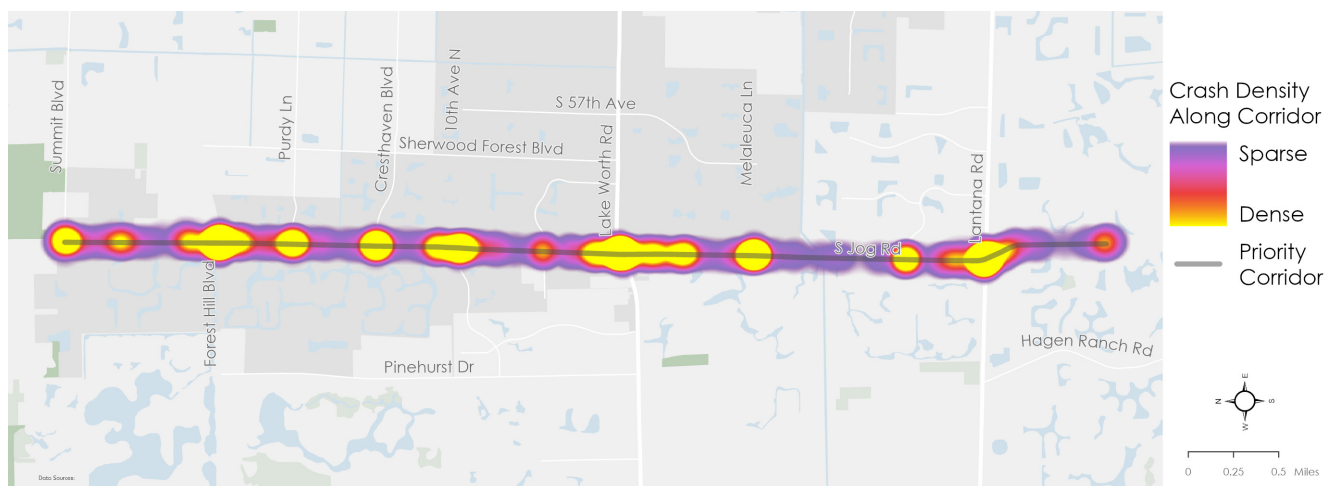
Corridor Context

- **Extent:** Winston Trails Boulevard to Summit Boulevard
- **Corridor Length:** 5.7 miles
- **Roadway Classification:** Urban, Principal Arterial
- **# of Lanes:** 6 Lanes
- **Road Width:** 120 feet
- **Posted Speed:** 45 MPH posted speed
- **AADT:** 39,000 to 55,000 AADT (FDOT, 2024)

Top Crash Types



South Jog Road Crash Heatmap



Recommendations Summary

The top safety concerns for this corridor and intersections on this corridor are rear end, sideswipe, and left turn crashes. The following safety recommendations were identified to address safety concerns with the crash types experienced on this corridor. To enhance safety at intersections, the implementation of high visibility crosswalks and Leading Pedestrian Intervals are proposed for pedestrian and bicyclist safety, while retroreflective backplates on signals would help increase signal visibility at night. Updating signal timing for protected left-turn phasing aims to minimize left entering crashes.

Between intersections, directional median conversions are proposed to restrict vehicle turning movements at specific locations, and a full traffic signal is recommended to lessen risks for vulnerable road users at an unsignalized midblock location.

Standalone and long-term projects include hardened centerlines at thirteen intersections to safeguard pedestrians and cyclists and the installation of separated bike lanes along the corridor to reduce conflicts between cyclists and vehicles.

Short-Term Projects

INTERSECTIONS

- **Leading Pedestrian Intervals** evaluate for for bicyclist and pedestrian safety (CMF: 0.41). Cost: \$18,000. Locations: 7.
- **Evaluate signal timing** in accordance with County standards, consider protected left-turn phasing to prevent left entering crashes (CMF: 0.45). Cost: \$203,000. Locations: 5.
- **Backplates with retroreflective borders** to increase signal visibility and prevent rear end crashes (CMF: 0.85). Cost: \$72,000. Locations: 7.

SEGMENTS

- **Directional Median Conversions** to restrict vehicle turning movements at specific locations to prevent angle and left turn crashes (CMF:0.43). Cost: \$481,000. Locations: 11.
- **Evaluate Pedestrian Traffic Signal** in accordance with County standards, consider installation of a pedestrian traffic signal to reduce vulnerable road user risks at unsignalized midblock location (CMF: 0.50). Cost: \$1,000,000. Locations: 1.

Standalone and Long-Term Projects

INTERSECTIONS

- **Hardened Centerlines** evaluate effectiveness and benefits of implementation at key intersections to reduce risk for pedestrians and cyclists within the crosswalk. Cost: \$1,856,000. Locations: 13.
- **Intersection Control Evaluation** for 9 key intersections on corridor that are also on County HIN. Locations: 9.

SEGMENTS

- **Separated Bike Lane** evaluate for where to implement along the length of the corridor to reduce cyclists and vehicle conflict. Cost: \$31,854,000.

Note: Costs do not include right-of-way

South Jog Road Recommendations Map



SOUTH MILITARY TRAIL

Corridor Description

South Military Trail is the longest of the five identified priority corridors. It is a major north-south route through Palm Beach County, and the portion identified as a priority corridor for this study is in southern Palm Beach County. The priority corridor connects to several major east-west roads like Linton Boulevard, Atlantic Avenue, and Woolbright Road. Bus transit service is also along the corridor.

The land use along the corridor is predominantly residential, with clusters of retail and commercial development at major intersections. Along the corridor, there is a pattern of long distances between intersections.

Passing through multiple cities, the corridor is a popular route that centrally bisects this region of the county. As such, the corridor is typically used to access daily services, neighborhoods, and jobs.

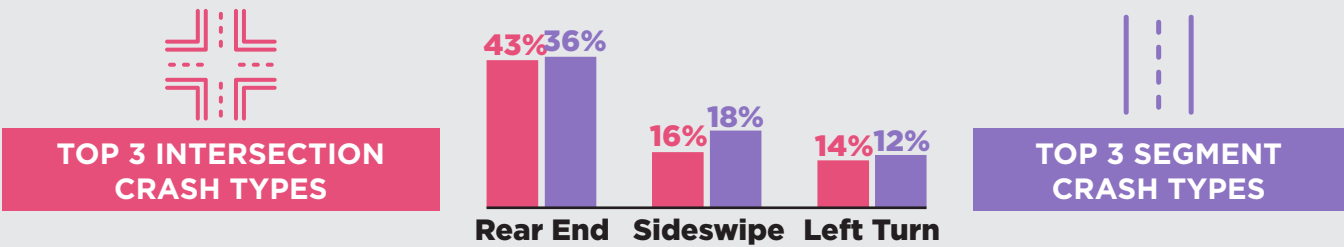
Crash Profile (2019 to 2023)

- **Total Crashes:** 2,302
- **FSIs:** 6775
- **Fatalities:** 7
- **Vulnerable Road User Crashes:** 61

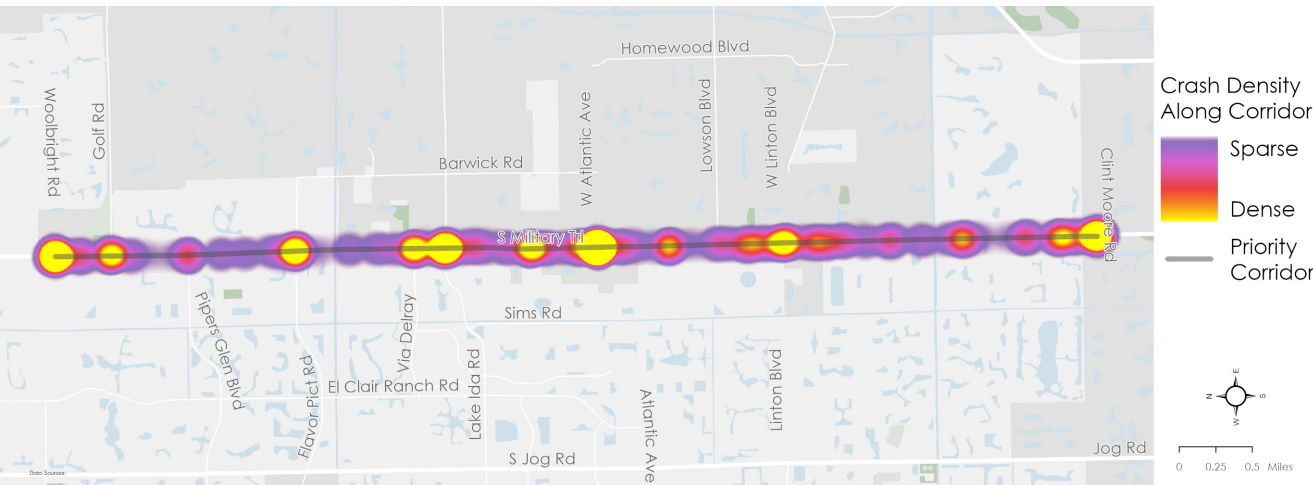
Corridor Context

- **Extent:** Clint Moore Road to Woolbright Road
- **Corridor Length:** 7.1 miles
- **Roadway Classification:** Urban, Principal Arterial
- **# of Lanes:** 6 Lanes
- **Road Width:** 120 feet
- **Posted Speed:** 45 MPH posted speed
- **AADT:** 39,000 to 55,000 AADT (FDOT, 2024)

Top Crash Types



South Military Trail Crash Heatmap



Recommendations Summary

The top safety concerns for this corridor and intersections along this corridor are rear end, sideswipe, and left turn crashes. The following safety recommendations were identified to address safety concerns with the crash types experienced along this corridor. To enhance safety at intersections, the implementation of Leading Pedestrian Intervals are proposed for pedestrian and bicyclist safety, while retroreflective backplates on signals would help increase signal visibility. Updating signal timing for protected left-turn phasing aims to minimize left entering crashes.

Between intersections, directional median conversions are proposed to restrict vehicle turning movements at specific locations.

Standalone and long-term projects include hardened centerlines at eighteen intersections to safeguard pedestrians and cyclists and the installation of separated bike lanes along the corridor to reduce conflicts between cyclists and vehicles.

Short-Term Projects

INTERSECTIONS

- **Leading Pedestrian Intervals** evaluate for bicyclist and pedestrian safety (CMF: 0.41). Cost: \$48,000. Locations: 19.
- **Evaluate signal timing** in accordance with County standards, consider protected left-turn phasing to prevent left entering crashes (CMF: 0.45). Cost: \$569,000. Locations: 14.
- **Backplates with retroreflective borders** to increase signal visibility to prevent rear end crashes (CMF: 0.85). Cost: \$197,000. Locations: 19.

SEGMENTS

- **Directional Median Conversions** to restrict vehicle turning movements at specific locations to prevent angle and left-entering crashes (CMF:0.43). Cost: \$657,000. Locations: 15.

Standalone and Long-Term Projects

INTERSECTIONS

- **Hardened Centerlines** evaluate effectiveness and benefits of implementation at key intersections to reduce risk for pedestrians and cyclists within the crosswalk. Cost: \$2,570,000. Locations: 18.
- **Intersection Control Evaluation** for 8 key intersections on corridor that are also on County HIN. Locations: 8.

SEGMENTS

- **Separated Bike Lane** evaluate for where to implement along the length of the corridor to reduce cyclists and vehicle conflict. Cost: \$39,543,000.

Note: Costs do not include right-of-way

South Military Trail Recommendations Map



SECTION 7. POLICIES AND PROGRAMS

Why Policies and Programs Matter

Engineering projects are essential to reducing fatal and serious injury crashes, but they are not sufficient on their own. Countywide policies, procedures, and programs shape how safety decisions are made every day, influencing when and where improvements are implemented, how consistently best practices are applied, and how quickly safety issues can be addressed.

The policies and programs outlined in this section are intended to support a proactive, systemic approach to roadway safety. Together, they help ensure that the safety strategies identified in this Plan are implemented consistently across the roadway network, applied before severe crashes occur, and sustained over time. These recommendations focus on removing procedural barriers, clarifying decision-making criteria, and establishing repeatable approaches that align with the Safe System approach and the findings of the Safety Analysis and High Injury Network.



7.1 POLICY AND PROCEDURE REVIEW SUMMARY

As part of the Palm Beach County Safety Action Plan, existing traffic engineering policies and procedures were reviewed to identify opportunities to better support systemic safety improvements. This review focused on policies that influence signal operations, speed management, pavement markings, and pedestrian and bicycle safety, particularly on State- and County-maintained roads.

The recommended updates emphasize flexibility, data-informed decision-making, and consistency in applying proven safety treatments. In several cases, the recommendations encourage allowing safety improvements to be implemented based on observed risk, roadway context, and user demand, rather than waiting for a documented crash history. This approach aligns with SS4A guidance and the Safe System principle of proactively addressing known risk factors.

Key policy and procedure recommendations are summarized below. Additional detail, including policy excerpts and supporting rationale, is provided in **APPENDIX D**.

- **Draft LPI PPM.** Consider revising criteria allowing LPI based on data and observation rather than crash history. Where appropriate, consider protected-only left turn operations to reduce conflicts.
- **ETO-100 Traffic Signal Installation Warrants.** Consider adding criteria for installing signals at intersections with demonstrated high pedestrian and/or bicycle volume, locations which would potentially handle significant pedestrian/bicycle, or locations with significant pedestrian/bicycle accidents.
- **ETO-105 FYA for Left Turn Movements.** Consider adding pedestrian/bicycle volumes and crash data as criteria for determining if FYA operates as protected-only during certain times of day.
- **ETO-108 Installation of Left Turn Signals.** Consider adding more restrictive criteria for allowing protected-permissive signals when pedestrian/bicycle activity may be higher.
- **ETO-602 Pedestrian Crosswalks at Uncontrolled Locations.** Adjust the minimum ADT threshold and FDOT Context Classification requirements for installing pedestrian crosswalks at uncontrolled locations, prioritizing pedestrian demand and ensuring high visibility crosswalks, advanced stop markings, and pedestrian warning signs as standard applications.
- **ETO-603 Speed Limit Policy Procedure.** Ensure speed limit signs are clearly visible both day and night, revising placement strategies to align with MUTCD standards, including places speed changes and jurisdictional boundaries.
- **ETO-614 School Zones.** Reference the use of flashing beacons at school crossings in areas with higher speed limits within the policy to foster consistent safety measures.

7.2 COUNTYWIDE SAFETY PROGRAMS

To translate systemic analysis into action, Palm Beach County can advance a set of repeatable safety programs that apply proven countermeasures across multiple locations over time. These programs are designed to be data-informed, scalable, and implementable within existing County processes, while remaining flexible to local context and community needs.

Each program uses the HIN, crash trends, and roadway context to identify candidate locations on a recurring basis. Potential treatments are drawn from the Systemic Countermeasure Matrix and refined through site-level review prior to implementation.

Systemic Intersection Safety Program

This program focuses on intersections with a high concentration of fatal and serious injury crashes, including locations identified through the intersection HIN. On an annual or biennial basis, the County would screen intersections to identify candidates for near-term safety improvements.

Treatments may include signal timing modifications, Leading Pedestrian Intervals, protected-only left turn phasing, improved lighting, enhanced pavement markings, and signing. Where appropriate, the program may also incorporate quick-build geometric treatments such as curb extensions, daylighting, pedestrian refuge areas, and bike boxes to reduce crossing distances and improve visibility.

As Palm Beach County advances Transit Signal Priority (TSP) initiatives, this program provides an opportunity to coordinate safety-focused signal operations with transit performance improvements, ensuring that pedestrian and bicycle safety considerations are integrated into signal timing decisions.

Speed Management Program

The Speed Management Program addresses speeding as a systemic risk factor on high-injury corridors and segments. Candidate locations are identified using the HIN, observed operating speeds, and roadway context.

Strategies may include targeted speed limit reviews, improved sign placement, speed feedback signs, pavement marking enhancements, and coordination with enforcement partners. The program prioritizes corridors where speed reduction can meaningfully lower crash severity.

Nighttime Visibility and Lighting Program

A substantial share of fatal and serious injury crashes in Palm Beach County occur during nighttime conditions. This program would identify corridors and intersections with a high proportion of nighttime crashes using crash timing data and the HIN.

Targeted field reviews would be conducted to assess lighting and visibility needs. Based on these reviews, improvements may include enhanced roadway lighting, reflective pavement markings, upgraded signs, and other visibility-focused treatments where warranted.

School Zone Safety Program

The School Zone Safety Program would provide a consistent, countywide approach to improving safety near schools. In coordination with the School District, the County would identify priority school areas based on student exposure, observed travel patterns, community concerns, and crash risk.

Walk audits and observational reviews would be used to understand arrival and dismissal conditions, crossing challenges, and opportunities to improve access for walking and biking. Improvements may include crossing enhancements, signal timing adjustments, flashing beacons, signing, lighting, and quick-build treatments that reallocate space to shorten crossing distances and create safer, more comfortable walking and biking environments near schools.

7.3 SUPPORTING STRATEGIES BEYOND ENGINEERING

Advancing a culture of safety in Palm Beach County also requires coordination, education, and the strategic use of low-cost tools. These supporting strategies reinforce engineering improvements and help extend the reach of safety investments.

Supporting strategies include:

- **Education and Outreach:** Targeted education efforts focused on safe walking, biking, and e-bike use, particularly near schools and along high-risk corridors.
- **Partnerships and Coordination:** Continued collaboration with the Palm Beach TPA, School District, Sheriff's Office, FDOT, and community organizations to align safety efforts and share data and resources.
- **Technology and Low-Cost Tools:** Deployment of speed feedback signs, lighting improvements, and other low-cost safety tools at locations identified through the HIN and systemic analysis.
- **Micromobility Considerations:** Integrating visibility, crossings, and operating space for micromobility and e-bikes into systemic safety treatments and policy updates.



SECTION 8. WHAT HAPPENS NEXT: IMPLEMENTATION AND PROGRESS UPDATES

How Recommendations Move from Plan to Projects

This chapter explains what happens after the Safety Action Plan is adopted. Some safety improvements can happen quickly, while others require additional engineering review, design, and funding. This Plan identifies high-risk locations, priority corridors, and recommended strategies, but it does not replace project-level engineering or traffic analysis. The steps below describe how the County can move from identifying risk to delivering projects, including advancing Priority Corridors into grant applications.



Phasing Segment-Based Improvements

Segment-based improvements are intended to move quickly from plan to implementation and do not require a full corridor study. These improvements focus on discrete locations identified through the HIN and are well suited for near-term delivery, either as standalone projects or bundled across multiple locations.

This step-by-step process allows the County to make near-term safety improvements each year while reserving more detailed engineering analysis for locations that require it.

WHAT HAPPENS NEXT:

1. Annual HIN Screening List

County staff generate a short list of candidate segments and intersections using the HIN, updated crash data, and known operational concerns.

2. Site Scoping and Field Review

For each location, staff conduct a brief field review to confirm crash patterns, roadway context, and constraints. This step establishes project limits and screens out locations that require more complex study.

3. Preliminary Engineering and Feasibility Review

Candidate countermeasures from the Systemic Countermeasure Matrix are evaluated for feasibility. This may include:

- Basic operational review
- Review of signal phasing and timing
- Visibility and lighting assessment
- Identification of quick-build vs. permanent treatments

4. Implementation Pathway Selection

Locations are advanced through one of two paths:

- **Quick-build or interim installation** for low-cost, low-risk treatments
- **Capital project development** for treatments requiring design and construction

This approach allows the County to implement multiple safety improvements each year while reserving more intensive analysis for locations where it is truly needed.

Pursuing Priority Corridors and Grant-Ready Projects

Priority Corridors previously discussed are intended to be **grant-ready starting points**, not final designs. The corridor summaries and countermeasure concepts are structured to support near-term grant applications while acknowledging that additional technical work is required.

HOW PRIORITY CORRIDORS ADVANCE TO GRANTS:

1. Corridor Confirmation and Limits Refinement

The County confirms corridor extents based on grant requirements, jurisdictional limits, and logical termini.

2. Additional Engineering Review (as needed)

Depending on the funding program, corridors may require focused additional analysis, as noted below. This work is intentionally scoped to meet grant needs, not to duplicate a full corridor study.

- Traffic operations or safety analysis
- Speed and volume data collection
- Community benefit documentation

3. Countermeasure Refinement for Grant Applications

Recommended countermeasures from this Plan are refined to the level needed for grant submittals. This typically includes:

- Concept-level layouts
- Order-of-magnitude cost estimates
- Phasing strategies (quick-build first, permanent later)

4. Demonstration and Interim Projects

Where appropriate, the County may advance quick-build or interim treatments on Priority Corridors prior to or concurrent with grant applications. These projects can strengthen applications by demonstrating readiness and local commitment.

This approach allows Priority Corridors to move directly from this Plan into SS4A Implementation Grants, state safety programs, and other competitive funding opportunities.

Funding Opportunities and Alignment

The Safety Action Plan is structured to support multiple funding pathways, with an emphasis on flexibility and readiness.

NEAR-TERM FUNDING OPPORTUNITIES INCLUDE:

- **SS4A Implementation Grants**, using Priority Corridors and systemic projects identified in this Plan
- **State and federal safety programs**, including the Highway Safety Improvement Program and other competitive safety funds
- **Local and programmed funds**, particularly for quick-build and demonstration projects

HOW FUNDING IS ALIGNED WITH IMPLEMENTATION:

- Segment-based improvements can be bundled to create competitive, scalable grant applications.
- Priority Corridors can be advanced as phased projects, combining near-term safety treatments with longer-term capital improvements.
- Safety improvements can be integrated into resurfacing, signal modernization, and Transit Signal Priority projects to stretch available funding.

By clearly defining project phasing, readiness, and scope, this Plan positions the County to pursue funding opportunities efficiently while maintaining flexibility as grant requirements evolve.

Monitoring Progress and Adjusting Implementation

Tracking progress helps ensure that safety improvements are moving forward and allows the County to share results with residents, partners, and funding agencies. The approach described in this Plan is intended to be clear and practical, focusing on meaningful information rather than complex reporting tools.

The County will track a small set of key indicators that show how safety recommendations are being advanced and whether conditions are improving over time. These indicators may include:

- Safety improvements moving from identification to implementation
- Near-term safety projects delivered each year
- Priority Corridors advancing to grant applications or construction
- Trends in fatal and serious injury crashes

Progress may be shared through annual updates or simple online reporting formats, depending on available resources and reporting needs. This approach keeps the County transparent and accountable while focusing staff time on delivering safety improvements. Monitoring results will help refine priorities, strengthen future funding applications, and guide adjustments over time.

APPENDICES

APPENDIX A - Details on Engagement Activities

APPENDIX B - Crash Trends on State- and County-Maintained Roadways

APPENDIX C - High Injury Network Methodology, Top Priority Segment and Intersection Lists, and Top Priorities by County District

APPENDIX D - Project Identification, Prioritization, and Policy Recommendations



PALM BEACH COUNTY SAFETY ACTION PLAN

Safe Street and Roads for All (SS4A) Grant Program



TASK FORCE MEETING #1 AGENDA

Date: June 17, 2025 | **Location:** [Virtual via Teams](#)

1. Safety Action Plan Overview

Walk-through the purpose of the Safety Action Plan, study objectives, approach, and schedule.

2. Task Force Roles & Expectations

Discuss the roles and responsibilities of the Task Force members.

3. Existing Conditions & Data Review

Share findings from the countywide crash data review and analysis, and initial viewings of the High Injury Network.

4. Understanding Barriers to Safety

Discussion among Task Force members on safety challenges.

5. Related Efforts & Initiatives

Discussion among Task Force members on safety efforts and initiatives.

6. Next Steps & Action Items

Walk-through next steps and Task Force member action items.



Safety Action Plan

Task Force Meeting #1 of 2

June 17, 2025

Consultant Team:



Funded by:



Introductions

Name

Agency

Role

In *30 seconds or less*, share
**how you are currently
engaged in making streets in
Palm Beach County safer.**

Agenda

- ♦ Safety Action Plan Overview
- ♦ Task Force Roles & Expectations
- ♦ Existing Conditions & Data Review
- ♦ Understanding Barriers to Safety
- ♦ Related Efforts & Initiatives
- ♦ Next Steps & Action Items

Agenda

- ♦ **Safety Action Plan Overview**
- ♦ Task Force Roles & Expectations
- ♦ Existing Conditions & Data Review
- ♦ Understanding Barriers to Safety
- ♦ Related Efforts & Initiatives
- ♦ Next Steps & Action Items

Setting the Stage

Fatal and Serious Injury
Crashes **Decreased** by

21% For all
modes

&

Increased by

2% For people
walking and
biking

*On State and County-maintained
roadways in Palm Beach County from
January 2019 – December 2023...*

>2 People were
killed or
seriously
injured

Every Day

What is the Safety Action Plan?

An **implementation focused plan** for **State** and **County-maintained** roadways in Palm Beach County to...



Reduce the
number of crashes



Reduce the severity of
crashes when they do occur

...built on a **collaborative approach** to ensure treatments match the context and needs in the County.



Funded by a Federal **Safe Streets and Roads 4 All** grant and local participation



Safety Action Plan Key Objectives

01

Identify High Injury Network (HIN) and Contributing Crash Factors

02

Recommend Countermeasures, Projects, and Policies to Address Safety Needs

03

Develop Performance Targets & Performance Measures

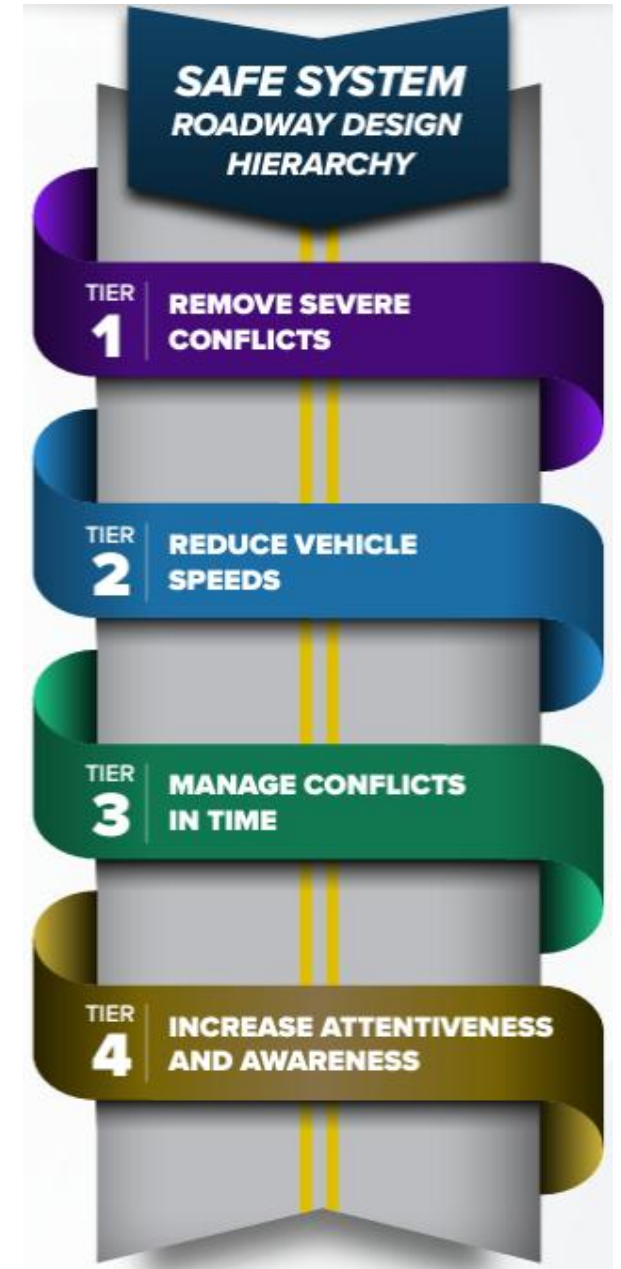
04

Engage and Educate the Community

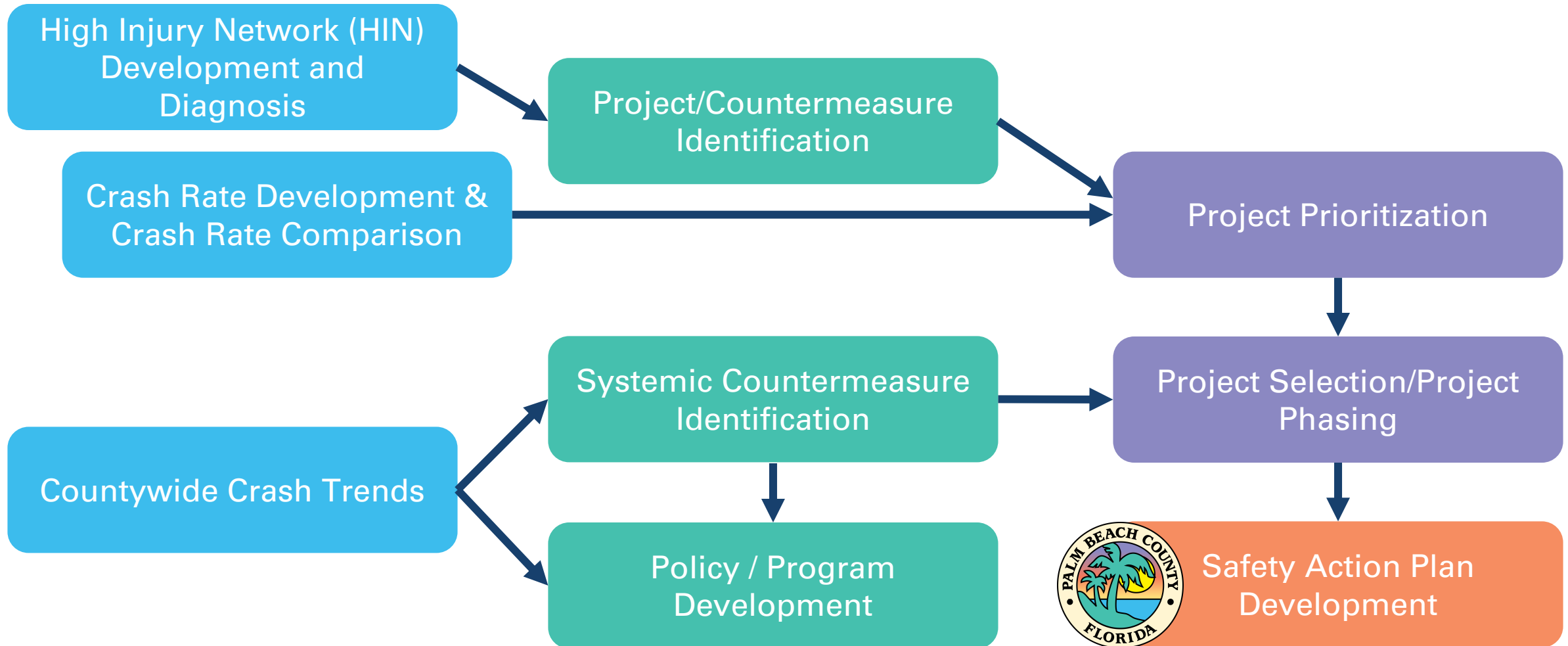
The Safe System Approach



Source: [Zero Deaths and Safe System](#) | FHWA (dot.gov)



Safety Action Plan Development Process



Safety View



FUTURE
ROADS

INRIX

Prioritization Tool

FARS

Crashes (Mode)

- Bicycle
- Motorcycle
- Pedestrian
- Vehicle

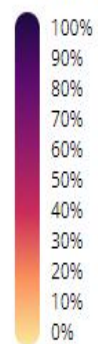
True Near-Miss Detection

- Points
- Forward Collision Alert
- Pedestrian Collision Mitigation Alert
- Automatic Pedestrian Braking
- Automatic Emergency Braking

Risky Maneuvers

- Clusters
- Hard Braking
- Hard Acceleration
- Hard Cornering

Vehicle exceeding speed limit +10mph



No Data

FRC 1-5

Crashes 0

Volume

Speed

Safety

Q4 2023 | Su, Mo, Tu, We, Th, Fr, Sa

Melaleuca Lane

-1157920582_0

Speed Limit

Speed at 85th percentile

Speed Limit + 10mph

35mph

49mph

31%

Speed Distribution

Download

View

Speed Distribution

8089 total observations

80+ mph

76 - 80 mph

71 - 75 mph

66 - 70 mph

61 - 65 mph

56 - 60 mph

51 - 55 mph

46 - 50 mph

41 - 45 mph

36 - 40 mph

31 - 35 mph

26 - 30 mph

21 - 25 mph

16 - 20 mph

11 - 15 mph

6 - 10 mph

1 - 5 mph

0% 20% 40% 60% 80% 100%

Percent

Three Layers of Engagement

Task Force

Two rounds of virtual meetings

- **Meeting 1:** Introduce the project, discuss objectives, outline roles and responsibilities, discuss initial findings.
- **Meeting 2:** Evaluate progress, review findings and strategies

Stakeholder/Focus Group Interviews

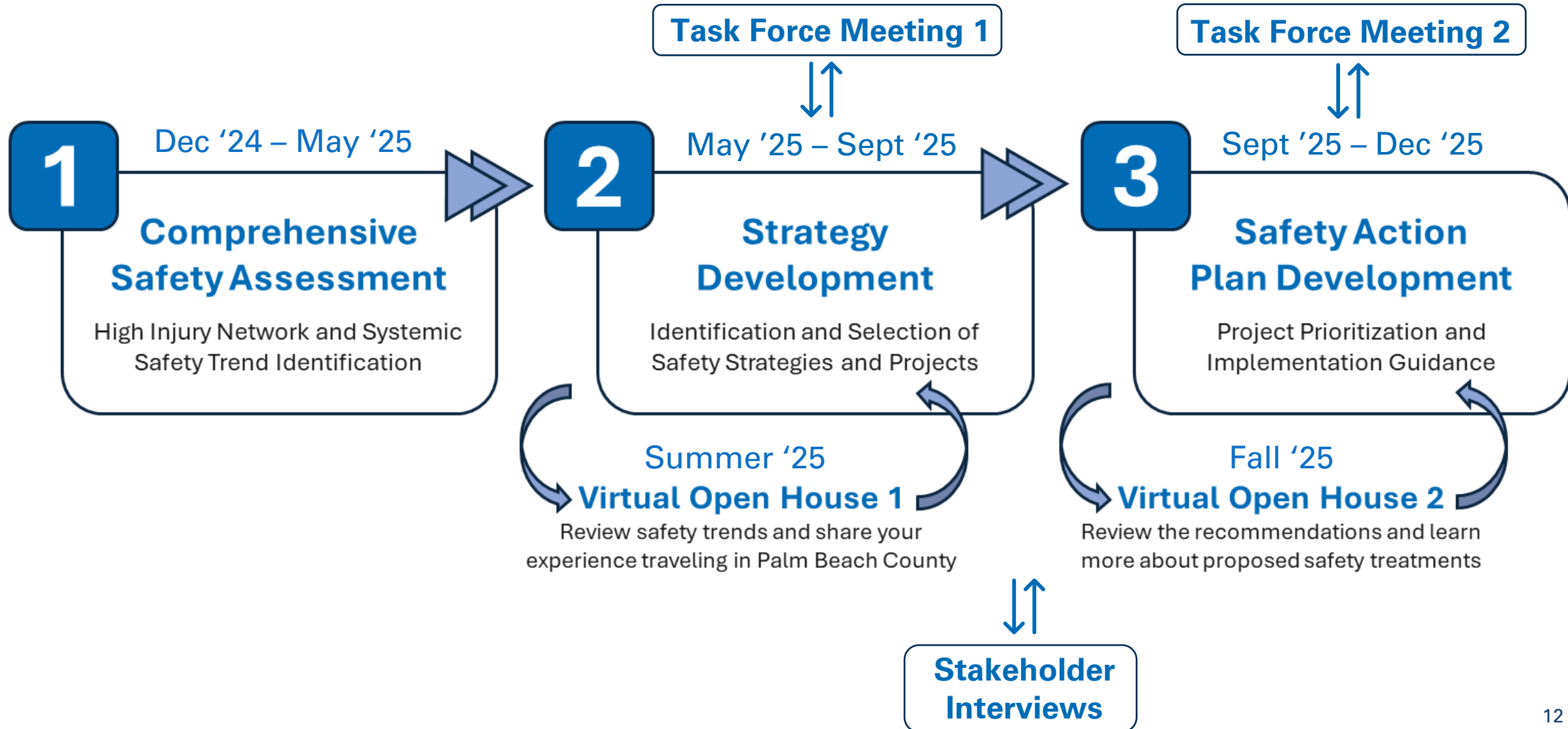
One round of interviews

- One-on-one or focus groups depending on the stakeholder
- Focus on major partners (Districts/Major Cities/Lake Communities, TPA, FDOT, etc.)

Community Engagement

- Hosting project website with survey, comment map, and pledge
- Using social media for spreading the word
- Hosting two rounds of a virtual Open House

Schedule



Agenda

- ♦ Safety Action Plan Overview
- ♦ **Task Force Roles & Expectations**
- ♦ Existing Conditions & Data Review
- ♦ Understanding Barriers to Safety
- ♦ Related Efforts & Initiatives
- ♦ Next Steps & Action Items

Task Force Roles & Responsibilities



You're a member of the team!



Review of the Safety Action Plan and provide feedback

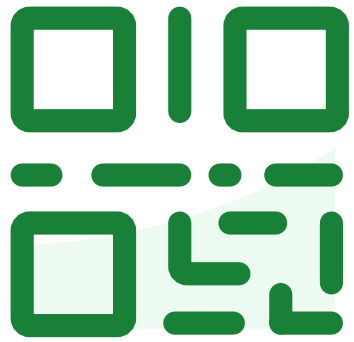


Participate in Task Force meetings



Serve as a champion for the plan in your local organization

Do not edit
How to change the
design



**Join at slido.com
#3859973**

 The Slido app must be installed on every computer you're presenting from

slido



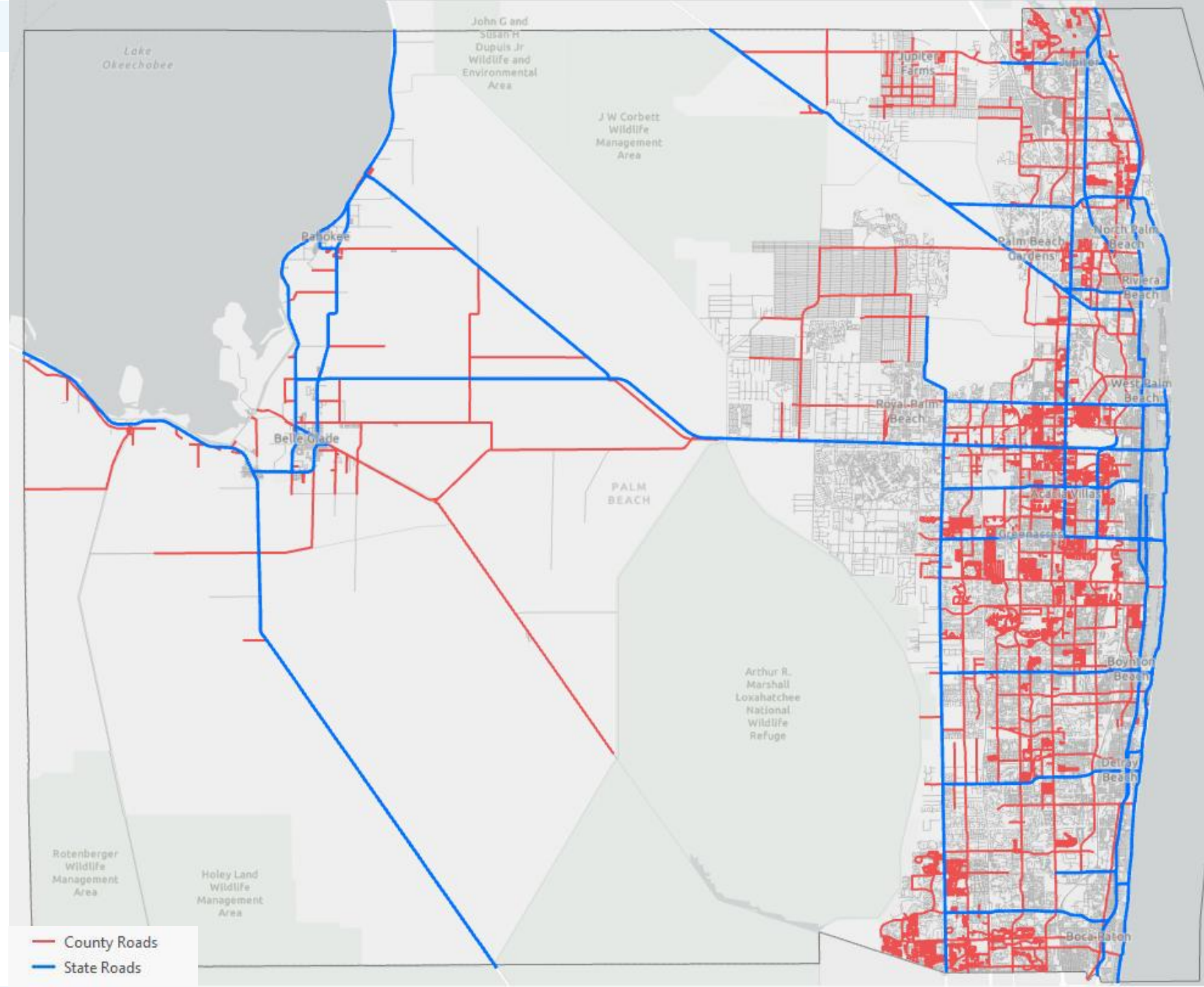
**In one word (or short phrase),
what would make this Safety
Action Plan successful?**

Agenda

- ♦ Safety Action Plan Overview
- ♦ Task Force Roles & Expectations
- ♦ Existing Conditions & Data Review
- ♦ Understanding Barriers to Safety
- ♦ Related Efforts & Initiatives
- ♦ Next Steps & Action Items

Study Network

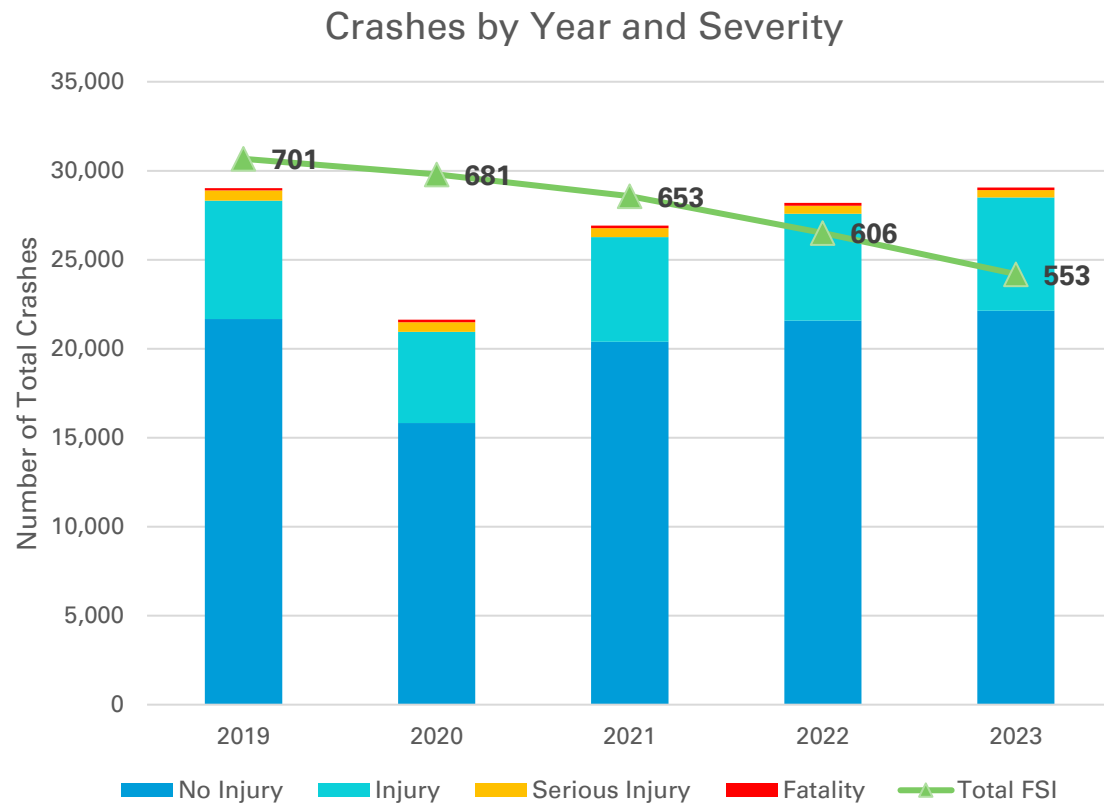
All State and
County-maintained
Roadways



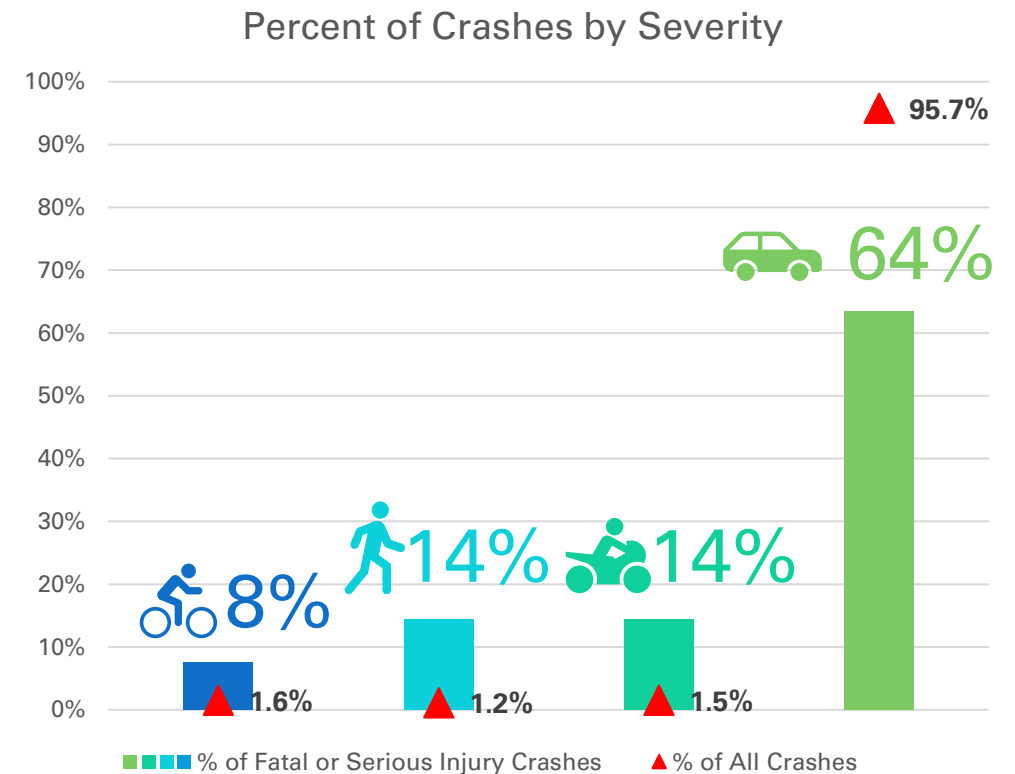
All Crashes (2019- 2023)

On State & County Maintained Roads

131,632 Total Crashes | **2,482** Serious Injury Crashes & **712** Fatal Crashes

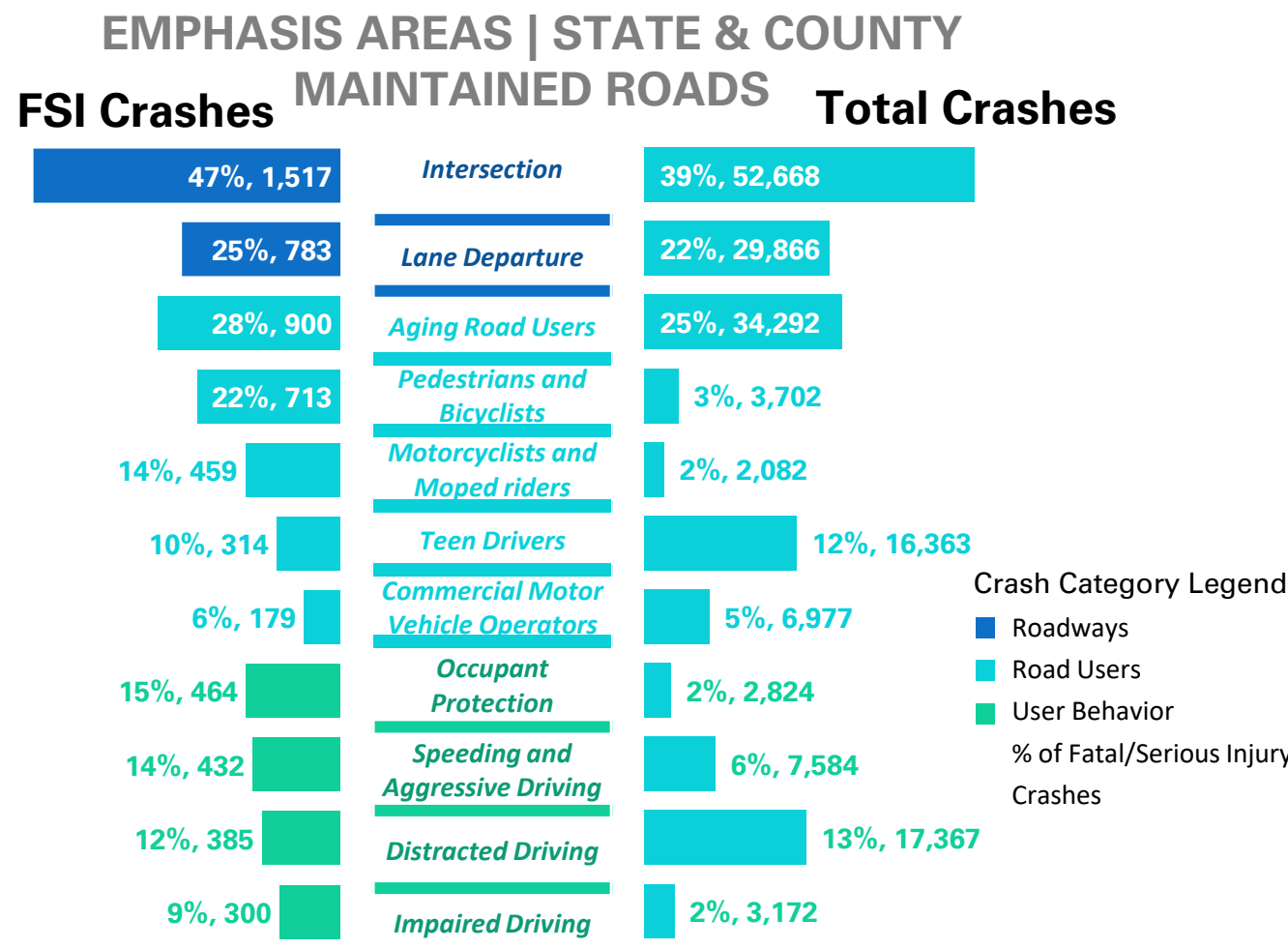
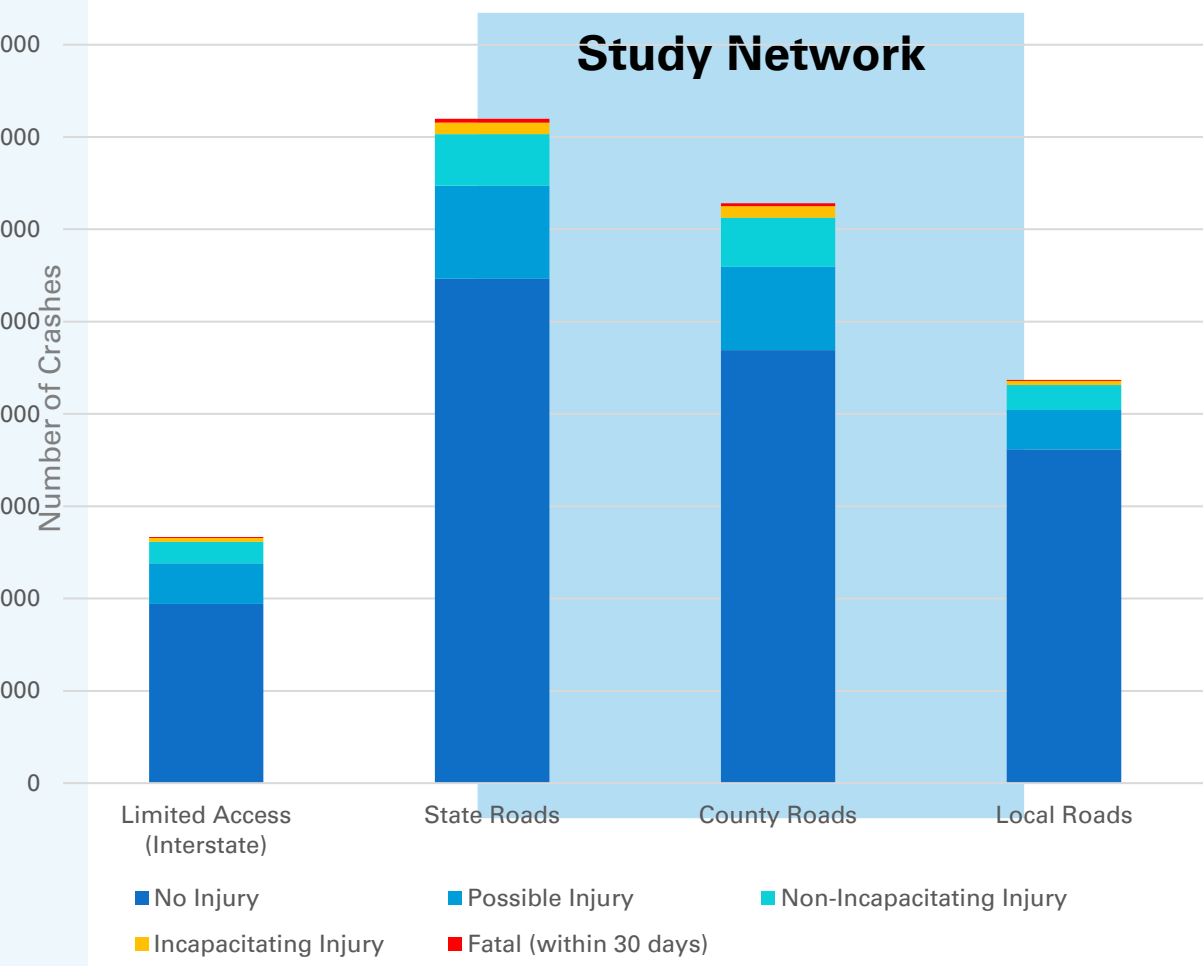


FSI = Fatal and Serious Injury Crashes



All Crashes (2019- 2023)

66% of all Crashes & 75% of all Fatal & Serious Injury Crashes occurred on State & County Roadways

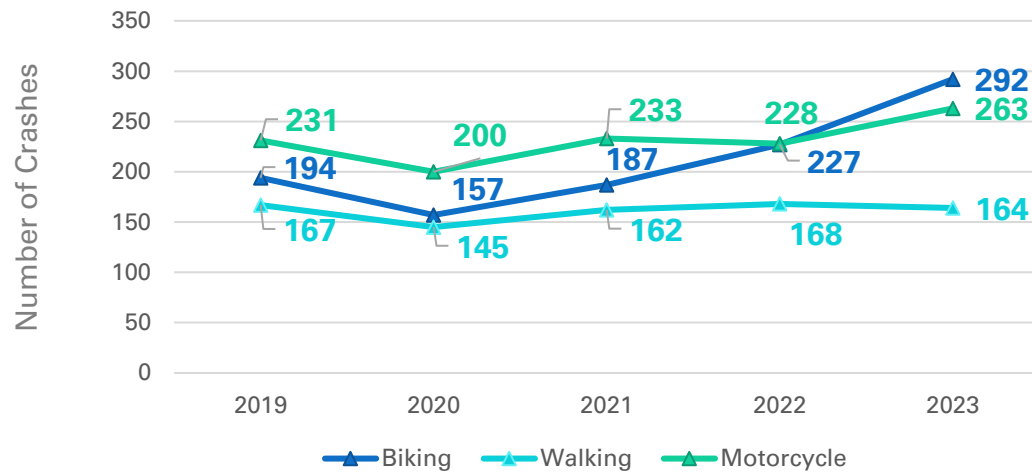


All Crashes (2019- 2023)

On State & County-maintained Roadways

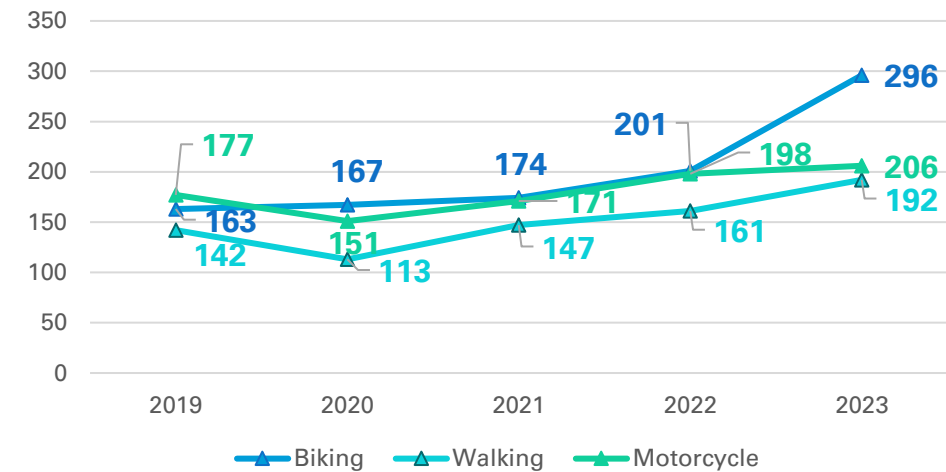
State Roadways

Vulnerable Road Users



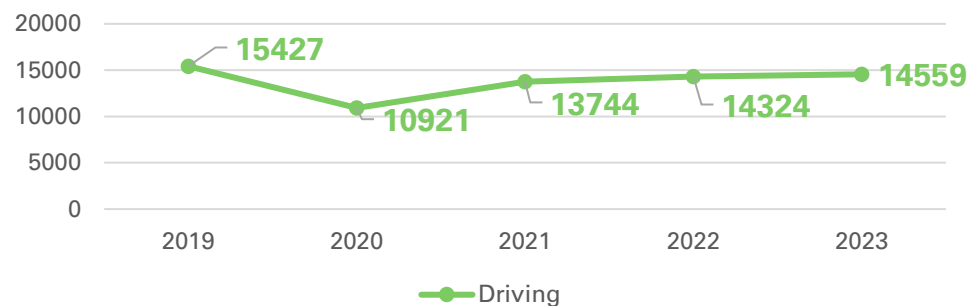
County-maintained Roadways

Vulnerable Road Users

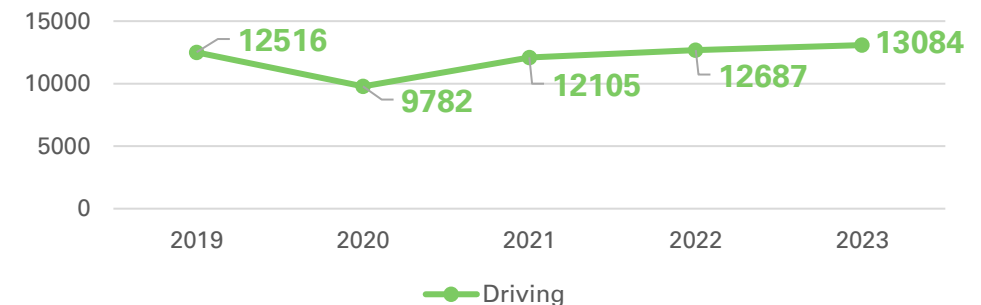


Number of Crashes

Drivers



Drivers



Trends (2019- 2023) of Fatal and Serious Injury Crashes

Driving



Top Crash Types

- Left Turn
- Rear End



4+

Vehicle Lanes



40+

Posted Speed

Top Contributing Actions

- Operated MV in Careless or Negligent Manner
- Failure to Yield Right-of-Way

Motorcycle



Top Crash Types

- Left Turn
- Other



4+

Vehicle Lanes



45+

Posted Speed

Top Contributing Actions

- Operated MV in Careless or Negligent Manner
- Failure to Yield Right-of-Way

Trends (2019- 2023) to Fatal and Serious Injury Crashes

Walking



Top Contributing Actions

- Failure to Yield Right-of-Way (Driver)
- Failure to Yield Right-of-Way (Pedestrian)



4+

Vehicle Lanes



45+

Posted Speed

Biking



Top Contributing Actions

- Failure to Yield Right-of-Way (Driver)
- Failure to Yield Right-of-Way (Bicyclist)



4+

Vehicle Lanes



35 or 45+

Posted Speed

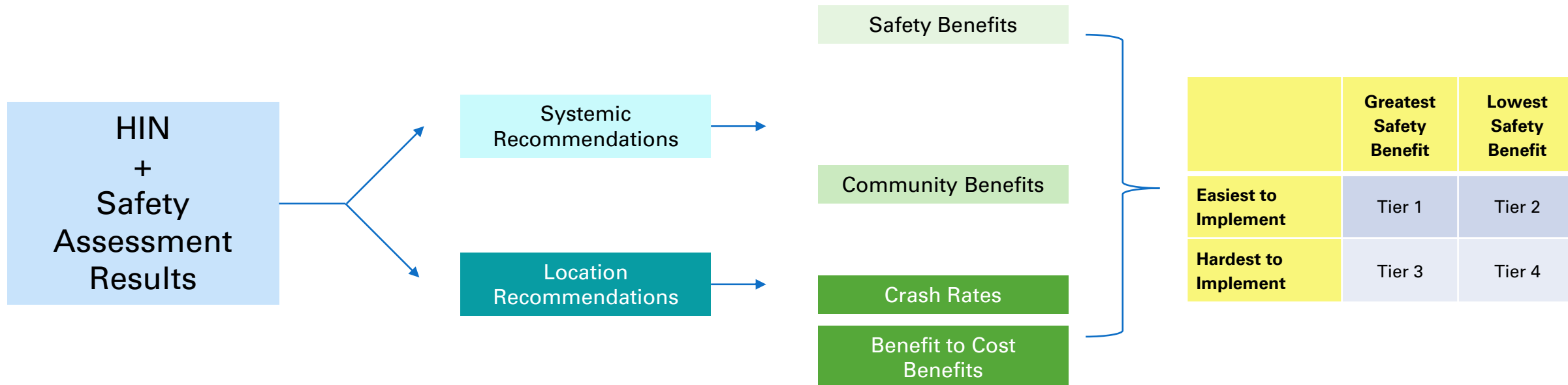
Strategy Identification Methodology

Safety Assessment

Identify Strategies

Prioritize Strategies

Phasing Strategy



High Injury Network (HIN) Identification Methodology

HIN determined using an Average Ranking from 4 methods :

1. High **crash frequency**
2. High **crash severity** score
3. Average crash **frequency rate** by facility type and traffic volume
4. Average crash **severity rate** by facility type and traffic volume



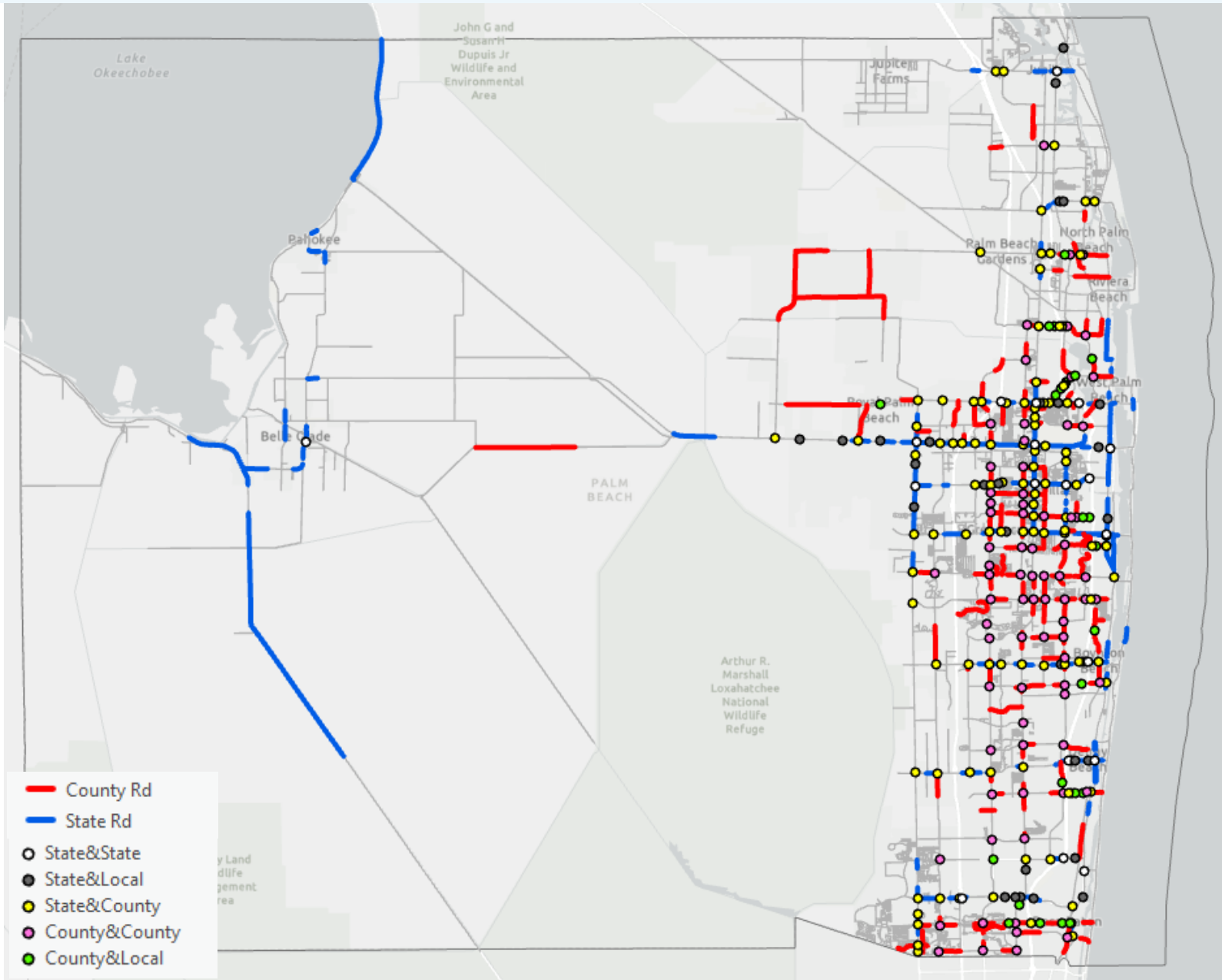
Individual HINs were developed for drivers, motorcyclists, bicyclists, pedestrians.

Vehicular HIN Results

HIN Represents

1005 FSI* Vehicular
Crashes representing

50% of the FSI
Vehicular Crashes on
State Rd & County Rd



*FSI = Fatal and Serious Injury Crashes

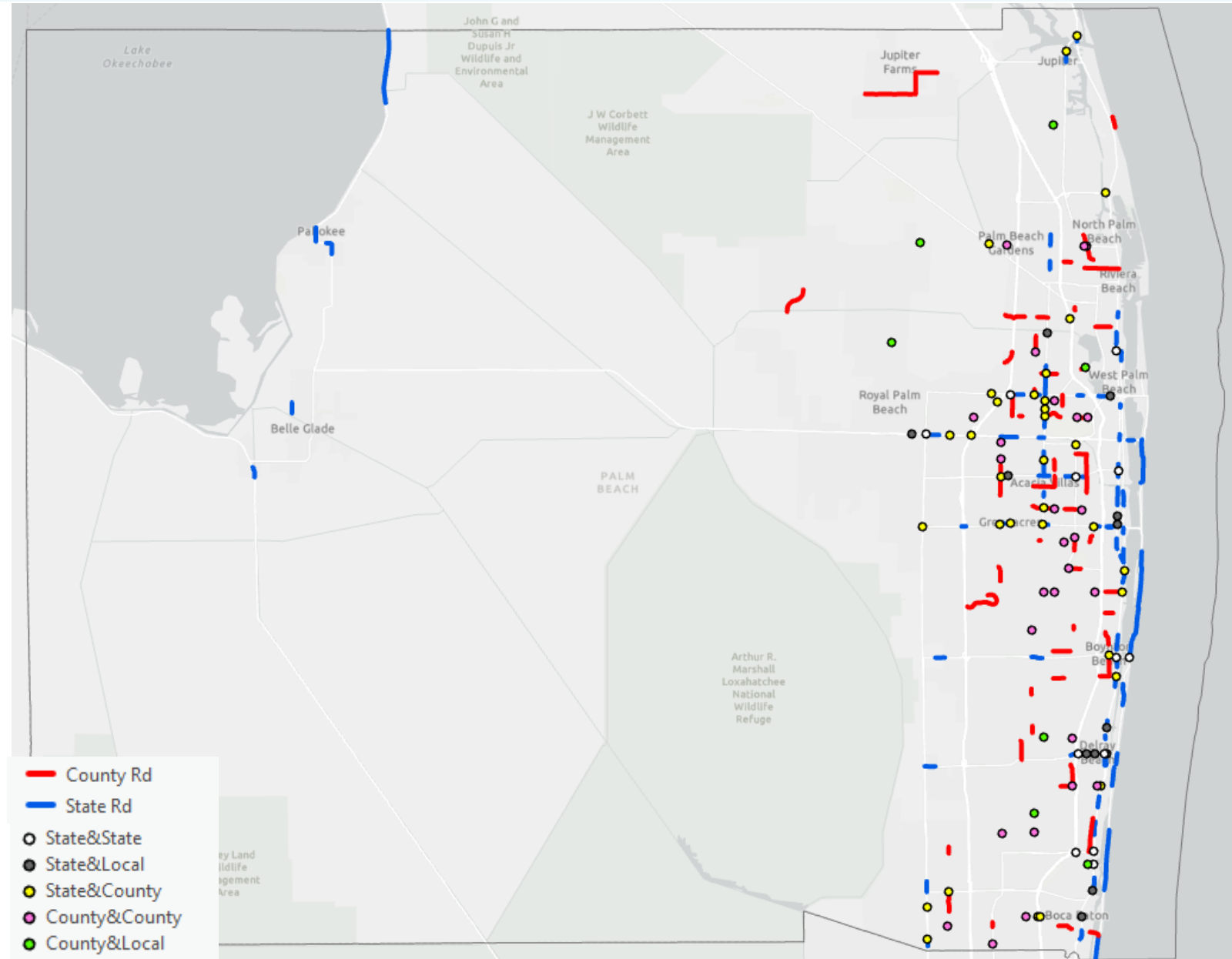
Signal Four Crash Data used from January 2019 – December 2023

Motorcycle HIN Results

HIN Represents

233 FSI* Motorcycle
Crashes

50% of the FSI
Motorcycle Crashes on
State Rd & County Rd



*FSI = Fatal and Serious Injury Crashes

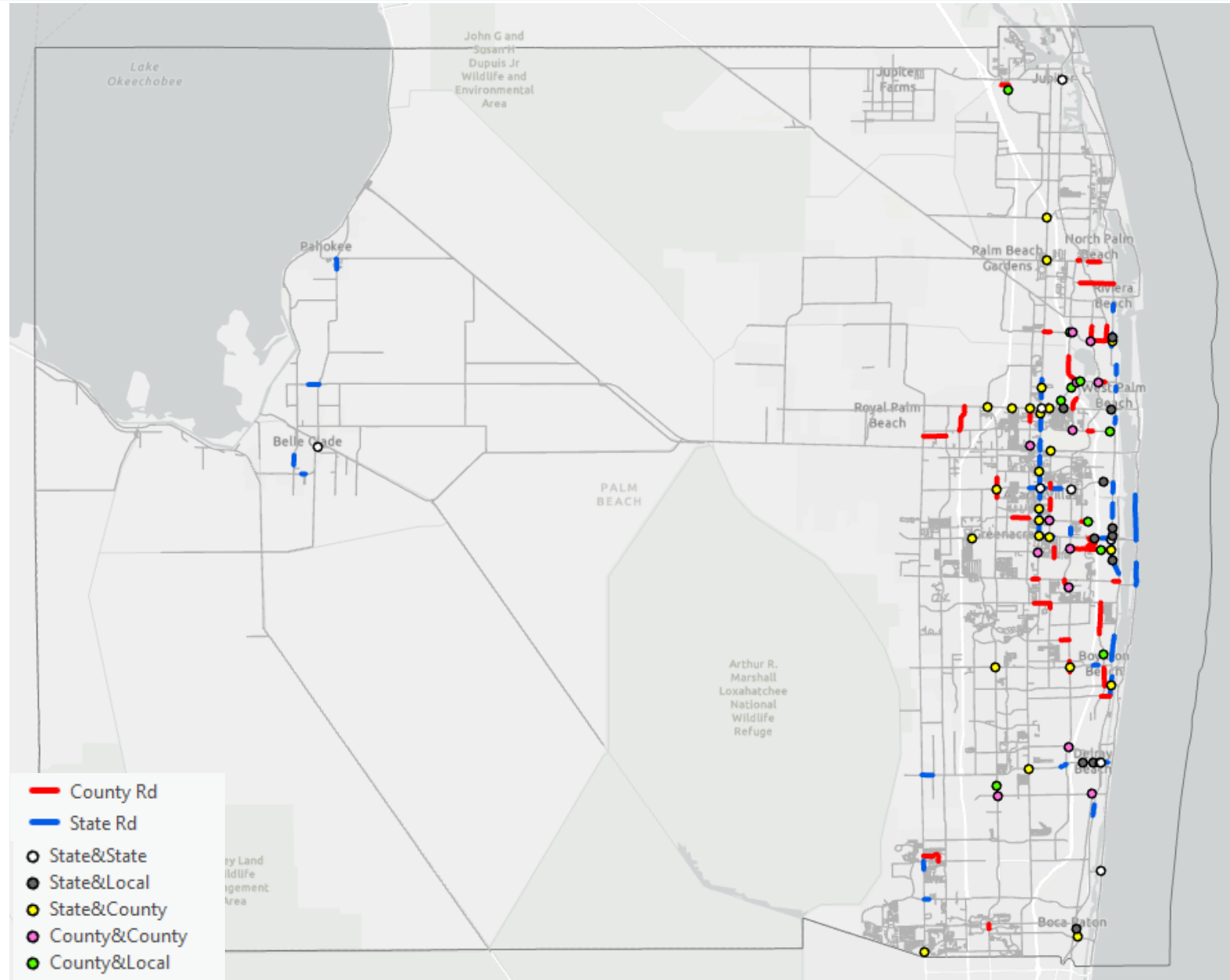
Signal Four Crash Data used from January 2019 – December 2023 27

Pedestrian HIN Results

HIN Represents

229 FSI* Pedestrian Crashes

50% of the FSI Pedestrian Crashes on State Rd & County Rd



*FSI = Fatal and Serious Injury Crashes

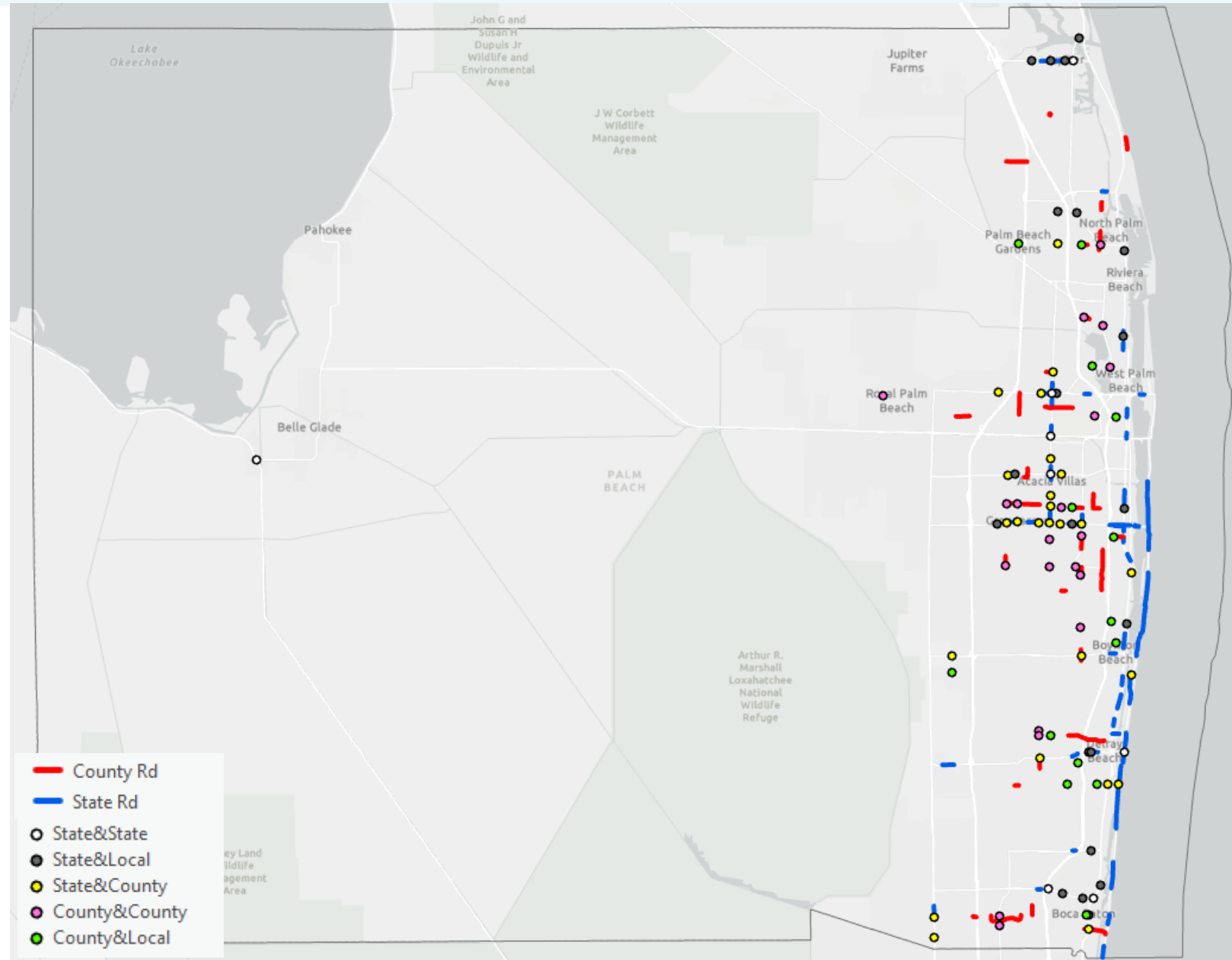
Signal Four Crash Data used from January 2019 – December 2023 28

Bicycle HIN Results

HIN Represents

132 FSI* Bicycle
Crashes

50% of the FSI Bicycle
Crashes on State Rd
& County Rd

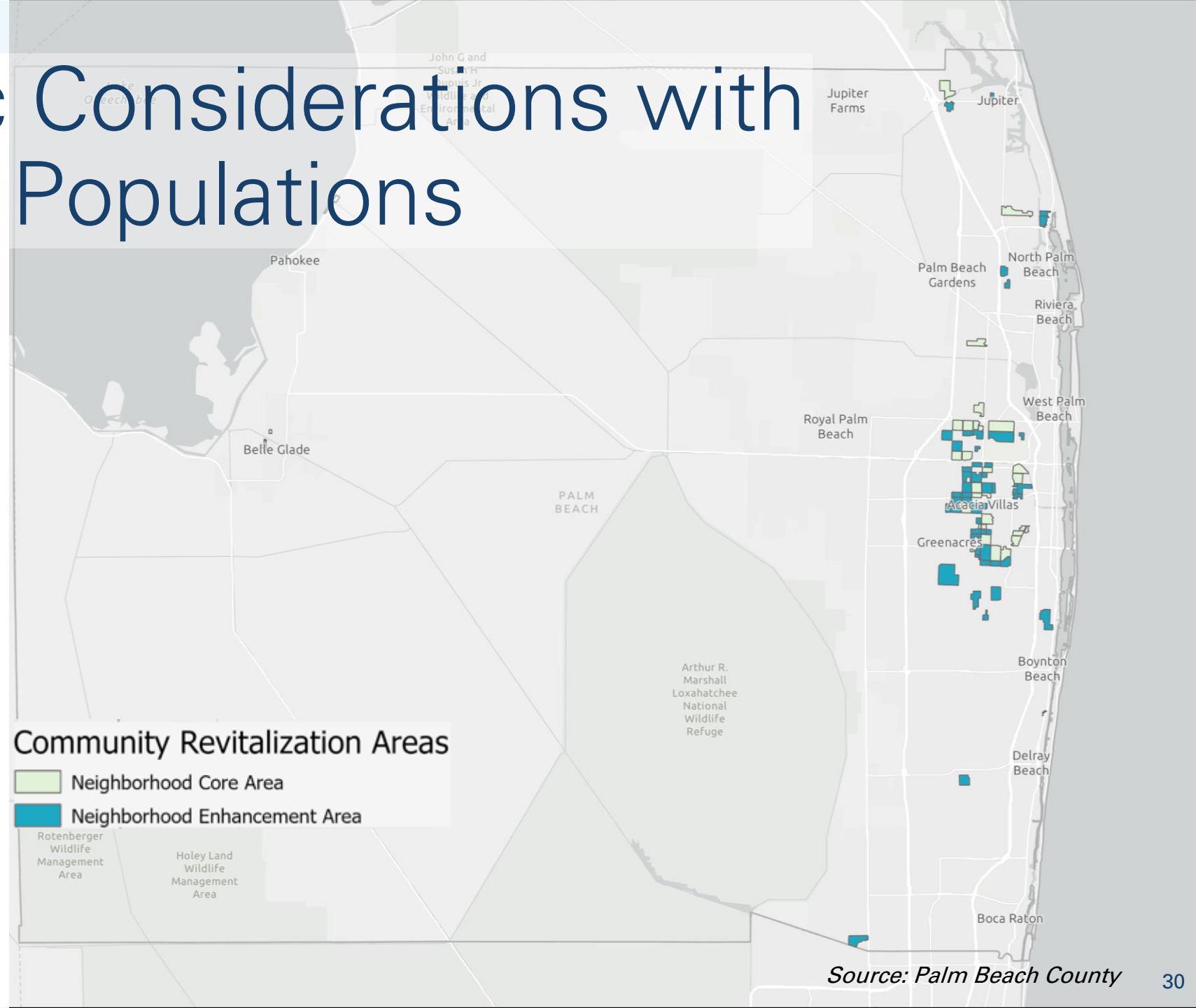


*FSI = Fatal and Serious Injury Crashes

Signal Four Crash Data used from January 2019 – December 2023

Demographic Considerations with Underserved Populations

Reviewing crash data within these areas along State Roadways and County-maintained Roadways



Discussion

- ♦ As we further analyze the HINs, do you have any feedback/thoughts/comments on locations you are anticipating or contributing factors, etc. based on your own agency's safety work?

Agenda

- ♦ Safety Action Plan Overview
- ♦ Task Force Roles & Expectations
- ♦ Existing Conditions & Data Review
- ♦ **Understanding Barriers to Safety**
- ♦ Related Efforts & Initiatives
- ♦ Next Steps & Action Items



What are 1-2 of the biggest safety concerns for your agency?



What makes addressing safety challenges difficult in Palm Beach County?

Agenda

- ♦ Safety Action Plan Overview
- ♦ Task Force Roles & Expectations
- ♦ Existing Conditions & Data Review
- ♦ Understanding Barriers to Safety
- ♦ **Related Efforts & Initiatives**
- ♦ Next Steps & Action Items

Discussion

- ♦ What **safety initiatives or projects** that your agency has been a part of **have been most successful**? Why?
- ♦ Is your agency / organization working on any **relevant efforts we should consider in the planning process**?
 - ♦ Past or ongoing safety initiatives
 - ♦ Upcoming projects or funding opportunities
 - ♦ Existing plans or policies
- ♦ What have you **seen work elsewhere** that we should consider for Palm Beach County?

Agenda

- Safety Action Plan Overview
- Task Force Roles & Expectations
- Existing Conditions & Data Review
- Understanding Barriers to Safety
- Related Efforts & Initiatives
- **Next Steps & Action Items**

Next Steps & Action Items

- Finalize Crash Trend Findings | *June 2025*
- Stakeholder Interviews | *July/August 2025*
- Online Virtual Open House | *July/August 2025*
- Strategy Identification & Prioritization | *Summer/Fall 2025*
- **TF ACTION: Help spread the word | *July/August 2025***
- **TF ACTION: Next Task Force Meeting | *Fall 2025***
- **TF ACTION: Provide feedback on Plan | *Fall/Winter 2025***



PALM BEACH COUNTY SAFETY ACTION PLAN

Safe Street and Roads for All (SS4A) Grant Program



TASK FORCE MEETING #2 AGENDA

Date: November 13, 2025 | **Location:** [Virtual via Teams](#)

1. Safety Action Plan Purpose Refresher / Overview

Briefly re-share the purpose of the Safety Action Plan; the Plan's study network and objectives; the HIN methodology and resulting network; and feedback from Task Force Meeting #1.

2. Outreach Update

Provide an overview of the outreach activities that have occurred since Task Force Meeting #1 and resulting themes heard to date.

3. Overview of Recommendations

Walk-through the approach taken to identify recommendations.

4. Systemic Safety Recommendations

Walk-through the draft systemic safety recommendations.

5. Priority Corridor Recommendations

Walk-through the draft priority corridor recommendations.

6. Next Steps

Discuss next steps and schedule.



Safety Action Plan

Task Force Presentation

November 13, 2025

Consultant Team:



Funded by:



Crashes on Palm Beach County Roads

Fatal and Serious Injury
Crashes **Decreased** by

21%

For all modes
combined

&

Increased by

1%

For people
walking and
biking

*On State and County-maintained
roadways in Palm Beach County from
January 2019 – December 2023...*

~2

People were
killed or
seriously injured

Every Day

What is the Safety Action Plan?

An **implementation focused plan** for **State** and **County-maintained** roadways in Palm Beach County to...



Reduce the
number of crashes



Reduce the severity of
crashes when they do occur

...built on a **collaborative approach** to ensure treatments match the context and needs in the County.

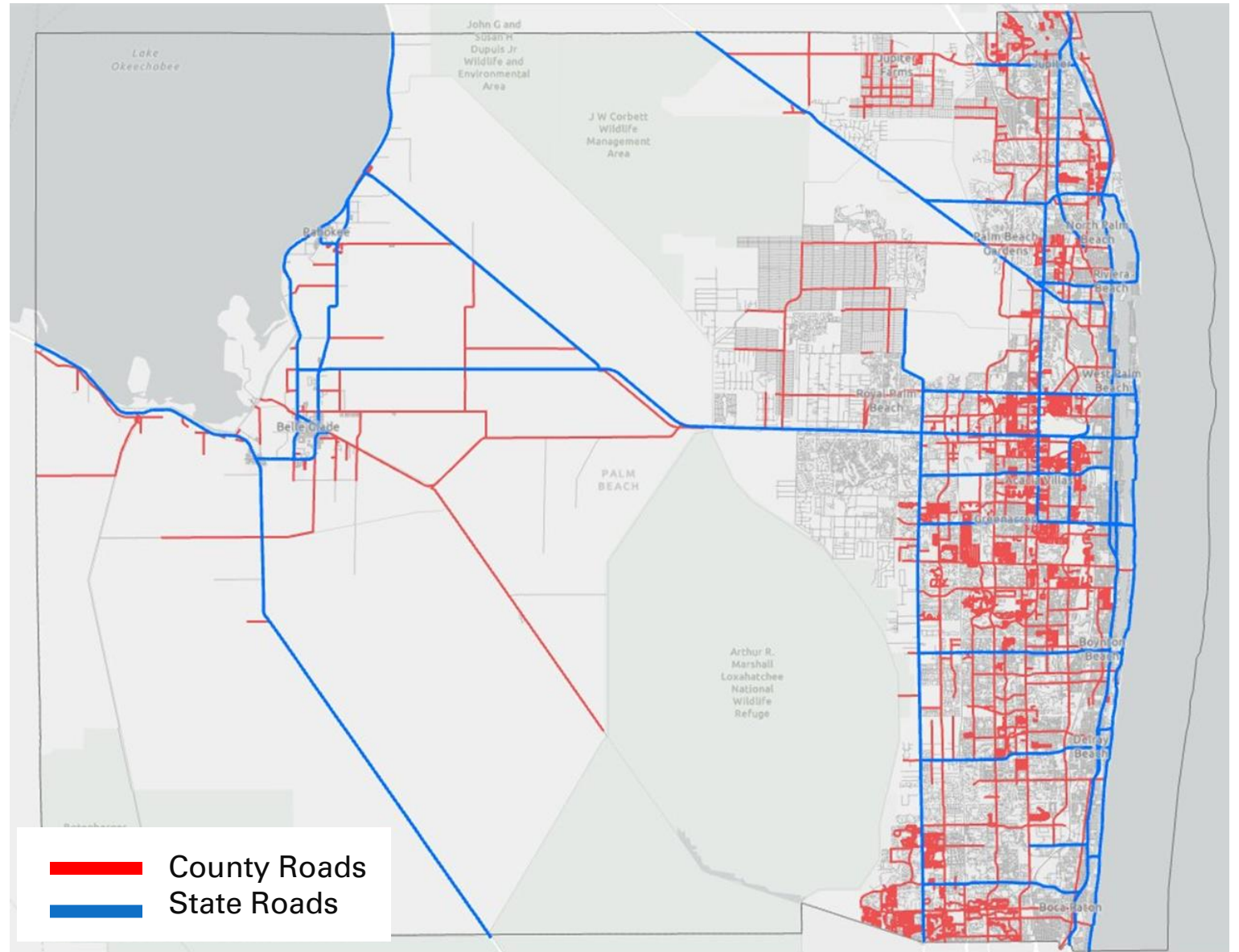


Funded by a Federal **Safe Streets and Roads 4 All** grant
and local participation



Study Network

All State and
County-maintained
Roadways



Safety Action Plan Key Objectives

01

Identify High Injury Network (HIN) and Contributing Crash Factors

02

Recommend Countermeasures, Projects, and Policies to Address Safety Needs

03

Develop Safety Targets & Performance Measures

04

Engage and Educate the Community

High Injury Network (HIN) Identification Methodology Refresh

HIN determined using an Average Ranking from 4 methods :

1. High **crash frequency**
2. High **crash severity** score
3. Average crash **frequency rate** by facility type and traffic volume
4. Average crash **severity rate** by facility type and traffic volume



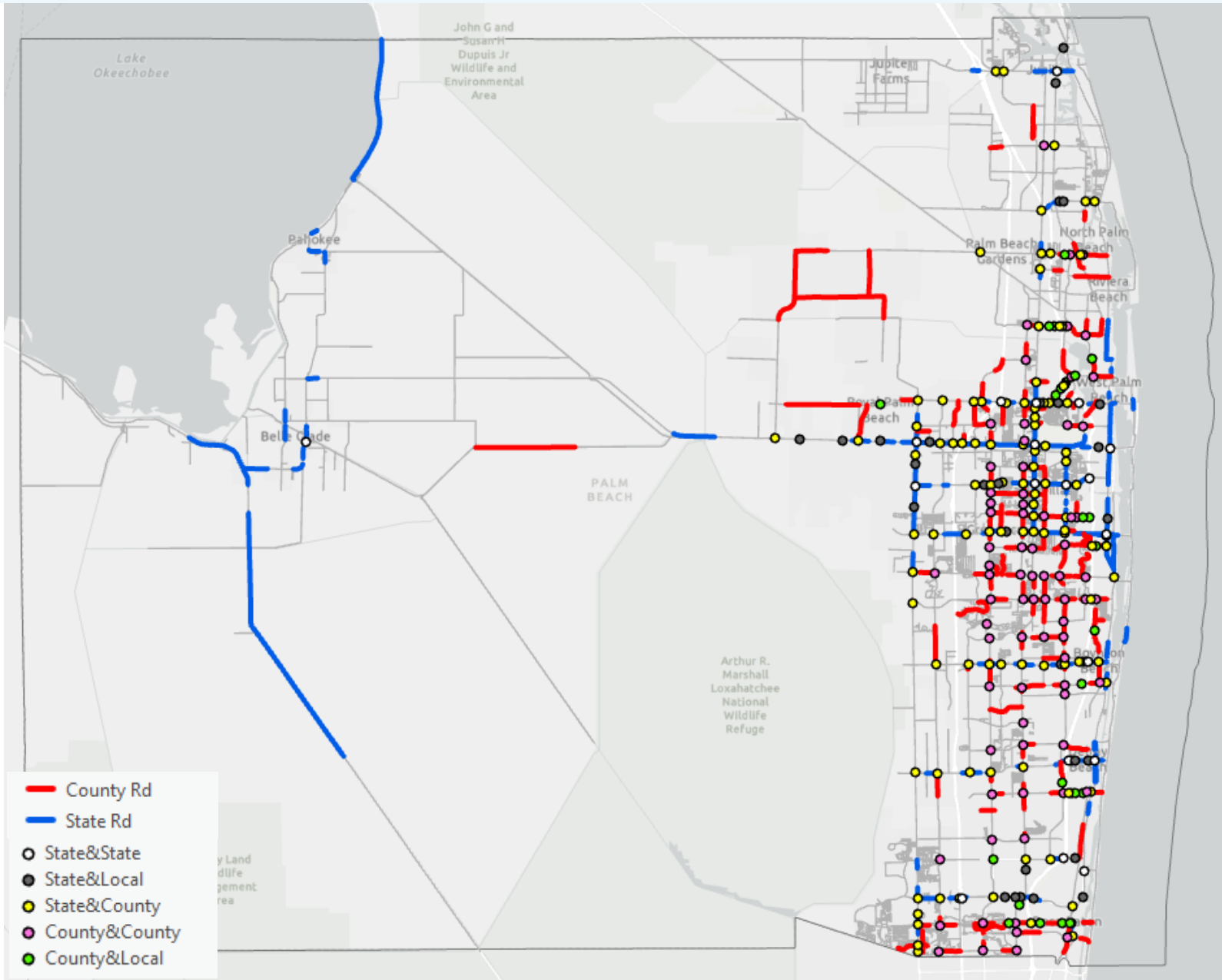
Individual HINs were developed for drivers, motorcyclists, bicyclists, pedestrians.

Vehicular HIN Results

HIN Represents

1005 FSI* Vehicular
Crashes representing

50% of the FSI
Vehicular Crashes on
State Rd & County Rd



*FSI = Fatal and Serious Injury Crashes

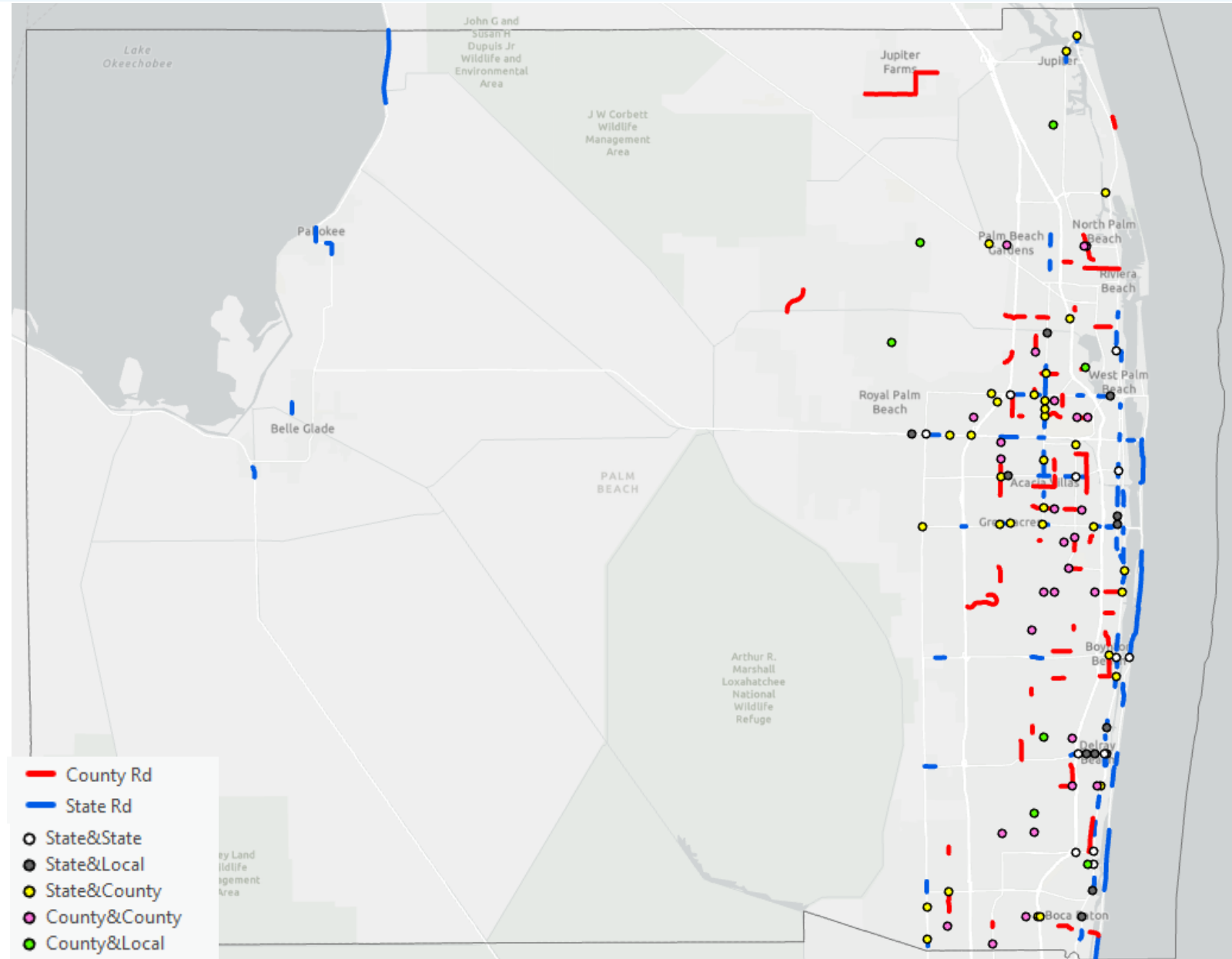
Signal Four Crash Data used from January 2019 – December 2023 ⁷

Motorcycle HIN Results

HIN Represents

233 FSI* Motorcycle
Crashes

50% of the FSI
Motorcycle Crashes on
State Rd & County Rd



*FSI = Fatal and Serious Injury Crashes

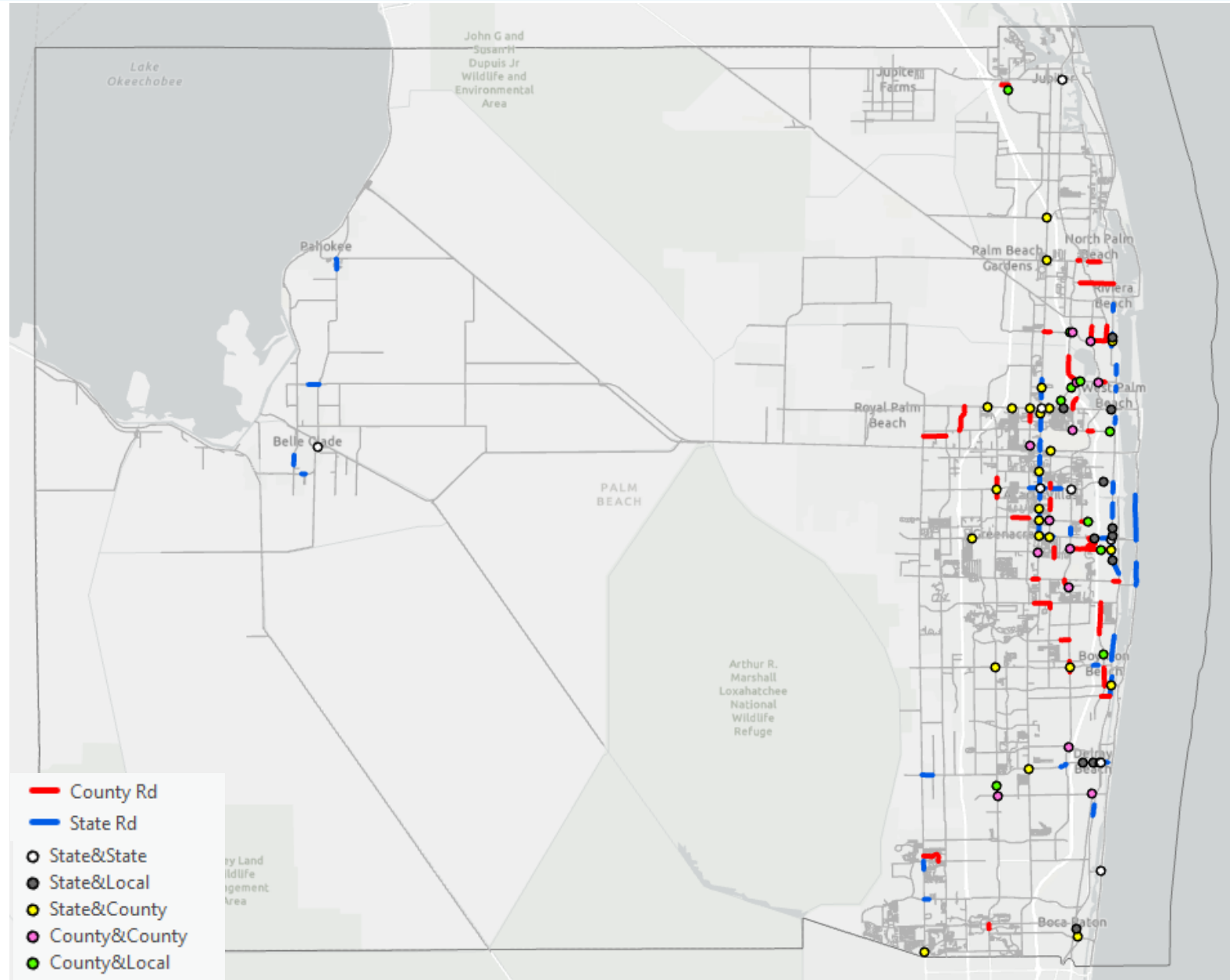
Signal Four Crash Data used from January 2019 – December 2023 8

Pedestrian HIN Results

HIN Represents

229 FSI* Pedestrian Crashes

50% of the FSI Pedestrian Crashes on State Rd & County Rd



*FSI = Fatal and Serious Injury Crashes

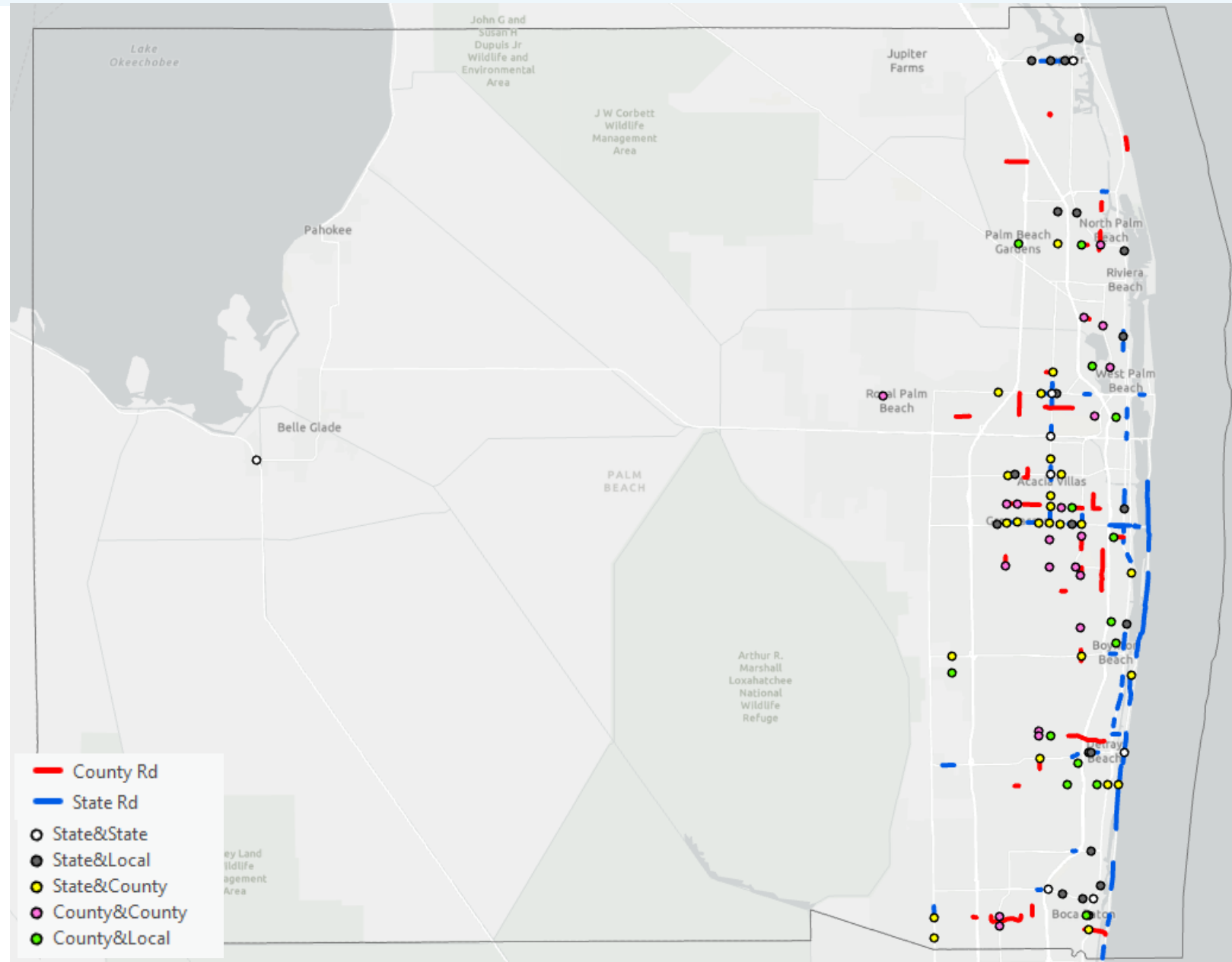
Signal Four Crash Data used from January 2019 – December 2023

Bicycle HIN Results

HIN Represents

132 FSI* Bicycle
Crashes

50% of the FSI Bicycle
Crashes on State Rd
& County Rd



*FSI = Fatal and Serious Injury Crashes

Signal Four Crash Data used from January 2019 – December 2023

June 17th Task Force Meeting #1 Recap

Agenda:

- Safety Action Plan Overview
- Task Force Roles & Expectations
- Existing Conditions & Data Review
- Understanding Barriers to Safety
- Related Efforts & Initiatives
- Next Steps & Action Items

Feedback Summary:

What are 1-2 biggest safety concerns for your agency?

- Parents dropping students off near traffic
- Aggressive driving
- Lack of options
- Speed and impairment
- Too many mode that have difference needs sharing the same roads with similar treatments

What makes addressing safety challenges difficult in PBC?

- Lack of funding
- Policy or regulation restrictions
- Public resistance to change
- Political will

What safety initiatives or projects that your agency has been a part of have been most successful? Is your agency working on any relevant efforts we should consider in the planning process?

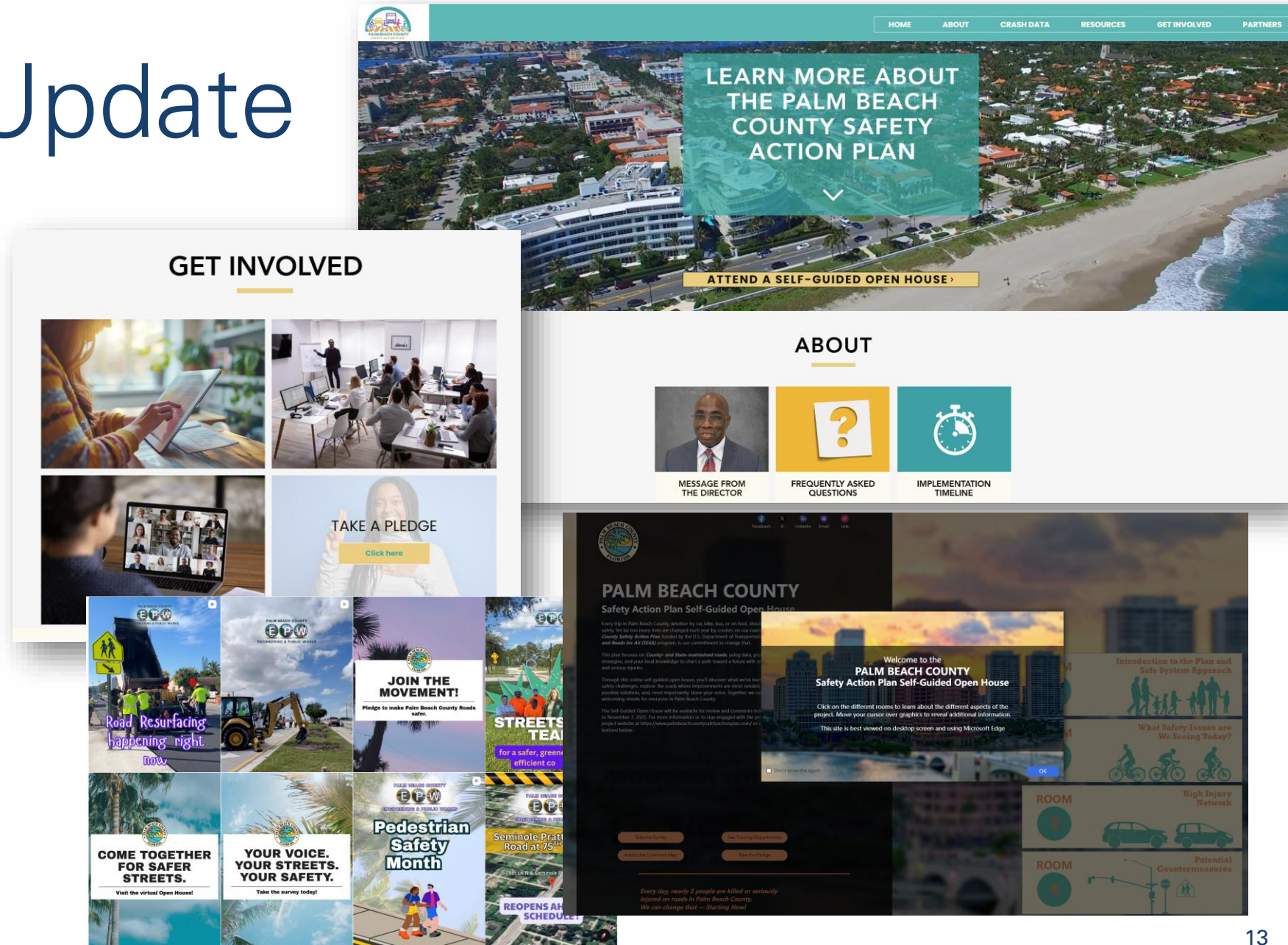
- TPA Vision Zero
- Palm Tran-detours around road projects, can they be notified in a more efficient manner so they can better prepare and identify safe alternate routes and properly notify transit users in advance
- Comment Map-Palm Beach TPA
- Local Mobility and SAPs for any SHS or county roadway efforts for consistency

Today's Agenda

- ♦ Outreach Update
- ♦ Overview of Recommendations
- ♦ Systemic Safety Recommendations
- ♦ Priority Corridor Recommendations
- ♦ Next Steps

Outreach Update

- Launched website with:
 - Survey
 - Pledge
 - Self-guided Open House
 - Links to safety trainings
- Conducted 20+ stakeholder interviews
- Coordinated with Master Plan
- Social Media postings and County website banner



What we heard to date:

- Safe Crossings are a Countywide Priority
- High Speeds and Aggressive Driving are a Daily Concern
- Sidewalk and Bike Network Gaps Limit Safe Access
- Rail Safety Challenges Persist Across Multiple Jurisdictions
- Stormwater, Drainage, King Tides, and Water-Adjacent Roadway Safety
- Large, Complex Intersections Create High-Stress Environments
- Communities Want Clearer Processes, Stronger Alignment Across Agencies, and Support Securing Funding
- Micromobility is Outpacing Policy and Infrastructure
- School Zones Face Persistent Congestion and Safety Issues
- Freight and Truck Traffic Pose Localized but Significant Challenges

Safety Recommendations

The chosen recommendations outline safety countermeasures for County-maintained roads and are divided into **two main categories**:

Priority Corridor Safety Recommendations



These focus on operational and infrastructure improvements to address most common crash types along the **top five priority corridors** identified within this plan.

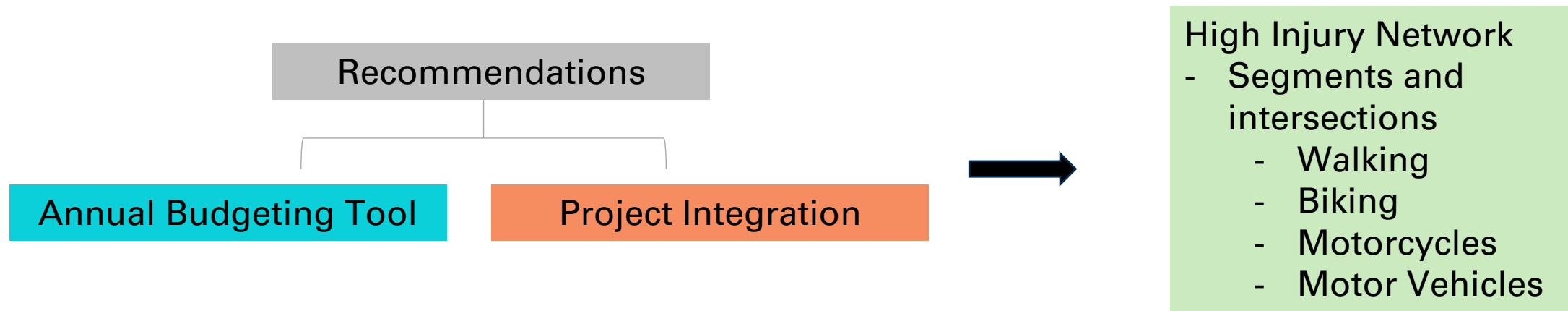
Systemic Safety Recommendations



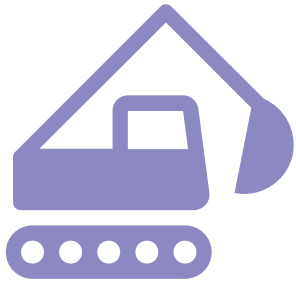
These present proven countermeasures that target the most frequent crash types across the High Injury Network (HIN)

Systemic Safety Recommendations

- A handbook for the proactive application of countermeasures on roads maintained by the County
- Designed to serve as a reference tool to support decision-making processes.



Systemic Safety Recommendations



Infrastructure

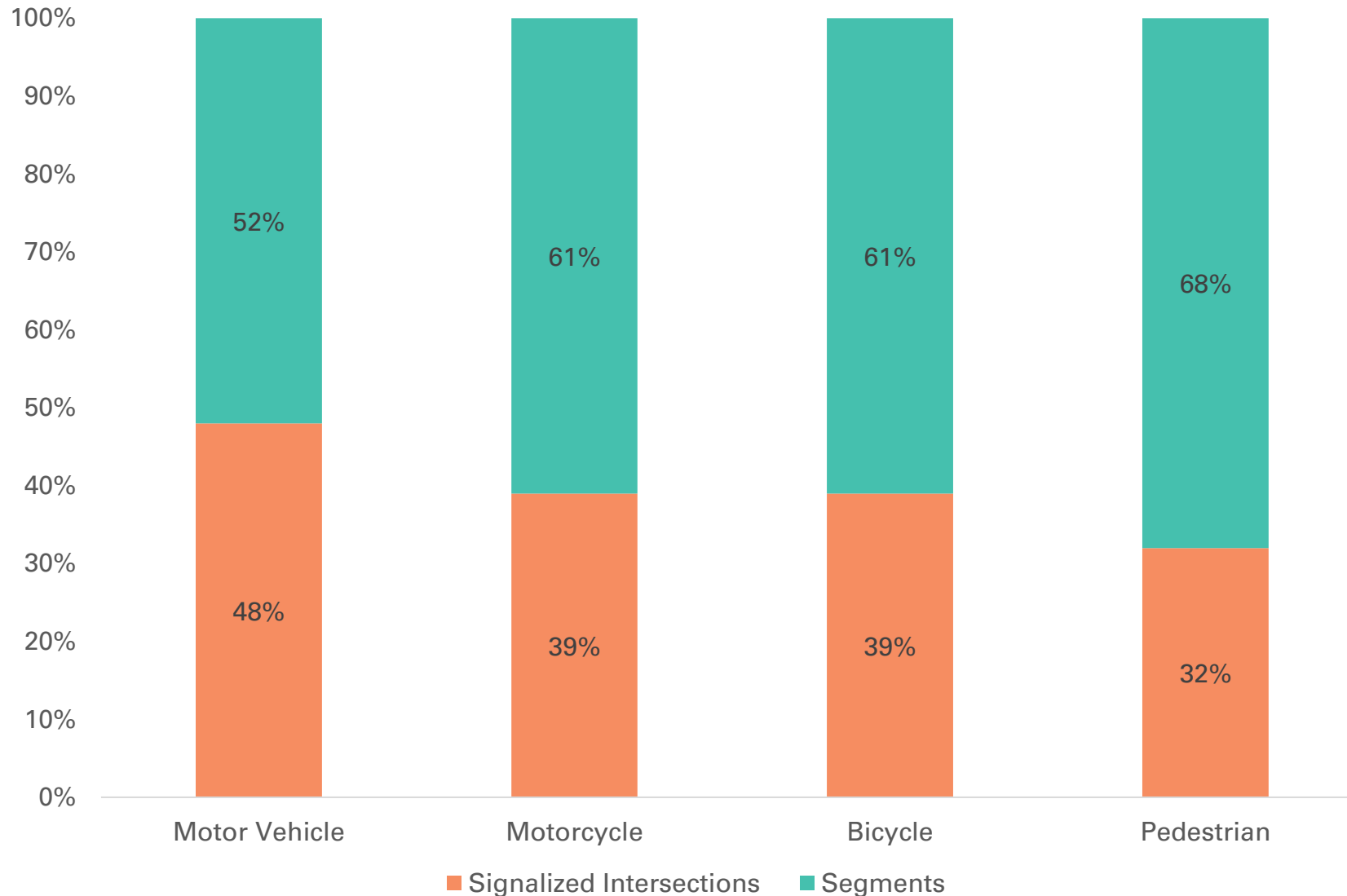


Operational
Improvements



Policy &
Programs

FSI Crashes By Mode and Location



Motor Vehicle Systemic Strategies

Crash Distribution	Top FSI Crash Types	Leading Contributing Causes	Systemic Safety Strategies
52% Segments	- Fixed Object/Run-Off-The-Road - Rear-End Collisions	- Operated carelessly - Ran-off-the-road	Infrastructure - Improve sign/markings retroreflectivity/visibility - Pavement friction management - Install rumble strips - Remove hazards from clear zone - Install lighting - Install next signal signs - Install warning signs - Improve access management Operations - Install signal timing and coordination Policy and Programs - Speeding enforcement
48% Signalized Intersections	- Left Turn - Angle	- Failed to yield ROW - Ran red light - Operated in careless manner	Infrastructure - Positive offset of left turn lanes - Remove sight line obstructions - Install left turn lanes Operations - Flashing yellow arrow / Flashing yellow arrow omit - Add backplates with retroreflective border - Provide one signal head per lane - Improve All Red interval

Motorcycle Systemic Strategies

Crash Distribution	Top FSI Crash Types	Leading Contributing Causes	Systemic Safety Strategies
68% Segments	- Fixed Object/Run-Off-The-Road - Left Turn	- Operated carelessly - Failure to yield ROW	Infrastructure - Roadway Maintenance (Ex. Remove debris and repair potholes) - Improve sight distance - Pavement Friction Policy and Programs - Safety Awareness Campaigns (Ex. Wear safety equipment when riding). - Speeding enforcement
32% Signalized Intersections	- Left Turn - Angle	- Failed to yield ROW - Ran red light - Operated in careless manner	Infrastructure - Positive offset of turn lanes or improve sight lines Operations - Confirm motorcycle detection by signal - Provide one signal head per lane Policy and Programs - Safety Awareness Campaigns (Ex. Defensive riding techniques, wearing bright gear) - Speeding Enforcement

Pedestrian Systemic Strategies

Crash Distribution	Top FSI Crash Types	Leading Contributing Causes	Systemic Safety Strategies
61% Segments	- Traveling Straight - Turning Right	Failure to yield ROW	Infrastructure - Increase midblock pedestrian crossings - Remove sight line obstructions - Improve lighting and remove obstructions to existing lighting - Speed feedback signs to slow down motorists - Relocate bus stops closer to intersections and existing crosswalks - Install special emphasis crosswalk markings at driveways - Install Pedestrian (W11-2) warning signs Policy and Programs - Safety Awareness Campaigns (Ex. Encourage bright clothing at night) - Speeding enforcement
39% Signalized Intersections	- Traveling Straight - Turning Right	Failed to yield ROW	Infrastructure - Install special emphasis crosswalk markings - Improve intersection lighting - Install Turning Vehicles Stop for Pedestrians (R10-15a) - Install hardened centerline - Remove sight line obstructions Operations - Review pedestrian clearance interval - Install countdown pedestrian signals - Reduce delays by prioritizing pedestrian signal actuations - Install audible push buttons - Install passive detection of pedestrians - Implement flashing yellow arrow (FYA) with left-turn omit for pedestrians. - Implement Leading Pedestrian Interval

Bicycle Systemic Strategies

Crash Distribution	Top FSI Crash Types	Leading Contributing Causes	Systemic Safety Strategies
61% Segments	- Traveling Straight - Turning Right	Failure to Yield ROW	Infrastructure - Add green marking at conflict areas - Install BIKE LANE (R3-17) signs - Install BEGIN RIGHT TURN YIELD TO BIKES (R4-4) signs - Add buffer between travel lane and bicycle lane - Add Sharrow pavement markings with optional black background - Install BICYCLES ALLOWS USE OF FULL LANE (R9-20) sign - Install W11-15 Bicycle warning signs with LOOK plaque facing driveways to notify drivers to expect cyclists on sidewalk. - Construct separated bicycle lanes
39% Signalized Intersections	- Traveling Straight - Turning Right	Failed to yield ROW	Infrastructure - Extend bicycle lane markings through intersection - Add bicycle signals and/or detection - Add green markings at key-hole lane - Add bike boxes - Install Turning Vehicles Stop for Pedestrian/Bicycle (R10-15) signs - Remove sight line obstructions Policy and Programs - Safety awareness campaigns (Ex. stop crossing during red signal, use pedestrian signal)

Priority Corridor Safety Recommendations

Recommendations build upon the findings of the **safety assessment**, and are generated using the following process:

Safety Assessment

Identify Strategies

Prioritize Strategies

Recommendations

HIN
+
Safety
Assessment
Results

Priority Corridor
Recommendations

Safety Benefits

Community Benefits

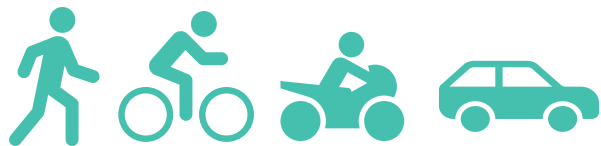
Benefit to Cost
Benefits

Priority Corridor
Recommendations

Priority Corridor Safety Recommendations

The prioritization process consists of analyzing and identifying **five priority corridors** on County-maintained roadways **to select a top project** for submission to federal or state safety grant programs, including Safe Streets for All (SS4A).

The Palm Beach County HIN was used to develop corridors consisting of segments and intersections that addressed all four travel modes



Each corridor was then ranked based on the total number of serious injury and fatal crashes

Chosen corridors account for **19%** of FSI crashes on County-maintained roads

The plan aims to maximize impact and return on investment in reducing and ultimately eliminating severe crashes

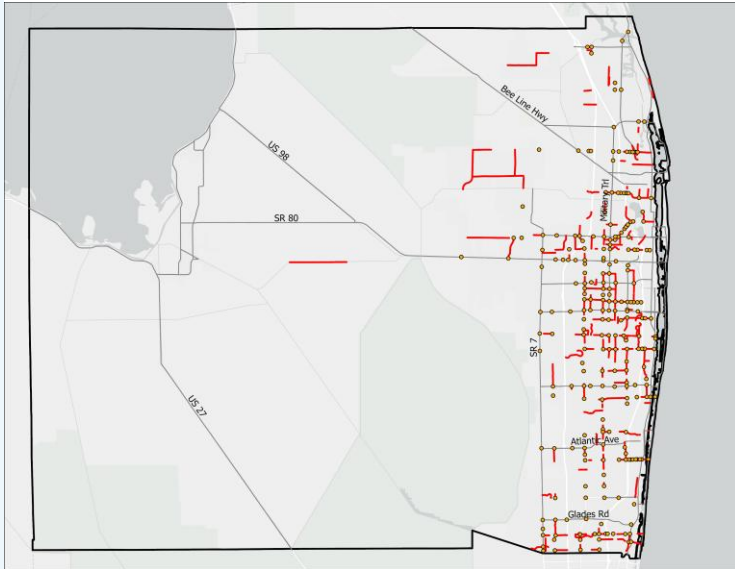
Benefit-Cost Analysis



Prioritization Matrix

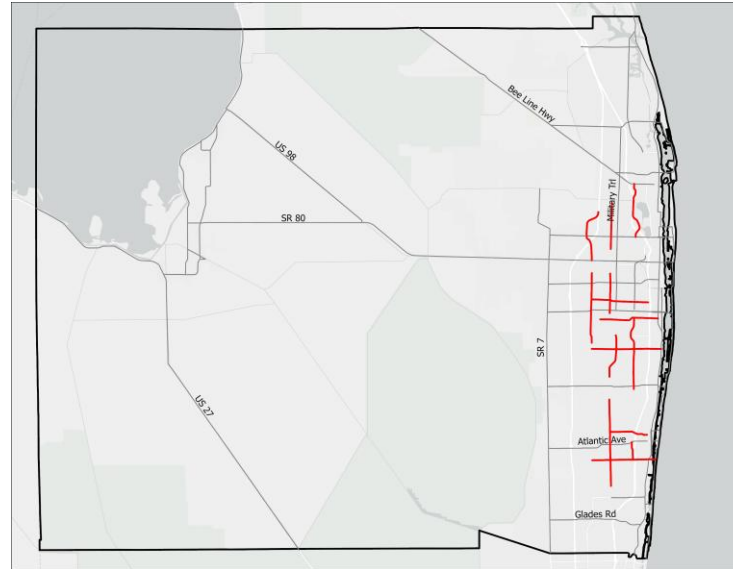
Priority Corridor Identification Process

County-Maintained Roadway
HIN Segments &
Intersections (All Modes)



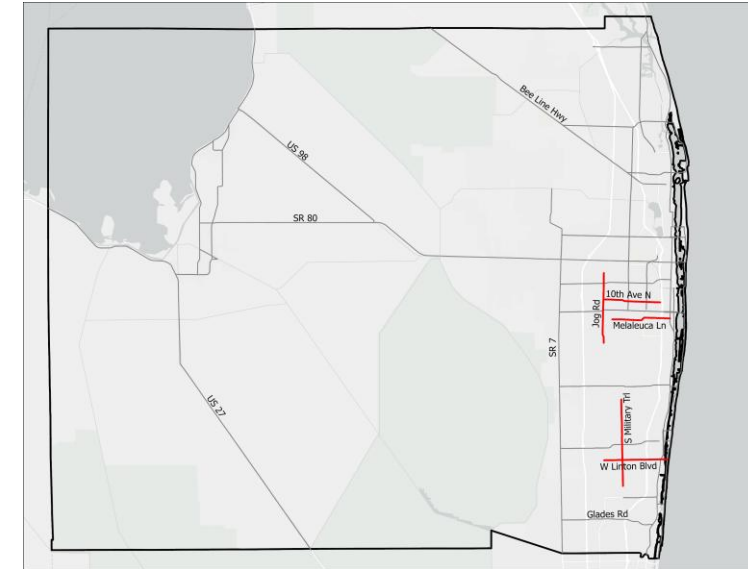
- 1,542 FSI crashes on county-maintained roadways over past five years

14 Corridors



- 41% of all FSI crashes on county-maintained roads on these 14 corridors

5 Priority Corridor



- 19% of all FSI crashes on county-maintained roads on these 5 corridors

Priority Corridor Map

- ♦ **West Linton Boulevard**
 - ♦ From South Jog Road to A1A
- ♦ **South Military Trail**
 - ♦ From Clint Moore Road to Woolbright Road
- ♦ **10th Avenue North**
 - ♦ From South Jog Road to Barnett Drive
- ♦ **6th Ave/Melaleuca Lane**
 - ♦ From Pine HOV Boulevard to US 1
- ♦ **South Jog Road**
 - ♦ From Winston Trails Boulevard to Summit Boulevard



Benefit-Cost Analysis

A data-driven benefit-cost analysis (BCA) was conducted for each of the top five priority corridors and crash data was reviewed to determine the most frequent crash types for each corridors.

Countermeasures were selected using the following:

- **Crash Modification Factors (CMFs):** Proven safety impacts sourced from the U.S. Department of Transportation's FHWA CMF Clearinghouse were reviewed, and where multiple strategies were available for a safety concern, the strategy with the higher CMF was selected.
- **Engineering Judgment:** Crash clusters were analyzed using aerial imagery and Google Street View to refine countermeasure placement and applicability.
- **Cost Considerations:** Emphasis was placed on low- to medium-cost treatments that do not require full roadway reconstruction.

Planning-level cost estimates and CMFs were used to calculate a cumulative cost-benefit score for each corridor.

Prioritization Matrix

Category	Category Weight	Subcategory
Safety	50%	Vehicle Safety
		Vulnerable Road User Safety
Community Benefit	30%	Parks
		Schools
		Transit
		Areas of Persistent Poverty
		Places of Worship
Benefit to Cost	20%	Planning level Benefit-to-cost ratio

After the BCA was performed to determine cost effectiveness, the corridors were prioritized based on specific weighted categories.

West Linton Boulevard

From South Jog Road to A1A



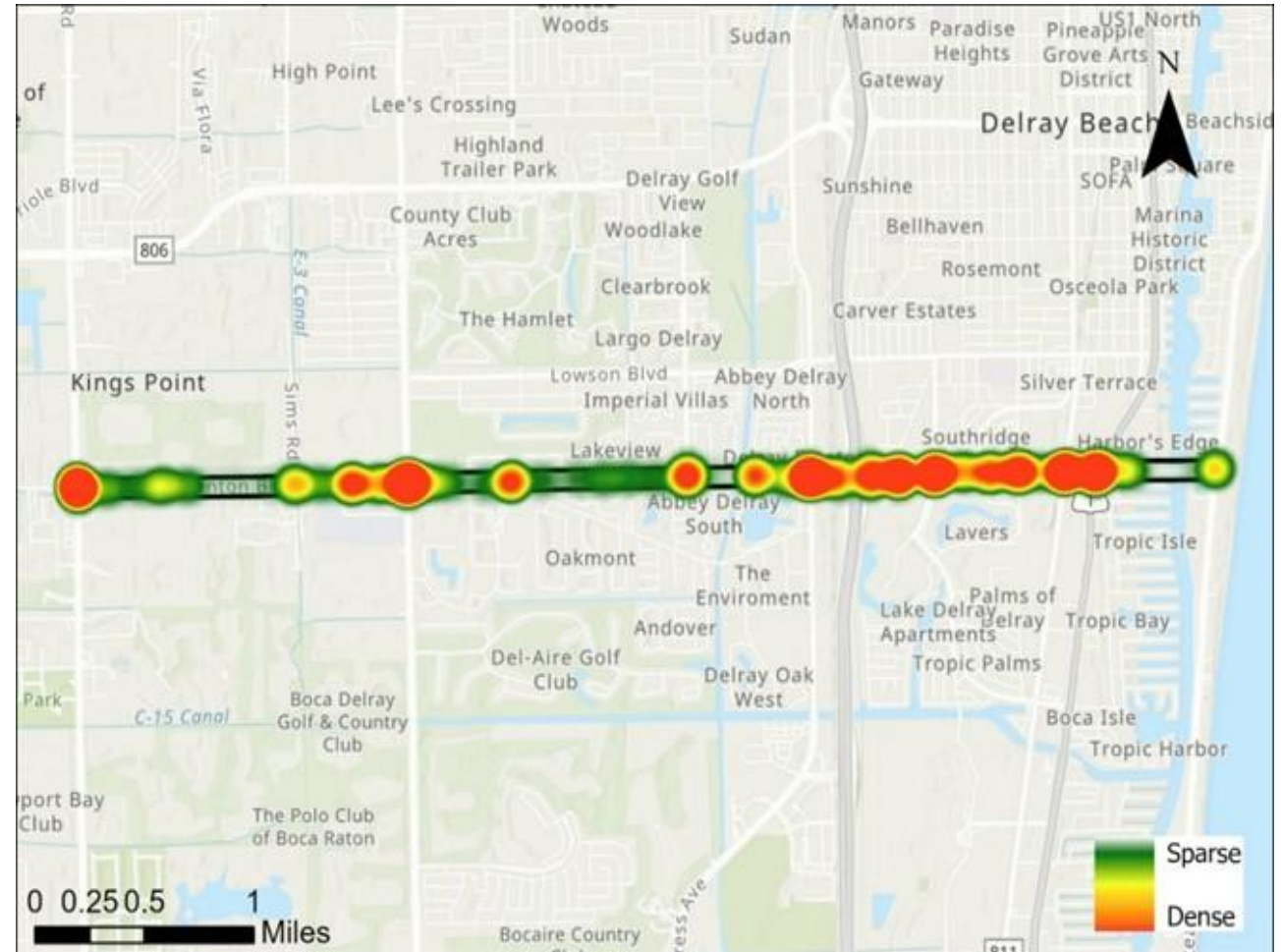
5.2 miles
Urban, Major Arterial
4-6 lanes
120 feet of ROW
40 to 45 MPH Posted Speed
14,400 to 45,000 AADT (FDOT, 2024)

Streetview looking west

West Linton Boulevard

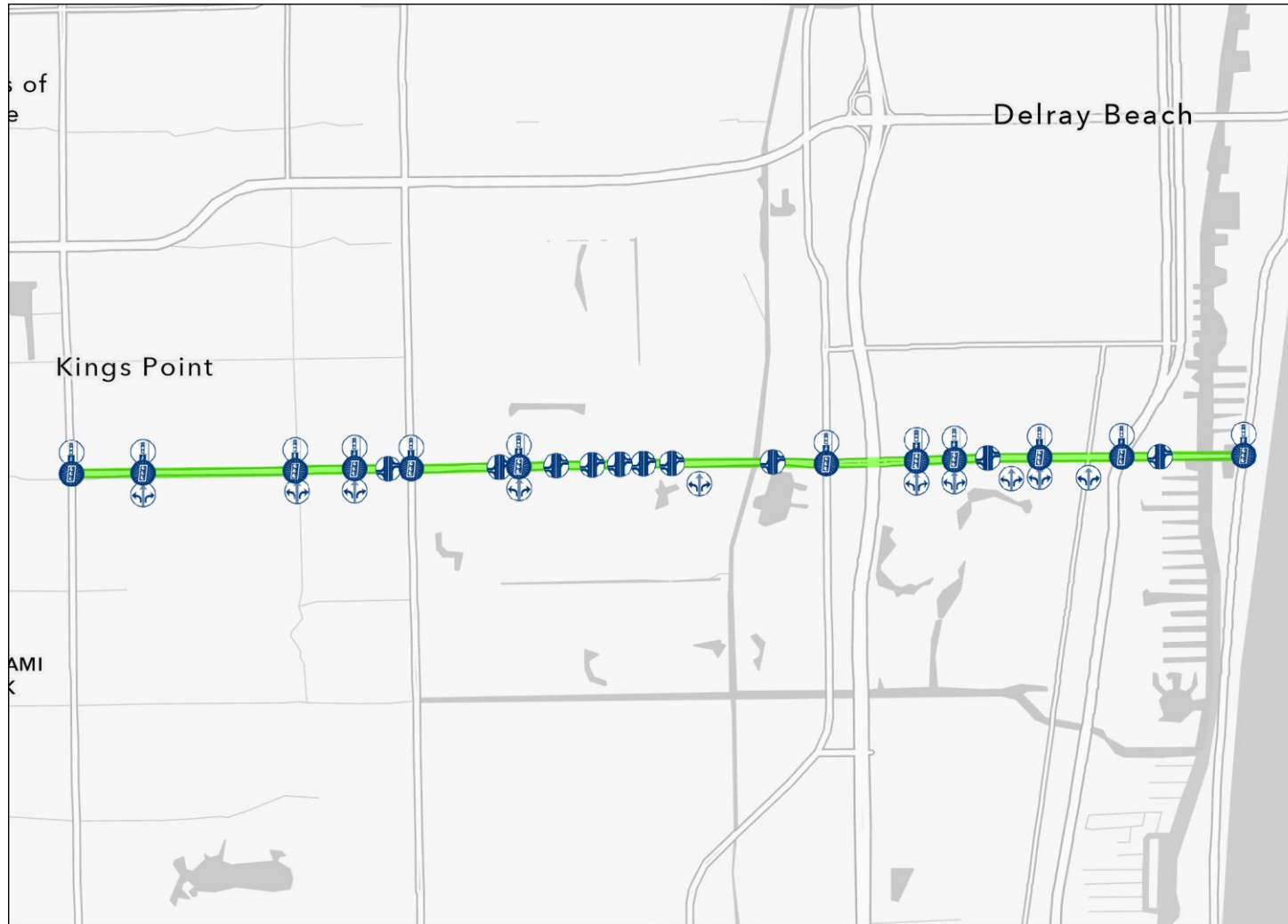
From South Jog Road to A1A

- Corridor experienced 7 FSI crashes (2 fatalities) at uncontrolled, open intersections.
- Uncontrolled, open intersections experienced a high share of rear end, side swipe, and angle crashes.
- Overall, this corridor experienced the highest number of total FSIs.



West Linton Boulevard

From South Jog Road to A1A



Recommended Corridor Safety Strategies



Protected Bike Lane



Protected Left Turn Phasing



Leading Pedestrian Interval



Retroreflective Backplates



Access Management

South Military Trail

Clint Moore Road to Woolbright Road



7.2 miles

Urban, Principal Arterial

6 lanes

120 feet of ROW

45 MPH posted Speed

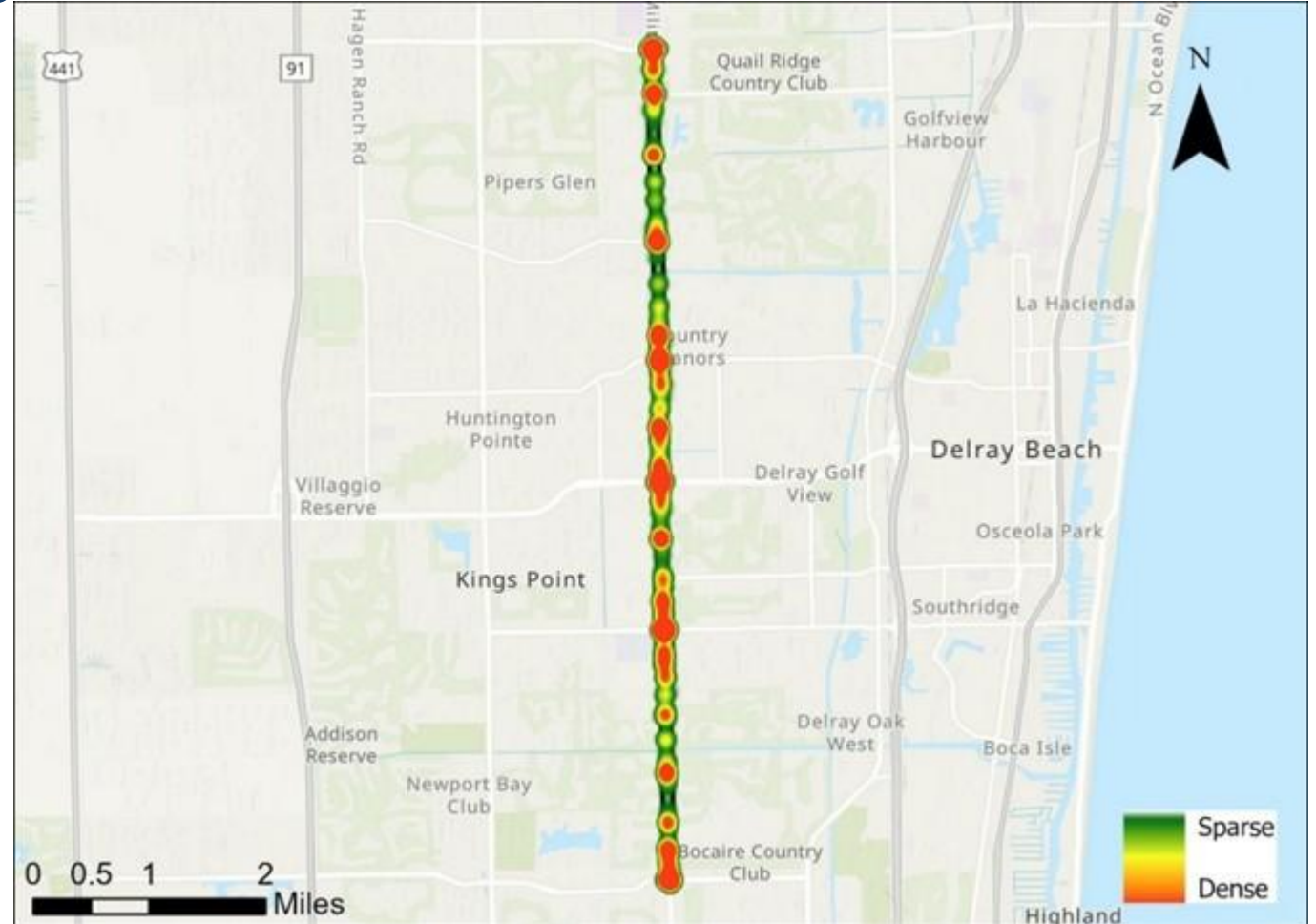
37,500 to 40,500 AADT (FDOT, 2024)

Streetview looking south

South Military Trail

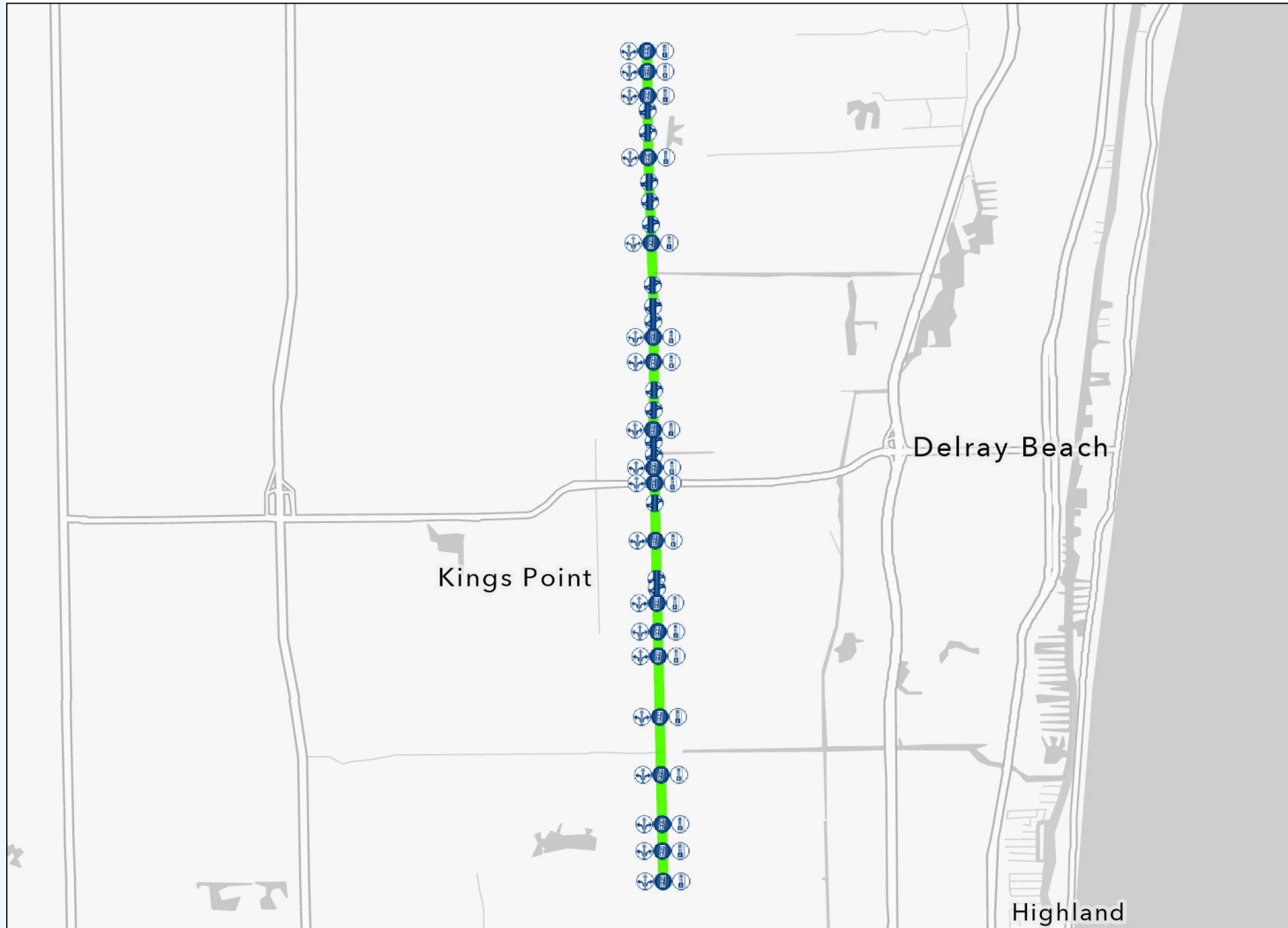
Clint Moore Road to Woolbright Road

- Corridor crosses through the most community benefit variables (parks, schools, transit, areas of persistent poverty, and places of worship).
- Majority of vulnerable road user crashes were Bicycle crashes along segments and at intersections.
- 2x more bicycle crashes than pedestrian.



South Military Trail

Clint Moore Road to Woolbright Road



Recommended Corridor Safety Strategies



Protected Bike Lane



Protected Left Turn Phasing



Leading Pedestrian Interval



Retroreflective Backplates



Access Management

10th Avenue North

South Jog Road to Barnett Drive



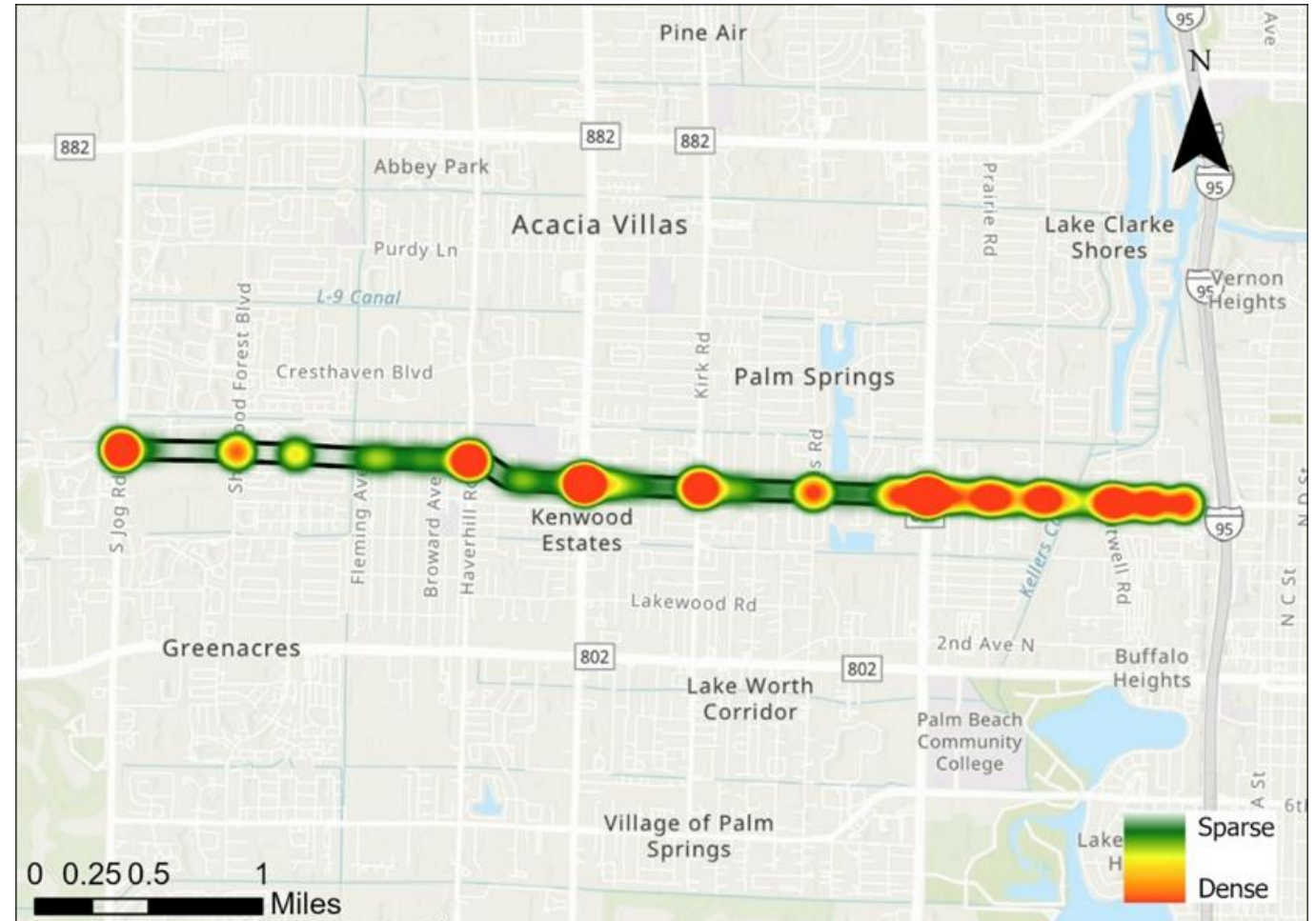
4.7 miles
Urban, Major Arterial
4-5 Lanes
80-120 feet of ROW
40 MPH posted speed
12,400 to 34,000 AADT (FDOT, 2024)

Streetview looking west

10th Avenue North

South Jog Road to Barnett Drive

- Shortest Corridor in length (4.7 miles) but the most fatalities (18).
- Majority of fatalities occurring along segments, not at intersections.
- Majority of segment fatalities are pedestrian crashes.
- Corridor crosses through the most school zones (3) and represents a significant travel corridor for children coming to and from school by foot.



10th Avenue North

South Jog Road to Barnett Drive



Recommended Corridor Safety Strategies



Protected Left
Turn Phasing



Leading Pedestrian
Interval



Retroreflective
Backplates



Access
Management



Speed Safety
Camera



High Visibility
Crosswalk

6th Avenue / Melaleuca Lane

From Pine HOV Boulevard to US 1



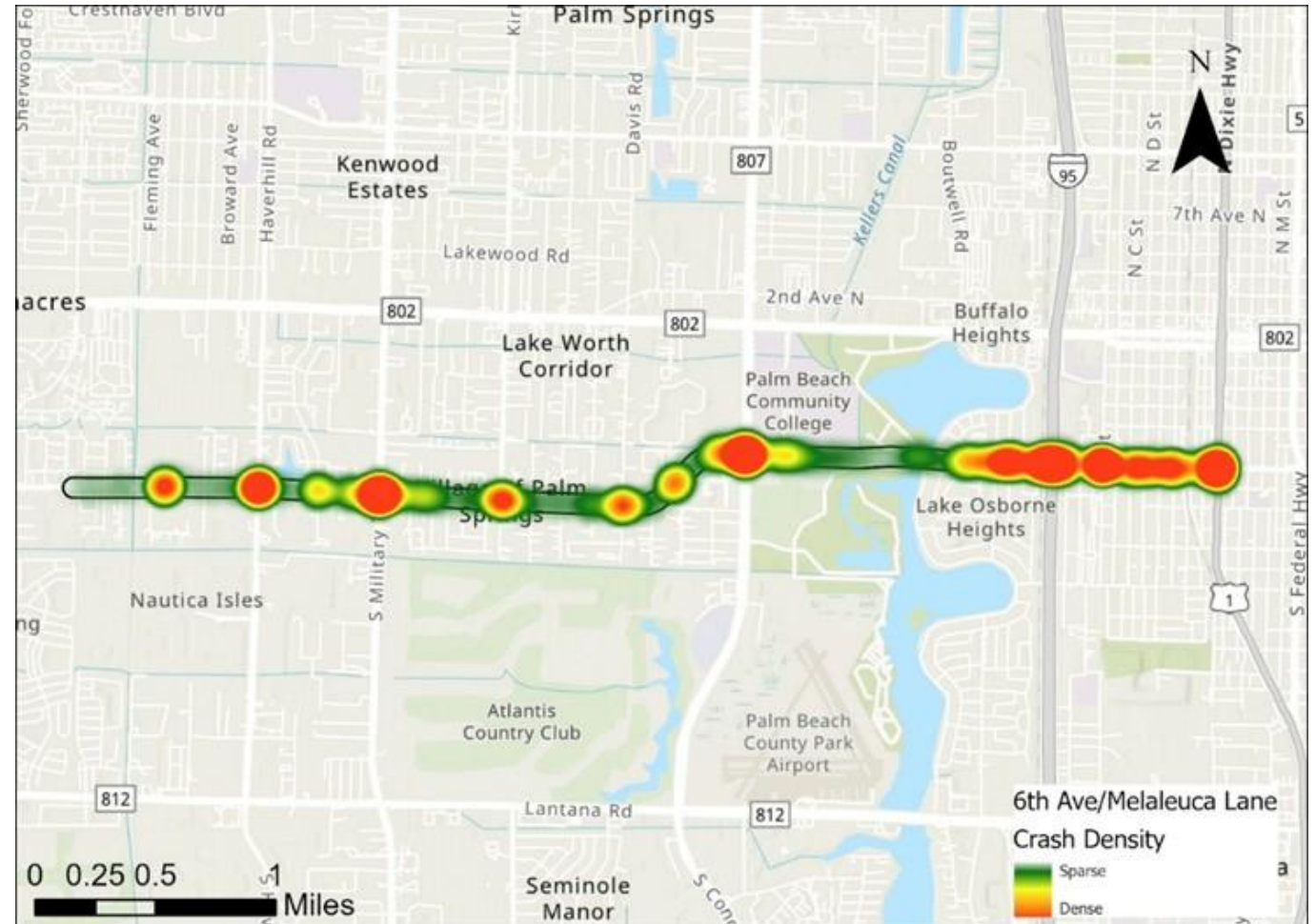
4.8 miles
Urban, Major Arterial
4-5 Lanes
80-110 feet of ROW
35 to 45 MPH posted speed
12,400 to 34,000 AADT (FDOT, 2024)

Streetview looking west

6th Avenue / Melaleuca Lane

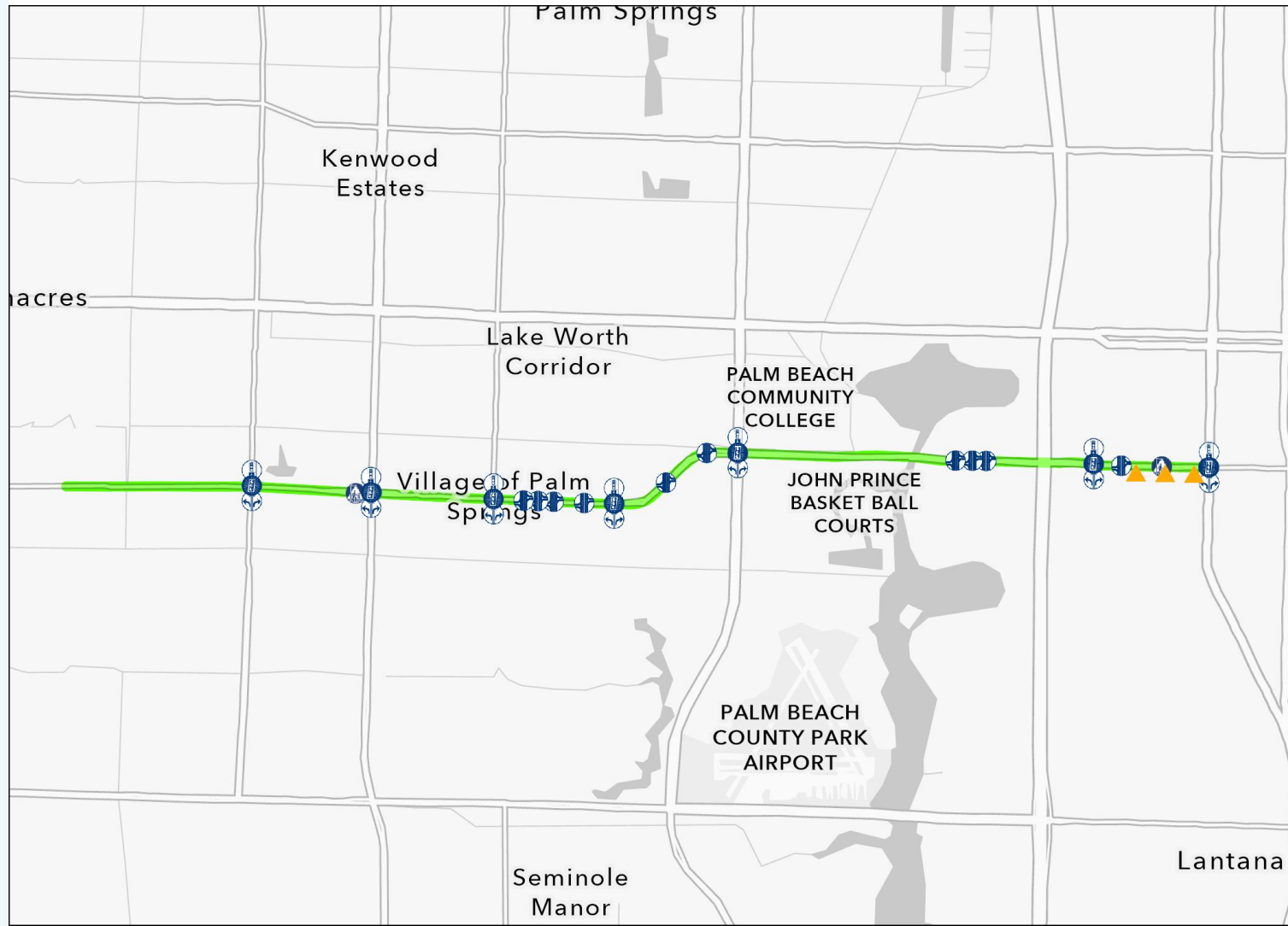
From Pine HOV Boulevard to US 1

- Highest number of vulnerable road user FSI, least amount of vehicle FSI.
- Corridor has access management issues within City of Lake Worth Beach. Uncontrolled intersections leading to high number of crashes.
- Highest number of pedestrian FSI's of the top 5 corridors (by 2 to 3 times).



6th Avenue / Melaleuca Lane

From Pine HOV Boulevard to US 1



Recommended Corridor Safety Strategies



Protected
Bike Lane



Protected Left Turn
Phasing



Leading
Pedestrian Interval



Retroreflective
Backplates



Access
Management



High Visibility
Crosswalk



Reduced Conflict
U-Turn

South Jog Road

From Winston Trails Boulevard to Summit Boulevard



5.7 miles
Urban, Principal Arterial
6 lanes
120 feet of ROW
45 MPH posted Speed
39,000 to 55,000 AADT (FDOT, 2024)

Streetview looking south

South Jog Road

From Winston Trails Boulevard to Summit Boulevard

- Only corridor where a Pedestrian Hybrid Beacon is recommended. Due to a cluster of midblock pedestrian crashes, including a fatality.
- Of the top 5 corridors, South Jog Road has the most bicycle crashes at intersections (39).



South Jog Road

From Winston Trails Boulevard to Summit Boulevard



Recommended Corridor Safety Strategies



Protected Left Turn Phasing



Leading Pedestrian Interval



Retroreflective Backplates



Access Management



Pedestrian Hybrid Beacon



High Visibility Crosswalk

Priority Corridor Prioritization Results

Corridor	Weighted Prioritization Score
6 th Ave/Melaleuca	4.00
10th Ave	4.00
Jog Rd	3.90
Linton Blvd	3.70
Military Trail	3.40

Next Steps

- ♦ Prepare final report (November/December 2025)
- ♦ Create dashboard (November/December 2025)
- ♦ Prepare for and post second Open House (January 2026)

Palm Beach County Safety Action Plan

Virtual Stakeholder Interview Notes

Project website: www.palmbeachcountysafetyactionplan.com

Overview

The purpose of the stakeholder interviews is to gather insights from partners in the region regarding experiences, challenges, and priorities related to transportation safety. The information collected will help inform the Safety Action Plan by identifying key barriers, learning from past and ongoing efforts, and ensuring that regional strategies align with local needs. These conversations provide valuable context to supplement data analysis and broader public engagement efforts being conducted via a virtual Open House and online survey.

We invited 96 stakeholders to interviews, covering every municipality, partner agencies (FDOT, TPA, TCRPC, Rail, etc.), and large HOAs. Twenty-two meetings were held, and 36 individual stakeholders provided feedback over a three-week period.

Stakeholder Findings

Throughout the 20+ meetings, we discovered that many municipalities and jurisdictions within Palm Beach County are in the process of their own Safe Streets and Roads for All (SS4A) effort, including:

- City of Palm Beach Gardens
- City of Delray Beach
- City of Lake Worth Beach
- City of Greenacres
- Village of Palm Springs
- City of Boca Raton
- Indian Trail Improvement District (ITID)
- City of Riviera Beach

Stakeholder Takeaways and Notes

Below are takeaways and notes from each meeting, organized by Palm Beach County Commission District. Although Commissioners representing each District are noted, many stakeholders that serve various government agencies throughout Palm Beach County were interviewed as noted.

District 1, Mayor Maria G. Marino - 10/16 @ 11 am | Visual: [D1-Map.pdf](#)

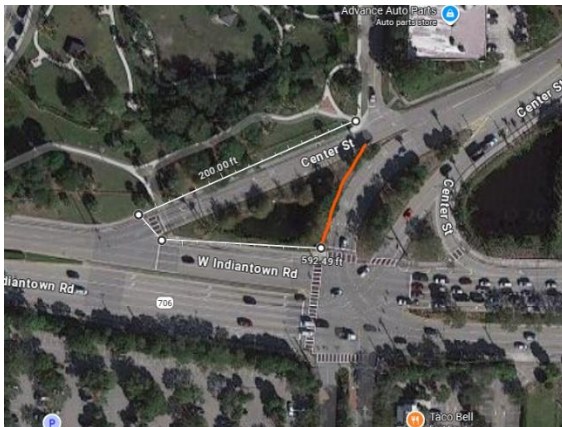
D1 Municipalities/Jurisdictions: South Indian River Water Control District (SIRWIC), **Northern Palm Beach County Improvement District, Jupiter, Palm Beach Gardens, North Palm Beach, Juno Beach**, Palm Beach Shores, Tequesta, and **Jupiter Inlet Colony**.

Northern Palm Beach County Improvement District (Dan Beaty, Executive Director) on 9/17/25

- Their roadways are within other municipalities. All traffic control measures (markings, signage) are implemented by the locals.
- Their biggest issue is trip & falls along their many miles of sidewalks, especially with oak trees.

Town of Jupiter (Martin Schneider, Town Planner; Stephanie Thoburn, Assistant Director of Planning and Zoning; George Dzama, Public Works Director; and CJ, Traffic Engineer) on 9/3/25

- **They previously submitted a grant application**
- Crashes: they found a couple discrepancies with the Palm Beach TPA crash dashboard
- Center Street
 - They are doing public outreach for Center Street - the County has a widening project to do a 3rd lane, and they want to collaborate. They have an upcoming public workshop (9/10 from 5 to 8pm) re: widening and a change to the zoning code related to the commercial area on the western side (redevelopment area) tying transportation and land use
 - There have been a lot of comments about slowing down the road, fatalities (people say there were 2), and a lack of crosswalks
 - Pedestrian fatality at Center Street and Dolphin
 - They have held off on doing crosswalks because they want to coordinate to make sure it is done in tandem with the County project
 - People use this street to walk to work
 - There was a motorcycle crash which isn't showing on the crash dashboard
 - Missing sidewalk on south of Indiantown Road and Center Street as it approaches Walmart where there is a desire line path
 - The crosswalk only exists on the west side, not the east side. Ped crossing also has conflict with left turns



- Central
 - Long and fast road; they have had fatalities including a 14-year-old girl who was crossing Jupiter Park Drive (missing crosswalk on north side) and Chasewood drive has a similar issue and there was also a fatality there.
 - There are a lot of low-income housing on one side and destinations like parks and daycare centers on other side. They have people who walk and bike out of necessity there, lack of crosswalks

- A1A
 - Carlin Park - The parking is on the east side of A1A and the pickleball courts are on the west side. There is not a crosswalk directly at every intersection.
 - A1A has a lot of traffic and high speeds.
- Additional locations for crossing safety
 - Central at Riverwalk Lane in front of the fire station
 - This may have been planned, but Town has not heard any updates or confirmation on this
 - Appears to be warranted based on video counts.
 - Residents come around school time and rush hour (3-6 pm) from community on one side to shopping center on the other side, and they may not have enough time to cross based on the gap time available and so they often run.
 - Island Way at Casa Circle / Church Street
 - Existing crosswalk on south side with RRFB; City wants another crosswalk on the north side of the intersection - this is primarily used by people biking
 - Asked that the County collect data to see; County says they do not see a need to have a crosswalk on both sides of the intersection but may be able to look into it
 - US 1 at Jupiter Yacht Club / Jupiter Bay Condominium
 - Spoke with FDOT, residents want a signalized intersection
 - Asked developer to do a warrant study for a possible signal when the Yacht Club was updated
 - State and Developer both did a warrant study, and it was not warranted, but a PHB may be. However, PHB is not allowed on 6 lane road, so they feel they want a signal.
 - They understand this is a state road, but they want to discuss the policy issue and see if they can implement something beyond the restrictions of the crosswalk policy.
- Traffic Calming
 - Discussion of traffic calming vs emergency response
 - County response: traffic calming should not impact emergency response. The speed humps are designed to get people to go the speed limit. These are working well for them.
 - On Center Street, can the County investigate some way to slow down the street?
 - County may look at roundabouts
- 50% of vehicular crashes happen at signalized intersections. They wanted to consider flashing yellow arrows for right turns.
 - The County does FYA for all left turns as a policy, and are considering it for right turns

City of Palm Beach Gardens (Natalie Crowley, Planning & Zoning Director; Joann Skaria, Assistant Director; and Todd Engle, City Engineer) on 9/12/25

- Natalie sits on VZ Action Committee TAC with Joann
- **They have their own Safety Action Plan, working with Kimley Horn, they've had their own outreach effort, finalizing it this fall. She wants us to share data.**
- **Their goal is to use this plan to implement projects. The plan formalizes what they've been doing towards the goal of having Safer Streets. Their draft can be shared but it has not been finalized by council yet.**
- **\$8M garnered so far to implement improvements, including the SS4A**
- PBC has supported their TPA beautification grant along Military
- They also have a citywide Mobility Plan: [Citywide-Mobility-Plan-March-2025](#)
- No surprises with their data, crashes occurring along HIN
- Some of these roads do not have supportive land uses. They want to start designing their roads for more than just speed.

- Natalie wants to partner more with the county. The more they can coordinate together, the better.
- They have four ongoing mobility projects, including one along Military Trail (this is from their plan)
- North Lake needs a lot of work, projects on this facility would be a huge win for the city and county.
- Natalie said their plan focuses on the following:
 - Enhanced crosswalks (along PGA)
 - Widths of existing roads
 - Use of multiuse paths since many of their bike lanes do not include buffers (people feel more comfortable there anyways, along with shade)
 - Gaps in their multimodal network,
- Todd is working with some cool paint/materials (PGA work). They don't have a formal Quick Build Program, but Todd can do a roundabout in 90 days. He said the stuff they do moves fast. The projects they do with DOT (LAP) or TPA are slow.
- Their PGA work is an example of agencies coming together (like North Lake that crosses jurisdictional boundaries)
- Other items discussed (per Natalie):
 - DOT doing RRR work
 - Ped signals not functioning (gathered during field data)
 - Crosswalks could be better delineated, low hanging fruit items
 - Short-term/quick build type projects: Former Mayor was very involved with NACTO

Village of North Palm Beach (Chard Girard, Director of Public Works) on 9/9/25

- Most of their issues are with local roads. He wants to improve pedestrian safety and reduce speeds.
- High traffic volume across the RR tracks at US 1 and North Lake.
- Mentioned construction with the North Bridge; conversation about reducing lanes from 6 to 4.

Town of Juno Beach (Town Manager Rob Cole) on 9/9/25

- Their town is less populated, and they don't have a lot of crashes as part of the HIN, but they do have bike/walk concerns on Donald Ross and US 1 (new development coming, and a few other development sites, future homes). Mentioned the same for Ocean Blvd.
- These developments will result in more people walking in this area, ped infrastructure to be improved.
- Wants a bike/ped trail along US 1 but the challenge is multiple agencies with conflicting objectives
- Brought up using adaptive AI at Donald Ross and US 1 (said the community is not supportive of adding a lane there); suggests trying adaptive AI at that intersection since it is FDOT approved.

Town of Jupiter Inlet Colony (Chief Dan Kerr and Town Manager Heide Siegel) on 9/9/25

- As far as safety goes, they see a lot of pedestrian traffic. They're surrounded by the ocean to the east, the inlet to the south, and another waterway borders their community.
- They receive a lot of pedestrian traffic due to Ocean Parks (Condo Association) and along the corridor that connects them to Jupiter Island
- Safety concerns regarding people exiting Jupiter Inlet Colony, particularly drawbridge traffic concerns
- Mentioned there's often not enough of a (drawbridge) warning. People try to cut around US1.

District 2, Commissioner Gregg K. Weiss - 10/24 @ 11:30 | Visual: [D2-Map.pdf](#)

D2 Municipalities/Jurisdictions: **West Palm Beach, Haverhill, Lake Worth Beach, COBWRA, Atlantis, and Boynton Beach.**

City of West Palm Beach (Jessica Keller, Parking & Mobility Administrator) on 9/3/25

- She wants to help amplify the county's messaging and engagement and will provide data findings.
- **Part of their bike master plan update: worst areas are county and state-maintained roadways. Data findings include:**
 - Highest crash locations
 - Prioritizing bike infrastructure projects overlapping with crash analysis findings – they didn't overlap (this is good)
 - Includes prioritization framework for downtown mobility plan that will be expanded citywide
 - Implementing their projects in a very logical way
 - She will share everything with us in raw form and summaries
- Interested in school specific questions (Dealing mostly with school traffic issues)
 - SRTS – are these going to be connected?
 - Fadi spearheads safety and school efforts
 - They coordinate with PBSO and school police
 - Can apply via the TPA TA applications
 - Have their own sidewalk projects; prioritizing sidewalks to school
 - AI/CAV
 - Pilot – nothing in the safety context. Will share safety info on this.
 - Is Guidant operating in Boca?
- Electric scooter/bike topic:
 - City is handling how – bike master plan meeting, creating a low stress network. Separated infrastructure for everything to the extent that they can. Updating their code where there are conflicts.
 - Promoting not driving alone.
- Launching transit program. It's an RFP. Had to re-advertise. Transit solution is envisioned for everything east of I-95.

Town of Haverhill (Town Administrator Tracey Stevens) on 9/15/25

- Streetlighting is a major concern, lacking on county roads (N Haverhill Road and Belvedere Road)
- 2nd priority is the high rate of crashes at N Military Trail (State Road) and Belvedere Road (County); suggested to look at signal timing
- Walking and biking are also a high priority for them

City of Lake Worth Beach (Interim City Manager Jamie Brown) on 9/15/25

- **They are currently in Phase 2 of their City Mobility Plan (this phase includes a Mobility Fee Plan); Phase 1 was their Safety Action Plan**
- Jamie has data to send regarding conversations with FDOT for a potential lane repurposing project on Dixie
- Palm Tran bus stop updates (Lucerne and Dixie are some of the transit agency's highest ridership routes); because of this, there is a need for bus stop improvements
- Lane improvements to be made on 10th Avenue N in coordination with the County (project on hold)

Coalition of Boynton West Residential Associations (COBWRA) with Irwin Cohen, Transportation Chair on 9/9/25

- COBWRA has 106 communities, 140K residents
- For the most part, he is pleased with the safety and movement of traffic, in a good place and getting better
- Their main concerns are with development being built before infrastructure is put into place, sees this as a very significant problem. They believe the state and county have a great deal to do in this regard.
- Fadi noted the imbalance has been created due to new laws
- As for alternative transportation (biking and walking) – Irwin noted they are west of downtown/urban activity saying they have limited to no public transit in their communities. Mentioned 2 people seriously injured near their communities (but not in their community).
- Flavor Pict Road is a unique facility - lots of people “playing in the sandbox”
- Concerned about Home Rule, they want BOCC to have a say about how and when development is done (versus the state), this puts a lot of strain on community groups too
- They are pleased the County is doing the study.

City of Boynton Beach (William Leidy, City Engineer) on 9/9/25

- Lack of walk/bike facilities east of I-95 in neighborhoods. Some west of 95, but specifically east of. Commissioners are concerned due to demographics.
- They have a program called Drive Safe Boynton to put in speed mitigation, do temporary improvements with speed humps and then Public Works will make it permanent if successful. Looking for additional funds for speed mitigation.
- Between Woolbright and Boynton Beach Blvd cut through traffic issues (residents and commuters).
- Lots of development (residential & mixed-use, 10 story buildings) around Ocean/BB US 1 area with Brightline through here. They want downtown to be more of a live, work, play area and increase ped and bicycle traffic.
- Long stretches without fencing and need rail safety, especially between Federal and Seacrest.
- They have several rail crossings, rail safety in certain areas would be good to have as part of the SAP; they don't have a lot of funding for rail safety initiatives.
- Two elementary schools (Galaxy and Forest Park, both E of I-95). Long stretch without signalized intersections; mid-block crossing need (NW quadrant), lots of traffic on Boynton in the AM peak
- No data to back that up at the time.
- On Woolbright Road across from elementary is Little League Park. Lots of off-peak events there. Woolbright has no bike lanes, narrow sidewalks, and there's a cemetery east of the park which limits the improvements that can be made
- Will talk to commissioners later this week and may have more to share

District 3, Commissioner Joel G. Flores - 10/29 @11:00 am | Visual: [D3-Map.pdf](#)

D3 Municipalities/Jurisdictions: **West Palm Beach**, South Florida Water Management District, **Greenacres**, **Palm Springs**, **Lake Worth Beach**, Lake Clarke Shores, Glen Ridge, and Cloud Lake.

City of West Palm Beach (Jessica Keller, Parking & Mobility Administrator) on 9/3/25

- She wants to help amplify the county's messaging and engagement and will provide data findings.
- **Part of their bike master plan update: worst areas are county and state-maintained roadways. Data findings include:**
 - Highest crash locations
 - Prioritizing bike infrastructure projects overlapping with crash analysis findings – they didn't overlap (this is good)
 - Includes prioritization framework for downtown mobility plan that will be expanded citywide
 - Implementing their projects in a very logical way
 - She will share everything with us in raw form and summaries
- Interested in school specific questions (Dealing mostly with school traffic issues)
 - SRTS – are these going to be connected?
 - Fadi spearheads safety and school efforts
 - They coordinate with PBSO and school police
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 - Is Guidant operating in Boca?
- Electric scooter/bike topic:
 - City is handling how – bike master plan meeting, creating a low stress network. Separated infrastructure for everything to the extent that they can. Updating their code where there are conflicts.
 - Promoting not driving alone.
- Launching transit program. It's an RFP. Had to re-advertise. Transit solution is envisioned for everything east of I-95.

City of Greenacres (City Manager Andrea McCue) on 9/15/25

- **Their Safety Action Plan was developed by the RPC; adopted in July 2025, part of SS4A grant.**
- Sherwood Forest Blvd project: they are unsure if a 3rd lane is warranted (included in their plan)
- 10th Avenue project: they would like to work with the County on this, potentially go for a grant through the TPA or a SS4A
- Additional Complete Streets projects also identified (as part of this SS4A grant)

Village of Palm Springs (Village Manager Kimberly Glas-Castro and Felipe Lofaso, Public Works Director) on 9/15/25

- **They adopted their Vision Zero Action Plan (VZAP) in June 2025. Priorities include bike/ped safety, adequate sidewalks, enhanced crosswalks, improved intersections, traffic calming, and Complete Streets type of improvements.**
- They have a lot of gaps. They have a lot of residents accessing Palm Tran which is another priority for them.
- Kicking off a new project near schools, and they have a major project on Kirk Road that they're working with the TPA on.

City of Lake Worth Beach (Interim City Manager Jamie Brown) on 9/15/25

- **They are currently in Phase 2 of their City Mobility Plan (this phase includes a Mobility Fee Plan); Phase 1 was their Safety Action Plan**
- Jamie has data to send regarding conversations with FDOT for a potential lane repurposing project on Dixie
- Palm Tran bus stop updates (Lucerne and Dixie are some of the transit agency's highest ridership routes); because of this, there is a need for bus stop improvements
- Lane improvements to be made on 10th Avenue N in coordination with the County (project on hold)

District 4, Commissioner Marci Woodward - 10/27 @ 11:00 am | Visual: [D4-Map.pdf](#)

D4 Municipalities/Jurisdictions: **Boca Raton**, Highland Beach, **Ocean Ridge**, **Manalapan**, **South Palm Beach**, Gulf Stream, Briny Breezes, **Boynton Beach**, **Golf**, **Delray Beach**, and **COBWRA**.

City of Boca Raton (Naresh Machavarapu, City Traffic Engineer) on 9/15/25

- **Kimley Horn is Boca's consultant for their Safety Action Plan/SS4A Grant. They've developed their HIN, completed neighborhood safety meetings, collected comments on their High Injury (Crash) Network, and they hope to have their plan completed in September 2025. They plan to coordinate with additional agencies beginning in October and finalize by end of this year (like PBC's timeline).**
- **Naresh said Dixie (where speeding is a major issue) came up as one of their top 5 as well as Military Trail.**
- Naresh would like to compare the County's methodology with what they're using. The County will share their procedure.
- Naresh invited the County and their consultant team to speak to their Advisory Board. He also suggested a meeting with their consultant and the County's consultant.
- Naresh asked how the SAP relates to the County's Work Program. Melissa explained the intent is to get an Implementation Grant. If not SS4A, the County may apply for a DOT Safety Grant (DOT has their Local Safety Program).
- Naresh is concerned that the non-federal funding approach may take decades which will result in different needs and projects.
- Melissa pointed out that policy recommendations are part of this program, and the SS4A findings will be integrated into the County's Transportation Master Plan.
- Naresh asked how we can align DOT, TPA, and County efforts with local priorities and projects (asked for the County to lead that coordination).
- **Naresh asked how locals can give their priorities to DOT in a meaningful way. He would like to be better aligned with DOT's process and understand what they have in their pipeline. This will inform Boca's Safety Action Plan.**

Town of Ocean Ridge (Town Manager Michelle Heiser) on 9/17/25

- Their Chief of Police and previous Town Manager have worked with a small group of citizens to successfully add pedestrian crossings at A1A. Cyclists coming from the south, also on A1A, are more difficult to accommodate.
- In general, they don't have major vehicular issues.
- King Tide issues, from E Ocean Blvd all the way to A1A, is underwater, areas become impassable.

Town of Manalapan (Town Manager Eric Marmer) on 9/17/25

- He noted they do not have bike facilities; there is barely a shoulder for bicyclists to use.
- Their town doesn't have a rescue vehicle, but they do have one fire truck.
- (Rail) crossing at Federal poses an issue where traffic backs up. Concerns for emergency response vehicles. There is a need for coordination with the bridge closures, rail, etc.
- Traffic signal timing concerns (on County facilities) can be emailed to ENG-Timing@pbc.gov

Town of South Palm Beach (Town Manager Jamie Titcomb) on 9/17/25

- Major issues for their residents: sidewalks; safe, well-lit, options to traverse their town
- No sidewalks along A1A on the west side
- A1A: 100' is entirely owned and maintained by FDOT; they have service agreements in place for street lighting, etc., but this ROW is mainly controlled by FDOT.

- Their community had a Hit & Run fatality 2 years ago. A pedestrian (wearing dark clothing) was struck and killed along A1A, at dusk. He noted there have been many near misses.
- Intersection improvements have occurred at Ocean Ave and S Ocean Blvd (the main drag that comes in from Lantana, over the bridge)
- They are plagued by King Tides, especially during this time of year. King Tides regularly floods parts of town. Noted there is no place for the water to go.
- FDOT directs them to apply for TPA grants (for pedestrian improvements)
- Synchronization of lights along the municipalities was brought up; PBC has agreements with most of the municipalities to maintain signals, intersections, etc.

City of Boynton Beach (William Leidy, City Engineer) on 9/9/25

- Lack of walk/bike facilities east of I-95 in neighborhoods. Some west of 95, but specifically east of. Commissioners are concerned due to demographics.
- They have a program called Drive Safe Boynton to put in speed mitigation, do temporary improvements with speed humps and then Public Works will make it permanent if successful. Looking for additional funds for speed mitigation.
- Between Woolbright and Boynton Beach Blvd cut through traffic issues (residents and commuters).
- Lots of development (residential & mixed-use, 10 story buildings) around Ocean/BB US 1 area with Brightline through here. They want downtown to be more of a live, work, play area and increase ped and bicycle traffic.
- Long stretches without fencing and need rail safety, especially between Federal and Seacrest.
- They have several rail crossings, rail safety in certain areas would be good to have as part of the SAP; they don't have a lot of funding for rail safety initiatives.
- Two elementary schools (Galaxy and Forest Park, both E of I-95). Long stretch without signalized intersections; mid-block crossing need (NW quadrant), lots of traffic on Boynton in the AM peak
- No data to back that up at the time.
- On Woolbright Road across from elementary is Little League Park. Lots of off-peak events there. Woolbright has no bike lanes, narrow sidewalks, and there's a cemetery east of the park which limits the improvements that can be made
- Will talk to commissioners later this week and may have more to share

Village of Golf (Village Manager Christine Thrower) on 9/15/25

- The residential part of their community is south of Golf Road.
- They are mostly a gated community, and because of that, they don't have a lot of coordination with the County.
- Speed limit is 45 mph along Golf Road, but many used to drag race on this road.
- They experience seasonal traffic problems.
- Mentioned there's a 100' county easement, and they can't do much because of this.
- Historically, she's unaware of any traffic calming improvements.
- The intersection of Golf and Congress is a challenging one, and she expects there to be a lot of crashes/collisions here. The same goes for Golf and Military. Woolbright and Military too potentially.
- She's curious about the traffic counts on these roads. She's heard that Golf is the reliever road to Woolbright but would like to know what the traffic counts are for the roads in and around Golf
- Melissa said the County has Turning Movement Counts at intersections, [TURN-Counts.pdf](#) and also shared their home page: [Engineering and Public Works - Traffic Home](#)

- She said Golf Road is too dangerous for bikes, and she seldom sees people walking (there are no sidewalks). Golf Road is about 2 miles long, and a mile of it is in the Village. If sidewalks were put in, it would be people's private property. When people go for a walk, it is in the early morning and at dusk.

City of Delray Beach (Jason Kaufman, Engineering Division Manager) on 9/9/25

- Similar concerns (like Boynton Beach) with the rail crossings; they've been exploring things with the FEC but have funding challenges
- **Delray Beach has their own SS4A effort, focus on city roads, they've hired a consultant, kicking off soon. He will share and may answer the questions we sent ahead of time.**
- Focus on crashes but expanding on other things like striping, crosswalks, signage, correcting their reflective pavement markings, etc. Coordinating with police over the years – the top 5 crash intersections are always state and county road intersections. Will probably come up in our analysis.
- He lives near Hypoluxo. Lots of crashes there including red light running violations. Are we looking into red light running cameras?
- Lane widths are very wide. They are looking at narrowing lanes but asked about (the County's) repaving efforts – what can be done regarding safety when those projects take place? Melissa and Jason spoke on the topic and agree we don't want to miss out on opportunities to improve a roadway. Jason is going to dig up the email exchange and send it to Melissa.
- Projects with the TPA are coming into fruition now such as Shared Use Lanes but reports folks are not comfortable biking. Sees a benefit to facilities off the road – will get more usage.
- Connectivity issues he is experiencing. Shared a story of biking along Hypoluxo to Federal where there are parts with no sidewalks – mentioned east bound, south side of Hypoluxo, leading up to I-95.
- Delray Beach has a traffic calming program in the city with a process to gather data, analyze it, and this includes working with neighbors. Folks can apply and data/thresholds trigger a treatment or not. Tend to do speed humps. Have tried chicanes, mini roundabouts, etc. but the public hasn't liked them, and some have even been removed.

Coalition of Boynton West Residential Associations (COBWRA) with Irwin Cohen, Transportation Chair on 9/9/25

- COBWRA has 106 communities, 140K residents
- For the most part, he is pleased with the safety and movement of traffic, in a good place and getting better
- Their main concerns are with development being built before infrastructure is put into place, sees this as a very significant problem. They believe the state and county have a great deal to do in this regard.
- Fadi noted the imbalance has been created due to new laws
- As for alternative transportation (biking and walking) – Irwin noted they are west of downtown/urban activity saying they have limited to no public transit in their communities. Mentioned 2 people seriously injured near their communities (but not in their community).
- Flavor Pict Road is a unique facility - lots of people “playing in the sandbox”
- Concerned about Home Rule, they want BOCC to have a say about how and when development is done (versus the state), this puts a lot of strain on community groups too
- They are pleased the County is doing the study.

District 5, Commissioner Maria Sachs - 10/22 @ 1pm | Visual: [D5-Map.pdf](#)

D5 Municipalities/Jurisdictions: **Delray Beach, Boca Raton, Lake Worth Drainage District, COBWRA, and Alliance of Delray Residential Associations.**

City of Delray Beach (Jason Kaufman, Engineering Division Manager) on 9/9/25

- Similar concerns (like Boynton Beach) with the rail crossings; they've been exploring things with the FEC but have funding challenges
- **Delray Beach has their own SS4A effort, focus on city roads, they've hired a consultant, kicking off soon. He will share and may answer the questions we sent ahead of time.**
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City of Boca Raton (Naresh Machavarapu, City Traffic Engineer) on 9/15/25

- **Kimley Horn is Boca's consultant for their Safety Action Plan/SS4A Grant. They've developed their HIN, completed neighborhood safety meetings, collected comments on their High Injury (Crash) Network, and they hope to have their plan completed in September 2025. They plan to coordinate with additional agencies beginning in October and finalize by end of this year (like PBC's timeline).**
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- **Naresh asked how locals can give their priorities to DOT in a meaningful way. He would like to be better aligned with DOT's process and understand what they have in their pipeline. This will inform Boca's Safety Action Plan.**

Lake Worth Drainage District (Reagan Walker, Assistant Executive Director and Gabe Margasak, PIO) on 9/17/25

- They have more flood control issues versus traffic safety concerns. Pedestrian crossings come into their permitting queue, also mentioned guard rails.
- They provided comments on the County's Transportation Master Plan (CTMP) regarding access paths that conflict with their maintenance obligations. She will share their comments with Melissa. <she emailed their comments after the meeting>
- She mentioned the need for coordination with major projects. For example, they could have a major rehabilitation project coming up for one of their canals that could occur a year before a major roadway improvement so it would be good to coordinate schedules.
- She mentioned their PIO, Gabe, receives safety concerns when people fish from their ROW. They also receive requests to restrict vehicular access yet when a gate is installed, it slows down their maintenance capabilities. They maintain 500 gates.
- They permit perpendicular crossings, but the parallel requests are more challenging, and they must be approved by their Board.
- She concluded by saying the drainage system has been around for 100+ years and cannot be expanded.

Coalition of Boynton West Residential Associations (COBWRA) with Irwin Cohen, Transportation Chair on 9/9/25

- COBWRA has 106 communities, 140K residents
- For the most part, he is pleased with the safety and movement of traffic, in a good place and getting better
- Their main concerns are with development being built before infrastructure is put into place, sees this as a very significant problem. They believe the state and county have a great deal to do in this regard.
- Fadi noted the imbalance has been created due to new laws
- As for alternative transportation (biking and walking) – Irwin noted they are west of downtown/urban activity saying they have limited to no public transit in their communities. Mentioned 2 people seriously injured near their communities (but not in their community).
- Flavor Pict Road is a unique facility - lots of people “playing in the sandbox”
- Concerned about Home Rule, they want BOCC to have a say about how and when development is done (versus the state), this puts a lot of strain on community groups too
- They are pleased the County is doing the study.

Alliance of Delray Residential Associations (Lori Vinikoor, President) on 9/9/25

Lori mentioned their top priorities are as follows:

- 1) Medians: Landscaping and maintenance falls to the neighborhood associations (height is to be 30"); Lyons Road and Flavor Pict Road, bushes can obstruct drivers' views; when will a signal come here? She took a course on this at Rutgers, very passionate about this, and said grass is the best groundcover. She wants to know what's being put in b/c her recommendation is landscaping should only be Washingtonian Palms and grass. Her top priority here is safety and visibility b/c HOAs are responsible for it (whenever there's a PUD). Bushes and other groundcovers can become unruly and obstruct views. Fadi shared his screen (Google Earth). Medians historically are an issue, can collect trash. Her trouble spot is Flavor Pict Road and 41 (dangerous) so she avoids it and goes elsewhere.

- 2) Flavor Pict Road along the Turnpike, what's the status of the project? Also, Sims Road from Atlantic (to Linton) status, needed for fire rescue access. She thinks these are either HIN or have issues related to emergency response.
- 3) eBikes should only be in bike lanes. She said when you're riding a bicycle, you're considered a pedestrian. These bikes and scooters fly through. Fadi said some travel 35 to 40mph, he believes this should not be allowed.
- 4) Traffic signals (did not catch where but she mentioned using AI at intersections)
- Lori mentioned last year, Valencia members communicated that Lyons Road doesn't have sidewalks (along the undeveloped parts)
- Lori noted that she believes Lyons & Atlantic should or could be on the HIN (where the Tax Collector and DMV will soon have an office). She also mentioned Lynton & Military, and Congress & Atlantic.
- Fadi said their consultants will investigate best practices for medians (and safety)

District 6, Vice Mayor Sara Baxter - 10/16 @ 10:00 am | Visual: [D6-Map.pdf](#)

D6 Municipalities/Jurisdictions: **Indian Trail Improvement District (ITID)**, Wellington, Westlake, **Loxahatchee Groves**, **Royal Palm Beach**, **Belle Glade**, **Pahokee**, and South Bay.

Indian Trail Improvement District (ITID) (Scarlet Cantley, Administration & Grants Coordinator) on 9/17/25

- They are also in the SS4A process and just submitted their NEPA documentation.
- **Melissa asked where they were in their process. They heard back yesterday that they (USDOT) received their NEPA documents, and they expect their (Safety Action) plan to be finalized in April 2026. Their Engineer, Mr. Foy, will oversee their bid process to get a consultant on board.**
- Burgess (her boss) has met with the County's Engineering Dept to talk about speed limits and 4-way stops
- They have new development coming which means more people, more traffic; some of their intersections with county roads are dangerous with high crashes along with some dangerous local roads.
- They are working on traffic calming measures (rumble strips, etc.), and at night there are other concerns due to no streetlights (and canals) which make for a dangerous combination
- They have equestrian uses and crossings
- They have a 2019 Mobility Plan which helped inform their SS4A grant.
- She mentioned it's been challenging working with the (USDOT) Grant Manager with a lot of turnover and lack of communication.
- Since they are a special district, they lack the authority to make changes like reducing speed limits, and their biggest struggle is when motorists get impatient (aggressive driving and distracted driving).

Town of Loxahatchee Groves (Town Manager Francine Ramaglia, Mary McNicholas, Lobbyist, and Richard Gallant, Public Works Director) on 9/12/25

- The Town has a partnership with PBC through the TPA for traffic calming.
- They are a rural, agriculture, and equestrian community. Wellington also bleeds into their town.
- They put in 6 crossings, then their Council changed, and all were denied.
- **They have been designated a Rural Community and would love to go for grants with PBC**
- They've been denied grants, most recently found out about a denial last Wednesday for a Rural Communities Grant.
- N/S access is a priority; they have roundabouts planned.
- Their elected officials want to keep Folsom a Rural Parkway, no desire to increase speed limits.
- They have no interlocal agreement with the County, need to accommodate the needs of their traffic flow.
- Okeechobee Blvd is their biggest issue; they are installing speed cameras within school zones.
- They've had rollovers from Okeechobee Blvd into canals
- Lots of residents do not have cars and use alternative transportation, like bikes and horses, and they need help traversing E/W along Okeechobee Blvd. Golf Carts are allowed on all roads; they have an ordinance.
- Many of their destinations are near Okeechobee Blvd. Road maintenance concerns and drainage issues (people end up in ditches).
- Many of their local roads are narrower than they should be due to ROW and property rights.
- School issues: children will go past the guardrails to get to their parents' cars sitting on Folsom Road. A group meets regularly about school zone safety, and it is organized by the County.

Village of Royal Palm Beach (Chris Marsh, Village Engineer and Ray Liggins) on 9/12/25

- Okeechobee Blvd, only 5 to 6' sidewalks, many bike lane gaps, they are ROW constrained
- There's a multiuse pathway through the entire city, and Okeechobee is major barrier to that pathway. They are looking at options to improve this.

- Schools: queue along major roadways. HL Johnson Elementary has two major roadways (Royal Palm Beach Blvd is one of them, Crestwood was also mentioned).
- For students to walk or bike to school, they need shade. And to make school zones safer, travel times will be impacted.
- They do traffic plans for each school. Chris gets with each principal about their traffic plan, and Ray meets with them once a year as well.

City of Belle Glade (Assistant City Manager, Zayteck Marin) on 9/11/25

- Access issues, especially during severe storms. There is one way out if heading north, and it's one lane.
- Lots of farmland in Belle Glade; truck traffic causes a lot of safety concerns.
- Guard rails are important, especially since Belle Glade has many canals.
- Concerns with sidewalk maintenance. Many are in horrible condition; they need to replace them more often than every 20-30 years.
- Other facilities mentioned: 715 (SR) and Canal Street (County Road) as well as Alt 80 (the road condition is poor, and it has a lot of truck traffic).
- Zayteck mentioned a TPA agreement with DOT; street lighting could be completed in 2026.

City of Pahokee (City Manager Michael Jackson) on 9/11/25

- Connectivity is a top priority for him
- Opportunities at municipal boundaries; they have many local roads that intersect and/or connect to county roads (State Market Road in particular).
- Fatal crash occurred in Pahokee last year (on a county road that leads into Pahokee). Fadi said there's a study for it.
- Concerns: sharp turns, lack of lighting, truck traffic, and agricultural lands.
- Fadi asked if they have guard rails. Michael will get with his staff to find out more. Fadi said the team will review best practices for guard rails (and guidelines)
- Some roads have been identified for no truck traffic, but truckers continue to use them. They've re-routed truckers but it is an ongoing issue. There is a need for truck route enforcement.
- Their economy is focused on agriculture, but the road materials and standards should be reconsidered, and a new design is needed, especially for heavy truck use.
- They want to build and strengthen opportunities for schools

District 7, Commissioner Bobby Power Jr. - 10/01 @ 9am | Visual: [D7-Map.pdf](#)

D7 Municipalities/Jurisdictions: **West Palm Beach, Riviera Beach**, Mangonia Park, Palm Beach Shores, Lake Park, Palm Beach, Lantana, Hypoluxo, **Boynton Beach, Delray Beach, COBWRA, Alliance of Delray Residential Associations**, and **Port of Palm Beach**.

City of West Palm Beach (Jessica Keller, Parking & Mobility Administrator) on 9/3/25

- She wants to help amplify the county's messaging and engagement and will provide data findings.
- **Part of their bike master plan update: worst areas are county and state-maintained roadways. Data findings include:**
 - Highest crash locations
 - Prioritizing bike infrastructure projects overlapping with crash analysis findings – they didn't overlap (this is good)
 - Includes prioritization framework for downtown mobility plan that will be expanded citywide
 - Implementing their projects in a very logical way
 - She will share everything with us in raw form and summaries
- Interested in school specific questions (Dealing mostly with school traffic issues)
 - SRTS – are these going to be connected?
 - Fadi spearheads safety and school efforts
 - They coordinate with PBSO and school police
 - Can apply via the TPA TA applications
 - Have their own sidewalk projects, prioritizing sidewalks to school
 - AI/CAV
 - Pilot – nothing in the safety context. Will share safety info on this.
 - Is Guidant operating in Boca?
- Electric scooter/bike topic:
 - City is handling how – bike master plan meeting, creating a low stress network. Separated infrastructure for everything to the extent that they can. Updating their code where there are conflicts.
 - Promoting not driving alone.
- Launching transit program. It's an RFP. Had to re-advertise. Transit solution is envisioned for everything east of I-95

City of Riviera Beach (Deputy Chief Kevin Coppin, Sgt Brian Desantis, and City Manager Jonathan Evans) on 9/9/25

- Starting from E to W, they have lots of pedestrians, and noted their crosswalk situation at dusk and during dawn
- Sees a speed reduction opportunity to access the beach (Singer Island) on Ocean Drive to get to PGA from Blue Herron; said a pedestrian was struck due to lighting issues
- There's a need for flashing beacons as you go west along Blue Heron, re-striping can help too, and they're also dealing with issues from construction as you move west here
- Began by saying they are a large industrial city
- N/S: Military trail, Barack Obama, Alternative A1A. Noted traffic enforcement, they're seeing a downward trend with fatalities but an uptick with ped/bike (crashes) and seeing more eBikes so more crashes with them too
- Enhanced ped crossings and lighting improvements are coming, but they have long stretches on these state roadways (W Blue Heron to Silver Beach) with no traffic control signals
- On the south end (before entering North Palm Beach), southern limits seeing speeds of 60mph or higher

- Although there's commerce along these corridors there are also residential areas, visitors (especially to Peanut Island), and because of this, they need to ensure signage and traffic control devices are there
- SR 7/Bee Line Hwy - thousands of tractor trailers in and out of the port (FedEx/Cisco/etc.), and the Police Chief must designate truck routes because these heavy machines are entering roads they shouldn't
- Central/Industrial Drive & Blue Heron have asked for Traffic Control Signals due to the high rollover rate resulting in fatalities and injuries (T-Bone crashes aka front to side collisions)
- Mentioned Executive...they've consistently requested studies but have been denied
- Continuous change of traffic patterns; moderated by Florida Highway Patrol (FHP), but they have been leaving the crashes to the locals (between Military Trail and Bee Line and the rail)
- Dire Road to VA Hospital/Military Trail sees daily gridlock; SR 7/Bee Line Hwy too
- School buses along Military Trail
- General theme: their fatalities are down but pedestrian crashes are up
- They would like to see green paint and rumble sticks to give motorists advanced warning
- He noted behavior issues with motorists (towards pedestrians I think)
- They've seen an uptick of pedestrians & vehicle crashes and more ebike crashes (40 to 45 is the number he referenced for eBikes – unsure of the period here but could be for 2025)
- Melissa mentioned a virtual meeting at TPA tomorrow, [E-Bike & Micromobility Safety Workshop - Palm Beach TPA](#)
- **Sonide Simon, Principal Planner joined at the end and asked how we are going to work with their local efforts because they have their own Safety Action Plan effort starting soon (status: they haven't signed their contract yet)**
- She asked if anyone mentioned Garden Road (noted large trucks use this route), mentioned Military and how it's scary to be a bicyclist, and noted that Blue Heron has a school.

City of Boynton Beach (William Leidy, City Engineer) on 9/9/25

- Lack of walk/bike facilities east of I-95 in neighborhoods. Some west of 95, but specifically east of. Commissioners are concerned due to demographics.
- They have a program called Drive Safe Boynton to put in speed mitigation, do temporary improvements with speed humps and then Public Works will make it permanent if successful. Looking for additional funds for speed mitigation.
- Between Woolbright and Boynton Beach Blvd cut through traffic issues (residents and commuters).
- Lots of development (residential & mixed-use, 10 story buildings) around Ocean/BB US 1 area with Brightline through here. They want downtown to be more of a live, work, play area and increase ped and bicycle traffic.
- Long stretches without fencing and need rail safety, especially between Federal and Seacrest.
- They have several rail crossings, rail safety in certain areas would be good to have as part of the SAP; they don't have a lot of funding for rail safety initiatives.
- Two elementary schools (Galaxy and Forest Park, both E of I-95). Long stretch without signalized intersections; mid-block crossing need (NW quadrant), lots of traffic on Boynton in the AM peak
- No data to back that up at the time.
- On Woolbright Road across from elementary is Little League Park. Lots of off-peak events there. Woolbright has no bike lanes, narrow sidewalks, and there's a cemetery east of the park which limits the improvements that can be made
- Will talk to commissioners later this week and may have more to share

City of Delray Beach (Jason Kaufman, Engineering Division Manager) on 9/9/25

- Similar concerns (like Boynton Beach) with the rail crossings; they've been exploring things with the FEC but have funding challenges
- **Delray Beach has their own SS4A effort, focus on city roads, they've hired a consultant, kicking off soon. He will share and may answer the questions we sent ahead of time.**
- Focus on crashes but expanding on other things like striping, crosswalks, signage, correcting their reflective pavement markings, etc. Coordinating with police over the years – the top 5 crash intersections are always state and county road intersections. Will probably come up in our analysis.
- He lives near Hypoluxo. Lots of crashes there including red light running violations. Are we looking into red light running cameras?
- Lane widths are very wide. They are looking at narrowing lanes but asked about (the County's) repaving efforts – what can be done regarding safety when those projects take place? Melissa and Jason spoke on the topic and agree we don't want to miss out on opportunities to improve a roadway. Jason is going to dig up the email exchange and send it to Melissa.
- Projects with the TPA are coming into fruition now such as Shared Use Lanes but reports folks are not comfortable biking. Sees a benefit to facilities off the road – will get more usage.
- Connectivity issues he is experiencing. Shared a story of biking along Hypoluxo to Federal where there are parts with no sidewalks – mentioned east bound, south side of Hypoluxo, leading up to I-95.
- Delray Beach has a traffic calming program in the city with a process to gather data, analyze it, and this includes working with neighbors. Folks can apply and data/thresholds trigger a treatment or not. Tend to do speed humps. Have tried chicanes, mini roundabouts, etc. but the public hasn't liked them, and some have even been removed.

Coalition of Boynton West Residential Associations (COBWRA) with Irwin Cohen, Transportation Chair on 9/9/25

- COBWRA has 106 communities, 140K residents
- For the most part, he is pleased with the safety and movement of traffic, in a good place and getting better
- Their main concerns are with development being built before infrastructure is put into place, sees this as a very significant problem. They believe the state and county have a great deal to do in this regard.
- Fadi noted the imbalance has been created due to new laws
- As for alternative transportation (biking and walking) – Irwin noted they are west of downtown/urban activity saying they have limited to no public transit in their communities. Mentioned 2 people seriously injured near their communities (but not in their community).
- Flavor Pict Road is a unique facility - lots of people “playing in the sandbox”
- Concerned about Home Rule, they want BOCC to have a say about how and when development is done (versus the state), this puts a lot of strain on community groups too
- They are pleased the County is doing the study.

Alliance of Delray Residential Associations (Lori Vinikoor, President) on 9/9/25

Lori mentioned their top priorities are as follows:

- 1) Medians: Landscaping and maintenance falls to the neighborhood associations (height is to be 30"); Lyons Road and Flavor Pict Road, bushes can obstruct drivers' views; when will a signal come here? She took a course on this at Rutgers, very passionate about this, and said grass is the best groundcover. She wants to know what's being put in b/c her recommendation is landscaping should only be Washingtonian Palms and grass. Her top priority here is safety and visibility b/c HOAs are responsible for it (whenever there's a PUD). Bushes and other groundcovers can become unruly and obstruct views. Fadi shared his

screen (Google Earth). Medians historically are an issue, can collect trash. Her trouble spot is Flavor Pict Road and 41 (dangerous) so she avoids it and goes elsewhere.

- 2) Flavor Pict Road along the Turnpike, what's the status of the project? Also, Sims Road from Atlantic (to Linton) status, needed for fire rescue access. She thinks these are either HIN or have issues related to emergency response.
- 3) eBikes should only be in bike lanes. She said when you're riding a bicycle, you're considered a pedestrian. These bikes and scooters fly through. Fadi said some travel 35 to 40mph, he believes this should not be allowed.
- 4) Traffic signals (did not catch where but she mentioned using AI at intersections)
- Lori mentioned last year, Valencia members communicated that Lyons Road doesn't have sidewalks (along the undeveloped parts)
- Lori noted that she believes Lyons & Atlantic should or could be on the HIN (where the Tax Collector and DMV will soon have an office). She also mentioned Lynton & Military, and Congress & Atlantic.
- Fadi said their consultants will investigate best practices for medians (and safety)

Town of Lantana (Eddie Crockett and Daniel Navas, Police Department) on 9/15/25

Listened to discussion.

Port of Palm Beach (Gary Dunmyer, Port Engineer and Keith Leggett, Assistant Director of Operations) on 9/9/25

- Gary used to work with Fadi at PBC. He has been at the Port for 8 months; Keith since 2011.
- Fadi asked Gary what their general transportation needs are at the port
- Gary shared his screen (Google Maps, used 84 Maple Lane as address), zoomed in on the cruise terminal
- Gary noted they are a smaller port with smaller boats. A cruise ship is typically parked there on Monday, Wednesday, and Friday. Three kinds of trips, and cruise ships arrive in the AM with passengers usually out by noon. 1,400 passengers per trip, and they have about 500 cars that need parking for this size ship.
- The debarking process is quick (8 to 11am, usually by 10am), doesn't back up too much but if it does, occurs along 11th towards Broadway (Gary noted it's gotten better since they moved to self-parking)
- Passengers show up between 10am to 3pm
- Just one cruise ship now but they expect to get a bigger boat and will have more cars to park; they may build a parking garage
- They get a lot of drop-offs with Uber and Taxis (30% rideshare for both pick-up and drop-off)
- Is there a shuttle or some sort of service between the airport and the port? Keith said no but talked about potential southern end options
- Cruise activity slows starting in September, they will pick back up in March (they get more local traffic b/c they have shorter trips; the longer sailings have more out of town traffic)
- They are mainly an export port, with lots of trucks/TEUs average per train, cargo traffic is Tuesday thru Saturday
- 24-hour port; largest shipper is Sugar (they get a lot of Sugar trucks)
- No connection from Port to Tri Rail yet Gary takes Tri Rail and rides his scooter to work
- Per Gary, MLK is a very wide road, seems overbuilt based on the existing traffic
- As a commuter, Gary talked about 45th Street and 95 intersection being highly congested
- 45 and US 1, feels very narrow, tough turn for tandem trucks (they try to keep their tandems on MLK but if there's a backup and a reroute, it can get tricky); DOT could move the stop bar back
- Blue Heron: they both avoid this one (as commuters). Keith adjusted their schedule, so FEC doesn't cause a backup (example: trains now come in at 6:30am versus 8am)

- What are their safety concerns? Broadway and 11th St gets complaints (Gary feels it should be a right-out only; when they build the garage, they'll probably convert it). Gary also noted that 5 lanes seem like too much (could have wider sidewalks, more grass)
- Marina area is getting new development (they said this area is ready to explode)
- Gary said Broadway and Access Road sees crashes, and he's asked DOT to trim the trees there
- Loop Way and Broadway see crashes as well as along 11th where there is no traffic signal
- MLK and Barack Obama (with railroad parallel with Barack Obama) – Gary doesn't think Barack Obama needs 4 lanes there, doesn't seem to get the traffic between 45th and MLK (he doesn't think they get 16K cars/day)
- Gary noted they are landlocked, and the city seems to be resistant to them acquiring more land. He noted they may even have to sell back land.
- Southside of port is FPL, and they may have some upcoming development
- Are there any other unsafe areas to note? Keith said FDOT is working on some improvements, but they noted the intersection of Bee Line and Blue Heron as a bad one (N bound on 710, major backups, almost all the way to Blue Heron)
- Gary mentioned they have a \$29M effort coming up. He will share the Traffic Study they completed (monitoring truck traffic b/n MLK and Broadway)
- What is the preferred truck route? MLK for containerized cargo; other goods via the south entrance
- And what is the preferred passenger route? Cruise passengers enter via 11th and Broadway

Other Stakeholders

Transportation Planning Agency (TPA) and Treasure Coast Regional Planning Council (TCRPC) on 9/16/25

Attendees: Tom Lanahan, SFRPC Executive Director; Brian Ruscher, TPA Deputy Director of Multimodal; Andrew Uhler, TPA Deputy Director of Programs

- The TCRPC just finished a Safety Action Plan for Greenacres:
 - Greenacres has a lot of bicycle users and pedestrians interacting with vehicle traffic, especially along Military Trail/Lake Worth and Forrest Hill/Jog.
 - Roads in that area are ROW constrained, and the TCRPC developed an alternative/parallel network.
- The TCRPC talked to the Lake Worth Drainage District (LWDD) again:
 - They weren't accepting as expected.
 - A low stress network is ideal. Looking to assess where paths cross.
- School safety
 - Lots of kids walk and bike, and we want to encourage that.
 - We want to identify the best and most efficient ways to get them to school.
 - Alternative network helps tremendously.
- Other plans should be reviewed:
 - Lake Worth Beach (several plans, including a Mobility Plan, a Ped/Bike Plan, and a Parking Plan)
 - Greenacres
 - Wellington
 - Palm Springs is adopting soon
- TCRPC and TPA noted and/or asked the following about the County's Safety Action Plan:
 - Suggested to go out and experience the High Injury Network (HIN)
 - Priorities: fill sidewalk gaps and crosswalks to connect paths
 - Education and enforcement included? Yes.
 - Reviewing the County standards/typical sections, PPM, etc.? Yes.
 - Fitting bike and ped facilities is a challenge
 - Seriously look hard at the HIN and smooth and reduce overall mileage
 - After 3 iterations there is still too much to chew on
 - Need to reconcile with an implementation plan
 - Be realistic
 - Have a funding call out for safety projects to move forward and tie it to the plan
 - Let the TPA know what projects come out for the SHS so all are connected
 - Look for opportunistic locations based on what roads are getting work done
- Andrew asked about the top 10 locations covering 20% of FSI
 - Jog and Military is always at the top
 - Hopefully flashing yellow arrow will help
- Andrew was curious about what else is being explored
 - A crash rate spreadsheet was developed
- Speeding and aggressive driving: compared to our peers, we are #1 – more than twice represented
 - This is a major emphasis area from the TPA's Vision Zero Action Plan
- Get more micromobility health care data from Brian
- All County Road comments go to the Engineering Action Center

Attendees: Katie Kehres and Tracey Xie

- Lots of different action plans are going on. They are sent to the entire safety team for review.
 - Safety team includes design construction maintenance program management traffic ops PLEMO.
 - PHBs aren't on state roads for an example – this was a comment left for a review.
 - Brings different perspectives across specific focus elements. Low stress multimodal plan reviews are ongoing for Broward right now.
- They recognize people don't know who maintains a roadway.
 - Protected bike lane treatments example – Tracey is working on a flow chart of when to recommend what...trying to create consistency! Starting with separated bike lanes.
- Data-driven approaches are encouraged. PBC to share deliverables and plan for FDOT Safety Team to review
- Melissa asked about e-bikes, scooters, etc. and mentioned the legislation that was passed this year with a definition of what micromobility is (i.e., went into statute this year). Expect to create new tip cards on it.
 - Courtney Cannon (CTST coordinator) – e-bike panel and putting together PSAs. Safety PIO.
- Is there a way to better coordinate construction timing and syncing up between agencies (North Lake example)? Also asked about Road Rangers on arterials. Seemed to be a no to both requests.
- Safety projects – engineering standpoint.
 - Target Zero goal.
 - SHSP emphasis areas align with the District emphasis areas.
 - FSI are a focus for the District. Trying to address it proactively (RSAs – identify locations for each county and in alignment with emphasis areas) and reactive (elected official requests etc.).
 - Reach out to stakeholders for safety concerns. Worked with PBC, helped them to fund projects (FYA was mentioned).
 - Funding is the challenge. Update the LREs in the Work Program. Cost estimates keep rising!
- <https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.palmbeachpost.com%2Fstory%2Fny%2Fn...>
- The Safety Action Plan's Open House, website, and comment maps were mentioned. State requested any feedback on the state system.
- Get the task force meeting scheduled.
- If the County has in person events, they offer a Target Zero table/support.
- 2026 Safe Streets Summit to be hosted in Palm Beach County.

2025 TRAFFIC SAFETY BILLS

Transportation

HB 567 / SB 462

Updated Definitions

- **Dynamic Driving Task:** adds "provision of event-based information, advice, instruction, or revised goals"
- **Micromobility Device:** specifies typical dimensions, weight, and speed ranges. Broadens definition to include both human and nonhuman-powered devices, which may be individually owned or part of a shared fleet

Amends:

F.S. 161.58 212.20, 316.003, 316.183, 316.187, 316.20655, 316.2128, 316.0849, 331.3051

Creates:

F.S. 218.3211, 218.3215, 316.00832, 316.88, 320.0849



Local Control and Education

- Allows local governments to adopt an ordinance with minimum age and/or ID requirements to operate e-bikes, motorized scooters, or micromobility devices.
- Permits local governments to provide training on traffic laws and safe operation of e-bikes, motorized scooters, and micromobility devices.



8

South Florida Regional Transportation Authority (SFRTA) on 9/16/25

Attendees: Natalie Yesbeck, Marcus Thomas, and Paula Scott

- On Broward SS4A technical committee
- Uptick in pedestrian strikes in all three counties
- Fairly flat numbers wise with vehicle strikes
- FL is second highest state for strikes in the country
- They have been working with Volpe Group for trespassers and suicide prevention
 - One location in Lake Worth area identified and is a focal point
 - Gathered through cross trends on number of strikes in the area
 - Pedestrian patterns – crossing through tracks – whether be no fencing or fencing torn down
 - Majority are within corridor and not at intersections
 - Working with law enforcement, maintenance of way group etc. are trying to help remove opportunities for homeless camps
 - Fencing has been upgraded
 - SFRTA tries to separate out – away from a crossing or platform versus at a location one can expect to be crossing
 - Treatment for those incidents need to consider the condition
 - Need signing, striping, lighting etc. where we want people crossing
 - No lighting should be where we don't want people
 - Fencing everywhere is preferred
- Okeechobee in WPB: gates come down when train is at the station; desensitizing folks to stop
 - At the core of this is education.
 - There are FRA standards and gates must come down. It's rail safety week.
- There is a number posted if someone feels they are waiting in error
 - The signs aren't easy to see/read. Let's help make this issue known and fixed.
 - Railroad is responsible for this
- SFRTA said they can provide any data, etc. that the County needs, and the County will follow up and share what we hear.

Palm Beach County School District on 9/16/25

Attendees: Kathy Stakermann

- There is a lot of confusion about who to go to and who is financially responsible when an issue pops up on a city street.
- No clear answer on when the county will get involved and whose budget it will hit.
- The money drives a lot of their decisions.
 - Goal is to separate the kids from the cars and the cars from the buses.
 - And separate strangers from the school area.
- Priority is to keep kids safe. Want them dropped off in the safest area possible, not in the middle of a roadway.
 - She prefers ped bridges but understands they are too expensive (Downtown WPB was quoted at \$30M).
 - Always prefer side streets, and not the busy streets.
 - Police presence (bad performing parents are held accountable)

- It's hard to fix old issues.
- Disney seems like a GREAT example of how to manage herding people and keeping them safe and separated.
- Schools weren't originally designed for this new age type of drop off system.
- Traffic task force exists for the County. Kathleen sits on it.
- Kathleen's team visits schools often to see what is really going on. Then they try to think of a way to fix it and prepare reports. Safety officers make up the team.
- Other team members:
 - Yalayna has an idea to improve things.
 - Marisa (manager of building code services with the school board) works with Fadi and can enact things. Need to talk to her and connect her to the TPA.
 - The safety officers are certified parks safety specialist.
- Other issues:
 - Parents taking golf carts is creating an issue too. It would be good to separate this traffic.
 - E-bikes and e-scooters are a concern.
- Last thoughts:
 - Safety Officer – full-time position. Over 175 schools. Divided by the four of them.
 - AEDs, put them in place and tell them what to do with them but someone needs to check them monthly etc.
 - ESC (environmental safety compliance) They are a sort of safety dept. They intersect a bit.

Florida East Coast Railway (FEC) on 9/10/25

Attendees: Bob Ledoux, General Counsel

- Bob has been with the FEC for 15 years. He opened saying there have been many studies. One was done by the Volpe Institute in coordination with the Federal Railroad Administration (FRA).
- Bob reiterated that many studies have been done, and nothing has been implemented by the city nor the county. He said he will participate in the study but is not optimistic that anything will be done.
- The Volpe study is public, about 12 years old, and gave an example from the City of West Palm Beach where a (rail) crossing was closed, but a bus stop was never moved
- From his point of view, no improvements have been made from the study
- He gave an antidote in downtown West Palm Beach about how hedges are put up (vs fencing), and they seem to work better than fencing because people don't want to tear up their clothes going through hedging
- He noted how high rises are built next to the track, and there is not a lot of room (to install improvements)
- He said West Palm Beach will not build overpasses
- Mo addressed his comments by saying he understands they (the FEC) want the locals to close crossings and not have at-grade conflicts
- Bob noted that two crossings have been closed in the last 25 years, and that was for Brightline
- Bob says there's a policy within the county not to build overpasses, Mo said he is not familiar with that policy, but perhaps it is in the TPA's LRTP.
- Bob said whenever an overpass has been identified, whomever the (local) governing board is has said no. An example is 45th Street at the hospital overpass.
- Bob also mentioned how FEC serves the Port and there are only so many places they can go.
- Bob asked what's the end goal of this plan. Melissa answered by saying the county is analyzing crash data. She asked Bob: If we cannot implement an overpass, is there anything else we can do?

- Bob said they lead in fatalities per mile, not only in the US but in the world. He said some of the fatalities are due to mental health issues and suicides.
- Mo asked about false alarms with gates coming down
- Bob said the FRA requires them to take the gates down every month for testing (said there are 100 gates in West Palm).
- Bob said every crossing and gate has a telephone number, which is required by the FRA, and this (emergency) number has been on the gates for 30 years
- He said they are also required by the local code (Municipal Traffic Code) and are small, 8x10, blue with white letters. Brief discussion about how these signs are not very noticeable.
- Bob said the FEC's problem is Route 1. Mentioned a recent issue with a low-lying truck, trucks with a very low clearance, and how they get stuck on the tracks b/c the tracks are raised about 2 to 4 feet. He said they've added plastic delineators/poles, and this seems to be effective (to prevent vehicles from driving on the tracks)
- Bob mentioned they participated in a study for Okeechobee, but he said nothing came of it
- Fadi asked if they have priorities (for safety issues), and Bob said he could probably get them from Brightline because they have the most fatalities
- Bob mentioned there's a Boys & Girls Club in West Palm where their back door opens right by the tracks. This is an area for improvement.

Palm Beach Sherrif's Office (PBSO) on 9/12/25

Attendees: Commander Ryan Mugridge, Lt. Shandon Hood, and Cpt. Jason Karlecke

- Lt. Shandon Hood works with 5 units, he works for Ryan (the direct line to county)
- Cpt. Jason Karlecke/PBSO Traffic Division/Grants (processing DUIs and traffic safety grants from FDOT, resident "traffic nerd"). Nickname: KarleckeGPT
 - 7 different divisions, went over his units including DUI, Aggressive Driving, and School Traffic Safety (oversee crossing guards)
- Applied for and accepted 5 grants, one through UNF
 - High Visibility Bike & Ped Grant (bicycle education, data driven thru Signal4, \$100K)
 - Motorcycle Safety Grant, half funding goes to education (also includes scooters I think)
 - Seatbelt Enforcement
 - Speed & Aggressive Driving Grant, enforcement
 - DUI Grant, enforcement in high profile areas
- Every grant has an enforcement and education component
- Active on Facebook and Instagram
- "Safety for Life program"
- Large footprint for traffic safety; They are busy yet doesn't scratch the service
- Half of the Captain's division must cover the President's visits
- They work closely with Fadi
- Vehicle Homicide Unit, mapping capabilities, handles all minus WPB and Boca
- Sherrif's Office has the funding to help with data
- eBikes or scooters? They do education, and it's very unregulated, mentioned one place has an Ordinance yet electric scooters are not codified by State Statute, only thing they have is Bicycle Enforcement Statute but the (violation) cost is \$64 and no points
- FL Legislature is far behind state statutes, not codified, they can only enforce laws, they don't write them
- Ordinances are a good stop gap effort
- Statute would make regulations much easier

- This (eBike/eScooter Statute) is one of their top 3 issues
- Camera program (GinOptic is the company), eCitations (Village of Wellington's go live on Monday, 9/15)
- They see safety advantages with this technology, data from Georgia shows speeding goes down
- \$100 processing fee but if they don't pay it, it becomes a UTC
- The new legislation allows the camera to operate all day, 30 min before school opens and 30 min after
- When school is in session, citations are typically given if going 11mph over
- Ryan sees the benefit as children's safety (and not the revenue it generates)
- Beth McClane is one of the worst school zones in the county
- Other two issues: distracted driving/collisions is the biggest (many exemptions to the law like when people are touching their phones for navigation...texting while driving causes more crashes than anything else)
 - Should go with what CA did; theirs is if you're holding the device
- 2nd issue is 209K citations, majority removed by the magistrate, and over 60% are nullified (shares the Annual UTC Report for PBC in 2024...DHSMV traffic stats is a public site; Melissa shared her screen to make sure she navigated to the correct site)
- The Magistrate Program doesn't put points on drivers' licenses (for those decided as not guilty/dismissed, adjudication withheld, and dismissals)
- This falls under the Chief Judge in PBC
- Criminal cases are up over 50%
- Any other technology that would help them? He said Speed Cameras are a step in the right direction but moves it from 10mph over to 15mph. The point system is the control mechanism.
- Any hot spots we should focus on in the SAP?
 - Southern Blvd is a raceway, wide open spaces where speeds are high, crashes are higher
 - They have no E/W thoroughfares, Okeechobee and one other is what they have, the roadway network lacks E/W thoroughfares, problem since early 2000s
- Hood brought up another issue known as Operation Hotwheel, unofficial racing organizations that have come up from Miami-Dade and Broward Counties. They use Southern Blvd as their raceway, and their force is not as well staffed as Broward County's.
- Ryan: 30-day rule (seize vehicles) has been very effective, but hard to tackle problem with the limited personnel they have. The racers hide from them in warehouses/warehouse districts and one near the fairgrounds.
- Fadi shared the county cannot put speedhumps on roads with 40mph or higher speeds (so they lowered the speed to 35mph when these are installed/warranted)
- Is there anything else?
 - Impairment with DUI
 - Speed
 - eBikes, they were #1 in all counties, just dropped to #2
- Their relationship with the county is great, wish they had the same at the state level
- Speed cameras (putting 30 in the county) is a step in the right direction
- Nearly \$1M in funding last year for enforcement and education, and the Captain hopes to get the same amount this year
- Final thoughts: They deal with unique constraints. Off the record needs whenever President Trump comes to town.

Palm Beach County Planning and Zoning on 9/15/25

Attendees: Khurshid Mohyuddin, David Wiloch, Jorge Perez, and Thuy Shutt with Murriah Dekle (PM for the CTMP). William Wynn (and Houston Tate) with Community Revitalization.

Khurshid shared the County Transportation Element on his screen (said he will send these to us)

- Shared page 6 of 87, section 7 highlighted (Bike/Ped, and Linked Open Space Facilities) ~ master comp Bike Transportation Plan adopted in 2011
- Objective 1.3, Policies 1-3e and 1-3g
- Objective 1.4, Roadway System
- Bike/Ped also in Objective 1.9 (he went over many of these policies)
- Policy 1.4p (Traffic Division shall consider and implement traffic calming measures...)
- He mentioned these are going back to the TPA this week (on Thursday, 9/18)

Thuy said they are starting their Evaluation & Appraisal (EAR) process to update their Comprehensive Plan (aka, Comp Plan). This must be updated every 7 years. Said the SAP is perfect timing and will be incorporated into their EAR.

- She hopes that the CTMP recommendations can inform the Comp Plan
- Engineering and Planning can work together so they don't have conflicting policies
- Many comments are received during rezonings (aka, their zoning application approval process), and they receive complaints around not only school zones but private daycares along with the upcoming school zone cameras
- She said more development leads to more crashes (perceived)...comp plan could be backed up by these findings
- She asked if we need population data as part of the SAP

William shared the following:

- 84 communities are within unincorporated PBC
- Traffic calming, specifically speed humps, are well received by the community; also, near school zones
- Community interested in what determines speed limits
- Khurshid added onto this by saying most crashes occur due to lack of lighting, most crashes occur late in the evening, and time of day should be considered

Palm Beach County Safety Action Plan 2025

1.

Added October 28 2025

This crosswalk is insane. Crossing 2 lanes of traffic that's entering a freeway, and drivers have no incentive to stop or yield. We need to control traffic so pedestrians can safely cross this ramp onto I-95.

Liked 1 time
2.

Added October 29 2025

Need a ped button in the median for the east crosswalk. The westbound right turn has a green arrow that doesn't change when you hit the crosswalk button on the SE corner.

Liked 0 times
3.

Added October 29 2025

WB bike lane needs to be extended east

Liked 0 times
4.

Added November 11 2025

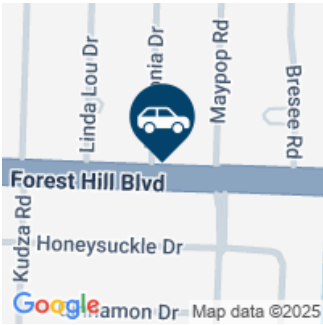
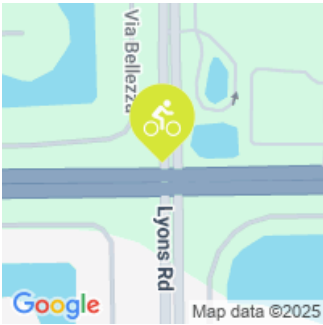
Left turns leaving the Vista Lago Apartment complex are extremely hazardous. A raised median separator or other device should be studied here, eliminating this movement entirely. It is only a matter of time before someone is seriously injured here.

Liked 0 times
5.

Added November 11 2025

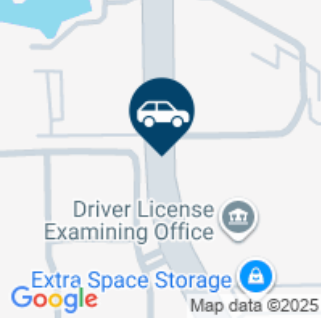
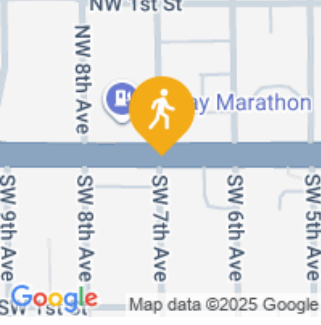
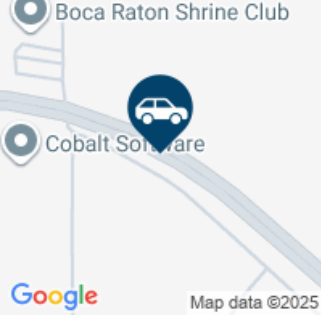
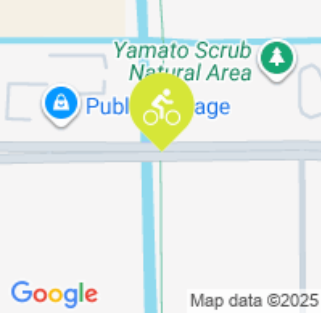
Lack of sidewalk on west side of neighborhood entrance for kids walking / biking to Pinehurst Middle School and residents walking to parks / shops.

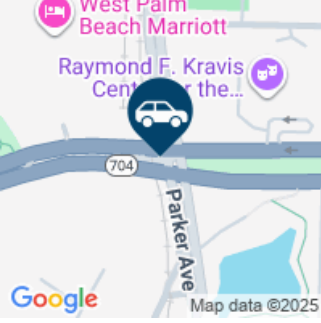
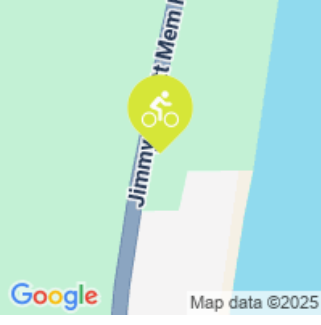
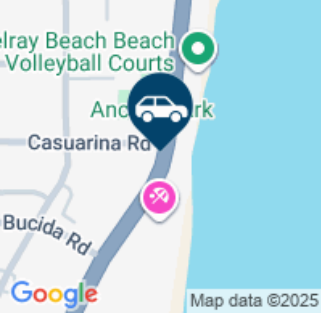
Liked 0 times

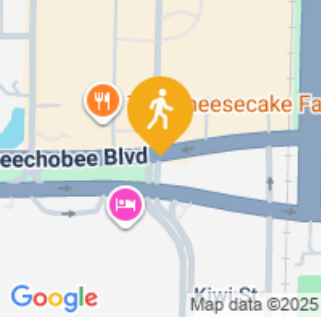
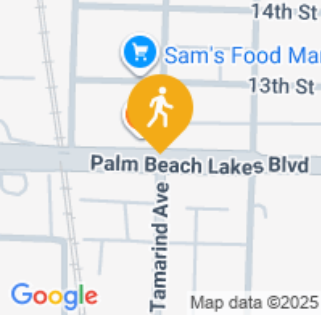
6.  Added November 11 2025
If there was a pedestrian access point here that was open for arrival / dismissal, it would make a huge difference for all the kids that have to get to this school- currently walk / bike or get dropped off via Jog Rd to Cholee Lakes Elementary School creating a long walk / bike trip and a lot of traffic back up.
Liked 0 times
7.  Added November 11 2025
High speed road that's dark at night can't see people walking / biking and long distances between intersections. Cars speed all day on this road.
Liked 0 times
8.  Added November 11 2025
There is no safe access from Dillman Trail / path to school - kids are dropped off at Dillman Rd and have to walk on grass / road to get to school. There should be an access point sooner or at least a pedestrian connection at the end.
Liked 0 times
9.  Added November 11 2025
All of Forest Hill to I-95 is scary to drive at night - cars drive fast, it's dark, and lots of people walk / bike that are hard to see
Liked 0 times
10.  Added November 11 2025
Lack of safe bicycle connectivity at intersections
Liked 0 times
11.  Added November 11 2025
Lack of safe bicycle connectivity at intersection
Liked 0 times

12.  Added November 11 2025
Cars speed on this road and it's dark at night, Hard to see other users and hard to turn left out of gated communities. Recommend adding roundabout and lighting.
Liked 0 times
13.  Added November 11 2025
Add roundabout to help calm down speeding cars and allow for cars to get out of neighborhoods
Liked 0 times
14.  Added November 11 2025
Dark road for people walking / biking - add lighting along Lyons
Liked 0 times
15.  Added November 11 2025
This intersection is way too big and scary for people walking and biking / trying to access transit stops and hospital / jobs / mall. Consider no turn on right and more visibility when someone pushes the signal to cross.
Liked 0 times
16.  Added November 11 2025
Intersection big and scary for people walking and biking. Consider adding no turn on right and more visibility when pedestrian pushes button to cross. Ensure they have enough time to get across and are visible.
Liked 0 times
17.  Added November 12 2025
Remove travel lanes because it's over capacity and reduce posted speed.
Liked 1 time

18.  Added November 12 2025
Proposed Roundabout and traffic calming
Liked 0 times
19.  Added November 12 2025
Need an El Rio Trail Connection.
Liked 1 time
20.  Added November 12 2025
El Rio Trail Connection
Liked 1 time
21.  Added November 12 2025
Add Queue lane for Calusa school pickup
Liked 0 times
22.  Added November 12 2025
Over capacity, reduce speed limit
Liked 0 times
23.  Added November 12 2025
Modify to roundabout.
Liked 0 times

24.  Added November 12 2025
Prohibit left turn movement to reduce crashes.
Liked 1 time
25.  Added November 12 2025
Prohibit left turns. Add Jug Handle turn lane
Liked 0 times
26.  Added November 12 2025
Please pave the potholes and implement speed reduction
Liked 1 time
27.  Added November 12 2025
Add more midblock crosswalks
Liked 1 time
28.  Added November 12 2025
Why is this road 4 lanes? There's no justification for this. Road diet.
Liked 0 times
29.  Added November 12 2025
HAWK signal needed. RRFB is not working.
Liked 1 time

30.  Added November 13 2025
There are no sidewalks to get to and from the bus stop.
Liked 0 times
31.  Added November 13 2025
Dangerous crossover for pedestrian and bicyclist since the road is an interchange but allows crossings at the ramps (on/off). Redesign sorely needed!
Liked 0 times
32.  Added November 13 2025
People never learn how to navigate this intersection because of the split lanes and crossing. Elevate the tracks or the road to create a better flow and eliminate the confusion. Also it is hard coming off Australian Ave and trying to get into the left turn lane with the curvy road and short distance to the intersection from the ramp. Just bad design.
Liked 0 times
33.  Added November 13 2025
Get rid of the golf carts! They take up space for people walking on the sidewalk and drive like they own the sidewalk. I might as well walk on the road now!
Liked 0 times
34.  **Albert | arichwagen@aol.com | 5617027433**, Added November 13 2025
75 feet of public right of way 2 travel lanes of 28 feet plenty of room for bike lanes specifically after many cyclist killed
No cyclist sharing road way signs
No road sharows No paved shoulder
NO BIKE LANES
Liked 1 time
35.  **Albert | arichwagen@aol.com | 5617027433**, Added November 13 2025
Cars run the red light daily here
Lots of speeding cars
Many fatalities on motor cycles bicycles and pedestrians
Liked 0 times

36.  **William Chad Kennedy, Executive Director | ckennedy@sirwcd.org | 5617470550,**
Added November 14 2025
- A traffic signal or traffic "calming" for traffic entering and leaving River Bend Park will reduce risk when entering and leaving the 4-lane highway. Drivers leaving the Turnpike and I-95 continue to drive over the speed limit on this stretch of Indian Town Road.
- Liked 0 times
37.  **William Chad Kennedy, Executive Director | ckennedy@sirwcd.org | 5617470550,**
Added November 14 2025
- A traffic signal for traffic entering and leaving the plaza will reduce risk
- Liked 0 times
38.  **William Chad Kennedy, Executive Director | ckennedy@sirwcd.org | 5617470550,**
Added November 14 2025
- The added turning lanes with the poles have helped. thank you.
- Liked 0 times
39.  **Joe Fretwell | joe.fretwell5@gmail.com | 8033155693,** Added November 25 2025
- Too wide of a road given foot traffic, no leading ped intervals on lights
- Liked 0 times
40.  **Joe Fretwell | joe.fretwell5@gmail.com | 8033155693,** Added November 25 2025
- Very challenging to cross (esp. at night). Coleman Park neighborhood has very low rate of car access so intersections like this one cut lots of low income households off from economic opportunities outside the neighborhood.
- Liked 0 times
41.  **Joe Fretwell | joe.fretwell5@gmail.com | 8033155693,** Added November 25 2025
- Poor/limited bus stop infrastructure on very important bus route for Coleman Park residents.
- Liked 0 times

42. **Joe Fretwell | joe.fretwell5@gmail.com | 8033155693**, Added November 25 2025



Really poor sidewalk and bike lane infrastructure on core artery connecting Lake Worth residents to tri-rail station. Especially bad at night

Liked 0 times

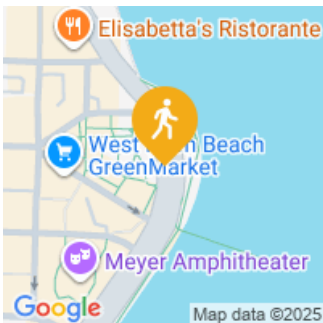
43. **Joe Fretwell | joe.fretwell5@gmail.com | 8033155693**, Added November 25 2025



This road is so challenging and unsafe to cross for walkers and bikers using the El Rio trail. This is a critical connector for FAU students and staff who ride transit, but the unsafe crossing (and really long light) makes this a daily challenge.

Liked 0 times

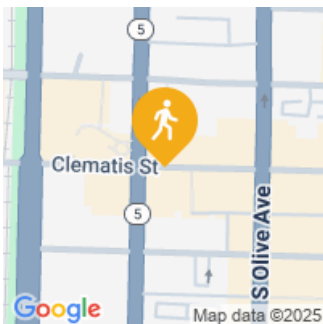
44. **Joe Fretwell | joe.fretwell5@gmail.com | 8033155693**, Added November 25 2025



Lights for cars are excessively long along the WPB waterfront. And when they do change, there are no leading pedestrian intervals to give folks on foot or bike a little head start.

Liked 0 times

45. **Joe Fretwell | joe.fretwell5@gmail.com | 8033155693**, Added November 25 2025



Cars cruising up and down Clematis detract from the potential of the street. We should pilot car-free Saturdays and just extend street closures from the Green Market to test what happens when we give even more space to walkers and bikers. This would reduce noise pollution and enhance economic development in downtown WPB.

Liked 0 times

CRASH TRENDS ON COUNTY- AND STATE- MAINTAINED ROADS

PALM BEACH COUNTY SAFETY ACTION PLAN

Prepared by:

KITTELSON & ASSOCIATES
550 West Cypress Creek Road, #470
Fort Lauderdale, FL 33309

Project No. 30139

FINAL | March 2026



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1. OVERVIEW

Palm Beach County is developing a countywide Safety Action Plan to reduce the number of people killed or seriously injured in traffic crashes. Funded by the federal Safe Streets for All (SS4A) grant program, the Plan will help the County and its partners identify where severe crashes are occurring, what factors are associated with them, and how to prioritize safety investments. It is guided by the principles of Vision Zero and the Safe System approach, which emphasize that serious crashes are preventable and that roadway design, policy, and education all play a role.

This memo summarizes the crash analysis conducted to inform the Safety Action Plan. The analysis includes a review of crash trends, conditions that are most often present when fatal and serious injury (FSI) crashes occur, and an initial identification of Palm Beach County's High-Injury Network (HIN), which highlights locations where these severe crashes are concentrated. The analysis focuses on County- and State-maintained roads, consistent with the scope of the SS4A grant, and will serve as the foundation for identifying future safety projects, policies, and programs.

STUDY AREA

This crash analysis focuses on Palm Beach County's roadway system, with an emphasis on County-maintained roads. These roads form the core of the analysis and will guide the primary recommendations in the Safety Action Plan. The analysis also includes State-maintained roads, recognizing that many serious crashes occur on high-speed, high-volume corridors regardless of ownership. While the County does not control these roads, understanding crash patterns on them is important for coordinated safety efforts. The study also considers all signalized intersections involving the County, including those shared with State and Local roads, to provide a comprehensive view of intersection safety. The study map and roadway classifications are shown in **FIGURE 1**.

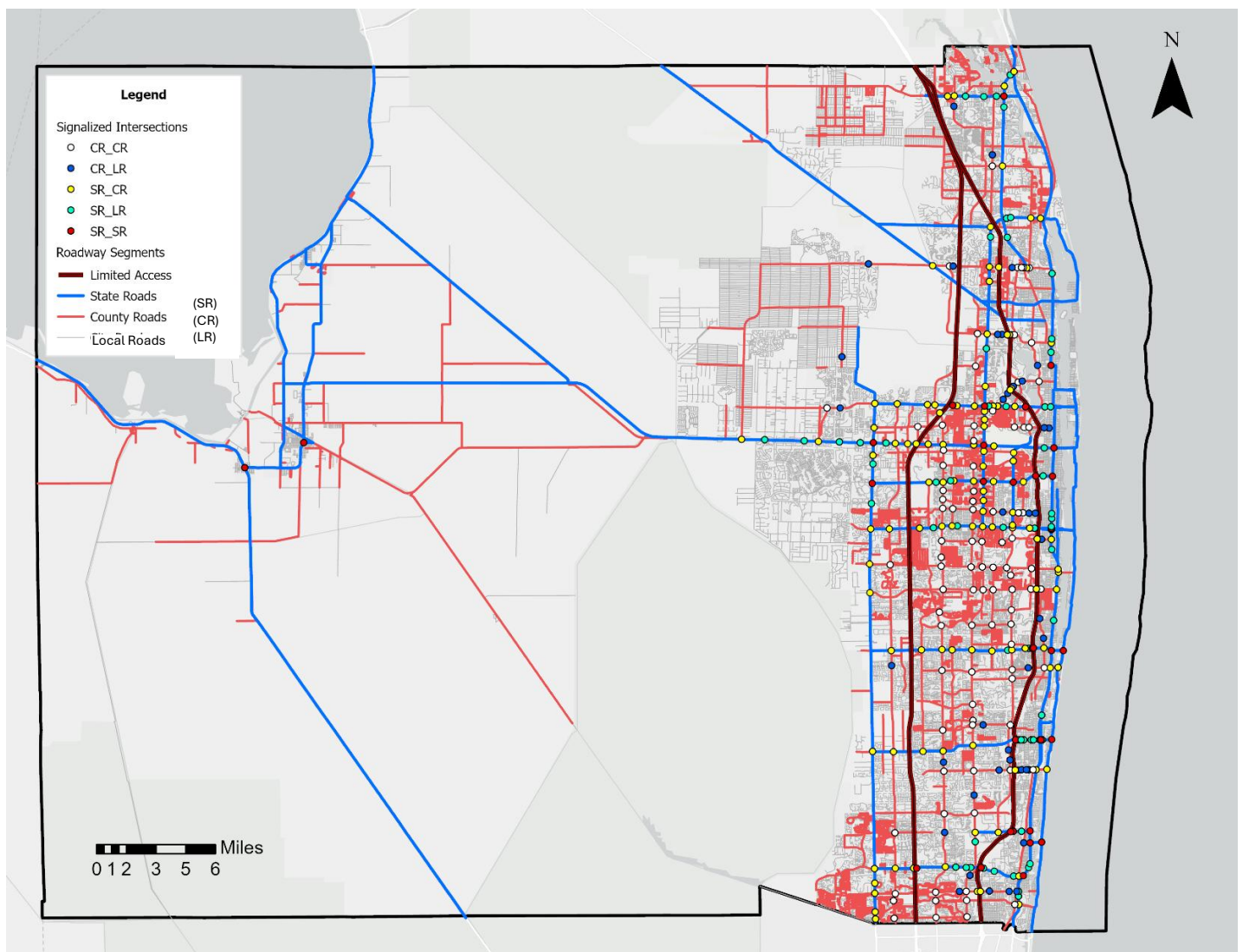


Figure 1 Palm Beach County Safety Action Plan Study Area

DATA INPUTS

All reported traffic crashes that occurred on County- and State-maintained roadways within Palm Beach County between 2019 and 2023 were included in this analysis. Crash data was obtained from Signal Four Analytics and supplemented with County roadway information, including traffic volumes, number of lanes, posted speed limits, and signal locations.

To support a consistent and accurate analysis, several modifications were made to the raw data to provide a consistent foundation for analyzing crash patterns across different roadway and intersection characteristics:

- **Location accuracy:** Crash records were reviewed and adjusted to correct geolocation errors and ensure crashes were accurately mapped to the roadway network.
- **Crash severity classification:** Severity was standardized based on the most serious outcome recorded in each crash report to enable consistent comparisons across the dataset.
- **Mode assignment:** Travel modes were determined based on the type of vehicle and the role of each person involved in the crash (e.g., pedestrian, bicyclist, motorcyclist, motor vehicle occupant).
- **Crash type consolidation:** Single-vehicle crashes involving fixed objects, rollovers, or roadway departures were grouped into a consolidated “lane departure” category to support crash analysis.
- **Crashes included in systemic analysis:** All crashes resulting in a fatality or serious injury (FSI) were isolated and used for recurring crash factor and pattern analysis.
- **Area type classification:** Although rural and urban roadways can have different safety challenges, this analysis does not distinguish between them. Approximately 98 % of crashes on State- and County-maintained roads in Palm Beach County occurred on roads classified as urban. As a result, all crashes were analyzed together, and findings primarily reflect the characteristics of urban roadway environments.

A NOTE ON DATA LIMITATIONS

The crash analysis in this report is based on police-reported crash data from Signal Four Analytics, covering crashes that occurred on County- and State-maintained roads in Palm Beach County between 2019 and 2023. While this dataset provides a valuable foundation for identifying trends and locations with characteristics commonly associated with crashes, it has several limitations.

Not all crashes are reported, and some contributing factors such as distraction, impairment, or crash circumstances may be underreported or inconsistently documented. In addition, fields like crash location, type, and severity may contain errors or rely on subjective interpretation. Several quality control steps were taken to clean and standardize the dataset, but the results still reflect only what was captured in the original reports.

Despite these limitations, the patterns identified in this analysis offer a reliable basis for understanding where and why severe crashes are occurring and for supporting data-informed safety strategies across the county.

HOW THIS DOCUMENT IS ORGANIZED

This document summarizes the results of a countywide crash analysis that informs the development of Palm Beach County’s Safety Action Plan. It is organized into the following sections:

1. **Overview:** Describes the geographic and temporal scope of the analysis, the types of crashes included, and the data sources and modifications used to support consistency and accuracy.
2. **Crash Summary Statistics:** Provides a high-level overview of crash frequency and severity across Palm Beach County, with breakdowns by year, travel mode, and emphasis areas.
3. **People-Focused Analysis:** Identifies how crashes affect different population groups, including youth, older adults, and communities near schools and transit stops. This section also examine where crashes may be disproportionately affecting vulnerable road users.
4. **Mode-Specific Crash Patterns:** Presents detailed crash context for each mode (motor vehicles, pedestrians, bicyclists, and motorcyclists) including crash types, roadway and intersection characteristics, and contributing factors such as lighting, speed, and driver behavior.
5. **Crash Profiles:** Summarizes key recurring crash patterns, such as pedestrian crossings at transit stops or crashes at wide unsignalized intersections, to support future countermeasure development.
6. **High-Injury Network:** Identifies corridors and intersections where fatal and serious injury crashes are most concentrated, based on the preliminary high-injury network developed for the Plan.
7. **Key Findings and Strategic Takeaways:** Synthesizes the most important crash trends and systemic patterns to inform the next phase of work, which will focus on identifying priority projects, programs, and policies.

2. CRASH SUMMARY STATISTICS

This section provides a high-level summary of all reported traffic crashes on County- and State-maintained roadways in Palm Beach County between 2019 and 2023. The goal is to understand overall crash volumes, severity levels, and general patterns across the roadway network. The analysis highlights factors often present where fatal and serious injury (FSI) crashes occur, identifies trends over time, and examines the disproportionate impact of severe crashes on vulnerable road users such as pedestrians, bicyclists, and motorcyclists. These summary statistics provide important context for the more detailed mode-specific analyses that follow.

COUNTYWIDE SUMMARY

From 2019-2023, 205,149 crashes occurred on streets in Palm Beach County. **FIGURE 2** shows the distribution of crashes by facility type and severity. Most crashes occurred on State roads and County-maintained roads. These two facility types also account for a disproportionately high share of fatal and serious injury (FSI) crashes, as shown by the green line, which represents the percentage of crashes that resulted in a fatality or serious injury on each facility type. While this discussion provides a brief overview of all crashes for comparison purposes, the rest of this document focuses on County- and State-maintained roads only.

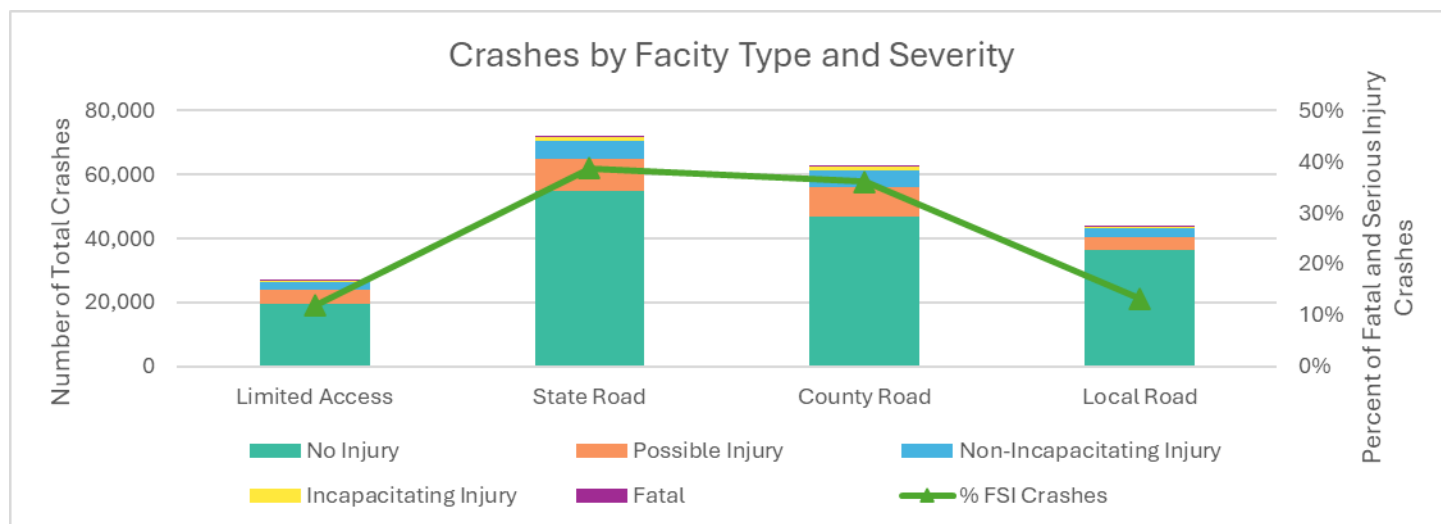


Figure 2 Crashes by Facility Type and Severity

CRASH TRENDS ON COUNTY- AND STATE-MAINTAINED ROADS

Between 2019 and 2023, there were approximately **135,000 reported traffic crashes** on State- and County-maintained roads in Palm Beach County. While most crashes resulted in minor or no injuries, this analysis focuses on understanding where the most severe outcomes occurred and what roadway conditions were commonly present. A summary of reported crashes by severity is provided in **TABLE 1**.

Table 1: Summary of All Reported Crashes on State- and County-maintained Roads, 2019-2023

Crash Severity	Crash Count	Percent of Total
Fatality	712	1%
Incapacitating Injury	2,480	2%
Non-Incapacitating Injury	10,833	8%
Possible Injury	19,140	14%
No Injury (Property Damage Only)	101,520	75%
Total	134,735	100%

FIGURE 3 shows total crashes by year and severity on State- and County-maintained Roads. While the total number of crashes has increased since 2020, the overall trend for fatal and serious injury crashes has declined between 2019 and 2023.

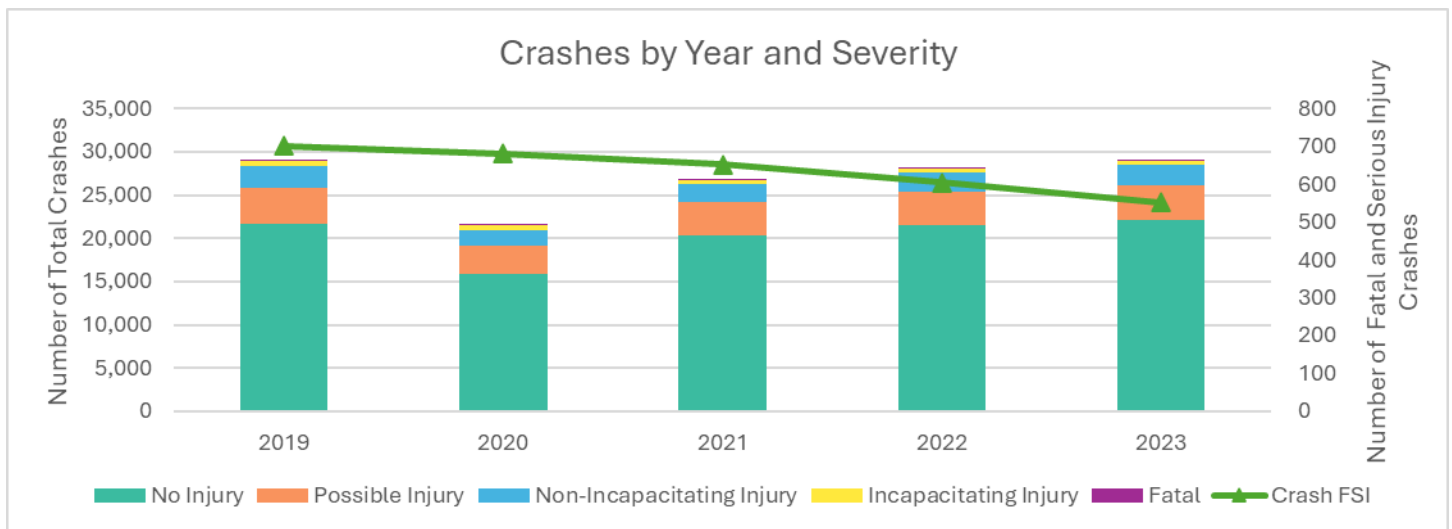


Figure 3 Crashes by Year and Severity for State- and County-Maintained Roads, 2019-2023

While anyone using the roadway network can be involved in a crash, some types of road users face significantly greater risk of severe outcomes. For example, pedestrians are involved in just 1% of all reported crashes but account for 14% of crashes resulting in a fatality or serious injury between 2019 and 2023. **FIGURE 4** highlights this disproportionate impact, showing that pedestrians, bicyclists, and motorcyclists represent a much larger share of fatal and serious injury crashes relative to their share of total crashes.

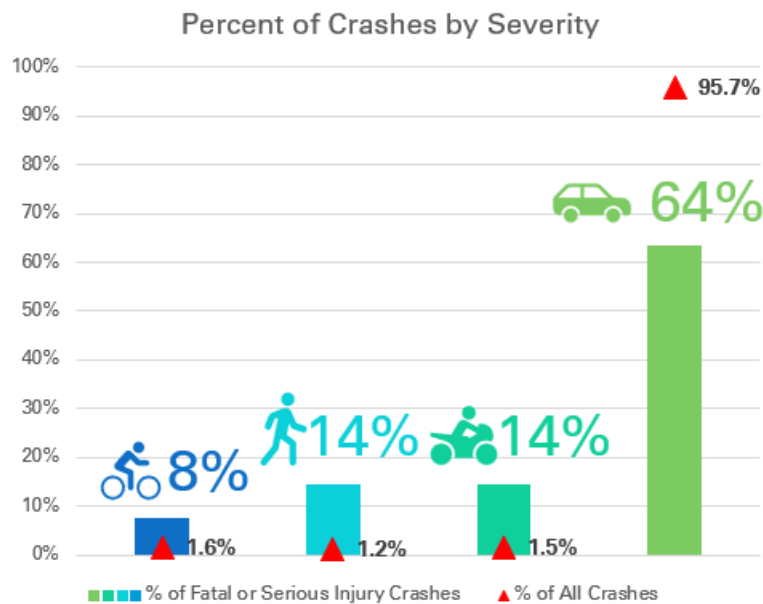


Figure 4 All Crashes by Travel Mode and Severity on State- and County-maintained Roads, 2019-2023

FIGURE 5 shows the distribution of crashes by crash type. Rear-end crashes make up the largest share, accounting for 40% of all crashes (54,190 crashes). Sideswipe crashes follow at 15% (19,588 crashes), and angle crashes account for 14% (19,144 crashes). Left-turn crashes represent 12% (16,094 crashes), and fixed-object or run-off-road crashes make up 7% (9,855 crashes). Together, these five crash types account for more than 80 percent of all reported crashes, highlighting a clear concentration in a small number of common crash patterns.

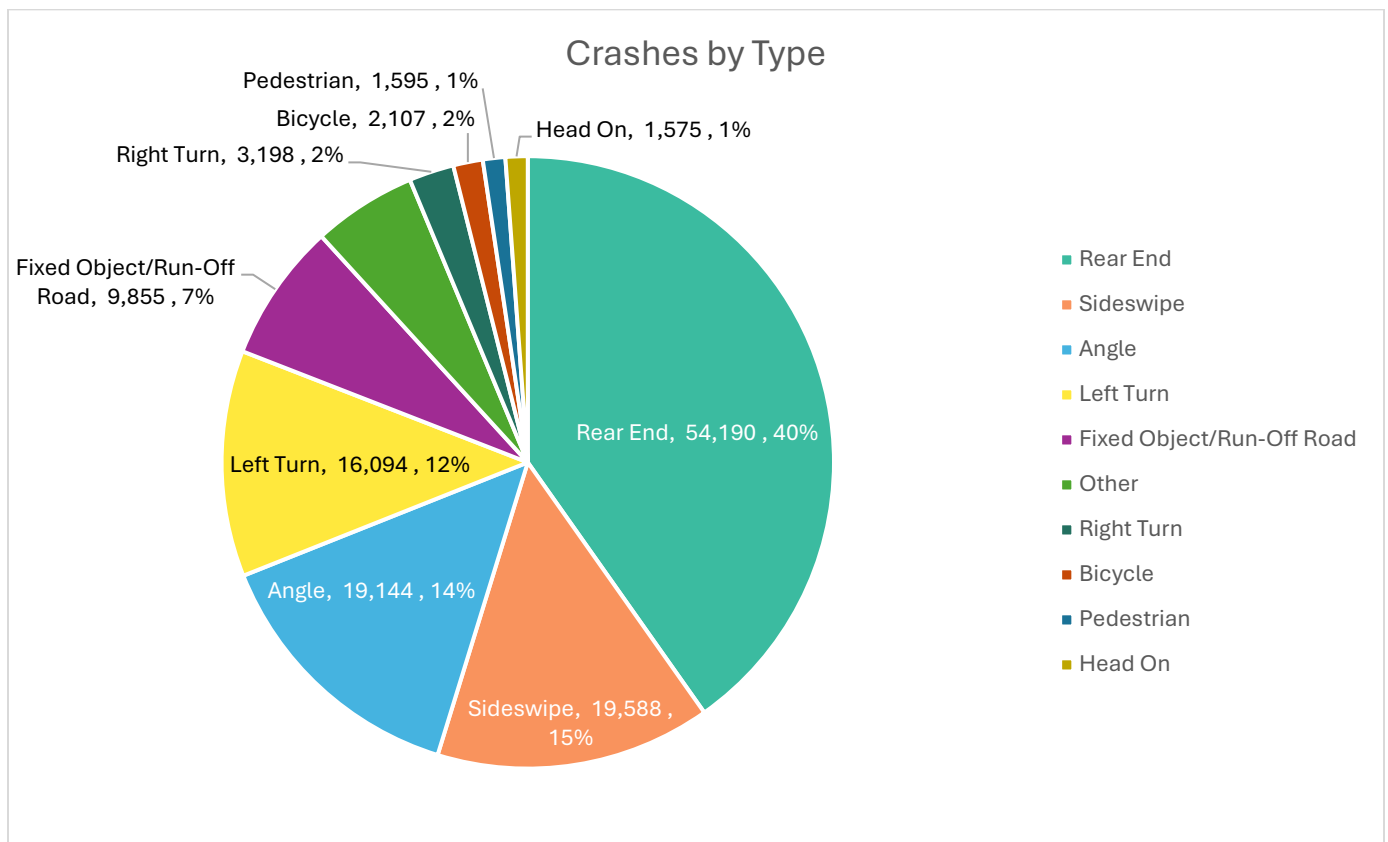


Figure 5 All Severity Crashes by Type on State- and County-maintained Roads, 2019-2023

RAIL-CAR-INVOLVED CRASH TRENDS AT SIGNALIZED INTERSECTIONS

From January 2019–October 2024, there were 24 rail-car-involved crashes countywide. Of these, 16 occurred at signalized intersections, spanning 14 unique locations. As shown in the **TABLE 2**, of the 14 intersections, two are located on the motorcycle High-Injury Network (HIN), one is on the pedestrian HIN, and two are on the bicycle HIN. None of the intersections fall within the top five priority corridors. Two intersections experienced multiple crashes—US 1/ Federal Hwy & Hypoluxo Rd and US 1/S Dixie Hwy & 12th Ave S—each with two crashes.

Intersection-related crashes averaged 2–3 per year from 2019 through 2023, followed by a notable increase to 7 crashes in 2024. Among these signalized intersection crashes, 7 resulted in fatal or serious injuries (FSI), leading to 4 fatalities and 6 injuries, while 9 involved no reported injuries.

Aging drivers were involved in approximately half of the intersection crashes, and half occurred during nighttime conditions. In addition, five intersection crashes involved distracted driving.

Overall, these patterns highlight signalized intersections as priority locations for further evaluation, particularly with respect to nighttime visibility, driver attention, and aging-driver considerations.

PBC Intersection ID	EW_ST	NS_ST	Vehicle HIN	Motorcycle HIN	Pedestrian HIN	Bicycle HIN	Total Rail Crash Count	FSI Rail Crash Count
40375	OCEAN AVE	FEDERAL HWY				x	1	1
15550	BURNS RD	ALT A1A				x	1	1
17370	NORTHLAKE BLVD	OLD DIXIE HWY		x			1	1
53174	WEST ATLANTIC AVE	I-95 WEST					1	1

PBC Intersection ID	EW_ST	NS_ST	Vehicle HIN	Motorcycle HIN	Pedestrian HIN	Bicycle HIN	Total Rail Crash Count	FSI Rail Crash Count
53080	WEST ATLANTIC AVE	WHATLEY RD					1	1
51615	GEORGE BUSH BLVD	NE 5TH AVE					1	0
40585	E CENTRAL BLVD	FEDERAL HWY					1	0
27955	OKEECHOBEE BLVD	QUADRILLE BLVD					1	0
20090	BEELINE HWY	JOG RD					1	0
27133	BANYAN BLVD	QUADRILLE BLVD					1	0
27487	FERN ST	S QUADRILLE BLVD					1	1
27525	HIBISCUS ST	QUADRILLE BLVD					1	1
41800	HYPOLUXO RD	FEDERAL HWY		x			2	0
38600	12TH AVE S	DIXIE HWY			x		2	0

Table 2 All Severity Crashes Reported to Involve Rail Car at Signalized Intersections in Palm Beach County, January 2019-October 2024

3. PEOPLE-FOCUSED ANALYSIS

This section examines how traffic crashes impact people on State- and County-maintained Roads in Palm Beach County, with a focus on identifying who is most affected by fatal and serious injury outcomes. The analysis highlights vulnerable users such as pedestrians, bicyclists, motorcyclists, older adults, and youth. It also reviews key behavioral crash factors such as speeding, distraction, alcohol, and drug involvement, and looks at how these behaviors relate to crash severity. Finally, the section includes an analysis that identifies where transportation-disadvantaged communities experience higher crash rates, along with a summary of crashes near schools and transit stops. *This section only considers crashes on State- and County-maintained roads in Palm Beach County from 2019-2023.*

STATE EMPHASIS AREAS

Florida's Strategic Highway Safety Plan (SHSP) identifies a set of emphasis areas that reflect crash types, road user characteristics, and behaviors commonly associated with fatal and serious injury (FSI) crashes. These categories help agencies align local analysis and safety strategies with state and federal priorities. This section applies the same emphasis areas to crashes on State- and County-maintained roads in Palm Beach County to understand how local crash trends compare to statewide focus areas.

Each emphasis area is described below and in **FIGURE 6**, along with its relative share of total crashes and FSI crashes in Palm Beach County:

- **Intersection:** Crashes occurring at or influenced by intersections. This is the leading emphasis area in Palm Beach County, accounting for 47% of FSI crashes and 39% of all crashes.
- **Lane Departure:** Crashes involving a vehicle leaving the travel lane, including run-off-road, rollover, or fixed-object collisions. These crashes account for 24% of FSI crashes and 22% of total crashes.
- **Aging Road Users:** Crashes involving people aged 65 and older. These account for 28% of FSI crashes and 25% of total crashes.
- **Pedestrians and Bicyclists:** Crashes involving people walking or biking. While these crashes make up just 3% of all crashes, they account for 22% of FSI crashes, reflecting their high severity.
- **Motorcyclists and Moped Riders:** Crashes involving people riding motorcycles or mopeds. These represent 2% of total crashes but 14% of FSI crashes.

- **Teen Drivers:** Crashes involving drivers under the age of 21. These account for 12% of total crashes but only 10% of FSI crashes.
- **Commercial Motor Vehicle Operators:** Crashes involving large trucks or other commercial vehicles. These make up 5% of total crashes and 6% of FSI crashes.
- **Occupant Protection:** Crashes where improper seatbelt use or lack of occupant protection was a factor. These represent 2% of total crashes and 15% of FSI crashes.
- **Speeding and Aggressive Driving:** Crashes where speeding or aggressive behaviors were reported. These represent 6% of total crashes and 14% of FSI crashes.
- **Distracted Driving:** Crashes involving inattention or distraction, including use of phones or other devices. These represent 13% of all crashes and 12% of FSI crashes.
- **Impaired Driving:** Crashes involving alcohol or drug use. These account for 2% of total crashes and 9% of FSI crashes.

As shown in **FIGURE 6**, intersections, lane departures, and vulnerable road users (especially pedestrians, bicyclists, and motorcyclists) are the most prominent emphasis areas for fatal and serious injury crashes in Palm Beach County. For example, pedestrians and bicyclists make up 3% of all crashes but 22% of FSI crashes. Risky behaviors such as speeding, distraction, and impairment appear in a smaller share of crashes overall but are strongly associated with crash severity.

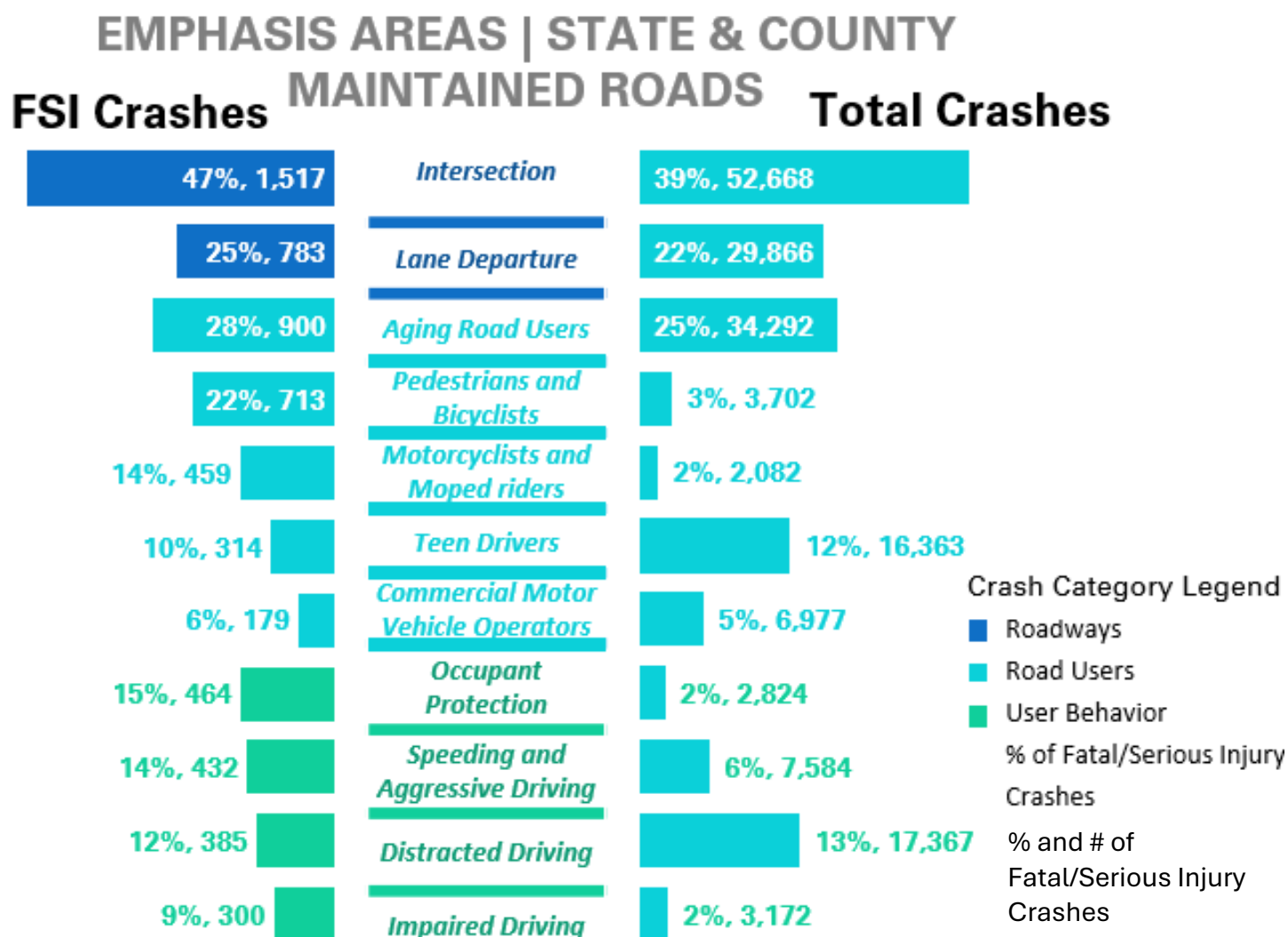


Figure 6 Crashes by Emphasis Area on State- and County-maintained Roads, 2019-2023

CRASH SUMMARY BY AGE GROUPS

Crash outcomes can vary significantly by age, particularly for people walking, biking, or riding motorcycles. Understanding which age groups are most affected by different types of crashes can help target safety strategies toward those at greatest risk. **FIGURE 7** shows the distribution of crash victims by age group and travel mode, providing insight into how different segments of the population experience roadway risk.

Adults between the ages of 18 and 64 make up the majority of crash victims across all modes, which is consistent with their higher levels of travel and exposure. However, older adults (age 65 and over) and youth (under 18) are overrepresented in certain crash types. For example, older adults account for 18 percent of pedestrian and bicycle crash victims, compared to 15 percent in vehicle crashes and 13 percent in motorcycle crashes. Youth under 18 make up 7 percent of bicycle crash victims and 8 percent of pedestrian crash victims but represent a much smaller share of motor vehicle and motorcycle crashes. These trends highlight the need to consider age-related vulnerability when designing safer streets, particularly for non-driving modes.

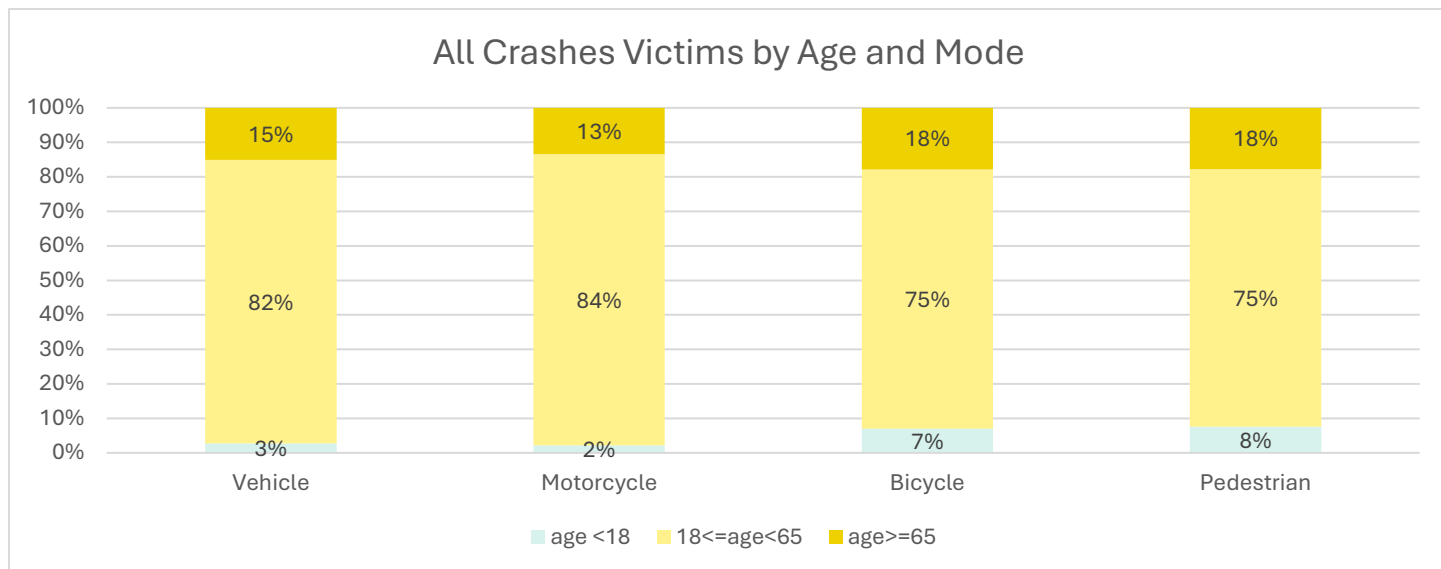


Figure 7 All Severity Crashes Victims by Age and Mode on State- and County-maintained Roads, 2019-2023

FIGURE 8 shows injury severity outcomes for vulnerable road users (pedestrians, bicyclists, motorcyclists) by age group. Older adults (65+) are the most vulnerable: they have the highest percentage of fatalities (13%) and incapacitating injuries (14%). Youth (<18) have relatively fewer severe outcomes, with lower fatality (4%) and incapacitating injury (8%) rates. Adults (18–64) show middle severity patterns, with a balance across all categories. Severity increases with age, with fewer “no injury” outcomes among older adults.

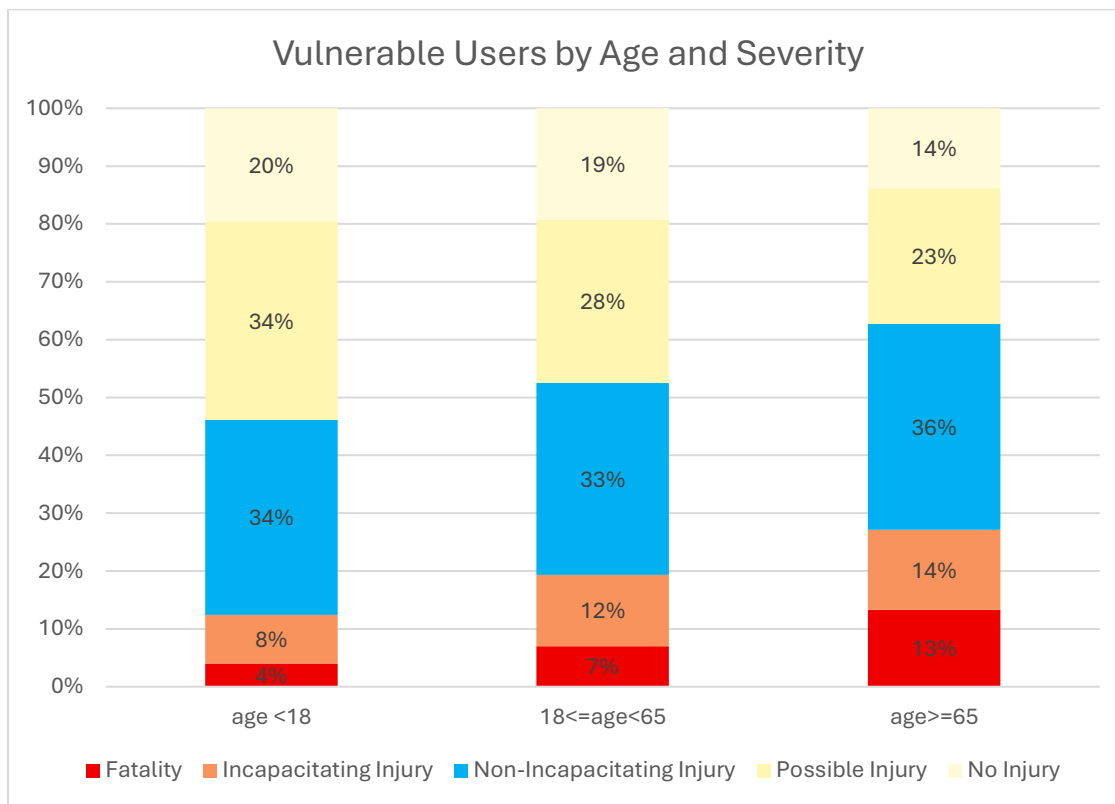


Figure 8 All Severity Vulnerable Users involved Crashes by Vulnerable User’s Age and Severity on State- and County-maintained Roads, 2019-2023

DRIVING BEHAVIOR

Risky driving behaviors such as speeding, distraction, and impairment play a significant role in traffic crashes and are closely linked to fatal and serious injury outcomes. This section summarizes crashes on State- and County-maintained roads in Palm Beach County where specific behaviors were reported in the crash record, including speeding or aggressive driving, distracted driving, and alcohol or drug involvement. While these behaviors are documented in only a portion of crash reports, the crashes where they are identified are far more likely to result in a fatal or serious injury. It is important to note that this analysis relies on what was recorded by law enforcement at the time of the crash, and these factors are often underreported or inconsistently documented. As a result, the true impact of driver behavior on crash outcomes may be greater than what the available data reflects.

TABLE 3 summarizes crashes where speeding or aggressive driving was noted in the crash report. These crashes make up 6 percent of all crashes, but account for 16% of all fatalities and 13% of serious injuries, making them significantly more severe than crashes without these behaviors.

Speeding or aggressive Driving?	Fatality	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	Total
Yes	115 (16.2%)	317 (12.8%)	981 (9%)	1,419 (7.4%)	4,751 (4.7%)	7,583 (5.6%)
No	597 (83.8%)	2,163 (87.2%)	9,902 (91%)	17,721 (92.6%)	96,769 (95.3%)	127,152 (94.4%)
Total	712	2,480	10,883	19,140	101,520	134,735

Table 3 All Severity Crashes Reported to Involve Speeding or Aggressive Driving on State- and County-maintained Roads, 2019-2023

TABLE 4 summarizes crashes where distracted driving was noted in the crash report. These make up 13% of all crashes. While the share of fatalities is lower (5%), distracted driving is associated with a higher proportion of injury crashes overall.

Distracted Driving?	Fatality	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	Total
Yes	34 (4.8%)	351 (14.2%)	1,588 (14.6%)	2,837 (14.8%)	12,522 (12.3%)	17,332 (12.9%)
No	678 (95.2%)	2,129 (85.8%)	9,295 (85.4%)	16,303 (85.2%)	88,998 (87.7%)	117,403 (87.1%)
Total	712	2,480	10,883	19,140	101,520	134,735

Table 4 All Severity Crashes Reported to Involve Distracted Driving on State- and County-maintained Roads, 2019-2023

TABLE 5 summarizes crashes where alcohol involvement was noted in the crash report. Although these crashes represent 2% of total crashes, they account for 13% of all fatalities and nearly 7% of serious injuries, highlighting disproportionate risk.

Alcohol involved?	Fatality	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	Total
Yes	91 (12.8%)	164 (6.6%)	535 (4.9%)	602 (3.1%)	1,465 (1.4%)	2857 (2.1%)
No	621 (87.2%)	2,316 (93.4%)	10,348 (95.1%)	18,538 (96.9%)	100,055 (98.6%)	131,878 (97.9%)
Total	712	2,480	10,883	19,140	101,520	134,735

Table 5 All Severity Crashes Reported to Involve Alcohol Impairment on State- and County-maintained Roads, 2019-2023

TABLE 6 summarizes crashes where drug involvement was noted in the crash report. These are the least frequently reported of the four behaviors, accounting for 0.5% of crashes, but they are linked to 5.5% of all fatalities and 2.4% of serious injuries, suggesting elevated severity even at low volume.

Drug involved?	Fatality	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	Total
Yes	39 (5.5%)	59 (2.4%)	142 (1.3%)	165 (0.9%)	303 (0.3%)	708 (0.5%)
No	673 (94.5%)	2,421 (97.6%)	10,741 (98.7%)	18,975 (99.1%)	101,217 (99.7%)	134,027 (99.5%)
Total	712	2,480	10,883	19,140	101,520	134,735

Table 6 All Severity Crashes Reported to Involve Drug Impairment on State- and County-maintained Roads, 2019-2023

OTHER CATEGORIES OF INTEREST ANALYSIS

Three categories of interest: (1) crash trends in areas experiencing persistent poverty, (2) crash trends in school zones, and (3) crash trends around bus and rail stops.

Areas Experiencing Persistent Poverty Crash Analysis

Addressing the safety needs of all roadway users is a key component of the Safe System approach and is critical to building a transportation network that protects people who may be more exposed to risk or face barriers to mobility. As part of this crash analysis, a network screening was conducted to assess whether certain communities experience a disproportionate share of severe crashes. This analysis focused on transportation-disadvantaged areas, defined as U.S. Census block groups where the percentage of low-income households and zero-vehicle households is higher than the county average. The crash data used in this section include all-severity crashes from 2019–2023 on non-limited access roads in Palm Beach County.

FIGURE 9 presents crash rates per centerline mile by census block group, using a five-level shading scale from dark (higher crash rates) to light (lower crash rates). Block groups that meet the definition of transportation-disadvantaged and also have crash rates exceeding the countywide average (29.4 crashes per mile) are highlighted on the map. These areas are primarily located along corridors such as Okeechobee Boulevard, SR 802, South Jog Road near SR 802, and West Woolbright Road in Boynton Beach.

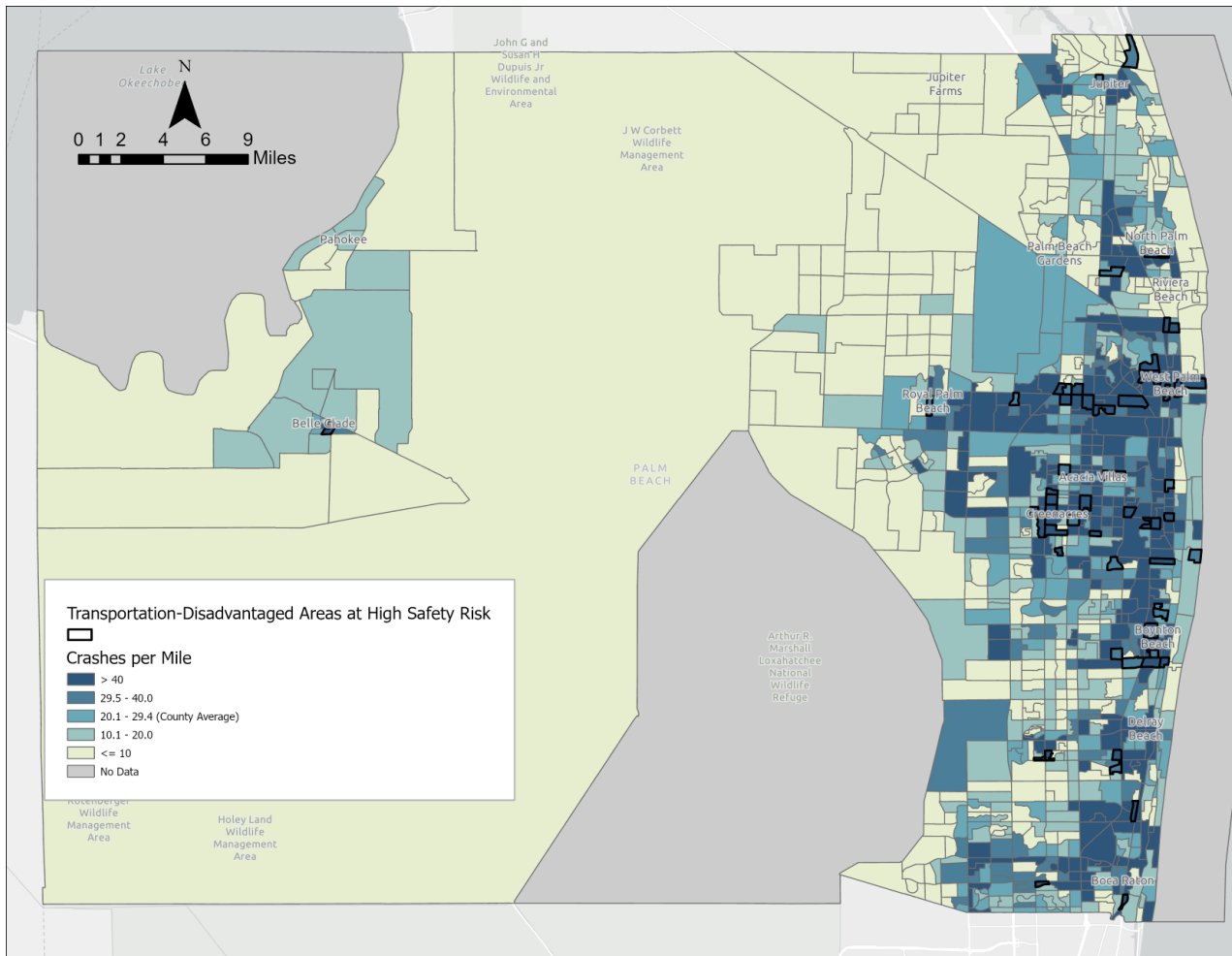


Figure 9 Transportation Disadvantaged Areas at High Safety Risk

School Zone Crash Analysis

The share of children walking or biking to school has been steadily declining for more than three decades, with increasing reliance on cars for school travel. This shift has contributed to greater traffic congestion, poorer air quality, and reduced daily physical activity. Safety concerns are a key factor behind the low rates of walking and biking. According to the 2017 National Household Travel Survey, 82.8% of children who walked to school lived within two miles of their school. Building on this finding, this analysis examines the safety performance of two-mile school zones surrounding public and private schools in the county.

FIGURE 10 presents crash rates per centerline mile by school zones, using a five-level shading scale from red (higher crash rates) to blue (lower crash rates). School zones with crash rates above the countywide average of 29.4 crashes per mile are shown as **red and orange points** on the map. These high-risk zones are concentrated along the coastline from North Palm Beach to Boca Raton, as well as in large clusters on both the north and south sides of Southern Boulevard, extending from the coast to Range Line Road.

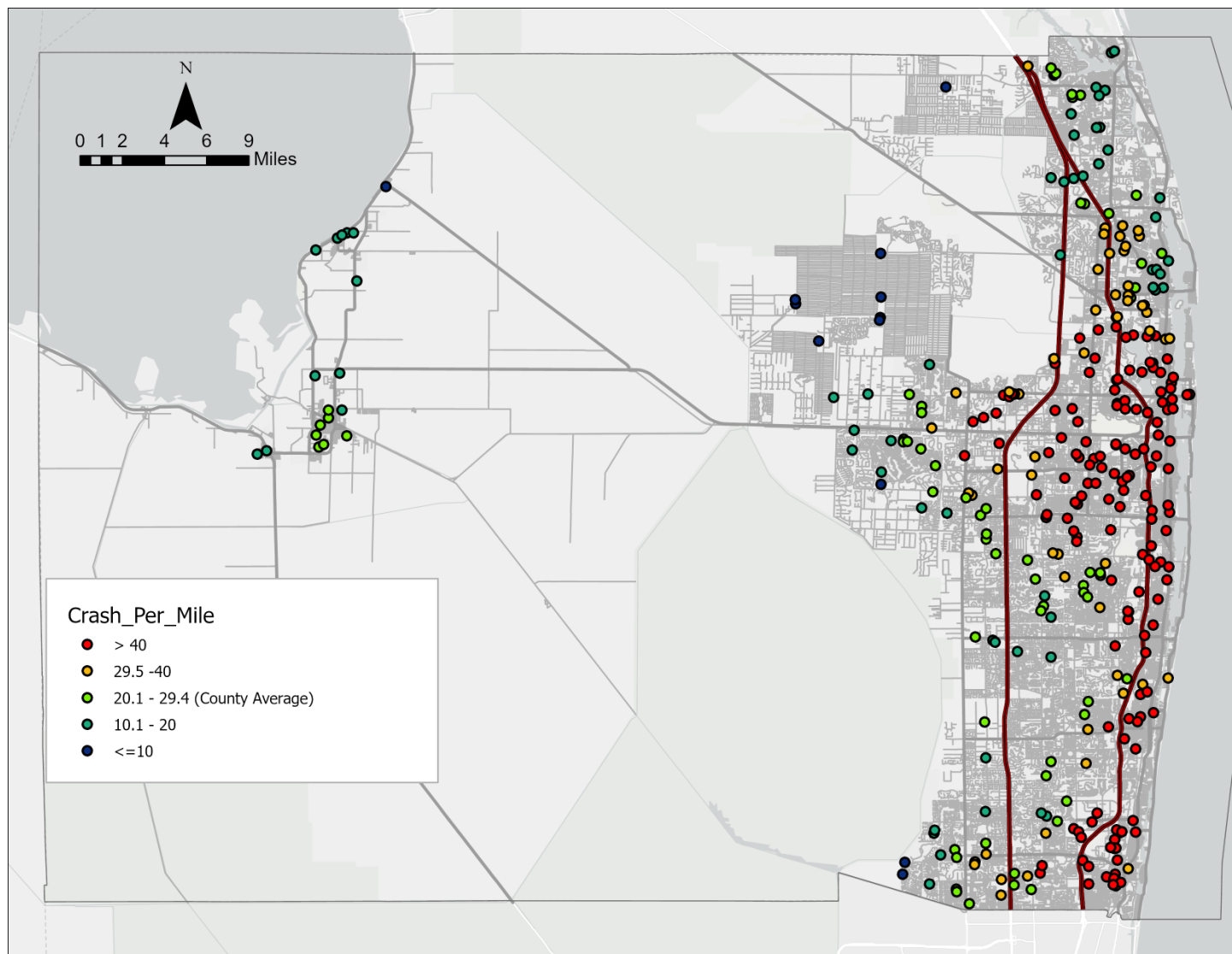


Figure 10 School Zone at High Safety Risk (Red and Orange Points)

Public Transportation Stop Area Crash Analysis

Public transportation plays a vital role in providing mobility, especially for people without access to a car. However, the area around transit stops often present safety challenges for pedestrians and bicyclists who rely on walking or biking to reach transit. Concerns such as inadequate crossings, high traffic volumes, and roadway design features can increase risk for vulnerable users. To better understand these risks, this analysis evaluates the safety performance of roadway segments within a 0.5-mile buffer of public transit stops across the county.

FIGURE 11 presents crash rates per centerline mile by public transportation stop areas, using a five-level shading scale from red (higher crash rates) to blue (lower crash rates). Most transit stops are located in areas with crash rates exceeding the countywide average of 29.4 crashes per mile. This pattern is likely influenced by the fact that many stops are located in denser urban areas, where higher traffic volumes and pedestrian activity naturally increase crash risk. For this analysis, the focus is on the highest-risk stops, defined as those with crash rates above 100 crashes per mile and shown as **red points** on the map.

These high-risk zones are concentrated along major corridors, including 45th Street and the downtown area of West Palm Beach, Okeechobee Boulevard and North Military Trail in unincorporated areas, the Lake Avenue and North Congress Avenue crossing in Palm Springs, the North Dixie Highway and Lake Avenue crossing in Lake Worth, the North Congress Avenue and West Boynton Beach Boulevard crossing in Boynton Beach, the West Atlantic Avenue corridor in Delray Beach, and the Glades Road and North Military Trail crossing in Boca Raton.

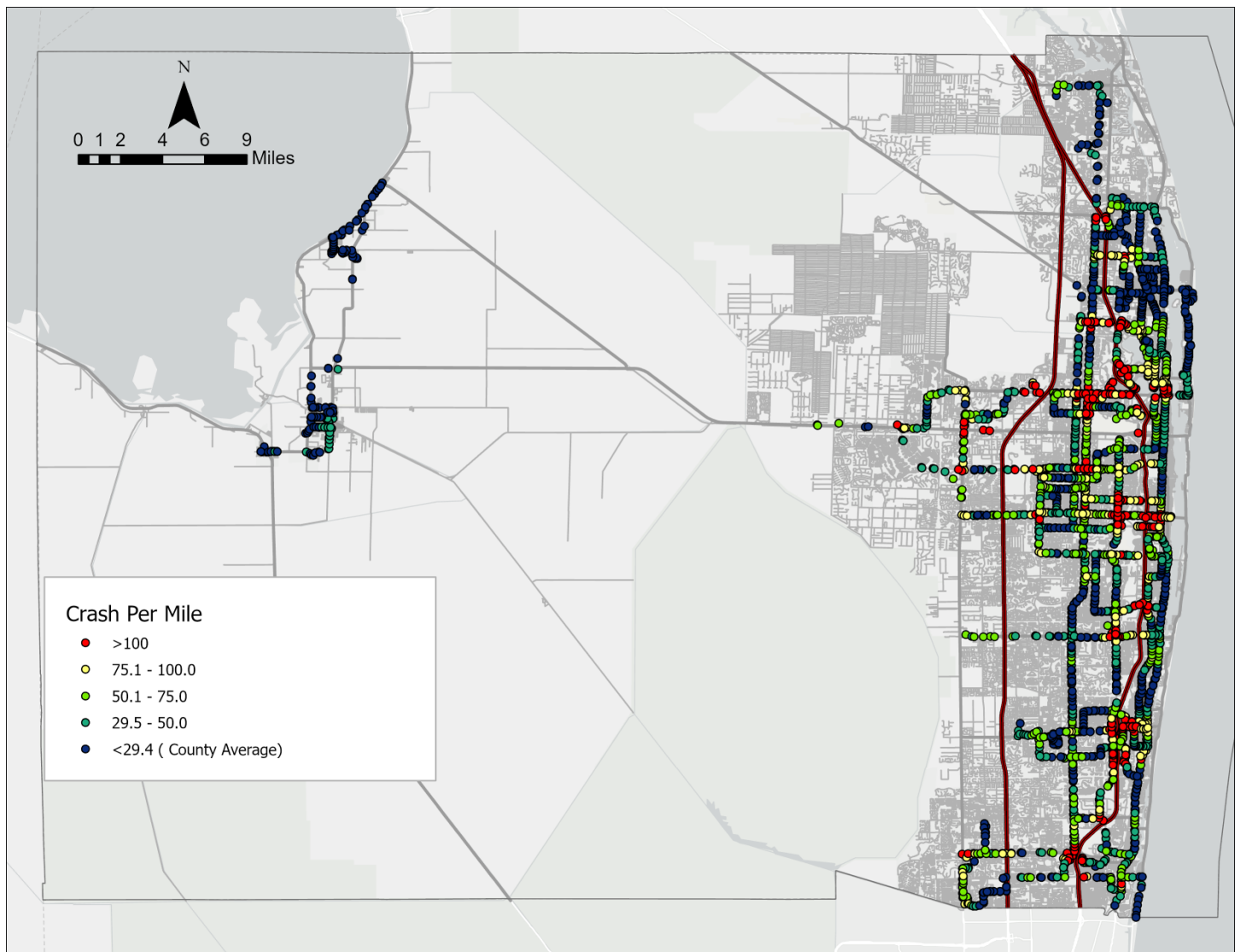


Figure 11 Transit Stop Area at High Safety Risk

4. MODE-SPECIFIC CRASH PATTERNS & FACTORS FOR FSI CRASHES

To better understand how crashes affect different types of roadway users, a focused analysis of crashes involving people walking, biking, riding motorcycles, and traveling in motor vehicles was developed. While the previous sections included all reported crashes to understand broader trends and common crash conditions, this section looks only at crashes that resulted in a fatality or serious injury (FSI). It also includes only crashes that occurred on State- or County-maintained roads, consistent with the focus of the Safety Action Plan.

This focus reflects the core principle of the Safe System Approach: the transportation system should be designed so that when crashes occur, they do not result in death or serious harm. By concentrating on the most severe outcomes, this analysis helps the County identify patterns that have the greatest impact on people's lives and better prioritize strategies that protect those most at risk.

To understand where fatal and serious injury (FSI) crashes are occurring and what conditions often present where they occur, this analysis separately evaluated crashes along roadway segments and at intersections. For each, crashes were grouped by relevant roadway or operational characteristics to identify common conditions across Palm Beach County's State- and County-maintained roads. Note that this relationship does not determine causality.

- **Segment crashes** refer to those that occurred in areas between signalized intersections. Segment crashes were evaluated using a variety of contextual factors to allow for meaningful comparison across the county's diverse roadway types. These include average annual daily traffic (AADT), number of lanes, posted speed limits, and facility type (e.g., undivided vs. divided). The analysis also considers whether these crashes involved common recurring crash conditions such as nighttime visibility, lane departures, or driver behaviors like careless operation. Statistics highlighted in bold purple within upcoming table summaries are overrepresented in the data.
- **Intersection crashes** refer to those that occur within 250 feet of the center of a signalized intersection. Intersection crashes were evaluated considering characteristics like entering traffic volume (ETV), intersection configuration (e.g., number of legs), number of lanes, and speed limit combinations. The analysis also identifies top crash types such as left turn or angle crashes and summarizes contributing actions like failure to yield or red-light running. Statistics highlighted in bold purple within upcoming table summaries are overrepresented in the data.

The analysis identifies common crash types, severity patterns, and contributing factors for each mode. It also highlights whether crashes are more likely to occur midblock or at intersections, helping the County tailor future safety improvements to the needs of each group.

MOTOR VEHICLE CRASHES

From 2019-2023, there were 2,020 motor vehicle crashes which resulted in someone being fatally or seriously injured. These crashes were split relatively evenly between segments and intersections, with 52% occurring along segments and 48% occurring at signalized intersections (**FIGURE 12**). As shown in **TABLE 7**, they are most frequent during afternoon and evening hours (noon to 6 PM), aligning with heavier traffic volumes seen in afternoon rush hour periods.

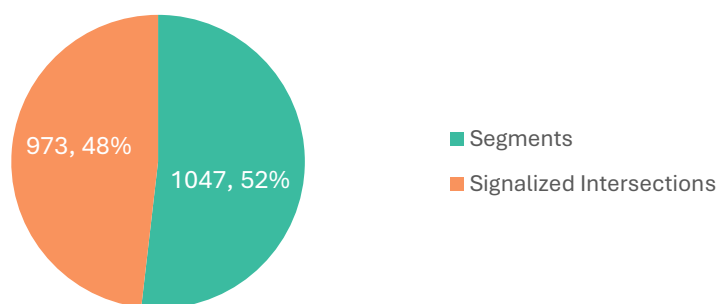


Figure 12 FSI Motor Vehicle Crashes by Network Type on State- and County-maintained Roads, 2019-2023

	12-3 AM	3-6 AM	6-9 AM	9-Noon	Noon-3 PM	3-6 PM	6-9 PM	9- Midnight
Motor Vehicle Crashes	121 (6%)	97 (4.8%)	242 (12%)	288 (14.3%)	364 (18%)	414 (20.5%)	298 (14.8%)	196 (9.7%)

Table 7 FSI Motor Vehicle Crash Summary by Time of Day on State- and County-maintained Roads, 2019-2023

TABLE 8 shows that most motor vehicle FSI crashes occur during daylight hours (47%), which reflects higher exposure from typical travel patterns. However, crash severity is higher in dark conditions. Although overall traffic exposure is significantly lower at night, crashes occurring in the dark—whether on lighted or unlighted roads—account for 46 percent of all fatal crashes, a share similar to daylight conditions. In contrast to daylight conditions, dark conditions have a higher proportion of fatal crashes compared to serious injury crashes, indicating that when a severe crash occurs at night, it is more likely to result in a fatality than during daylight. In particular, roads without lighting appear more dangerous, making up 12 percent of fatal crashes but only 4 percent of serious injury crashes.

Reported Lighting Condition	Dark - Lighted	Dark - Not Lighted	Dark - Unknown Lighting	Dawn	Daylight	Dusk	Unknown	Total
Fatal Crashes	119 (34.3%)	41 (11.8%)	4 (1.2%)	9 (2.6%)	163 (47%)	6 (1.7%)	5 (1.4%)	347
Serious Injury Crashes	390 (23.3%)	64 (3.8%)	1 (0.1%)	23 (1.4%)	1,150 (68.7%)	45 (2.7%)	0 (0%)	1,673

Table 8 FSI Motor Vehicle Crash Summary by Reported Lighting Condition on State- and County-maintained Roads, 2019-2023

TOP CRASH TYPES

FIGURE 13 shows that the most common fatal and serious injury (FSI) crash type involving motor vehicles is fixed-object or run-off-road crashes, which account for 30 percent of all FSI motor vehicle crashes. Rear-end crashes are the second most common, representing 20 percent of cases. For both crash types, the most frequently reported contributing action was operating the vehicle in a careless or negligent manner. This was cited in 28 percent of fixed-object crashes and 58 percent of rear-end crashes.

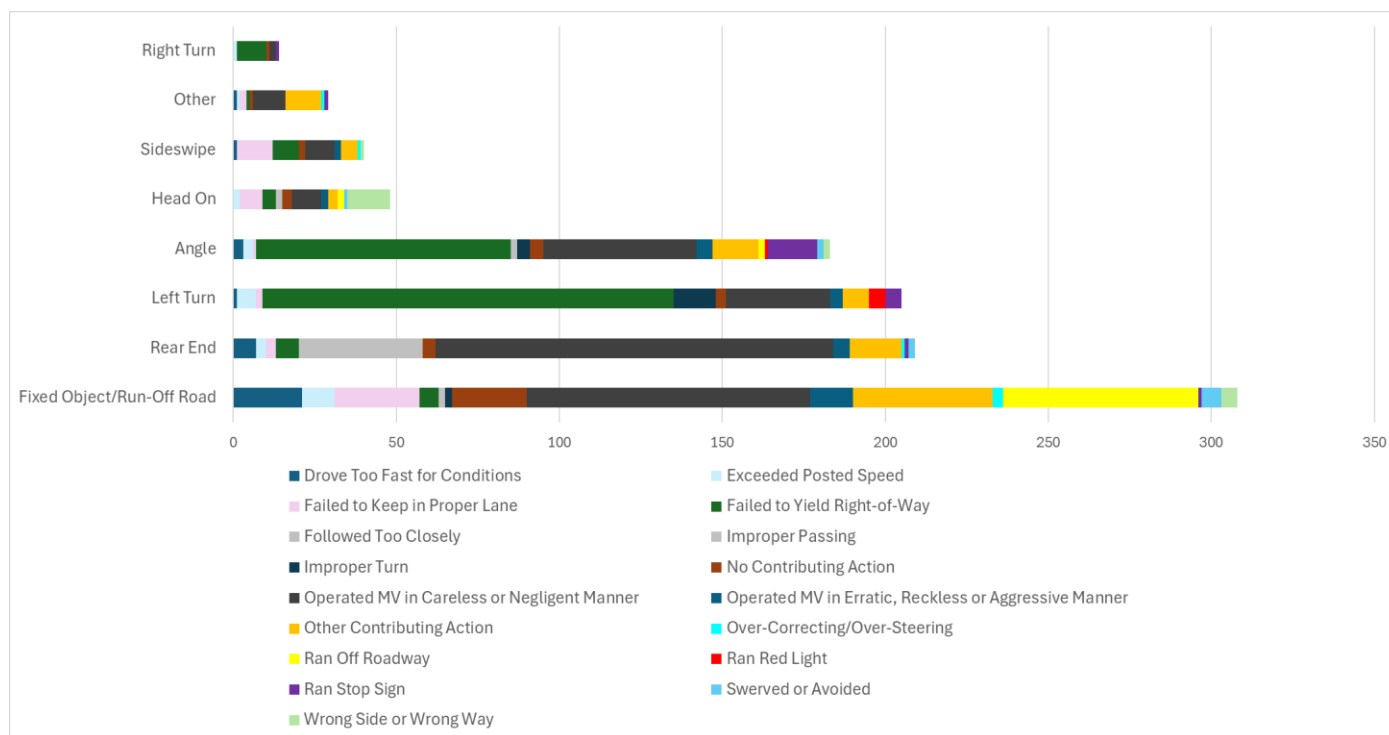


Figure 13 Segment related FSI Motor Vehicle Crashes by Crash Type on State- and County-maintained Roads, 2019-2023

CRASH SUMMARY BY ROADWAY CHARACTERISTICS

FSI crashes are disproportionately concentrated on higher-volume roads, as shown in ***THE** total crashes shown in this table are less than the total crashes on the segments because some roadway segments do not have AADT data available.

Table 9. Segments with AADT over 40,000 represent 6.5% of centerline miles but account for nearly 23% of fatal and serious injury (FSI) crashes. In contrast, segments with AADT under 20,000 make up the majority of roadway mileage (67.5%) but account for 34% of crashes.

AADT	<= 20,000	20,000 – 40,000	40,000 – 60,000	≥ 60,000
% of Centerline miles with AADT	67.5%	26.0%	5.5%	1.0%
Vehicle only Crashes*	331 (33.8%)	423 (43.3%)	171 (17.5%)	53 (5.4%)

*The total crashes shown in this table are less than the total crashes on the segments because some roadway segments do not have AADT data available.

Table 9 Segment related FSI Motor Vehicle Crash Summary by AADT on State- and County-maintained Roads, 2019-2023

FSI crashes are also disproportionately concentrated on higher-speed roads, as shown in **TABLE 10**. Most severe crashes occur on roadways with posted speed limits between 40 and 50 MPH. These segments represent 31% of centerline miles but account for over 66% of FSI crashes. In contrast, low-speed roads (≤ 35 MPH) make up two-thirds of the network but see 22% of crashes.

Posted Speed Limit	<=35 MPH	40-50 MPH	>=55 MPH
% of Centerline miles with speed limit	66.5%	31.4%	2.1%
Vehicle only Crashes	233 (22.3%)	688 (65.7%)	126 (12%)

Table 10 Segment related FSI Motor Vehicle Crash Summary by Posted Speed Limit on State- and County-maintained Roads, 2019-2023

TABLE 11 illustrates that most County- and State-maintained roads in Palm Beach County have three or fewer lanes, representing 62% of total centerline mileage. These roads account for 23% of fatal and serious injury crashes. In contrast, segments with four to seven lanes comprise 37% of the network but are associated with 69% of crashes. This distribution indicates that wider roads may experience a higher concentration of severe crashes relative to their network share.

Number of Lanes	3 or fewer Lanes	4-5 Lanes	6-7 Lanes	8 or more Lanes
% of Centerline miles with # lanes	61.9%	18.5%	18.2%	1.4%
Vehicle only Crashes	243 (23.2%)	376 (35.9%)	350 (33.4%)	78 (7.5%)

Table 11 Segment related FSI Motor Vehicle Crash Summary by Number of Lanes on State- and County-maintained Roads, 2019-2023

INTERSECTION CRASH ANALYSIS

TOP CRASH TYPES

FIGURE 14 summarizes fatal and serious injury crashes at signalized intersections by crash type and associated driver actions. The most common crash type is left-turn crashes, which account for 40% of intersection-related FSI crashes. Angle crashes are the second most common, representing 22% of vehicle FSI crashes.

For left-turn crashes, the most frequently reported contributing actions are failure to yield right-of-way (44%) and running a red light (25%). For angle crashes, the top contributing actions are running a red light (48%) and operating a vehicle in a careless or negligent manner (20%).

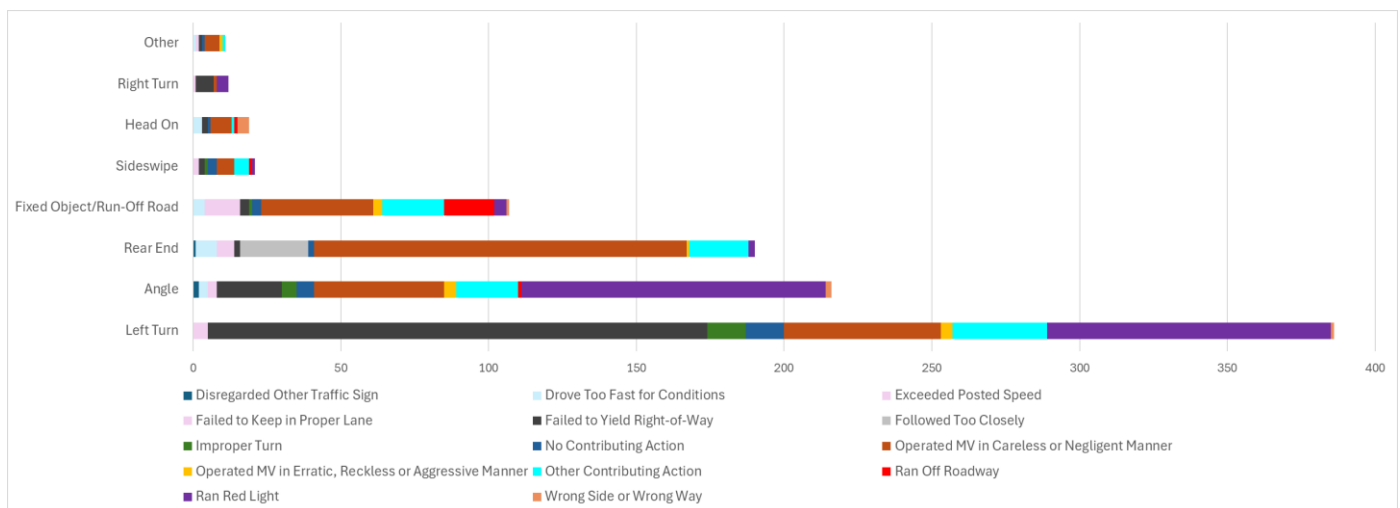


Figure 14 Intersection related FSI Motor Vehicle Crash Summary by Crash Type on State- and County-maintained Roads, 2019-2023

CRASH SUMMARY BY ROADWAY CHARACTERISTICS

TABLE 12 summarizes FSI crashes by the number of legs at signalized intersections. Most crashes occurred at four- or five-leg intersections, which make up 82% of the studied locations and account for 86% of crashes. Three-leg intersections represent 18% of locations and 14% of crashes. This distribution generally aligns with network prevalence but suggests slightly higher crash exposure at larger intersections.

Number of Legs	3 legs	4 or 5 legs
% Intersections	18.3%	81.7%
Vehicle only Crashes	139 (14.3%)	834 (85.7%)

Table 12 Intersection Related FSI Motor Vehicle Crashes by Number of Intersection Legs on State- and County-maintained Roads, 2019-2023

TABLE 13 presents FSI crashes by entering traffic volume (ETV) at each intersection. Intersections with ETV greater than 60,000 make up 13.1% of the system but account for 22.4% of crashes, indicating notable overrepresentation. Intersections with 30,000 to 60,000 ETV represent 47% of locations and account for 55% of crashes. In contrast, intersections with ETV less than or equal to 30,000 make up nearly 40% of the network but represent 23% of crashes. These findings suggest that intersections with higher overall volume experience a greater share of severe crashes.

ETV	<= 30K	30K < - ≤ 60K	≥ 60K
% Intersections	39.9%	47.0%	13.1%
Vehicle only Crashes	225 (23.1%)	530 (54.5%)	218 (22.4%)

Table 13 Intersection Related FSI Motor Vehicle Crashes by Entering Traffic Volume on State- and County-maintained Roads, 2019-2023

TABLE 14 shows the distribution of crashes based on the lane configuration of intersecting roadways. Intersections where a six or more lane road crosses a road with three or fewer lanes account for 33.4% of intersections and 39.3% of crashes, making this combination notably overrepresented. Intersections where both roads have six or more lanes or six and four to five lanes also show elevated crash shares. In contrast, intersections where both roads have three or fewer lanes represent 15.8% of intersections but account for 11% of crashes.

# of Lanes on Each Approach	>=6 & >=6	>=6 & 4-5	>=6 & <=3	>=6 & odd leg	4-5 & 4-5	4-5 & <=3	4-5 & odd leg	<=3 & <=3	<=3 & odd leg
% Intersections	3.9%	6.4%	33.4%	3.1%	5.2%	30.0%	1.8%	15.8%	0.5%
Vehicle only Crashes	86 (8.8%)	115 (11.8%)	382 (39.3%)	17 (1.7%)	44 (4.5%)	217 (22.3%)	4 (0.4%)	107 (11.1%)	1 (0.1%)

Table 14 Intersection Related FSI Motor Vehicle Crashes by Number of Lanes on Each Approach on State- and County-maintained Roads, 2019-2023

Table 15 compares crash patterns across combinations of posted speed limits for intersecting roads. Intersections where both roads have posted speeds between 40 and 50 MPH account for 17.8% of locations but represent 32% of FSI crashes, indicating strong overrepresentation. Intersections where a 40–50 MPH road intersects a ≤35 MPH road make up 48.6% of intersections and account for 46.6% of crashes, which is approximately proportional. The data suggest that medium-speed intersections, particularly where both roads fall in the 40–50 MPH range, are associated with elevated crash risk.

Posted Speed on Each Approach (MPH)	<=35 & odd leg	<=35 & <=35	40-50 & odd leg	40-50 & <=35	40-50 & 40-50	>=55 & <=35	>=55 & >=55	>=55 & 40-50
% Intersections	0.8%	24.8%	4.5%	48.6%	17.8%	1.8%	0.6%	1.0%
Vehicle only Crashes	2 (0.2%)	150 (15.4%)	21 (2.2%)	453 (46.6%)	311 (32%)	11 (1.1%)	9 (0.9%)	15 (1.6%)

Table 15 Intersection Related FSI Motor Vehicle Crashes by Posted Speed on Each Approach on State- and County-maintained Roads, 2019-2023

CRASH TREE SUMMARIES

Crash trees are a type of decision-tree analysis used to identify common combinations of conditions which are commonly present where specific crash types occur. Each crash tree begins with a broad crash category, such as lane departure or left-turn crashes, and progressively filters the data by roadway and operational characteristics (e.g., traffic volume, number of lanes, speed limit, intersection type). Note that this relationship does not determine causality. This approach helps highlight the recurring patterns where these severe crashes are most likely to occur.

The following summaries highlight some of the most frequently occurring crash scenarios for the top two FSI crash types across Palm Beach County's State- and County-maintained roads on segments and on intersections.

1. Lane Departure Crashes on Segments

- **Share of Segment Vehicle FSI Crashes:** 30% (310)
- **Common scenario:** AADT between 20,000–40,000, divided roadway, 6–7 lanes, posted speed limit of 40–50 MPH
- **Share of all lane departure crashes:** 20%
- **Top contributing factor:** Careless or negligent driving (34%)
- **Other key conditions:** 52% occurred at night

2. Rear-End Crashes on Segments

- **Share of Segment Vehicle FSI Crashes:** 20% (210)
- **Common scenario:** AADT between 20,000–40,000, divided roadway, 6–7 lanes, posted speed limit of 40–50 MPH
- **Share of all rear-end crashes:** 21%
- **Top contributing factors:**
 - Careless or negligent driving (60%)
 - Following too closely (16%)
- **Other key conditions:** 19% occurred on wet road surfaces

3. Left-Turn Crashes at Intersections

- **Share of Intersection Vehicle FSI Crashes:** 40% (387)
- **Common scenario:** 4-leg intersection with entering volume of 30,000–60,000; major road with ≥6 lanes and 40–50 MPH speed limit intersecting a minor road with ≤3 lanes and ≤35 MPH speed limit
- **Share of all left-turn crashes:** 25%
- **Top contributing factors:**
 - Failure to yield right-of-way (48%)
 - Running a red light (24%)

4. Angle Crashes at Intersections

- **Share of Intersection Vehicle FSI Crashes:** 22% (217)
- **Common scenario 1:** 4-leg intersections with entering volume ≥60,000, where both roads have ≥6 lanes and 40–50 MPH speed limits
- **Share of all angle crashes for common scenario 1:** 11%
- **Common scenario 2:** 4-leg intersections with entering volume between 30,000–60,000, where a ≥6-lane, 40–50 MPH road intersects a ≤3-lane, ≤35 MPH road
- **Share of all angle crashes for common scenario 2:** 10%
- **Top contributing factors for scenario 1 and 2, respectively:**
 - Running a red light (55% and 54%)
 - Failure to yield right-of-way (18% and 17%)

MOTORCYCLE CRASHES

From 2019-2023, there were 459 crashes involving a motorcycle which resulted in someone being fatally or seriously injured. **FIGURE 15** shows that a majority (68%) of these crashes occurred along segments, with the remaining 32% occurring at intersections. As shown in **TABLE 16**, they are most frequent in the afternoon and evening hours of 3 to 9 PM, which aligns with heavier traffic and recreational riding times.

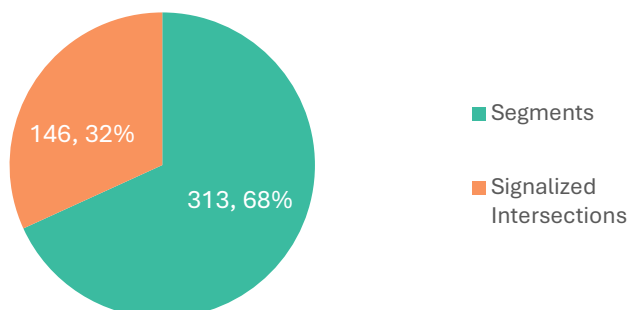


Figure 15 FSI Motorcycle Crashes by Network Type on State- and County-maintained Roads, 2019-2023

Time	12-3 AM	3-6 AM	6-9 AM	9-Noon	Noon-3 PM	3-6 PM	6-9 PM	9-Midnight
Motorcycle Crashes	25 (5.4%)	11 (2.4%)	34 (7.4%)	44 (9.6%)	68 (14.8%)	106 (23.1%)	104 (22.7%)	67 (14.6%)

Table 16 FSI Motorcycle Crash Summary by Time of Day on State- and County-maintained Roads, 2019-2023

TABLE 17 summarizes fatal and serious injury motorcycle crashes by reported lighting conditions. Most crashes occurred during daylight, which accounted for 50% of fatal crashes and 60% of serious injury crashes. However, a substantial share of fatal crashes (37%) occurred in dark but lighted conditions, highlighting an elevated risk of fatal outcomes when riding at night, even on illuminated roadways.

Motorcycle crashes in dark-unlighted conditions were less common overall but still present in the data, with 10% of fatal crashes and 6% of serious injury crashes reported under these conditions. While daytime riding is associated with a higher number of severe crashes, likely due to greater overall exposure, nighttime crashes appear to carry a higher risk of fatal outcomes.

Reported Lighting Condition	Dark - Lighted	Dark - Not Lighted	Dark - Unknown Lighting	Dawn	Daylight	Dusk	Total
Fatal Crashes	43 (37.4%)	11 (9.6%)	2 (1.7%)	1 (0.9%)	57 (49.6%)	1 (0.8%)	115
Serious Injury Crashes	96 (27.9%)	20 (5.8%)	0 (0%)	3 (0.9%)	207 (60.2%)	18 (5.2%)	344

Table 17 FSI Motorcycle Crash Summary by Reported Lighting Condition on State- and County-maintained Roads, 2019-2023

SEGMENT CRASH ANALYSIS

TOP CRASH TYPES

FIGURE 16 shows the top crash types for FSI motorcycle crashes. The most common crash type is fixed-object or run-off-road, accounting for 31% of all FSI motorcycle crashes. This is followed closely by left turn crashes at 30%.

For fixed-object/run-off-road crashes, the most common contributing action was careless or negligent driving, reported in 33% of cases. For left-turn crashes, the top contributing factor was failure to yield the right-of-way, cited in 58% of crashes. These patterns highlight the role of both roadway departure and turning movement conflicts in the most severe motorcycle crashes.

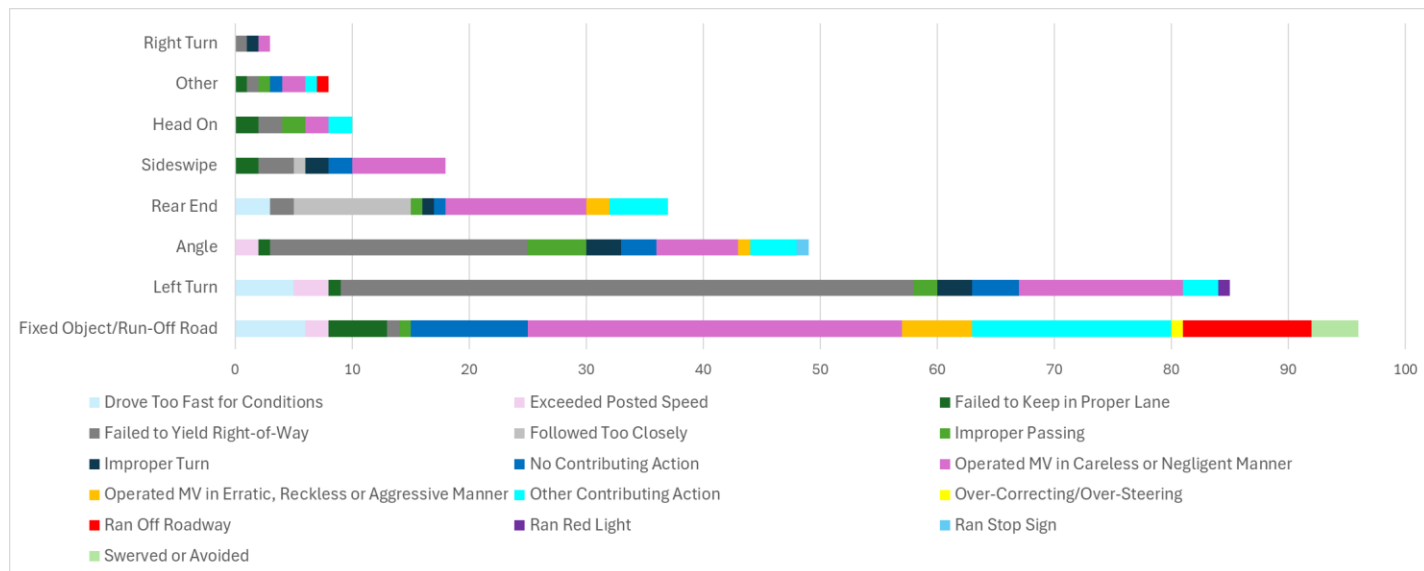


Figure 16 Segment related FSI Motorcycle Crashes by Network Type on State- and County-maintained Roads, 2019-2023

CRASH SUMMARY BY ROADWAY CHARACTERISTICS

***THE** total crashes shown in this table are less than the total crashes on the segments because some roadway segments do not have AADT data available.

Table 18 summarizes motorcycle FSI crashes by AADT and shows that segments with AADT between 20,000 and 40,000 make up 26% of centerline miles but account for 41% of crashes, indicating a disproportionate crash concentration on moderately traveled roads. Segments with AADT over 40,000 represent 6.5% of the network and account for 23% of crashes, further emphasizing elevated risk on busier roadways. In contrast, segments with AADT under 20,000 represent the majority of mileage (68%) but account for 36% of crashes.

AADT	<= 20,000	20,000 – 40,000	40,000 – 60,000	≥ 60,000
% of Centerline miles with AADT	67.5%	26.0%	5.5%	1.0%
Motorcycle Crashes*	104 (35.7%)	119 (40.9%)	55 (18.9%)	13 (4.5%)

*The total crashes shown in this table are less than the total crashes on the segments because some roadway segments do not have AADT data available.

Table 18 Segment related FSI Motorcycle Crash Summary by AADT on State- and County-maintained Roads, 2019-2023

TABLE 19 compares motorcycle crashes by posted speed limit. Segments posted at 40–50 MPH represent 31% of network mileage but account for 56% of crashes, indicating a high-risk category. High-speed roads (≥55 MPH) are relatively limited in coverage (2.1% of mileage) but account for 6% of crashes. Roads posted at 35 MPH or below comprise 66.5% of the network but account for 38.3% of motorcycle crashes.

Posted Speed Limit	<=35 MPH	40-50 MPH	>=55 MPH
% of Centerline miles with speed limit	66.5%	31.4%	2.1%
Motorcycle Crashes	120 (38.3%)	175 (55.9%)	18 (5.8%)

Table 19 Segment related FSI Motorcycle Crash Summary by Posted Speed Limit on State- and County-maintained Roads, 2019-2023

TABLE 20 presents crash data by the number of lanes. Motorcycle crashes are more likely to occur on multilane roadways. 4–5 lane roads represent 18.5% of the network and account for the largest share of crashes (33.5%), followed closely by 6–7 lane roads, which represent 18.2% of the mileage and 29.7% of crashes. In comparison, 3 or fewer lane roads account for 62% of the network but 31% of crashes.

Number of Lanes	3 or fewer Lanes	4-5 Lanes	6-7 Lanes	8 or more Lanes
% of Centerline miles with # lanes	61.9%	18.5%	18.2%	1.4%
Motorcycle Crashes	98 (31.3%)	105 (33.5%)	93 (29.7%)	17 (5.5%)

Table 20 Segment related FSI Motorcycle Crashes Summary by Number Lanes on State- and County-maintained Roads, 2019-2023

INTERSECTION CRASHES

TOP CRASH TYPES

TABLE 21 presents fatal and serious injury motorcycle crashes at intersections by crash type and contributing driver action. The most common crash type is left-turn crashes, representing 30% of intersection-related FSI motorcycle crashes. Angle crashes follow at 25%.

For left-turn crashes, the top contributing factor was failure to yield the right-of-way, reported in 59% of crashes. Running a red light was the second most common factor, present in 23% of cases.

For angle crashes, running a red light was the top contributing factor (36%), followed by careless or negligent operation (17%). Together, left-turn and angle crashes account for 55% of all intersection-related motorcycle FSI crashes, indicating a need to further evaluate conflict points and driver behavior at signalized locations.

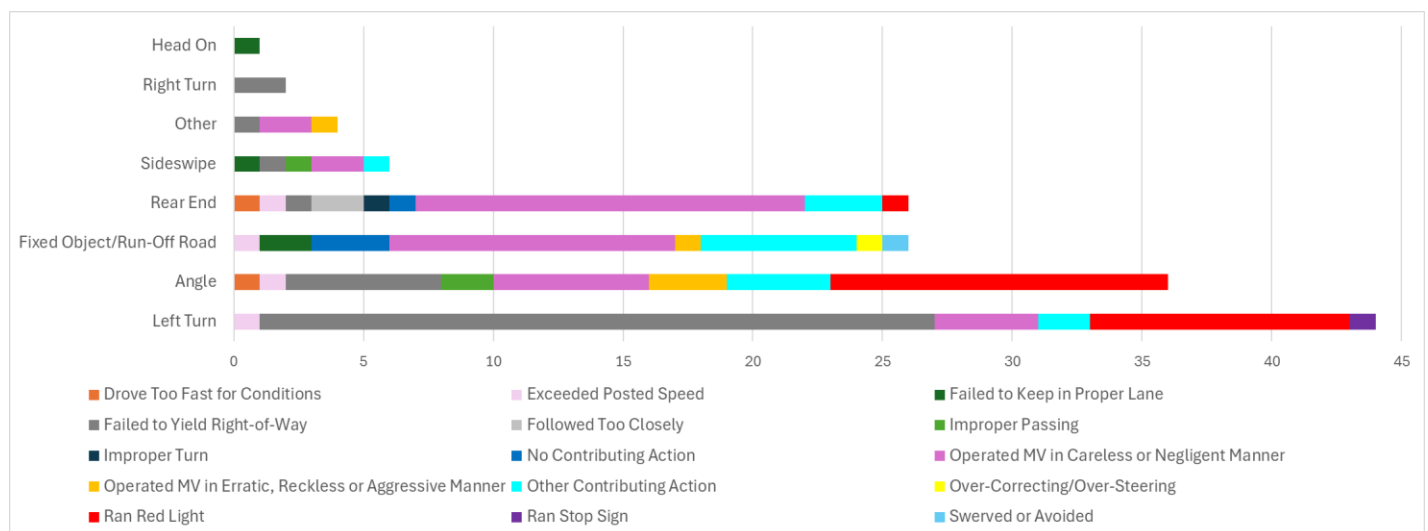


Table 21 Intersection related FSI Motorcycle Crashes Summary by Light Condition on State- and County-maintained Roads, 2019-2023

CRASH SUMMARY BY ROADWAY CHARACTERISTICS

TABLE 22 summarizes motorcycle crashes by number of intersection legs. Intersections with 4 or 5 legs represent 82% of signalized intersections in the dataset, but account for 90% of FSI motorcycle crashes. This overrepresentation suggests greater risk at more complex intersections, which may introduce additional turning movements or conflict points compared to simpler 3-leg intersections.

Number of Legs	3 legs	4 or 5 legs
% Intersections	18.3%	81.7%
Motorcycle Crashes	14 (9.6%)	132 (90.4%)

Table 22 Intersection Related FSI Motorcycle Crashes by Number of Intersection Legs on State- and County-maintained Roads, 2019-2023

TABLE 23 presents FSI motorcycle crashes by ETV at intersections. Intersections with 30K to 60K ETV account for 47% of locations and 51% of crashes, while intersections with 60K+ ETV make up just 13% of locations but represent 23% of crashes. These patterns show that a disproportionate share of severe motorcycle crashes occur on roads with higher traffic volumes.

ETV	<= 30K	30K < - ≤ 60K	≥ 60K
% Intersections	39.9%	47.0%	13.1%
Motorcycle Crashes	38 (26%)	75 (51.4%)	33 (22.6%)

Table 23 Intersection Related FSI Motorcycle Crashes by Entering Traffic Volume on State- and County-maintained Roads, 2019-2023

TABLE 24 shows FSI motorcycle crashes based on the lane configuration of intersecting roads. Intersections where a 6+ lane road meets a 3-lane or smaller road make up 33% of intersections but account for 37% of crashes. Intersections of two 6+ lane roads make up 4% of locations but are associated with 10% of crashes. These trends suggest elevated risk where wide, high-volume roads intersect with narrower streets (or with other wide roads) likely due to increased speed and complexity.

# of Lanes on Each Approach	>=6 & >=6	>=6 & 4-5	>=6 & <=3	>=6 & odd leg	4-5 & 4-5	4-5 & <=3	4-5 & odd leg	<=3 & <=3	<=3 & odd leg
% Intersections	3.9%	6.4%	33.4%	3.1%	5.2%	30.0%	1.7%	15.8%	0.5%
Motorcycle Crashes	15 (10.3%)	13 (8.9%)	54 (37%)	4 (2.7%)	9 (6.1%)	33 (22.6%)	0 (0%)	16 (11%)	2 (1.3%)

Table 24 Intersection Related FSI Motorcycle Crashes by Number of Lanes on Each Approach on State- and County-maintained Roads, 2019-2023

TABLE 25 shows that intersections where a 40–50 MPH road intersects with a ≤35 MPH road make up the largest share of the network at 48.6% of signalized intersections and account for 45.9% of severe motorcycle crashes. This indicates nearly proportional representation, though slightly underrepresented relative to their presence in the network. Intersections where both roads are 40–50 MPH are 17.8% of intersections but account for 25.3% of crashes, showing clear overrepresentation. Together, these two types account for 66.4% of intersections and 71.2% of crashes, pointing to mid-speed intersections as key locations for motorcycle crash risk.

Posted Speed on Each Approach (MPH)	<=35 & odd leg	<=35 & <=35	40-50 & odd leg	40-50 & <=35	40-50 & 40-50	>=55 & <=35	>=55 & >=55	>=55 & 40-50
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% Intersections	0.8%	24.8%	4.5%	48.6%	17.8%	1.8%	0.6%	1.0%
Motorcycle Crashes	2 (1.4%)	30 (20.5%)	4 (2.7%)	67 (45.9%)	37 (25.3%)	2 (1.4%)	3 (2.1%)	1 (0.7%)

Table 25 Intersection Related FSI Motorcycle Crashes by Posted Speed on Each Approach on State- and County-maintained Roads, 2019-2023

Note: crash trees and further recurring crash condition analysis for FSI motorcycle crashes was not completed due to the low number of total crashes and potential for breakdown in statistical reliability.

PEDESTRIAN CRASHES

From 2019-2023, there were 458 crashes involving someone walking which resulted in a death or serious injury.

Figure 17 shows that a majority (61%) of these crashes occurred along segments, with the remaining 39% occurring at intersections. As shown in **TABLE 26**, they are most frequent in the evening hours of 6 PM to 12 AM. Early morning (3–6 AM) also shows an elevated share at 9.4%, despite activity typically being lower at these times.

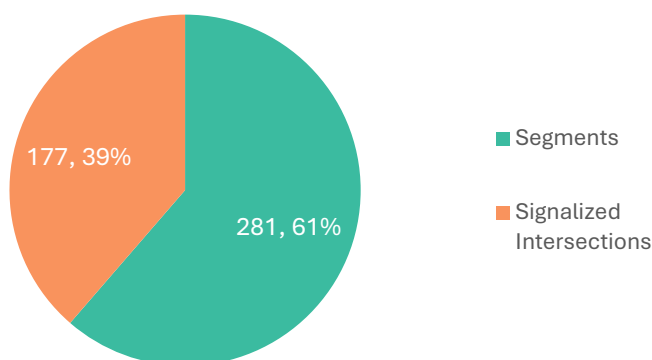


Figure 17 FSI Pedestrian Crashes by Network Type on State- and County-maintained Roads, 2019-2023

	12-3 AM	3-6 AM	6-9 AM	9-Noon	Noon-3 PM	3-6 PM	6-9 PM	9-Midnight
Pedestrian Crashes	33 (7.2%)	43 (9.4%)	40 (8.7%)	30 (6.6%)	38 (8.3%)	33 (7.2%)	129 (28.2%)	112 (24.5%)

Table 26 FSI Pedestrian Crash Summary by Time of Day on State- and County-maintained Roads, 2019-2023

TABLE 27 shows that the majority of fatal and serious injury pedestrian crashes occurred under dark conditions. Crashes in dark but lighted conditions account for 53.9% of fatalities and 44.9% of serious injuries, while dark and unlighted conditions make up an additional 21.1% of fatalities and 14.2% of serious injuries. Combined, nearly three-quarters of fatal crashes and more than half of serious injury crashes happened at night, highlighting the elevated risk of walking in low-light conditions. Although daylight conditions saw a substantial share of serious injuries (34.3%), they were associated with a smaller share of fatal crashes (22.1%).

Reported Lighting Condition	Dark - Lighted	Dark - Not Lighted	Dark - Unknown Lighting	Dawn	Daylight	Dusk	Total
Fatal Crashes	110 (53.9%)	43 (21.1%)	3 (1.5%)	2 (1%)	45 (22.1%)	1 (0.4%)	204
Serious Injury Crashes	114 (44.9%)	36 (14.2%)	1 (0.4%)	7 (2.8%)	87 (34.3%)	9 (3.4%)	254

Table 27 FSI Pedestrian Crashes Summary by Reported Lighting Condition on State- and County-maintained Roads, 2019-2023

Pedestrian crash records often lack detail in standard crash type fields, so this analysis utilized the “Vulnerable Road User Action” field from Signal Four Analytics to identify segment and intersection crash trends. This field provides more specific information about pedestrian behavior at the time of the crash, including whether the person was crossing in a marked crosswalk, walking along the road, or entering the roadway unexpectedly. These details help identify patterns that would otherwise be obscured. For the purposes of this assessment, “Not Near Crosswalk” refers to crashes that occurred more than 100 feet away from a crosswalk.

SEGMENT CRASH ANALYSIS

TOP SEGMENT CRASH TYPES

*The sum of percentages may not equal exactly 100% because of rounding adjustments.

Table 28 summarizes combinations of vehicle maneuver, pedestrian action, and crosswalk context for segment crashes. The most common scenario involved a vehicle traveling straight ahead and a pedestrian failing to yield the right-of-way away not near a crosswalk, which accounted for 23.5% of all FSI crashes. Other common patterns included:

- Pedestrians darting or dashing into the road away from a crosswalk (18.9%)
- Pedestrians in the roadway improperly or with no improper action, both near and far from marked crosswalks (various combinations totaling over 15%)

Crashes occurring far from a crosswalk (defined as more than 100 feet away) were involved in many of the most severe crashes. These midblock incidents may reflect gaps in safe pedestrian crossing infrastructure, especially on higher-speed corridors.

Vehicle Maneuver	Vulnerable Road User Action	Crosswalk Context	% of Total FSI Crashes*
Changing Lanes	Failure to Yield Right-of-Way	Not Near Crosswalk	0.8%
Making U-Turn	In Roadway Improperly	Not Near Crosswalk	0.8%
Negotiating a Curve	No Improper Action	Not Near Crosswalk	0.8%
Slowing	Dart/Dash	Not Near Crosswalk	0.8%
Straight Ahead	Failure to Yield Right-of-Way	Near Crosswalk	3.0%
		Not Near Crosswalk	23.5%
	Dart/Dash	Near Crosswalk	2.3%
		Not Near Crosswalk	18.9%
	In Roadway Improperly	Not Near Crosswalk	17.4%
	No Improper Action	Near Crosswalk	0.8%
		Not Near Crosswalk	9.8%
Turning Left	Other	Near Crosswalk	0.8%
		Not Near Crosswalk	7.6%
	Failure to Yield Right-of-Way	Near Crosswalk	0.8%
		No Improper Action	0.8%
		Not Near Crosswalk	0.8%
Turning Right	No Improper Action	Near Crosswalk	0.8%
		Not Near Crosswalk	0.8%
Unknown	Failure to Yield Right-of-Way	Not Near Crosswalk	5.30%
	Dart/Dash	Not Near Crosswalk	0.8%

	In Roadway Improperly	Not Near Crosswalk	0.8%
	No Improper Action	Not Near Crosswalk	2.30%

*The sum of percentages may not equal exactly 100% because of rounding adjustments.

Table 28 Segment Related FSI Pedestrian Crashes by Vehicle Maneuver, Pedestrian Action and Distance to the Crosswalk on State- and County-maintained Roads, 2019-2023

CRASH SUMMARY BY ROADWAY CHARACTERISTICS

TABLE 29 shows that while most of the County and State roadway mileage has average annual daily traffic (AADT) of 20,000 or less (67.5%), these lower-volume roads account for 35.3% of pedestrian FSI crashes. Crashes are disproportionately concentrated on moderate- and high-volume roadways, especially those with AADT between 20,000 and 40,000, which represent 26% of the network but account for 41% of crashes. Roadways with AADT above 40,000 make up just 6.5% of mileage but account for nearly 24% of crashes.

AADT	<= 20,000	20,000 – 40,000	40,000 – 60,000	≥ 60,000
% of Centerline miles with AADT	67.5%	26.0%	5.5%	1.0%
Pedestrian Crashes*	94 (35.3%)	109 (41%)	55 (20.7%)	8 (3%)

*The total crashes shown in this table are less than the total crashes on the segments because some roadway segments do not have AADT data available.

Table 29 Segment related FSI Pedestrian Crash Summary by AADT on State- and County-maintained Roads, 2019-2023

TABLE 30 indicates that pedestrian fatal and serious injury crashes are more likely to occur on roads with posted speeds between 40 and 50 MPH, which account for 31.4% of centerline miles but are associated with 56.9% of crashes. In contrast, roads with speed limits 35 MPH or below make up two-thirds of roadway mileage but are associated with 38.1% of crashes, suggesting lower risk relative to exposure. High-speed roads (≥55 MPH) are rare and account for a smaller share of crashes, but still show some overrepresentation given their limited mileage.

Posted Speed Limit	<=35 MPH	40-50 MPH	>=55 MPH
% of Centerline miles with speed limit	66.5%	31.4%	2.1%
Pedestrian Crashes	107 (38.1%)	160 (56.9%)	14 (5%)

Table 30 Segment Related FSI Pedestrian Crash Summary by Posted Speed Limit on State- and County-maintained Roads, 2019-2023

TABLE 31 highlights that pedestrian crashes are more likely to occur on multi-lane roads. Segments with four or more lanes represent 38.1% of roadway mileage but are associated with 79% of pedestrian crashes. In particular, 4–5 lane roads account for 18.5% of the network but 43.4% of crashes. This pattern mirrors trends observed in motorcycle and vehicle crashes, where wider roadways present increased exposure and potential for conflict.

	3 or fewer Lanes	4-5 Lanes	6-7 Lanes	8 or more Lanes
% of Centerline miles with # lanes	61.9%	18.5%	18.2%	1.4%
Pedestrian Crashes	59 (21%)	122 (43.4%)	89 (31.7%)	11 (3.9%)

Table 31 Segment Related FSI Pedestrian Crash Summary by Number of Lanes on State- and County-maintained Roads, 2019-2023

INTERSECTION CRASHES

TOP INTERSECTION CRASH TYPES

***THE** sum of percentages may not equal exactly 100% because of rounding adjustments.

Table 32 summarizes fatal and serious injury (FSI) pedestrian crashes at signalized intersections based on vehicle maneuver and Vulnerable Road User Action. The most common crash scenario involved a vehicle traveling straight and a pedestrian failing to yield the right-of-way, representing 22.7% of intersection crashes. Other frequent combinations include:

- Darting or dashing into the roadway in front of a vehicle going straight (16.0%)
- Failure to obey traffic signs or signals during a vehicle's straight movement (9.3%)
- Pedestrians in the roadway improperly during a straight movement (12.0%)

Though less common, left-turning vehicles were also involved in crashes with pedestrians in the roadway improperly or with no improper action, highlighting potential issues with visibility, yielding behavior, or turn signal timing.

Overall, straight-through vehicle movements are linked to the highest number of FSI pedestrian crashes at intersections, especially when combined with unexpected pedestrian behavior or failures to yield or obey signals.

Vehicle Maneuver	Vulnerable Road User Action	% of Total FSI Crashes*
Changing Lanes	No Improper Action	1.3%
Leaving Traffic Lane	No Improper Action	1.3%
Slowing	Other	1.3%
Straight Ahead	Dart/Dash	16.0%
	Failure to Obey Traffic Signs, Signals, or Officer	9.3%
	Failure to Yield Right-of-Way	22.7%
	In Roadway Improperly	12.0%
	No Improper Action	4.0%
	Other	9.3%
Turning Left	In Roadway Improperly	2.7%
	No Improper Action	4.0%
Turning Right	Failure to Obey Traffic Signs, Signals, or Officer	1.3%
	Failure to Yield Right-of-Way	1.3%
	No Improper Action	5.3%
	Other	1.3%
Other	Other	6.6%
Unknown	Failure to Obey Traffic Signs, Signals, or Officer	1.3%
	Failure to Yield Right-of-Way	2.7%
	In Roadway Improperly	1.3%

*The sum of percentages may not equal exactly 100% because of rounding adjustments.

Table 32 Intersection Related FSI Pedestrian Crashes by Pedestrian Actions and Vehicle Maneuver on State- and County-maintained Roads, 2019-2023

CRASHES SUMMARY BY ROADWAY CHARACTERISTICS

TABLE 33 shows that 4–5 leg intersections make up 81.7% of signalized intersections and are associated with 96% of fatal and serious injury pedestrian crashes, suggesting higher crash risk at more complex, multi-leg intersections.

Number of Legs	3 legs	4 or 5 legs
% Intersections	18.3%	81.7%
Pedestrian Crashes	7 (4%)	170 (96%)

Table 33 Intersection Related FSI Pedestrian Crashes by Number of Intersection Legs on State- and County-maintained Roads, 2019-2023

TABLE 34 indicates that intersections with entering traffic volumes of 60,000 or more represent 13.1% of the network but account for 28.2% of pedestrian crashes. Intersections with ETV between 30,000 and 60,000 are nearly proportional, representing 47% of locations and 45.8% of crashes. Crash risk appears to increase with entering traffic volume, particularly at the highest-volume intersections.

ETV	<= 30K	30K < - ≤ 60K	≥ 60K
% Intersections	39.9%	47.0%	13.1%
Pedestrian Crashes	46 (26%)	81 (45.8%)	50 (28.2%)

Table 34 Intersection Related FSI Pedestrian Crashes by Entering Traffic Volume on State- and County-maintained Roads, 2019-2023

TABLE 35 highlights that intersections where both intersecting roads have six or more lanes account for 3.9% of intersections but 13.6% of crashes, indicating a disproportionate crash risk. Intersections where a 6+ lane road meets a 3-lane or smaller road are the most common configuration (33.4%) and account for a similar share of crashes (32.8%). Crashes are most concentrated at intersections involving wide roads, especially when both intersecting roads are multi-lane facilities.

# of Lanes on Each Approach	>=6 & >=6	>=6 & 4-5	>=6 & <=3	>=6 & odd leg	4-5 & 4-5	4-5 & <=3	4-5 & odd leg	<=3 & <=3	<=3 & odd leg
% Intersections	3.9%	6.4%	33.4%	3.1%	5.2%	30.0%	1.8%	15.8%	0.5%
Pedestrian Crashes	24 (13.6%)	21 (11.9%)	58 (32.8%)	0 (0%)	13 (7.3%)	47 (26.5%)	0 (0%)	13 (7.3%)	1 (0.6%)

Table 35 Intersection Related FSI Pedestrian Crashes by Number of Lanes on Each Approach on State- and County-maintained Roads, 2019-2023

TABLE 36 shows that intersections where both roads have posted speeds of 40–50 MPH make up 17.8% of the network but account for 30.5% of crashes, indicating overrepresentation. Crash concentrations are highest at intersections involving medium-speed roads, particularly when both approaches are in the 40–50 MPH range.

Posted Speed on Each Approach (MPH)	<=35 & odd leg	<=35 & <=35	40-50 & odd leg	40-50 & <=35	40-50 & 40-50	>=55 & <=35	>=55 & >=55	>=55 & 40-50
% Intersections	0.8%	24.8%	4.5%	48.6%	17.8%	1.8%	0.6%	1.0%
Pedestrian Crashes	1 (0.6%)	52 (29.4%)	0 (0%)	70 (39.5%)	54 (30.5%)	0 (0%)	0 (0%)	0 (0%)

Table 36 Intersection Related FSI Pedestrian Crashes by Speed Limit Combination of the Intersecting Roads on State- and County-maintained Roads, 2019-2023

BICYCLE CRASHES

From 2019-2023, there were 255 crashes involving someone riding a bicycle which resulted in a death or serious injury.

FIGURE 18 shows that a majority (61%) of these crashes occurred along segments, with the remaining 39% occurring at intersections. As shown in **TABLE 37**, they are most frequent during the afternoon/evening (3–9 PM, ~41%), but are generally more spread out throughout the daylight hours than the other modes considered.

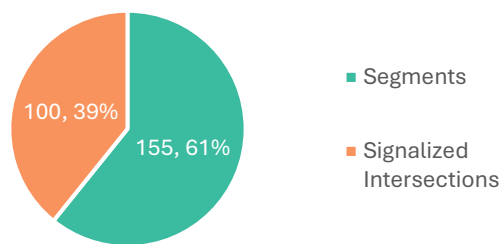


Figure 18 FSI Bicycle Crashes by Network Type on State- and County-maintained Roads, 2019-2023

	12-3 AM	3-6 AM	6-9 AM	9-Noon	Noon-3 PM	3-6 PM	6-9 PM	9-Midnight
Bicycle Crashes	7 (2.7%)	7 (2.7%)	28 (11%)	47 (18.4%)	33 (12.9%)	55 (21.6%)	51 (20%)	27 (10.7%)

Table 37 FSI Bicycle Crashes Summary by Time of Day on State- and County-maintained Roads, 2019-2023

TABLE 38 summarizes fatal and serious injury (FSI) bicycle crashes by reported lighting condition. While most serious injuries occurred during the day (67.9%), fatal crashes were more evenly split between daylight (41.3%) and dark but lighted conditions (39.1%). Combined, these two lighting conditions account for more than 80% of bicycle fatalities. In contrast, dark-not lighted conditions contributed a smaller share of crashes (8.7% of fatalities and 8.1% of serious injuries) but still represent elevated risk due to reduced visibility. These patterns suggest that while daytime exposure leads to more injuries overall, crashes occurring at night under lit conditions are more likely to be fatal.

Reported Lighting Condition	Dark - Lighted	Dark - Not Lighted	Dark - Unknown Lighting	Dawn	Daylight	Dusk	Total
Fatal Crashes	18 (39.1%)	4 (8.7%)	0 (0%)	1 (2.2%)	19 (41.3%)	4 (8.7%)	46
Serious Injury Crashes	30 (14.4%)	17 (8.1%)	1 (0.5%)	6 (2.9%)	142 (67.9%)	13 (6.2%)	209

Table 38 FSI Bicycle Crashes Summary by Reported Lighting Condition on State- and County-maintained Roads, 2019-2023

As with pedestrian crashes, bicycle-involved crash records often lack detail in standard crash type fields, so this analysis utilized the “Vulnerable Road User Action” field from Signal Four Analytics to identify segment and intersection crash trends. This field provides more specific information about the behavior of the person biking at the time of the crash, including whether the person was traveling along the roadway, crossing midblock, riding against traffic, or navigating through an intersection. These details help identify patterns that would otherwise be obscured.

SEGMENT CRASH ANALYSIS

TOP CRASH TYPES

***THE** sum of percentages may not equal exactly 100% because of rounding adjustments.

Table 39 The most common scenario resulting in fatal and serious injury (FSI) crashes involves a driver and person biking traveling in the same direction, with both going straight ahead. These scenarios account for more than 35% of all bicycle-related FSI crashes, and most of them occurred on roads without any dedicated bicycle facility (54%). The most common bicyclist actions in these cases were listed as “Other,” “No Improper Action,” or “Failure to Yield the Right-of-Way.”

Crashes involving drivers turning right or left and a person biking also represent a significant portion of the total (22% and 11.2% of bicycle-involved FSI crashes, respectively), particularly at locations without dedicated infrastructure. These often involve similar bicyclist actions and may point to visibility or yielding conflicts during turning movements.

Although bicycle facilities were present in some crash records, more than half of all fatal and serious injury crashes occurred where no bike facility was recorded. This emphasizes the need to understand how roadway design and the absence of dedicated infrastructure may relate to crash risk, although this relationship does not necessarily determine causality.

Bike Facility	Vehicle Maneuver	Vulnerable Road User Action	% of Total FSI Crashes*
Separated	Straight Ahead	In Roadway Improperly	1.40%
Buffered	Straight Ahead	Failure to Yield ROW	1.40%
		In Roadway Improperly	1.40%
	Turning Right	No Improper Action	1.40%
		Other	1.40%
Colored	Straight Ahead	No Improper Action	1.40%
Designated	Unknown	Other	1.40%
	Straight Ahead	Failure to Yield ROW	1.40%
		Dart/Dash	1.40%
		In Roadway Improperly	1.40%
		Failure to Obey Signals	2.80%
		No Improper Action	4.20%
		Other	8.30%
	Turning Left	Failure to Yield ROW	1.40%
		No Improper Action	2.80%
		Other	1.40%
	Turning Right	Failure to Yield ROW	4.20%
		No Improper Action	2.80%
Sharrow	Straight Ahead	Other	1.40%
	Turning Left	No Improper Action	1.40%
	Turning Right	No Improper Action	1.40%
	Other	No Improper Action	1.40%
None	Overtaking/Passing	Other	1.40%
	Stopped in Traffic	Other	1.40%
	Straight Ahead	Failure to Yield ROW	13.90%
		Dart/Dash	6.90%
		In Roadway Improperly	2.80%
		Failure to Obey Signals	1.40%
		No Improper Action	2.80%
		Other	6.90%
	Turning Left	No Improper Action	2.80%
		Other	1.40%
	Turning Right	Failure to Yield ROW	1.40%
		No Improper Action	6.90%
		Other	2.80%

*The sum of percentages may not equal exactly 100% because of rounding adjustments.

Table 39 Segment Related FSI Bicycle Crashes Summary by Bike Facility, Vehicle Maneuver, and Bicyclist Action on State- and County-maintained Roads, 2019-2023

CRASHES SUMMARY BY ROADWAY CHARACTERISTICS

***THE** total crashes shown in this table are less than the total crashes on the segments because some roadway segments do not have AADT data available.

Table 40 shows that while lower-volume roads ($\leq 20,000$ AADT) make up more than two-thirds of County- and State-maintained roadway mileage, they account for about one-third of bicycle crashes. Moderate- to high-volume roads (20,000–60,000 AADT) comprise a smaller portion of the network (31.5%) but carry a much higher share of crashes (64.4%), indicating a disproportionate risk for people biking.

AADT	$\leq 20,000$	20,000 – 40,000	40,000 – 60,000	$\geq 60,000$
% of Centerline miles with AADT	67.5%	26.0%	5.5%	1.0%
Bicycle Crashes*	47 (32.8%)	60 (42%)	32 (22.4%)	4 (2.8%)

*The total crashes shown in this table are less than the total crashes on the segments because some roadway segments do not have AADT data available.

Table 40 Segment related FSI Bicycle Crash Summary by AADT on State- and County-maintained Roads, 2019-2023

TABLE 41 highlights that bicycle crashes are concentrated on moderate-speed roads (40–50 MPH). These segments make up 31.4% of the roadway network but account for 54.2% of crashes. Conversely, roads with speed limits of 35 MPH or lower make up two-thirds of mileage and less than half of crashes.

Posted Speed Limit	≤ 35 MPH	40-50 MPH	≥ 55 MPH
% of Centerline miles with speed limit	66.5%	31.4%	2.1%
Bicycle Crashes	70 (45.2%)	84 (54.2%)	1 (0.6%)

Table 41 Segment Related FSI Bicycle Crash Summary by Posted Speed Limit on State- and County-maintained Roads, 2019-2023

TABLE 42 shows that bicycle crashes are more likely to occur on wider, multi-lane roads. Roads with 4–7 lanes account for 36.7% of the network but represent more than 70% of bicycle crashes. In contrast, roads with 3 or fewer lanes account for 61.9% of the network and 31.6% of crashes. This suggests that higher-volume, multi-lane roads pose greater risk to people biking.

Number of Lanes	3 or fewer Lanes	4-5 Lanes	6-7 Lanes	8 or more Lanes
% of Centerline miles with # lanes	61.9%	18.5%	18.2%	1.4%
Bicycle Crashes	49 (31.6%)	49 (31.6%)	51 (32.9%)	6 (3.9%)

Table 42 Segment Related FSI Bicycle Crash Summary by Number of Lanes on State- and County-maintained Roads, 2019-2023

INTERSECTION CRASHES

TOP CRASH TYPES

***THE** sum of percentages may not equal exactly 100% because of rounding adjustments.

Table 43 highlights that the most common fatal and serious injury (FSI) crash scenario at intersections involves a vehicle traveling straight while the person biking is reported to *failure to obey traffic signs, signals, or officer* (23.3%) or *failing to yield the right-of-way* (16.3%). These scenarios make up nearly 40% of intersection-related FSI bicycle crashes. Other notable patterns include:

- Turning movements, particularly right turns, are linked to several crash scenarios. Right-turn crashes with “no improper action” by the bicyclist account for 9.3%, and right-turn “other” actions add another 7%.
- Straight-ahead vehicle movements paired with “no improper action” or “other” by the bicyclist account for a combined 16.3%.
- Left-turn crashes are also prevalent, especially where the bicyclist was reported to take no improper action (9.3%).

These trends suggest multiple contributing factors at signalized intersections, including motorist turning behavior, failure to yield, and complex interactions at conflict points.

Vehicle Maneuver	Vulnerable Road User Action	% of Total FSI Crashes*
Straight Ahead	Dart/Dash	2.3%
	Failure to Obey Traffic Signs, Signals, or Officer	23.3%
	Failure to Yield Right-of-Way	16.3%
	In Roadway Improperly	2.3%
	No Improper Action	7.0%
	Other	9.3%
Turning Left	Failure to Yield Right-of-Way	2.3%
	No Improper Action	9.3%
Turning Right	Dart/Dash	2.3%
	Failure to Obey Traffic Signs, Signals, or Officer	2.3%
	Failure to Yield Right-of-Way	2.3%
	No Improper Action	9.3%
	Other	7.0%
Unknown	Failure to Yield Right-of-Way	2.3%
	No Improper Action	2.3%

*The sum of percentages may not equal exactly 100% because of rounding adjustments.

Table 43 Intersection Related FSI Bicycle Crashes by Vehicle Maneuver and Bicyclist Action on State- and County-maintained Roads, 2019-2023

CRASHES SUMMARY BY ROADWAY CHARACTERISTICS

TABLE 44 shows that 4- or 5-leg intersections make up 81.7% of all signalized intersections and account for 87% of bicycle crashes, indicating a modest overrepresentation. These more complex intersections present multiple conflict points for people biking, increasing the risk of crashes.

	3 legs	4 or 5 legs
% Intersections	18.3%	81.7%
Bicycle Crashes	13 (13%)	87 (87%)

Table 44 Intersection Related FSI Bicycle Crashes by Number of Intersection Legs on State- and County-maintained Roads, 2019-2023

TABLE 45 indicates that intersections with Entering Traffic Volumes (ETV) of 60,000 or more represent 13.1% of intersections but 26% of crashes, showing strong overrepresentation. Crashes are concentrated at higher-volume intersections, likely due to increased vehicle exposure and turning conflicts.

ETV	<= 30K	30K < - ≤ 60K	≥ 60K
% Intersections	39.9%	47.0%	13.1%
Bicycle Crashes	24 (24%)	50 (50%)	26 (26%)

Table 45 Intersection Related FSI Bicycle Crashes by Entering Traffic Volume on State- and County-maintained Roads, 2019-2023

TABLE 46 shows that bicycle crashes are concentrated at intersections where wide roads meet narrower ones. However, intersections where a 6+ lane road meets a 4–5 lane road make up 6.4% of locations but account for 14% of crashes, and 6+ lane to 6+ lane intersections make up 3.9% of locations but 13% of crashes. These combinations are clearly overrepresented, highlighting the increased risk for people biking at large, complex intersections.

# of Lanes on Each Approach	>=6 & >=6	>=6 & 4-5	>=6 & <=3	>=6 & odd leg	4-5 & 4-5	4-5 & <=3	4-5 & odd leg	<=3 & <=3	<=3 & odd leg
% Intersections	3.9%	6.4%	33.4%	3.1%	5.2%	30.0%	1.8%	15.8%	0.5%
Bicycle Crashes	13 (13%)	14 (14%)	34 (34%)	1 (1%)	4 (4%)	25 (25%)	1 (1%)	8 (8%)	0 (0%)

Table 46 Intersection Related FSI Bicycle Crashes by Number of Lanes on Each Approach on State- and County-maintained Roads, 2019-2023

TABLE 47 illustrates that intersections involving 40–50 MPH roads are consistently overrepresented in bicycle crashes. Intersections where both roads are 40–50 MPH make up 17.8% of intersections but are associated with 33% of bicycle crashes, suggesting elevated crash risk in these speed environments.

Posted Speed on Each Approach (MPH)	<=35 & odd leg	<=35 & <=35	40-50 & odd leg	40-50 & <=35	40-50 & 40-50	>=55 & <=35	>=55 & >=55	>=55 & 40-50
% Intersections	0.8%	24.8%	4.5%	48.6%	17.8%	1.8%	0.6%	1.0%
Bicycle Crashes	0 (0%)	12 (12%)	2 (2%)	50 (50%)	33 (33%)	1 (1%)	0 (0%)	2 (2%)

Table 47 Intersection Related FSI Bicycle Crashes by Posted Speed on Each Approach on State- and County-maintained Roads, 2019-2023

5. CRASH PROFILES

This section highlights common crash scenarios that lead to fatal and serious injury crashes in Palm Beach County. While the previous chapter focused on recurring crash factors based on overrepresentation in crash data, this chapter takes a closer look at the circumstances and patterns behind those crashes.

For each mode, the analysis identifies typical crash types, behaviors, and roadway conditions such as the speed of the road, number of lanes, or traffic volumes that are often present where FSI crashes occur. While this relationship does not necessarily determine causality, these crash profiles help tell the story behind the numbers and offer insight into how and where to prioritize changes.

VEHICLE CRASHES

This section builds on the crash tree summaries presented earlier by identifying common crash profiles: specific combinations of roadway conditions and driver behavior that are overrepresented in fatal and serious injury crashes. Motor vehicle FSI crashes in Palm Beach County are concentrated in the following main scenarios:

LANE DEPARTURE CRASHES

Lane departure crashes are the top type of vehicle FSI crashes on segments, accounting for 30 % of vehicle FSI crashes on segments. As shown in **FIGURE 19**, these crashes are most common on 6–7 lane divided roadways with posted speeds of 40–50 MPH and AADT between 20K–40K. The top contributing factor is careless or negligent driving (34%), and 52% occur at night, highlighting a potential role for visibility, fatigue, or impairment. Over half of the lane departure crashes happening on these facility types occurred at nighttime.

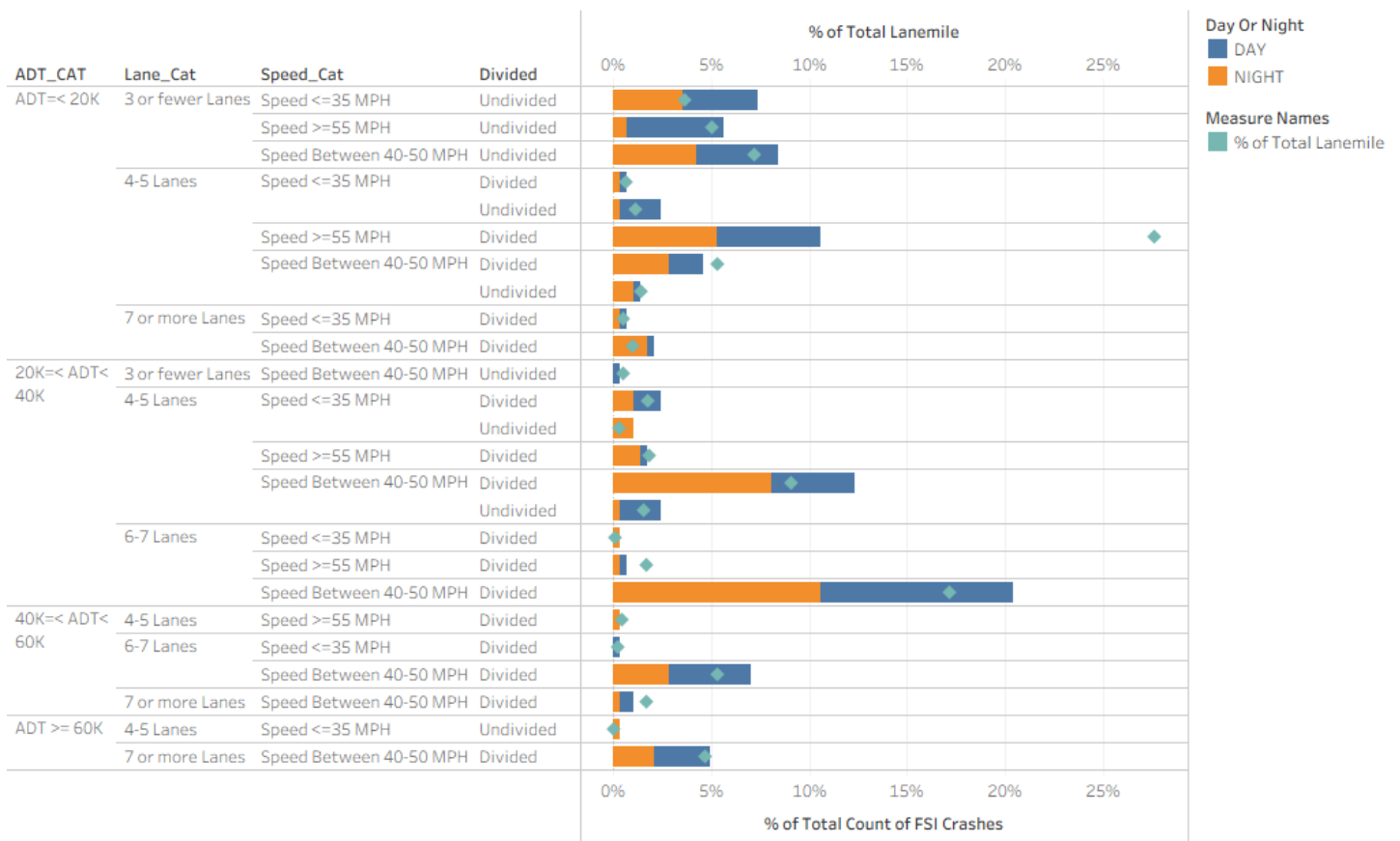


Figure 19 FSI Motor Vehicle Involved Lane Departure Crashes by Road Characteristics on State- and County-maintained Roads, 2019-2023

REAR END CRASHES

Rear end crashes are the second highest type of vehicle FSI crashes on segments, accounting for 20 % of vehicle FSI crashes on segments. As shown in **FIGURE 20**, these crashes typically occur on similar roadway types as fixed object crashes: 6–7 lane, divided roads with posted speeds of 40–50 MPH and AADT between 20K–40K. Careless driving is again the top factor (60%), followed by following too closely (16%). About 19% happen on wet roads, suggesting a role for stopping distance and speed control.

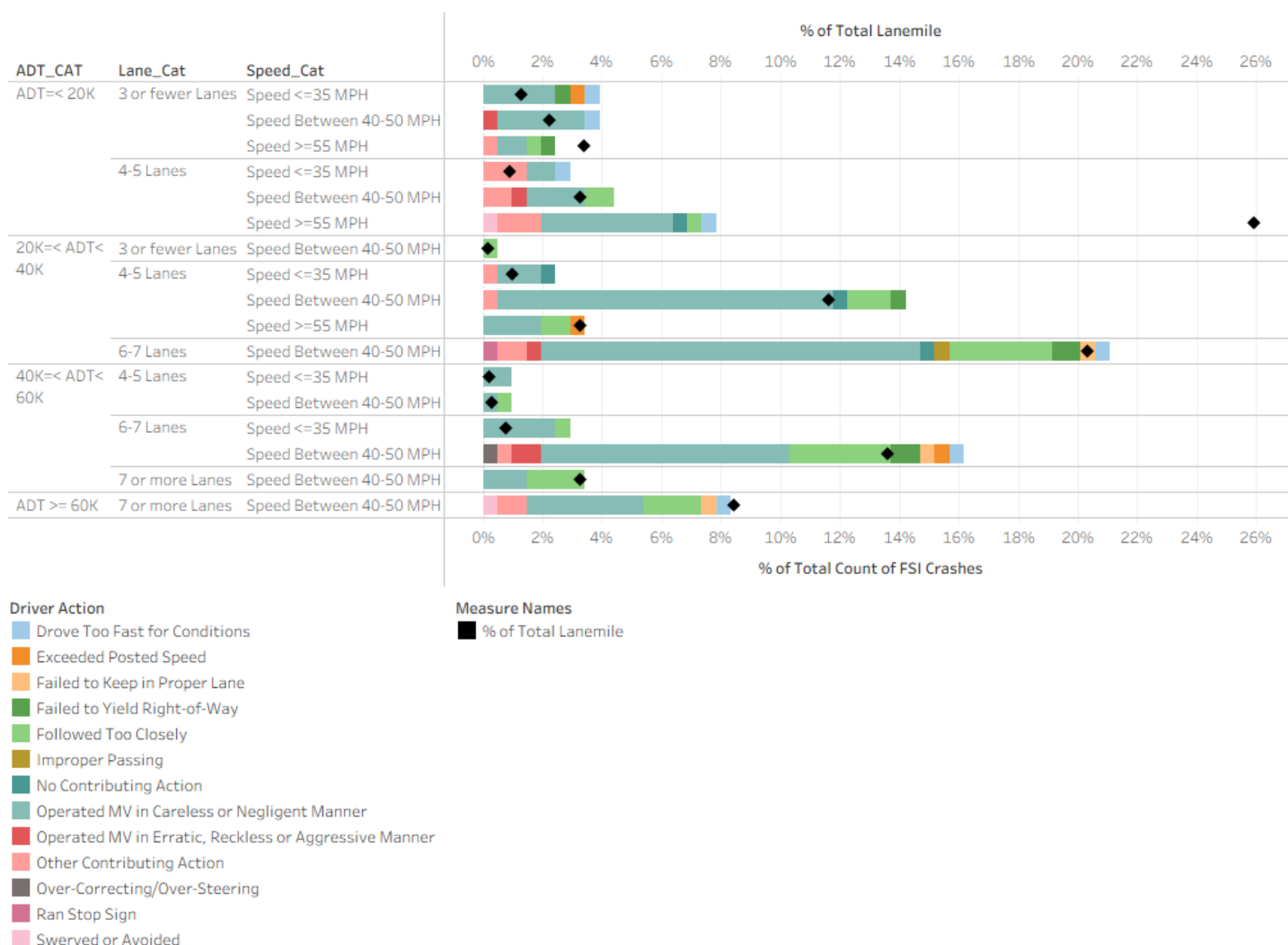


Figure 20 FSI Motor Vehicle Involved Rear End Crashes by Road Characteristics on State- and County-maintained Roads, 2019-2023

Left-turn crashes are the top type of vehicle FSI crashes at signalized intersections, accounting for 40 % of vehicle FSI crashes at intersections. The most common locations are 4-leg signalized intersections where a 6+ lane road (posted 40–50 MPH) intersects a 3-lane or smaller road (posted ≤35 MPH), and the entering traffic volume is between 30K–60K. The driver is typically turning left, and the primary contributing factors are failing to yield the right-of-way (48%) or running a red light (24%).

MOTORCYCLE CRASHES

Motorcycle-involved FSI crashes in Palm Beach County are concentrated in the following main scenarios:

LANE DEPARTURE CRASHES

Lane departure crashes are the top type of motorcycle FSI crashes on segments, accounting for 31% these crashes. As shown in **FIGURE 21**, these crashes are most common on 6–7 lane, divided roadways with AADT between 20K–40K and posted

speeds of 40–50 MPH. Over one-third (34%) involve careless or negligent driving, and more than half (52%) occur at night, often on lighted roadways. These conditions suggest visibility and speed may contribute to crash severity.

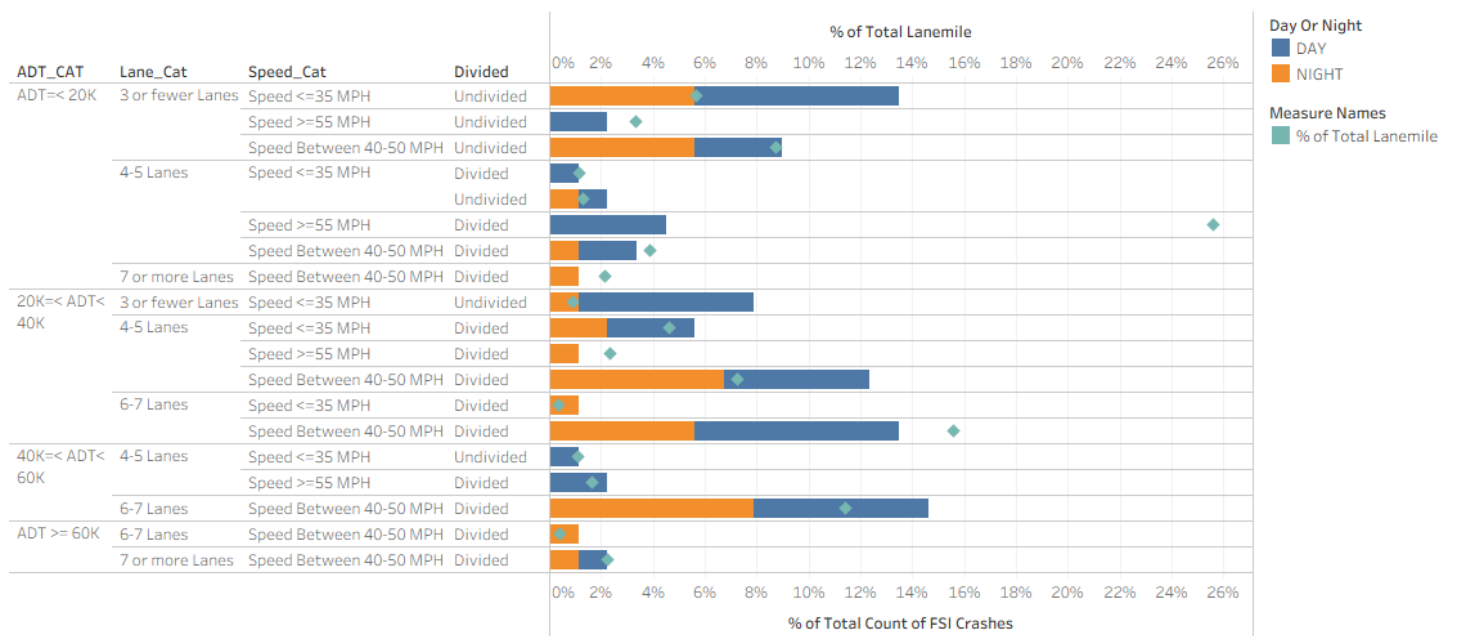


Figure 21 FSI Motorcycle Involved Lane Departure Crashes by Road Characteristics on State- and County-maintained Roads, 2019-2023

LEFT TURN CRASHES

Left-turn crashes are the top type of motorcycle FSI crashes at signalized intersections, accounting for 30 % of motorcycle FSI crashes at intersections. **FIGURE 22** shows that the most common conditions for left-turn crashes involve a 6+ lane divided roadway intersecting with another wide road (often 4–5 or 6+ lanes) at posted speeds of 40–50 MPH. These crashes are heavily concentrated at high-volume intersections and frequently involve failure to yield or visibility issues. About 25–36% occur at night, depending on the facility type.

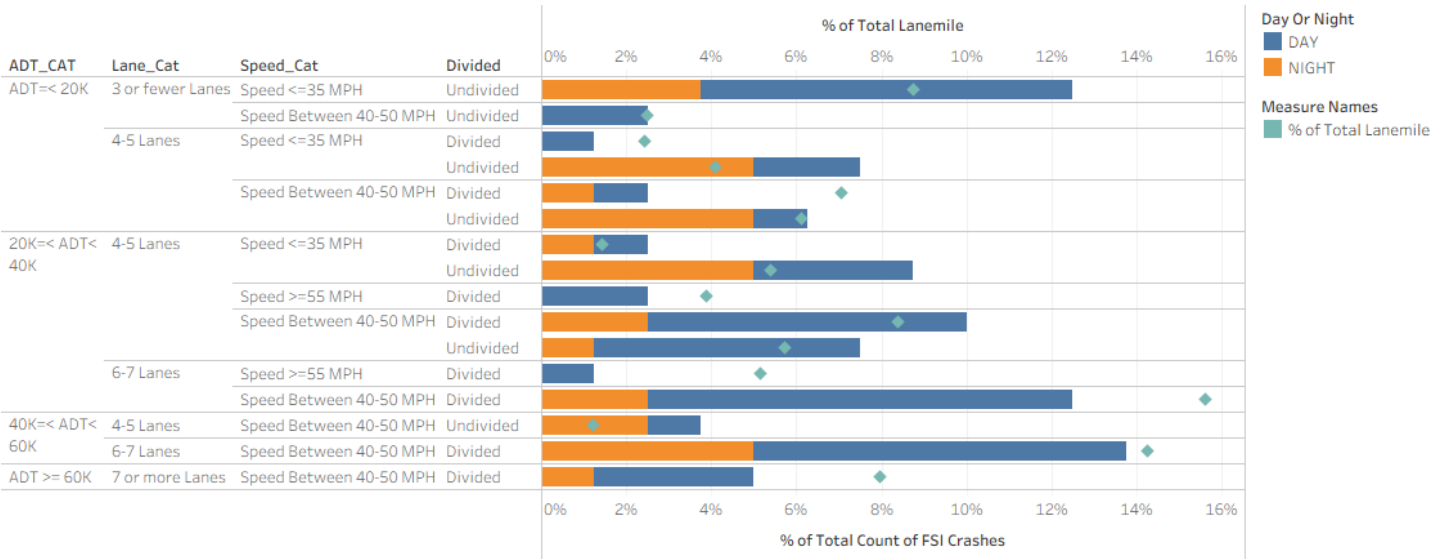


Figure 22 FSI Motorcycle Involved Left Turn Crashes by Road Characteristics on State- and County-maintained Roads, 2019-2023

PEDESTRIAN CRASHES

Pedestrian-involved FSI crashes in Palm Beach County are concentrated in the following main scenarios:

MID-BLOCK CRASHES

Mid-block crossings are the top scenario, accounting for 73% of all pedestrian FSI crashes along segments. These crashes are overrepresented on segments with the following characteristics.

- AADT $\leq 20,000$, undivided, 4-5 lanes, and speed limits ≤ 35 MPH.
- AADT between 20,000–40,000, divided, 4-5 lanes, and speed limits ≤ 35 MPH.
- AADT between 20,000–40,000, undivided, 4-5 lanes, speed limits ≤ 35 MPH.

As shown in **FIGURE 23**, these conditions often reflect major roadways with wide cross-sections and limited controlled crossings, where pedestrians may attempt to cross between intersections. Most crashes in these scenarios occur at night.

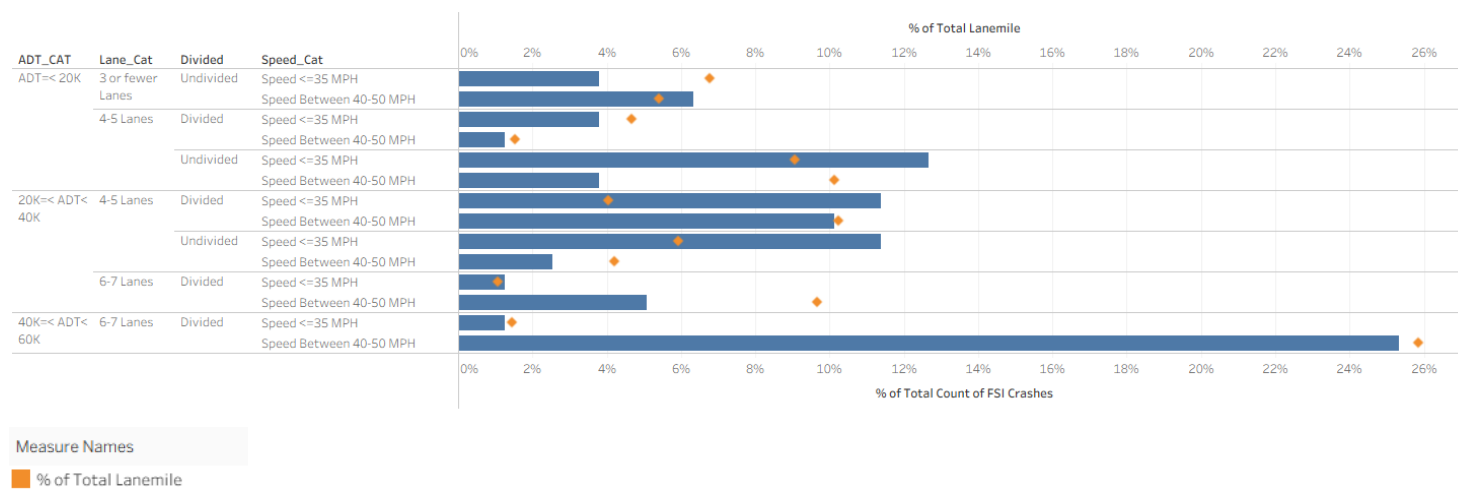


Figure 23 FSI Pedestrian Involved Mid-Block Crossing Crashes by Road Characteristics on State- and County-maintained Roads, 2019-2023

SIGNALIZED INTERSECTIONS

The second most common scenario occurs at signalized intersections, accounting for 25% of pedestrian FSI crashes at signalized intersections. These typically involve pedestrians crossing while vehicles are traveling through the intersection. Crashes are overrepresented at:

- 4- or 5-leg intersections with ETV $\geq 60K$
- Major roads with 6 or more lanes and speed limits of 40–50 MPH intersecting with minor roads with 3 or fewer lanes and speeds of 35 MPH or less
- Intersections with full crosswalks present, suggesting that marked crossings alone are insufficient without supportive signal phasing, lighting, and other treatments

As shown in **FIGURE 24**, nearly two-thirds of these intersection crashes occurred at night, reinforcing the need to address visibility and lighting at high-volume, multi-lane intersections

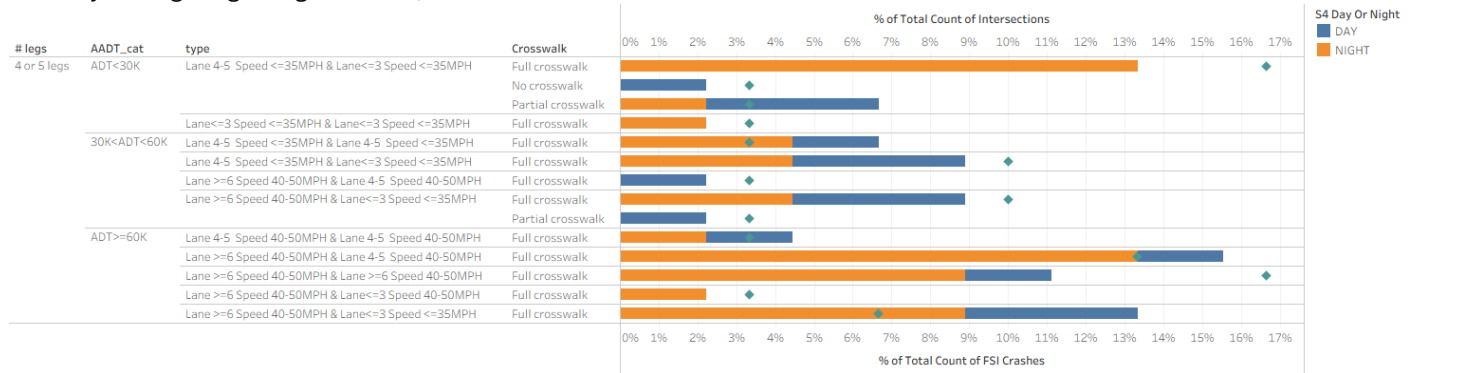


Figure 24 Intersection Related FSI Pedestrian Crashes by Road Characteristics on State- and County-maintained Roads, 2019-2023

BICYCLE CRASHES

Bicycle-involved FSI crashes on segments most commonly occur in locations without dedicated bicycle facilities, particularly where riders must share space with fast-moving or high-volume vehicles. This profile accounts for 13% of all bicycle FSI crashes and is overrepresented on segments with the following characteristics:

- AADT ≤ 20,000, undivided, 4–5 lanes, and speed limits ≤ 35 MPH, no bike facility present
- AADT between 20,000–40,000, undivided, 4–5 lanes, and speed limits ≤ 35 MPH, no bike facility present
- AADT between 20,000–40,000, divided, 6–7 lanes, and speed limits between 40–50 MPH, no bike facility present

As shown in **FIGURE 25**, these crashes frequently occur in wide cross-section environments where roadway conditions do not accommodate people biking, especially in moderate- to high-speed corridors. The presence of high traffic volumes and speeds, combined with the absence of protected infrastructure, are common factors where bicycle FSI crashes occur.

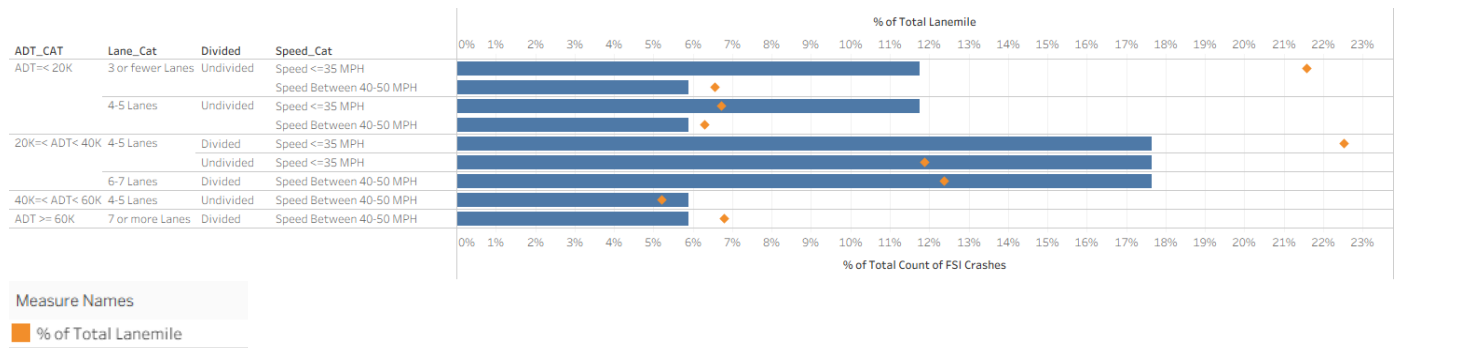


Figure 25 FSI Bicycle Crashes by Road Characteristics on State- and County-maintained Roads, 2019-2023

6. HIGH-INJURY NETWORK

The High-Injury Network (HIN) identifies roadway segments and intersections in Palm Beach County where the most severe crashes occur. It highlights locations with a disproportionate number of fatal and serious injury (FSI) crashes, as well as corridors with a high concentration of pedestrian or bicycle crashes, regardless of severity. The analysis covers all State and County-maintained public roads, excluding limited access highways, within Palm Beach County.

Separate HINs were developed for motor vehicle, pedestrian, bicycle, and motorcycle crashes, considering both segments and intersections. The full methodology for the HIN development can be found in the Methodology Technical Memorandum. Each HIN is based on crash frequency, severity score, frequency rate (normalized by traffic volume) and severity rate (normalized by traffic volume). A crash rate only analysis was also conducted should the County want to understand those findings as a standalone piece of information, as a subset of the multilayered HIN findings.

For roadway segments, all four metrics are averaged to generate a final rank. The top-ranked segments are selected to account for 50% of all segment-related FSI crashes for each mode.

For intersections, the final rank is based on the average of the top two metrics (crash frequency and severity score). Intersections are selected to represent 50% of all intersection-related FSI crashes for each mode.

VEHICLE HIN

The HIN includes 1,005 FSI vehicular crashes, representing 50% of all FSI vehicular crashes on state and county roads as shown in **FIGURE 26**. However, the HIN disproportionately covers only 8% of state roads and 34% of county roads.

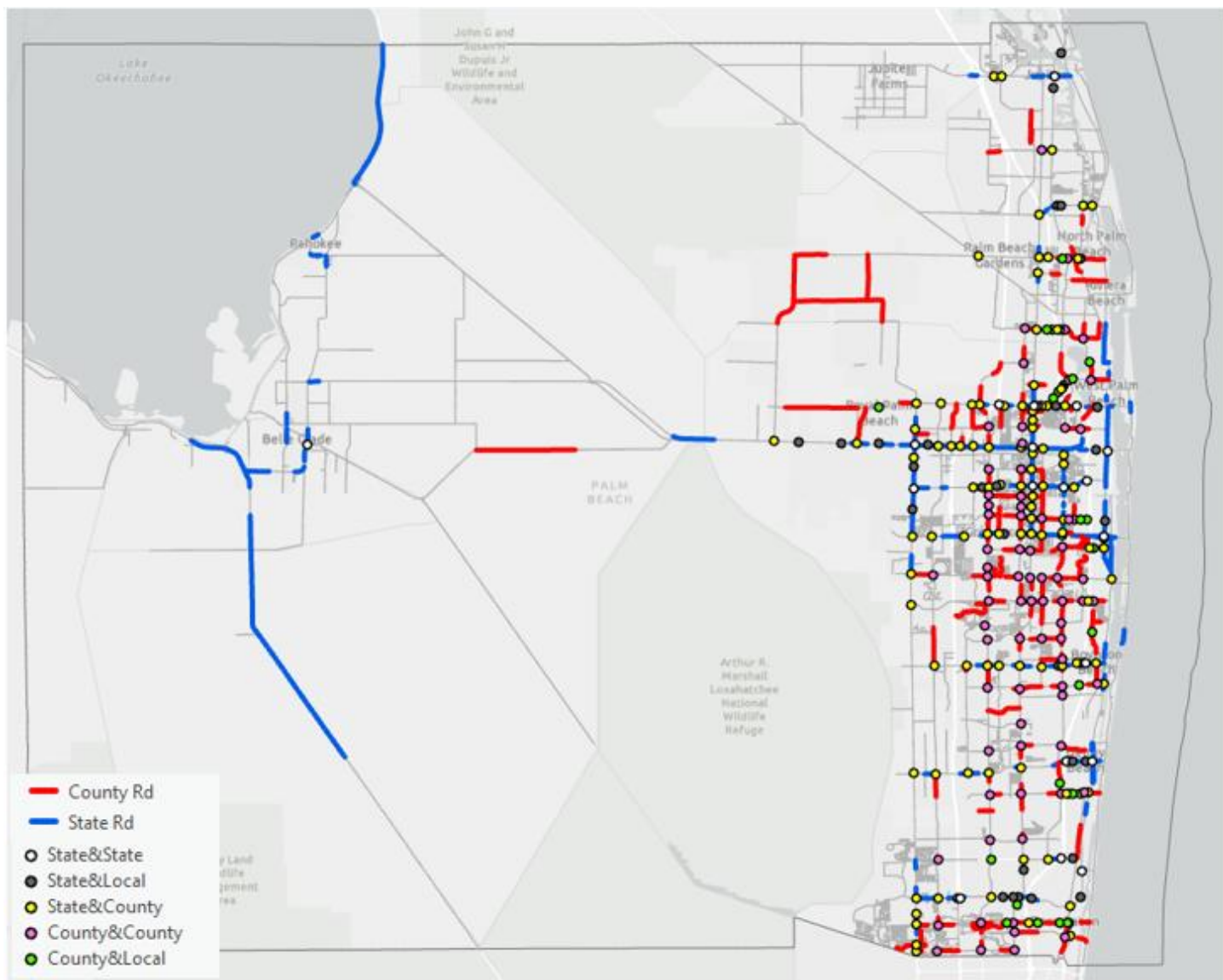


Figure 26 HIN for Motor Vehicle Involved Crashes

MOTORCYCLE HIN

The HIN includes 233 FSI motorcycle involved crashes, representing 50% of all FSI motorcycle involved crashes on state and county roads as shown in **FIGURE 27**. However, the HIN disproportionately covers only 4% of state roads and 11% of county roads.

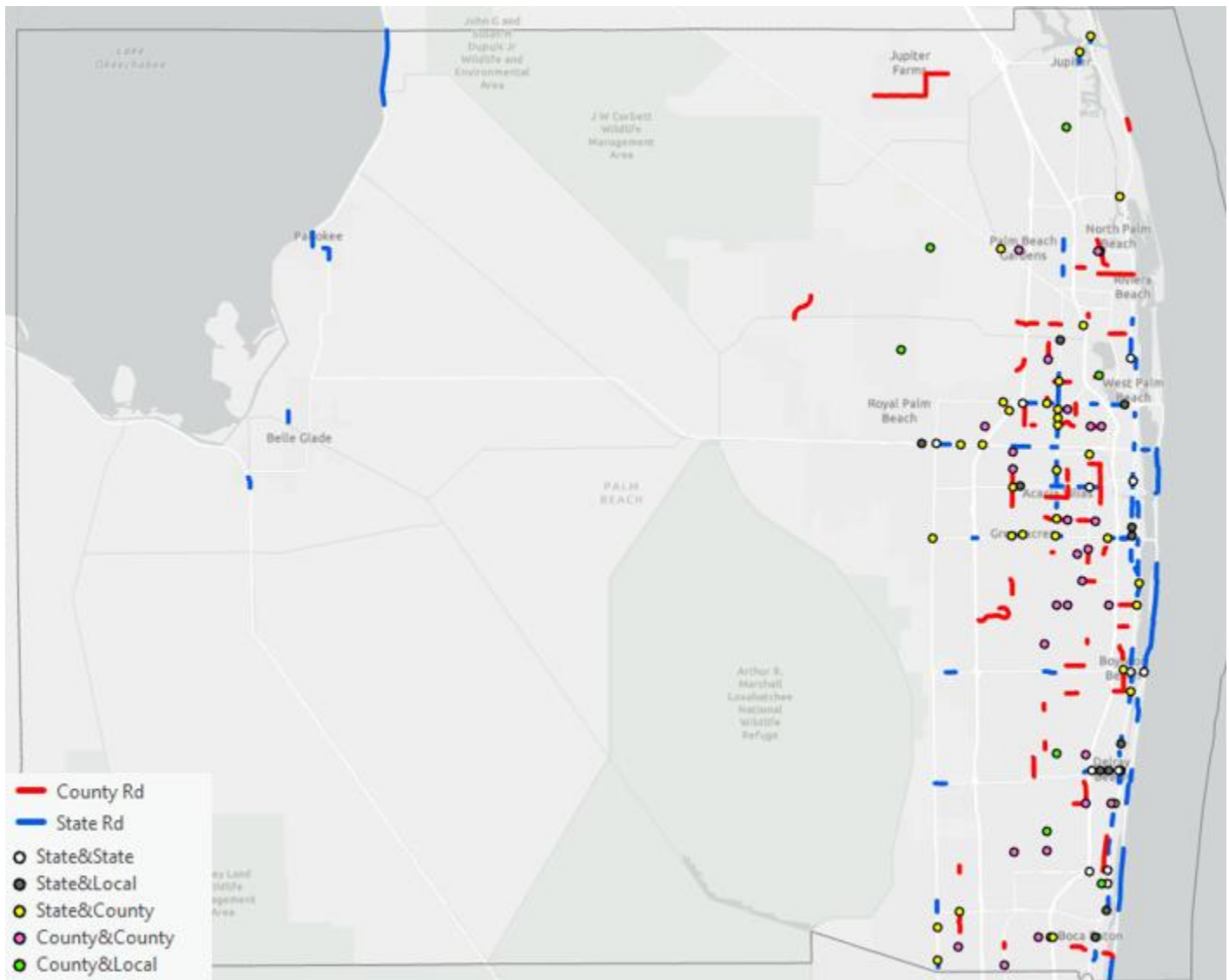


Figure 27 HIN for Motorcycle Involved Crashes

PEDESTRIAN HIN

The HIN includes 229 FSI pedestrian involved crashes, representing 50% of all FSI pedestrian involved crashes on state and county roads as shown in **FIGURE 28**. However, the HIN disproportionately covers only 2% of state roads and 6% of county roads.

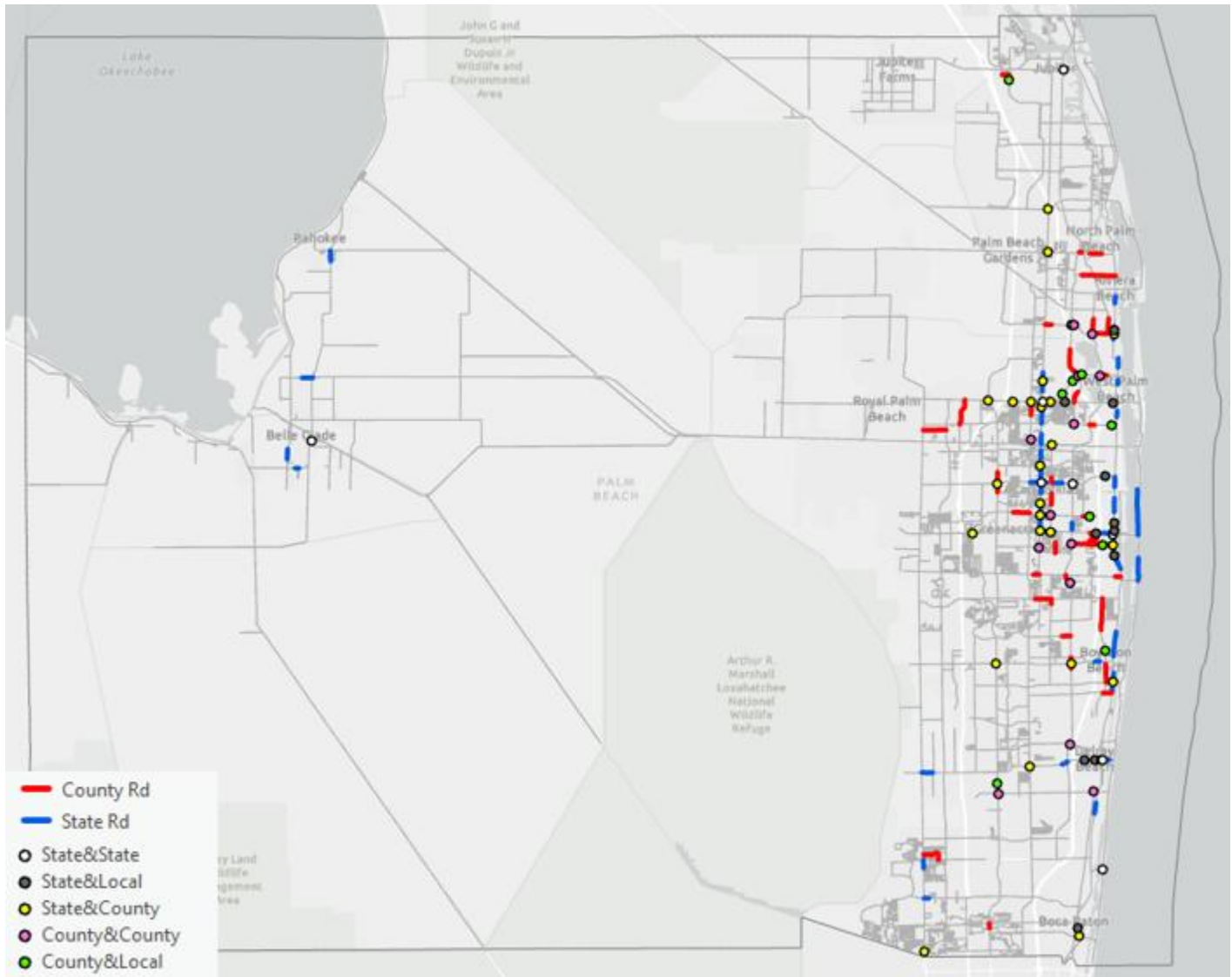


Figure 28 HIN for Pedestrian Involved Crashes

BICYCLE HIN

The HIN includes 132 FSI bicycle involved crashes, representing 50% of all FSI bicycle involved crashes on state and county roads as shown in **FIGURE 29**. However, the HIN disproportionately covers only 2% of state roads and 5% of county roads.

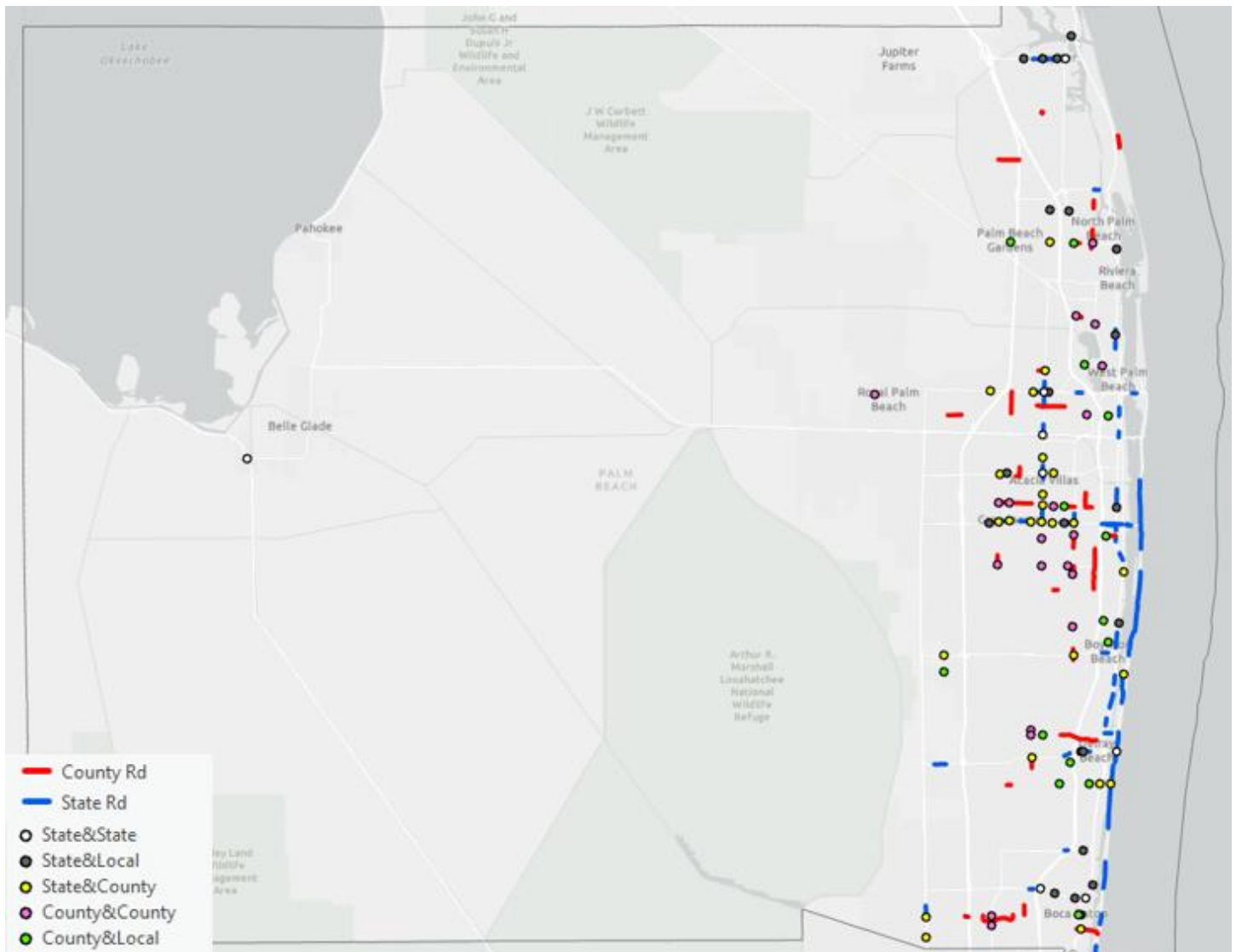


Figure 29 HIN for Bicycle Involved Crashes

7. KEY FINDINGS & STRATEGIC TAKEAWAYS

This section summarizes the key findings from the fatal and serious injury (FSI) crash analysis and highlights common associated factors and roadway characteristics by travel mode. These insights provide a foundation for developing countermeasures that target the most pressing safety challenges in Palm Beach County.

CROSS-MODE TAKEAWAYS

- **Mid-speed, high-volume, multi-lane roads are consistently high-risk.**
 - Across all modes, roads with 40–50 MPH speed limits, AADT between 20,000 and 40,000, and 4 or more lanes are associated with a disproportionate share of fatal and serious injury crashes.
 - These roadways account for a relatively small share of network mileage but represent the majority of severe crashes.
- **Severe crashes are concentrated on a small portion of the network.**
 - High-risk roadway and intersection characteristics are relatively limited in geographic extent but account for the majority of FSI crashes, suggesting the potential for targeted countermeasures to have widespread safety benefits.
- **Intersections with high traffic volumes and wide approaches are hot spots.**
 - Many fatal and serious injury crashes, especially for pedestrians and bicyclists, occur at signalized intersections where 6+ lane roads intersect with 4–5 lane or other wide roads, particularly at locations with ETV $\geq$ 60,000.
- **Lack of crossing opportunities is correlated to pedestrian risk.**
 - A large share of fatal and serious pedestrian crashes occur midblock and far from crosswalks. While crash reports often cite pedestrian "error" such as darting or failure to yield, the data suggest these behaviors may stem from unsafe roadway conditions and missing infrastructure, not simply individual choices.
- **Lighting conditions are correlated with crash severity, especially for vulnerable users.**
 - A significant portion of fatal crashes involving motorcycles, pedestrians, and bicyclists occur in dark, lighted conditions, suggesting a need for more comprehensive lighting and visibility strategies, as well as speed management during nighttime hours.
- **Failure to yield and negligent driving are common contributing factors.**
 - Across all modes, failure to yield right-of-way and general careless or negligent driving are frequently cited as top contributing actions in FSI crashes, reinforcing the importance of roadway design that reduces conflict points and mitigates human error.

MODE-SPECIFIC TAKEAWAYS:

MOTOR VEHICLE

- The most common severe crash types were run-off-road (30%), rear-end (20%), and left-turn (40% of intersection crashes).
- Run-off-road crashes typically involved single vehicles striking fixed objects, especially at night and on 4–7 lane roads with 40–50 MPH speed limits and AADT between 20,000 and 40,000.
- Rear-end crashes occurred most often on high-volume arterials (20K–60K AADT) during daylight hours and were frequently linked to careless driving or following too closely, especially on wet pavement.
- Left-turn crashes occurred predominantly at 4-leg intersections where major roads with 6 or more lanes intersected with 4–5 lane roads, with contributing factors including failure to yield and red-light running.
- Potential systemic countermeasures to be considered may include:
 - Enhanced delineation, lighting, and roadside safety on run-off-road corridors
 - Improved signal timing and visibility, including advance warning and friction treatments
 - Protected left-turn phasing and signal upgrades at large intersections
 - Speed management and access control on wide, high-volume corridors
 - Left turn calming at intersections such as hardened centerlines and median noses

MOTORCYCLE

- Motorcycle crashes were disproportionately fatal, with over half of fatal crashes occurring at night, particularly on lighted roadways.
- The most common crash types were run-off-road/lane departure (31% of segment FSI crashes) and left-turn crashes (30% of intersection FSI crashes), with riders most often hit while traveling straight and another vehicle turned across their path.
- Crashes were concentrated on 4–7 lane roads with 40–50 MPH speed limits and AADT between 20,000 and 40,000.
- High-risk intersections included those where 6+ lane roads intersected with ≤3-lane roads, especially with ETV ≥ 60,000.
- Potential systemic countermeasures to be considered may include:
 - Lighting and curve delineation improvements, including run off prevention (i.e. rumble strips and friction treatments) to reduce nighttime and lane departure crashes
 - Protected turn phasing and advance warning for high-risk intersections
 - Speed reduction strategies and visibility enhancements on key corridors

PEDESTRIAN

- Most FSI pedestrian crashes occurred on 4+ lane roads with 40–50 MPH speed limits and AADT between 20,000 and 40,000.
- Many crashes happened midblock and away from crosswalks (73% of segment FSI crashes), pointing to a need for improved crossing opportunities, not necessarily pedestrian fault.
- Pedestrians were often hit by drivers traveling straight, and crash reports frequently cited failure to yield, dart/dash, or being in the roadway improperly. These patterns are often tied to long distances between safe crossings.
- Intersections with 6+ lane roads and high entering volumes (ETV ≥ 60,000) showed higher crash frequencies.
- Potential systemic countermeasures to be considered may include:
 - High-visibility and midblock crossings at key corridors
 - Improved pedestrian infrastructure and signal spacing improvements
 - Speed management near pedestrian activity centers
 - Median refuges and lighting at crossings
 - Signal timing strategies like leading pedestrian intervals, right turn on red restrictions, and/or flashing yellow arrow – omit phases

BICYCLE

- Severe bicycle crashes were most common on 4–7 lane roads with 40–50 MPH speed limits and AADT between 20,000 and 40,000.
- Many involved riders traveling straight and drivers doing the same, especially where no bike facility was present.
- Frequently cited contributing factors included failure to yield, "other", or unclear causes, suggesting infrastructure gaps and limited driver awareness.
- Crashes were concentrated at intersections where two 40–50 MPH roads or a 40–50 MPH road intersected with a ≤35 MPH road.
- Potential systemic countermeasures to be considered may include:
 - Protected bike lanes and buffered facilities on high speed or volume corridors
 - Signal timing and geometric improvements at high-speed intersections
 - Driver awareness campaigns and signage for shared roadways
 - Intersection designs that reduce exposure and improve visibility

Technical Memorandum

January 25, 2025

To: Melissa Ackert, PE; Fadi Emil Nassar, Ph.D., PE, PTOE; Motasem Al-Turk Ph.D., PE
Palm Beach County

From: Jessica Josselyn; Travis Hills, PE, RSP₁; Ryan Mansfield PE, RSP₁; Jia Fang, PhD
Kittelison & Associates, Inc.

RE: Palm Beach County SS4A Safety Action Plan – Safety Analysis Methodology

INTRODUCTION

Kittelison & Associates, Inc. (Kittelison) was tasked by Palm Beach County (PBC) to conduct a safety analysis to develop a high injury network in support of the Safe Streets and Roads for All (SS4A) Safety Action Plan (SAP). This technical memorandum presents a proposed safety analysis methodology for the SAP. The study area includes all public county and state roads, excluding limited access facilities, within Palm Beach County limits.

The purpose of the safety analysis is to summarize crash trends by mode (vehicular (which includes freight), motorcycle, pedestrian, and bicycle) and identify a high injury network on county and state roadways. An equity analysis will be conducted, and actionable strategies will be developed that PBC can implement to meet their reduced fatal and serious injury crashes goal along their roadway segments and intersections.

This technical memorandum is broken down into the following sections:

- Data Requirements And Data Collection
- Safety Analysis Approach
- Safety Documentation
- Safety View (System) Methodology

DATA REQUIREMENTS AND DATA COLLECTION

Data sources required for analysis have been identified and are documented in the sections below. **Bolded** data indicates missing data sets requiring PBC support.

Safety Data

Crash records will be obtained from the Florida Department of Transportation's (FDOT) Signal Four Analytics (S4) crash database (primary) and the County crash database

(secondary) for the study area. The safety analysis will be performed for the most recent five years of crash data (January 1, 2019 – December 31, 2023). Supplemental crash data from January 1, 2024, to October 31, 2024, will also be reviewed to verify crash trends and patterns. This methodology is consistent with guidance from the 2023 FDOT Safety Crash Data Guidance published by the State Safety Office¹.

2023 and 2024 data is incomplete due to Florida Highway Safety and Motor Vehicles (FLHSMV) and FDOT processing time. Although initial reporting occurs within 10 days, FLHSMV allows an additional 90 days for final reporting and to receive crash data from enforcement agencies. FLHSMV's goal is to finalize the data for all crash severities within 7 to 10 months, and then FDOT verifies locations within 10 months for all crash severities after FLHSMV finalizes the annual data.

Existing Roadways and Intersections

Study area roadways and intersections will be obtained from the following datasets:

- State Roads: FDOT Roadway Characteristics Inventory (RCI) data
- Street Centerlines: PBC (received on July 22nd, 2024)
- Signalized Intersections: PBC (received on Jan 22nd, 2025); FDOT Traffic Signal Maintenance and Compensation Agreement Exhibit A

Roadway Characteristics

Roadway characteristics will be obtained from the following datasets:

- Number of Lanes: FDOT RCI data; PBC (received on Jan 2nd, 2025)
- Posted Speed: FDOT RCI data; PBC (**need to request/obtain if available**)
- Undivided/Divided Roadway: FDOT RCI data
- AADT: FDOT RCI data; PBC (received on July 22nd, 2024)

Pedestrian and Bicycle Facilities

Pedestrian and bicycle facilities will be obtained from the following datasets:

- Sidewalks: FDOT RCI data; PBC (received on Jan 2nd, 2025)
- Bikeway Networks: FDOT RCI data; PBC (received on Jan 2nd, 2025)
- Shared Use Paths: FDOT RCI data; PBC (received on Jan 2nd, 2025)

¹ State Safety Office, Florida Department of Transportation. (04/17/2023). Safety Crash Data Guidance. https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/safety/11a-safetyengineering/crash-data/25998_crash-data-process_v18.pdf?sfvrsn=b50e9f4e_2

- Crossing Types at Intersections: PBC (Requested, but not available)
- Midblock Crossings: PBC (received on Jan 22nd, 2025)
- Crosswalk Inventory Data: PBC (received on Jan 2nd, 2025)
- ADA Curb Ramp Inventory: PBC (Requested, but not available)

Other Data

Other data to be used in the safety analysis will be obtained from the following datasets:

- Context Classification: FDOT RCI data
- Roadway Lighting: PBC (received on July 22nd, 2024)
- Equity Areas: US Department of Transportation (USDOT), using the Climate and Economic Justice Screening Tool (CEJST) and the Equitable Transportation Community (ETC) Explorer; PBC Countywide Community Revitalization Areas (received on Jan 2nd, 2025)
- PBC Planning Districts: PBC (received on Jan 2nd, 2025)
- PBC City Boundaries: U.S. Census
- School Zones: PBC (received on Jan 2nd, 2025)
- Recent and Planned Roadway Improvement Projects: PBC (received on Jan 2nd, 2025)

SAFETY ANALYSIS APPROACH

Safety Indicators

The crash data set will be mapped in ArcGIS and overlaid with the FDOT/PBC data, roadway characteristics data, and other data identified above. Crashes will be summarized based on the following roadway segments and intersections:

- Crashes on Roadway Segments
 - County Roadways
 - FDOT's State Highway System (SHS) Roadways (excluding Limited Access)
- Crashes at Signalized Intersections
 - County Roads intersecting State Roads
 - County Roads intersecting County Roads
 - County Roads intersecting Local Roads (municipally owned)
 - State Roads intersecting State Roads
 - State Roads intersecting Local Roads (municipally owned)

Crash trends will be summarized by the following categories:

- Pedestrian – all crash severities (including Property Damage Only (PDO) crashes)

- Bicycle – all crash severities (including PDO crashes)
- Motorcycle – all crash severities (including PDO crashes)
- Vehicle – all crash severities (including PDO crashes)

Crash Analysis

The crash data will be assessed by each of the safety indicators noted above along study area roadway segments and signalized intersections to identify high crash severity locations. A crash will be labeled as a segment crash or an intersection crash based on the following definitions:

- Segment Crash = A crash occurring along a roadway that is not within a 250-foot buffer around the center point of a signalized intersection
- Signalized Intersection Crash = A crash occurring within a 250-foot buffer around the center point of a signalized intersection

Crash data will be analyzed by the following four metrics:

1. High crash frequency;
2. High crash severity score;
3. Annual crash frequency rate by traffic volume compared to statewide rates and countywide rates; and
4. Annual crash severity rate by traffic volume compared to statewide rates and countywide rates.

The **severity score** will be calculated using the Highway Safety Manual (HSM) Equivalent Property Damage Only (EPDO) Methodology. Three different EPDO weights are proposed to calculate this measure. Once each calculation is completed, the results will be compared to determine which calculation will be used to develop the severity score for the High Injury Network. The three calculation using different weighting factors will be:

- Method A: HSM EPDO Methodology using FDOT KABCO Crash Costs
- Method B: HSM EPDO Methodology using Palm Beach County's Weighting Factors
- Method C: HSM EPDO Methodology using FDOT KABCO Crash Costs with Weighted Average Cost for KA Crashes

Method A: HSM EPDO Methodology using FDOT KABCO Crash Costs

In this method, weighting factors related to the societal costs of fatal, injury, and property damage-only crashes are assigned to crashes to develop the EPDO score that considers frequency and severity of crashes. FDOT KABCO (K=fatal, A=incapacitating injury, B=non-incapacitating injury, C=possible injury, O=property damage only) crash costs are retrieved from the 2024 FDOT Design Manual Table 122.6.2. The crash costs for each crash

severity are divided by the crash cost of a property damage only crash (\$7,700) to get the weighted factors as seen in [Table 1](#).

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Table 1 EPDO Methodology Crash Costs and Weighting Factors

Severity	Crash Cost	Ratio	Weighting Factor
Fatal (K)	\$10,890,000	$\$10,890,000 / \$7,700$	1,414
Incapacitating Injury (A)	\$888,030	$\$888,030 / \$7,700$	115
Non-Incapacitating Injury (B)	\$180,180	$\$180,180 / \$7,700$	23
Possible Injury (C)	\$103,950	$\$103,950 / \$7,700$	14
Property Damage Only (O)	\$7,700	$\$7,700 / \$7,700$	1

FDOT Design Manual, January 1, 2025. Table 122.6.2 FDOT KABCO Crash Costs.

Severity Score Example: if you have a roadway segment that experienced one fatal crash, and two serious injury crashes over a period of five years, the annual EPDO score would be calculated as shown below:

- One Fatal Crash = $(1 * \$10,890,000) / \$7,700 = 1,414$
- Two Incapacitating Injury Crashes = $(2 * \$888,030) / \$7,700 = 231$
- Five Year EPDO score = $1,414 + 231 = 1,645$
- Annual EPDO score = $1,645 / 5 = 329$

Method B: HSM EPDO Methodology using PBC Weighting Factors

In this method, the weighting factors shown in [Table 2](#) will be used for each crash severity.

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Table 2 PBC Weighting Factors

Severity	Weighting Factor
Fatal (K)	50
Incapacitating Injury (A)	20
Non-Incapacitating Injury (B)	10
Possible Injury (C)	5
Property Damage Only (O)	1

Method C: HSM EPDO Methodology using FDOT KABCO Crash Costs with Weighted Average Cost for KA Crashes

In this method, an average weight will be calculated for combined fatal and incapacitating injury (K and A) crashes based on the number of K and A crashes on the study network. Crash costs used in the calculations will be the same FDOT KABCO crash costs shown in [Table 1](#).

$$SWC_{KA} = C_K \frac{N_K}{N_{KA}} + C_A \frac{N_A}{N_{KA}}$$

Where: SWC = severity-weighted cost for two severities

C = FDOT crash unit cost for a given severity

N = number of crashes of a given severity or group of severities

The **annual crash frequency rate** will be calculated as follows:

$$\text{Annual Crash Frequency Rate} = \frac{\text{crash frequency} \times 100,000,000}{\text{AADT} \times 365 \times \text{years} \times \text{segment length}}$$

The **annual crash severity rate** will be calculated as follows:

$$\begin{aligned} &\text{Annual Crash Severity Rate} \\ &= \frac{\left(\frac{\text{severity score} \times \text{crash frequency by severity}}{\text{total crash frequency}} \right) \times \text{severity score} \times 100,000,000}{\text{AADT} \times 365 \times \text{years} \times \text{segment length}} \end{aligned}$$

High Injury Network & Segmentation

Once the crash analysis has been performed based on the methodology in the previous section, a high injury network (HIN) will be developed for the following roadway segment and intersection groups:

- Roadway Segments*:
 - County Roadways
 - FDOT's State Highway System (SHS) Roadways (excluding Limited Access)
- Signalized Intersections:
 - County Roads intersecting State Roads
 - County Roads intersecting County Roads
 - County Roads intersecting Local Roads (municipally owned)
 - State Roads intersecting State Roads
 - State Roads intersecting Local Roads (municipally owned)

*Corridor endpoints will be identified based on the roadway segmentation provided by PBC.

To incorporate all roadway users, four different HINs are proposed for each group mentioned above: vehicle, pedestrian, bicycle, and motorcycle. The roadway segment

HINs will be developed by applying an average ranking score to the four crash analysis methods outlined in the [Crash Analysis](#) section. Corridor endpoints will be identified based on the roadway segmentation provided by PBC. The signalized intersection HINs will be developed by applying an average ranking score to the first two crash analysis methods only (crash frequency and crash severity score).

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Equity Analysis

Disadvantaged Census tracts will be identified using three equity related sources: USDOT ETC and USDOT CEJST (both supported by the SS4A grant literature), and PBC's Countywide Community Revitalization Areas data. The disadvantaged Census tracts will be overlaid with the high crash locations by mode to help with identification of strategies in these traditionally transportation disadvantaged communities.

SAFETY DOCUMENTATION

Following this methodology memorandum, the safety analysis will produce a series of individual deliverables. For each deliverable submitted, PBC will be given the opportunity for one round of review and comment. The deliverables include the following:

1. Safety Analysis and Summary Technical Memorandum
2. Identified HINs in tabular and map format
3. GIS files with HINs

SAFETY VIEW METHODOLOGY

The INRIX Safety View tool is a cloud-based analytics solution developed by GM and INRIX that provides comprehensive safety data and sophisticated analytics to help public agencies create informed safety plans. It combines crash, vehicle, vulnerable road user, and demographic data to identify and prioritize dangerous roadway segments. This tool supports the evaluation of safety projects and helps in the application process for safety-related funding.

The specific inputs and application of the tool outputs within the PBC SAP will be determined following the approval of the crash data analysis methodology outlined herein. This two-step process will help ensure compatibility, efficiency, and enhancements to the proposed traditional/standard crash analysis. It is anticipated the tool will be most helpful in proactively identifying high risk locations using the hard braking, near miss, and speed data provided with the subscription.

Motor Vehicle Intersection HIN Top 25 Locations

HIN Intersection GIS ID	East/West Street Name	North/South Street Name	Category	Vehicle Fatal Crashes	Vehicle Serious Injury Crashes	Vehicle Non- incapacitating Injury Crashes	Vehicle Possible Injury Crashes	Vehicle No Injury Crashes	Final HIN Rank
341	OKEECHOBEE BLVD	MILITARY TR	State Rd/State Rd	0	4	25	67	384	1
265	FOREST HILL BLVD	MILITARY TR	State Rd/State Rd	1	0	19	56	344	2
139	WEST ATLANTIC AVE	MILITARY TR	State Rd/County Rd	2	4	9	31	331	3
254	FOREST HILL BLVD	SR 7/US 441	State Rd/State Rd	0	0	32	26	313	3
347	OKEECHOBEE BLVD	JOG RD	State Rd/County Rd	0	4	12	30	323	5
234	LAKE WORTH RD	JOG RD	State Rd/County Rd	0	0	24	39	277	6
1771	PALM BEACH LAKES BLVD	SPENCER DR/VILLAGE BLVD	County Rd/Local Rd	0	1	20	39	288	7
342	OKEECHOBEE BLVD	HAVERHILL RD	State Rd/County Rd	0	1	24	36	269	8
24	10TH AVE N	MILITARY TR	State Rd/County Rd	0	4	20	46	235	9
302	SOUTHERN BLVD	SANSBURY'S WAY	State Rd/County Rd	1	2	16	45	247	10
263	FOREST HILL BLVD	JOG RD	State Rd/County Rd	0	1	22	32	272	11
353	OKEECHOBEE BLVD	SR 7/US 441	State Rd/County Rd	0	2	21	35	244	12
200	LANTANA RD	CONGRESS AVE	County Rd/County Rd	1	2	15	36	247	13
357	COMMUNITY DR	MILITARY TR	State Rd/County Rd	0	1	29	42	208	14
243	10TH AVE N	CONGRESS AVE	State Rd/County Rd	0	0	13	46	262	15
423	PGA BLVD	MILITARY TR	State Rd/County Rd	0	0	8	32	312	16
534	LINTON BLVD	MILITARY TR	County Rd/County Rd	1	4	13	30	246	16
1666	PALM BEACH LAKES BLVD	ROBBINS DR	County Rd/Local Rd	0	0	13	23	313	18
1758	LANTANA RD	JOG RD	County Rd/County Rd	0	2	13	25	279	19
591	LANTANA RD	MILITARY TR	County Rd/County Rd	0	2	17	41	227	20
1871	45TH ST	CONGRESS AVE	County Rd/County Rd	0	0	11	29	294	21
231	LAKE WORTH RD	MILITARY TR	State Rd/County Rd	0	3	13	46	220	22
305	SOUTHERN BLVD	SR 7/US 441	State Rd/State Rd	0	0	7	30	312	22
338	OKEECHOBEE BLVD	PALM BCH LAKES BLVD/WABAS	State Rd/County Rd	0	3	12	23	273	22
321	WESTGATE AVE/ELMHURST F	MILITARY TR	State Rd/County Rd	0	0	29	32	214	25

Motorcycle Intersection HIN Top 25 Locations

HIN Intersection GIS ID	East/West Street Name	North/South Street Name	Category	Motorcycle Fatal Crashes	Motorcycle Serious Injury Crashes	Motorcycle Non-incapacitating Injury Crashes	Motorcycle Possible Injury Crashes	Motorcycle No Injury Crashes	Final HIN Rank
24	10TH AVE N	MILITARY TR	State Rd/County Rd	1	1	1	1	1	1
169	OCEAN AVE	FEDERAL HWY	State Rd/State Rd	1	0	2	1	1	2
1815	LAKE IDA RD	CONGRESS AVE	County Rd/County Rd	0	2	1	2	0	3
234	LAKE WORTH RD	JOG RD	State Rd/County Rd	0	2	1	0	3	4
316	BELVEDERE RD	MILITARY TR	State Rd/County Rd	0	0	5	0	2	5
347	OKEECHOBEE BLVD	JOG RD	State Rd/County Rd	1	0	0	1	2	6
146	WEST ATLANTIC AVE	NW/SW 8TH AVE	State Rd/Local Rd	0	2	1	1	0	7
535	HYPOLUXO RD	MILITARY TR	County Rd/County Rd	0	2	0	1	2	8
1735	10TH AVE N	KIRK RD	County Rd/County Rd	1	0	0	0	3	9
432	PGA BLVD	ELLISON WILSON RD	State Rd/County Rd	0	1	1	0	3	10
318	CHERRY RD	MILITARY TR	State Rd/County Rd	0	1	2	1	0	11
344	OKEECHOBEE BLVD	FLA TURNPIKE	State Rd/State Rd	1	1	0	1	0	12
1654	SUMMIT BLVD	JOG RD	County Rd/County Rd	1	1	0	1	0	12
1899	PALMETTO PARK RD	I-95 W	State Rd/County Rd	1	1	0	0	1	14
194	HYPOLUXO RD	FEDERAL HWY	State Rd/County Rd	1	0	1	1	0	15
357	COMMUNITY DR	MILITARY TR	State Rd/County Rd	1	0	1	1	0	15
63	PALMETTO PARK RD	FEDERAL HWY	State Rd/Local Rd	0	1	1	1	1	17
584	SW 18TH ST	POWERLINE RD	County Rd/County Rd	1	0	1	0	1	17
321	STGATE AVE/ELMHURST	MILITARY TR	State Rd/County Rd	0	0	3	1	0	19
256	FOREST HILL BLVD	CONGRESS AVE	State Rd/State Rd	0	1	1	0	2	20
1855	MELALEUCA LN/6TH AVE	CONGRESS AVE	County Rd/County Rd	0	0	1	3	1	21
149	WEST ATLANTIC AVE	I-95 EAST	State Rd/State Rd	0	1	0	1	2	22
549	NORTHLAKE BLVD	OLD DIXIE HWY	County Rd/County Rd	0	2	1	0	0	22
342	OKEECHOBEE BLVD	HAVERHILL RD	State Rd/County Rd	0	0	2	0	3	24
75	N FEDERAL HWY	NW SPANISH RIVER BLVD	State Rd/State Rd	0	0	2	1	1	25
103	GLADES RD	LYONS RD	State Rd/County Rd	0	0	1	2	2	25
1861	ROEBUCK RD	HAVERHILL RD	County Rd/County Rd	0	0	2	1	1	25
1982	MELALEUCA LN	DAVIS RD	County Rd/County Rd	0	0	2	1	1	25

Pedestrian Intersection HIN Top 25 Locations

HIN Intersection GIS ID	East/West Street Name	North/South Street Name	Category	Pedestrian Fatal Crashes	Pedestrian Serious Injury Crashes	Pedestrian Non- incapacitating Injury Crashes	Pedestrian Possible Injury Crashes	Pedestrian No Injury Crashes	Final HIN Rank
343	OKEECHOBEE BLVD	MERIDIAN RD	State Rd/County Rd	4	0	2	0	2	1
265	FOREST HILL BLVD	MILITARY TR	State Rd/State Rd	1	1	1	6	0	2
206	6TH AVE S	DIXIE HWY	State Rd/County Rd	0	3	3	3	0	3
1855	MELALEUCA LN/6TH AVE S	CONGRESS AVE	County Rd/County Rd	2	2	1	0	1	4
172	BOYNTON BEACH BLVD	CONGRESS AVE	State Rd/County Rd	2	0	2	1	1	5
341	OKEECHOBEE BLVD	MILITARY TR	State Rd/State Rd	0	2	4	3	0	6
1866	MARTIN LUTHER KING BLVD/NW 10TH AVE	SEACREST BLVD	County Rd/Local Rd	1	2	1	1	0	7
1726	PALM BEACH LAKES BLVD	AUSTRALIAN AVE	County Rd/County Rd	0	2	2	1	1	8
551	MELALEUCA LN	MILITARY TR	County Rd/County Rd	1	2	1	0	0	9
155	EAST ATLANTIC AVE	NE/SE 5TH AVE	State Rd/State Rd	1	1	1	1	0	10
368	45TH ST	BROADWAY	State Rd/County Rd	1	1	1	1	0	10
1920	10TH AVE N	BOUTWELL RD	County Rd/Local Rd	1	1	0	1	1	12
274	FOREST HILL BLVD	PARKER AVE	State Rd/Local Rd	1	0	1	1	1	13
1865	PALM BEACH LAKES BLVD	CONGRESS AVE	County Rd/County Rd	0	1	2	2	1	14
1771	PALM BEACH LAKES BLVD	SPENCER DR/VILLAGE BLVD	County Rd/Local Rd	0	1	3	1	0	15
329	OKEECHOBEE BLVD	ROSEMARY AVE	State Rd/Local Rd	0	2	2	0	0	16
1871	45TH ST	CONGRESS AVE	County Rd/County Rd	1	0	0	1	2	17
239	7TH AVE N	DIXIE HWY	State Rd/Local Rd	2	1	0	0	0	18
337	OKEECHOBEE BLVD	SPENCER DR	State Rd/Local Rd	2	0	0	1	0	19
214	LAKE WORTH RD	AKRON ST	State Rd/Local Rd	1	2	0	0	0	20
342	OKEECHOBEE BLVD	HAVERHILL RD	State Rd/County Rd	1	2	0	0	0	20
90	SW 18TH ST/MARINA BLVD	SR 7/US441	State Rd/County Rd	1	1	0	1	0	22
1957	NORMANDY LA	JOG RD	County Rd/Local Rd	1	0	2	0	0	23
2031	PALM BEACH LAKES BLVD	FORUM WAY	County Rd/Local Rd	1	0	2	0	0	23
321	WESTGATE AVE/ELMHURST RD	MILITARY TR	State Rd/County Rd	0	0	3	2	1	25

Bicycle Intersection HIN Top 25 Locations

HIN Intersection GIS ID	East/West Street Name	North/South Street Name	Category	Bike Fatal Crashes	Bike Serious Injury Crashes	Bike Non-incapacitating Injury Crashes	Bike Possible Injury Crashes	Bike No Injury Crashes	Final HIN Rank
347	OKEECHOBEE BLVD	JOG RD	State Rd/County Rd	1	1	6	1	0	1
263	FOREST HILL BLVD	JOG RD	State Rd/County Rd	0	0	7	4	2	2
265	FOREST HILL BLVD	MILITARY TR	State Rd/State Rd	0	1	3	5	3	3
56	INDIANTOWN RD	LOXAHATCHEE DR	State Rd/Local Rd	1	0	3	1	1	4
15	LINTON BLVD	A1A	State Rd/County Rd	0	3	1	0	2	5
24	10TH AVE N	MILITARY TR	State Rd/County Rd	0	0	2	7	0	6
230	LAKE WORTH RD	KIRK RD	State Rd/County Rd	0	1	2	3	1	6
200	LANTANA RD	CONGRESS AVE	County Rd/County Rd	2	0	1	1	1	8
68	GLADES RD	NW 2ND AVE	State Rd/Local Rd	0	1	3	1	1	9
1893	BELVEDERE RD	PARKER AVE	County Rd/Local Rd	0	0	4	2	1	10
231	LAKE WORTH RD	MILITARY TR	State Rd/County Rd	0	0	4	1	2	11
1758	LANTANA RD	JOG RD	County Rd/County Rd	0	1	1	3	0	12
234	LAKE WORTH RD	JOG RD	State Rd/County Rd	0	1	1	2	1	13
1630	BELVEDERE RD	FLA MANGO RD	County Rd/County Rd	0	2	2	0	0	14
341	OKEECHOBEE BLVD	MILITARY TR	State Rd/State Rd	0	1	1	1	2	15
264	FOREST HILL BLVD	KIRK RD	State Rd/County Rd	0	0	3	1	1	16
1679	10TH AVE N	JOG RD	County Rd/County Rd	0	2	1	1	0	17
402	PALMETTO RD/LAKE SHORE DR	US 1	State Rd/Local Rd	0	0	2	3	0	18
139	WEST ATLANTIC AVE	MILITARY TR	State Rd/County Rd	0	1	2	0	1	19
551	MELALEUCA LN	MILITARY TR	County Rd/County Rd	0	1	1	2	0	20
91	SANDALFOOT BLVD	SR 7/US 441	State Rd/County Rd	0	1	1	1	1	21
96	PALMETTO PARK RD	POWERLINE RD	County Rd/County Rd	0	1	1	1	1	21
1919	LINTON BLVD	HOMEWOOD BLVD	County Rd/Local Rd	0	1	1	1	1	21
20	WOOLBRIGHT RD/BEACHWAY DR	A1A	State Rd/County Rd	0	1	0	3	0	24
246	CRESTHAVEN BLVD	MILITARY TR	State Rd/County Rd	0	0	3	1	0	24
1975	LINTON BOULEVARD	LAVERS AVENUE	County Rd/Local Rd	0	0	3	1	0	24

Motor Vehicle Segment HIN Top 25 Locations

HIN Segment GIS ID	Street Name	Start Road Name	End Road Name	Length (mi)	State Road (Yes/No)	Vehicle Fatal Crashes	Vehicle Serious Injury Crashes	Vehicle Non-incapacitating Injury Crashes	Vehicle Possible Injury Crashes	Vehicle No Injury Crashes	Final HIN Rank
866	W ATLANTIC AVE	NW 24TH AVE	N CONGRESS AVE	0.29	YES	1	9	9	15	218	1
815	SOUTHERN BLVD	JOG RD	AVOCADO AVE	0.77	YES	1	5	13	26	82	2
200	N DIXIE HWY	5TH AVE N	2ND AVE N	0.25	YES	0	1	13	20	107	3
498	LAKE AVE	LAKE WORTH RD	N E ST	0.25	YES	0	1	9	10	124	4
145	W ATLANTIC AVE	SW 10TH AVE	SW 7TH AVE	0.15	YES	0	1	11	15	106	5
1067	W ATLANTIC AVE	I-95 S OFF RAMP AT W ATLANTIC AVE	N CONGRESS AVE	0.22	YES	0	3	4	13	169	6
516	LUCERNE AVE	LAKE WORTH RD	N E ST	0.24	YES	0	1	6	13	103	7
3204	6TH AVE S	DIXIE HWY	S A ST	0.48	No	0	2	11	23	140	8
743	S MILITARY TRL	HOLIDAY WAY	FOREST HILL BLVD	0.38	YES	0	1	16	25	164	9
3095	10TH AVE N	N DETROIT ST	BOUTWELL RD	0.19	No	0	3	12	12	96	10
288	SOUTHERN BLVD	SR 7	FAIRGROUNDS RD	0.65	YES	0	0	5	26	92	11
309	OKEECHOBEE BLVD	N CONGRESS AVE	CHURCH ST	0.26	YES	1	0	2	27	134	12
5861	S SEACREST BLVD	W OCENA AVE	W WOOLBRIGHT RD	0.86	No	1	1	11	16	98	13
265	SE 5TH AVE	SE 5TH ST	SE 5TH AVE	0.32	YES	0	4	6	14	65	14
471	FOREST HILL BLVD	S MILITARY TRL	FOREST AVE	0.25	YES	0	2	7	15	123	15
699	S DIXIE HWY	9TH AVE S	12TH AVE S	0.25	YES	1	1	5	9	77	16
727	S MILITARY TRL	SOUTH OF CAMBRIDGE ST	LAKE WORTH RD	0.51	YES	1	2	19	26	121	17
5831	S JOG RD	DODD RD	PINE AVE	0.63	No	0	2	19	39	187	18
698	S DIXIE HWY	6TH AVE S	9TH AVE S	0.25	YES	0	2	9	9	64	19
6446	W GATEWAY BLVD	N CONGRESS AVE	NW 23RD ST	0.40	No	0	0	12	21	94	20
3105	10TH AVE N	S CONGRESS AVE	RUDOLF RD	0.28	No	0	2	3	9	112	21
3101	10TH AVE N	KIRK RD	HAVERHILL RD	1.03	No	1	3	13	16	131	22
799	SE 5TH AVE	SE 5TH ST	SE 10TH ST	0.44	YES	0	1	4	10	85	23
3999	DREXEL RD	BELVEDERE RD	OKEECHOBEE BLVD	1.02	No	0	0	11	14	95	24
549	N MILITARY TRL	SOUTH OF RIDGE WAY DR	BELVEDERE RD	0.38	YES	1	2	5	16	104	25

Motorcycle Segment HIN Top 25 Locations

HIN Segment GIS ID	Street Name	Start Road Name	End Road Name	Length (mi)	State Road (Yes/No)	Motorcycle Fatal Crashes	Motorcycle Serious Injury Crashes	Motorcycle Non-incapacitating Injury Crashes	Motorcycle Possible Injury Crashes	Motorcycle No Injury Crashes	Final HIN Rank
586	OCEAN DR	ISLAND DR	RIVER DR	0.55	YES	2	0	0	1	1	1
982	S OCEAN BLVD	CARISSA RD	E LINTON BLVD	0.86	YES	1	2	1	2	0	2
200	N DIXIE HWY	5TH AVE N	2ND AVE N	0.25	YES	0	2	1	1	3	3
698	S DIXIE HWY	6TH AVE S	9TH AVE S	0.25	YES	1	1	0	1	1	4
3165	45TH ST	PREMIER PARK DR	N JOG RD	0.97	No	2	4	5	4	0	5
472	FOREST HILL BLVD	EAT OF BAY MEADOWS DR	S MILITARY TRL	0.25	YES	1	0	4	0	1	6
766	S OCEAN BLVD	E CAMINO REAL	NORTH OF OSCEOLA DR	0.57	YES	1	0	2	1	0	7
498	LAKE AVE	LAKE WORTH RD	N E ST	0.25	YES	0	2	0	0	2	8
558	N MILITARY TRL	COMMUNITY DR	OLD MILITARY TRL	0.50	YES	1	1	5	0	2	9
3097	10TH AVE N	DAVIS RD	S CONGRESS AVE	0.50	No	2	0	1	3	0	10
114	S OCEAN BLVD	E ATLANTIC AVE	CASUARINA RD	0.51	YES	0	2	0	0	3	11
471	FOREST HILL BLVD	S MILITARY TRL	FOREST AVE	0.25	YES	0	1	4	0	1	12
741	S MILITARY TRL	TELLIN AVE	SUMMIT BLVD	0.38	YES	1	2	2	0	1	13
260	S DIXIE HWY	17TH AVE N	13TH AVE N	0.32	YES	0	1	1	3	1	14
712	S FEDERAL HWY	12TH AVE S	E WINDWARD WAY	0.63	YES	1	0	1	0	1	15
4475	HYPOLUXO RD	OVERLOOK RD	SEACREST BLVD	0.52	No	0	2	1	1	0	16
460	FOREST HILL BLVD	PRAIRIE RD	FLORIDA MANGO RD	0.25	YES	2	0	0	1	1	17
635	OKEECHOBEE BLVD	HAVERHILL RD	WEST OF N MILITARY TRL	0.26	YES	1	2	0	0	3	18
528	FEDERAL HWY	MANATEE BAY DR	NE 6TH AVE	0.70	YES	1	0	2	1	1	19
699	S DIXIE HWY	9TH AVE S	12TH AVE S	0.25	YES	0	0	3	0	1	20
557	N MILITARY TRL	OLD MILITARY TRL	OKEECHOBEE BLVD	0.50	YES	1	2	1	2	0	21
717	S FEDERAL HWY	SOUTH OF SE 18TH AVE	SE 23RD AVE	0.25	YES	0	0	3	2	0	22
701	S DIXIE HWY	SOUTH OF 15TH AVE S	E WINDWARD WAY	0.35	YES	0	2	1	0	0	23
516	LUCERNE AVE	LAKE WORTH RD	N E ST	0.24	YES	0	0	2	0	2	24
585	OCEAN DR	RIVER DR	E OCEAN BLVD	0.55	YES	0	0	2	1	1	25

Pedestrian Segment HIN Top 25 Locations

HIN Segment GIS ID	Street Name	Start Road Name	End Road Name	Length (mi)	State Road (Yes/No)	Pedestrian Fatal Crashes	Pedestrian Serious Injury Crashes	Pedestrian Non-incapacitating Injury Crashes	Pedestrian Possible Injury Crashes	Pedestrian No Injury Crashes	Final HIN Rank
414	BROADWAY	45TH ST	40TH ST	0.24	YES	2	3	2	2	0	1
698	S DIXIE HWY	6TH AVE S	9TH AVE S	0.25	YES	1	2	2	2	0	2
3204	6TH AVE S	DIXIE HWY	S A ST	0.48	No	1	6	3	2	2	3
516	LUCERNE AVE	LAKE WORTH RD	N E ST	0.24	YES	1	1	0	2	1	4
284	BROADWAY	52ND ST	49TH ST	0.16	YES	1	1	0	1	1	5
750	S MILITARY TRL	CANAL 8 RD	PURDY LN	0.25	YES	3	1	1	0	0	6
499	LAKE AVE	N E ST	DIXIE HWY	0.25	YES	0	2	2	0	0	7
200	N DIXIE HWY	5TH AVE N	2ND AVE N	0.25	YES	2	1	0	0	0	8
233	S DIXIE HWY	SUMMA ST	ALHAMBRA PL	0.15	YES	1	0	2	0	0	9
5950	SEACREST BLVD	OLD SPANISH TRL	MENTONE RD	0.25	No	1	0	1	1	0	10
701	S DIXIE HWY	SOUTH OF 15TH AVE S	E WINDWARD WAY	0.35	YES	1	1	0	0	1	11
743	S MILITARY TRL	HOLIDAY WAY	FOREST HILL BLVD	0.38	YES	2	1	1	1	1	12
6446	W GATEWAY BLVD	N CONGRESS AVE	NW 23RD ST	0.40	No	1	2	1	0	1	13
3102	10TH AVE N	HAVERHILL RD	S 57TH AVE	0.77	No	2	0	3	0	0	14
5386	PALM BEACH LAKES BLVD	N TAMARIND AVE	N AUSTRALIAN AVE	0.30	No	0	2	1	2	0	15
5072	N BENOIST FARMS RD	BELVEDERE RD	OKEECHOBEE BLVD	1.21	No	1	0	2	0	1	16
139	ATLANTIC AVE	SE 7TH AVE	VENETIAN DR	0.26	YES	0	1	0	2	2	17
714	S FEDERAL HWY	GREENBRIAR DR	E WOOLBRIGHT RD	0.44	YES	0	1	3	0	1	18
558	N MILITARY TRL	COMMUNITY DR	OLD MILITARY TRL	0.50	YES	2	1	0	2	0	19
974	LAKE WORTH RD	KIRK RD	WEST OF OLSSON TER	0.19	YES	1	0	1	1	0	20
5193	N SEACREST BLVD	GATEWAY BLVD	MENTONE RD	1.00	No	1	1	1	1	0	20
86	S DIXIE HWY	PARK PL	FLAMINGO DR	0.13	YES	1	0	0	1	0	22
699	S DIXIE HWY	9TH AVE S	12TH AVE S	0.25	YES	1	1	0	0	0	23
73	GLADES RD	SR 7	GLADES RD	0.23	YES	1	0	1	1	0	24
285	BROADWAY	49TH ST	45TH ST	0.20	YES	0	0	1	4	1	25

Bicycle Segment HIN Top 25 Locations

HIN Segment GIS ID	Street Name	Start Road Name	End Road Name	Length (mi)	State Road (Yes/No)	Bike Fatal Crashes	Bike Serious Injury Crashes	Bike Non-incapacitating Injury Crashes	Bike Possible Injury Crashes	Bike No Injury Crashes	Final HIN Rank
114	S OCEAN BLVD	E ATLANTIC AVE	CASUARINA RD	0.51	YES	0	1	3	2	3	1
12	OCEAN DR	LARK DR	NORTH OF GOLFVIEW DR	1.00	YES	0	2	4	3	0	2
982	S OCEAN BLVD	CARISSA RD	E LINTON BLVD	0.86	YES	0	2	2	2	0	3
3204	6TH AVE S	DIXIE HWY	S A ST	0.48	No	0	3	3	1	1	4
585	OCEAN DR	RIVER DR	E OCEAN BLVD	0.55	YES	0	0	2	4	0	5
698	S DIXIE HWY	6TH AVE S	9TH AVE S	0.25	YES	0	2	0	0	3	6
5429	PALMETTO PARK RD EB TO BOCA RIO RD SB	W PALMETTO PARK RD	BOCA RIO RD	0.18	No	0	1	2	2	0	7
4025	E CAMINO REAL	S DIXIE HWY	SE 4TH AVE	0.58	No	0	0	3	3	0	8
768	S OCEAN BLVD	E LINTON BLVD	S OCEAN ALY	2.09	YES	0	3	5	1	2	9
516	LUCERNE AVE	LAKE WORTH RD	N E ST	0.24	YES	0	0	2	2	0	10
588	OCEAN DR	GEORGE BUSH BLVD	THOMAS ST	0.68	YES	0	0	3	0	2	11
4667	LAKE IDA RD	N SWINTON AVE	N CONGRESS AVE	1.21	No	0	2	6	1	3	12
498	LAKE AVE	LAKE WORTH RD	N E ST	0.25	YES	0	0	2	0	3	13
727	S MILITARY TRL	SOUTH OF CAMBRIDGE ST	LAKE WORTH RD	0.51	YES	0	2	1	3	4	14
5763	S FLORIDA MANGO RD	BOUNDBROOK BLVD	10TH AVE N	0.67	No	0	1	1	2	0	15
749	S MILITARY TRL	FOREST HILL BLVD	CANAL 8 RD	0.25	YES	1	0	1	1	1	16
717	S FEDERAL HWY	SOUTH OF SE 18TH AVE	SE 23RD AVE	0.25	YES	0	0	2	2	1	17
866	W ATLANTIC AVE	NW 24TH AVE	N CONGRESS AVE	0.29	YES	0	2	1	0	2	18
517	LUCERNE AVE	N E ST	DIXIE HWY	0.24	YES	0	1	0	2	0	19
634	OKEECHOBEE BLVD	EAST OF N HAVERHILL RD	N MILITARY TRL	0.26	YES	0	1	4	0	2	20
14	INDIANTOWN RD	S PENNOCK LN	MILITARY TRL	0.51	YES	0	1	4	2	1	21
743	S MILITARY TRL	HOLIDAY WAY	FOREST HILL BLVD	0.38	YES	0	1	4	1	0	22
886	BOYNTON BEACH BLVD	NW 3RD ST	N SEASCREST BLVD	0.27	YES	0	0	2	2	1	23
772	S OCEAN BLVD	LAKE AVE	NORTH OF E OCEAN AVE	1.08	YES	0	2	1	1	0	24
770	S OCEAN BLVD	E OCEAN AVE	NORTH OF BOYNTON INLET PIER PARKING	2.23	YES	0	1	1	3	2	25

Technical Memorandum

March 20, 2026

To: Melissa Ackert, PE; Fadi Emil Nassar, Ph.D., PE, PTOE; Motasem Al-Turk Ph.D., PE
Palm Beach County

From: Jessica Josselyn, Kittelson & Associates, Inc.; Brad Davis, AICP, CNU-A and Ravi
Wijesundera, PE, Kimley-Horn and Associates, Inc.

RE: Palm Beach County SS4A Safety Action Plan – Project Identification and
Prioritization

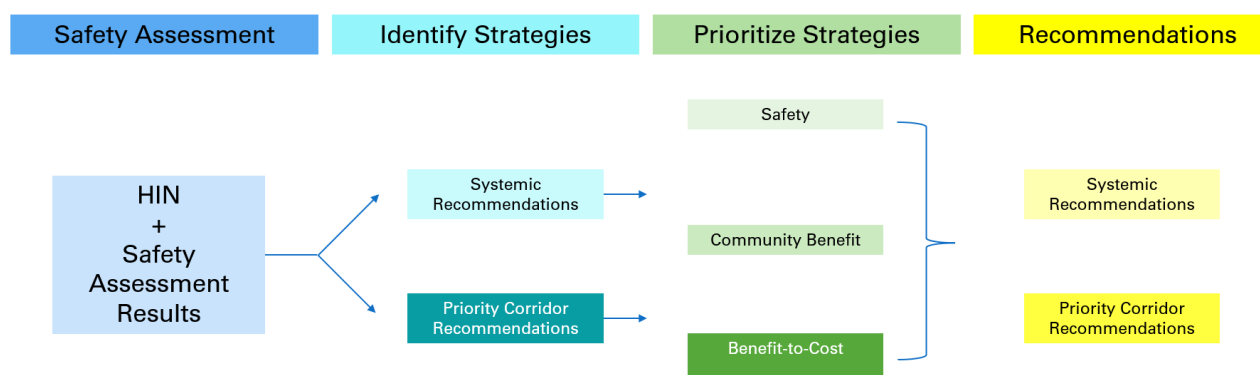
INTRODUCTION

Kittelston & Associates, Inc. (Kittelston) and Kimley-Horn and Associates, Inc. (Kimley-Horn) were tasked by Palm Beach County (PBC) to identify and prioritize recommendations in support of the Safe Streets and Roads for All (SS4A) Safety Action Plan (SAP). This technical memorandum outlines recommended safety countermeasures for County-maintained roads. The recommendations are divided into two key categories:

- **Priority Corridor Safety Recommendations.** These focus on operational and infrastructure improvements to address the most common crash types along the five priority corridors identified in this plan. The primary objective is to select the top corridor for a safety grant application—either through the Safe Streets for All (SS4A) program or other funding opportunities.
- **Systemic Safety Recommendations.** These present proven countermeasures that target the most frequent crash types across the High Injury Network (HIN). The goal is to establish a strategic framework for implementing these countermeasures throughout the HIN.
- **Policy and Procedure Memoranda (PPMs) Review.** Based on a thorough review of the PPMs for Palm Beach County, several key recommendations have emerged to address systemic issues and corridor needs.

The recommendations build upon the findings of the safety assessment, which provided the foundation for prioritization and decision-making. The following graphic describes how each step in the process informed the development of these recommendations.

Recommendations Development Process



Detailed descriptions of each recommendation are provided in the sections that follow. Additional technical information is included in the appendix.

PRIORITY CORRIDOR SAFETY RECOMMENDATIONS

This section summarizes the identification and analysis of five priority corridors on County-maintained roadways. The purpose of this process is to select a top project for submission to federal or state safety grant programs, including Safe Streets for All (SS4A).

The corridors were identified using the High Injury Network (HIN) developed for this plan, incorporating segments and intersections across all four travel modes—walking, biking, motorcycling, and driving. These segments were grouped into logical project extents, and each corridor was ranked based on the total number of serious injury and fatal crashes (FSI). This ranking ensures that the selected corridors target locations with the highest concentration of severe crashes.

Initially, fourteen corridors were identified. The five highest-ranked corridors (based on the total number of severe crashes) were selected for detailed analysis and the development of targeted safety countermeasures. These top five corridors account for approximately 20% of all FSI crashes on County-maintained roads in Palm Beach County. By focusing on these corridors, the plan aims to maximize impact and return on investment in reducing and ultimately eliminating severe crashes.

The five priority corridors selected for analysis are:

Corridor Name	Extent	Length (Miles)
6 th Ave/Melaleuca Lane	US 1 to Pine Hov Circle	4.8
South Military Trail	Clint Moore Road to Woolbright Road	7.2

Corridor Name	Extent	Length (Miles)
South Jog Road	Winston Trails Boulevard to Summit Boulevard	5.8
10 th Avenue North	Barnett Drive to South Jog Road	4.7
Linton Boulevard	A1A to South Jog Road	5.2

Summary of Findings for Top Five Priority Corridors

For each of the top five priority corridors, safety countermeasures were developed based on crash types, contributing factors, and the needs of various road users. The recommendations include both intersection-focused treatments and strategies to improve safety between intersections. In addition to immediate projects identified for the benefit cost analysis, a mixture of systemic and long-term projects were also recommended for each corridor but not included in the overall benefit cost analysis. This is due to these projects either not having applicable crash modification factors or high overall costs that placed them outside the scope of a SS4A implementation grant.

These strategies are multimodal, addressing the safety of people driving as well as vulnerable road users—those walking, biking, or riding motorcycles and mopeds.

Following the development of corridor-specific recommendations, a prioritization analysis was conducted using three key criteria:

- **Safety Opportunity.** Assesses the extent to which the project addresses FSI crashes involving both drivers and vulnerable road users. Corridors with higher numbers of FSI crashes received more points.
- **Community Benefit.** Evaluates the corridor's proximity and access to community assets such as parks, schools, transit stops, and places of worship. Corridors serving more destinations received higher scores.
- **Benefit-Cost.** Measures the return on investment for the proposed countermeasures. Projects with a higher benefit-to-cost ratio were scored more favorably.

According to the scoring framework, 10th Avenue is the top-ranked prioritization corridor. However, the scores for all corridors were very close, indicating they have similar levels of priority.

The following sections detail each step of the analysis and present the recommended safety countermeasures for each corridor.

Priority Corridor Identification

Fourteen corridors were identified for consideration as priority projects. This step focused on developing a long list of candidate corridors from the County's High Injury Network (HIN).

To create the corridors, all HIN segments and intersections were combined across four travel modes—motor vehicle, motorcycle, pedestrian, and bicycle. These segments were then grouped into logical project extents. In some cases, segments not included in the HIN were added to ensure practical and implementable project boundaries.

Once the corridors were defined, they were ranked based on the total number of fatal and serious injury (FSI) crashes. This ranking helped prioritize corridors with the greatest potential for safety impact.

The table below presents the initial list of fourteen corridors considered for prioritization.

Priority Corridor Long List

Corridor ID	Street Name	Corridor Length	Corridor FSI Crashes	Corridor Rank
17-A	Linton Blvd	5.21	83	1
2-B	S Military Trl	7.24	75	2
1-A	10th Ave N	4.70	67	3
5-A	6 th Ave/Melaleuca Ln	4.84	62	4
4-B	S Jog Rd	5.77	60	5
3-B	N Congress Ave	6.03	55	6
8-A	Hypoluxo Rd	5.72	41	7
9-A	Lake Ida Rd	3.11	36	8
11-B	S Haverhill Rd	3.28	28	9
2-A	S Military Trl	3.61	28	9
11-A	N Haverhill Rd	3.79	25	11
4-A	N Jog Rd	4.59	25	11
3-A	N Congress Ave	4.73	23	13
3-C	S Congress Ave	1.47	23	13

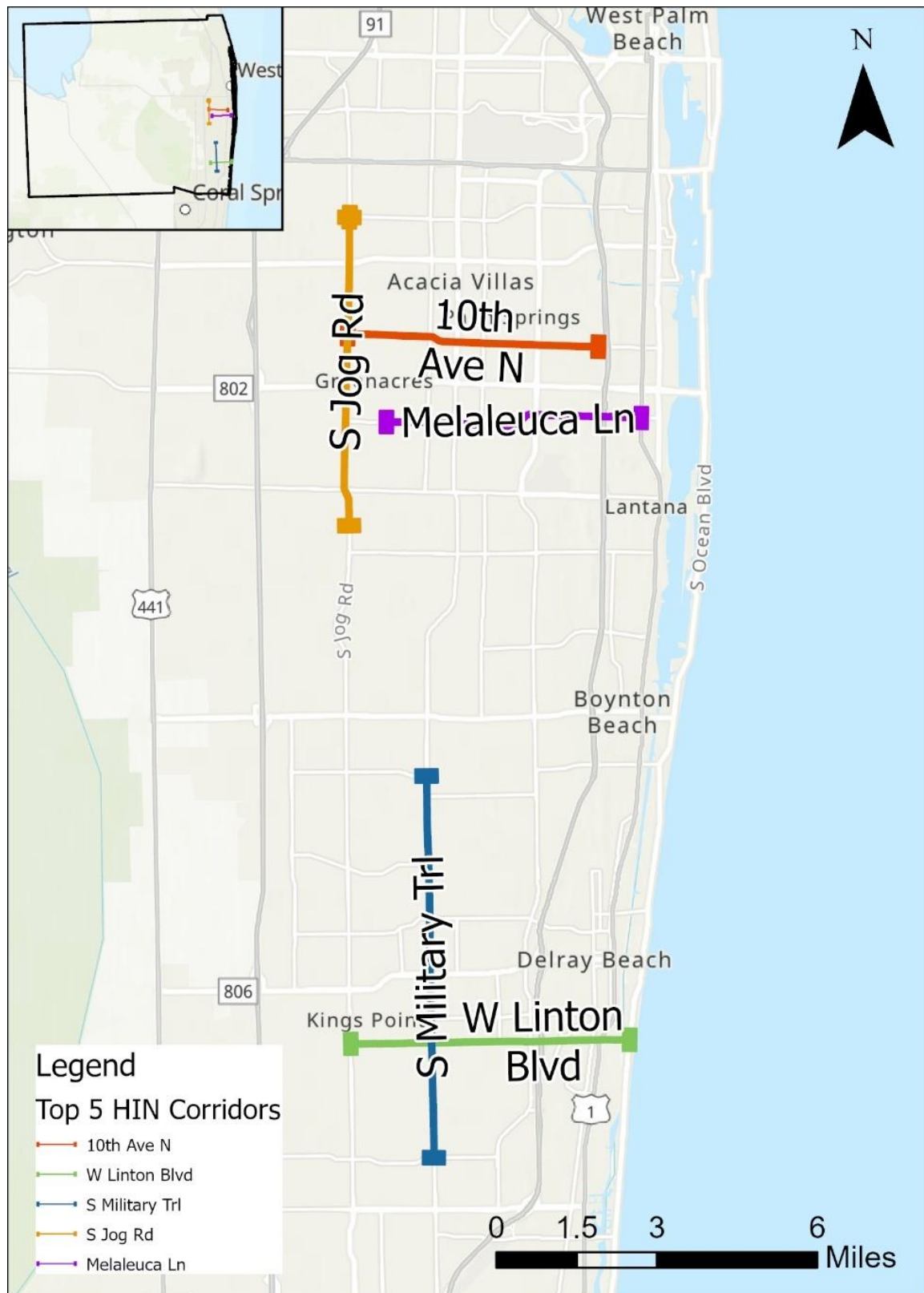
Top Five Priority Corridors

The top five corridors from the initial list of fourteen projects were carried forward for more detailed project development, analysis, and project prioritization. General information about each of the five corridors is provided in the table below. A map of the five corridors is provided on the next page.

Top Five Priority Corridor Summary Table

Corridor Name	Extent	Context
6 th Ave/Melaleuca Lane	US 1 to Pine Hov Circle	• 4.8 miles • Urban, Major Arterial • 4-5 Lanes • 80-110 feet of ROW • 35 to 45 MPH posted speed • 12,400 to 34,000 AADT (FDOT, 2024)
South Military Trail	Clint Moore Road to Woolbright Road	• 7.2 miles • Urban, Principal Arterial • 6 lanes • 120 feet of ROW • 45 MPH posted Speed • 37,500 to 40,500 AADT (FDOT, 2024)
South Jog Road	Winston Trails Boulevard to Summit Boulevard	• 5.7 miles • Urban, Principal Arterial • 6 lanes • 120 feet of ROW • 45 MPH posted Speed • 39,000 to 55,000 AADT (FDOT, 2024)
10 th Avenue North	Barnett Drive to South Jog Road	• 4.7 miles • Urban, Major Arterial • 4-5 Lanes • 80-120 feet of ROW • 40 MPH posted speed • 12,400 to 34,000 AADT (FDOT, 2024)
Linton Boulevard	A1A to South Jog Road	• 5.2 miles • Urban, Major Arterial • 4-6 lanes • 120 feet of ROW • 40 to 45 MPH posted Speed • 14,400 to 45,000 AADT (FDOT, 2024)

Top 5 Priority Corridor Map



Benefit-Cost Analysis

A data-driven benefit-cost analysis (BCA) was conducted for each of the top five priority corridors to evaluate the economic viability of proposed safety countermeasures. Crash data was reviewed to determine the most frequent crash types at both intersections and midblock segments for each corridor. Countermeasures were selected using the following inputs:

- **Crash Modification Factors (CMFs):** Proven safety impacts were reviewed, and where multiple strategies were available for a safety concern, the strategy with the higher CMF was selected.
- **Engineering Judgment:** Crash clusters were analyzed using aerial imagery and Google Street View to refine countermeasure placement and applicability.
- **Cost Considerations:** Emphasis was placed on low- to medium-cost treatments that do not require full roadway reconstruction.

Each corridor was assigned five to seven countermeasures tailored to its crash profile. Planning-level cost estimates and CMFs were used to calculate a cumulative cost-benefit score for each corridor.

Planning-Level Benefit-to-Cost Matrix

Planning-Level Benefit to Cost Matrix	Order of Magnitude Benefit	++++	+++	++	+
Order of Magnitude Cost	Weight	4	3	2	1
\$\$\$\$	4	1.00	0.75	0.50	0.25
\$\$\$	3	1.33	1.00	0.67	0.33
\$\$	2	2.00	1.50	1.00	0.50
\$	1	4.00	3.00	2.00	1.00

The procedure to generate the cost benefit score using the CMFs and estimated project costs followed three distinct steps.

First, CMFs were assigned to each recommended project within a corridor. The values of all CMFs for all five corridors were broken into ranges to assign them values based on the Planning-Level Benefit-to-cost Matrix.

Second, the project cost estimates for all five corridors were similarly broken into ranges to assign them values based on the Planning-Level Benefit-to-Cost Matrix.

Third, each individual CMF and associated cost were analyzed using the matrix values to derive a cost benefit score for each CMF within a corridor. The final cost benefit score for each corridor represents an average of the cost benefit scores for all of the projects identified along a priority corridor.

The table below summarizes the benefit and cost ranges used for the matrix.

Benefit and Cost Ranges

Cost Order of Magnitude Ranges			
	Order of Magnitude	Matrix Reference	Dollar Range
Highest	\$\$\$\$	4	Over \$406,746
	\$\$\$	3	\$124,273 - \$406,745.6
	\$\$	2	\$56,445 - \$124,272
Lowest	\$	1	Under \$56,444.16
Benefit Order of Magnitude Ranges			
	Order of Magnitude	Matrix Reference	CMF Lower Limit
Highest	++++	4	Less than or equal to 0.43
	+++	3	0.44 to 0.59
	++	2	0.60 to 0.84
Lowest	+	1	0.85+

Crash Modification Factors (CMFs) were sourced from the U.S. Department of Transportation's FHWA CMF Clearinghouse.

Cost estimates for countermeasures were developed using a combination of Florida Department of Transportation (FDOT) Long Range Estimates (LREs) and Historical Item Average Cost Reports. To ensure comparability, assumptions were established for each countermeasure to generate consistent per-mile cost estimates. These per-mile costs were then multiplied by the length of each corridor to produce planning-level cost estimates. This approach allowed for a standardized and data-driven comparison of safety benefits and estimated implementation costs across all five priority corridors.

The analysis found that South Jog Road, 10th Ave North, and Linton Boulevard offer the most cost-effective countermeasure packages. 6th Avenue/Melaleuca Lane scored the lowest within the cost benefit scoring matrix. However, the margins between all five corridors in terms of overall score were extremely close and indicative of minimal cost benefit differences between them.

Benefit-to-Cost Summary Results

Corridor	Cumulative Cost	Planning-Level Cost Benefit Score
South Jog Road	\$941,000	1.67
10th Avenue North	\$1,384,000	1.67
Linton Boulevard	\$959,000	1.63
South Military Trail	\$1,471,000	1.52
6th Ave / Melaleuca	\$1,258,000	1.43

Note that long-term or standalone countermeasures, as well as their associated costs, were not included in the benefit-to-cost analysis. This approach was adopted for two main reasons: first, potential grant programs prioritize low- to medium-cost countermeasures, which can be executed without significant roadway reconstruction; second, standalone or long-term countermeasures typically involve substantially higher costs and present more complex and variable scopes.

For example, implementing separated bike lanes along a corridor may necessitate various construction strategies to ensure continuity. In some segments, adequate right-of-way might be available, eliminating the need to relocate existing curbs and stormwater infrastructure. Conversely, other sections could require extensive roadway reconstruction to accommodate the separated bike lanes. Furthermore, many signalized intersections are inherently complex and demand additional design studies to determine feasible solutions for integrating separated bike lanes through these locations. Due to the considerable variability in costs and design considerations, these elements were excluded from the benefit-to-cost analysis and project prioritization.

Each project includes estimates for both short-term and long-term/standalone costs. Moving forward, it is recommended that each corridor undergo more detailed design and analysis to determine the appropriate timing and methods for implementing both short-term and long-term measures. Both types of interventions are essential to effectively address safety needs across priority corridors.

Priority Corridor Prioritization

After the BCA was performed to determine cost effectiveness, the corridors were prioritized based on specific weighted categories. The categories are: Safety (50%), Community Benefit (30%), and Benefit to Cost Ratio (20%). Metrics are tied to each category and assigned values to derive a final score.

Priority Project Prioritization Matrix

Category Weight	Subcategory	Evaluation Metric	Points
50%	Vehicle Safety	Number of Vehicle FSI	
		less than 33	1
		33 to 36	2
		37 to 60	3
		61 or more	4
	Vulnerable Road User Safety	Number of Vulnerable Road User FSI	
		less than 19	1
		19 to 23	2
		24 to 31	3
		32 or more	4
30%	Parks	Number of Parks within 1/4 mile of Corridor	1-4 score based on total sum range
	Schools	Number of Schools within 1/4 mile of Corridor	
	Transit	Number of Public Transit Stops within 200 ft of Corridor	
	Equity	Number of Areas of Persistent Poverty Corridor Passes Through	
	Places of Worship	Number of Places of Worship within 1/4 mile of Corridor	
20%	Planning level Benefit-to-cost ratio	equal to or less than 1.52	1
		1.53 to 1.625	2
		1.63 to 1.66	3
		greater than 1.66	4

Based on this scoring, 10th Avenue North was identified as the top-ranked corridor for grant application consideration. A summary of the prioritization results is provided below. The detailed results are provided in the Appendix.

Priority Corridor Prioritization Results

Corridor	Weighted Prioritization Score
10th Ave North	4.20
South Jog Road	3.90
Linton Boulevard	3.90
6 th Ave/Melaleuca Lane	3.60
South Military Trail	3.40

TOP RANKED CORRIDOR SUMMARY

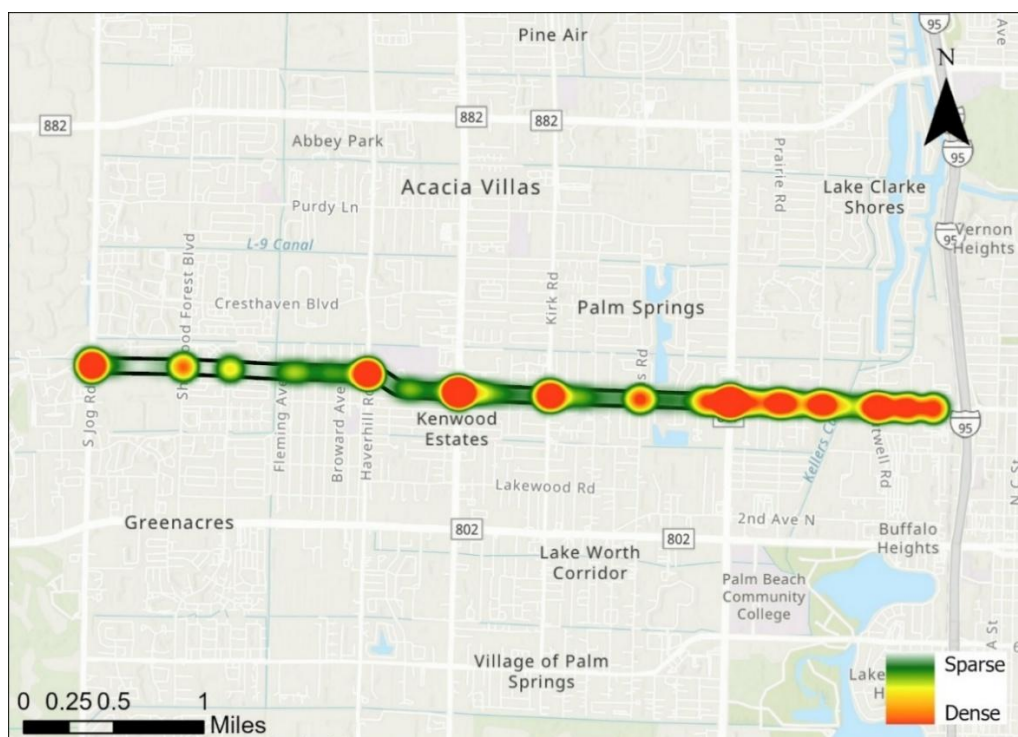
10th Avenue North

As a prominent urban major arterial, 10th Avenue North extends for 4.7 miles from Barnett Drive to South Jog Road. This essential corridor serves as a critical east-west route supporting significant community destinations, including residential areas, schools, and a key connection to I-95. The posted speed limit is 40 MPH. This corridor experiences varying traffic volumes. The annual average daily traffic (AADT) reported by FDOT in 2024 ranged from 12,400 to 34,000 vehicles. Additionally, the corridor traverses three school zones, contributing to its role as a vital thoroughfare in the area.

The study portion of 10th Avenue passes through a high number of community areas and points of attraction, which attributed to the corridor scoring high during the prioritization process. This portion of 10th Avenue was the shortest corridor studied in length, but it experienced the highest number of fatalities for the top five priority corridors. Between 2019 and 2023, the corridor experienced:

- 2,922 crashes
- 67 FSI, including 18 fatalities
- 130 vulnerable road user crashes

10th Avenue Crash Heat Map



Intersection Crash Profile and Countermeasures

User	Top 3 Crash Types		
	Crash Type 1	Crash Type 2	Crash Type 3
Vehicle	Rear end (43%)	Left turn (16%)	Angle (15%)
Vulnerable Road User	Bicycle (45%)	Pedestrian (32%)	Rear end (9%)

Based on these crash types, the recommended intersection countermeasures are:

- **High Visibility Crosswalk at South Military Trail and 10th Ave North** – Enhance visibility for pedestrians and cyclists
- **Leading Pedestrian Intervals (LPI)** – Improve crossing safety for pedestrians and cyclists
- **Signal Backplates with Retroreflective Borders** – Increase signal visibility to reduce rear end crashes
- **Protected Left-Turn Signal Phasing** – Reduce left entering crashes at intersections
- **Hardened Centerlines** – Reduce risk to pedestrians and cyclists within the crosswalk at signalized intersections.

Segment Crash Profile and Countermeasures

User	Top 3 Crash Types		
	Crash Type 1	Crash Type 2	Crash Type 3
Vehicle	Rear end (40%)	Angle (20%)	Left turn (15%)
Vulnerable Road User	Bicycle (36%)	Pedestrian (32%)	Left turn (11%)

Based on these crash types, the recommended segment countermeasures are:

- **Directional Median Conversion** – Reduce non-signalized intersection crashes along segments by controlling turning movements and preventing crossings of the roadway at specific locations.
- **Full Traffic Signal at Henthorne Drive and 10th Avenue North** – To reduce vulnerable road user risks associated with nearby generators north and south of the unsignalized intersection.

Detailed technical information and supporting analysis for this corridor and the other top five priority corridors are provided in the appendix.

SYSTEMIC SAFETY RECOMMENDATIONS

Systemic road safety is a proactive approach to managing and planning for roadway safety. Rather than reacting to individual crash locations, the systemic method focuses on implementing proven countermeasures across a network of roadways that share similar characteristics and risk factors. This approach is especially effective for deploying low- to moderate-cost treatments that help prevent crashes before they occur.

For this plan, systemic recommendations are guided by the High Injury Network (HIN) Framework, which includes four target travel modes:

- Motor Vehicles
- Motorcyclists
- Pedestrians
- Bicyclists

Each mode HIN includes both segments and intersections, resulting in eight systemic focus areas.

Crash data from both County- and State-maintained roadways was analyzed to identify patterns and develop targeted recommendations. The systemic safety strategies specifically address severe crashes—those resulting in serious injuries or fatalities—with the overarching goal of reducing and ultimately eliminating these incidents on County-maintained roads.

How to Use Systemic Safety Recommendations

The systemic safety recommendations developed in this plan are intended to guide proactive implementation of countermeasures across County-maintained roadways. These recommendations are based on the High Injury Network (HIN) segment and intersection rankings generated through the safety assessment.

There are two primary ways to apply these recommendations:

- **Annual Budgeting Tool.** The HIN rankings and associated systemic countermeasures can be used to inform annual safety investment decisions. This allows for broad, network-wide implementation of proven strategies that address common crash types and risk factors.
- **Project Integration.** When a roadway project is scheduled along a segment of the HIN, the systemic recommendations can be applied incrementally as part of the project scope. This ensures that safety improvements are embedded into planned infrastructure upgrades.

By using both approaches—annual programming and opportunistic integration—the County can strategically deploy systemic countermeasures to reduce and ultimately eliminate severe crashes.

A summary of each of the eight systemic safety recommendation focus areas is provided in the following pages. Each summary includes:

- A summary of the top crash types addressed.
- A flow chart linking crash types to recommended countermeasures.

The flow charts that follow provide a summary of the leading crash types and their connection to the recommended countermeasures. In the appendix, the more detailed information about the countermeasures is provided in tables. That information includes:

- Recommended treatments
- Preliminary cost estimates
- Crash Modification Factors (CMFs)
- Example applications or safety issues

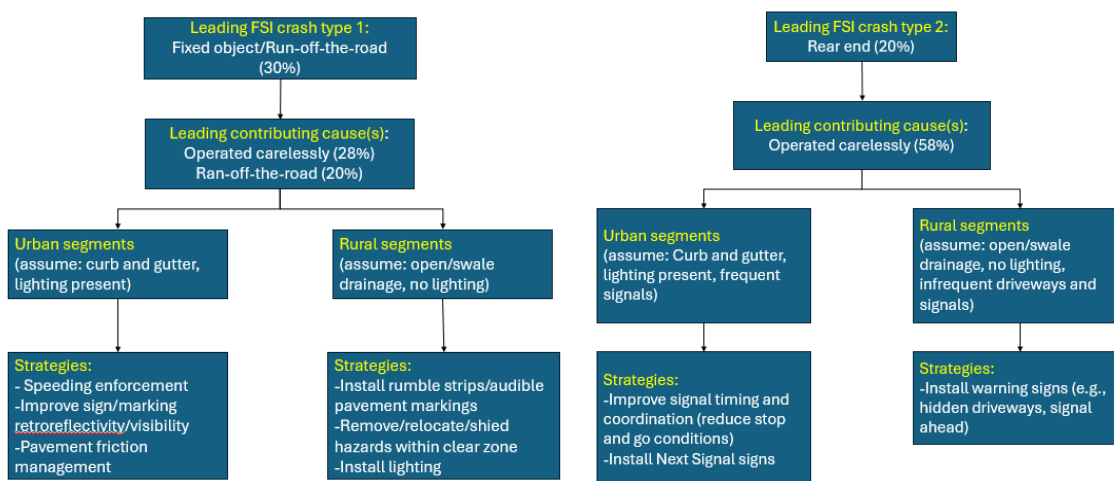
Motor Vehicle Systemic Safety Recommendations

From 2019 to 2023, there were 2,020 motor vehicle crashes on state and county-maintained roadways that resulted in someone being fatally or seriously injured. These crashes were split relatively evenly between segments and intersections, with 52% occurring along segments and 48% occurring at signalized intersections. The motor vehicle systemic safety recommendations are focused on reducing and eliminating these crash trends.

Motor Vehicle Roadway Segments

The two leading FSI crash types involving motor vehicles along segments are:

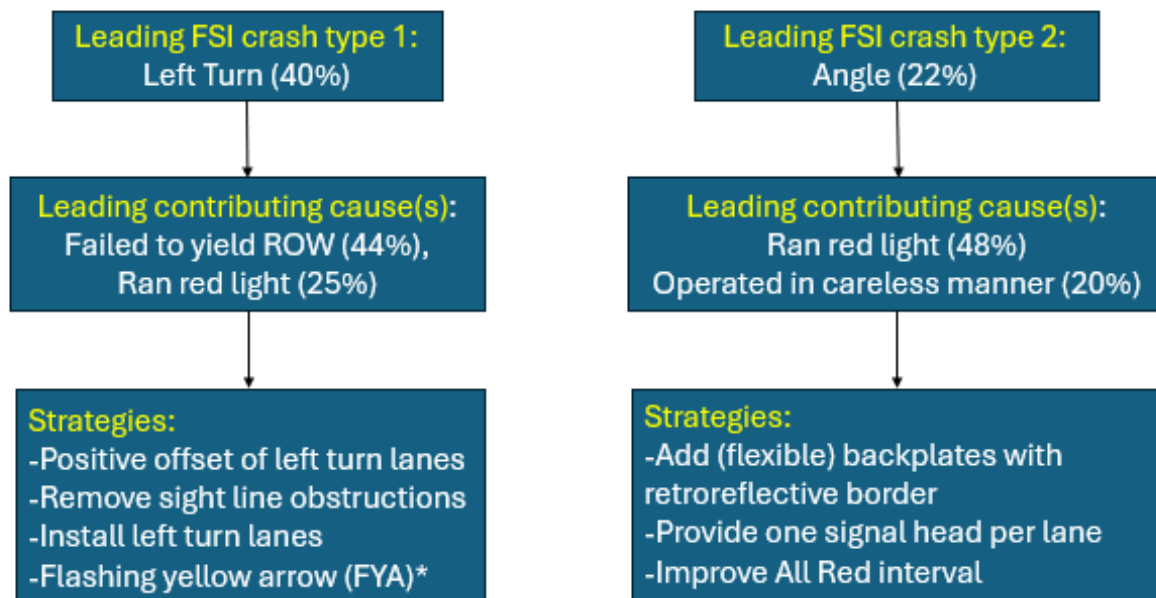
- Fixed Object / Run-Off-the-Road
- Rear End Collisions



Motor Vehicle Intersections

The two leading FSI crash types involving motor vehicles at intersections are:

- Left Turn
- Angle



* Applicable if the existing left turn phasing
is permissive or protected/permissive

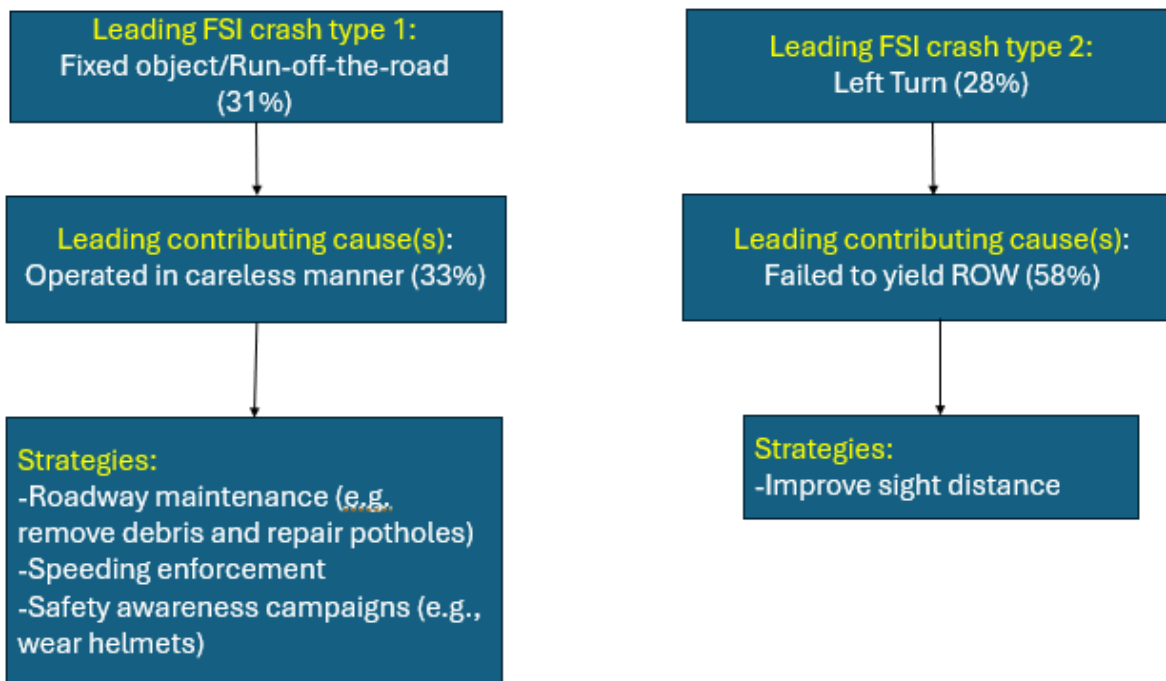
Motorcycle Systemic Safety Recommendations

From 2019 to 2023, there were 459 motorcycle crashes on state and county-maintained roadways that resulted in someone being fatally or seriously injured. Most of these severe crashes occurred on segments (68%), with the remaining 32% occurring at intersections. The motorcycle systemic safety recommendations are focused on reducing and eliminating these crash trends.

Motorcycle Roadway Segments

The two leading FSI crash types involving motor vehicles along segments are:

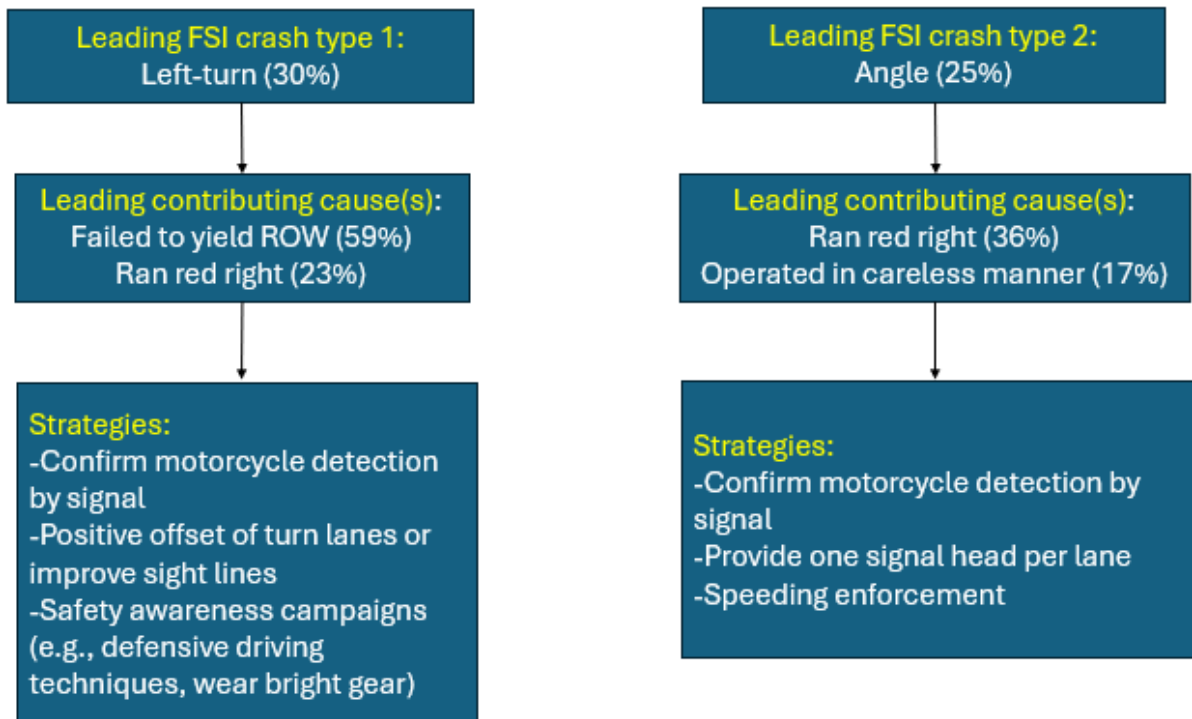
- Fixed Object / Run-Off-the-Road
- Left Turns



Motorcycle Intersections

The two leading FSI crash types involving motorcycles at intersections are:

- Left Turn
- Angle



Pedestrian Systemic Safety Recommendations

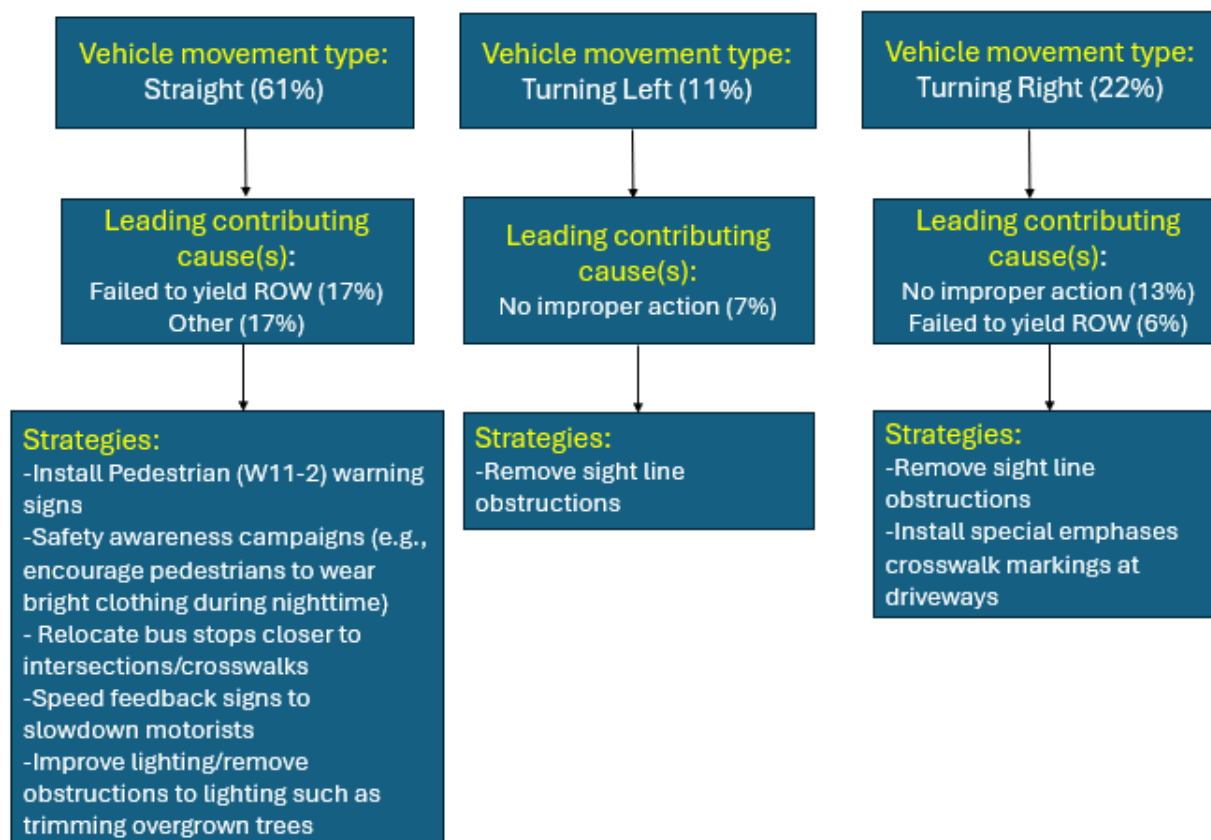
From 2019-2023, there were 458 crashes involving someone walking which resulted in a fatality or serious injury. The majority (61%) of these crashes occurred along segments, with the remaining (39%) occurring at intersections. The pedestrian systemic safety recommendations are focused on reducing and eliminating these crash trends.

Pedestrian Roadway Segments

The two leading vehicle movements along segments that involved a fatal or serious injury pedestrian crash are:

- Traveling straight
- Turning right

Failure to yield was the leading contributing factor.

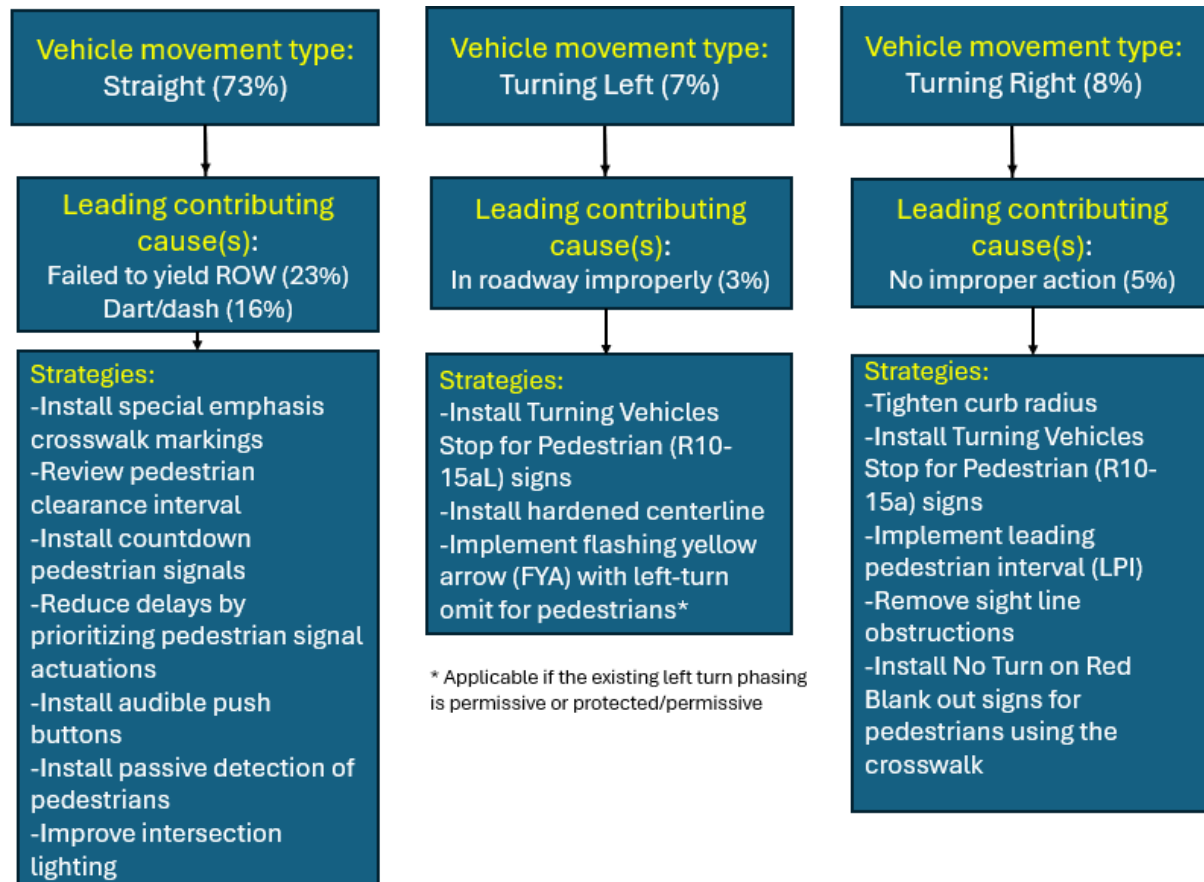


Pedestrian Roadway Intersections

The two leading vehicle movements at intersections that involved a fatal or serious injury pedestrian crash are:

- Traveling straight
- Turning right

Failure to yield was the leading contributing factor.



Bicycle Systemic Safety Recommendations

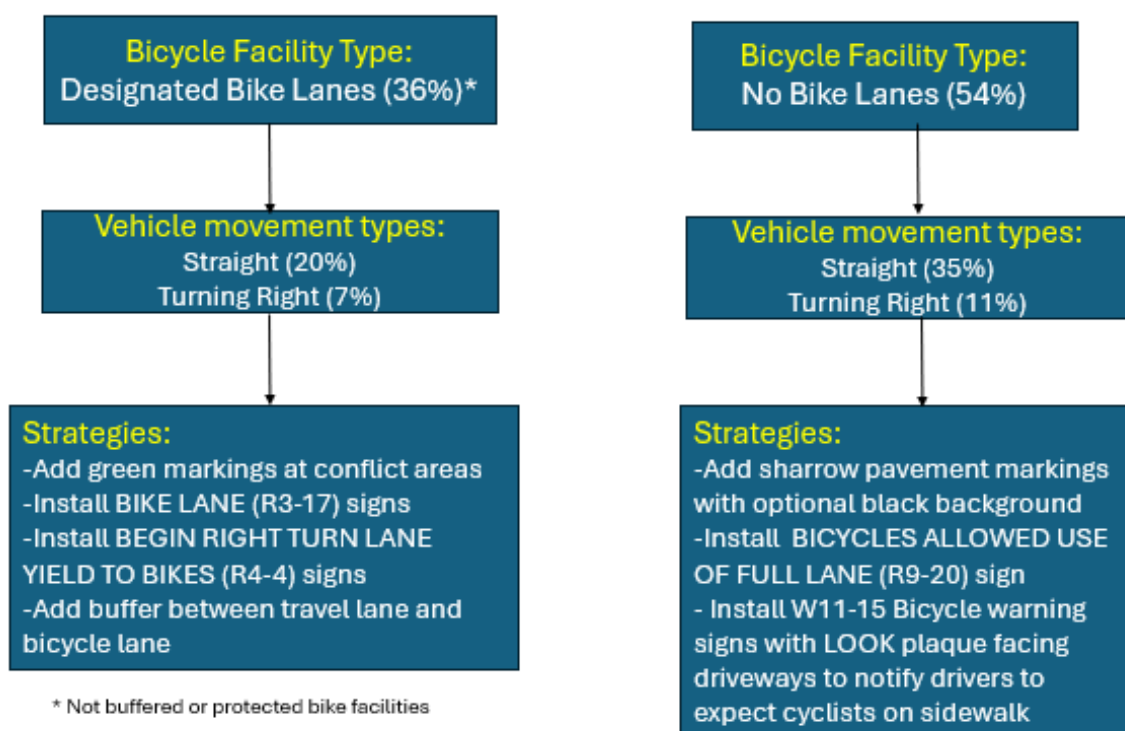
From 2019-2023, there were 255 crashes involving someone riding a bike which resulted in a fatality or serious injury. The majority (61%) of these crashes occurred along segments, with the remaining (39%) occurring at intersections. The bicycle systemic safety recommendations are focused on reducing and eliminating these crash trends.

Bicycle Roadway Segments

On roadway segments, most fatal and serious injury bicycle crashes occurred where no bike lanes exist. The top vehicle movements for these severe crashes are:

- Traveling straight
- Turning right

Failure to yield was the leading contributing factor.

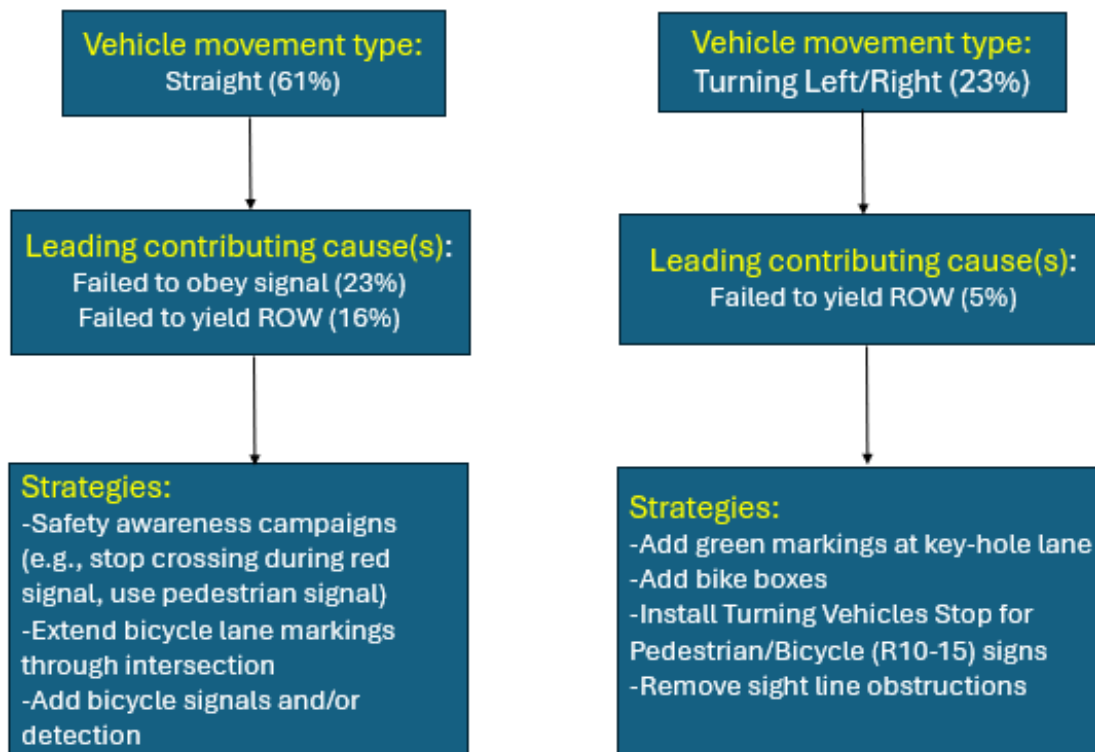


Bicycle Roadway Segments

At intersections, the top vehicle movements for these severe crashes are:

- Traveling straight
- Turning right

Failure to yield was the leading contributing factor.



POLICY AND PROCEDURE MEMORANDA (PPMS) REVIEW

Introduction

The Policy and Procedure Memoranda (PPMs) serve as the essential guidelines for Palm Beach County's approach to roadway safety and maintenance. Establishing uniform standards and procedures for varied aspects of traffic management, these PPMs ensure that infrastructure improvements are systematic and secure. Covering areas from street lighting to pedestrian signals, the policies underpin the County's commitment to proactively enhancing safety and operational efficiency on its roadways. By aligning with

national and state standards and incorporating specific recommendations, the PPMs focus on consistently applying industry standards to maintain and upgrade traffic systems effectively.

Summary of Findings

Based on a thorough review of the Policy and Procedure Memorandums (PPMs) for Palm Beach County, several key recommendations have emerged to address systemic issues and corridor needs.

- **Draft LPI PPM.** Consider allowing LPI based on data and observation rather than waiting for crashes. Do not recommend FYA over LPI but could recommend protected-only left turns.
- **ETO-100 Traffic Signal Installation Warrants.** Consider adding criteria for installing signals at intersections with demonstrated high pedestrian and/or bicycle volume, locations which would potentially handle significant pedestrian/bicycle, or locations with significant pedestrian/bicycle accidents.
- **ETO-105 FYA for Left Turn Movements.** Consider adding pedestrian/bicycle volumes and crash data as criteria for determining if FYA operates as protected-only during certain times of day.
- **ETO-108 Installation of Left Turn Signals.** Consider adding more restrictive criteria for allowing protected-permissive signals when pedestrian/bicycle activity may be higher.
- **ETO-300 Pavement Markings.** Require the use of thermoplastic materials with glass beads for pavement markings to enhance nighttime visibility.
- **ETO-602 Pedestrian Crosswalks at Uncontrolled Locations.** Eliminate the minimum ADT threshold and FDOT Context Classification requirements for installing pedestrian crosswalks at uncontrolled locations, prioritizing pedestrian demand and ensuring high visibility crosswalks, advanced stop markings, and pedestrian warning signs as standard applications.
- **ETO-603 Speed Limit Policy Procedure.** Ensure speed limit signs are clearly visible both day and night, revising placement strategies to align with MUTCD standards, including places speed changes and jurisdictional boundaries.
- **ETO-614 School Zones.** Reference the use of flashing beacons at school crossings in areas with higher speed limits within the policy to foster consistent safety measures.

These recommendations aim to enhance roadway safety comprehensively and address specific corridor needs effectively.

Opportunities Tied to Systemic Issues and Corridor Needs

PPM	Opportunities	
	Systemic Safety	Corridor Safety
Draft LPI PPM	Where applicable, do not recommend FYA over LPI. Protected only left turns are a good alternative as well.	Provide LPI based on data and observations, do not wait for crashes to happen
ETO-100 Traffic Signal Installation Warrant	Consider adding criteria for installing signals at intersections with demonstrated high pedestrian and/or bicycle volume, locations which would potentially handle significant pedestrian/bicycle volume (not many people crossing currently, because they can't, but would if they could), or locations with significant pedestrian/bicycle accidents.	
ETO-105 FYA for Left Turn Movements	Consider adding more restrictive criteria for allowing protected-permissive signals when pedestrian/bicycle activity may be higher.	
ETO-108 Turn Lane Requests	n/a	
ETO-200 Traffic Control Sign Policy	Place Wildlife crossing signs where applicable.	Consistent and compliant signage along HIN corridors.
ETO-300 Pavement Markings	Review roadways to identify if new markings need to be placed or if existing markings	On Corridors with high nighttime crash rates, confirm reflective materials are adequately utilized.

PPM	Opportunities	
	Systemic Safety	Corridor Safety
	need maintenance.	
ETO-500 Street Lighting Policy	Prioritize lighting where nighttime crashes are prevalent and lighting does not exist.	
ETO-501 Sidewalk Program	Prioritize locations with high pedestrian crash rates that lack existing sidewalks.	Review HIN corridors to confirm sidewalk connectivity, prioritize connectivity along these corridors.
ETO-602 Pedestrian Crosswalks at Uncontrolled Locations	Standardize the use of High visibility crosswalks and add advanced stop markings and warning signs at uncontrolled crosswalk locations.	
ETO-603 Speed Limit Policy Procedure	Confirm speed limit signs are adequately spaced on roadways and confirm they are visible during all light conditions.	Review high crash locations to determine if speeding is a consistent crash factor. If speed is a problem, consider conducting a review of the speed limit.
ETO-606 Turn Lanes Request	n/a	
ETO-609 Non-Conforming Landscaping or Other Obstructions in County Road Right-of-Ways	Conduct regular assessments of sight distance and clear zones can proactively prevent crashes caused by visibility obstructions.	
ETO-614 School Zones	Enhancing school zone safety with flashing beacons at crossings and school entrances.	
ETO-708 Accessible Pedestrian Signals and Detectors	Inventory pedestrian signals and detectors for accessibility levels to identify shortfalls and promote inclusive safety planning.	

Summary of PPMs

PPM: Draft LPI PPM

Summary of PPM: The policy establishes criteria for implementing a Leading Pedestrian Interval (LPI) to enhance pedestrian safety at County-maintained traffic signals. LPI gives pedestrians a 3-7 second head start before vehicles proceed, improving visibility and reducing conflicts. The evaluation criteria include pedestrian-vehicle crashes, high pedestrian volumes with turning vehicles, visibility issues, motorist non-yielding behavior, requests by visually impaired individuals, and intersection performance during peak hours. The procedure involves data analysis, consideration of alternative measures, and coordination between Traffic Engineering and Traffic Signal Systems Managers, ensuring the LPI's benefits outweigh any potential traffic delays.

Recommendations: Consider allowing LPI based on data and observation rather than waiting for crashes. Do not recommend FYA over LPI but could recommend protected-only left turns. These recommendations are based on a safe system approach that aims to transition policy from being reactive to proactive.

PPM: ETO-100 Traffic Signal Installation Warrants

Summary of PPM: This policy outlines the criteria and procedures for the installation of traffic signals within Palm Beach County. Governed by the Manual on Uniform Traffic Control Devices (MUTCD) and Florida State Statutes, the policy ensures that intersections meet specific signal warrants appropriate for traffic conditions. Key criteria include the jurisdiction of the intersection, compliance with Florida statutes, satisfaction of MUTCD signal warrants, and consideration of access management policies. For private roads or commercial driveways, the private entity must fund the design, utility relocation, and installation of the signal. Requests for signal installation initiate a data analysis process, with the Traffic Engineering Studies Manager evaluating and recommending the signal installation to the Director for final approval. Upon approval, the Signal Design Manager schedules the design and installation, and the requesting party is informed of the results.

Recommendations: Consider adding criteria for installing signals at intersections with demonstrated high pedestrian and/or bicycle volume, locations which would potentially handle significant pedestrian/bicycle volume, or locations with significant pedestrian/bicycle accidents.

PPM: ETO-105 FYA for Left Turn Movements

Summary of PPM: This policy establishes criteria for installing and operating Flashing Yellow Arrow (FYA) signals for left-turn movements at signalized intersections in Palm Beach County, following MUTCD guidelines. All new and modified signals must include FYA for Permissive Only and Protected/Permissive modes. Variable mode operation is considered

based on time-of-day and crash trends. Consistent application across intersection approaches and appropriate signage are required. Special considerations include avoiding mixed signal types, managing pedestrian activity, and ensuring structural feasibility. Requests for installation undergo evaluations by traffic management teams, with prioritization given to critical locations, including school crossings and high pedestrian crash areas.

Recommendations: Consider adding pedestrian/bicycle volumes and crash data as a criteria for determining if FYA operates as protected-only during certain times of day.

PPM: ETO-108 Installation of Left Turn Signals

Summary of PPM: This policy outlines guidelines for installing left turn signals at signalized intersections in Palm Beach County, based on criteria similar to those in the Manual of Traffic Signal Design and the Highway Capacity Manual. The need for a left turn signal is determined by peak hour volumes, average delay, and crash patterns. Protected-Permissive left turn signals may be installed if specific volume thresholds, delay, or crash conditions are met, including special considerations for senior citizen drivers. Protected-Only left turn signals are required for intersections with multiple left turn lanes or substantial opposing traffic, and may also be installed to enhance pedestrian safety, address specific crash patterns, or accommodate high-speed traffic areas. Evaluation ensures that left turn signals improve safety and traffic flow while maintaining an acceptable Level of Service (LOS).

Recommendations: Consider adding more restrictive criteria for allowing protected-permissive signals when pedestrian/bicycle activity may be higher.

PPM: ETO-200 Traffic Control Sign Policy

Summary of PPM: Establishes guidelines for the installation of traffic control signs on County and non-County roads in Palm Beach County, ensuring compliance with established standards.

- **Sign Installation Authority:** All County-installed signs must conform to the MUTCD and FDOT standard plans. Sign installation on County roads depends on maintenance acceptance, permits from responsible agencies, or inter-local agreements with municipalities.
- **Non-County Road Signage:** The County installs signs on non-County road projects on a case-by-case basis for street name signs, primarily at intersections with County roads or when public safety and responsibility conditions are met.
- **Wildlife Crossing Signs:** "Watch for Wildlife" warning signs are installed only if the road segment borders conservation land or greenways, has a speed limit of 45

mph or higher, and there is documented evidence of wildlife-vehicle collisions. Sign placement follows MUTCD guidelines with specific sizing and spacing.

- Procedures and Approvals: Initial sign installations require approved work orders from a Professional Engineer in the Traffic Division, with replacements documented by a specific form. The policy is subject to approvals by the Division and Department Directors.

Recommendations: No recommendations.

PPM: ETO-300 Pavement Markings

Summary of PPM: The guidelines outline the requirements for pavement markings on County roadways. Permanent markings must use thermoplastic materials, while paint is allowed for temporary conditions or initial layers. Low-volume residential and business roads generally do not qualify for markings unless approved by the Assistant Director. All new or widened roads need approved engineering plans or work orders for markings, and intersections with state road approaches fall under FDOT responsibility. Refurbishing decisions depend on upcoming projects and timeframes, with paint used for short-term projects and thermoplastic for longer-term or absent projects. Routine refurbishing that matches existing markings typically does not require new engineering plans, except for compliance changes or added bicycle lanes.

Recommendations: No recommendations

PPM: ETO-500 Street Lighting Policy

Summary of PPM: Establishes guidelines for the design, installation, and maintenance of street lighting on County-maintained roads. It mandates coordination with local utilities, adherence to national and state standards, and specific conditions for lighting intersections, thoroughfares, and roundabouts. Requests for new street lights must be reviewed by the Traffic Signal and Lighting Design Manager and are dependent on budget and field conditions. The policy also includes procedures for inspection and billing reconciliation of completed projects and defines the roles of the County and municipalities regarding street lighting installations and maintenance.

Recommendations: No recommendations.

PPM: ETO-501 Sidewalk Program

Summary of PPM: This document outlines the process for selecting projects to be funded under the Sidewalk Program for the upcoming fiscal year. The Traffic Division compiles a list of eligible projects, which is then reviewed by a Selection Committee made up of representatives from various county departments and agencies. Approved projects, including both school-related and general sidewalk requests, are chosen to serve the

interests of multiple stakeholders. The final list of recommended projects is submitted to the Board of County Commissioners for approval each October.

Recommendations: No recommendations.

PPM: ETO-602 Pedestrian Crosswalks at Uncontrolled Locations

Summary of PPM: Defines the criteria for installing pedestrian crosswalks at uncontrolled locations like midblock areas or unsignalized intersections. It outlines requirements for traffic volume, pedestrian demand, distance from other crosswalks, visibility, and specific enhancements like pavement markings and signs. The policy provides guidelines for additional safety measures such as flashing beacons and pedestrian signals, based on road conditions and speed limits. Requests for crosswalks are reviewed by the Traffic Engineering Studies Manager, who ensures proper study, approval, installation, and ongoing maintenance.

Recommendations:

- 1) Consider lowering minimum ADT threshold and providing flexibility with FDOT Context Classification requirements for installation of a pedestrian crosswalk at uncontrolled locations on County maintained roadways. Pedestrian demand should dictate the need for crosswalks, regardless of ADT or context classification. Crosswalks should be prioritized at key pedestrian generator locations. Low volume county roads without a crosswalk still create a potential safety risk. Removing these requirements is proactive and is aligned with the Safe System approach.
- 2) High Visibility Crosswalks (CMF 4123) should be the standard regardless of ADT on the roadway. They are a proven safety countermeasure, and their standardized application is a proactive approach to safety.
- 3) Advanced Stop markings and pedestrian warning signs should be used in conjunction with high visibility crosswalks as a standard application. They are a proven safety countermeasure (CMF 9017).
- 4) All crosswalks should be reviewed annually to determine maintenance needs and to keep their paint adequately visible.

PPM: ETO-603 Speed Limit Policy Procedure

Summary of PPM: This document outlines the guidelines and procedures for establishing speed limits on County maintained roads in Florida. Speed limits are set according to state statutes and the Florida Department of Transportation (FDOT) standards, with typical limits of 30 mph in business or residential districts and 55 mph elsewhere. The County Engineer, following proper engineering studies and recommendations, has the

authority to approve speed limits, which must be posted in accordance with FDOT criteria and Board of County Commissioners resolutions. Sign placement requirements and the process for adopting changes to speed limits are also specified.

Recommendations:

- 1) Indicate that signs shall be clearly legible and visible both in daylight and at night when illuminated by headlights.
- 2) Consider revising "Speed limit signs should be placed at the beginning of each speed zone, about 2500 feet apart and approximately 100 feet from intersection." Per MUTCD (2B.13) Speed Limit (R2-1) signs, indicating speed limits for which posting is required by law, shall be located at the points of change from one speed limit to another.
 - a. At the downstream end of the section to which a speed limit applies, a Speed Limit sign showing the next speed limit shall be installed. Additional Speed Limit signs shall be installed beyond major intersections and at other locations where it is necessary to remind road users of the speed limit that is applicable.
 - b. Speed Limit signs indicating the statutory speed limits shall be installed at entrances to the State and, where appropriate, at jurisdictional boundaries in urban areas.

PPM: ETO-606 Turn Lanes Request

Summary of PPM: This policy outlines the criteria and procedures for the installation of turn lanes on public roads, aimed at enhancing traffic flow and safety. For public roads serving other public roads, the county may fund the turn lane installation based on a warranted traffic engineering study. For private roads or public roads serving private developments, the developer typically covers the costs, unless a public health or safety benefit justifies county funding. Turn lanes are considered based on traffic volume thresholds: 75 right turns or 30 left turns during peak hours, with considerations for speed, volume, accident history, and road geometry. Requests initiate an engineering study, and justified requests are reviewed by the Capital Projects Committee for approval and assignment. Engineering plans for non-county projects require review and permits before construction begins.

Recommendations: No recommendations.

PPM: ETO-609 Non-Conforming Landscaping or Other Obstructions in County Road Right-of-Ways

Summary of PPM: Sets guidelines for addressing landscaping or other obstructions in the County right-of-ways. It's illegal to place items in these areas without permits. The County

investigates complaints to determine if obstructions violate clear zone and sight distance requirements per the FL Greenbook standards. If a violation is found, the owner is given time to remove it; otherwise, the County will remove the obstruction. For extreme cases, immediate removal may be warranted without prior notice. The policy includes specific procedures for assessing sight distance and clear zone compliance.

Recommendations: No recommendations.

PPM: ETO-614 School Zones

Summary of PPM: This PPM outlines the policy and procedures for establishing and maintaining school zones in Palm Beach County to ensure pedestrian safety and effective traffic control near schools.

- Authority and definitions: The policy is based on the MUTCD and FDOT's Speed Zone Manual, defining key terms such as school route maps and school speed zones used for traffic control planning.
- Procedures for school speed zones: Requests for school speed zones are handled by the Traffic Engineering Studies Manager who evaluates them per policy guidelines, issues work orders for signage and flashers, and coordinates installation with the signal section.
- School route maps and speed zone guidelines: Official school route maps include school property, crossings, traffic controls, and walk routes, updated collaboratively with schools and law enforcement. School speed zones of 20 mph are established on street segments with student crossings under specific conditions such as traffic control absence, speed limits above 35 mph, or multiple lanes. Flashers and signs comply with MUTCD standards and speed limits are enforced during designated school arrival and dismissal times.
- Additional traffic controls: School crossings require adult crossing guards and must be spaced at least 300 feet apart. Traffic signals may be installed at school entrances or major access intersections if MUTCD warrants are met to enhance safety.

Recommendation: As an enhancement or best practice for PPM, it is recommended to incorporate a direct reference to section 15.4.1 (3) of the Florida Speed Zoning Manual. This section suggests the addition of flashing beacons to improve safety at school crossing zones and school entrances in areas where speed limits are 45 mph or higher, as well as in locations that do not have posted school zone signage.

While the PPM currently states that the foundation of its policy is based on the standards outlined in both the MUTCD and the Speed Zoning Manual, which would include the

practice of installing flashing beacons, noting this recommendation explicitly within the PPM would help ensure that best safety practices are consistently implemented.

PPM: ETO-708 Accessible Pedestrian Signals and Detectors

Summary of PPM: This document outlines the process for evaluating and installing Accessible Pedestrian Signals and Detectors in Palm Beach County. It details the steps for submitting requests, the evaluation and approval procedures, coordination with relevant entities like FDOT, and the responsibilities of the Manager in documenting findings and consulting with other traffic signal managers. The document also covers ongoing maintenance, bi-annual reviews of installed devices, and the protocols for modification and training for visually impaired pedestrians.

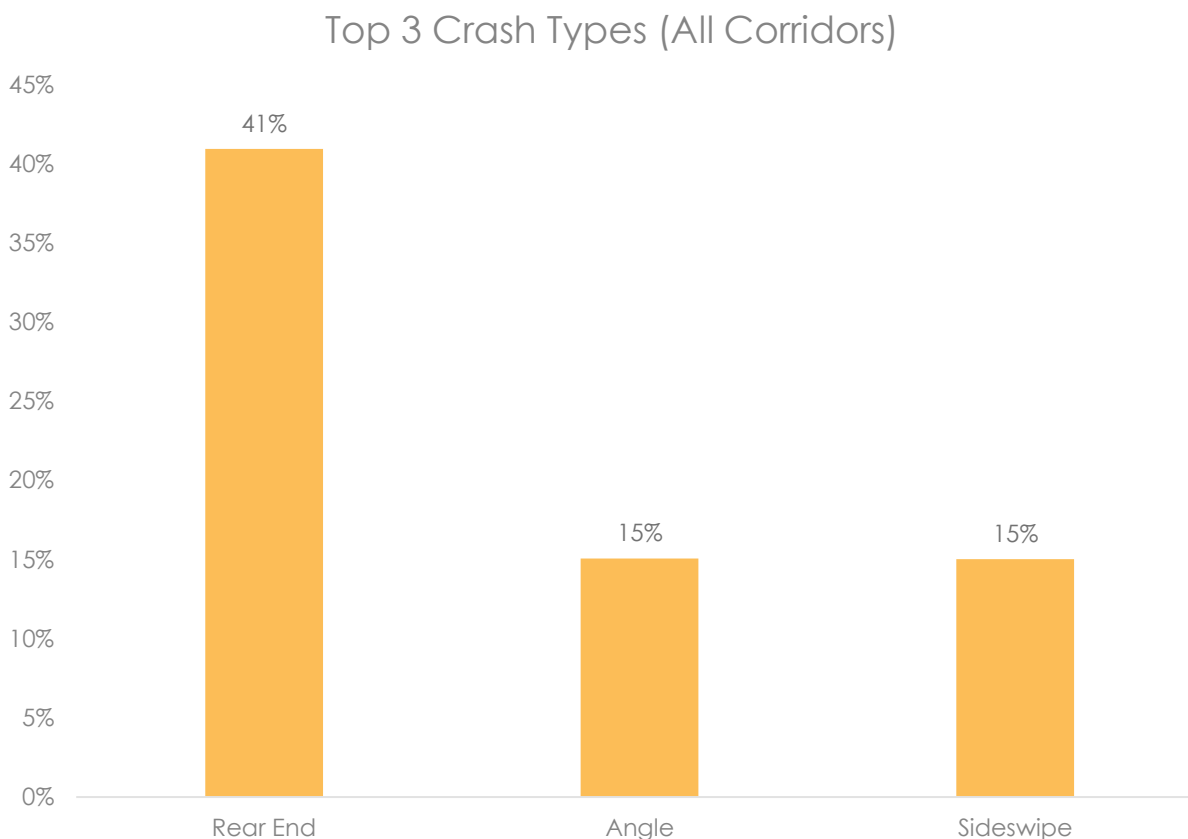
Recommendations: No recommendations.

APPENDIX A: TOP 5 PRIORITY CORRIDOR OVERVIEW

Overall Corridor Trends

For all five corridors combined (including intersections and segments together), the top crash types were Rear End (41%), Angle (15%), and Sideswipe (15%).

Total Crashes by Type (top 3 types for all levels of crash severity)



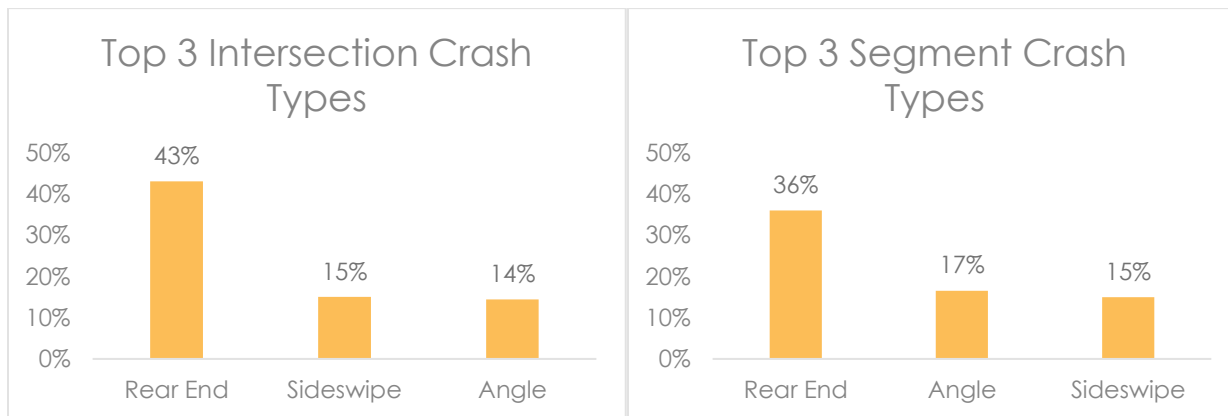
From 2019 to 2023, left turn crashes consistently resulted in the highest number of fatal or serious injuries (FSI), peaking at 26 in 2022. rear end crashes showed steady FSI numbers around 12-14 from 2019 to 2021, with no data mentioned for 2022-2023. Angle crashes had notable FSI counts in 2019 and 2021 but decreased over time. Bicycle crashes appeared in 2020 with an FSI count of 13. Pedestrian crashes saw increasing FSI counts, peaking at 13 in 2022 and maintaining significant numbers in 2023. Fixed object/run-off-road crashes had moderate FSI counts in 2022 and 2023. Together, these five corridors account for 11% of all fatal or serious injuries (FSIs) in the county (2019-2023) while comprising only 2.2% of total county-maintained lane miles.

OF FSI CRASHES BY YEAR AND TYPE (TOP 3 TYPES FOR FSI)

Year	Top 3 Crash Types	Number of FSI per Crash Type
2019	Left Turn	21
	Rear End	14
	Angle	13
2020	Left Turn	18
	Rear End	14
	Bicycle	13
2021	Left Turn	21
	Rear End	12
	Angle	9
2022	Left Turn	26
	Pedestrian	13
	Fixed Object/Run-Off Road	8
2023	Left Turn	14
	Fixed Object/Run-Off Road	10
	Pedestrian	10

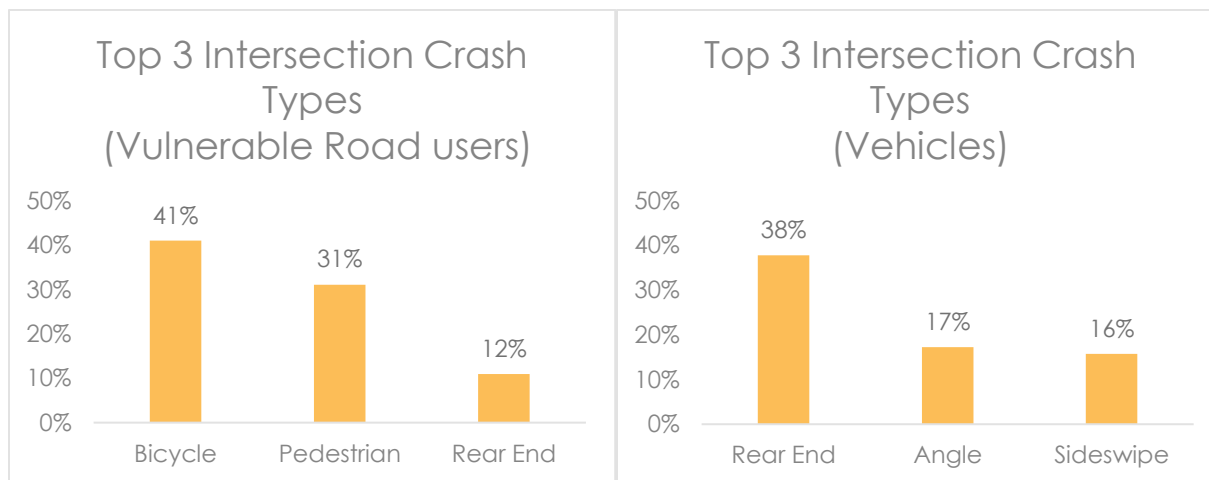
When comparing crash types between segments and intersections, the results remain consistent for each. For both, rear end crashes represent the most common type of crash. For intersections, sideswipe crashes were more common than angle crashes, with this relationship reversing for segment crashes.

Intersection Crash Types vs Segment Crash Types



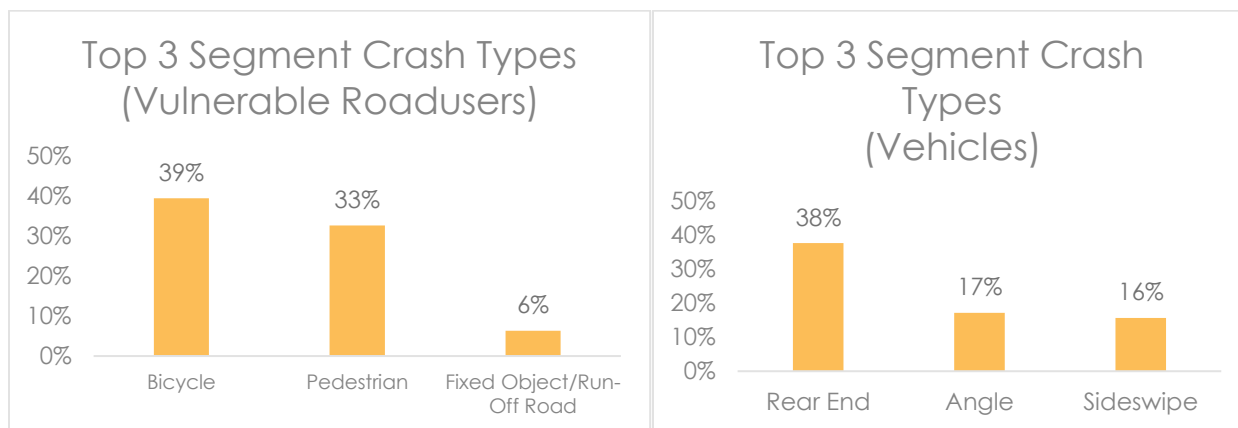
At intersections, the top crash types for vulnerable road users are mainly bicycle and pedestrian crashes, whereas for vehicles, rear end and angle crashes are more common.

Comparison of Vulnerable Road Users to Vehicles at Intersections



On segments, the pattern for vulnerable road users remains with bicycle and pedestrian crashes being predominant, while for vehicles, rear end and angle crashes again dominate alongside sideswipe incidents.

Intersection Crash Types vs Segment Crash Types



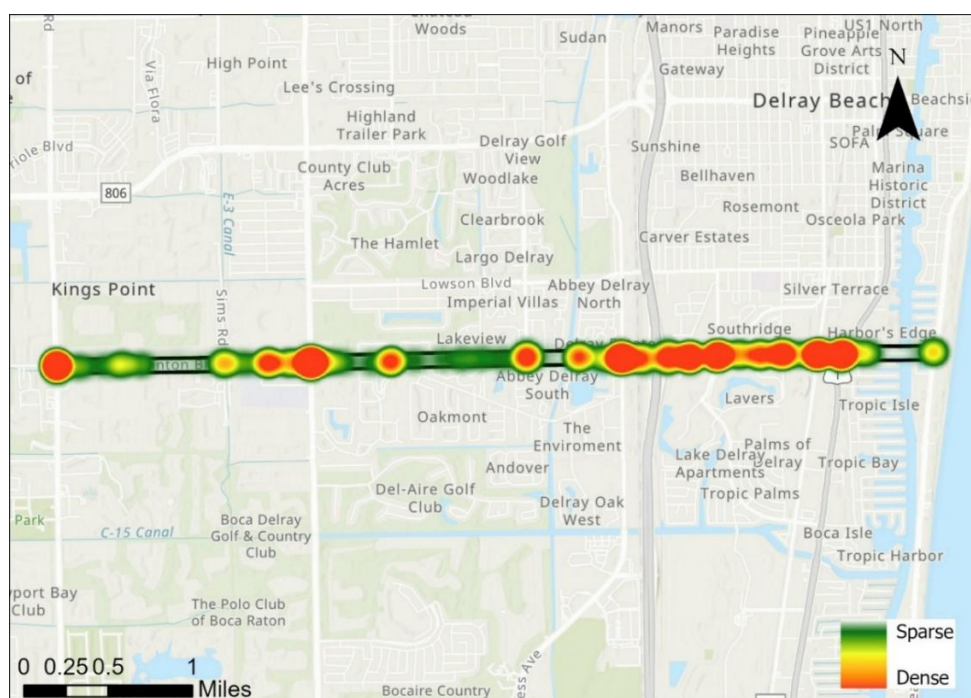
APPENDIX B: TOP 5 PRIORITY CORRIDOR CRASH PROFILES AND COUNTERMEASURE RECOMMENDATIONS

Linton Boulevard



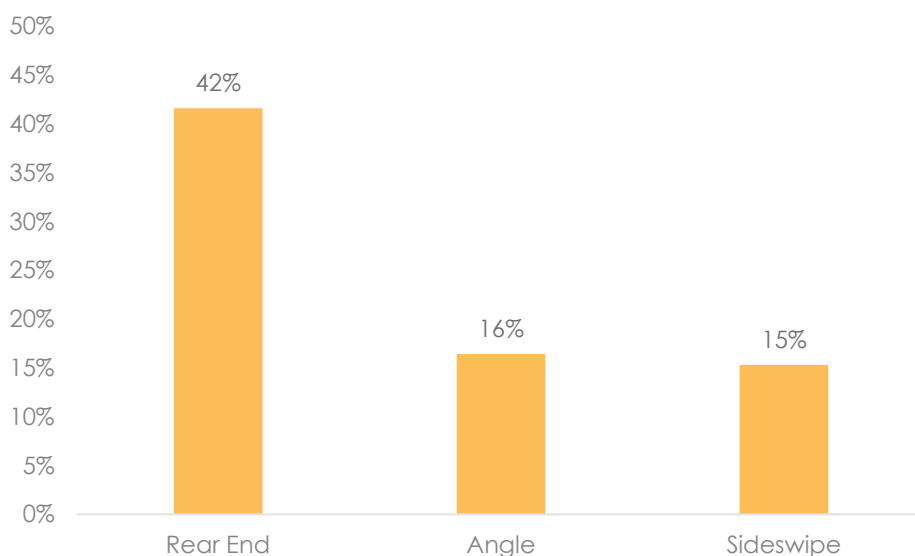
Linton Boulevard, spanning from A1A to South Jog Road over a length of 5.2 miles, serves as an urban major arterial roadway. The roadway accommodates 4 to 6 lanes within a 120-foot right of way, with posted speed limits ranging from 40 to 45 MPH. It experiences an annual average daily traffic (AADT) between 14,400 and 45,000, as reported by FDOT in 2024. The roadway is a major east/west corridor for the county and also connects to I-95.

Linton Boulevard Crash Heat Map



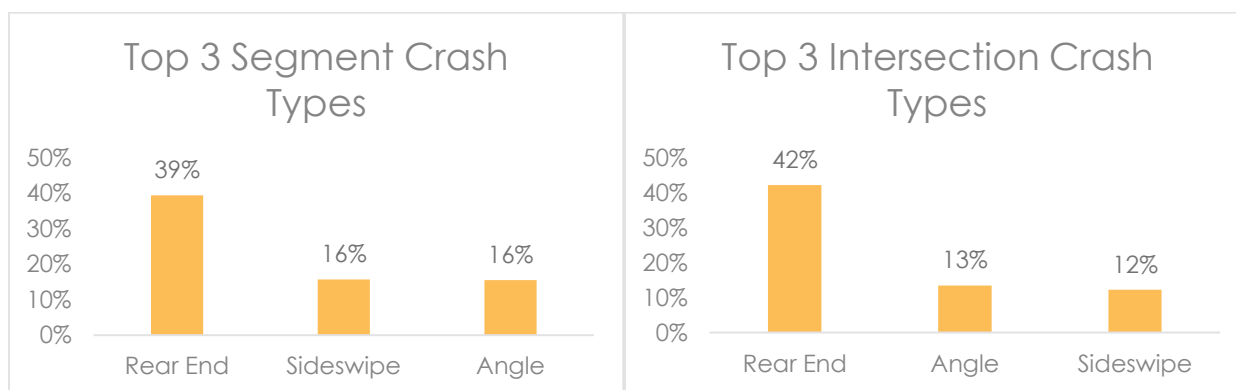
Linton Boulevard experienced a total of 2,555 crashes over the study period. There was a total of 83 FSI, including 7 fatalities. Of the five priority corridors, Linton Boulevard had the most FSI between 2019-2023. Of the 2,555 crashes, 81 were involving vulnerable road users. The most common crash types for all modes were 1) rear end, 2) angle, and 3) sideswipe.

Top 3 Crash Types (All Crashes)



In segments, rear end crashes account for 39%, sideswipe crashes for 16%, and angle crashes for 16%. At intersections, rear end crashes constitute 42%, angle crashes 13%, and sideswipe crashes 12%. For both crash locations, the same three crash types remain the most common.

Midblock Crash Types vs Segment Crash Types



Countermeasures Identified for Corridor

Intersections:

- Leading Pedestrian Intervals for bicyclist and pedestrian safety (CMF: 0.41).
- Update signal timing with protected left-turn phasing to prevent left entering crashes (CMF: 0.45).
- Backplates with retroreflective borders to increase signal visibility (CMF: 0.85).

Segments:

- Directional Median Conversions to restrict vehicle turning movements at specific locations (CMF: 0.43)

Short-term Project Costs

Countermeasure	Cost
Leading Pedestrian Interval (12)	\$31,000
Backplates for Signals (12)	\$124,000
Protected Left Turn Phase (9)	\$366,000
Directional Median Conversion (10)	\$438,000
Total Costs	\$959,000

Standalone and Longterm Projects

- Hardened Centerlines at 9 intersections to reduce risk for pedestrians and cyclists within the crosswalk.
- Separated Bike Lane for the length of the corridor to reduce cyclist and vehicle conflict.

Standalone and Longterm Project Costs

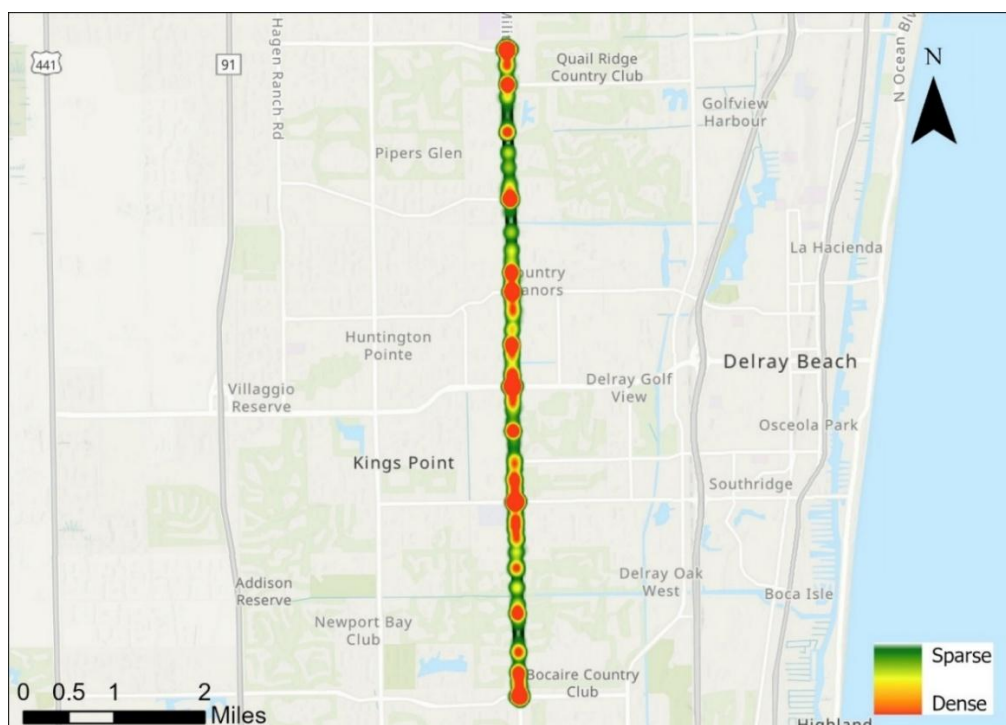
Countermeasure	Cost
Hardened Centerlines (9)	\$1,285,000
Separated Bike Lane	\$28,559,000
Total Costs	\$29,844,000

South Military Trail



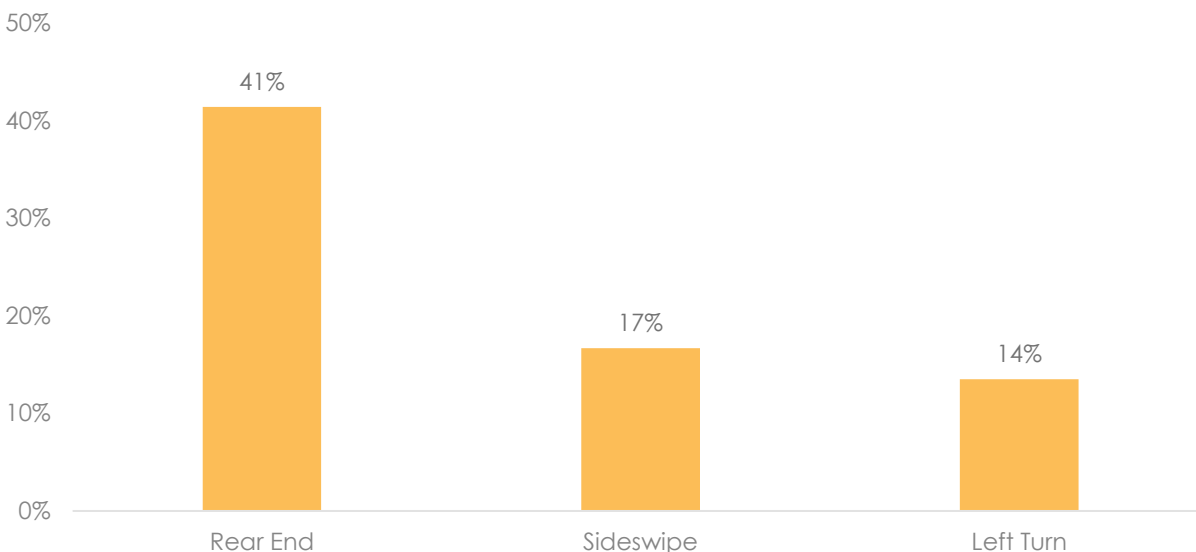
South Military Trail, spanning from Clint Moore Road to Woolbright Road over 7.2 miles, serves as an urban principal arterial roadway. The roadway features 6 lanes within a 120-foot right of way, with a posted speed limit of 45 MPH. According to FDOT in 2024, it experiences an annual average daily traffic (AADT) between 37,500 and 40,500.

South Military Trail Crash Heat Map



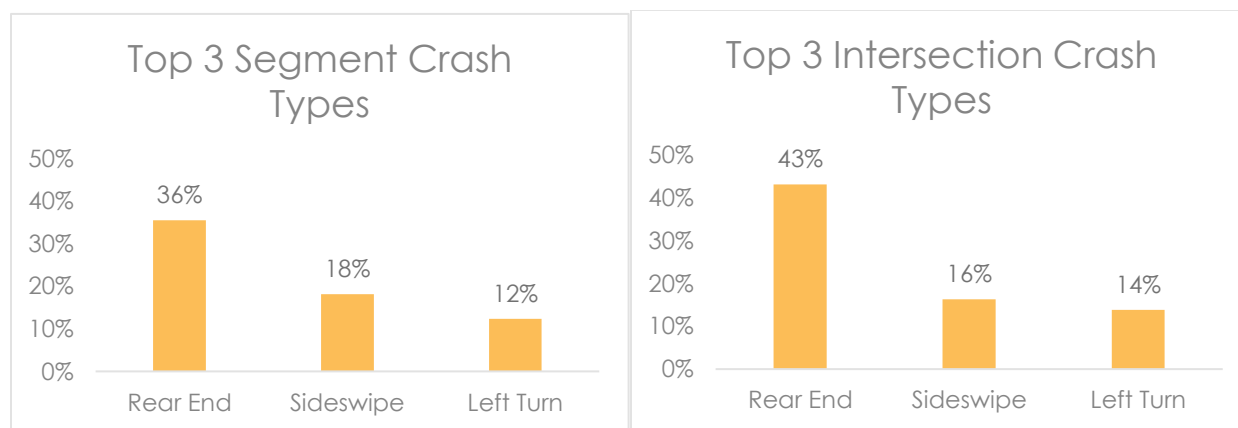
South Military Trail had a total of 2,302 crashes with 75 FSI, including 7 fatalities, over the 5-year study period of 2019-2023. 61 crashes of the 2,302 involved vulnerable road users, with the rest being vehicle crashes.

Top 3 Crash Types (All Crashes)



For segments, rear end crashes account for 36%, sideswipe crashes for 18%, and left turn crashes for 12%. At intersections, rear end crashes make up 43%, sideswipe crashes 16%, and left turn crashes 14%.

Midblock Crash Types vs Segment Crash Types



Countermeasures Identified for Corridor

Intersections:

- Leading Pedestrian Intervals for pedestrian and bicyclist safety (CMF: 0.41).
- Update signal timing with protected left-turn phasing to reduce left entering crashes (CMF: 0.45).
- Backplates with retroreflective borders to increase signal visibility (CMF: 0.85).

Segments:

- Directional Median Conversions to restrict vehicle turning movements at specific locations (CMF: 0.43)

Short-Term Project Costs

Countermeasure	Cost
Leading Pedestrian Interval (19)	\$48,000
Backplates for Signals (19)	\$197,000
Protected Left Turn Phase (14)	\$569,000
Directional Median Conversion (15)	\$657,000
Total Costs	\$1,471,000

Standalone and Longterm Projects

- Hardened Centerlines at 18 intersections to reduce risk for pedestrians and cyclists within the crosswalk.
- Separated Bike Lane for the length of the corridor to reduce cyclist and vehicle conflict.

Standalone and Longterm Project Costs

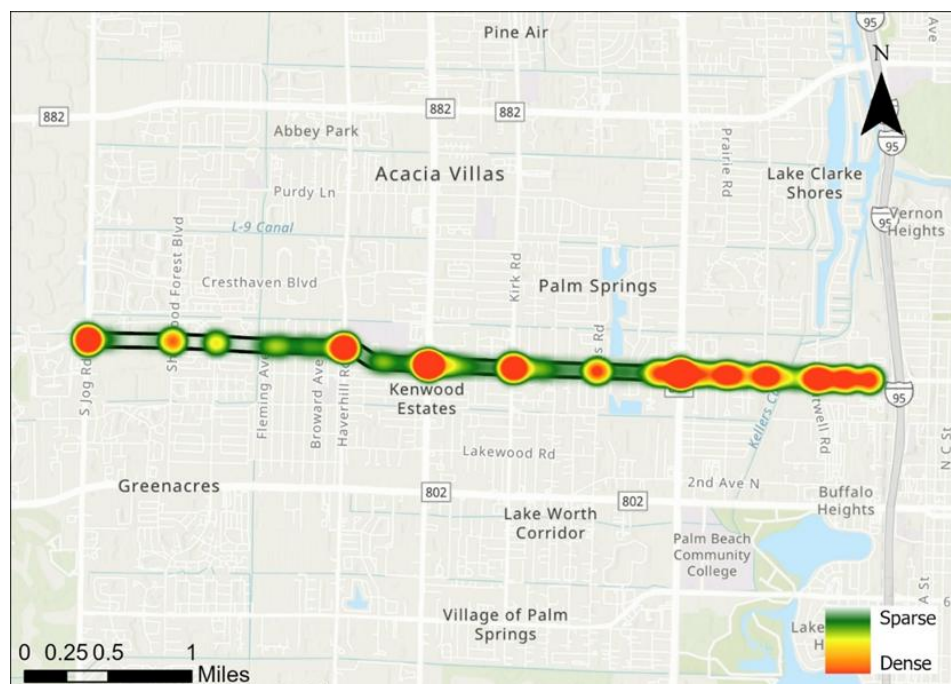
Countermeasure	Cost
Hardened Centerlines (18)	\$2,570,000
Separated Bike Lane	\$39,543,000
Total Costs	\$42,113,000

10th Avenue North



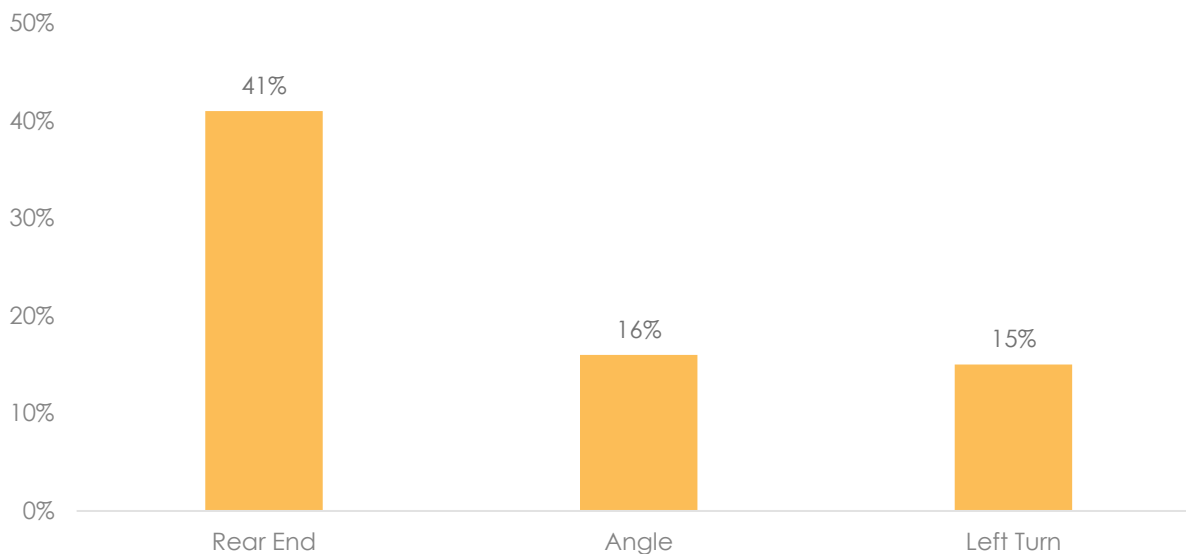
10th Avenue North, extending from Barnett Drive to South Jog Road over a length of 4.7 miles, functions as an urban major arterial roadway. This roadway consists of 4 to 5 lanes within an 80 to 120-foot right of way, with a posted speed limit of 40 MPH. According to FDOT in 2024, the annual average daily traffic (AADT) for this stretch ranges from 12,400 to 34,000. This portion of 10th Avenue North passes through 3 school zones and features a connection to I-95.

10th Avenue North Crash Heat Map



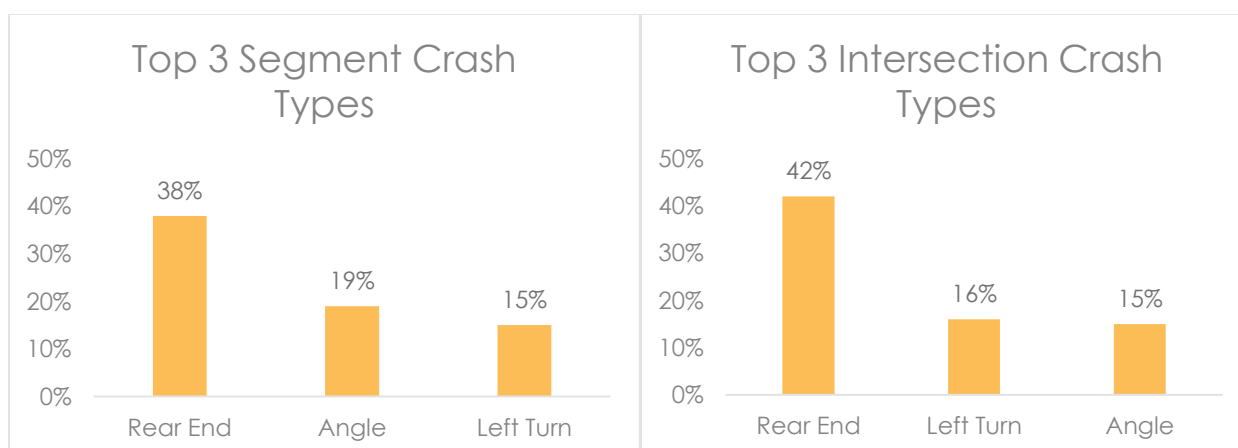
10th Avenue North experienced a total of 2,922 crashes with 67 FSI, including 18 fatalities. 10th Avenue North was the shortest corridor in length, but it experienced the most fatalities of the top 5. Of the full 2,922 crashes, 130 were vulnerable road users.

Top 3 Crash Types (All Crashes)



For segments, rear end crashes account for 38%, angle crashes for 19%, and left turn crashes for 15%. At intersections, rear end crashes make up 42%, left turn crashes 16%, and angle crashes 15%.

Midblock Crash Types vs Segment Crash Types



Countermeasures Identified for Corridor

Intersections:

- High Visibility Crosswalk for pedestrian and bicyclist safety (CMF: 0.60).
- Leading Pedestrian Interval for pedestrian safety (CMF: 0.41).
- Update signal timing with protected left-turn phasing to reduce left entering crashes (CMF: 0.45).
- Backplates with retroreflective borders to increase signal visibility (CMF: 0.85).

Segments:

- Directional Median Conversions to restrict vehicle turning movements at specific locations (CMF: 0.43).
- Full Traffic Signal to reduce vulnerable road user risks at unsignalized midblock location (CMF: 0.50).

Short-Term Project Costs

Countermeasure	Cost
High Visibility Crosswalk	\$56,000
LPI (12)	\$31,000
Backplates for Signals (12)	\$124,000
Directional Median Conversion (15)	\$657,000
Full Signal (1)	\$110,000
Signal Timing PLT (10)	\$407,000
Total Costs	\$1,384,000

Standalone and Longterm Projects

- Hardened Centerlines at 4 intersections to reduce risk for pedestrians and cyclists within the crosswalk.
- Installation and construction of new lighting infrastructure for the length of the corridor to reduce frequency of nighttime crashes.

Standalone and Longterm Project Costs

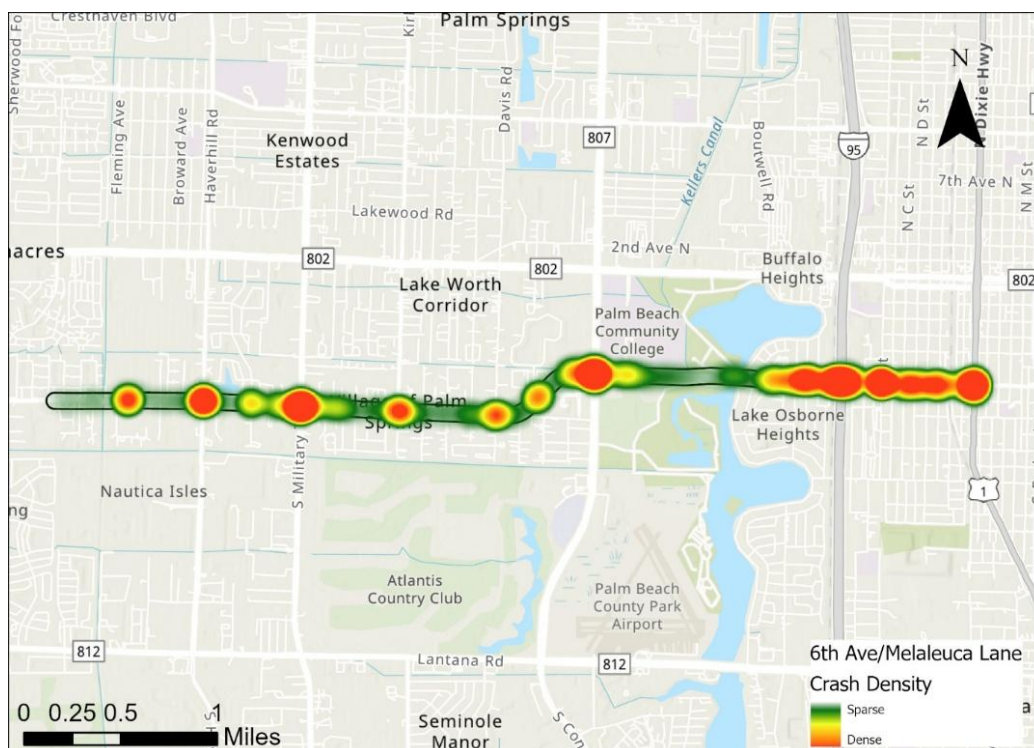
Countermeasure	Cost
Hardened Centerlines (4)	\$571,000
Lighting	\$12,365,000
Total Costs	\$12,936,000

6th Avenue/ Melaleuca Lane



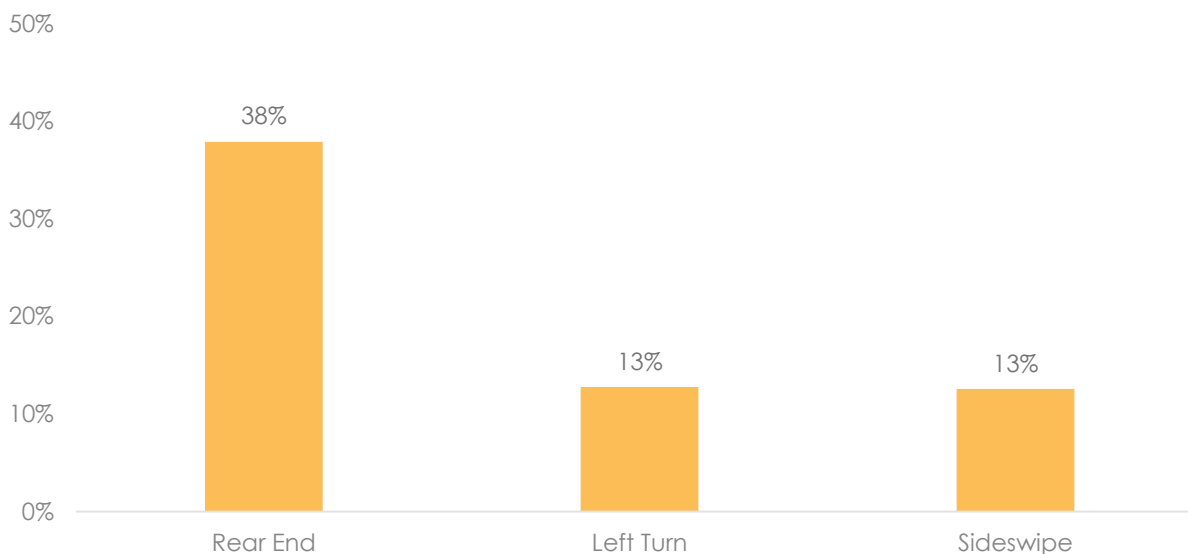
6th Ave/Melaleuca Lane, spanning from US 1 to Pine Hov Circle over 4.8 miles, serves as an urban major arterial roadway. The road features 4 to 5 lanes within an 80 to 110-foot right of way, with posted speed limits ranging from 35 to 45 MPH. According to FDOT in 2024, the annual average daily traffic (AADT) for this section is between 12,400 and 34,000. The road features a connection to I-95 and serves as a major route for east/west travel for the County.

6th Avenue/Melaleuca Lane Crash Heat Map



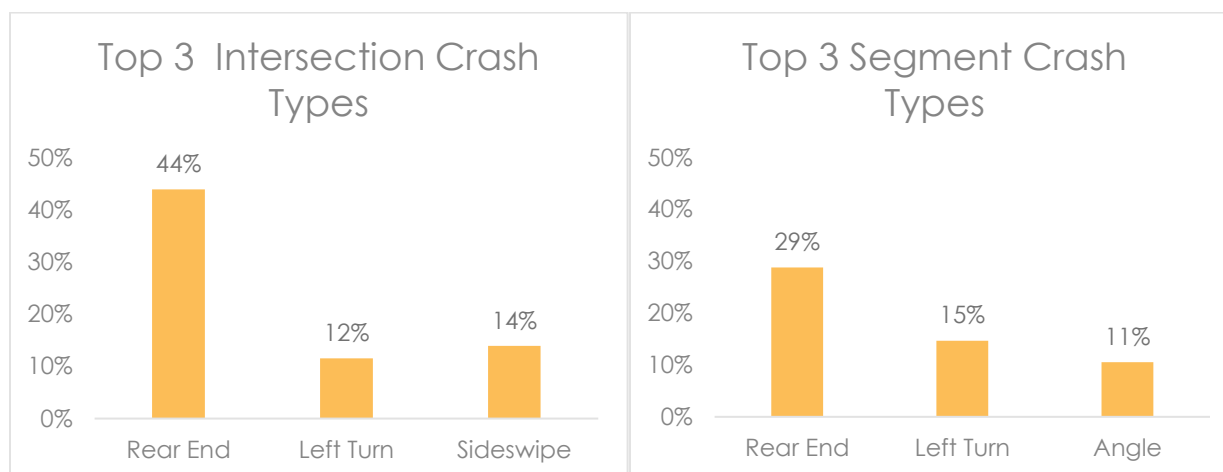
6th Ave/Melaleuca Lane experienced a total of 2,066 crashes over the study period, with 62 FSIs and 12 fatalities. Of the 2,066 crashes, 113 were vulnerable road users.

Top 3 Crash Types (All Crashes)



At intersections, rear end crashes account for 44%, left turn crashes for 12%, and sideswipe crashes for 14%. For segments, rear end crashes make up 29%, left turn crashes 15%, and angle crashes 11%.

Midblock Crash Types vs Segment Crash Types



Countermeasures Identified for Corridor

Intersections:

- High Visibility Crosswalk for pedestrian safety (CMF: 0.60).
- Leading Pedestrian Interval for pedestrian and bicyclist safety (CMF: 0.41).
- Backplates with retroreflective borders to increase signal visibility (CMF: 0.85).
- Update signal timing with protected left-turn phasing to reduce left entering crashes (CMF: 0.45).

Segments:

- Directional Median Conversions to restrict vehicle turning movements at specific locations (CMF: 0.43)

Short-Term Project Costs

Countermeasure	Cost
Leading Pedestrian Interval (7)	\$18,000
Backplates for Signals (7)	\$72,000
Protected Left Turn Phase (5)	\$203,000
High Visibility Crosswalk (7)	\$395,000
Directional Median Conversion (13)	\$569,000
Total Costs	\$1,258,000

Standalone and Longterm Projects

- Hardened Centerlines at 1 intersection to reduce risk for pedestrians and cyclists within the crosswalk.
- Installation and construction of new lighting infrastructure for the length of the corridor to reduce frequency of nighttime crashes.
- Separated Bike Lane for the length of the corridor to reduce cyclist and vehicle conflict.

Standalone and Longterm Project Costs

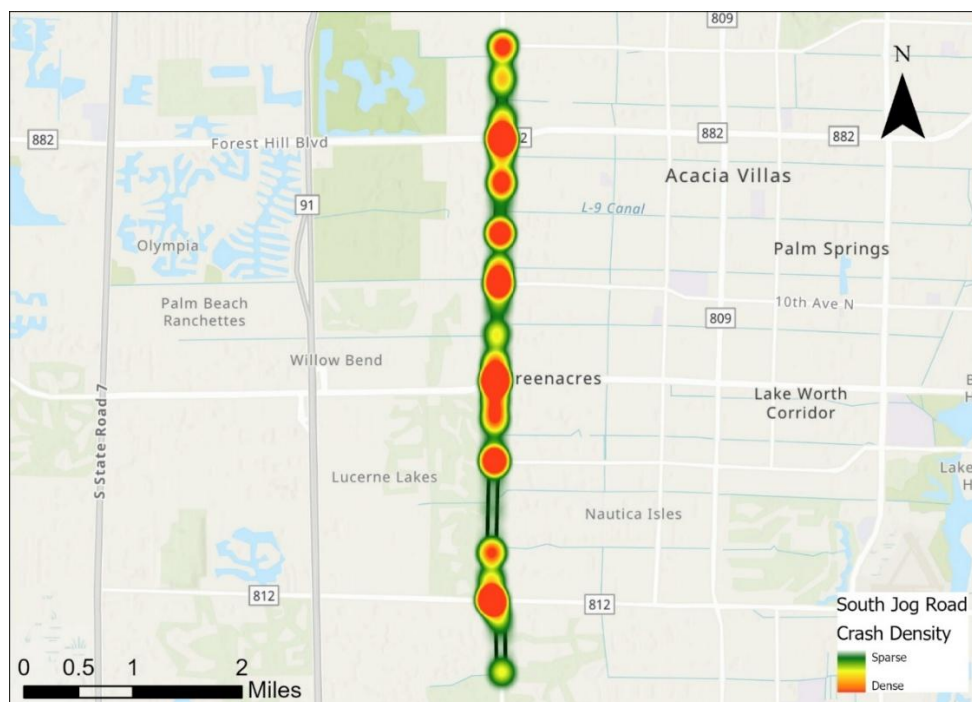
Countermeasure	Cost
Hardened Centerlines (1)	\$143,000
Lighting	\$6,314,000
Separated Bike Lane	\$26,362,000
Total Costs	\$32,819,000

South Jog Road



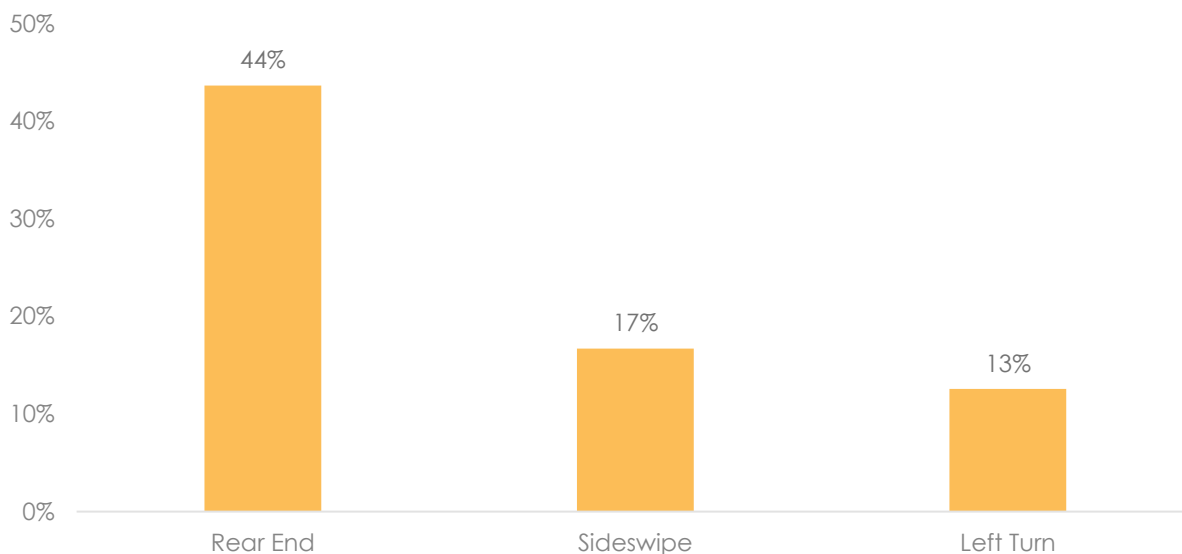
South Jog Road, extending from Winston Trails Boulevard to Summit Boulevard over a distance of 5.7 miles, serves as an urban principal arterial roadway. The road features 6 lanes within a 120-foot right of way, with a posted speed limit of 45 MPH. According to FDOT in 2024, the annual average daily traffic (AADT) for this segment ranges from 39,000 to 55,000. This corridor experiences the highest average AADT for all of the priority corridors.

South Jog Road Crash Heat Map



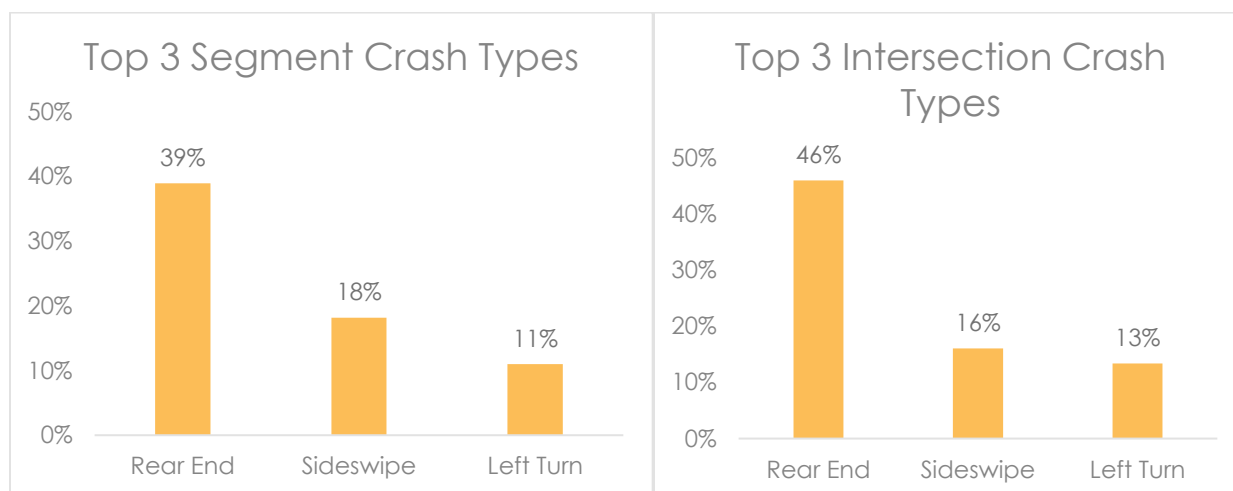
South Jog Road experienced a total of 3,133 crashes over the study period, with 60 FSIs and 10 fatalities. Of the 3,133 crashes, 124 were vulnerable road users.

Top 3 Crash Types (All Crashes)



For segments, rear end crashes account for 39%, sideswipe crashes for 18%, and left turn crashes for 11%. At intersections, rear end crashes make up 46%, sideswipe crashes 16%, and left turn crashes 13%.

Midblock Crash Types vs Segment Crash Types



Countermeasures Identified for Corridor

Intersections:

- High Visibility Crosswalk for bicycle safety (CMF: 0.60).
- Leading Pedestrian Interval for pedestrian safety (CMF: 0.41).
- Backplates with retroreflective borders to increase signal visibility (CMF: 0.85).
- Update signal timing with protected left-turn phasing to reduce left entering crashes (CMF: 0.45).

Segments:

- Full Traffic Signal to reduce vulnerable road user risks at unsignalized midblock location (CMF: 0.50).
- Directional Median Conversions to restrict vehicle turning movements at specific locations (CMF: 0.43)

Short-Term Project Costs

Countermeasure	Cost
Update Signal Timing with Protected Left Turn (5)	\$203,000
High Visibility Crosswalk (1)	\$56,000
Leading Pedestrian Interval (7)	\$18,000
Backplates with Borders (7)	\$72,000
Full Signal (1)	\$110,000
Directional Median Conversion (11)	\$481,000
Total Costs	\$941,000

Standalone and Longterm Projects

- Hardened Centerlines at 13 intersections to reduce risk for pedestrians and cyclists within the crosswalk.
- Separated Bike Lane for the length of the corridor to reduce cyclist and vehicle conflict.

Standalone and Longterm Project Costs

Countermeasure	Cost
Hardened Centerlines (13)	\$1,856,000
Separated Bike Lane	\$31,854,000
Total Costs	\$33,711,000



Technical Memorandum

APPENDIX C: BENEFIT-TO-COST ANALYSIS RESULTS

Corridor	Length (mi)	CM	Individual CM cost	Quartile Cost Score	CMF Score	CMF Score to Matrix	Cost Benefit Score	Cumulative Cost	Averaged CBS
Linton	5.2	LPI (12)	\$ 30,505.0	1.00	0.41	4.00	4.00	\$ 958,572	1.63
		Backplates for Signals (12)	\$ 124,272.0	2.00	0.85	1.00	0.50		
		Signal Timing PLT (9)	\$ 366,071.0	3.00	0.45	3.00	1.00		
		Directional Median Conversion (10)	\$ 437,724.1	4.00	0.43	4.00	1.00		
Military	7.2	LPI (19)	\$ 48,301.0	1.00	0.41	4.00	4.00	\$ 1,471,095	1.52
		Signal Timing PLT (14)	\$ 569,443.8	4.00	0.45	3.00	0.75		
		Backplates for Signals (19)	\$ 196,764.0	3.00	0.85	1.00	0.33		
		Directional Median Conversion (15)	\$ 656,586.2	4.00	0.43	4.00	1.00		
10th Ave	4.7	High Visibility Crosswalk	\$ 56,444.2	1.00	0.60	2.00	2.00	\$ 1,384,254	1.67
		Full Signal (1)	\$ 109,700.00	2.00	0.50	3.00	1.50		
		LPI (12)	\$ 30,505.9	1.00	0.41	4.00	4.00		
		Backplates for Signals (12)	\$ 124,272.0	2.00	0.85	1.00	0.50		
		Directional Median Conversion (15)	\$ 656,586.2	4.00	0.43	4.00	1.00		
		Signal Timing PLT (10)	\$ 406,745.6	3.00	0.45	3.00	1.00		
6th/Melaleuca	4.8	LPI (7)	\$ 17,795.1	1.00	0.41	4.00	4.00	\$ 1,257,810	1.43
		High Visibility Crosswalk (7)	\$ 395,109.1	3.00	0.60	2.00	0.67		
		Directional Median Conversion (13)	\$ 569,041.3	4.00	0.43	4.00	1.00		
		Signal Timing PLT (5)	\$ 203,372.8	3.00	0.45	3.00	1.00		
		Backplates for Signals (7)	\$ 72,492.0	2.00	0.85	1.00	0.50		
Jog	5.8	High Visibility Crosswalk (1)	\$ 56,444.2	1.00	0.60	2.00	2.00	\$ 941,301	1.67
		LPI (7)	\$ 17,795.1	1.00	0.41	4.00	4.00		
		Full Signal (1)	\$ 109,700.00	2.00	0.50	3.00	1.50		
		Directional Median Conversion (11)	\$ 481,496.5	4.00	0.43	4.00	1.00		
		Signal Timing PLT (5)	\$ 203,372.8	3.00	0.45	3.00	1.00		
		Backplates for Signals (7)	\$ 72,492.0	2.00	0.85	1.00	0.50		

APPENDIX D: TOP 5 PRIORITY CORRIDOR PRIORITIZATION RESULTS

Category Weight	Subcategory	Evaluation Metric	Points	Linton Blvd	Military Trail	10th Ave	6th/Melaleuca	Jog Rd
50%	Vehicle Safety	Number of Vehicle FSI						
		less than 33	1				1	
		33 to 36	2			2		2
		37 to 60	3		3			
		61 or more	4	4				
	Vulnerable Road User Safety	Number of Vulnerable Road User FSI						
		less than 19	1		1			
		19 to 23	2	2				
		24 to 31	3			3		3
		32 or more	4				4	
30%	Parks	Number of Parks within 1/4 mile of Corridor	1-4 score based on total sum range	22	67	54	65	45
	Schools	Number of Schools within 1/4 mile of Corridor						
	Transit	Number of Public Transit Stops within 200 ft of Corridor						
	Equity	Number of Areas of Persistent Poverty Corridor Passes Through						
	Places of Worship	Number of Places of Worship within 1/4 mile of Corridor		1	4	3	3	2
20%	Planning level Benefit-to-cost ratio	equal to or less than 1.52	1		1		1	
		1.53 to 1.625	2					
		1.63 to 1.66	3	3				
		greater than 1.66	4			4		4
Total Points				9.00	9.00	11.00	11.00	9.00
Weighted Prioritization Scores				3.90	3.40	4.20	3.60	3.90

APPENDIX E: SYSTEMIC SAFETY RECOMMENDATIONS COUNTERMEASURE TABLES

Motor Vehicle Systemic Safety Recommendations

Segment Systemic Countermeasures

Leading Crash Type 1: Fixed Object/Run-off-the-road (30%)

Crashes: 1,047 fatal/serious injury (FSI) crashes

Contributing Causes: Operated carelessly, Ran-off-the-road

Fixed Object/Run-off-the-Road Crash Systemic Countermeasures

Area Type	Recommendation	Image	Cost	CMF
Urban	Speeding enforcement		N/A	N/A
	Improve sign/markings retroreflectivity/visibility		N/A	CMF range 0.717 – 0.852 (Note CMF for rural roads)

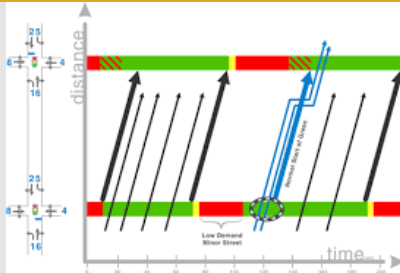
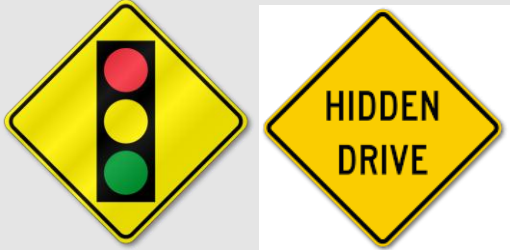
Area Type	Recommendation	Image	Cost	CMF
	Improve pavement friction		\$40-60 per sq. yard (FDOT)	CMF range 0.22 – 1.66
Rural	Install rumble strips/audible pavement markings		\$1,615,000 per mile (FDOT)	CMF range 0.31 – 1.08
	Remove/relocate/shield hazards within clear zone		N/A	CMF range 0.20 – 0.62
	Install lighting		\$10,600 per light pole (35 feet mounting height, FDOT)	CMF range 0.79 – 0.88

Leading Crash Type 2: Rear end (20%)

Crashes: 1,047 FSI crashes

Contributing Causes: Operated carelessly

Rear End Crash Countermeasures

Area Type	Recommendation	Image	Cost	CMF
Urban	Improve signal timing and coordination (reduce stop and go conditions)		\$2,500 per signal (FDOT)	CMF range 0.20 – 1.04
	Install Next Signal signs		\$2,900 per sign (FDOT)	CMF: 0.897
Rural	Install warning signs (e.g., hidden driveways, signal ahead)		\$550 per sign (FDOT)	N/A

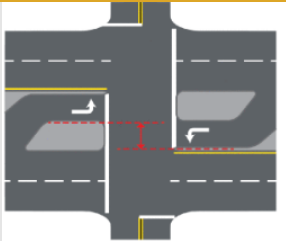
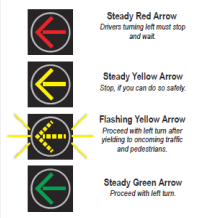
Signalized Intersection Systemic Countermeasures

Leading Crash Type 1: Left turn (40%)

Crashes: 973 FSI crashes

Contributing Causes: Failed to yield ROW, Ran red light

Left Turn Crash Countermeasures

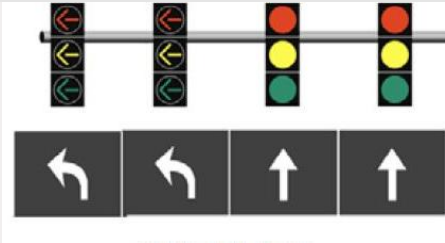
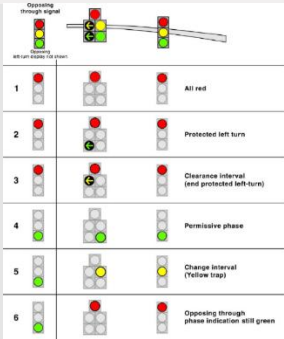
Recommendation	Image	Cost	CMF
Provide a positive offset of left turn lanes		N/A	CMF range 0.74 – 0.80
Remove sight line obstructions at left turn lanes		\$2,100 (remove/relocate a tree, FDOT)	N/A
Install left turn lanes		N/A	CMF range 0.81 – 1.25
Implement flashing yellow arrow (FYA)		\$2,400 per signal head (FDOT)	CMF range 0.598 – 0.85

Leading Crash Type 2: Angle (22%)

Crashes – 973 FSI crashes

Contributing Causes: Ran red light, Operated in careless manner

Angle Crash Countermeasures

Recommendation	Image	Cost	CMF
Add (flexible) backplates with retroreflective border		\$950 per signal (FDOT)	CMF range 0.80 – 0.85
Provide one signal head per lane		\$2,000 per signal head (FDOT)	0.54
Improve All Red interval		N/A	CMF range 0.96 – 1.12

Motorcycle Systemic Safety Recommendations

Segments Systemic Countermeasures

Leading Crash Type 1: Fixed Object/Run-off-the-Road (31%)

Crashes: 313 FSI crashes

Contributing Causes: Operated in careless manner

Fixed Object/Run-of-the-Road Crash Countermeasures

Recommendation	Image	Cost	CMF
Roadway maintenance (e.g. remove debris and repair potholes)		N/A	N/A
Speeding enforcement		N/A	N/A
Safety awareness campaigns (e.g., wear helmets)		N/A	N/A

Motorcycle Segments Systemic Countermeasures

Leading Crash Type 2: Left Turn

Crashes: 313 FSI crashes

Contributing Causes: Failed to yield ROW

Left Turn Crash Countermeasures

Recommendation	Image	Cost	CMF
Improve sight distance at left turn lanes		\$2,100 (remove/relocate a tree, source: FDOT)	N/A

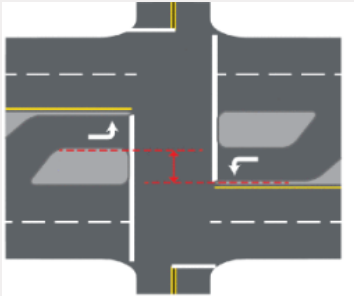
Signalized Intersection Systemic Countermeasures

Leading Crash Type 1: Left Turn (30%)

Crashes: 146 FSI crashes

Contributing Causes: Failed to yield ROW, Ran red right

Left Turn Crash Countermeasures

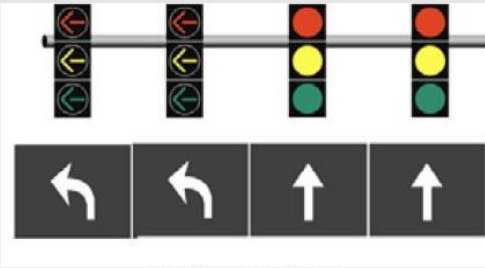
Recommendation	Image	Cost	CMF
Confirm motorcycle detection by signal		N/A	N/A
Provide positive offset of turn lanes or improve sight lines		N/A	CMF range 0.74 – 0.8
Safety awareness campaigns (e.g., defensive driving techniques, wear bright gear)		N/A	N/A

Leading Crash Type 2: Angle (25%)

Crashes: 146 FSI crashes

Contributing Causes: Operated in careless manner, Ran red right

Angle Crash Countermeasures

Recommendation	Image	Cost	CMF
Confirm motorcycle detection by signal		N/A	N/A
Provide one signal head per lane		\$2,000 per signal head (FDOT)	0.54
Speeding enforcement		N/A	N/A

Pedestrian Systemic Safety Recommendations

Segment Systemic Countermeasures

Vehicle Movement Type 1: Straight (84%)

Crashes: 281 FSI crashes

Contributing Causes: Failed to yield ROW, Dart/dash

Straight Crash Countermeasures

Recommendation	Image	Cost	CMF
Install Pedestrian (W11-2) warning signs		\$550 per sign (FDOT)	N/A
Safety awareness campaigns (e.g., encourage pedestrians to wear bright clothing during nighttime)		N/A	N/A

Recommendation	Image	Cost	CMF
Relocate bus stops closer to intersections / crosswalks		N/A	N/A
Install speed feedback signs to slowdown motorists		\$5,000-8,000 (web search, various sources)	CMF range 0.78 – 0.95
Improve lighting/remove obstructions to lighting such as trimming overgrown trees		N/A	N/A

Vehicle Movement Type 2: Turning left (3%)

Crashes: 281 FSI crashes

Contributing Causes: Failed to yield ROW

Turning Left Crash Countermeasures

Recommendation	Image		Cost	CMF
Remove sight line obstructions at left turn lanes			\$2,100 (remove/relocate a tree, source: FDOT)	N/A

Vehicle Movement Type 3: Turning right (1%)

Crashes: 281 FSI crashes

Contributing Causes: No improper action

Turning Right Crash Countermeasures

Recommendation	Image		Cost	CMF
Remove sight line obstructions at right turn lanes			\$2,100 (remove/relocate a tree, source: FDOT)	N/A
Install special emphases crosswalk markings at driveways/minor roads			\$23.75 per LF (FDOT)	CMF range 0.6 – 0.81

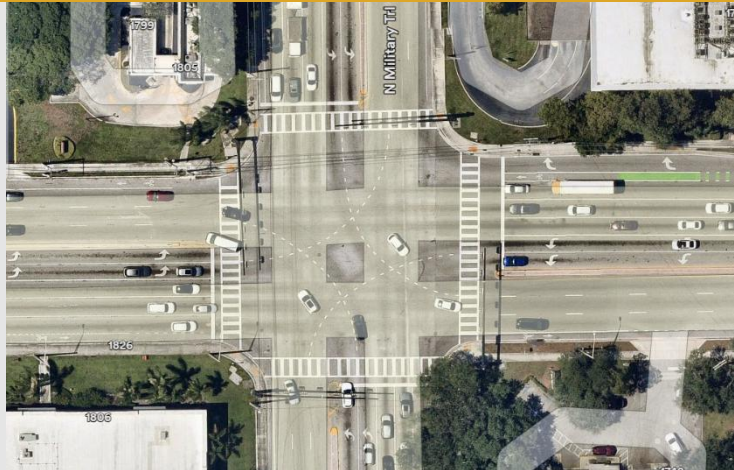
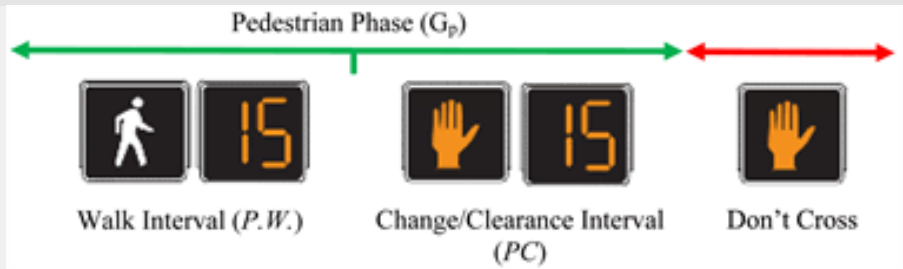
Signalized Intersection Systemic Countermeasures

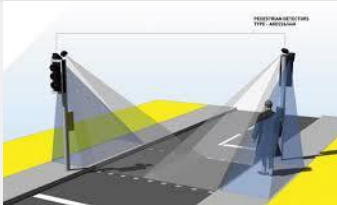
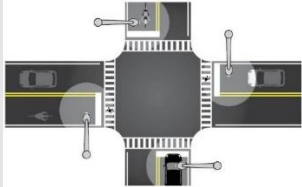
Vehicle Movement Type 1: Straight (73%)

Crashes: 177 FSI crashes

Contributing Causes: Dart/dash, Failed to yield ROW

Straight Crash Countermeasures

Recommendation	Image	Cost	CMF
Install special emphasis crosswalk markings		\$23.75 per LF/ \$7,410 per intersection (FDOT)	CMF range 0.6 – 0.81
Review pedestrian clearance interval	Pedestrian Phase (G_p)  Walk Interval ($P.W.$) Change/Clearance Interval ($P.C.$) Don't Cross	N/A	N/A

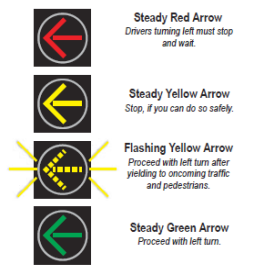
Recommendation	Image	Cost	CMF
Install countdown pedestrian signals		\$1,350 per unit	CMF range 0.51 – 1.13
Reduce delays by prioritizing pedestrian signal actuations		NA	N/A
Install audible push buttons		\$2,550 per unit (FDOT)	N/A
Install passive detection of pedestrians		\$11,700 unit (FDOT)	N/A
Improve intersection lighting		\$10,600 per light (35 feet mounting height, source: FDOT)	CMF range 0.79 – 0.88

Vehicle Movement Type 2: Turning left (7%)

Crashes: 177 FSI crashes

Contributing Causes: No improper action

Turning Left Crash Countermeasures

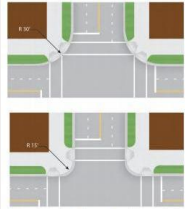
Recommendation	Image	Cost	CMF
Install Turning Vehicles Stop for Pedestrian (R10-15a) signs		\$550 per sign (FDOT)	N/A
Install hardened centerline		N/A	N/A
Implement flashing yellow arrow (FYA) with left-turn omit for pedestrians		\$2,400 per signal head (FDOT)	CMF range 0.598 – 0.85

Vehicle Movement Type 3: Turning right (9%)

Crashes: 177 FSI crashes

Contributing Causes: No improper action

Turning Right Crash Countermeasures

Recommendation	Image	Cost	CMF
Install Turning Vehicles Stop for Pedestrian (R10-15a) signs		\$550 per sign (FDOT)	N/A
Tighten curb radius		\$15,000 – \$40,000 per corner (source: PEDSAFE)	N/A
Implement leading pedestrian interval (LPI)		\$2,500 per signal (FDOT)	CMF range 0.49 – 1.05
Remove sight line obstructions for turning vehicles		\$2,100 (to remove/relocate a tree, source: FDOT)	N/A

Bicycle Systemic Safety Recommendations

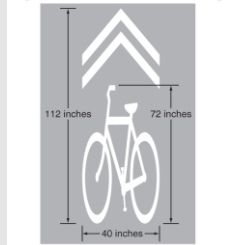
Segment Systemic Countermeasures

Bicycle Facility Type 1: No bicycle lanes (54%)

Crashes: 155 FSI crashes

Vehicle Movement Types: Straight, Turning Right

No Bicycle Lanes Crash Countermeasures

Recommendation	Image	Cost	CMF
Add sharrow pavement markings with optional black background	Figure 9C-9. Shared Lane Marking 	\$165-\$250 each (web search, various sources)	N/A
Install BICYCLES ALLOWED USE OF FULL LANE (R9-20) sign		\$550 per sign (FDOT)	N/A
Install W11-15 Pedestrian/ Bicycle warning sign with LOOK plaque facing driveways to notify drivers to expect cyclists on sidewalk		\$600 per sign (FDOT)	N/A

Bicycle Facility Type 2: Designated bike lane (34%)

Crashes: 155 FSI crashes

Vehicle Movement Types: Straight, Turning Right

Designated Bike Lane Crash Countermeasures

Recommendation	Image	Cost	CMF
Add green markings at conflict areas		\$8.70 per square foot (FDOT)	N/A
Install BIKE LANE (R3-17) signs		\$550 per sign (FDOT)	N/A
Install BEGIN RIGHT TURN LANE YIELD TO BIKES (R4-4) signs		\$550 per sign (FDOT)	N/A
Add buffer between travel lane and bicycle lane		N/A	CMF range 0.34 – 1.69

Signalized Intersection Systemic Countermeasures

Vehicle Movement Type 1: Straight (61%)

Crashes: 100 FSI crashes

Contributing Causes: Failed to obey signal, Failed to yield ROW

Straight Crash Countermeasures

Recommendation	Image	Cost	CMF
Safety awareness campaigns (e.g., stop crossing during red signal, use pedestrian signal)		N/A	N/A
Extend bicycle lane markings through intersection		N/A	N/A
Add bicycle signals and/or detection		N/A	N/A

Vehicle Movement Type 2: Turning Left/Right (35%)

Crashes: 100 FSI crashes

Contributing Causes : No improper action

Turning Left/Right Crash Countermeasures

Recommendation	Image	Cost	CMF
Add green markings at key-hole lane		N/A	N/A
Add bike boxes		N/A	N/A
Install Turning Vehicles Stop for Pedestrian / Bicycle (R10-15) signs		\$550 per sign (FDOT)	N/A
Remove sight line obstructions for turning vehicles		\$2,100 (to relocate a tree, source: FDOT)	N/A

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Technical Memorandum