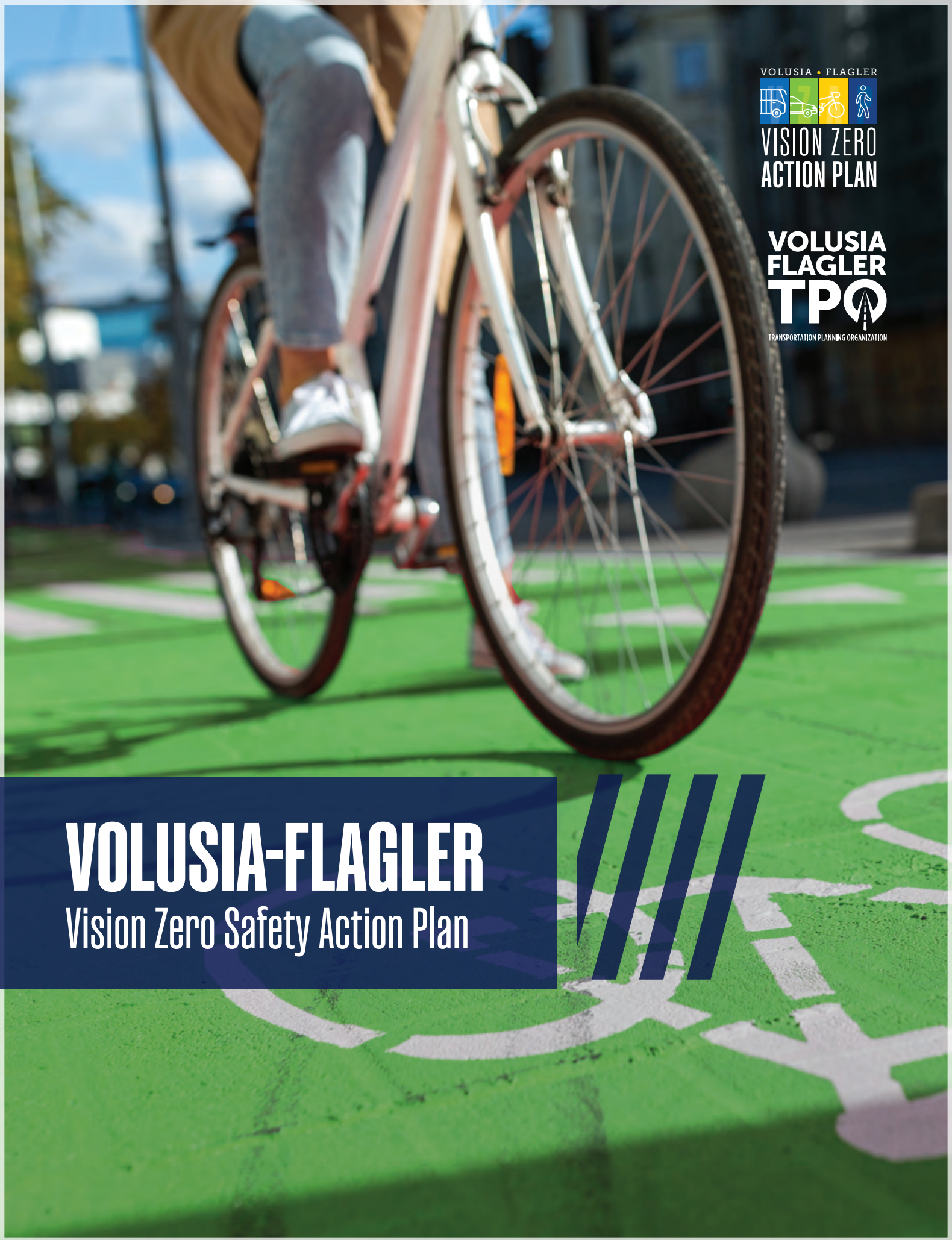

VOLUSIA • FLAGLER

VISION ZERO ACTION PLAN

VOLUSIA FLAGLER TPO

TRANSPORTATION PLANNING ORGANIZATION

VOLUSIA-FLAGLER

Vision Zero Safety Action Plan

THIS REPORT IS PREPARED BY

VOLUSIA FLAGLER TPO
TRANSPORTATION PLANNING ORGANIZATION

Volusia County
FLORIDA

FLAGLER COUNTY
FLORIDA

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CAMBRIDGE SYSTEMATICS

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VOLUSIA • FLAGLER
VISION ZERO ACTION PLAN

Dear residents of Volusia and Flagler counties,

We are pleased to present this Volusia-Flagler Vision Zero Action Plan (VZAP), the result of many hours of collaboration between our member governments, agency partners, community stakeholders, and the public, an inclusive Safe System Approach to roadway safety throughout the region.

From 2019 to 2023, Volusia and Flagler counties together saw a total of 65,978 crashes[1]. That means a crash happened in the region **about every hour and a half**.

In those same five years, 604 people were killed and 2,246 were seriously injured. In other words, **every week, 2.3 people died and 8.5 people were seriously injured on our roads**. The lives of our community members – our relatives, friends, and colleagues – are too great a price to pay. We must come together and take the necessary actions to make our roadways safer.

The Volusia-Flagler Transportation Planning Organization (TPO) has committed to reaching zero fatalities and serious injuries on our transportation system by 2050.

This VZAP includes the identification of the most dangerous roadway corridors in our region – known together as the High Injury Network – and assigns a series of corresponding safety countermeasures to address specific concerns along each corridor. The VZAP includes additional recommendations to raise a culture of awareness and support for roadway safety through educational and enforcement campaigns, and local government policy change.

Our journey to zero traffic fatalities and serious injuries does not begin and end with this plan. We invite you to help us by spreading awareness of the VZAP and acting as a champion of roadway safety habits within your community.

[1] The analysis of crashes does not include those that occurred on limited access facilities (I-95) and off facility crashes such as those that occurred in a parking lot.

CONTENTS

KEY TERMS

Crash – An occurrence where a road user collides with another road user, such as a car or truck, motorcyclist, bicyclist, pedestrian, animal, road debris, or other moving or stationary obstruction, such as a tree, pole, or building, that may result in injury or loss of life, trauma, and/or property damage. Crashes can involve a single-party or multiple parties.

Disadvantaged Community – A U.S. Department of Transportation (USDOT) designation for communities where people experience greater transportation inequities to access jobs, housing, food, health care, education, and other destinations due to overlapping factors, including demographics, features of the built environment, and in some instances a lack of prior investment in the transportation system.

High Injury Network – A collection of streets where a disproportionate number of crashes result in someone being seriously injured or killed occurs.

Kinetic Energy –In the safety context, kinetic energy refers to the combination of mass and speed of a vehicle or other road user, like a bicyclist, involved in a collision. Depending on the angle of the crash, the higher the combination of mass and speed, the more likely the crash is to result in a serious injury or death, with the impact severity increasing as the square of the vehicle speed: twice the speed means four times the kinetic energy for the same mass.

KSI Crash - A crash that results in someone being killed or seriously injured.

Safe System Approach – A guiding safety approach that builds and reinforces multiple layers of protection to both prevent crashes from occurring and minimize the harm caused to those involved when a crash does occur.

Serious Injury – May also be referred to as an incapacitating injury. An injury that significantly affects a person's ability to function and may result in permanent disability. Serious injuries may include broken bones, severed limbs, etc. These injuries usually require hospitalization and transport to a medical facility.

Vision Zero – A road safety philosophy which states that no loss of life or incapacitating injury due to traffic crashes is acceptable.

Vulnerable Road User – For the purposes of this Safety Action Plan, a person outside of a car or truck, which includes pedestrians, bicyclists, or motorcyclists. This also includes people in wheelchairs and on e-mobility devices, like scooters.

List of abbreviations

ADA – Americans with Disabilities Act

BPAC– Bicycle/Pedestrian Advisory Committee

CAC – Citizen's Advisory Committee

CBO – Community-based organization

CIP – Capital Improvement Plan

DUI – Driving under the influence

EMS – Emergency medical services

FDOT – Florida Department of Transportation

FHP – Florida Highway Patrol

FHWA – Federal Highway Administration

HIN – High Injury Network

ITS – Intelligent Transportation Systems

KSI - Fatal or serious injury crash

LPI – Leading Pedestrian Interval

NHTSA – National Highway Traffic Safety Administration

PHB – Pedestrian hybrid beacon

RRFB – Rectangular rapid-flashing beacon

SRTS – Safe Routes to School

SS4A - Safe Streets and Roads for All

TCC – Technical Coordinating Committee

TDLCB – Transportation Disadvantaged Local Coordinating Board

USDOT – United States Department of Transportation

EXECUTIVE SUMMARY

This Vision Zero Action Plan (VZAP) is an effort by the Volusia-Flagler Transportation Planning Organization (TPO) that establishes a pathway for reaching zero fatalities and serious injuries due to crashes by the year 2050. This goal is necessary due to an above-average rate of transportation-related fatalities and serious injuries on Volusia and Flagler County roadways. By joining together, local agencies, leaders, key stakeholders, and the community at large will be able to make changes that improve roadway safety conditions and save lives.

Aerial view of Daytona Beach, FL

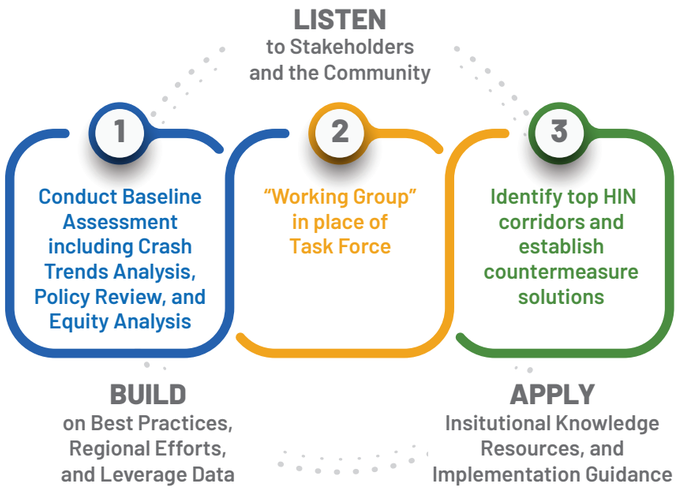
PLAN DEVELOPMENT

The development of the VZAP utilized a multi-faceted approach to make data-driven recommendations with buy-in from the community and local stakeholders to reach the goal of reducing traffic-related fatalities and injuries to zero.

Data Driven – an in-depth analysis of crash data was used to identify the High Injury Network (HIN) in Volusia and Flagler Counties in need of safety improvements. This data-driven approach was used to pinpoint areas with the highest incidence of traffic-related fatalities and serious injuries and to determine appropriate interventions and prioritization. Specific interventions for 20 corridors were selected based on variables such as crash frequency, severity, and patterns, as well as from consideration of both staff and community input. Additional information was collected on existing projects and best practices being deployed by FDOT, both counties, and local governments to improve roadway conditions. This approach encourages an efficient allocation of resources in order to maximize the impact of targeted safety measures on the most hazardous corridors and ultimately to enhance road safety throughout the region.

Community Informed – the development of the VZAP relied on input from both the general public and local stakeholders to ensure findings and recommendations were context-specific and grounded in the lived experiences of the community. Through the convening of a Working Group comprised of diverse subject matter experts, in-person workshops, and online engagement offered by the TPO, the community provided feedback on which areas were most in need as well as appropriate interventions. The plan also included an equity analysis providing additional demographic context for findings and further supporting funding opportunities in traditionally underserved communities.

Action Oriented – the project team worked with key stakeholders including Volusia County, Flagler County, and FDOT staff to make specific recommendations on the most dangerous corridors, as well as changes in policy and educational needs. Pulling from nationally recognized FHWA guidance and other resources on recommended safety countermeasures, infrastructure improvements include an array of solutions to protect vulnerable road users. The plan also promotes stricter enforcement of traffic laws and educational campaigns to foster safe driving behaviors.



CRASH TREND HIGHLIGHTS

- Between 2019 and 2023, approximately **107 people in Volusia County** and **14 people in Flagler County on average were killed per year in traffic crashes** on roadways. As well, **408 people in Volusia County and 41 people in Flagler County on average were seriously injured per year**. This means approximately 10 people in Volusia County and 1 person in Flagler County were killed or seriously injured on roadways each week.
- Overall, motor vehicle crashes comprised most of the crashes in both counties, but crashes involving people **walking, biking, or riding a motorcycle had a disproportionately higher chance of resulting in a crash where someone is killed or seriously injured (KSI)**.
- In both counties, rear end crashes were the most common crash type, but **off road and left-turn crashes were the most common KSI crashes** .
- Most crashes occurred between 3PM and 6PM in both counties. Crashes were **most likely to be KSI crashes from 12AM to 3AM**, particularly in Volusia County.
- **Fridays had the highest number of crashes**, and along with Saturdays reported the most KSI crashes in Volusia County.
- **Drug impairment**, whether alone or in combination with alcohol, at nearly one in four crashes, had a **higher rate of fatal or serious injury outcomes than other behavioral factors.**
- Approximately 20% of crashes in Volusia County involving **unrestrained passengers resulted in a KSI.**

SUMMARY OF PRIORITIZED SAFETY COUNTERMEASURES

The final result of the VZAP is a list of context-specific safety countermeasures, targeted to address safety needs along the identified HIN encompassing a range of interventions including engineering, policy, and educational strategies. This suite of interventions is organized according to near, mid, and long-term strategies providing actionable safety benefits in the near term as well as providing a roadmap for future funding and implementation decisions.

Examples of near-term engineering strategies include enhanced signage, the installation of quick-build speed reduction measures, and increased law enforcement presence.

While examples of long-term solutions include the redesign of high-risk intersections, the deployment of advanced traffic management systems, and the construction of protected bike lanes and shared use paths. To monitor the effectiveness of these strategies, routine performance tracking will be an essential component, supporting continuous improvement of the HIN as well as identification of additional roadways and ongoing implementation of capital improvement projects.

Policy and educational strategies are another important component to support proper mitigation of roadway safety concerns along the HIN. Policy solutions embed roadway safety best practices into development procedures to ensure safety enhancements are a part of a community's infrastructure for all new development projects. Educational solutions further effectuate change within the community by building a culture around safety practices, increasing general awareness and responsible driving habits, and creating advocates for promoting roadway safety within the community.

A summary of prioritized engineering countermeasures is provided on the next page, which identifies countermeasures tailored to specific roadways along the HIN.

Leading Pedestrian Interval

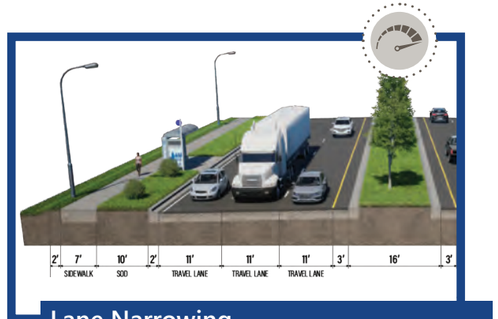
Median with Pedestrian Refuge Island

Advance Warning Signage/Markings

Pedestrian Hybrid Beacon (PHB)

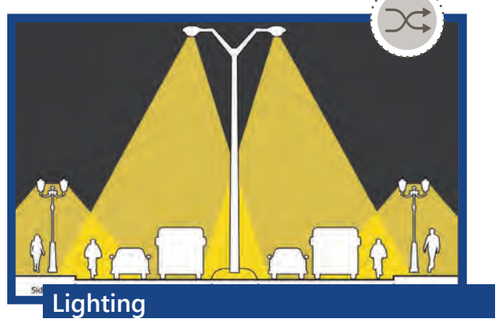
Short Blocks with Marked Crosswalks

Shared Use Path

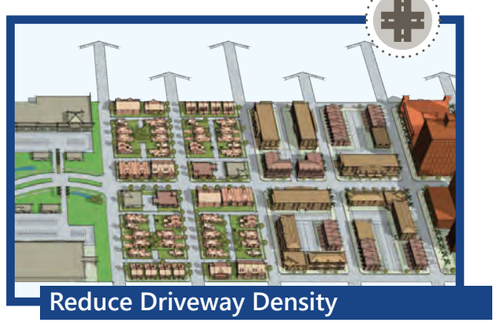


Lane Narrowing

Speed Feedback Signs



Lighting



Reduce Driveway Density

Retroreflective Backplates on Signals

Raised Median with Landscaping

NEAR-TERM IMPROVEMENTS (IMPLEMENTATION BY 2030)

	OLD KINGS RD N from Farragut Dr to Palm Coast Pkwy NE	**PALM COAST PKWY NW/SW** from Pine Lakes Pkwy to I-95	**PALM COAST PKWY NE/SE** from I-95 to Palm Harbor Pkwy	**CR 302** from CR 305 to State Hwy 100W	**SR 100 W** from John Campbell Dr to CR 305	**WHITEVIEW PKWY** from Ravenwood Dr to Belle Terre Pkwy	**BELLE TERRE PKWY N** from Palm Coast Pkwy to Buddy Taylor Middle School	**BELLE TERRE PKWY S** from Pritchard Dr to Market Ave	**N OCEAN SHORE BLVD (A1A)** from Cedar Point Rd to Camino Del Mar	**MOODY BLVD (SR 100)** from US Hwy 1 to Old Kings Rd	**E INTERNATIONAL SPEEDWAY BLVD (US 92)** from US Hwy 92 to Beach Access	**S RIDGEWOOD AVE (US 1)** from W International Speedway Blvd (US 92) to Ocean Ave	**HOWLAND BLVD** from Catalina Blvd to Fort Smith Blvd	**SAXON BLVD** from W Normandy Blvd to Sterling Silver Blvd	**N RIDGEWOOD AVE (US 1)** from Mason Ave to W International Speedway Blvd (US 92	**MASON AVE (SR 430)** from Williamson Blvd to N Beach St	**ORANGE AVE** from S Nova Rd to S Beach St	**W INTERNATIONAL SPEEDWAY BLVD (US 92)** from Tomoka Farms Rd to N Beach St	**N NOVA RD (CR 5A)** from 3rd St to Volusia Ave (US 92)	**S NOVA RD (CR 5A)** from Madeline Ave to S Ridgewood Ave (US 1)
Appropriate speed limit assessment		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓
Speed feedback signs	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Leading Pedestrian Intervals (LPIs)	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Review of signal phasing, timing, and yellow change intervals		✓	✓				✓	✓		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
Backplates with retroreflective borders on signal heads		✓	✓			✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Signal coordination analysis		✓	✓				✓	✓		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
Striping through intersections for all left-turn movements	✓	✓	✓			✓	✓	✓		✓		✓	✓	✓	✓	✓			✓	✓	✓
Intersection improvements which may include traffic signals				✓	✓				✓												
Refresh of intersection crosswalks and pavement markings	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gateway feature with low-cost, quick-build pedestrian safety improvements		✓	✓								✓										
High-emphasis crosswalks on all legs of intersections	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sidewalk and trail connectivity study	✓	✓	✓	✓	✓							✓	✓	✓		✓					
Bicycle signage							✓	✓	✓	✓	✓							✓	✓	✓	
Bicycle pavement markings such as sharrows							✓	✓	✓		✓							✓			
Green striping for bicycle lanes through intersections							✓	✓	✓	✓									✓	✓	
Improve shoulder as bicycle lane with signage, pavement markings, and striping																✓					✓
Install speed cameras in school zone							✓			✓			✓		✓						
Lighting justification study	✓										✓				✓						
Install R-1 series signage at signalized intersections	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Road Safety Audit	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mobility study									✓												
2030 Planning Level Cost	$415,512	$1,420,344	$1,519,926	$1,072,000	$1,072,000	$335,676	$1,049,190	$887,550	$634,512	$2,936,369	$574,542	$1,199,760	$1,203,708	$398,640	$1,178,244	$1,2 63,264	$651,660	$4,042,920	$1,632,936	$1,713,768	

MID-TERM IMPROVEMENTS (IMPLEMENTATION BY 2040)

	OLD KINGS RD N from Farragut Dr to Palm Coast Pkwy NE	**PALM COAST PKWY W** from Pine Lakes Pkwy to I-95	**PALM COAST PKWY NE** from I-95 to Palm Harbor Pkwy	**CR 302** from CR 305 to State Hwy 100W	**SR 100 W** from John Campbell Dr to CR 305	**WHITEVIEW PKWY** from Ravenwood Dr to Belle Terre Pkwy	**BELLE TERRE PKWY N** from Palm Coast Pkwy to Buddy Taylor Middle School	**BELLE TERRE PKWY S** from Pritchard Dr to Market Ave	**N OCEAN SHORE BLVD (A1A)** from Cedar Point Rd to Camino Del Mar	**MOODY BLVD (SR 100)** from US Hwy 1 to Old Kings Rd	**E INTERNATIONAL SPEEDWAY BLVD (US 92)** from US Hwy 92 to Beach Access	**S RIDGEWOOD AVE (US 1)** from W International Speedway Blvd (US 92) to Ocean Ave	**HOWLAND BLVD** from Catalina Blvd to Fort Smith Blvd	**SAXON BLVD** from W Normandy Blvd to Sterling Silver Blvd	**N RIDGEWOOD AVE (US 1)** from Mason Ave to W International Speedway Blvd (US 92	**MASON AVE (SR 430)** from Williamson Blvd to N Beach St	**ORANGE AVE** from S Nova Rd to S Beach St	**W INTERNATIONAL SPEEDWAY BLVD (US 92)** from Tomoka Farms Rd to N Beach St	**N NOVA RD (CR 5A)** from 3rd St to Volusia Ave (US 92)	**S NOVA RD (CR 5A)** from Madeline Ave to S Ridgewood Ave (US 1)
Lane narrowing	✓	✓	✓				✓	✓		✓		✓			✓	✓			✓	✓	✓
Re-assessment of appropriate speed limit following implementation of other countermeasures		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓				✓	✓	✓
Mast arm design at signalized intersections		✓	✓				✓	✓		✓			✓						✓		✓
Access modifications to reduce left-turn conflicts		✓	✓			✓	✓	✓		✓		✓	✓	✓	✓	✓			✓	✓	✓
Dedicated left turn lanes	✓	✓	✓	✓	✓				✓												✓
Directionalization or closure of full access median openings	✓	✓	✓							✓									✓		✓
Extend raised median / median nose												✓			✓					✓	
Reduced curb radii at unsignalized intersections / driveways		✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Access management evaluation	✓	✓	✓							✓		✓			✓	✓		✓	✓	✓	✓
Road upgrades including paved shoulders and drainage				✓	✓											✓					
Install SafetyEdge	✓					✓															
Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Completion of sidewalk gaps	✓								✓	✓						✓		✓			
Installation of sidewalk						✓															
Raised crosswalk																✓	✓				
Upgrade school crosswalks to raised with RRFB, advanced warning signs, yield markings, and in-pavement lighting													✓		✓						
New buffered bike lanes											✓										
Vertical separation of bike lanes									✓	✓		✓			✓			✓	✓	✓	
Convert on street parking to bicycle lane												✓									
Upgrade adjacent roads to include buffered bike lanes, pavement markings, and green striping																✓					
Enhanced landscaping with canopy trees in existing raised medians		✓	✓							✓			✓					✓			
Co-locate bus stops with mid-block crossings											✓	✓	✓	✓	✓	✓	✓		✓	✓	
Chicanes with enhanced landscaping											✓										
Hardened centerlines and raised medians with landscaping and pedestrian refuge islands	✓	✓	✓	✓	✓				✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Signalize intersections with LPIs and high-emphasis crosswalks				✓	✓		✓	✓	✓												
Provide advance road name and overhead lane use signage on approach to major intersections		✓	✓							✓									✓		
Interchange Operations Analysis Report Study		✓	✓							✓											
Residential street tree canopy program						✓	✓	✓				✓	✓	✓							
Lighting justification study				✓	✓		✓	✓	✓			✓	✓	✓	✓	✓	✓			✓	

LONG-TERM IMPROVEMENTS (IMPLEMENTATION BY 2045)

	OLD KINGS RD N from Farragut Dr to Palm Coast Pkwy NE	**PALM COAST PKWY W** from Pine Lakes Pkwy to I-95	**PALM COAST PKWY E** from I-95 to Palm Harbor Pkwy	**CR 302** from CR 305 to State Hwy 100W	**SR 100 W** from John Campbell Dr to CR 305	**WHITEVIEW PKWY** from Ravenwood Dr to Belle Terre Pkwy	**BELLE TERRE PKWY N** from Palm Coast Pkwy to Buddy Taylor Middle School	**BELLE TERRE PKWY S** from Pritchard Dr to Market Ave	**N OCEAN SHORE BLVD (A1A)** from Cedar Point Rd to Camino Del Mar	**MOODY BLVD (SR 100)** from US Hwy 1 to Old Kings Rd	**E INTERNATIONAL SPEEDWAY BLVD (US 92)** from US Hwy 92 to Beach Access	**S RIDGEWOOD AVE (US 1)** from W International Speedway Blvd (US 92) to Ocean Ave	**HOWLAND BLVD** from Catalina Blvd to Fort Smith Blvd	**SAXON BLVD** from W Normandy Blvd to Sterling Silver Blvd	**N RIDGEWOOD AVE (US 1)** from Mason Ave to W International Speedway Blvd (US 92	**MASON AVE (SR 430)** from Williamson Blvd to N Beach St	**ORANGE AVE** from S Nova Rd to S Beach St	**W INTERNATIONAL SPEEDWAY BLVD (US 92)** from Tomoka Farms Rd to N Beach St	**N NOVA RD (CR 5A)** from 3rd St to Volusia Ave (US 92)	**S NOVA RD (CR 5A)** from Madeline Ave to S Ridgewood Ave (US 1)
Roundabout or signalization of intersection(s)		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Evaluate alternative crossing opportunities such as pedestrian bridge																		✓		
Assessment of SUN Trail facilities for additional safety treatments									✓											
Elimination of on-street bike lanes												✓								
Multiuse trail or Shared-use path with tree canopy	✓	✓	✓						✓			✓	✓	✓				✓	✓	✓
Expand existing sidewalks to a minimum of 10 ft		✓	✓						✓			✓	✓	✓				✓	✓	✓
Future Land Use and Zoning revisions	✓	✓	✓								✓	✓			✓	✓	✓	✓	✓	

INTRODUCTION

The VZAP leverages the principles of Vision Zero to reach the TPO's goal of eliminating traffic-related fatalities and serious injuries by 2050.

Cars stopped at the intersection with people crossing the street

BACKGROUND – VISION ZERO AND THE SAFE SYSTEM APPROACH

The VZAP is built upon the principles of nationally recognized methods for improving roadway safety including the FHWA Safe System Approach and Vision Zero Core Elements.

SAFE SYSTEM APPROACH

Developed by the FHWA, the Safe System Approach is an inclusive and forward-thinking method for improving transportation safety with the goal of eliminating deaths and serious injuries on highways. This represents a change from traditional safety methodologies as it addresses both human errors and vulnerabilities, creating a structure with backup measures to safeguard all users. The Safe System Approach consists of five key goals: ensuring people are safe, improving road safety, enhancing vehicle safety, regulating speeds for safety, and managing care after crashes.

These goals are interconnected and reinforce each other, necessitating a joint effort by various parties, including transportation authorities, police forces, healthcare professionals, educators, and community representatives.

- **Safer People** - Educating and encouraging road users to follow traffic rules and to behave responsibly on the road, as well as enforcing laws that deter risky behaviors such as speeding, distracted driving, or impaired driving.
- **Safer Roads** – Designing and maintaining road infrastructure that reduces conflict points, encourages appropriate speeds, accommodates the needs and abilities of different road users, and provides clear and consistent guidance through signage, markings, and signals.
- **Safer Vehicles** – Ensuring vehicles are equipped with safety features that protect occupants and other road users in the event of a crash, assists in avoiding or mitigating crashes, encourages safe driving, and are appropriate for the contexts in which they operate.
- **Safer Speeds** – Speed limits and road design practices that encourage speeds that are appropriate for the road context and the level of risk, that reflect the limitations of human perception and reaction, and that minimize the impact forces.
- **Post-Crash Care** – Providing timely and effective emergency response and medical care to crash victims, as well as psychological and legal support to survivors and families, and collecting and analyzing crash data to identify and address the causes and consequences of crashes.

VISION ZERO CORE ELEMENTS

Vision Zero is a global initiative focused on eliminating all traffic deaths and serious injuries, while promoting safe, healthy, and fair mobility for everyone. The initiative includes 10 Core Elements categorized into three main priority areas described as follows.

LEADERSHIP AND COMMITMENT

PUBLIC, HIGH-LEVEL, AND ONGOING COMMITMENT

Key leaders commit to a goal of eliminating transportation-related fatalities and serious injuries within a specific timeframe.

AUTHENTIC ENGAGEMENT

Meaningful and accessible community engagement toward the Vision Zero strategy and implementation are employed, with a focus on people.

STRATEGIC PLANNING

A Vision Zero Action Plan is developed, adopted, and used to guide work. The Plan includes explicit goals and measurable strategies with clear timelines, and it identifies responsible stakeholders.

PROJECT DELIVERY

Decision-makers advance projects and policies for safe, accessible, multi-modal travel by securing funding and implementing projects, and prioritizing roadways with the most pressing safety issues.

SAFE ROADWAYS AND SAFE SPEEDS

COMPLETE STREETS FOR ALL

Complete Streets concepts are integrated into communitywide plans and implemented through projects to encourage a safe, well-connected transportation network for people using all modes of transportation.

CONTEXT APPROPRIATE SPEEDS

Travel speeds are set to foster safe conditions for the roadway context and to protect all roadway users. Proven speed management policies and practices are prioritized to reach this goal.

DATA-DRIVEN APPROACH, TRANSPARENCY, AND ACCOUNTABILITY

PEOPLE-FOCUSED ANALYSIS AND PROGRAMS

Programs and strategies which support access to jobs and services for low-income individuals or those without vehicles or housing.

RESPONSIVE HOT SPOT PLANNING

A map of the community's fatal and serious injury crash locations is developed, regularly updated, and used to guide priority actions and funding.

PROACTIVE, SYSTEMIC PLANNING

A proactive, systems-based approach to safety is used to identify and address top risk factors and mitigate potential crashes and crash severity.

COMPREHENSIVE EVALUATION AND ADJUSTMENTS

Routine evaluation of the performance of all safety interventions is made public and shared with decision makers to inform priorities, budgets, and updates to the VZAP.

HOW DOES VISION ZERO CHANGE THE GAME?

1. Reframes traffic deaths as preventable.
2. Integrates human mistakes into the approach.
3. Focuses on preventing fatal and serious injury crashes rather than eliminating all crashes.
4. Aims to establish safe systems rather than relying on individual responsibility.
5. Applies data driven decision making.
6. Establishes road safety as a social equity issue.

WHY VISION ZERO?

Vision Zero is an innovative initiative designed to eradicate traffic deaths and serious injuries, while enhancing safe, healthy, and equitable mobility for all individuals. Developed in Sweden during the 1990s, and now adopted by many major cities in the United States, Vision Zero marks a substantial change in the way road safety is perceived. It is grounded in the core principle that major traffic incidents can be avoided, and that traditional methods of ensuring road safety should be reevaluated.

Central to Vision Zero is the Safe System approach, which emphasizes modifying the traffic settings to account for human mistakes and preventing deadly physical impacts during collisions. This involves making infrastructure advancements such as narrowing roadways, improving lighting, creating distinct bike paths, and tightening intersections to lessen the chance of fatalities and serious injuries when human errors happen. Through this comprehensive strategy, Vision Zero not only seeks to eliminate deaths and serious injuries but also fosters an atmosphere of safety and responsibility, ensuring streets are safer for all.

Aerial view of intersection in Daytona Beach, FL

QUICK-BUILD COUNTERMEASURES

Quick-build projects are an important countermeasure strategy utilized by Vision Zero to implement low cost, low barrier solutions to safety issues identified by the VZAP [1]. These projects often involve the installation of roadway modifications using low-cost materials to quickly address safety issues or as a way to test out more permanent construction solutions.

Examples of quick-build projects include using street art in the form of painted crosswalks or roundabouts to increase drivers' awareness of pedestrian spaces, narrowing roadways by installing parklets or curb extensions, lowering posted speed limits, and using soft-posts or paint to protect bike lanes[1].

Due to the less formal nature of these countermeasures, some special considerations should be made when initiating and maintaining these projects.

- **Community Buy-in** – An important aspect of quick-build project planning is engaging with and receiving buy-in from stakeholders, local businesses, and the community as these projects may be unfamiliar to people and generate push-back.
- **Materials Selection** – The appropriate selection of materials helps to ensure that the low-cost materials used are efficient to deploy and suitable to stand the test of time.
- **Performance Tracking** – Tracking the effectiveness of these solutions to address safety needs is essential for informing the selection of more permanent construction projects. This will extend the impact of quick-build solutions by informing decision makers which strategies are or are not feasible for a given location.

[1] Letunic, Niko (2022). Vision Zero Network. Use these tools to save lives: Quick, low-cost, effective street redesigns. Retrieved from https://visionzeronetwork.org/use-these-tools-to-save-lives/

CRASH TRENDS

The development of this VZAP and recommendations to improve transportation safety in the Volusia-Flagler region relied upon an analysis of crash trends using Signal 4 crash data from 2019 to 2023. By looking at certain crash factors such as mode of transportation, behavior, and roadway conditions, it is possible to create a picture of what is impacting safety issues in the region and what solutions make the most sense.

Car crash on the highway

CRASH DATASET 2019-2023

The detailed analysis was completed based on crash data reflective of 2019 to 2023 for the Volusia-Flagler TPO. All data was mapped based on the geolocation associated with each crash record. **Data reflects all crashes in the region that were reported to law enforcement and that involve a vehicle**. It should be noted that the analysis does not include certain crashes including those with incomplete or incorrect information, and crashes on interstates, private drives, and parking areas outside of the transportation network.

A total of 57,733 crashes in Volusia County and 8,245 crashes in Flagler County were recorded for the 2019 to 2023 period. **Of these crashes, 535 in Volusia County and 69 in Flagler County resulted in a fatality.** In addition, 2,040 crashes in Volusia County and 206 in Flagler County resulted in a severe injury. **These crashes that result in either a severe injury or a fatality are grouped together and referred to as KSI.**

CRASHES BY YEAR

Table 1 and **Table 2** reflect the total crashes in Flagler and Volusia Counties, respectively, by year and by the severity level, as defined below.

- **No Injury** – crashes where no persons were reported to be injured. Also known as property damage only crashes.
- **Injury** – crashes where there is a possible injury or a non-incapacitating injury which may or may not require hospitalization.
- **Severe Injury** – crashes where there is an incapacitating injury, such as burns, lacerations, or broken bones that require hospitalization.
- **Fatality** – crashes that result in a fatality within 30 days.

TABLE 1: CRASH SUMMARY BY YEAR - FLAGLER COUNTY

Year	No Injury	Injury[1]	Severe Injury[2]	Fatality	Total (% Total)	KSI Total (% Total)	KSI Rate[3]
2019	1,132	475	48	7	1,662 (20.2%)	55 (20.0%)	3.3%
2020	984	48	43	15	1,520 (18.4%)	58 (21.1%)	3.8%
2021	1,144	511	26	11	1,692 (20.5%)	37 (13.5%)	2.2%
2022	1,123	507	43	19	1,692 (20.5%)	62 (22.5%)	3.7%
2023	1,107	509	46	17	1,679 (20.4%)	63 (22.9%)	3.8%
Total	**5,490**	**2,480**	**206**	**69**	**8,245**	**275**	**3.3%**

NOTES

Source: Signal 4 Analytics

1. Injury includes crashes that were defined as "Non-Incapacitating Injury" and "Possible Injury."
2. Crash records use the label "Incapacitating Injury"
3. KSI Rate is calculated as the percentage of crashes in each category resulting in a KSI.

TABLE 2: CRASH SUMMARY BY YEAR - VOLUSIA COUNTY

Year	No Injury	Injury[1]	Severe Injury[2]	Fatality	Total (% Total)	KSI Total (% Total)	KSI Rate[3]
2019	7,875	3,454	492	104	11,925 (20.7%)	596 (23.1%)	5.0%
2020	6,632	3,145	399	111	10,287 (17.8%)	510 (19.8%)	5.0%
2021	7,750	3,480	433	118	11,781 (20.4%)	551 (21.4%)	4.7%
2022	8,093	3,313	386	107	11,899 (20.6%)	493 (19.1%)	4.1%
2023	8,157	3,259	330	95	11,841 (20.5%)	425 (16.5%)	3.6%
Total	**38,507**	**16,651**	**2,040**	**535**	**57,733**	**2,575**	**4.5%**

CRASHES BY MODE

Figure 1 summarizes crashes by injury severity and mode for Flagler and Volusia Counties. Motor vehicle crashes accounted for 93.5% of total crashes in Flagler County and 92.1% in Volusia. This is expected as most trips in the region are typically made by motor vehicle. Motorcyclists were involved in 4% of the total crashes in Flagler County and 4.4% in Volusia County. Bicyclists in 1.3% and 1.4% of total crashes for Flagler and Volusia, respectively. Pedestrians were involved in a larger share of crashes in Volusia County (2.1%), compared to Flagler County (1.2%). **The KSI rate for bicyclists and pedestrians in Flagler and Volusia Counties in this time-period (21.3%) is higher than the state-averaged KSI rate for the same period (16.1%[1]).**

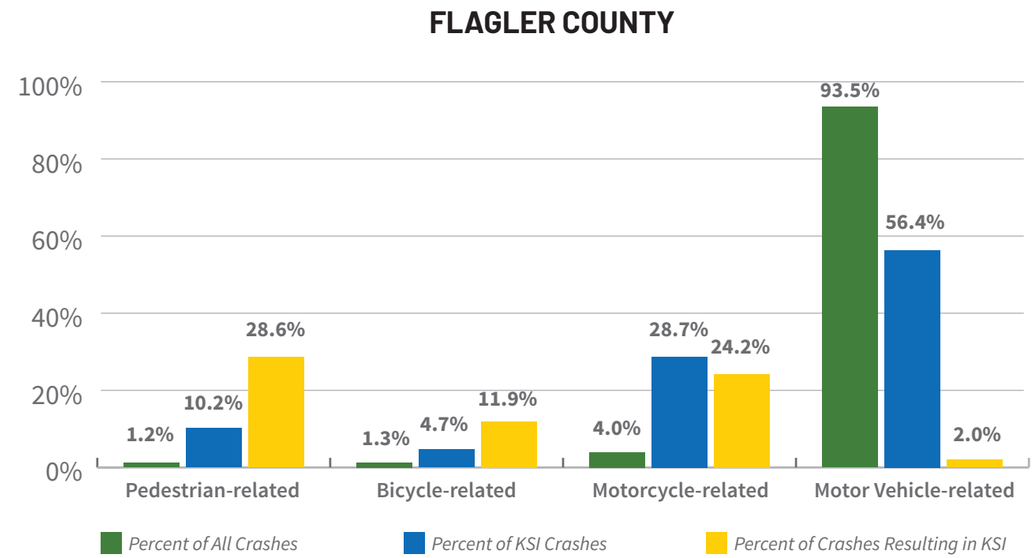
While motor vehicle crashes accounted for the largest share of both overall crashes and KSI crashes, when vulnerable road users (i.e. pedestrians, bicyclists, or motorcyclists) were involved in a crash, the risk of death or severe injury increased disproportionately. The Florida Pedestrian and Bicycle Strategic Safety Plan (FDOT, 2021) places Volusia County in the top 25 counties for pedestrian and bicyclist KSI crashes, Flagler County is placed in the bottom half of Florida counties.

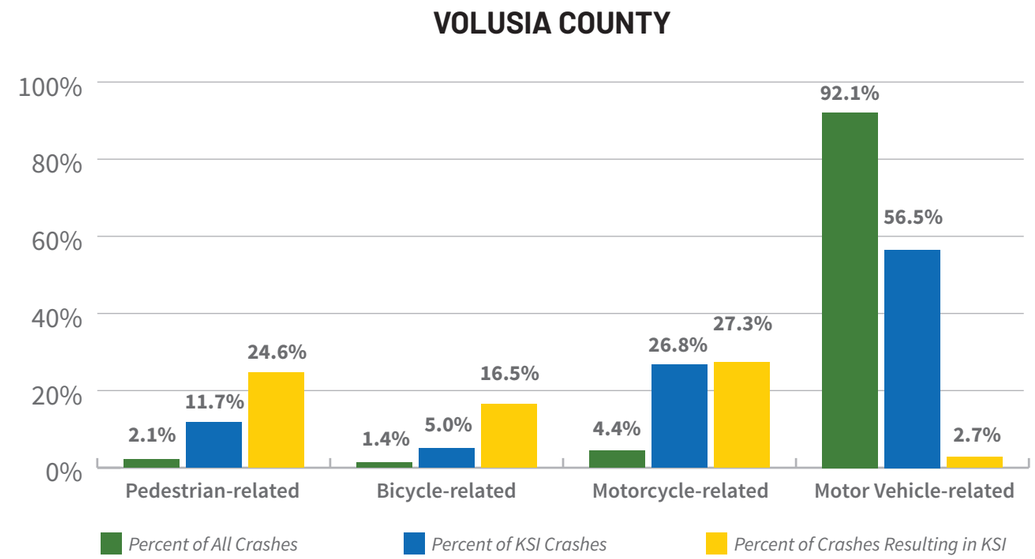
Crashes involving vulnerable road users accounted for about 7.9% of overall crashes in Volusia County and 6.5% in Flagler County but accounted for 43.5% and 43.6% of total KSI crashes, respectively.

- **Bicyclists:** Accounted for **1.3% of total crashes compared to 4.7% of total KSI** crashes in Flagler County. Bicyclists were involved in **1.4% of total crashes compared to 5% of total KSI crashes** in Volusia County.
- **Pedestrians:** Accounted for **2.1% of all crashes but 11.7% of KSI crashes** in Volusia County. In Flagler, **1.2% of total crashes involved a pedestrian and 10.2% of total KSI** involved pedestrians. **Pedestrians have among the highest KSI rate of all modes** with 28.6% of pedestrian crashes in Flagler and 24.6% in Volusia resulting in a fatality or serious injury,
- **Motorcyclists:** Accounted for 4.4% of all crashes in Volusia County and 4% of crashes in Flagler County. **27.3% of motorcycle crashes in Volusia and 24.2% in Flagler County resulted in a KSI.** These crashes accounted for 26.8% of the total KSI figures in Volusia County and 28.7% in Flagler County.

» **Motor Vehicle Users:** Motor vehicle (cars & trucks) crashes comprise 92.1% of all crashes in Volusia County and 93.5% of all crashes in Flagler County. These crashes also represent the largest share of KSI crashes, 56.5% in Volusia County and 56.4% in Flagler County, and the lowest rate of KSI crashes, 2.7% in Volusia and 2% in Flagler.

FIGURE 1: CRASH SUMMARY BY MODE (2019-2023)

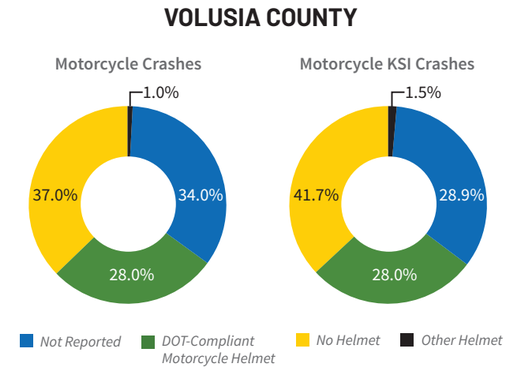




Source: Signal 4 Analytics

Factors such as vehicle size, a higher rate of alcohol impairment, a lack of laws requiring helmets, and a lack of awareness by motorists all contribute to the deadliness of motorcycle-related crashes[1]. **Figure 2** shows the relationship between helmet use and crash severity in Flagler and Volusia counties. From 2019 to 2023, **crashes where no helmet was used accounted for 37% of total crashes and 41.7% of KSI crashes** in Volusia County and **51% of total crashes and 51.9% of KSI crashes** in Flagler County. The data further indicates that only a small percentage of motorcyclists were wearing a DOT-compliant helmet when the crash occurred, 28% for Volusia County and 33% for Flagler County. This underscores the importance of educational countermeasures for promoting motorcycle safety practices in the region.

FIGURE 2: MOTORCYCLE CRASHES AND HELMET USE (2019-2023)



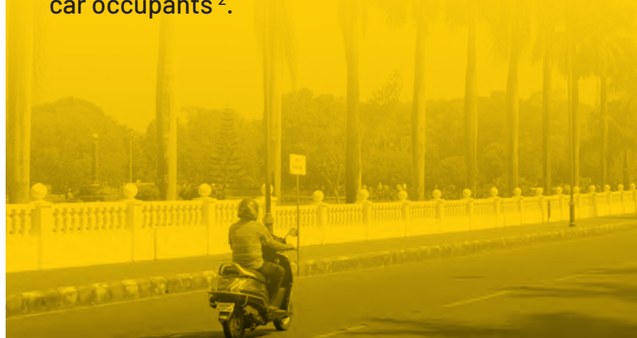
[2] National Highway Traffic Safety Administration (NHTSA), 2024. *Traffic Safety Facts*. Retrieved from Traffic Safety Fact: 2022 Data - Motorcycles.

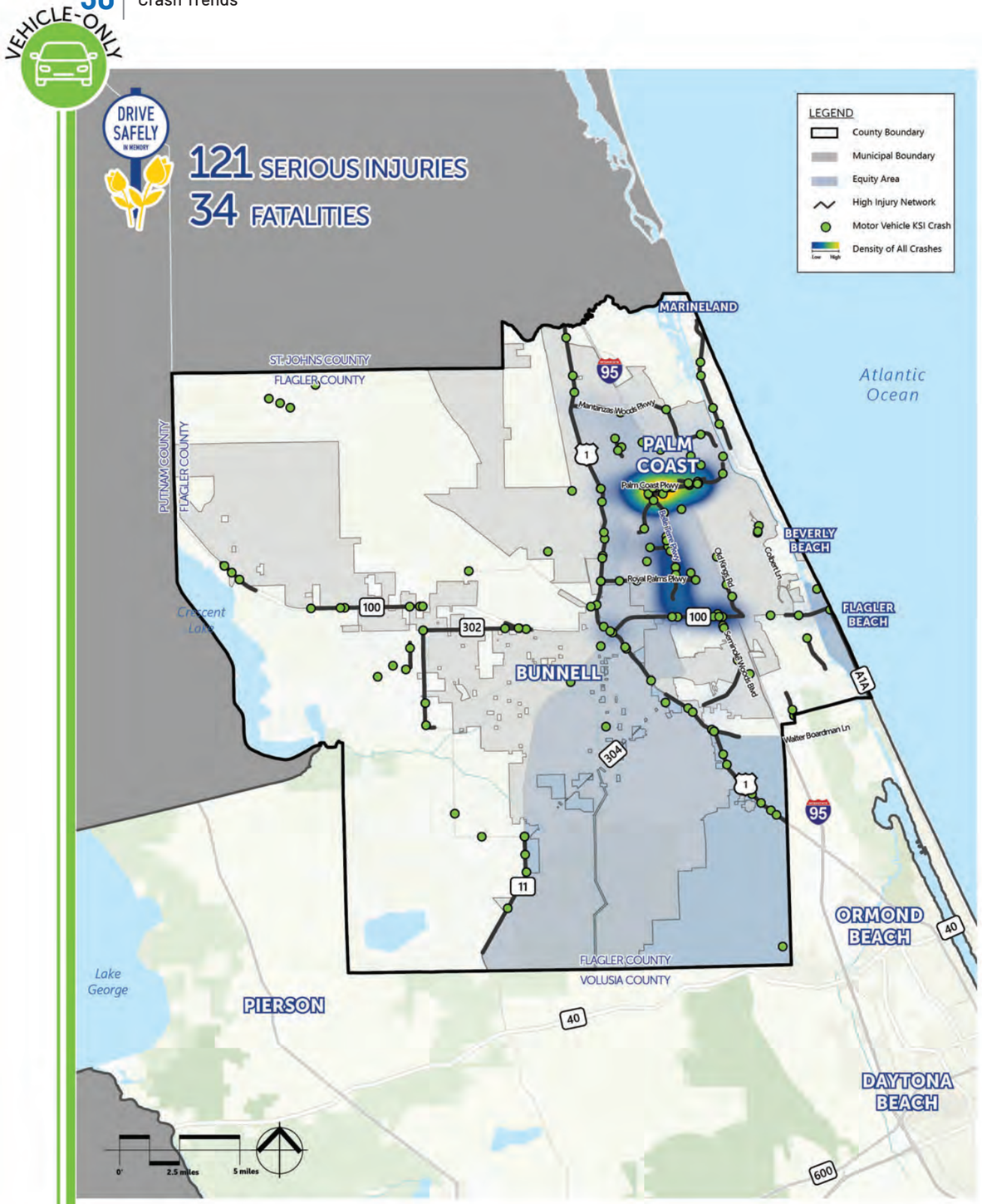
The seriousness of motorcycle safety is especially felt in Volusia County where thousands of motorcyclists visit each year for Daytona Bike Week and Biketoberfest. The Florida Department of Highway Safety and Motor Vehicles reports that over the course of five consecutive Bike Week events, from 2019-2023, there were 80 total motorcycle crashes, 10 of them resulting in a fatality or serious injury. This highlights the importance of increasing public awareness and safety practices related to motorcycles. The NHTSA recommends measures such as use of helmets and protective gear, increasing visibility through vibrant and reflective clothing, and avoiding any form of impairment to improve safety for motorcyclists[1].

For drivers, increased vigilance is vital to avoid conflicts with motorcycles including looking out for motorcycles on the road and adhering to appropriate distancing and lane maneuvering practices[1].

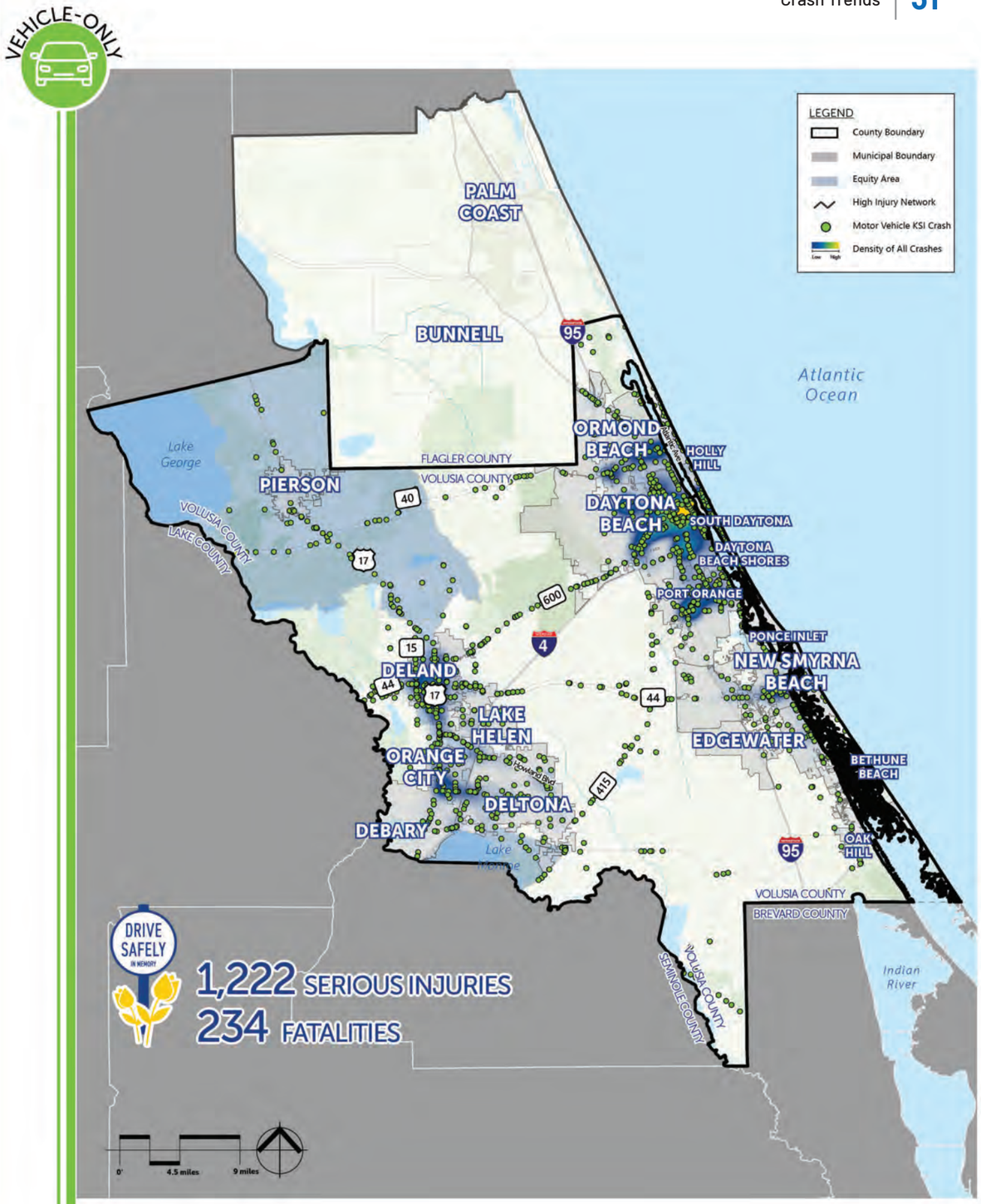
MOTORCYCLES – RIDE SAFE, RIDE AGAIN

While crashes involving motorcycles account for a small percentage of total crashes, they account for significantly more fatalities and serious injuries in Flagler and Volusia Counties. According to the National Highway Traffic Safety Administration (NHTSA), at the national level, motorcyclists in 2022 had a 5 times higher fatality rate and nearly 22 times higher injury rate per vehicle mile traveled when compared to passenger car occupants [2].

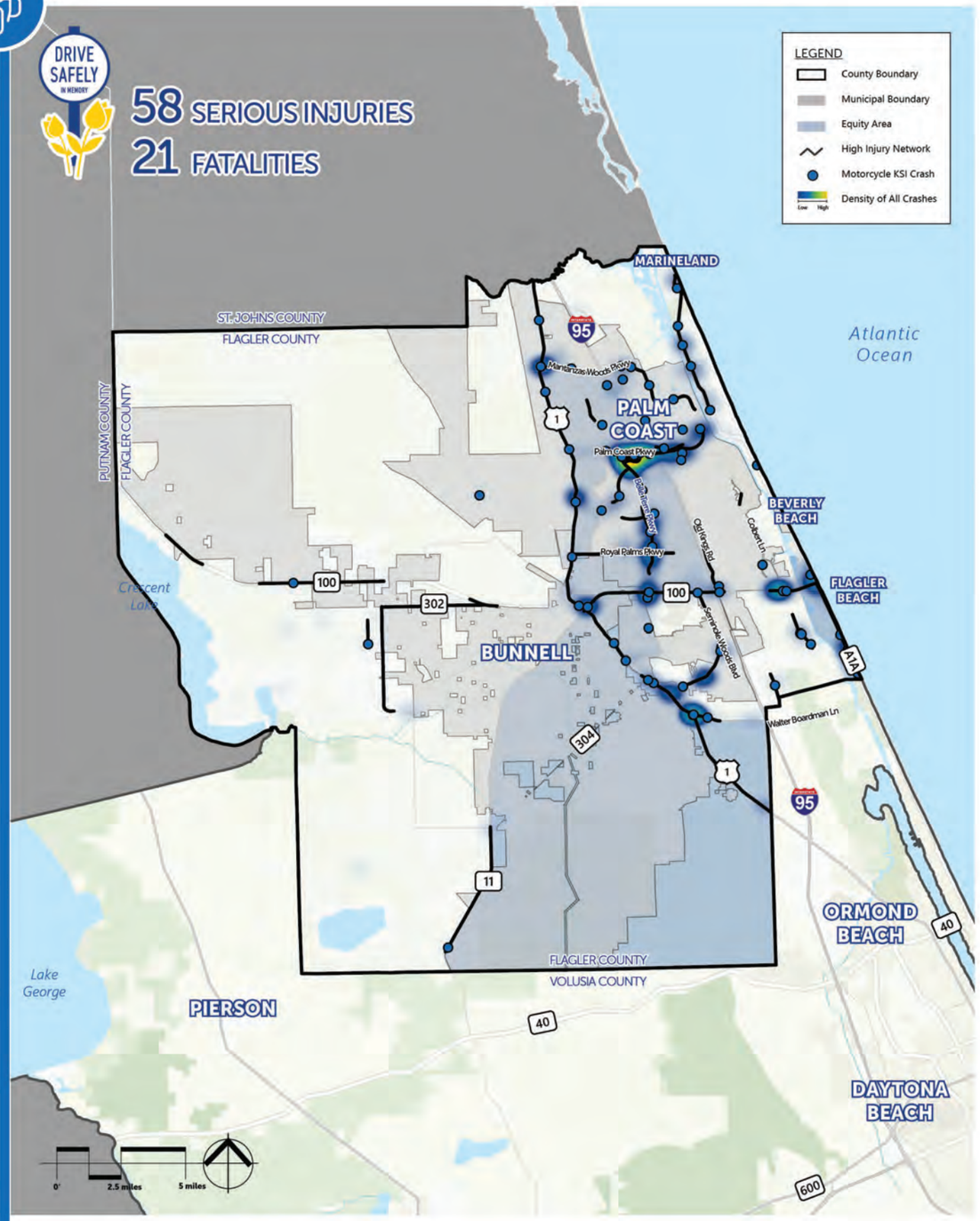




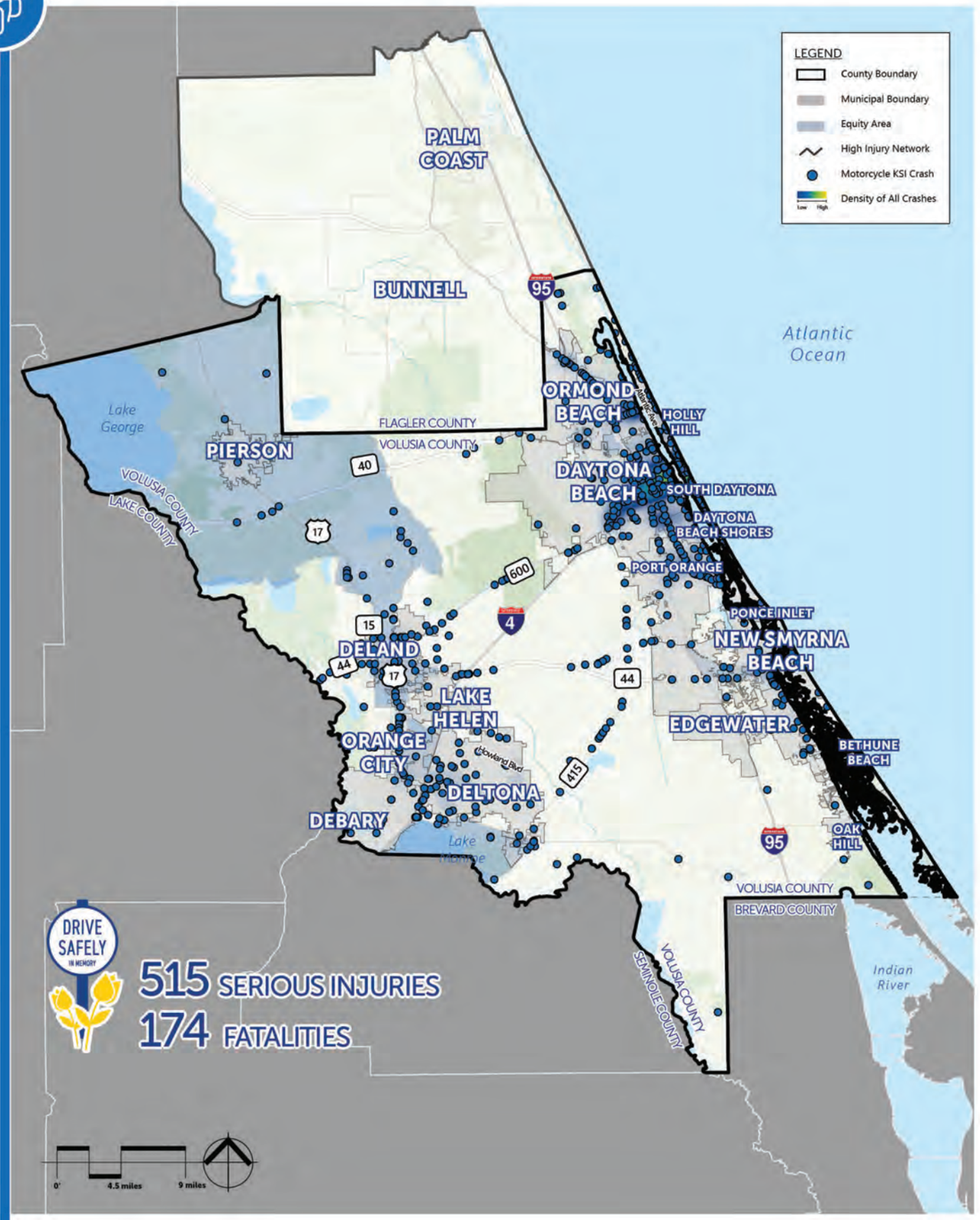
CRASH SUMMARY BY TYPE – MOTOR VEHICLE ONLY - FLAGLER COUNTY



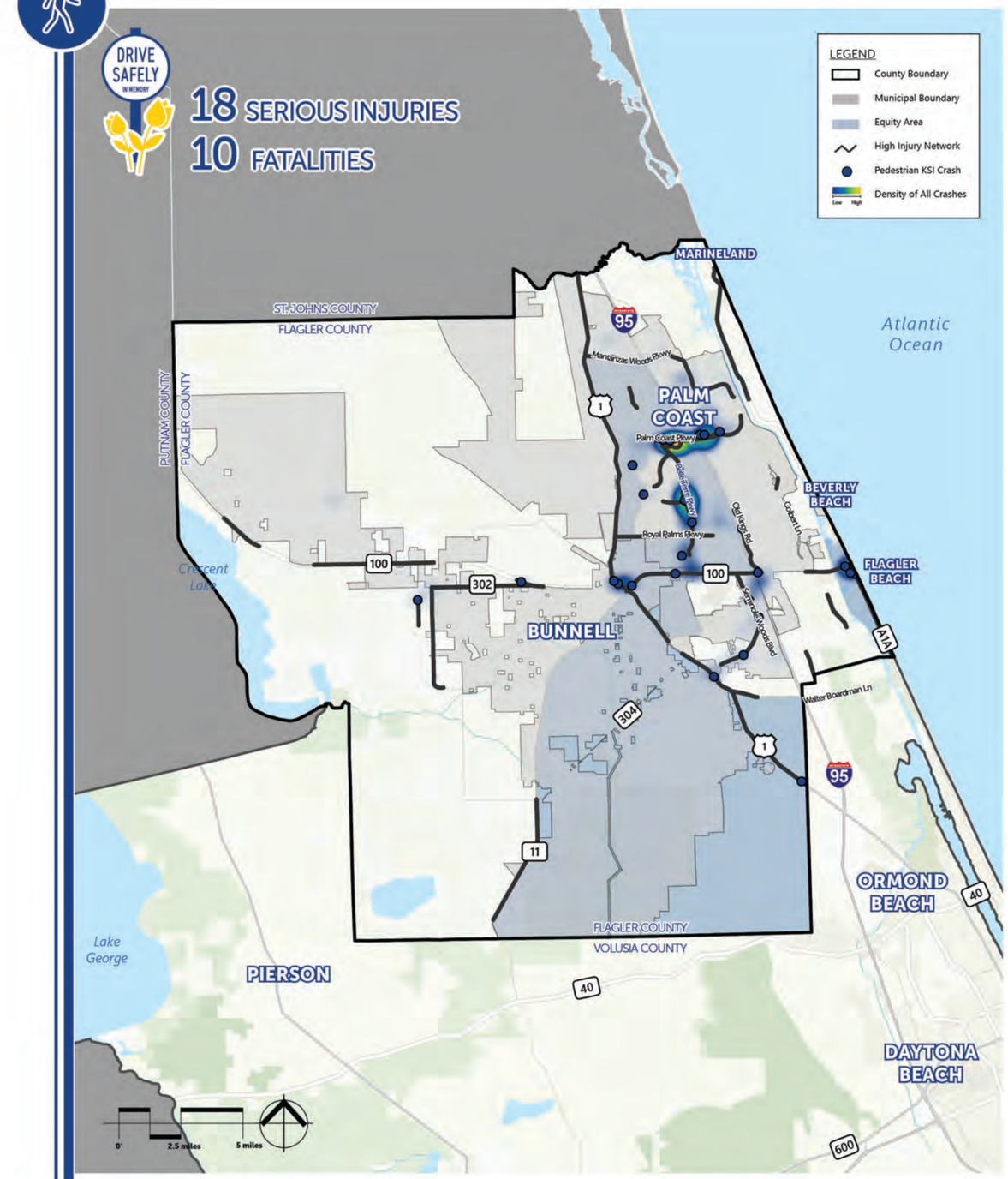
CRASH SUMMARY BY TYPE – MOTOR VEHICLE ONLY - VOLUSIA COUNTY



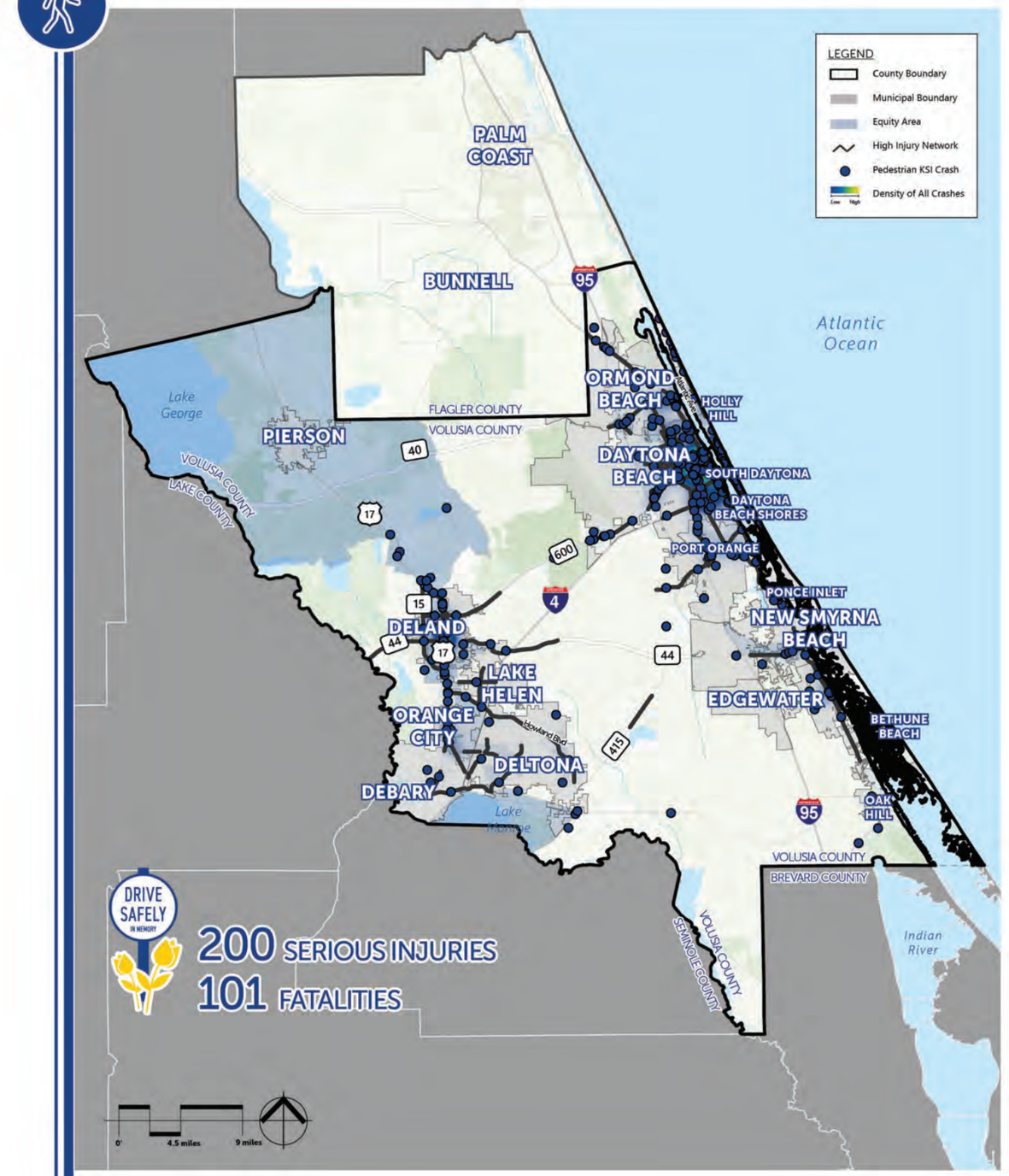
CRASH SUMMARY BY TYPE – MOTORCYCLE ONLY - FLAGLER COUNTY



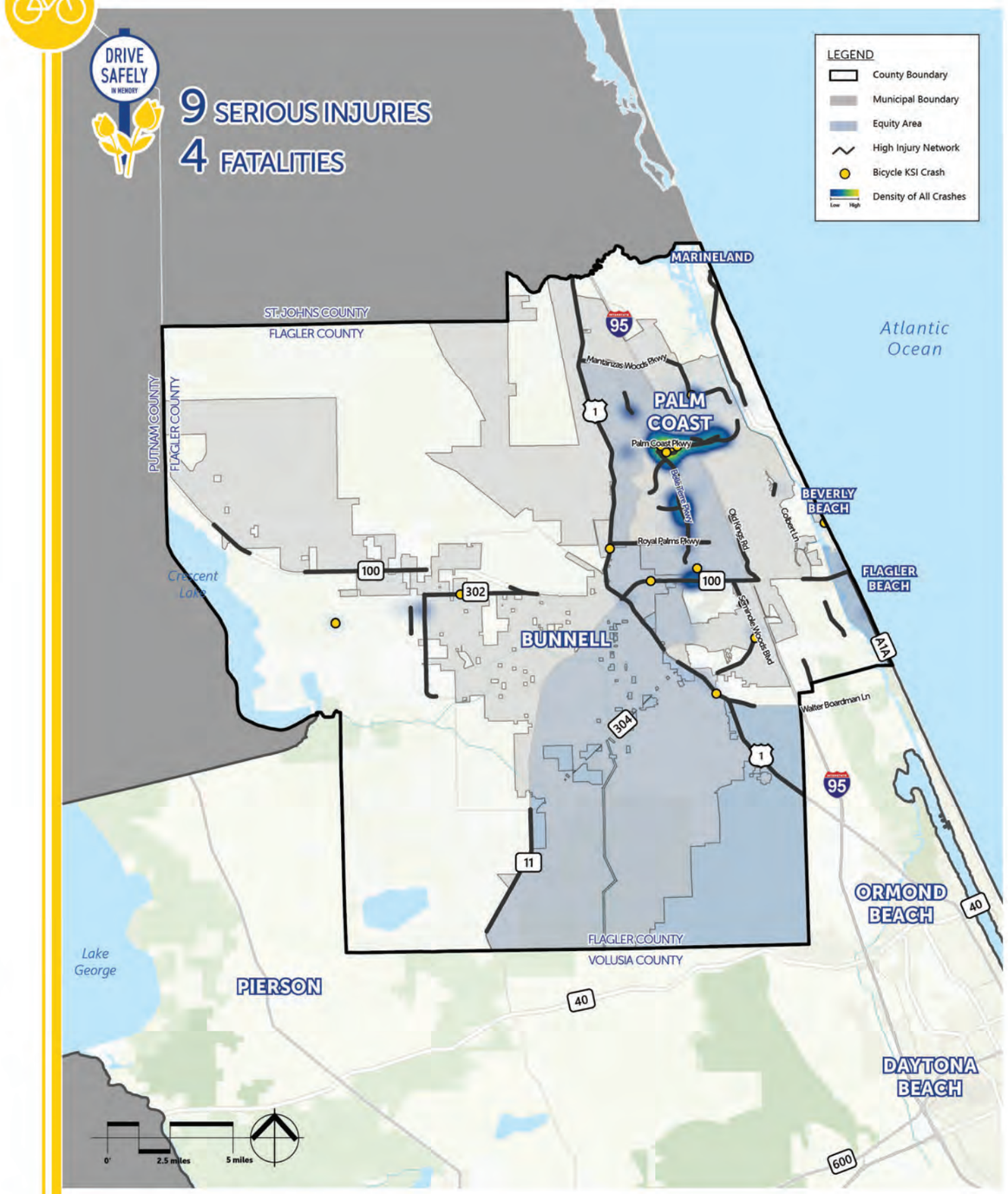
CRASH SUMMARY BY TYPE – MOTORCYCLE ONLY - VOLUSIA COUNTY



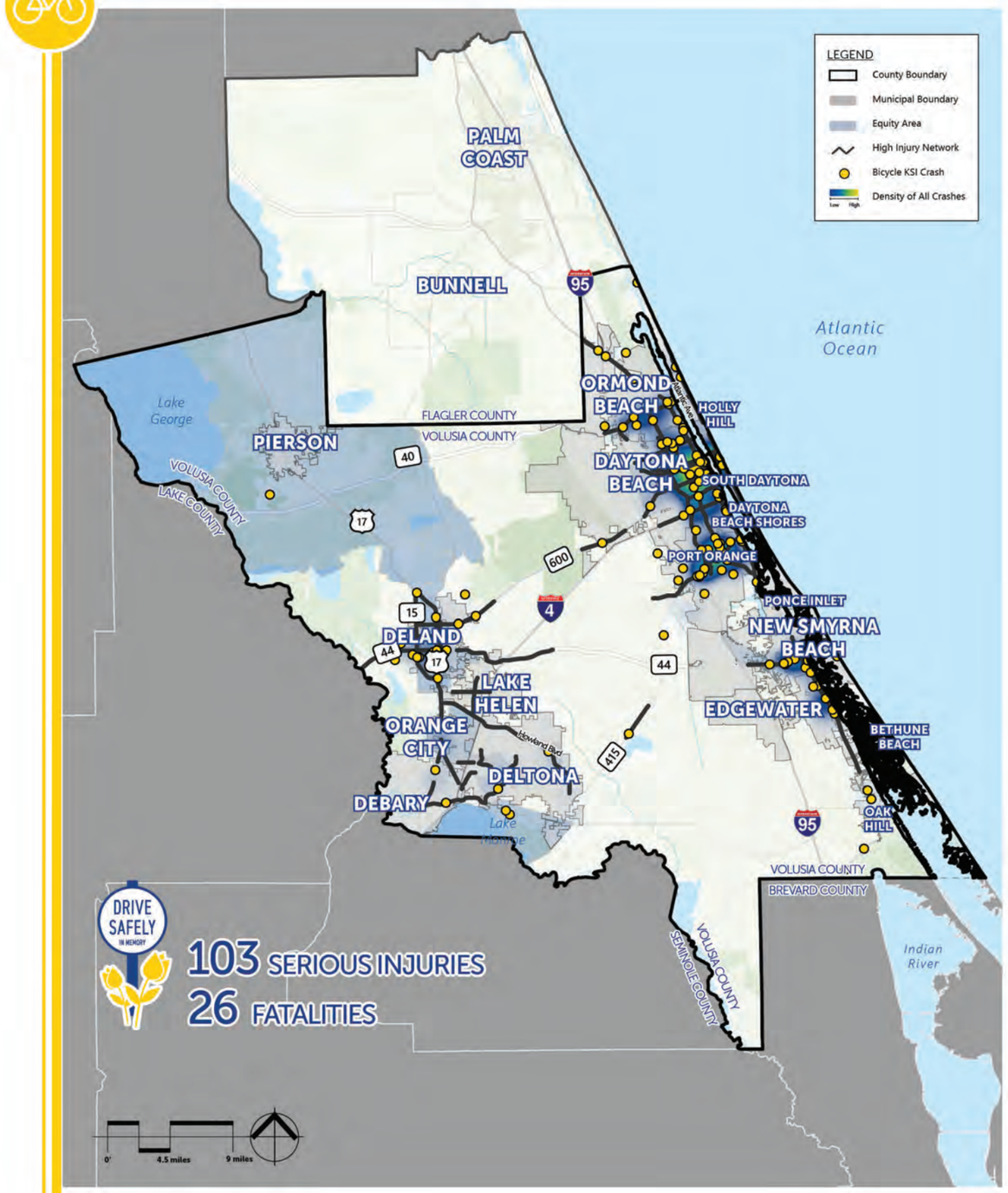
CRASH SUMMARY BY TYPE – PEDESTRIAN ONLY - FLAGLER COUNTY



CRASH SUMMARY BY TYPE – PEDESTRIAN ONLY - VOLUSIA COUNTY



CRASH SUMMARY BY TYPE – BICYCLE ONLY - FLAGLER COUNTY



CRASH SUMMARY BY TYPE – BICYCLE ONLY - VOLUSIA COUNTY

CRASHES BY TYPE

Tables 3 and 4 summarize crashes based on the recorded crash type for Flagler and Volusia Counties, respectively. The most notable contributing factors are highlighted in bold.

TABLE 3: CRASH SUMMARY BY TYPE – FLAGLER COUNTY

Crash Type	No Injury	Injury[1]	Severe Injury[2]	Fatality	Total (% Total)	KSI Total (% Total)	KSI Rate[3]
Angle	296	224	19	2	541 (6.6%)	21 (7.6%)	3.9%
Animal	226	33	0	2	261 (3.2%)	2 (0.7%)	0.8%
Bicycle	16	80	9	4	109 (1.3%)	13 (4.7%)	11.9%
Head On	60	54	7	7	128 (1.6%)	14 (5.1%)	10.9%
Left Turn	486	398	38	13	935 (11.3%)	**51 (18.5%)**	5.5%
Off Road	474	236	30	15	755 (9.2%)	45 (16.4%)	6.0%
Other	1,383	402	33	5	**1,823 (22.1%)**	38 (13.8%)	2.1%
Pedestrian	6	64	18	10	98 (1.2%)	28 (10.2%)	**28.6%**
Rear End	1,629	750	32	5	**2,416 (29.3%)**	37 (13.5%)	1.5%
Right Turn	95	24	0	0	119 (1.4%)	0 (0.0%)	0.0%
Rollover	37	58	13	4	112 (1.4%)	17 (6.2%)	15.2%
Sideswipe	700	122	7	1	830 (10.1%)	8 (2.9%)	1.0%
Unknown	82	35	0	1	118 (1.4%)	1 (0.4%)	0.8%
Total	**5,490**	**2,480**	**206**	**69**	**8,245**	**275**	

TABLE 4: CRASH SUMMARY BY TYPE – VOLUSIA COUNTY

Crash Type	No Injury	Injury[1]	Severe Injury[2]	Fatality	Total (% Total)	KSI Total (% Total)	KSI Rate[3]
Angle	3,008	2,097	222	30	5,357 (9.3%)	252 (9.8%)	4.7%
Animal	280	59	10	3	352 (0.6%)	13 (0.5%)	3.7%
Bicycle	158	496	103	26	783 (1.4%)	129 (5.0%)	16.5%
Head On	522	346	82	45	995 (1.7%)	127 (4.9%)	12.8%
Left Turn	3,160	2,628	338	77	6,203 (10.7%)	415 (16.1%)	6.7%
Off Road	4,093	1,398	284	101	5,876 (10.2%)	385 (15.0%)	6.6%
Other	7,552	1,610	229	58	**9,449 (16.4%)**	287 (11.1%)	3.0%
Pedestrian	164	758	200	101	1,223 (2.1%)	301 (11.7%)	**24.6%**
Rear End	12,503	5,615	329	48	**18,495 (32.0%)**	377 (14.6%)	2.0%
Right Turn	509	159	15	3	686 (1.2%)	18 (0.7%)	2.6%
Rollover	206	311	111	21	649 (1.1%)	132 (5.1%)	**20.3%**
Sideswipe	5,321	854	78	10	6,263 (10.8%)	88 (3.4%)	1.4%
Unknown	1,031	320	39	12	1,402 (2.4%)	51 (2.0%)	3.6%
Total	**38,507**	**16,651**	**2,040**	**535**	**57,733**	**2,575**	

[3] Florida Highway Safety and Motor Vehicles. *Driving Safety: Motorcycle Safety Awareness.* Retrieved from Motorcycle Safety Awareness - Florida Department of Highway Safety and Motor Vehicles.

FLAGLER COUNTY

For Flagler County, left turn, pedestrian, and rear end crashes were the most notable crash types.

Left Turn – These crashes reflect 11.3% of total crashes but **18.5% of the KSI crashes**. The most reported driver contributing factors for this crash type are **running a red light (42%) and following too closely (14.1%)**.

Pedestrian – This crash type makes up 1.2% of total crashes but **10.2% of the KSI crashes**. While **33.7% of these crashes reported no contributing action** from the driver, the most common driver contributing factors for this crash type was **following too closely (16.3%)**.

Rear End – This crash type accounts for **29.3% of total crashes** and **13.5% of the KSI crashes**. The most reported driver contributing factors for this crash type **were following too closely (39.1%) and improper passing (31.2%)**.

In Flagler County this crash type reflects 1.4% of total crashes and 6.2% of the KSI crashes. **Following too closely (14.3%), over-correcting/over-steering (14.3%), and operating a vehicle in a negligent manner (13.4%)** were the most reported driver actions.

VOLUSIA COUNTY

In Volusia County, notable crash types include left turn, pedestrian, rear end, and roll over crashes.

Left Turn – This crash type reflects 10.7% of total crashes and **16.1% of the KSI crashes**. The most common driver contributing factors for this crash type were **failing to yield right-of-way (47.6%) and operating a vehicle in a negligent manner (10.6%)**.

Pedestrian – These crashes account for 2.1% of total crashes and **11.7% of the KSI crashes**. If a pedestrian was involved in a crash, **there was a 24.6% chance that the crash resulted in a fatality or serious injury**. The most common driver contributing factors for this crash type were **failing to yield the right-of-way (13.2%) and operating a vehicle in a negligent manner (10.3%). Forty-seven and 4 tenths percent (47.4%) of these crashes reported no contributing action from the driver**.

Rear End – This crash type makes up **32% of total crashes** and 14.6% of the KSI crashes. The most common driver contributing factors for this crash type were **operating a vehicle in a negligent manner (45.2%) and following too closely (20.3%)**.

Roll Over – This crash type consists of 1.1% of total crashes and 5.1% of the KSI crashes. In the instance of a rollover crash, there was a **20.3% chance the crash resulted in a fatality or serious injury** in Volusia County. **Operating a vehicle in a negligent manner (22%) and failure to keep in proper lane (19.9%)** were the most reported driver actions.

CRASHES BY TIME OF DAY

Overall, crashes are most likely to occur between noon and 6 PM in Flagler County and Volusia County. These windows reflect the busiest periods of the day. The largest share of KSI crashes occur between 3 PM and 9 PM for both counties (42.2% of Flagler KSI crashes and 40.3% of Volusia KSI crashes), but the KSI rate tends to be highest in the early hours of the morning between midnight and 3 AM (9.7% in Volusia, 6.8% in Flagler).

TIME OF DAY

NOON-6PM
All crashes
46% Flagler
and Volusia

3PM-9PM
KSI
42% Flagler
40% Volusia

12AM-3AM
KSI Rate
7% Flagler
10% Volusia

CRASHES BY DAY OF WEEK

In Flagler County, crashes were generally steady through the work week, but highest on Fridays, with the most KSI crashes having occurred on Saturday. In Volusia County, Fridays had the most total crashes and KSI crashes.

DAY OF WEEK

FRIDAY
Flagler All - 17%
Volusia All - 18%
Volusia KSI - 18%

SATURDAY
Flagler KSI - 17%

CRASHES BY MONTH/SEASON

Volusia County hosts a number of major events every year. The three major event weeks, Bike Week, Biketoberfest, and Daytona Speed Weeks, attract hundreds of thousands of visitors each year, leading to increased traffic conflicts. The influx of vehicles increases the likelihood of traffic incidents as roadway conditions are further strained by drivers who may be unfamiliar with local routes.

The data shows there is an increase in crashes during these weeks. Daytona Speed Weeks have an average of a 5.8% increase in crashes over Volusia County's average during these dates. Bike Week and Biketoberfest, have an average of 35.7% and 36.1% increase in crashes, respectively.

The increase in crashes does not necessarily result in an increase in KSI crashes during these dates, but there are slight increases for certain crash factors (i.e. aggressive driving and speeding).

Race days, including the Daytona 500 and Coke Zero Sugar 400, do not appear to contribute to an increase in incidents with a reduced number of total crashes and KSI crashes compared to the annual averages for Volusia County (22.2% and 24.5%, respectively).

CRASHES BY BEHAVIOR FACTOR

Figure 3 provides an overview of behavioral factors that contribute to crashes for Flagler and Volusia counties including alcohol and drug impairment, aggressive driving, speeding, distracted driving, and unrestrained occupants. At least one behavioral factor was reported for 6,499 crashes (out of total 8,245 crashes) for Flagler County and 14,408 crashes (out of total 57,733 crashes) for Volusia County. It should be noted that in many crashes, multiple behavioral factors can be present. For example, a person driving under the influence of drugs may also be distracted and/or driving aggressively. However, the intersectionality of these factors is not analyzed in this plan. Additionally, behavioral factors such as aggressive driving and speeding are often under-reported.

- **Aggressive Driving:** 18.4% of all crashes and 11.6% of KSI crashes in Flagler County listed aggressive driving in the crash report. In Volusia County, 4.8% of total crashes but 9.6% of KSI crashes listed aggressive driving as a factor.

- **Speeding:** includes crashes where either exceeding the speed limit or driving too fast for the conditions was noted in the crash report. Six and eight tenths percent (6.8%) of all crashes and 4.4% of KSI crashes in Flagler County listed speeding in the crash report. In Volusia County, 2.7% of total crashes and 6.3% of KSI crashes listed speeding as a factor, however the KSI rate for speeding-related crashes in Volusia County is much higher (10.3%) than it is in Flagler (2.1%).

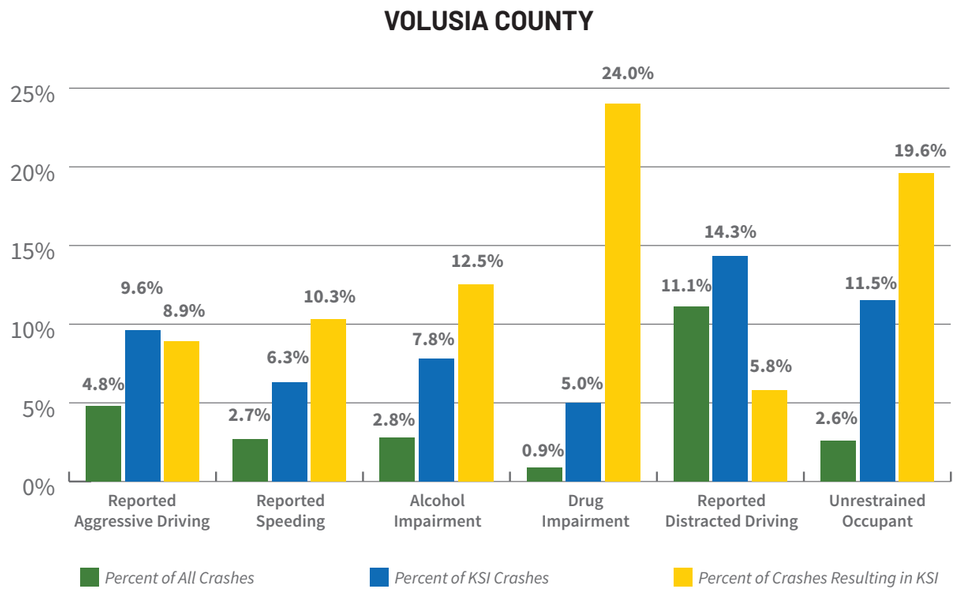
- **Alcohol Use:** These crashes include both when the alcohol level was reported as over the legal limit (blood alcohol level of 0.08 or more per Florida Statute 316.193) as well as when alcohol use was listed as a contributing crash factor in the crash report. In Flagler County, 3.9% of the total crashes involved alcohol, but 14.2% of the total KSI crashes involved alcohol. Twenty-seven and 8 tenths percent (27.8%) of alcohol-related crashes in Flagler County were off road crashes. Similarly, 2.8% of crashes in Volusia reported alcohol use, but these crashes accounted for 7.8% of the total KSI crashes. Thirty and a half percent (30.5%) of alcohol-related crashes in Volusia County were off road crashes. The KSI rate for crashes involving alcohol is consistently high for both counties (12.5% in Volusia and 12% in Flagler).

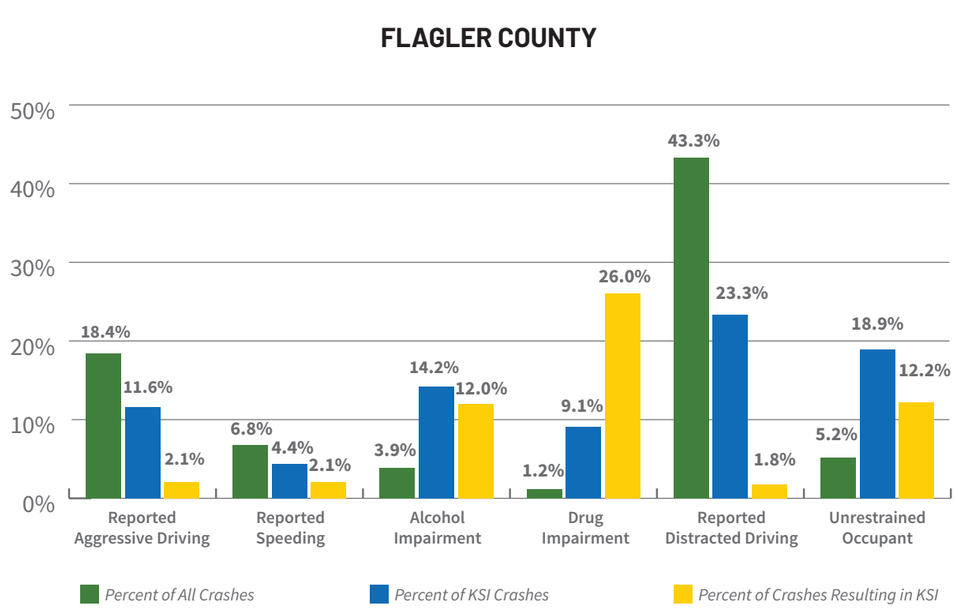
- **Drug Use:** includes crashes where impairment was reported either by illegal drugs or prescription drugs and is made when a drug test of a driver is positive, or a driver refused a test. In Flagler County, 1.2% of the total crashes and 9.1% of the total KSI crashes involved drug use. Three and 33 tenths percent (3.33%) of drug-related crashes in Flagler County were off-road crashes. Similarly, 0.9% of crashes in Volusia reported drug use, but these crashes accounted for 5% of the total KSI crashes. Thirty-one and seven tenths percent (31.7%) of drug-related crashes in Volusia County were off-road crashes. The KSI rate for crashes involving drug use is the highest behavior related factor in both counties (24% in Volusia and 26% in Flagler).

- **Distracted Driving:** 43.3% of all crashes and 23.3% of KSI crashes in Flagler County involved distracted driving. In Volusia County, 11.1% of total crashes but 14.3% of KSI crashes listed distracted driving as a factor. The most common crash type associated with this behavior is rear end crashes (40.4% in Flagler County, 45.1% in Volusia County).

- **Unrestrained Occupant:** 5.2% of all crashes and 18.9% of KSI crashes in Flagler County listed unrestrained occupants in the crash report. In Volusia County, 2.6% of total crashes but 11.5% of KSI crashes listed unrestrained occupants in the crash report. Instances of unrestrained occupants increased the likelihood of fatalities and serious injuries, with the KSI rate for unrestrained occupants at 12.2% in Flagler County, and 19.6% in Volusia County.

FIGURE 3 – CRASHES BY BEHAVIORAL FACTORS (2019-2023)



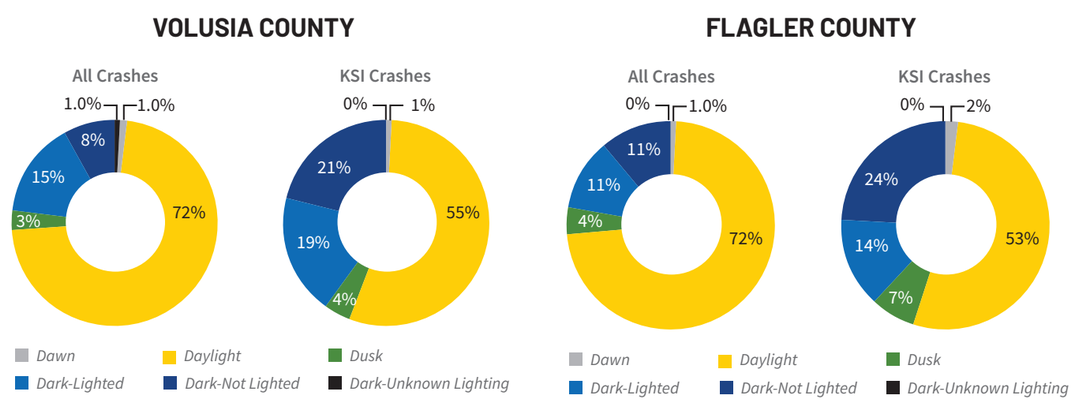


Source: Signal 4 Analytics

CRASHES BY LIGHTING CONDITION

Figure 4 summarizes crashes by reported lighting conditions for Flagler and Volusia Counties. In Flagler County, the majority of crashes and KSI crashes occurred during daylight hours (72.2% and 53.1%, respectively), but the highest KSI rate crashes were recorded in dark not lighted conditions. Dark not lighted conditions were present for 24% of the recorded total KSI crashes. Volusia County crash statistics were similar. Most crashes and KSI crashes occurred during daylight hours (72.2% and 55.2%, respectively), but the highest KSI rate crashes were recorded in dark not lighted conditions. Dark not lighted conditions were present for 20.5% of the recorded total KSI crashes.

FIGURE 4 – CRASHES BY LIGHTING CONDITION (2019-2023)

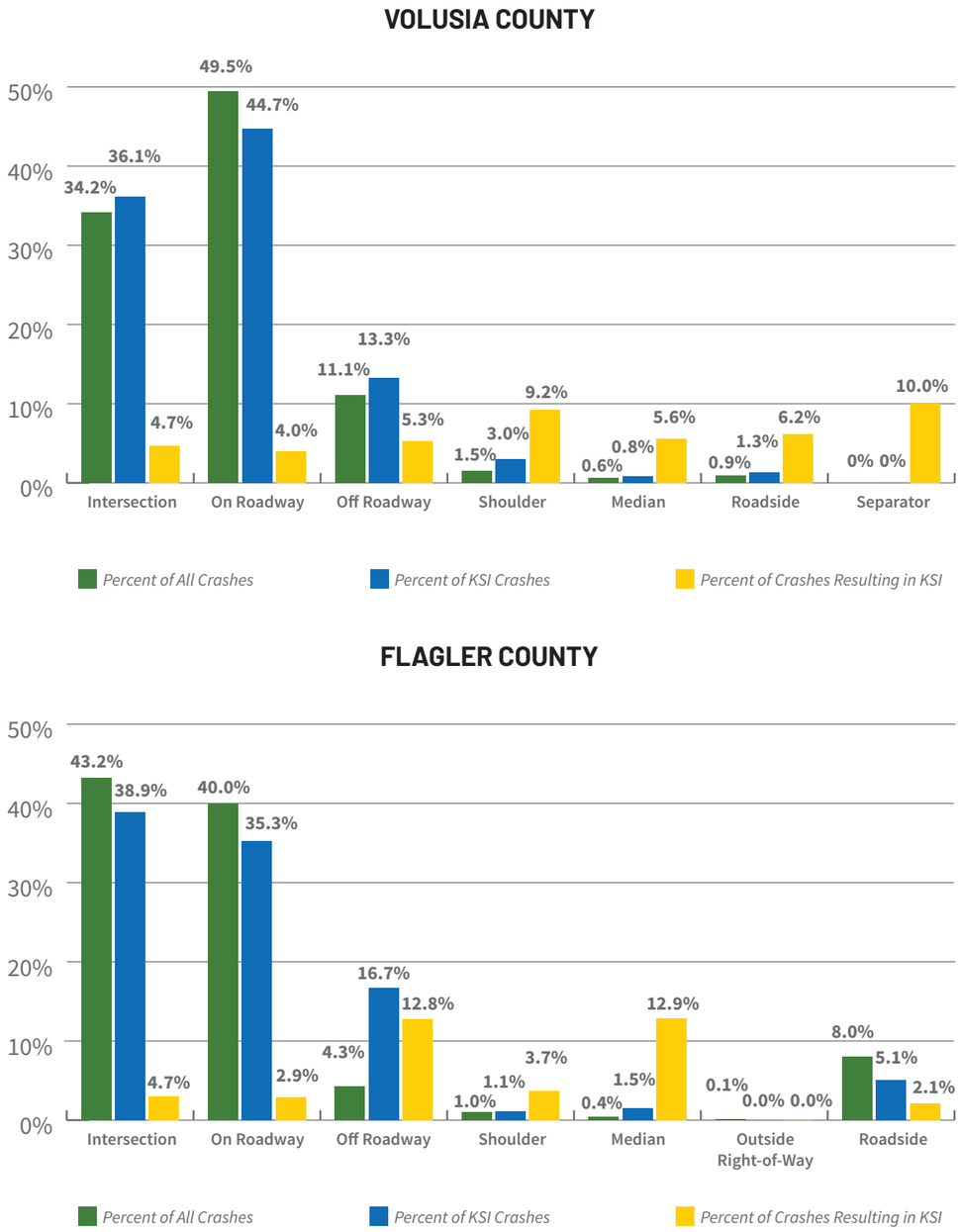


Source: Signal 4 Analytics

CRASHES BY LOCATION

Figure 5 summarizes crash locations for Flagler and Volusia Counties. In Flagler County, 83.2% of crashes were recorded on roadway segments or intersections. Thirty-eight and nine tenths percent (38.9%) of KSI crashes occurred in intersections and 35.3% occurred on roadway segments outside of intersections. The KSI rates in Flagler were the highest for crashes that occurred off roadway or in roadway medians, at 12.8% and 12.9%, respectively. In Volusia County, 83.7% of total crashes were recorded in intersections or on roadway segments. Thirty-four and 2 tenths percent (34.2%) of total crashes and 36.1% of KSI crashes in intersections in Volusia, compared to 49.5% of total crashes and 44.7% of KSI crashes in roadway segments. Shoulder and separator crashes represented the highest KSI rate for Volusia County at 9.2% and 10%, respectively.

FIGURE 5 – CRASHES BY LOCATION (2019-2023)



Approximately 2% of crashes occurred in other locations including parking zones, "unknown", or (blank) in the crash report.

Source: Signal 4 Analytics

ADDITIONAL CRASH FACTORS

Figure 6 summarizes crashes by injury severity and mode for Flagler and Volusia Counties. This section provides an overview of additional factors that contribute to crashes, including driver age (teenage or aging drivers), commercial motor vehicle (CMV) involvement, and whether the crash involved a lane departure. It should be noted that in many crashes, multiple crash factors can be present. For example, a person driving a commercial motor vehicle may also be an aging driver. However, the intersectionality of these factors is not analyzed in this plan.

- **Teenage Driver:** Crashes involving a teenage driver (defined as a driver aged 18 or younger) accounted for 15.3% of crashes in Flagler County and 13% of crashes in Volusia County. These crashes account for a similar share of the total KSI crashes in each county (13.8% in Flagler County and 9.5% in Volusia County).
- **Aging Driver:** Crashes involving an aging driver (defined as a driver aged 65 or older) accounted for 31.2% of crashes in Flagler County and 24.9% of crashes in Volusia County. Approximately a quarter of all KSI crashes in each county involve an aging driver (27.6% in Flagler, 25.9% in Volusia).
- **Commercial Motor Vehicle Involved:** Commercial motor vehicles (CMVs) include those with a gross vehicle weight greater than 26,001 pounds or that have three or more axles regardless of weight. In Flagler County, 6.3% of reported crashes and 5.8% KSI crashes involve a CMV. In Volusia County, 4.9% of total crashes and 4.3% of KSI crashes involved a CMV. For both counties, rear end crashes were the most common crash type when a CMV was involved (24.4% of crashes in Flagler County, 25.6% in Volusia County).
- **Lane Departure:** The identification of lane departures is based on the first harmful event and driver action recorded in the crash report and is dependent on the location of the crash. These crashes include but are not limited to improper passing, front-to-front crashes, sideswipes, and driver actions resulting in off-road crashes. In Flagler County, lane departure-related crashes account for 33.9% of total crashes and 40.7% of KSI crashes. Twenty-seven and half percent (27.5%) of total crashes and 34.3% of KSI crashes in Volusia County are lane departure-related

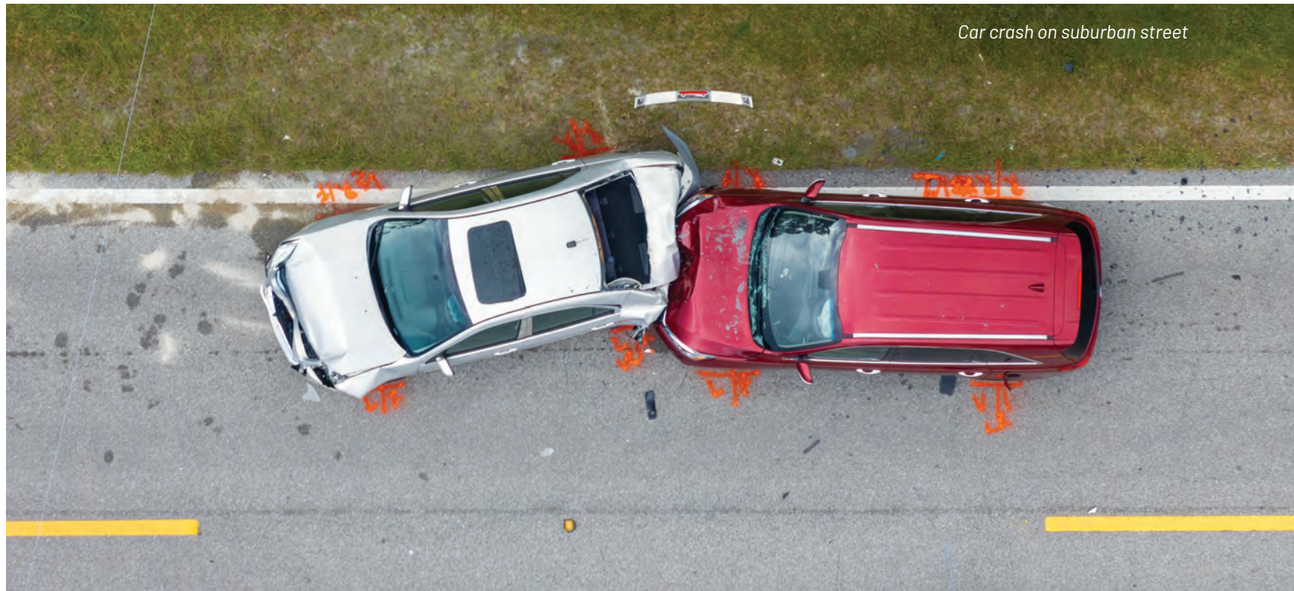
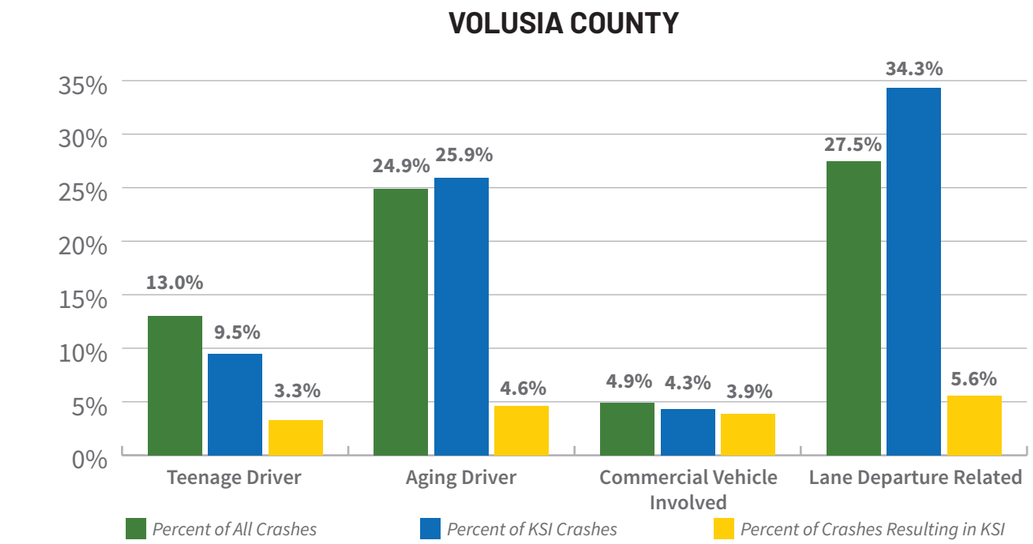
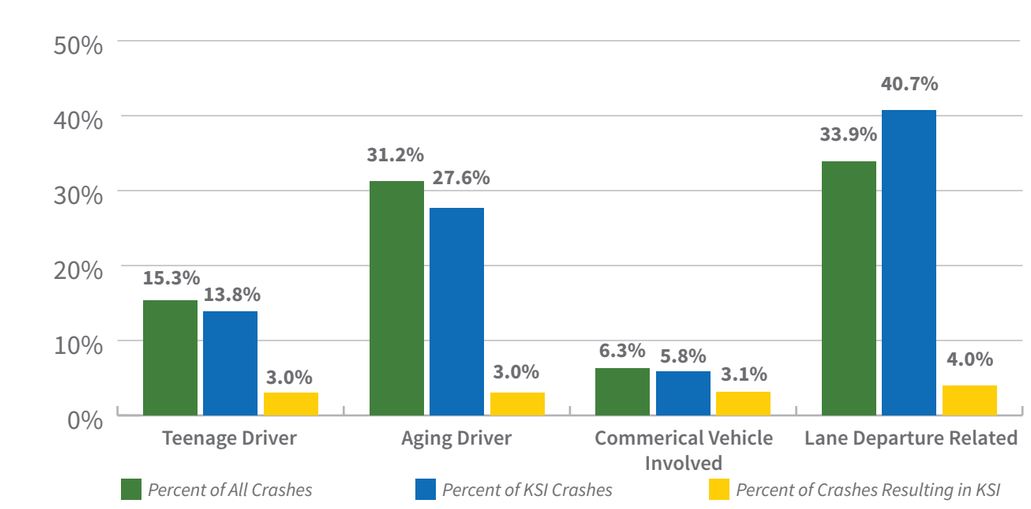

Car crash on suburban street

FIGURE 6 – ADDITIONAL CRASH STATISTICS (2019-2023)





Source: Signal 4 Analytics

HIGH INJURY NETWORK

A central outcome of the VZAP is to identify a High Injury Network (HIN), reflecting a network of the most dangerous roadway corridors in both Volusia and Flagler Counties, that carry a disproportionate share of crashes. In addition to roadways, 35 high-priority intersections (15 in Flagler County and 20 in Volusia County) were also identified where a disproportionate number of fatal and serious injury crashes were reported.

Flagler County contains about 1,245 centerline miles of non-limited access roadways, 53.1 miles of which are identified on the HIN. Crashes that occurred on the HIN segments account for approximately 81% of all KSI crashes in the region, 33% of total crashes, 42% of bicycle crashes, 37% of pedestrian crashes, and 43% of motorcycle crashes. Volusia County has about 4,173 centerline miles of non-limited access roadways, 404.6 miles of which are identified on the HIN. Crashes that occurred on the selected HIN segments accounted for approximately 82% of all KSI crashes in the region, 36% of total crashes, 48% of bicycle crashes, 46% of pedestrian crashes, and 57% of motorcycle crashes. After HIN identification, each corridor is paired with identified countermeasures which provide the most efficient means of targeted interventions for reducing traffic-related fatalities.

The HIN methodology used a geostatistical model to identify roadway segments with high incidences of crashes and KSI crashes. A series of weighting factors were then used to further rank identified corridors according to cost by crash severity (EPDO Score), the density of crashes per mile (Safety Score), and the presence of vulnerable users (Weighted EPDO and Safety Scores). The full list of HIN corridors are included in the Appendix. For the purpose of identifying immediate improvements on specific corridors, TPO and county staff have identified a strategic set of HIN corridors listed in on page 48, including 10 roadways in Volusia County and 10 in Flagler County. The figure below shows a sample of vulnerability rankings with weighted safety scores, bicycle crashes per mile, and pedestrian crashes per mile.

FLAGLER COUNTY

Old Kings Rd N from Farragut Dr to Palm Coast Pkwy NE
Weighted Safety Score 4,925, #1 Pedestrian Crashes

Palm Coast Pkwy NW from Corporate Dr to I-95
Weighted Safety Score 4,148, #1 Bicycle Crashes, #4 Pedestrian Crashes

White View Pkwy from Ravenwood Dr to Belle Terre Pkwy
Weighted Safety Score 3,489, #2 Pedestrian Crashes

Belle Terre Pkwy from Pritchard Dr to Royal Palms Pkwy
Weighted Safety Score 3,355, #4 Bicycle Crashes

State Hwy 100 E from Belle Terre Pkwy to Bulldog Dr
Weighted Safety Score 2,719, #2 Bicycle Crashes

VOLUSIA COUNTY

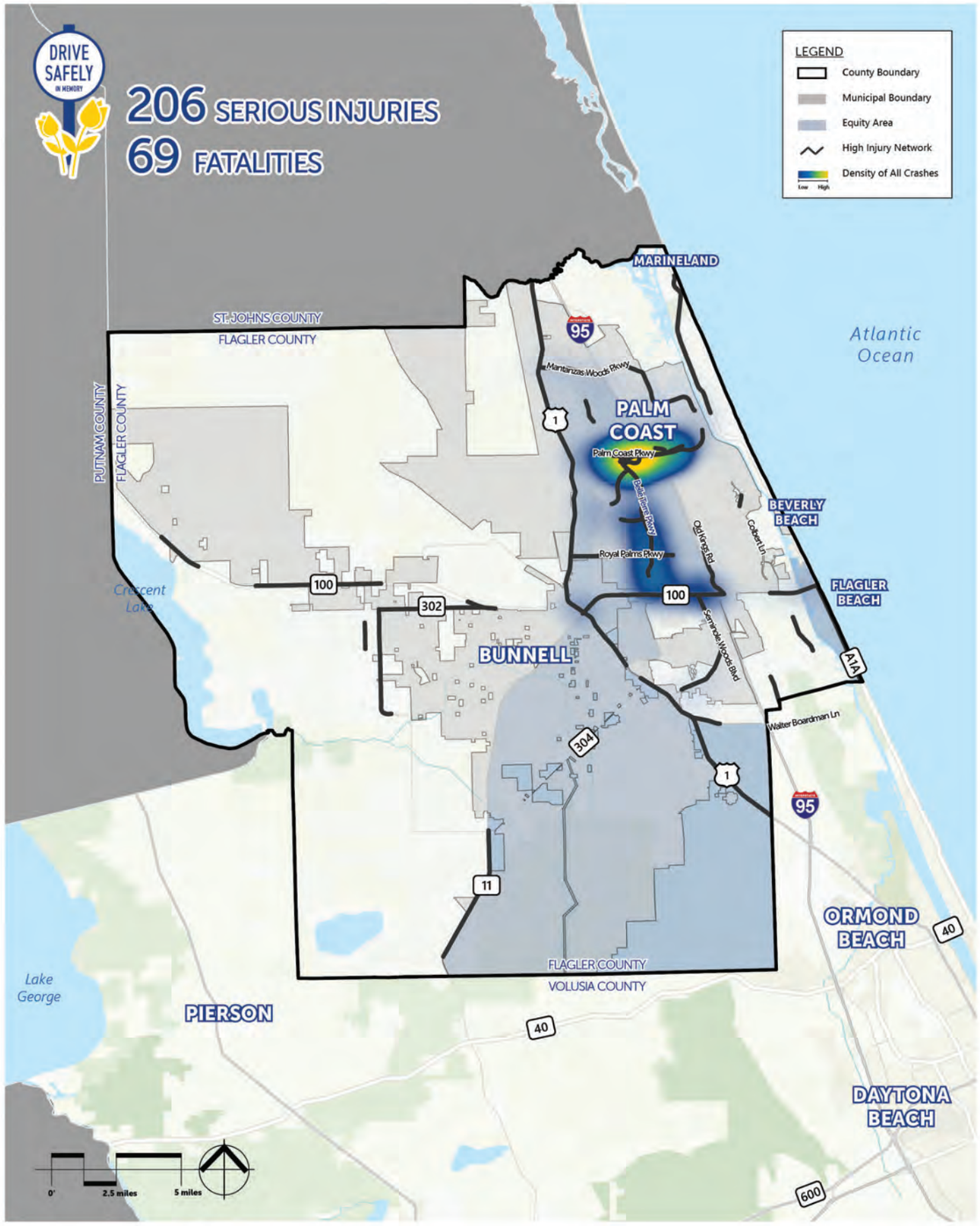
Mason Ave from Acapulco Ln to N Beach St
Weighted Safety Score 9,925, #3 Bicycle Crashes, #4 Pedestrian Crashes

Nova Road from Madeline Ave to Canal View Blvd
Weighted Safety Score 9,453, #1 Bicycle Crashes

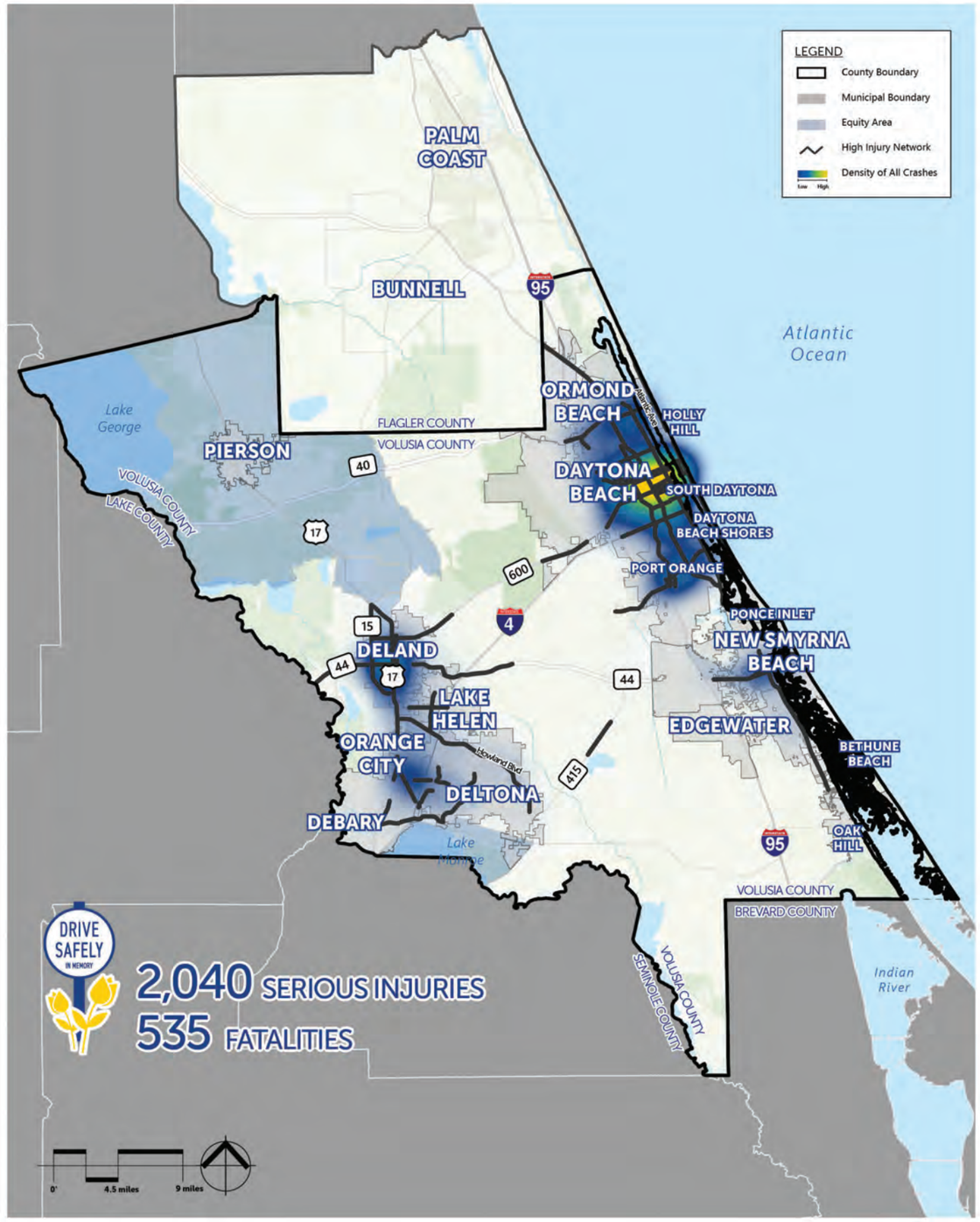
Oakridge Blvd from N Halifax Ave to AIA
Weighted Safety Score 8,817

W Intl Speedway Blvd from Tomoka Farms Rd to N Beach St
Weighted Safety Score 6,692

N Ridgewood Ave from Mason Ave to Arlington Ave
Weighted Safety Score 6,576, #1 Bicycle Crashes, #1 Pedestrian Crashes



FLAGLER COUNTY HIGH INJURY NETWORK



VOLUSIA COUNTY HIGH INJURY NETWORK

TABLE 5: FLAGLER COUNTY HIGH INJURY NETWORK PRIORITIZED CORRIDORS

Road Name	Length (In Miles)	From	To	Total Crashes - KSI Crashes
Old Kings Rd N	.4	Farragut Dr	Palm Coast Pkwy NE	93 - 5
Palm Coast Pkwy NW/SW	4.0	Pine Lakes Pkwy	I-95	661 - 14
Palm Coast Pkwy NE/SE	4.3	I-95	Palm Harbor Pkwy	466 - 6
CR 302	3.5	CR 305	State Hwy 100	29 - 5
SR 100 W	4.2	John Campbell Dr	CR 305	37 - 7
Whiteview Pkwy	.8	Ravenwood Dr	Belle Terre Pkwy	95 - 4
Belle Terre Pkwy N	1.9	Palm Coast Pkwy NW	Buddy Taylor Middle School	255 - 6
Belle Terre Pkwy S	2.7	Pritchard Dr	Market Ave	507 - 14
Moody Blvd (SR 100)	5	US Hwy 1	Old Kings Rd	495 - 18
N Ocean Shore Blvd (A1A)	3.4	Cedar Point Rd	Camino Del Mar	89 - 9

TABLE 6: VOLUSIA COUNTY HIGH INJURY NETWORK PRIORITIZED CORRIDORS

Road Name	Length (In Miles)	From	To	Total Crashes - KSI Crashes
E Intl Speedway Blvd (US 92)	0.6	US Hwy 92 Bridge	Beach Access	214 - 7
S Ridgewood Ave	4.8	W International Speedway Blvd (US 92)	Ocean Ave	988 - 49
Howland Blvd	6.4	Catalina Blvd	Fort Smith Blvd	730 - 33
Saxon Blvd	0.8	W Normandy Blvd	Sterling Silver Blvd	206 - 9
N Ridgewood Ave (US 1)	1.2	Mason Ave (SR 430)	W International Speedway Blvd (US 92)	439 - 14
Mason Ave (SR 430)	4.2	N Williamson Blvd	N Beach St	1367 - 49
Orange Ave	1.4	S Nova Rd	S Beach St	413 - 12
W Intl Speedway Blvd (US92)	5.5	Tomoka Farms Rd	N Beach St	2761 - 73
N Nova Rd (SR 5A)	1.6	3rd St	Volusia Ave (US 92)	679 - 22
S Nova Rd (SR 5A)	3.8	Madeline Ave	S Ridgewood Ave (US 1)	666 - 66

2024 DATA

TOTAL CRASHES

While the crash trends analysis relies upon crash data from 2019 to 2023, preliminary crash data from 2024 is summarized in **Tables 7 and 8**. In comparison to the previous year, the total number of crashes increased from 1,679 in 2023 to 1,932 in 2024 (15.1%) in Flagler County and decreased from 11,841 in 2023 to 10,813 in 2024 (-8.7%) in Volusia County. While total crashes increased in Flagler County from the previous year, there was a decrease in both the total number of KSIs, from 63 in 2023 to 61 in 2024 (-3.2%), and the KSI rate (-0.6%).

TABLE 7: CRASH SUMMARY 2024 – FLAGLER COUNTY

Year	No Injury	Injury[1]	Severe Injury[2]	Fatality	Total	KSI Total	KSI Rate[3]
2024	1,288 ▲	583 ▲	49 ▲	12 ▼	1,932 ▲	61 ▼	3.2% ▼

Source: Signal 4 Analytics

1: Injury includes crashes that were defined as "Non-Incapacitating Injury" and "Possible Injury."

2: Crash records use the label "Incapacitating Injury"

3: KSI Rate is calculated as the percentage of crashes in each category resulting in a KSI.

TABLE 8: CRASH SUMMARY 2024 – VOLUSIA COUNTY

Year	No Injury	Injury[1]	Severe Injury[2]	Fatality	Total	KSI Total	KSI Rate[3]
2024	7,579 ▼	2,885 ▼	267 ▼	82 ▼	10,813 ▼	349 ▼	3.2% ▼

Source: Signal 4 Analytics

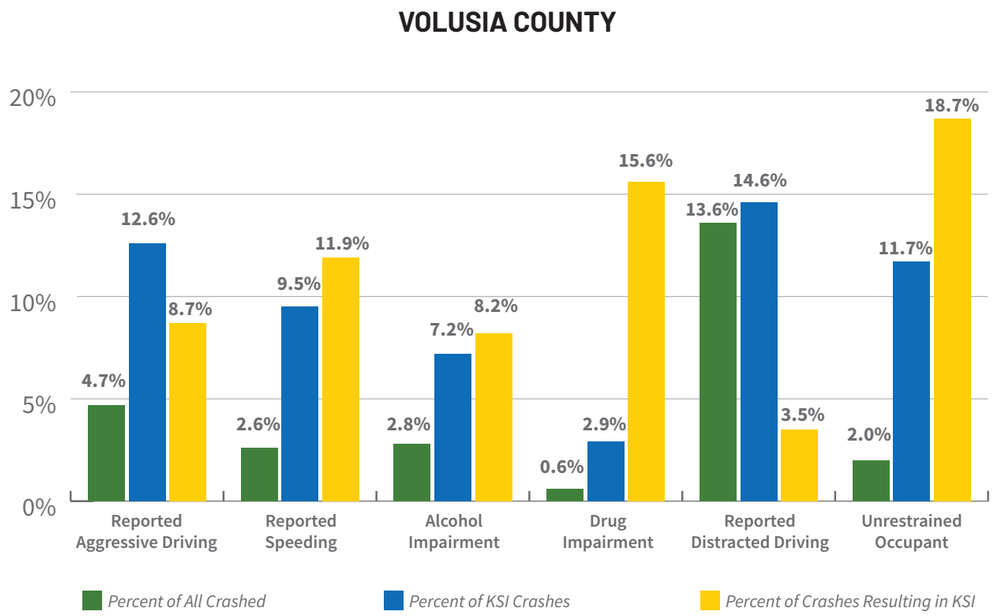
1: Injury includes crashes that were defined as "Non-Incapacitating Injury" and "Possible Injury."

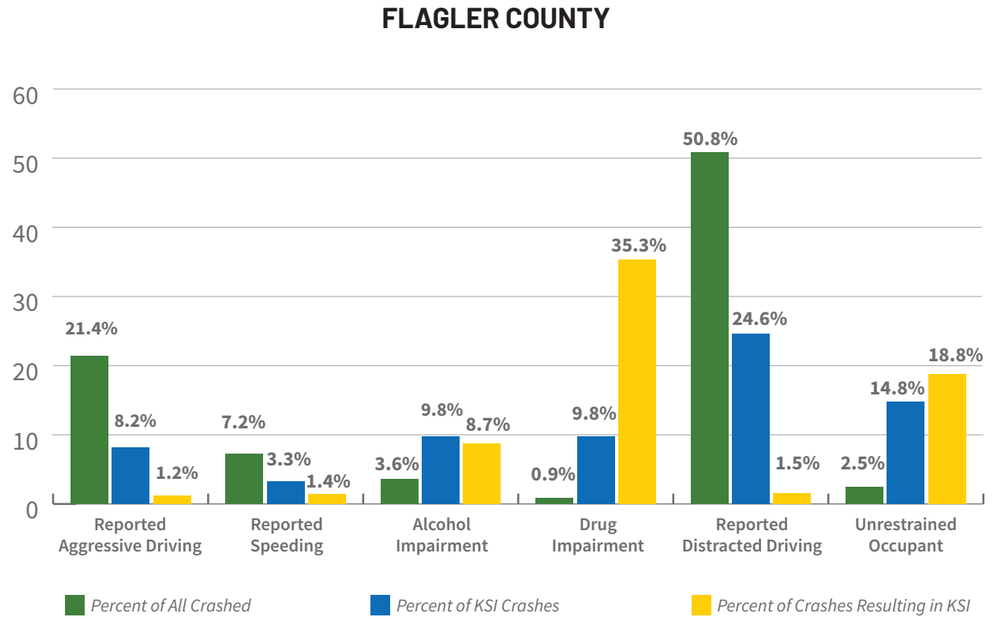
2: Crash records use the label "Incapacitating Injury"

3: KSI Rate is calculated as the percentage of crashes in each category resulting in a KSI.

Car crash between two SUVs

FIGURE 7 – CRASHES BY BEHAVIORAL FACTORS (2024)





Source: Signal 4 Analytics

BEHAVIORAL FACTORS

Figure 7 provides an overview of behavioral factors that contributed to crashes for Flagler and Volusia Counties in 2024. At least one behavioral factor was reported for 1,668 crashes (out of total 1,932 crashes) for Flagler County and 2,846 crashes (out of total 10,813 crashes) for Volusia County. Behavioral factors contribution to crashes followed a similar trend as compared to the 2019-2023 crash data. Notable exceptions include a decrease in the KSI rate for drug impairment in Volusia County (from 24% to 15.6%). In Flagler County, the share of KSIs where an unrestrained occupant was reported decreased from 18.9% to 14.8%, while the KSI rate increased from 12.2% to 18.8%.

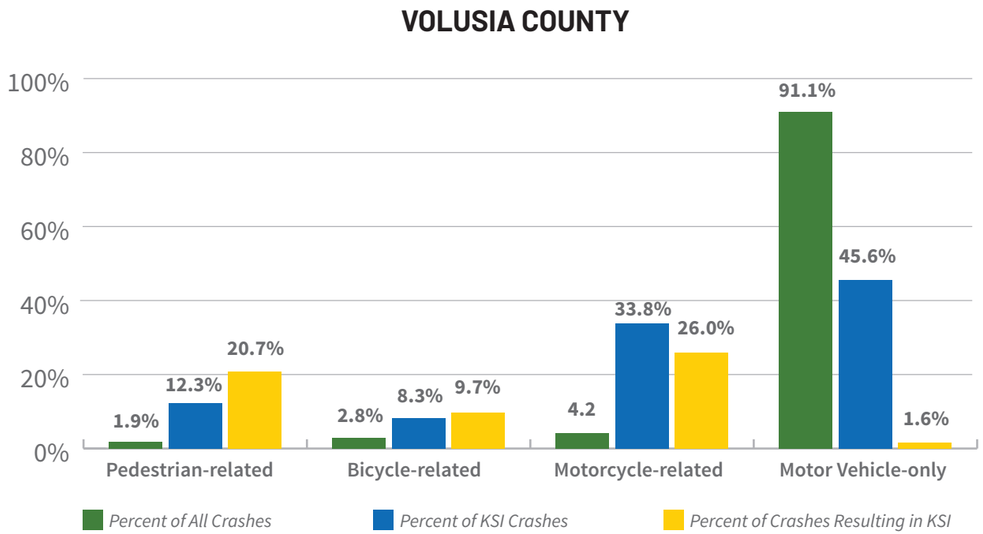
- **Aggressive Driving:** 4.7% of all crashes and 12.6% of KSI crashes in Volusia County listed aggressive driving in the crash report. In Flagler County, while 21.4% of total crashes listed aggressive driving as a factor, this factor accounted for only 8.2% of KSI crashes.
- **Speeding:** 2.6% of all crashes and 9.5% of KSI crashes in Volusia County listed speeding in the crash report. In Flagler County, 7.2% of total crashes and 3.3% of KSI crashes listed speeding as factor, however, the KSI rate for speeding-related crashes in Volusia County is much higher (11.9%) than it is in Flagler (1.4%).
- **Alcohol Use:** In Volusia County, 2.8% of the total crashes involved alcohol, but 7.2% of the total KSI crashes involved alcohol. Similarly, 3.6% of crashes in Flagler reported alcohol use, but these crashes accounted for 9.8% of the total KSI crashes. The KSI rate for crashes involving alcohol is consistently high for both counties (8.2% in Volusia and 8.7% in Flagler).
- **Drug Use:** In Volusia County 0.6% of the total crashes and 2.9% of the total KSI crashes involved drug use. Similarly, 0.9% of crashes in Flagler reported drug use, but these crashes accounted for 9.8% of the total KSI crashes. The KSI rate for crashes involving drug use is the highest behavior related factor in Flagler County (35.3%) and second highest in Volusia County (15.6%).
- **Distracted Driving:** 50.8% of all crashes and 24.6% of KSI crashes in Flagler County involved distracted driving. In Volusia County, 13.6% of total crashes but 14.6% of KSI crashes listed distracted driving as a factor.
- **Unrestrained Occupant:** 2.5% of all crashes and 18.8% of KSI crashes in Flagler County listed unrestrained occupants in the crash report. In Volusia County, 2% of total crashes but 11.7% of KSI crashes listed unrestrained occupants in the crash report. Instances of unrestrained occupants increased the likelihood of fatalities and serious injuries, with a KSI rate of 18.8% in Flagler County, and 18.7% in Volusia County.

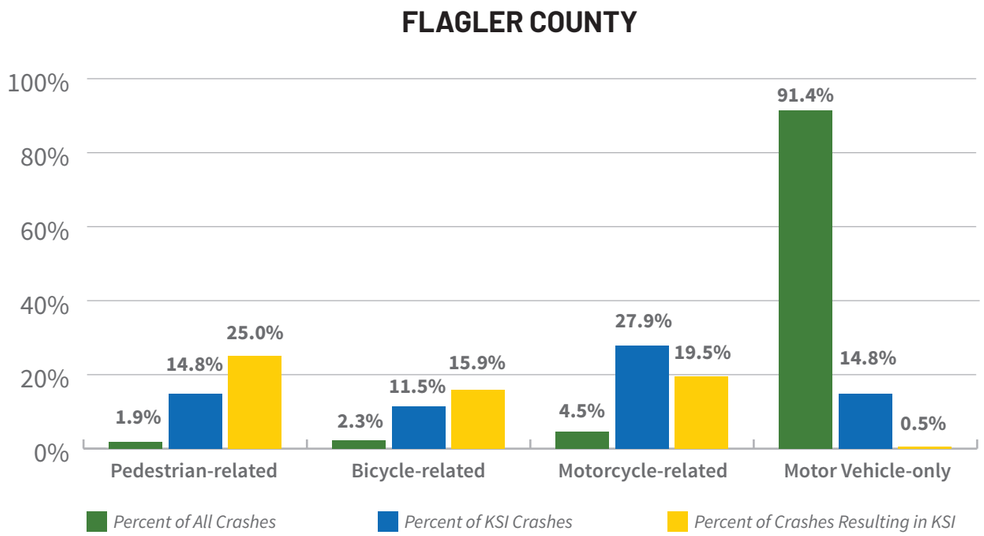
CRASHES BY MODE

Figure 8 summarizes crashes by injury severity and mode for Flagler and Volusia Counties. Motor vehicle crashes accounted for 91.4% of total crashes in Flagler County and 91.1% in Volusia. Motorcyclists were involved in 4.5% of the total crashes in Flagler County and 4.2% in Volusia County. Bicyclists were involved in 2.3% and 2.8% of total crashes for Flagler and Volusia, respectively. Pedestrians were involved in 1.2% of crashes in Flagler County 2.1% of crashes in Volusia County. **The KSI rate for bicyclists and pedestrians in Flagler and Volusia Counties in this time-period (15%) is lower than the previous 2019-2023 average KSI rate (21.3%) as well as the state-averaged KSI rate for 2024 (20.6%[4]).**

[4] Signal 4 Analytics, State of Florida, 2019 - 2023 (https://signal4analytics.com)

FIGURE 8 – CRASHES BY MODE (2024)





Source: Signal 4 Analytics


Woman riding a bike

When compared to the previous 2019-2023 average, **crashes involving vulnerable road users had a greater share of overall crashes in 2024, accounting for about 8.9% of total crashes in Volusia County and 8.6% in Flagler County.** A similar increase was found in the share of KSI crashes for vulnerable users in 2024 compared to the 2019-2023 average at **54.4% of total KSI crashes for Volusia County and 54.1% for Flagler County**.

- **Bicyclists:** Accounted for **2.8% of total crashes compared to 8.3% of total KSI** crashes in Volusia County. Bicyclists were involved in **2.3% of total crashes compared to 11.5% of total KSI crashes** in Flagler County.

- **Pedestrians:** Accounted for **1.9% of all crashes but 12.3% of KSI crashes** in Volusia County. In Flagler, **1.9% of total crashes involved a pedestrian and 14.8% of total KSI** involved pedestrians. **Pedestrians have the highest KSI rate of all modes in Flagler County at 25%** and the second highest in Volusia County at 20.7%.

- **Motorcyclists:** Accounted for 4.2% of all crashes in Volusia County and 4.5% of all crashes in Flagler County. Motorcycle crashes had the **highest KSI rate in Volusia County at 26% and the second highest in Flagler County at 19.5%.** These crashes accounted for the **largest share of total KSI figures in Flagler County at 27.9%** and accounted for 33.8% of KSI crashes in Volusia County.

- **Motor Vehicle Users:** Motor vehicle (cars & trucks) crashes comprise 91.1% of all crashes in Volusia County and 91.4% of all crashes in Flagler County. These crashes represented the largest share of KSI crashes in Volusia County (45.6%) but only the second largest in Flagler County (14.8%). Motor vehicle crashes were **least likely to result in a KSI compared to all other modes** with KSI rates of 1.6% in Volusia and 0.5% in Flagler.

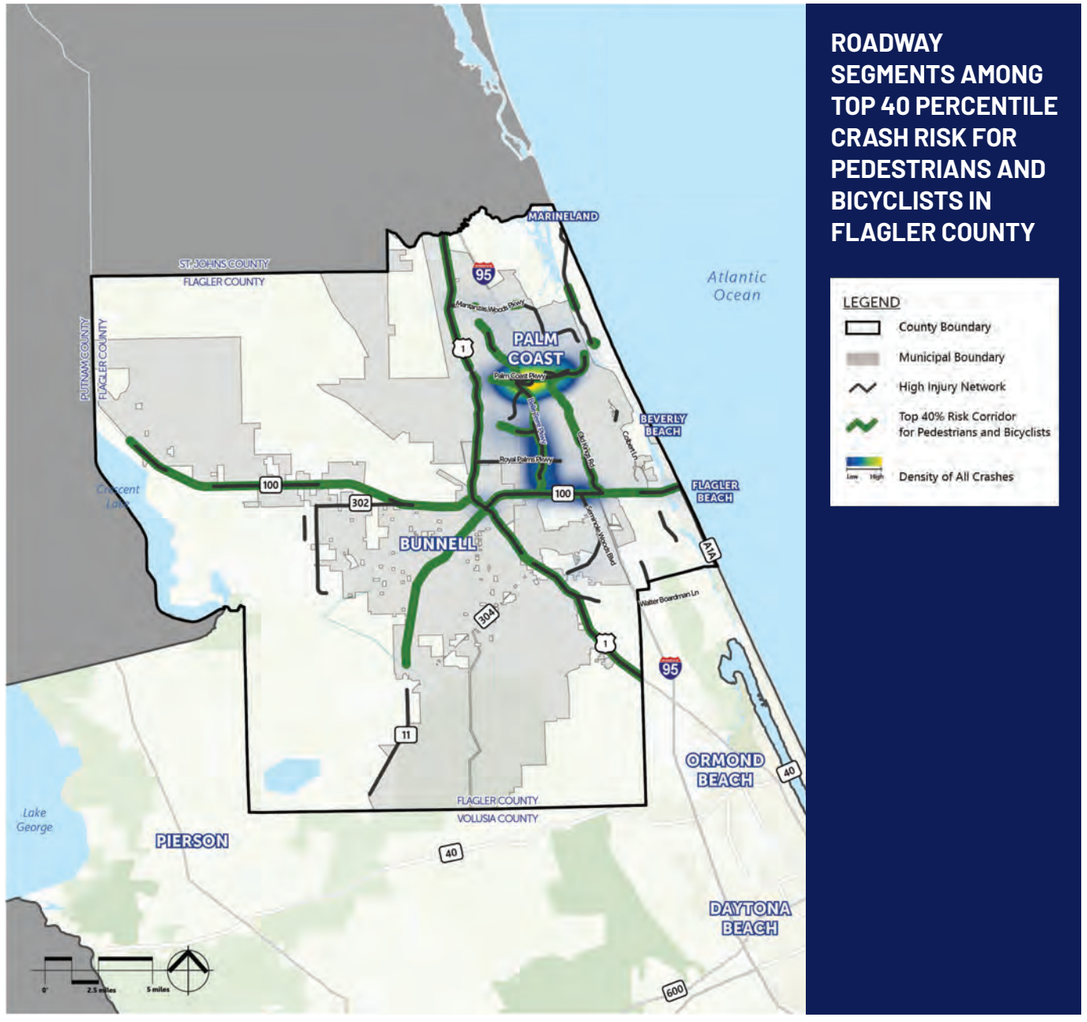
SYSTEMIC ANALYSIS

A Systemic Analysis was completed for this plan as a proactive approach to identify roadways with characteristics that increase the likelihood of fatal and serious injury crashes. This methodology shifts from traditional site-specific crash analysis to evaluating the entire roadway network based on predefined criteria. **The goal of the Systemic Analysis is to identify roadways which may not currently have high crash rates but where crashes are likely to occur**.

This allows for targeted safety improvements beyond the High Injury Network with the hope of preventing crashes before they happen.

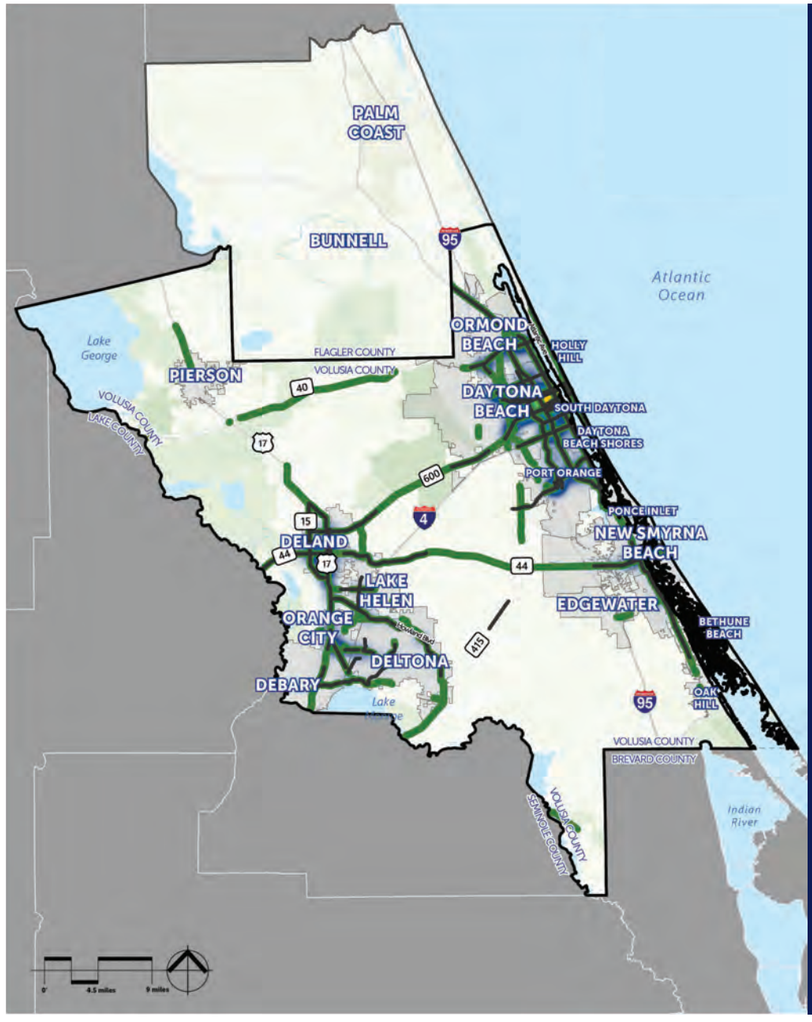
The analysis included a three-step process, identifying focus crash types, determining associated risk factors, and locating areas within the study area where these risk factors exist. Pedestrian and bicycle-related crashes were the primary focus since these crash types are disproportionately represented in fatal and serious injury crashes. A binary logistic regression model was used to conduct a risk factor analysis, estimating the likelihood of pedestrian or bicyclist crashes on specific roadway segments based on design features and environmental conditions. Roadway characteristics analyzed included functional class, average annual daily traffic (AADT), speed limits, number of lanes, and the presence of sidewalk barriers and bike lanes. Additionally, socioeconomic data from the American Community Survey and school locations were considered in identifying areas with increased pedestrian and bicyclist activity.

The analysis results ranked roadway segments by crash probability, with those in the top 40th percentile identified as high-risk areas. These segments are intended to inform project prioritization efforts by integrating them with the top corridors from the High Injury Network, thereby advancing safety measures for pedestrians and bicyclists in Volusia and Flagler Counties.



ROADWAY SEGMENTS AMONG TOP 40 PERCENTILE CRASH RISK FOR PEDESTRIANS AND BICYCLISTS IN FLAGLER COUNTY

LEGEND
- County Boundary
- Municipal Boundary
- High Injury Network
- Top 40% Risk Corridor for Pedestrians and Bicyclists
- Density of All Crashes (Low – High)



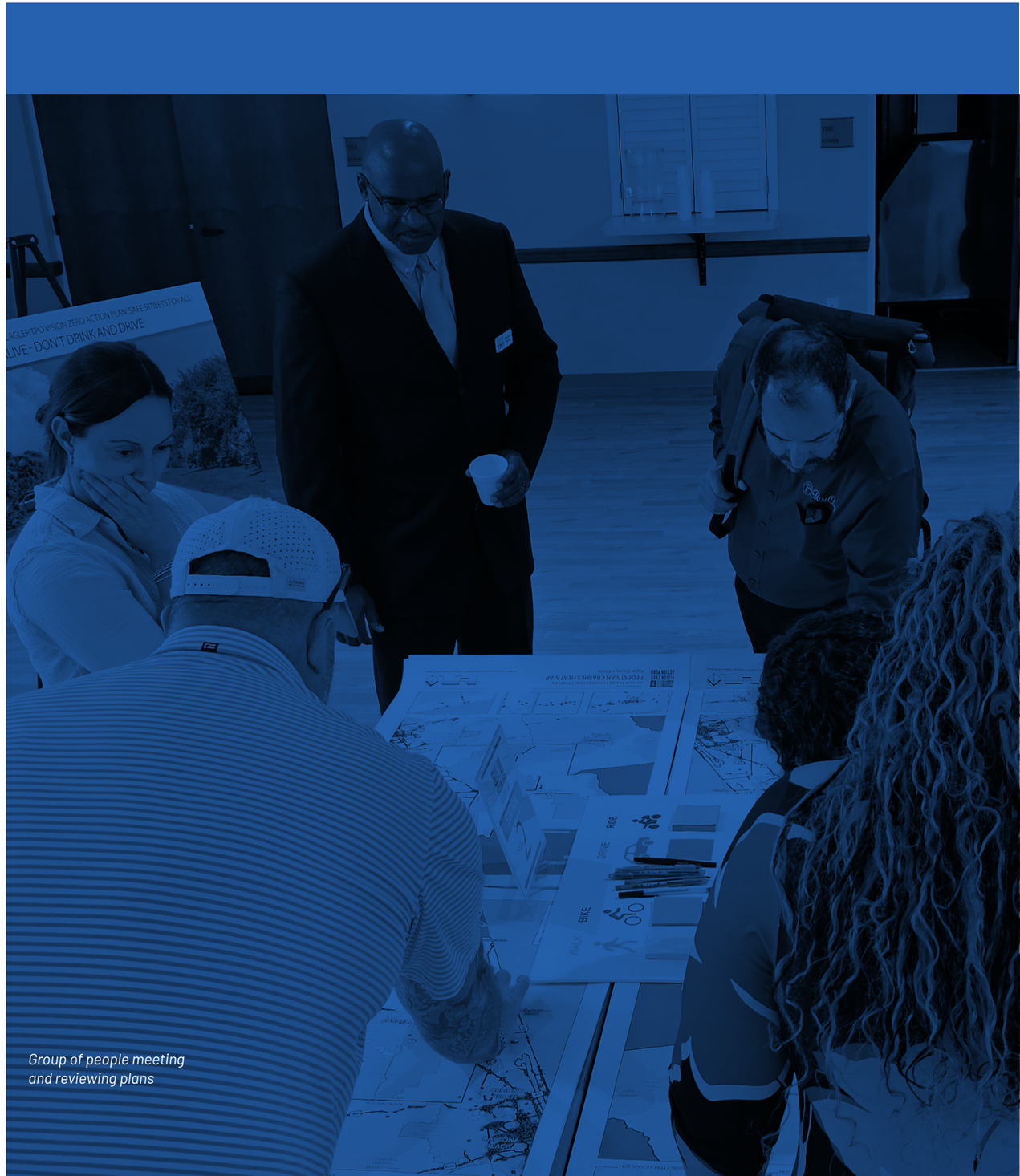
ROADWAY SEGMENTS AMONG TOP 40 PERCENTILE CRASH RISK FOR PEDESTRIANS AND BICYCLISTS IN VOLUSIA COUNTY

LEGEND
- County Boundary
- Municipal Boundary
- High Injury Network
- Top 40% Risk Corridor for Pedestrians and Bicyclists
- Density of All Crashes (Low – High)

PUBLIC ENGAGEMENT AND COLLABORATION

Community Outreach was vital in establishing the Volusia-Flagler TPO Vision Zero campaign and identifying the recommendations outlined in the Action Plan.

The Action Plan's public engagement strategy is organized around a layered approach to offer diverse insight on safety concerns and opportunities. This started with the convening of a Working Group which consisted of key stakeholders and subject matter experts such as transportation engineers, law enforcement representatives, and community advocates who were engaged virtually throughout the Vision Zero process. Three in-person community workshops were conducted to engage the public throughout the Volusia-Flagler TPO planning area. Additionally, the project team provided routine project updates to the TPO's Citizen's Advisory Committee (CAC), Technical Coordinating Committee (TCC), and Bicycle and Pedestrian Advisory Committee (BPAC) with additional opportunity for feedback on crash trends, public input, and planning recommendations.

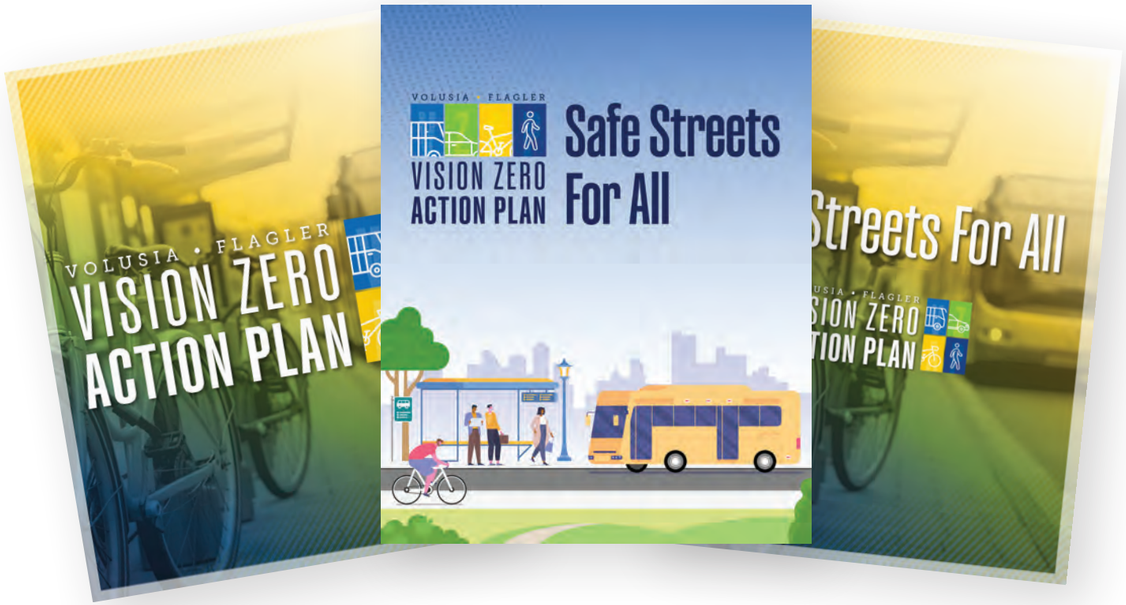


Group of people meeting and reviewing plans

Both the Working Group and the public met regularly to provide essential insights to guide the development of the final plan. Each engagement session was instrumental in identifying the public's top safety concerns, opportunities for improvement, and cataloging the local knowledge and experiences of each participant, and supporting VZAP recommendations that are well-informed and community-driven.

BRAND DEVELOPMENT

The VFTPO Vision Zero Action Plan brand was developed to generate visibility in the campaign and familiarity among the community to achieve comprehensive participation. The VFTPO VZAP branding highlights the various modes of transportation available for mobility around the community, speaking to the core of the effort, and emphasizing that transportation should be safe for every person. Sample photos from the social media campaign are showcased below.



COMMUNITY WORKSHOPS

Community Workshops began with a formal presentation, continued with a group discussion, and concluded with public engagement activities at three separate stations. The presentation gave the public a chance to learn about the goals of the Vision Zero program, terms such as High Injury Network (HIN) and Killed or Seriously Injured (KSI), and the key takeaways from the crash analysis. The content of the presentation provided participants with a base of information to generate the important insight and perspective individuals had to offer on how to best effectuate the change needed to reach the goal of zero fatalities and serious injuries as a result of a crash.

To begin the conversation following the presentation, two questions were asked of attendees:

1. Have you or a loved one been involved in a fatal or serious injury crash?
2. What are your top safety concerns in West Volusia, East Volusia, or Flagler County?

Participants across the three community workshops held had varying responses. Pieces of their stories are shared below:

"Trails need to be considered in transportation safety, especially for those who frequently bike or walk. My crash happened on a trail, and a golf cart was at fault."

"The capacity of our roads sparks concern over traffic safety for me. More and more people move here every day and more congested roads have led to more dangerous driving conditions."

"Speed limits are the biggest concern of mine. Slower driving makes me feel more comfortable as a pedestrian on the road."

The following describes each of the public engagement activities at three separate stations.

STATION 1

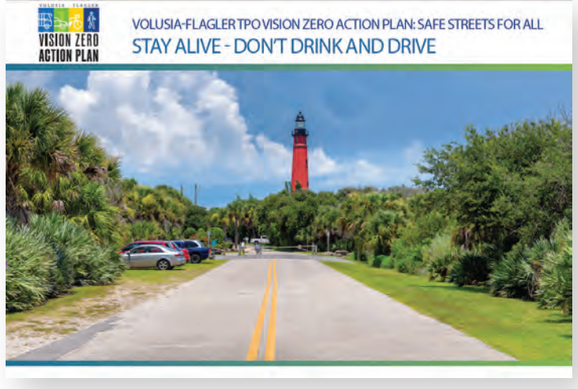
Welcome Table and Introduction to the VFTPO

This station gave participants the opportunity to sign in and provide contact information to the project team, so they were able to stay informed and involved. There were also materials which described the mission and current events of the VFTPO. At the conclusion of the community workshop, each participant passed this station once again and was invited to take home materials which addressed roadway safety.

STATION 2

Identification of Safety Concerns

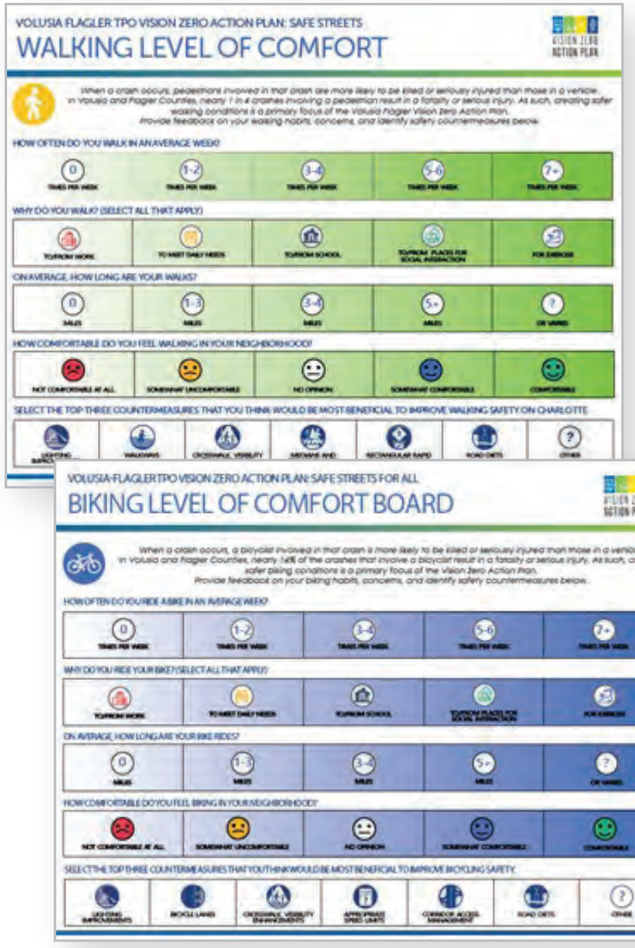
At this interactive station, attendees were able to contribute feedback through sticky notes of different colors, each indicating a concern with a different mode of transportation: walking, biking, motorcycling, and driving. Participants wrote their safety concerns on sticky notes and were able to place them on the available Crash Heat Maps, which were also displayed by mode. A member of the project team was at this station to collect feedback and for personal stories to be shared. To allow attendees to better visualize safety concerns, particularly those related to speed and impairment, a Cone of Vision activity and Dangers of Driving while Impaired activity were set up for use by attendees.



STATION 3

Identification of Countermeasures

Following the identification of attendees concerns, participants were then able to move to this interactive station which focused on the identification of solutions, also known as countermeasures. Feedback was provided on a duplicate set of Crash Heat Maps. Participants were able to choose from a selection of countermeasure tags to place at the locations they felt would be most beneficial. For countermeasures that were not engineering-related, an open response board was available for additional comment on education, enforcement, and emergency services needs. Additionally, participants were also able to interact with Level of Comfort boards which evaluated attendees' feelings of safety and security while walking or biking in their communities and the type of countermeasures that help them feel safe.



RESULTS OF FIRST WORKSHOP

March 20, 2025 – Sanborn Activity Center, DeLand, FL – West Volusia County

Participants at the first community workshop drew heavily on personal experience as many attendees in the room had been in or knew someone who had been in a KSI crash. A large portion of the open discussion focused on trail-related mobility whether that meant biking or walking. Speed limits were also discussed at length, particularly the complex process of attempting to amend a speed limit and coordinating the various layers of government in this process. Finally, a lack of roadway resilience was discussed. Attendees highlighted the over-reliance on State Road 44 as a means of travel for a majority of the population, and with still-rising growth, alternative routes should be considered and expanded upon now to improve flow and safety into the future.

Through the interactive stations, attendees noted the following:

- Areas where roadway elevation posed risks to pedestrians and bicyclists.
- Areas of high congestion and the need for alternate routes to alleviate congestion.
- Points where the HIN intersects with the trail network.
- Visibility issues for pedestrians and bicyclists due to overgrown vegetation.
- Consideration of new and recently more popular forms of micromobility like electric bikes and golf carts which present their own safety concerns to pedestrians and bicyclists as these mobility options move quickly.

RESULTS OF SECOND WORKSHOP

April 3, 2025 – Daytona Beach International Airport, Daytona Beach, FL – East Volusia County

Attendees at the second community workshop were varied in their perspectives, with backgrounds ranging from health care to academia. Participants provided specific insight into safety concerns given various localities around East Volusia County, making the feedback gathered robust. Notably, regional coordination needed to integrate public feedback into the VZAP was a topic discussed at length. Participants expressed safety concerns and congestion experienced connecting into neighboring Seminole County to the southwest.

Through the interactive stations, attendees noted the following:

- Speed limit concerns on several roadways that create unsafe conditions for both pedestrians and cyclists.
- Many students at Bethune-Cookman University are pedestrians in their day-to-day lives and intersections surrounding the University can be dangerous.
- Countermeasures such as improved signage for trails and active mobility options, resurfacing/adding speed bumps, and mandating the installation of sidewalks in all new development were discussed to make current pedestrians and bicyclists more comfortable, but also to encourage more people to use other transportation options.
- Another measure with strong support was the implementation of dedicated bike lanes, especially near beach access points.
- A robust education plan with materials for various audiences including but not limited to, university students, the elderly, and those who have recently relocated to Florida is needed to offer residents of diverse backgrounds knowledge of the best safety practices.

RESULTS OF THIRD WORKSHOP

April 17, 2025 – Palm Coast Community Center, Flagler County

Participants at this workshop broadly discussed the need to implement changes on roadways to accommodate recent growth in the area. The transportation network was originally constructed for a significantly less intense use, and with more cars, bicyclists, and pedestrians on the road, important changes like adding signals at high traffic intersections and planning for safety around schools and parks have become essential. Participants were also curious about how this plan will fit into the other active plans at both the TPO, county, and city/municipality level, as they are eager to implement the changes being discussed, because growth is still moving quickly.

Through the interactive stations, attendees noted the following:

- The safety concerns reported on roadways were largely attributed to aggressive and/or distracted driving and increased congestion.
- The restriction of left turn movements by closing medians was an important potential countermeasure discussed to discourage vehicles racing across oncoming traffic.
- Countermeasures such as installing sidewalks in subdivisions where feasible and providing thorough education on road safety to school-aged children were mentioned as top priorities. Close behind in priority are securing the level of visibility at crosswalks and intersections, and mitigating issues caused by overgrown foliage and vehicles blocking visibility.

Second community workshop

KEY TAKEAWAYS FROM WORKING GROUP MEETINGS

Throughout the project, a wide range of key stakeholders from the VFTPO planning area served as members of the Working Group which held meetings throughout the planning process to coordinate work efforts, receive project updates, and provide feedback on the progress and direction of the VFTPO VZAP. The Working Group consisted of diverse subject-matter experts, including city planners, law enforcement representatives, traffic engineers, municipal partners, and community organization leaders, who were brought together to guide the development of the Vision Zero Action Plan. Each member's unique experience created a source of interdisciplinary expertise and knowledge which provided a comprehensive look into roadway safety and the methods which would be most effective in addressing the various factors that contribute to traffic-related injuries and fatalities.

The Working Group was brought together on three separate occasions. These meetings consisted of tasks such as reviewing crash data, sharing best practices, and fielding the feasibility of varied countermeasures based upon existing conditions. By involving experts with varied perspectives and specialties, the Working Group was instrumental in supporting development of an Action Plan consistent with comprehensive industry-leading best practices, but also relevant to the needs and conditions of those who live, work, and play in the VFTPO planning area.

The overarching goal for the Working Group was to identify effective strategies which will mitigate the areas of highest risk, enhance roadway infrastructure, and promote safe transportation behaviors among road users. The Working Group's guidance served to shape policy recommendations and identify targeted countermeasures needed to promote a safer, more resilient transportation network for all modes of transportation.

- **Project Kick-off Meeting**
  December 2024
- **First Working Group Meeting**
  January 2025
  Background on the Vision Zero Initiative, Visioning the Role of the Working Group, and Preliminary Data Overview
- **Second Working Group Meeting**
  March 2025
  Reviewing the HIN, Crash Trends, and Public Engagement Takeaways
- **Third Working Group Meeting**
  May 2025
  Confirm Countermeasure Recommendations and Review Draft VZAP

Some of the key discussions throughout this series include:

- Many of the Working Group members noted congestion, aggressive, and distracted driving as prominent issues throughout the planning area, attributing a potential cause of these behaviors to increased, rapid growth in recent years.
- Working Group members who bike and walk frequently themselves noted the need for an interconnected and safe transportation network for those not in vehicles.
- Posted high speed limits throughout the counties in the planning area were discussed, feeding into unsafe conditions for road users.
- Countermeasures discussed include lane narrowing, mid-block crossings, with special considerations for crossings located at a bridge or in an area of elevation change, and speed management practices.

WORKING GROUP MEMBERS

VOLUSIA COUNTY

Maggie Ardito, BPAC

Jason Aufdenberg, BPAC

Emery Jeffreys, BPAC

Sean Castello, Engineer, Volusia County Traffic Engineering

Jay I. Williams, Division Director, Volusia County Traffic Engineering

Ralf Heseler, Transit Planning Manager, Volusia County Transit Services Division

Matthew Mehalko, Special Events Coordinator, Volusia County Sheriff's Office

Robert Voges, Planning Coordinator, Volusia County Schools

VOLUSIA COUNTY MUNICIPALITIES

Gwyn Herstein, TCC (Daytona Beach Shores Representative)

Jonathan Knight, TCC (Deltona Representative)

Terry Lodge, BPAC (DeBary Representative)

Becky Mendez, TCC (Orange City Representative)

Nic Mostert, BPAC (New Smyrna Beach Representative)

Gayle Belin, BPAC (Ormond Beach Representative)

Fred Heyne, CAC (Ormond Beach Representative)

Emily Nice, CAC (Daytona Beach Representative)

Belinda Williams-Collins, TCC (DeLand Representative)

Brian Woodworth, TCC (Daytona Beach Representative)

Nancy Epps, BPAC (Ponce Inlet Representative)

FLAGLER COUNTY

Larry Coletti, BPAC (Flagler County Representative)

Jonathan Dopp, Commander, Flagler County Sheriff's Office

Simone Kenny, TCC (Flagler County Representative)

Hamid Tabassian, County Engineer, Flagler County Government

Trevor Martin, General Services Manager, Flagler County Government

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FLAGLER COUNTY MUNICIPALITIES

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Humayun Khawaja, CAC (Palm Coast Representative)

Phong Nguyen, TCC (Palm Coast Representative)

VOLUSIA-FLAGLER TRANSPORTATION PLANNING ORGANIZATION

Colleen Nicoulin, Executive Director, Volusia-Flagler TPO

Stephan Harris, Transportation Planner-Project Manager, Volusia-Flagler TPO

Pamela Blankenship, Community Outreach/ Title VI Coordinator, Volusia-Flagler TPO

Andy Dance, TPO Board/Flagler County Board of County Commissioners

Matt Reinhart, TPO Board/Volusia County Council/ TDLCB Chair

STATE - AND FEDERAL – LEVEL

Loreen Bobo, Safety Administrator, Office of Safety, FDOT, District 5

Stephanie Phillips, Bicycle & Pedestrian Coordinator, FDOT, District 5

Stephen Civitelli, Director, Florida Department of Health in Volusia and Flagler Counties

Lauren Torres, Program Technical Advisor (Roadway Practice), National Safety Council

COMMUNITY ORGANIZATIONS AND CITIZENS

Emily Bush, Executive Director, Bike/Walk Central Florida

Mackenzie Anderson, Program Coordinator, Bike/Walk Central Florida

Steve Williams, Concerned Citizen

VIRTUAL ENGAGEMENT – PUBLIC SURVEY AND RESULTS

The VFTPO created a public survey to distribute throughout the region to gather even more feedback from residents, bridging the gap for those who could not attend the in-person public workshops.

The survey distributed was comprised of six questions. They are as follows:

1. What corridors do you think are the most dangerous in Volusia County or Flagler County? Explain why. Feel free to review the crash maps provided on our website titled "VFTPO VZAP Crash Maps" to gain insight on the locations of crashes across the region.
2. What corridors do you think are the safest in Volusia or Flagler County? Explain why.
3. In your opinion, what engineering opportunities exist to improve transportation safety across the region (e.g., high emphasis crosswalks, trail improvements, lighting upgrades, speed management strategies, specific intersection improvements, etc.)? Feel free to review the countermeasure identification board to gain additional insight into potential safety solutions.
4. What educational or enforcement campaigns do you think would be effective in improving transportation safety across the region (e.g., helmet fittings, speed feedback signs, neighborhood slow zones, social media campaigns, etc.)
5. Where would you specifically like to see transportation safety improvements made?
6. Please leave any additional thoughts or information.

Overall, respondents overwhelmingly identified the most dangerous corridors to be US 17/92 through DeBary and DeLand, as well as the entirety of International Speedway Blvd. to the east of Volusia County. Both SR 100 and A1A in Flagler County had a significant proportion of the responses as well. Following, SR 44 was identified as well as Saxon Blvd., Enterprise Rd., and any school properties and the surrounding areas.

Conversely, many respondents highlighted US 1 and Beach St. for an elevated level of comfort due to low business traffic and recent improvements like narrowed lanes, slower speeds, and enhanced pedestrian crossings.

To create even safer roadways throughout the network, respondents identified slower speed countermeasures like dedicated neighborhood slow zones, increased signage including speed feedback signs, and increased enforcement presence to get drivers to slow down across the region. Respondents also mentioned the need for more public education on how to be a safe pedestrian and cyclist, especially for younger road users. Public transit was also mentioned, with a respondent advocating for increased ridership on Sunrail, getting more individuals out of single-occupancy vehicles and on to the transit system.

Respondents indicated that these improvements would do the best first on routes close to the beach, protecting the large pedestrian and cyclist population. Following, in indicated importance would be Moody Blvd. throughout DeBary, SR 44 in New Smyrna Beach, and Nova Rd. Generally, these safety measures were indicated to be improvements if installed at existing bike and pedestrian facilities.

Group of people talking

EQUITY ANALYSIS

Everyone has the right to safe transportation that is available, accessible, and affordable.

To support the safety goals and initiatives adopted by the Volusia Flagler TPO and align with Vision Zero values, future transportation decisions should consider the health and well-being of communities. Evaluating transportation through this lens can be challenging as there are many potential variables and impacts to consider.

Intersection of Pine St. & Flagler Ave.
- New Smyrna Beach, FL

GUARDIANS OF THE CROSSWALK: KEEPING KIDS SAFE NEAR SCHOOLS

The Vision Zero effort aims to make roadways safer by planning for and implementing actions that accommodate for the mistakes humans inevitably make. A component of this planning involves understanding that humans are vulnerable, especially within the transportation system.

Some of our most vulnerable roadway users are children. In travelling to or from school, students who walk, ride their bike, or get picked up and dropped off by a school bus, can experience unsafe conditions, especially in the absence of countermeasures like continuous sidewalks and protected bike lanes.

National efforts like the Safe Routes to Schools Partnership have continually worked to make it "safe, convenient, and fun, for children to walk and bike to school." In the VFTPO planning area, many community members have taken action toward accomplishing these goals where they live. Usually, one of the first steps toward fostering a safer roadway for pedestrians and cyclists is to conduct a Roadway Safety Audit (RSA). An audit involves walking and examining the corridor for potential safety concerns ranging from uneven sidewalk pavement to noncontinuous bike lanes, and even lack of lighting or proper and visible crossings.

In Flagler County, current County Chair Andy Dance has been a vocal champion for the implementation of these RSAs. As a previous member of the School Board and throughout his involvement in public office, County Chair Dance has been a strong supporter of creating a safer pathway to school– regardless of how children travel. This drive to foster safer conditions for students stems from tragic crashes in the Palm Coast community which recently claimed the lives of one elementary and one high school student. Over the years, he has led several walking audits around elementary, middle, and high schools in the area. These walking audits have generated findings that have catalyzed the repainting of crosswalks, the improvement of lighting, and the removal of dangerous tree limbs.

Crossing guard helping children riding bikes cross the street

LOCAL RELEVANCE – A SNAPSHOT OF VOLUSIA AND FLAGLER COUNTY

Each county in the VFTPO planning area has unique qualities and characteristics, which together help to explain roadway safety concerns and offer important insight on context-sensitive recommendations.

Volusia County has almost triple the land mass than that of Flagler County and just under half a million more people. In both counties, senior residents make up a large portion of the population, inclusive of those who have lived in their communities for many years, to those who spend a portion of their year in the community and may even be thinking of relocating full time from other locales. Flagler County has a larger portion of seniors who use their residence seasonally and live in more metropolitan areas such as Palm Coast or Flagler Beach. In Volusia County, there are more seniors who once lived in the county for a portion of the year but have now moved permanently to the area. Usually, this group of seniors tends to live in a more rural setting rather than an urban one.

Both counties are home to younger groups of people as well with family-oriented households being common. In Flagler County, younger families make up a larger portion of the community, where households, usually with children, value a semi-rural locale like that in the City of Bunnell and area surrounding Cody's Corner. In Volusia County, families tend to be older, some households having children, and some do not. These families have likely remained in the same home and community for years.

In Flagler County, suburban living is very common in surrounding cities like Palm Coast and Flagler Beach, with semirural preferences following close behind. In Volusia County, preferences are more varied. Suburban living is still the most common in places like DeLand and Deltona, however , metro city living follows close behind in places like Daytona Beach and New Smyrna Beach. While seniors and established families make up a large portion of the community in Volusia County, there is also a smaller but notable portion of the community which are younger, sometimes have families but are more often members of single households and live in some form of multi-family housing. This group, on average, is more likely to rent their living spaces than own them.

A Closer Look at

VOLUSIA & FLAGLER COUNTIES

Volusia County	Flagler County
Area in Square Miles: 1,432 square miles	**Area in Square Miles:** 570 square miles
2025 Population: 611,741	**2025 Population:** 140,801
2050 Population: 709,900	**2050 Population:** 196,600
2025 Population Below 18: 99,460	**2025 Population Below 18:** 22,387
2025 Population Above 65: 142,584	**2025 Population Above 65:** 43,225
Miles of Coastline: 47 miles	**Miles of Coastline:** 18.8 miles

LEVERAGING PARTNER BEST PRACTICES

Further demographic analysis conducted across the VFTPO planning area followed the methodology and best practices used by MetroPlan Orlando, a neighboring metropolitan planning organization in Central Florida. Maintaining a consistent methodology creates momentum for pursuing enhanced safety across a transportation network that does not end at jurisdictional boundaries.

The criteria analyzed in the Equity Analysis includes:

- The percentage of population age 75 and above.
- The percentage of households below the poverty level.

- The percentage of female headed households with children under 18 years.
- The percentage of population with disabilities, defined as a person with a disability which includes someone who has a mobility issue and/or self-care limitation.
- The percentage of the population which are minorities.
- The percentage of the population with limited English proficiency (LEP).
- The percentage of households with no vehicle.

All criteria listed were visually mapped using data from the most recent five-year American Community Survey (ACS) at the census tract level. All maps are included in the Appendix.

Where each of the equity indicators are further discussed independently below, a composite equity score was created for each census tract, reflecting above average equity concerns where transportation equity focus areas overlap. As shown in Figure 9, the analysis reveals that equity criteria are strongly correlated with the HIN. Several key HIN corridors are located in the areas of highest concern with 6-7 equity areas, such as Palm Coast Parkway and Belle Terre Parkway in Flagler County; and Saxon Boulevard, Mason Avenue (SR 430), S Ridgewood Avenue (US 1), and Nova Rd (SR 5A) in Volusia County.

PERCENT OF POPULATION AGE 75 AND ABOVE

Aging populations were primarily distributed in the urban areas of each county. In Volusia County, aging populations are most densely identified along the coast in communities including Daytona Beach Shores, New Smyrna Beach, and Ormond Beach. In Flagler County, the communities of Flagler Beach and Palm Coast have higher concentrations of individuals 75 and older. Those populations aged 75 and above have a noticeable overlap with populations with disabilities.

PERCENT OF HOUSEHOLDS BELOW POVERTY LEVEL

In both counties, areas where households below the poverty level were more densely concentrated frequently overlapped with the road segments identified in the HIN. In Volusia County, this primarily included the Daytona Beach area, bounded by I-4 to the south, LPGA Boulevard to the north, I-95 to the west and the US 1 corridor to the east. In Flagler County, the highest concentrations of households below the poverty level are located west of US 1 (north of SR 20), and west of SR 11 (south of SR 20). In the analysis, overlap of areas below the poverty level, with minority populations, and with zero-vehicle households, was noticeable.

AARP's Driver Safety Program: Addressing Roadway Concerns and Navigating the Road Ahead

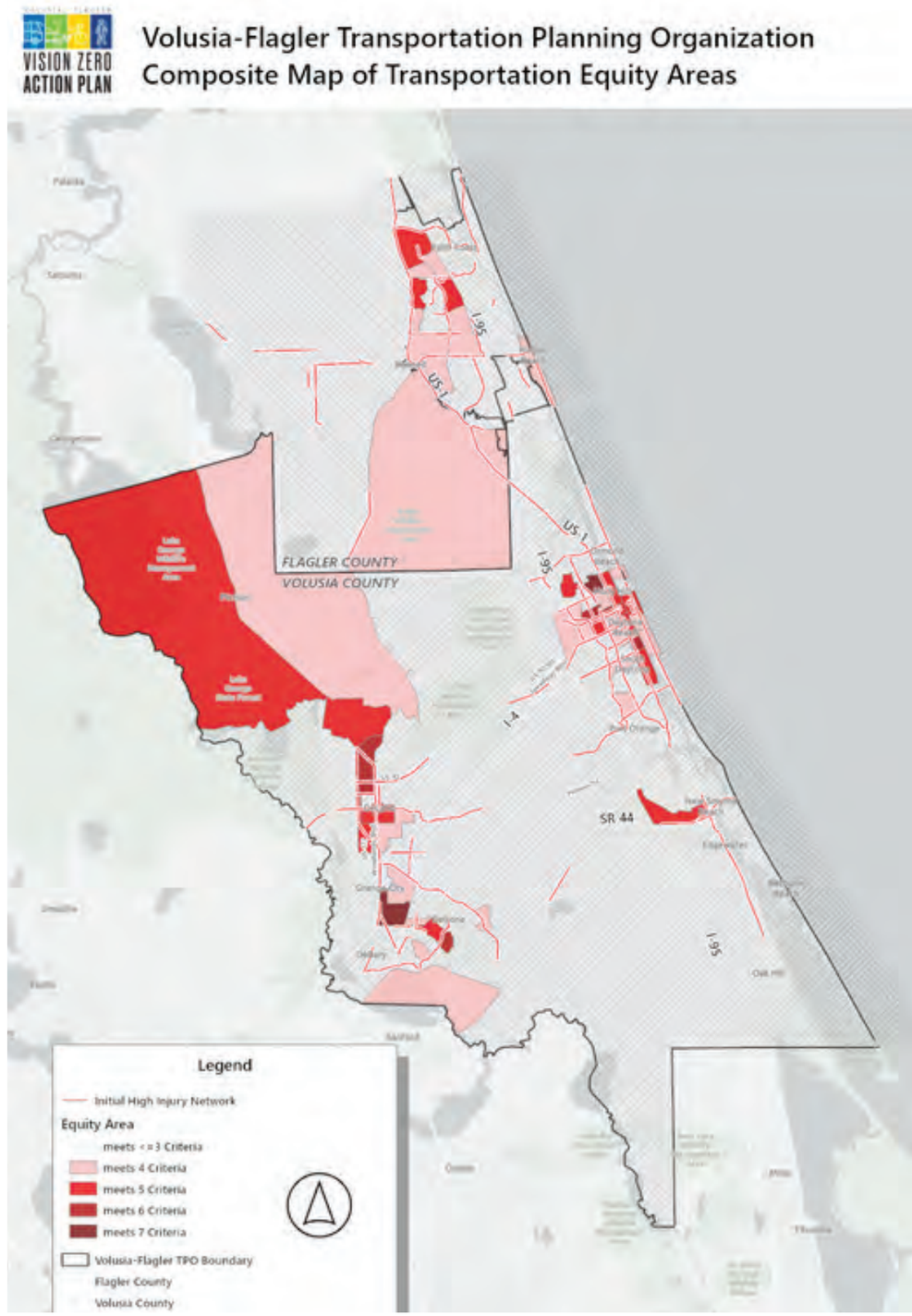
As the population in both Volusia and Flagler Counties continues to age, it will be critical to put targeted safety measures in place for older drivers. As we age, declining vision, slower reaction times, and health conditions such as arthritis can become more likely and can affect our ability to drive.

The American Association of Retired People (AARP) emphasizes the importance of community initiatives such as AARP's Driver Safety program, which offers educational resources designed to help older drivers stay safe on the road. Local policy can also play a role. Potential courses of action include focusing on regular health assessments for driving fitness and creating more efficient public transit systems to reduce reliance on personal vehicles.

Improving road safety for aging drivers can also involve creating more age-friendly communities with enhanced public transit options, clearer road signage and better street lighting. Offering refresher driving courses tailored to older adults can also support higher levels of road safety.

Initiatives like these and alignment with agencies like AARP will be instrumental in mitigating the risks associated with aging drivers and improving road safety for all in the VFTPO planning area.

FIGURE 9 – VFTPO COMPOSITE MAP OF TRANSPORTATION EQUITY AREAS



PERCENT OF FEMALE HEADED HOUSEHOLDS

In Volusia County, female headed households are generally distributed throughout the area, but concentrations are seen along the eastern coast in the communities of Daytona Beach, South Daytona, Holly Hill, and Ormond Beach. In Flagler County, households led by a single mother are primarily located in the west of the county, specifically within northwest Palm Coast. In both counties, households led by a single mother generally correlated with the HIN, especially in more dense urban areas.

PERCENT OF POPULATION WITH DISABILITIES

Where the population of people with a disability is denser, there is some correlation with the HIN. In Volusia County, the distribution of populations with disabilities is more common in the western region, with high concentrations in Orange City and northern DeLand. In Flagler County, populations with disabilities are higher in the western area of the county.

PERCENT OF MINORITY POPULATIONS

According to the US Census Bureau, minority populations include portions of the population other than non-Hispanic white only, including Black, Hispanic or Latino, Asian American, American Indian or Alaskan Native, and Native Hawaiian and Other Pacific Islander. In Volusia County, the highest distribution of the minority population is primarily in the Daytona Beach area. This area has a notable correlation with the segments identified in the HIN. In Flagler County, the highest concentrations of minority populations are found west of I-95 and east of US 1. This area also has a strong correlation with the road segments identified in the HIN.

PERCENT OF POPULATION WITH LIMITED ENGLISH PROFICIENCY

Limited English proficiency includes those who speak, read, write, or understand English at a level of "less than very well" or "not at all" – generally limiting effective interaction in English over native or most comfortable/learned language. In Volusia County, the western region has a more prominent distribution of populations with LEP. In Flagler County, populations with LEP are distributed throughout Palm Coast, concentrated primarily in the areas north of Highway 100/Moody Boulevard and west of US 1. In Flagler County, this is consistent with the HIN.

The criteria analyzed in the Equity Analysis includes:

- The percentage of **population age 75 and above.**
- The percentage of **households below the poverty level.**
- The percentage of **female headed households with child under 18 years.**
- The percentage of the population which are **minorities.**
- The percentage of the population with **disabilities,** defined as a person with a disability includes someone who has a form of mobility issue and/or self-care limitation.
- The percentage of the population with **limited English proficiency (LEP).**
- The percentage of **households with no vehicle.**

PERCENT OF HOUSEHOLDS WITH NO VEHICLE

In Volusia County, the distribution of households without a vehicle is more common along the east coast, within the north and west regions of the county, and north of International Speedway Boulevard. A second notable area of concentration is surrounding academic institutions like Embry-Riddle Aeronautical University, Bethune-Cookman University, and Daytona State College. In Flagler County, households without a vehicle are primarily concentrated along the eastern coastal areas. In each county, there is a correlation between households without a vehicle and the road segments identified in the HIN. However, this correlation is more prominent in Volusia County and smaller in Flagler County.

A Letter from

Dr. Jason Aufdenberg

DAYTONA BEACH RESIDENT

I have lived in Daytona Beach without a car since 2006 and I'm privileged to live close to where I work. Part of my daily 10-minute bike ride to work is on the East Campus Trail that connects my neighborhood to Embry-Riddle Aeronautical University (ERAU). Before 2012, this trail did not exist, and I navigated my bike on the incomplete sidewalk network along the six-lane arterial US 92 and the four-lane arterial State Road 483. Compared to the trail, this experience is unpleasant and noisy. Trails are often the most pleasant part of any bike trip and trails built off the road system provide safe, peaceful connections. In this light, it's exciting that the City of Port Orange is considering an east-west utility corridor trail to connect the City. The local showcase trail system, the St. Johns River to Sea Loop (locally part of the East Coast Greenway linking Key West and Maine) is now complete through Daytona Beach but remains under construction in Volusia and Flagler Counties.

Trails, unlike roads, don't go everywhere and my bicycle trips for errands (grocery store, dentist, movie theater, etc) take me everywhere between Port Orange and Ormond Beach. With my folding bike and public transportation (Votran, VoRide and SunRail) I can access Deland and beyond. Trails connecting all cities wasn't even a thing in the Netherlands until the 1990s, we need to catch up! Current land use plays a big role in how safe and comfortable it feels to travel by bicycle. North of US 92 to Ormond Beach, a residential street grid exists and provides more comfortable routes parallel to the major arterial roads. However, south of US 92, cul-de-sac communities abound. These routes provide mostly narrow sidewalks to be shared by everyone.

What does safety mean?

- To the north, improved safety means marked bike routes and signalized crossings where these routes meet major roads.
- To the south, wide shared-use paths along the arterials with additional countermeasures at intersections including leading intervals for people on bikes and on foot with no right on red.
- Everywhere: lower the target speed and redesign the road to meet this speed.

PLAN RECOMMENDATIONS

Building on the insights derived from crash data analysis and public engagement, the VFTPO VZAP outlines a series of targeted recommendations which support the enhancement of roadway safety on prioritized segments of the HIN.

Recommendations include near-, mid- and long-term countermeasures like improving signage, refining traffic signal timing, enhancing pedestrian crossings, and investing in substantial infrastructure changes to support safer biking and walking. The recommendations are tailored to address the specific needs of the region's road users and are designed to create a safer, more resilient transportation system for Volusia and Flagler Counties, while providing diverse opportunities for future SS4A funding.

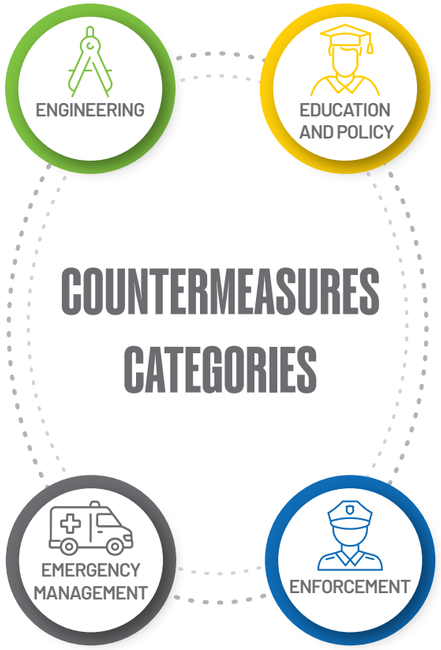
Bicyclist riding in the bike lane

COUNTERMEASURES OVERVIEW

This Action Plan uses countermeasures that aim to address high-risk areas in a strategic way, based on the data driven solutions that can prevent certain kinds of fatal and serious injury crashes. These countermeasures cover a broad range of strategies designed to both respond to and prevent crashes. Countermeasures include engineering actions, educational programs, policy modifications, and enforcement techniques.

Engineering actions directly alter the built environment to create safer conditions, including modifications like lane narrowing, pedestrian refuge islands, rumble strips, improved lighting and signage, and signal coordination. Strategies can also have an impact on roadway user behavior and can include educational programs and more robust, efficient enforcement. These actions may include enhanced driver education programs to encourage safe road usage, public awareness campaigns surrounding dangers like distracted driving and speeding, and a strengthened traffic law enforcement presence.

Non-engineering countermeasures aim to influence roadways users by changing the social environment to encourage or enforce the desired behavior. Strategies can be implemented at a scale to influence large segments of the community through marketing campaigns and high-visibility enforcements which affect the roadway user behavior by increasing their awareness of risk. Education campaigns can also be tailored to raise awareness among specific groups like teen drivers or motorcyclists.



Based upon extensive research conducted to evaluate the effectiveness of reducing crashes, these countermeasures can present great benefit to the roadways within the VFTPO planning area and support movement toward Vision Zero goals. More particular countermeasures within each category are identified through analysis of crash trends and roadway characteristics to both understand the safety issue at hand and identify proven countermeasures that address these issues, for both current residents, and those to come.

ENGINEERING COUNTERMEASURES

Engineering countermeasures focus on the enhancement of or addition to physical roadway infrastructure and facilities. Engineering countermeasure categories are introduced below and accompanied by a case study in either Volusia or Flagler County, where applicable.

SPEED MANAGEMENT

Addressing speed is fundamental to the Safe System Approach which focuses on making streets safer. A growing body of research shows that speed limit changes alone can lead to measurable declines in crashes. To implement appropriate speed limits, first the roadway must be analyzed for safety concerns and conflicts which can include sharp bends, high traffic zones, or locations of community assets like schools.

Additional analysis of surrounding land uses is important, providing opportunity to assign a appropriate speed given an understanding of context classification. Awareness of potential roadway safety concerns then allows for a comprehensive analysis to be undertaken to then identify appropriate design and target speed.

In addition to identifying and enforcing appropriate speed limits, safe speeds can be induced with traffic calming measures such as speed humps, lane narrowing, and/or chicanes. Additionally, continuous monitoring of traffic, roadway conditions, and roadway user behavior can support more careful driving practices. Findings through observations can be reviewed over time to consistently evaluate the effectiveness of the speed choice and implementation and support the identification of amendments if necessary.

ROADWAY DEPARTURE

A roadway departure occurs when a vehicle unintentionally strays away from its designated lane. Roadway departures account for over half of all traffic fatalities in the United States. In Volusia County, approximately 18.9% of the recorded fatalities were identified as off road crashes. In Flagler County, 21.7% of all fatal crashes were recorded as off road crashes. If drivers cannot clearly identify the edge of travel lanes, and see the alignment of the road ahead, the risk of this instance may be greater.

Tools such as roadside barriers, rumble strips, and wider edge lines are all engineering countermeasures that address roadway departures caused by drivers who may be fatigued or distracted. In unfavorable driving conditions, including extreme weather, that increase the risk for sliding or skidding, skid-resistant pavement can add much needed traction, preventing more departures.

SIGNALIZATION AND SIGNAGE

Improvements in signalization are a significant factor in fostering safer roadways. Enhancing elements of traffic control can considerably impact driver behavior, reducing the confusion and uncertainty that can lead to crashes. Clear, visible signage and signal coordination are essential to safe roadways. Updated, highly visible, and where appropriate, dynamic signage can be considered to provide drivers with information and directions that aid them in making informed decisions, especially through high risk intersections.

INTERSECTIONS AND ROADWAYS

Intersections frequently serve as a point of conflict among pedestrians, cyclists, and vehicles, making them a critical aspect in evaluating the enhancement of roadway safety. As the crash analysis revealed, just over one-third of the fatal or serious injury crashes occurred within an intersection. Measures such as enhancing lighting, using larger or reflective signage, creating high visibility crosswalks, providing turn striping, and removing sight obstructions at intersections can significantly minimize crashes. The geometric design of the intersection, too, plays a pivotal role in road safety. Configurations such as roundabouts, traffic islands, raised intersections, and adequate turning lanes streamline traffic flow and minimize points of conflict.

Man and woman crossing the street, New Smyrna Beach, FL

PEDESTRIAN FACILITIES

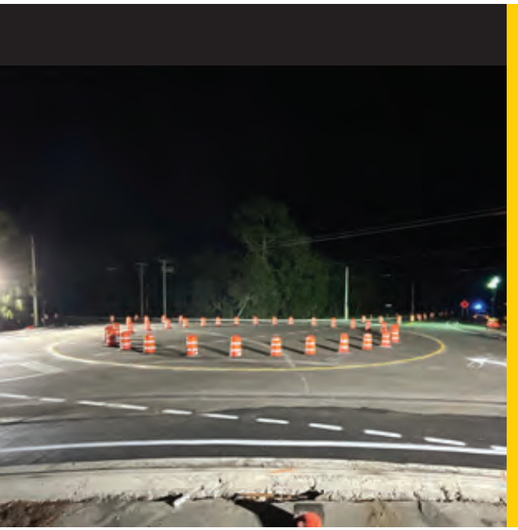
Pedestrian safety countermeasures are crucial in creating safe roadways for all users. The implementation of engineering solutions such as crosswalk enhancements (high-emphasis crosswalk markings, raised crosswalks, pedestrian refuge islands) and signal improvements (pedestrian countdown timers, leading pedestrian intervals) together will help to save lives. The introduction of suitable signage and lighting to enhance visibility and the integration of advanced technology can also support ongoing pedestrian safety. Alongside these, education programs and enforcement of traffic laws contribute to cultivating safer behaviors among drivers and pedestrians alike. These countermeasures, when executed in a comprehensive and context-sensitive manner, can significantly improve pedestrian safety on our streets.

BICYCLE FACILITIES

Supporting bicycle safety is an essential part of envisioning a future with safer roads. Deploying countermeasures such as the creation of dedicated bike lanes, bike boxes, and bicycle-specific traffic signals can help cater to the needs of cyclists on the road and better protect them from harm. Intersection improvements, enhanced signage, and protected paths, particularly along popular routes are important to create good visibility conditions for both bicyclists and motorists. Additionally, innovative technology and regular road maintenance together can promote smooth and obstacle-free bike travel.

CROSS-CUTTING

Cross-cutting transportation safety countermeasures are broad approaches that enhance safety across multiple modes of transport, addressing the needs of motorists, bicyclists, and pedestrians alike. These countermeasures, implemented in an integrated manner, can contribute significantly to making transportation systems safer and more efficient. Examples of cross-cutting engineering countermeasures include various implementations of intersection and roadway lighting, Road Safety Audits (RSAs), and Complete Streets.



Cody's Corner, Flagler County

In Flagler County, the intersection of State Road 11 and County Road 304 has seen numerous crashes resulting in fatalities and serious injuries. What was once a four-way intersection leading to these crashes has now been replaced with a roundabout. Quick-build improvements included barrells, signage, and message boards placed at the intersection to clearly guide roadway users through the intersection in a prepared and safe manner. Future upgrades, including lighting upgrades and refreshed pavement markings are also slated to be completed, further enhancing safety at the intersection. Compared to traditional traffic signals, roundabouts reduce the likelihood of crashes, resulting in a reduction of serious injuries and fatalities by up to 82 percent. Roundabouts also decrease the number of vehicle conflict points where crashes can occur, making the intersection safer for both motorists and pedestrians.

New Pedestrian Facilities in Ormond Beach

Along the A1A corridor, stretching from Milsap Road to Granada Boulevard, there have been continuous safety issues for pedestrians which has spurred the implementation of change. Along the road segment, eight mid-block crossings with raised medians will be installed. At one of the crossings, there will also be a Rectangular Rapid Flashing Beacon (RRFB), and at another crossing, a Pedestrian Hybrid Beacon (PHB).

Each of these countermeasures are intended to bring greater visibility and consideration for pedestrians and also slow the speeds of drivers travelling through the crossings.

EDUCATION AND POLICY

Education is an important non-engineering countermeasure, as it is aimed at fostering road safety awareness and instilling safe behaviors among all road users across the VFTPO planning area. The overall goal of educational strategies is to inform, engage, and influence road users to change habits and attitudes about acceptable behavior when travelling on roadways. Educational efforts usually target specific key factors that contribute to roadway injuries and fatalities in a proactive and preventative manner.

Smart Driving College Challenge

The Volusia-Flagler Transportation Organization (VFTPO) in partnership with the Florida Department of Transportation (FDOT), launched a Smart Driving College Challenge in the months of January through March of 2025. This educational campaign was meant to reward safe drivers who attend one of the four Volusia County colleges and universities with prizes between $25 and $250. The challenge was run through a mobile application where participants could track their individual journeys in the car and be scored for seven various driving behaviors, including speed, phone distraction, swerving, and acceleration.

- AARP's Driver Safety program
- Safe Routes to School
- Pilot Demonstration Safety Projects
- Educational Materials on New Roadway Design
- Education Campaigns Targeting Dangerous Roadway Behavior or Vulnerable Groups
- Bicycle Helmet Fittings
- Safe Teen Drivers Campaign
- Bike/Ped Safety Events
- Educational Materials on Traffic Safety Laws
- Share the Road/Bicyclists May Use Full Lane Awareness Programs
- Ride Share Promotions
- DUI Aware-ness Campaigns
- Vehicle Maintenance Campaign

Policy-oriented, non-engineering countermeasures are a key component in approaching roadway safety as comprehensively and proactively as possible. Policies and regulations should be clear and aligned with continued analysis of crash trends and visions for the community. Supporting the enforcement and education of the public on policies and regulations also set the standard for safe behavior on the roads, connecting to the critical need for educational strategies as a component of selecting and implementing countermeasures, whether engineering, or not.

The initiatives range from public awareness campaigns, school-based programs on driver education, policy needs, and workshops designed to educate around key areas such as distracted driving, impaired driving, speeding, pedestrian safety, and cycling safety. These programs harness various methods and platforms, including traditional media, social media, community events, and in-person training. Each of the education countermeasures should be closely integrated with enforcement, engineering, and policy efforts, creating a comprehensive approach to safety.

The success of educational and policy-oriented countermeasures hinges on effective engagement with local communities, policymakers, stakeholders, and advocacy groups. These collaborations play a crucial role in customizing education efforts to cater to the local context and specific road safety challenges of the communities in the VFTPO planning area.

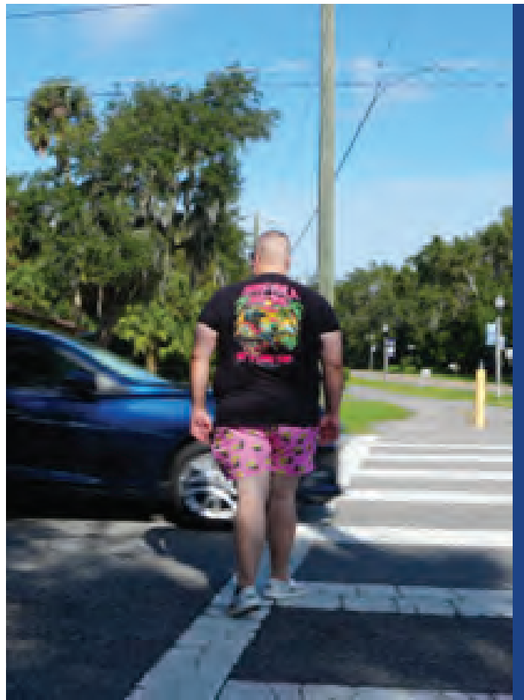
EMERGENCY MANAGEMENT

Countermeasures which consider the necessary involvement and collaboration with emergency management are critical to implementing a well-rounded suite of safety measures. All persons on the road are human – both vulnerable and prone to making errors. Crashes will occur, and while the suite of other countermeasures described here aims to lower the total KSI crashes to zero, emergency management services and first responders aim to provide those in need of medical care or aid from law enforcement the resources to do so. Public education campaigns concentrated on who to call for help, how to accommodate first responders on the roadways both on the shoulder and in transit, and supporting roadway safety that support swift response times for first responders are important in this category.

ENFORCEMENT

Enforcement countermeasures in this VZAP work together with other components to form a holistic strategy aimed at supporting everyone's safety on streets in the VFTPO planning area. These tactics target high-risk behaviors, including speeding, impaired driving, distracted driving, and non-compliance with yielding rules, among others. The emphasis is not solely on punishment, but rather on creating clear incentives for safe, legal behavior and a strong understanding of the consequences of unsafe actions. Data-driven enforcement, primarily focusing on high-incidence locations and high-risk times, is integral to this approach.

Continual monitoring and reevaluation of the effectiveness of these countermeasures will also be crucial. This requires close coordination with law enforcement agencies, traffic operations professionals, and the wider community. Furthermore, it will be crucial that identified passive and active enforcement measures treat all road users equitably, contributing to the overall goal of enhancing trust and cooperation between law enforcement and the communities they serve.



Best Foot Forward Pedestrian Safety Program

Operation Best Foot Forward is a pedestrian safety initiative with the goal that more drivers yield and stop for pedestrians in marked crosswalks. The goal of the initiative is accomplished through implementation of the "three Es" of community education, low-cost engineering, and high-visibility enforcement.

In Volusia County, high-traffic crosswalks in the City of DeBary and the City of Ormond Beach served as two of the project sites for the operation. Volusia County Sheriff's officers were present to issue moving and non-moving violations and warnings for those who did not stop for crossing pedestrians. Flagler County has deployed the same initiative in 2025 at a variety of high-traffic intersections.

The Volusia County Sheriff's Office was awarded the Enforcement Award at the Central Florida Safety Summit in May of 2025 for their Best Foot Forward Operation efforts at the crossing of Ocean Shore Blvd. and Tom Renick Park. Their efforts increased the drivers' rate of stopping for pedestrians to 42%, up from the original 19%.

Car in motion with blurred spedometer

Trenton's Law – CS/HB 687

A Stetson University student named Trenton Stewart was only 18 when he was struck in his vehicle by a reckless and impaired driver travelling on the roadway in the opposite direction. This was not the first time this perpetrator had tragically ended a life due to driving under the influence.

The tragic loss of Trenton Stewart prompted Representative Kim Kendall of District 18 covering the St. Johns District, north of St. Augustine, to file the bill to increase the level of offense an individual who commits a crime like this can be convicted for. Other enhancements and diversion programs are also included within this piece of legislation. This bill was passed in the 2025 session and will hopefully prevent these heart-wrenching experiences.

PRIORITIZATION PROCESS

Safety interventions are more effective when they are strategically planned to optimize the use of resources, including staff time and capital investment. Corridor prioritization is essential as it helps to achieve the highest possible crash reduction, which in turn saves more lives, reduces injuries, and lowers economic losses due to crashes. The prioritization of specific corridors for safety projects helps ensure that countermeasures are both meaningful and cost-effective. Moreover, a focus on corridors with high crash rates along with considerations for vulnerable populations can significantly improve community well-being and ensure that the benefits of improved safety are distributed in a way that benefits all community members.

This plan ranked road segments based on a scoring system that considered safety and community-related factors. It assigned higher scores to segments that had more crashes per mile and higher crash rates, which accounts for roadways with differing traffic volumes. It also favored those segments with more KSI crashes, as well as roadways with more crashes involving pedestrians, bicyclists, and motorcyclists. These roadways are depicted in this section as aerials that display the location of each crash, the crash type, and top factors associated with crashes in this section. The crash data visualized on these cut sheets, combined with the available roadway information, helps to visualize what specific interventions will be most valuable as well as where they should be located.

As an example of how the project team looked to identify countermeasures, we reviewed recent improvements to one of the HIN segments at Oakridge Blvd from N Halifax Ave to Jimmy Buffet Memorial Highway (A1A). The graphic on the next page outlines the crash trends for this corridor as well as the suite of safety improvements deployed by FDOT to enhance safety, walkability, and bikeability along the corridor. These type of improvements help to enhance overall quality of life and the aesthetics of the popular beach destination.

OAKRIDGE BLVD from N Halifax Ave to Jimmy Buffet Memorial Hwy (A1A)

CRASH TRENDS (2019 - 2023)

221 TOTAL CRASHES | 8 KSI CRASHES | 0.5 MILES

LEGEND

HIN · HIN Intersection · Density of All Crashes (High / Low) · Equity Area · Pedestrian KSI Crash · Bicycle KSI Crash · Motorcycle KSI Crash · Motor Vehicle KSI Crash · Bus Route/Stop · Traffic Signal · School · Trail · Railroad Crossing · Midblock Crossing

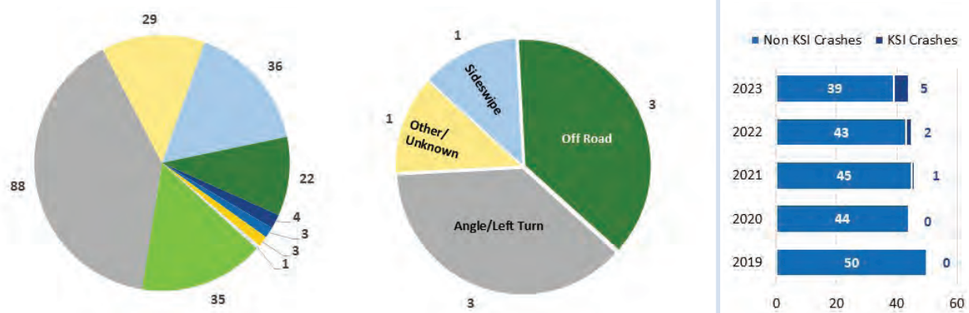
4 Serious Injuries
4 Fatalities

BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	0	0	2	6
Total	4	3	22	192

BY CRASH TYPE

Rear End · Angle/Left Turn · Other / Unknown · Sideswipe · Off Road · Pedestrian · Head On · Bicycle · Right Turn · Rollover · Animal



BY YEAR

OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	0	0	1	0	5
Total	5	13	16	2	95

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

RECENTLY IMPLEMENTED SAFETY COUNTERMEASURES

Starting in 2021, Oakridge Boulevard underwent a Resurfacing, Restoration, Rehabilitation (RRR) Project managed by the FDOT. The project aimed to enhance infrastructure and safety, involving the milling and resurfacing of pavement to meet contemporary standards. It adopted a "Complete Streets" approach by converting the previous 3-lane eastbound roadway into 2 lanes, incorporating a 7-foot buffered bike lane to facilitate diverse modes of transportation. This initiative addressed traffic volumes and existing crash trends while uplifting the urban feel of the beach gateway corridor with crosswalk enhancements and pedestrian signalization. Neighborhood connectivity was enhanced on adjacent Seabreeze Boulevard which retained its 2-lane configuration with a designated bike lane. Together, the improvements created a one-way road system to enhance traffic flow and multimodal improvements.

A list of proven safety countermeasures implemented through this RRR project and other capital investments are highlighted below. These are the type of countermeasures presented for future implementation among other corridors in the Volusia County and Flagler County HIN.

SPEED MANAGEMENT

- Lane narrowing and repurposing
- Posted speed limit signs

SIGNALIZATION

- Mast-arm installation
- Retroreflective borders on signal heads
- Signal coordination

INTERSECTIONS AND ROADWAYS

- Tightened curb radii
- Enhanced landscaping in on-street bioswales
- Dedicated left turn lanes

PEDESTRIAN FACILITIES

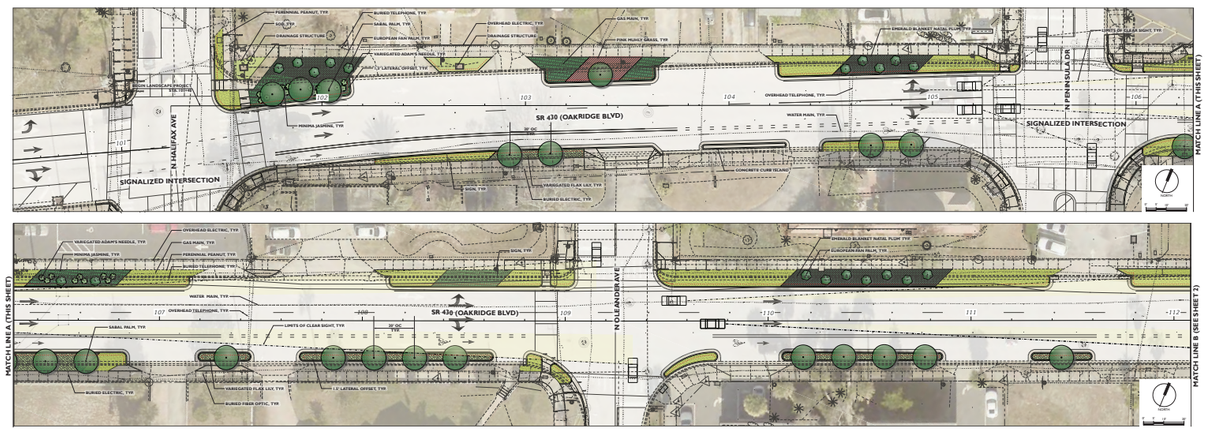
- High-emphasis crosswalks on all legs of intersections
- R-1 series signage
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Advance warning signage for pedestrian crossings
- Complete sidewalk facilities

BICYCLE FACILITIES

- Buffered, green bike lane
- Bicycle pavement markings
- Bicycle signage
- Green striping through intersections

CROSS-CUTTING

- Roundabout or signalization of intersection(s)
- Future Land Use and Zoning revisions



Flagler County

1: PALM COAST PKWY NW/SW from Pine Lakes Pkwy to I-95

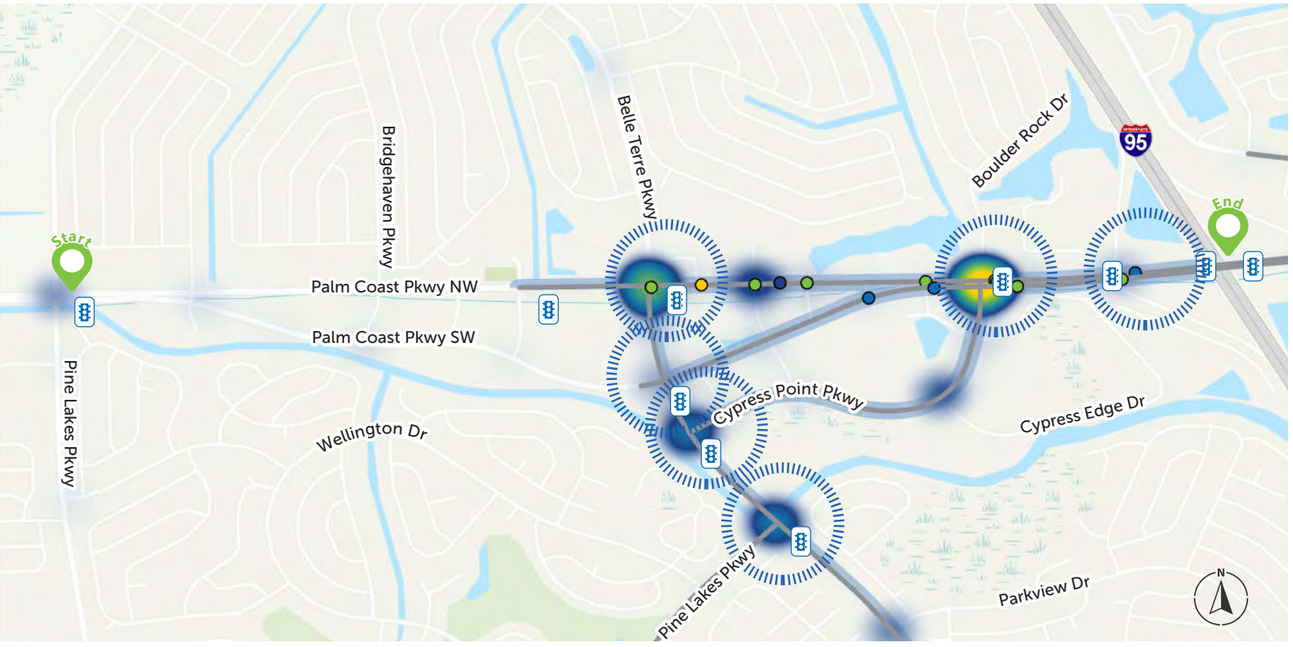
661 Total Crashes | 14 KSI Crashes | 4.0 Miles*

Project Prioritization Score: 62.8

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Principal Arterial
Posted Speed Limit: 45 MPH
Number of Lanes: 2 - 4
Roadway Volume: 10,000 - 20,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: Y
Presence of Medians: Intermittent

Lighting Condition: Lit
Equity HIN Corridor: Y
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

City of Palm Coast Capital Improvement Program: In 2023, a significant roadway improvement was implemented, connecting the traffic signal at Boulder Rock to fiber, enabling integration with the City's traffic signal monitoring server. This enhancement facilitates better traffic management and monitoring capabilities.

SYSTEMIC CRASH FACTORS

Portions of Palm Coast Parkway NW and SW have been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County. Significant risk factors include lack of bicycle lanes and percent of households without a vehicle.

NO BICYCLE LANE **40%** Percentile

NO VEHICLE **40%** Percentile

*Crash trends are only representative of those that occurred on the HIN.

CRASH TRENDS (2019 - 2023)

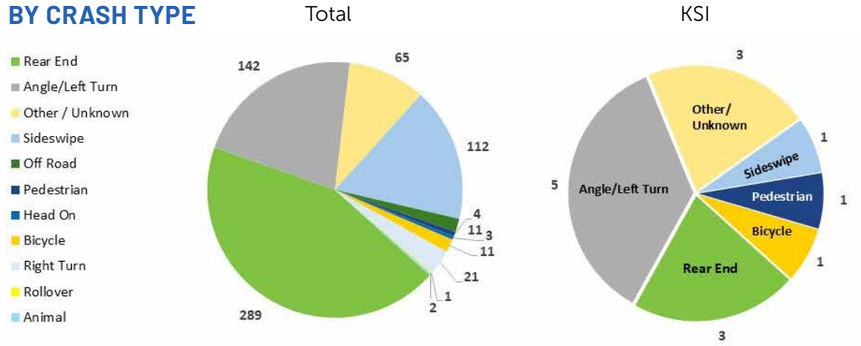
DRIVE SAFELY

11 Serious Injuries
3 Fatalities

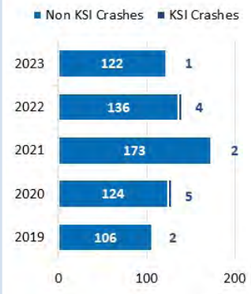
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	1	1	4	8
Total	4	11	18	628

BY CRASH TYPE



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	0	3	1	0	1
Total	4	150	73	3	62

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Sidewalk/trail connectivity study
- Gateway feature with low-cost, quick-build safety improvements
- Install R-1 series signage at signalized intersections
- Road Safety Audit

2030 Planning Level Cost: $1,420,344

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Dedicated left turn lanes
- Directionalization of closure of full access median openings
- Reduced curb radii
- Mast-arm installation
- Access management evaluation
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Enhanced landscaping with canopy trees in existing raised medians
- Pedestrian refuge islands
- Provide advance road name and overhead lane use signage on approach to major intersections
- Interchange Operations Analysis Report Study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

Flagler County

2: OLD KINGS RD N from Farragut Dr to Palm Coast Pkwy NE

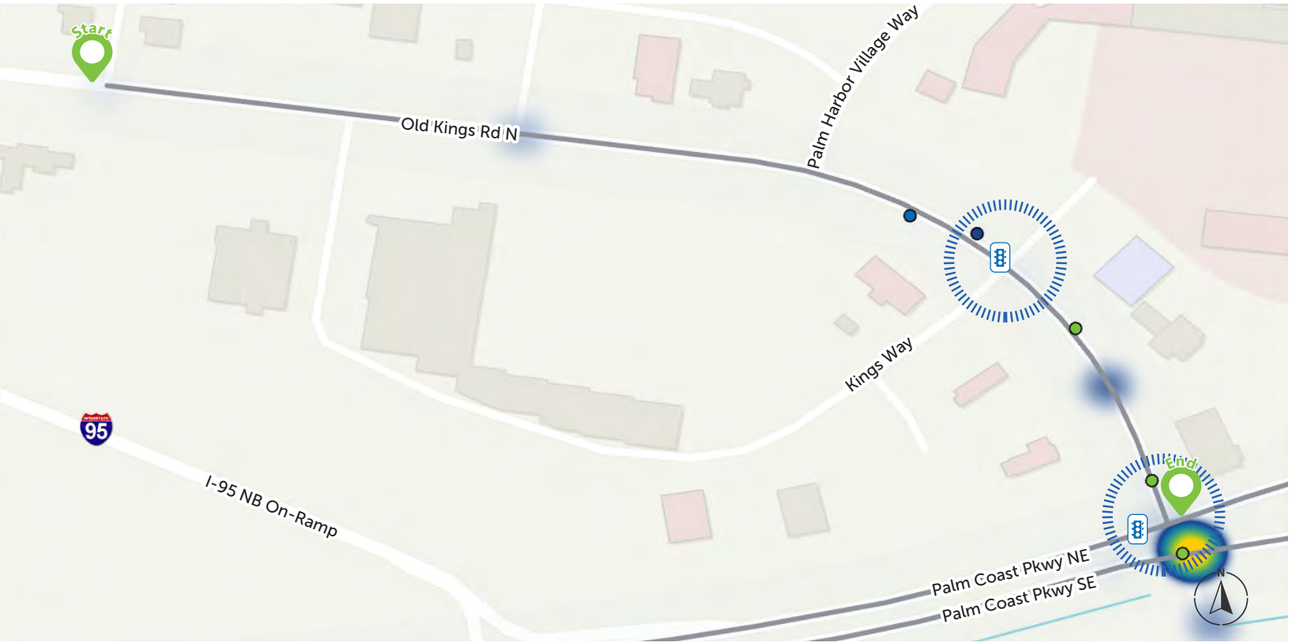
93 Total Crashes | 5 KSI Crashes | 0.4 Miles

Project Prioritization Score: 59.0

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Minor Arterial
Posted Speed Limit: 35 MPH
Number of Lanes: 2 - 5
Roadway Volume: 5,000 - 10,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: Intermittent
Presence of Medians: Y

Lighting Condition: Intermittent
Equity HIN Corridor: N
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

City of Palm Coast Capital Improvement Program: Safety improvements on Old Kings Road involve transforming the existing 2-lane corridor into a 4-lane divided roadway, incorporating features like curb and gutter, raised curbed grass medians, and 8-foot-wide sidewalks. Phase 1 of this widening project has already been completed.

SYSTEMIC CRASH FACTORS

This segment of Old Kings Road was not identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County.

CRASH TRENDS (2019 - 2023)

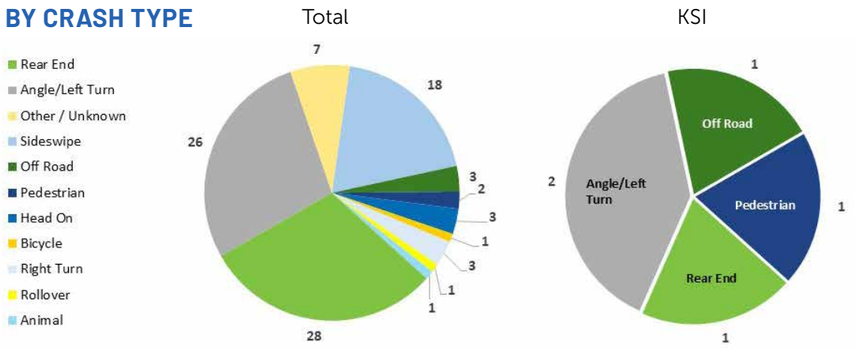
DRIVE SAFELY

5 Serious Injuries
0 Fatalities

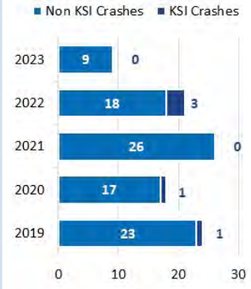
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	1	0	1	3
Total	3	1	1	88

BY CRASH TYPE



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	0	1	1	1	1
Total	3	17	47	4	13

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Sidewalk/trail connectivity study
- Lighting justification study
- Install R-1 series signage at signalized intersections
- Road Safety Audit

MID-TERM (BY 2040)

- Lane narrowing
- Install SafetyEdge
- Dedicated left turn lanes
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Directionalization of closure of full access median openings
- Access management evaluation
- Completion of sidewalk gaps
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands

LONG-TERM (BY 2050)

- Multiuse trail or shared-use path with tree canopy
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

2030 Planning Level Cost: $415,512

Flagler County

3: BELLE TERRE PKWY S from Pritchard Dr to Market Ave

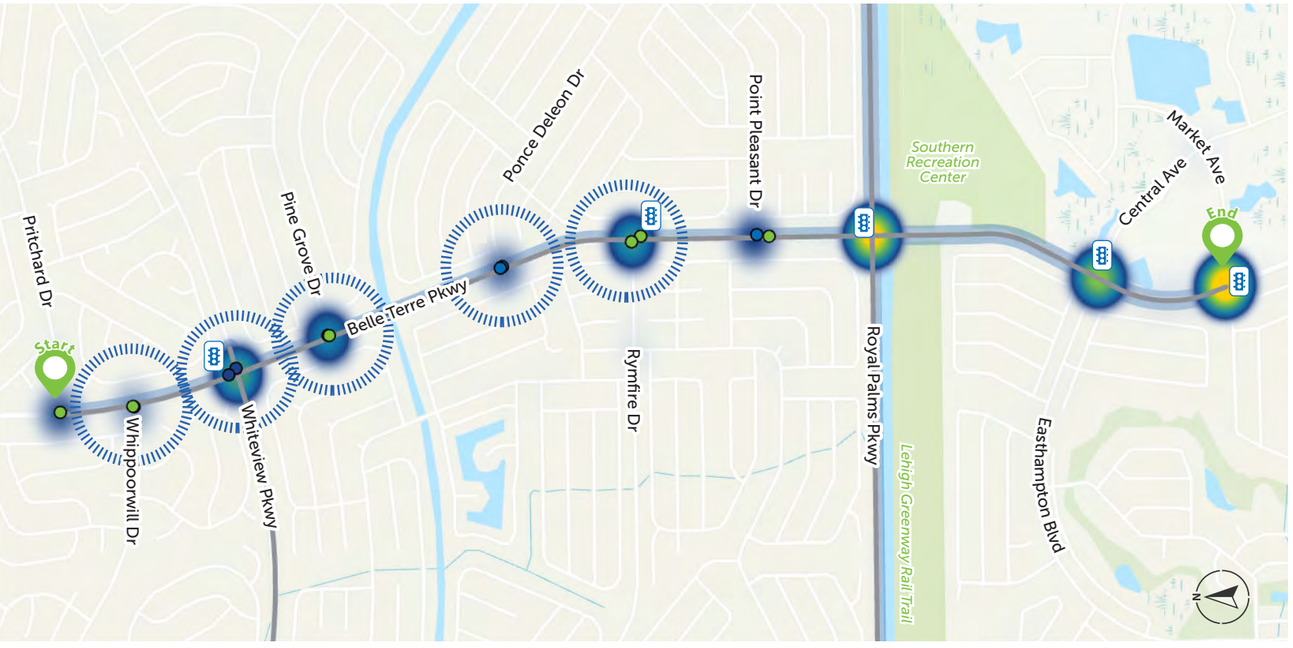
507 Total Crashes | 14 KSI Crashes | 2.7 Miles

Project Prioritization Score: 54.7

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Minor Arterial
Posted Speed Limit: 45 MPH
Number of Lanes: 4 - 6
Roadway Volume: 20,000 - 25,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: Y
Presence of Medians: Y

Lighting Condition: Y
Equity HIN Corridor: Y
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

City of Palm Coast Capital Improvement Program: Future improvements focus on traffic, safety, and access management, prioritizing intersections. In 2022, the city installed a dedicated right turn lane at the East Hampton Boulevard and the left turn signal duration for vehicles was extended, enhancing traffic flow and intersection safety.

SYSTEMIC CRASH FACTORS

Belle Terre Parkway has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County. Significant risk factors include lack of bicycle lanes and percent of households without a vehicle.

NO BICYCLE LANE **40%** Percentile

NO VEHICLE **40%** Percentile

CRASH TRENDS (2019 - 2023)

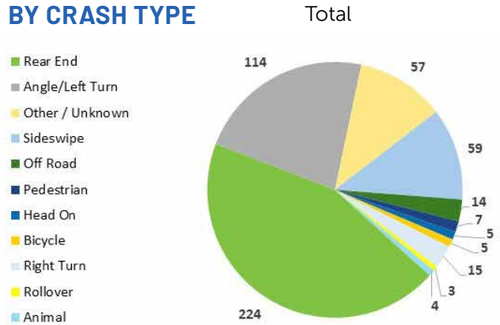
DRIVE SAFELY

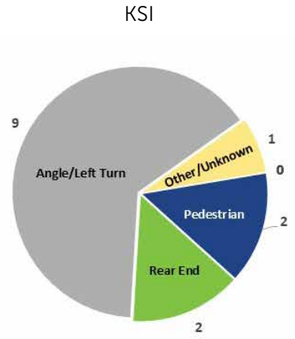
10 Serious Injuries
4 Fatalities

BY MODE

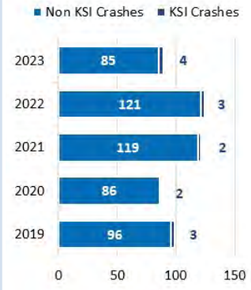
	KSI	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI		2	0	3	9
Total		7	10	11	479

BY CRASH TYPE





BY YEAR



OTHER FACTORS

	KSI	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI		3	4	3	1	4
Total		18	129	266	19	68

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Bicycle signage and pavement markings on existing trail with green striping through intersections
- Install R-1 series signage at signalized intersections
- Road Safety Audit

2030 Planning Level Cost: $887,550

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Reduced curb radii
- Mast-arm installation
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Signalize intersections with LPIs and high-emphasis crosswalks
- Lighting justification study
- Residential street tree canopy program

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)

Flagler County

4: MOODY BLVD (SR 100) from US Hwy 1 to Old Kings Rd

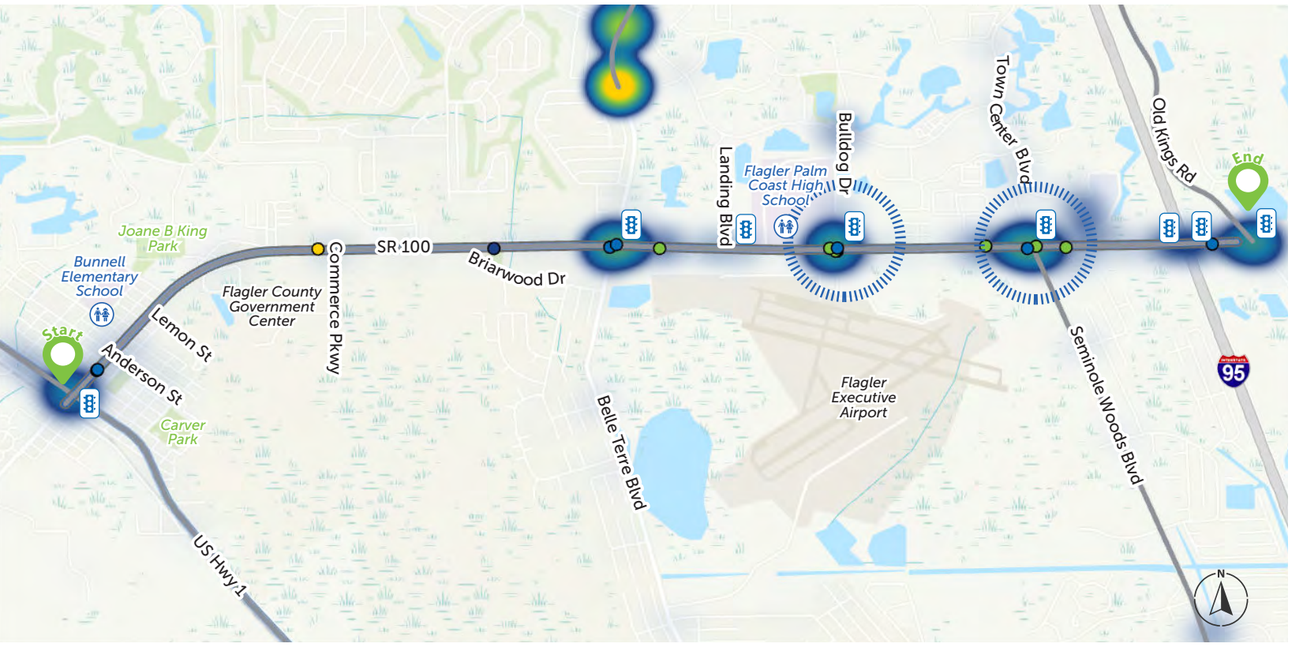
495 Total Crashes | 18 KSI Crashes | 5.0 Miles

Project Prioritization Score: 49.7

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Railroad Crossing
Trail
Midblock Crossing



Functional Classification: Principal Arterial
Posted Speed Limit: 45 - 50 MPH
Number of Lanes: 4
Roadway Volume: 10,000 - 40,000

Presence of School Zone: Y
Presence of Bike Lanes: Intermittent
Presence of Sidewalks: Intermittent
Presence of Medians: Y

Lighting Condition: Intermittent
Equity HIN Corridor: Y
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

City of Bunnell Capital Improvement Program: The city has approved an additional route, known as the Commerce Parkway Connector, which will intersect with Moody Boulevard to the south. This new roadway will be about 1.7 miles long and will have paved 8-foot wide shoulders, a 5-foot sidewalk, and wildlife fencing and crossings.

SYSTEMIC CRASH FACTORS

Moody Boulevard (SR 100) has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County. Significant risk factors include lack of bicycle lanes and location within a school buffer.

NO BICYCLE LANE **40%** Percentile

SCHOOL ZONE **40%** Percentile

CRASH TRENDS (2019 - 2023)

DRIVE SAFELY

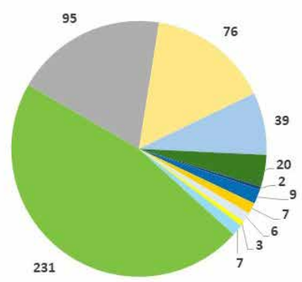
15 Serious Injuries
3 Fatalities

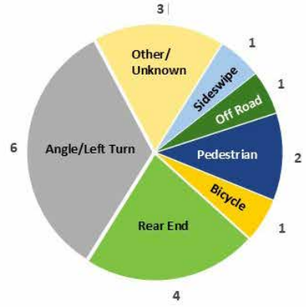
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	2	1	7	8
Total	2	7	17	469

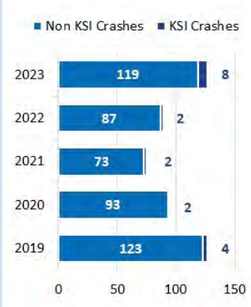
BY CRASH TYPE

Rear End
Angle/Left Turn
Other / Unknown
Sideswipe
Off Road
Pedestrian
Head On
Bicycle
Right Turn
Rollover
Animal





BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	3	0	5	3	9
Total	21	100	201	26	93

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Bicycle signage
- Green striping for bicycle lanes through intersections
- Speed cameras in school zone
- Install R-1 series signage at signalized intersections
- Intersection improvements which may include traffic signals
- Road Safety Audit

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Provide advance road name and overhead lane use signage on approach to major intersections
- Directionalization or closure of full access median openings
- Reduced curb radii
- Mast-arm installation
- Access management evaluation
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Enhanced landscaping with canopy trees in existing raised medians
- Pedestrian refuge islands
- Completion of sidewalk gaps
- Bicycle lane buffer with vertical deflection
- Interchange Operations Analysis Report Study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

2030 Planning Level Cost: $2,936,396

Flagler County

5: BELLE TERRE PKWY N from Palm Coast Pkwy to Buddy Taylor Middle School

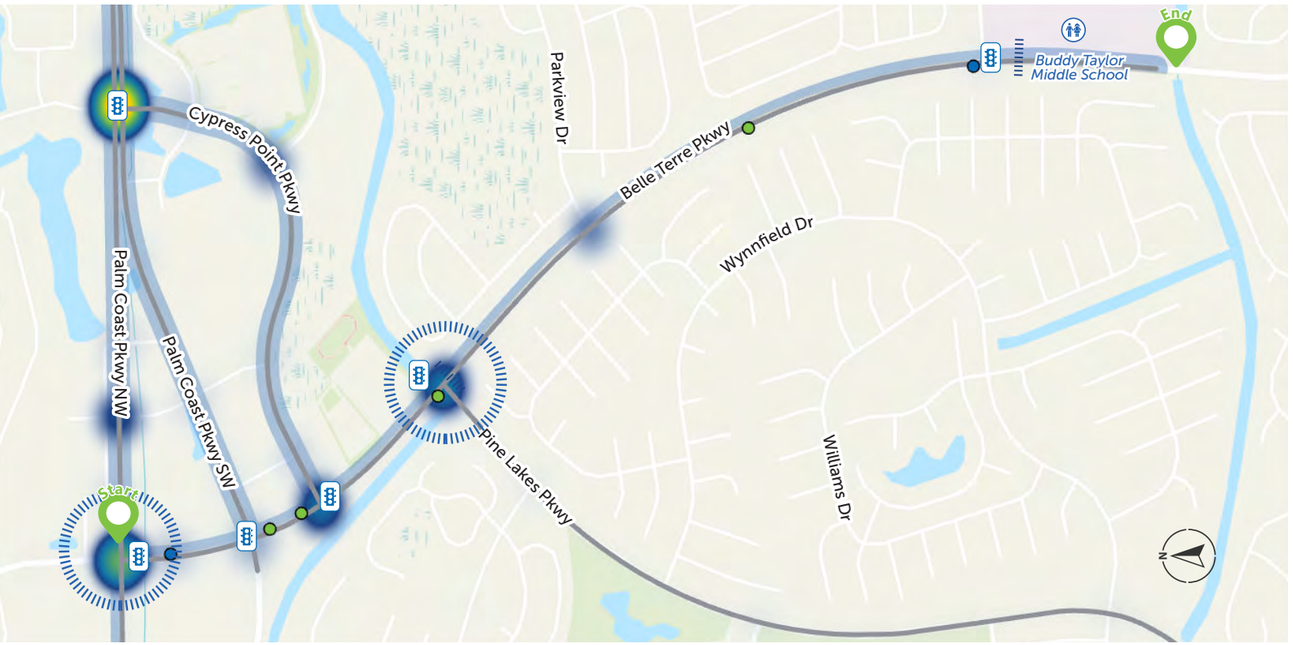
255 Total Crashes | 6 KSI Crashes | 1.9 Miles

Project Prioritization Score: 46.5

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Minor Arterial
Posted Speed Limit: 45 MPH
Number of Lanes: 4 - 6
Roadway Volume: 20,000 - 25,000

Presence of School Zone: Y
Presence of Bike Lanes: N
Presence of Sidewalks: Y
Presence of Medians: Y

Lighting Condition: Lit
Equity HIN Corridor: Y
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

There are no recent or planned improvements for Belle Terre Parkway N.

SYSTEMIC CRASH FACTORS

Belle Terre Parkway has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County. Significant risk factors include lack of bicycle lanes and location within a school buffer.

NO BICYCLE LANE **40%** Percentile

SCHOOL ZONE **40%** Percentile

CRASH TRENDS (2019 - 2023)

DRIVE SAFELY

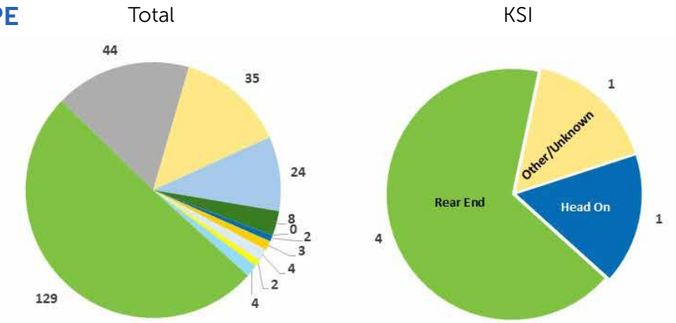
6 Serious Injuries
0 Fatalities

BY MODE

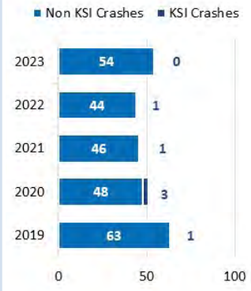
	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	0	0	2	4
Total	0	5	7	243

BY CRASH TYPE

Rear End
Angle/Left Turn
Other / Unknown
Sideswipe
Off Road
Pedestrian
Head On
Bicycle
Right Turn
Rollover
Animal



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	3	1	1	0	1
Total	6	40	48	4	39

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Bicycle signage and pavement markings on existing trail with green striping through intersections
- Install R-1 series signage at signalized intersections
- Speed cameras in school zone
- Road Safety Audit

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Reduced curb radii
- Mast-arm installation
- Upon speed limit reduction, upgrade school crosswalks to raised crosswalks with rectangular rapid flashing beacon, advanced warning signs, yield markings, and in-pavement lighting
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Signalize intersections with LPIs and high-emphasis crosswalks
- Lighting justification study
- Residential street tree canopy program

2030 Planning Level Cost: $1,049,190

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)

Flagler County

6: WHITEVIEW PKWY from Ravenwood Dr to Belle Terre Pkwy

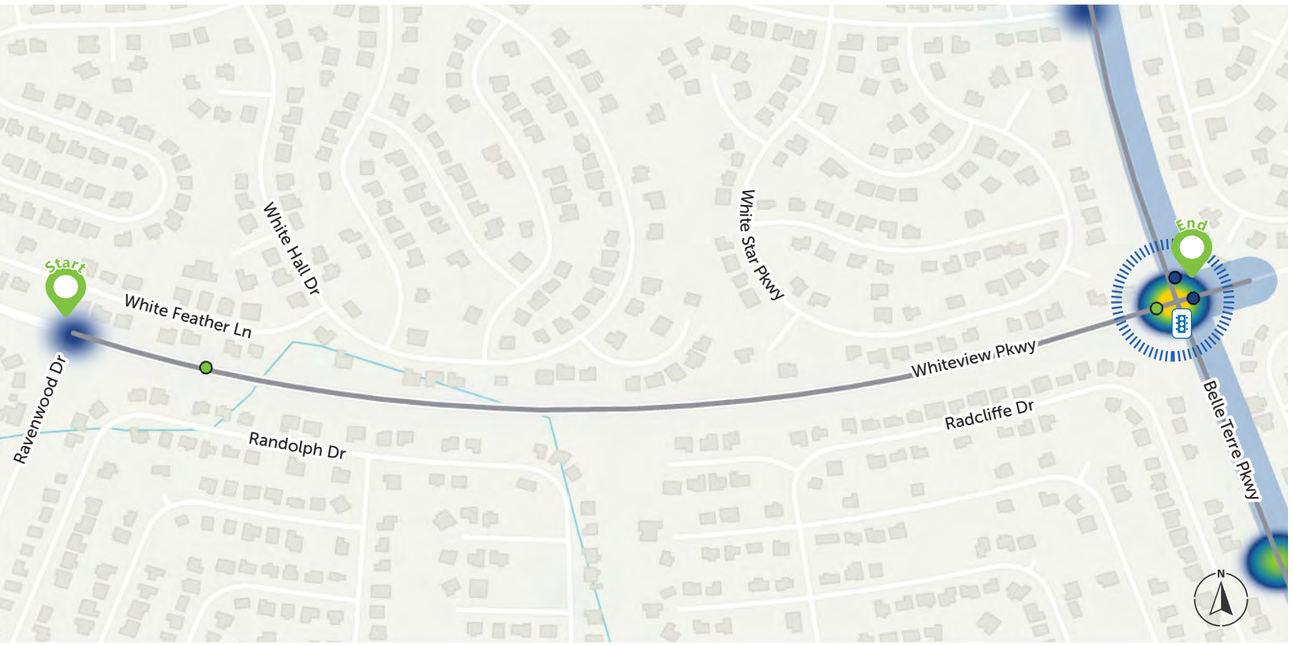
95 Total Crashes | 4 KSI Crashes | 0.8 Miles

Project Prioritization Score: 36.3

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Minor Arterial
Posted Speed Limit: 50 MPH
Number of Lanes: 2
Roadway Volume: 5,000 - 10,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: Eastbound Only
Presence of Medians: N

Lighting Condition: Intermittent
Equity HIN Corridor: Y
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

City of Palm Coast Capital Improvement Program: Proposed safety improvements on Whiteview Parkway include road widening to install turn lanes, modifying median access, reconstructing driveways, and conducting reconstruction along Ravenwood Drive. These drafted improvements all aim to enhance traffic flow and safety.

SYSTEMIC CRASH FACTORS

Whiteview Parkway has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County. Significant risk factors include lack of bicycle lanes, lack of sidewalks, and/or sidewalk barriers.

NO BICYCLE LANE **40%** Percentile

NO SIDEWALKS **40%** Percentile

CRASH TRENDS (2019 - 2023)

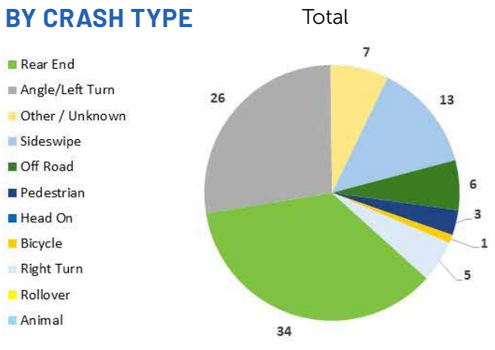
DRIVE SAFELY

4 Serious Injuries
0 Fatalities

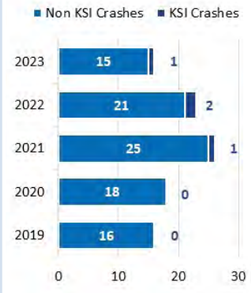
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	2	0	0	2
Total	3	1	0	91

BY CRASH TYPE



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	0	1	1	0	1
Total	2	77	55	3	19

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Backplates with retroreflective borders on signal heads
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Install R-1 series signage at signalized intersections
- Road Safety Audit

MID-TERM (BY 2040)

- Install SafetyEdge
- Re-assessment of appropriate speed limit
- Access modifications to reduce left-turn conflicts
- Reduced curb radii
- Mid-block crossing with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Installation of sidewalk
- Residential street tree canopy program

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)

2030 Planning Level Cost: $335,676

Flagler County

7: PALM COAST PKWY NE/SE from I-95 to Palm Harbor Pkwy

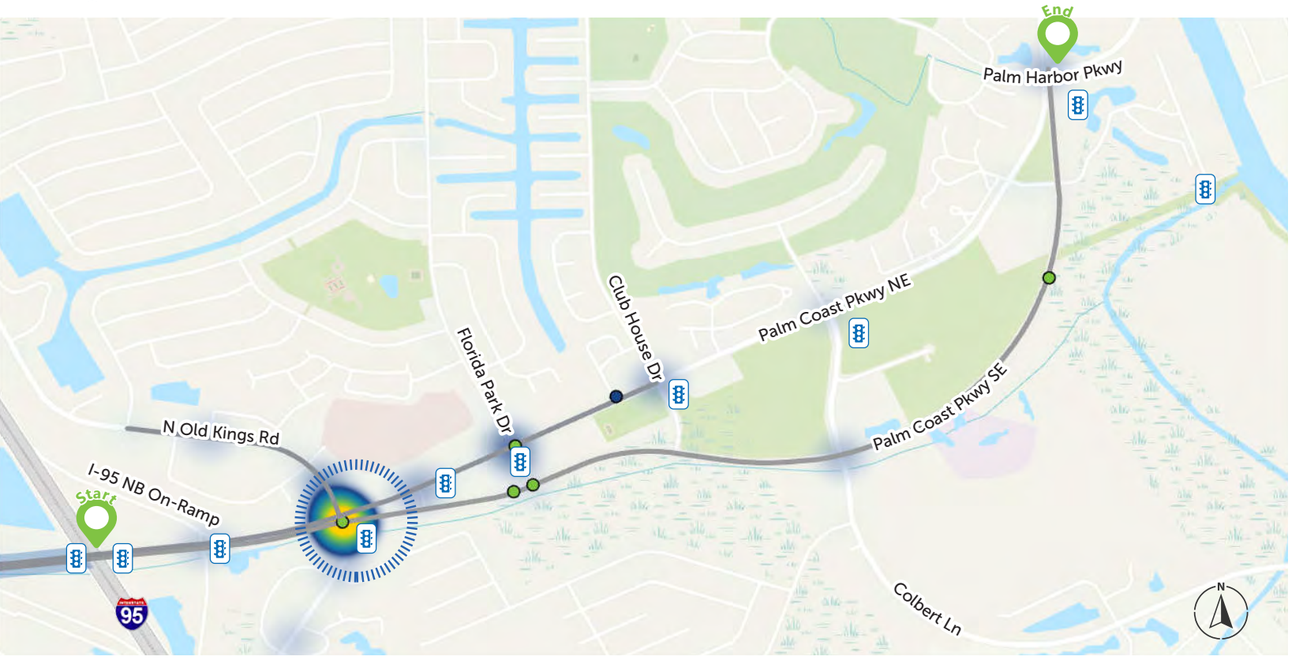
466 Total Crashes | 6 KSI Crashes | 4.3 Miles*

Project Prioritization Score: 30.9

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Principal Arterial
Posted Speed Limit: 40 - 45 MPH
Number of Lanes: 2 - 4
Roadway Volume: 5,000 -15,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: Intermittent
Presence of Medians: Intermittent

Lighting Condition: Intermittent
Equity HIN Corridor: N
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

City of Palm Coast Capital Improvement Program: Future roadway improvements along Palm Harbor Parkway include enhanced street lighting specifically targeting the intersection of Palm Coast Parkway East and Palm Harbor Parkway, aiming to increase visibility and safety.

SYSTEMIC CRASH FACTORS

Portions of Palm Coast Parkway NE and SE have been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County. Significant risk factors include lack of bicycle lanes and percent of households without a vehicle.

NO BICYCLE LANE **40%** Percentile

NO VEHICLE **40%** Percentile

*Crash trends are only representative of those that occurred on the HIN.

CRASH TRENDS (2019 - 2023)

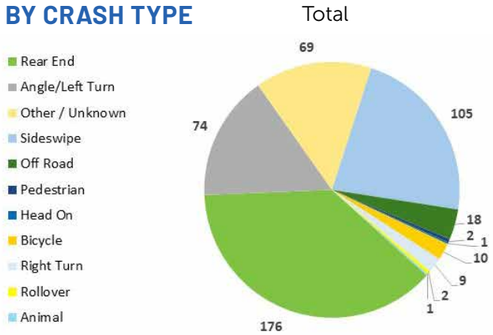
DRIVE SAFELY

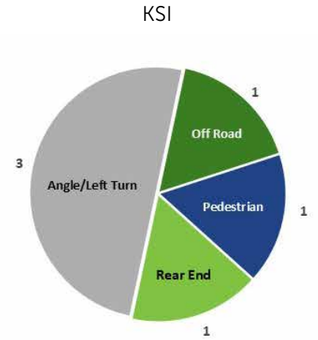
6 Serious Injuries
0 Fatalities

BY MODE

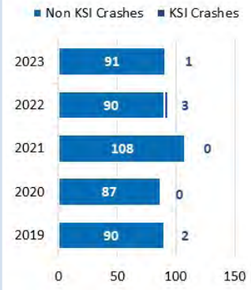
	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	1	0	0	5
Total	2	11	7	446

BY CRASH TYPE





BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	0	1	1	0	3
Total	15	118	169	99	91

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Sidewalk/trail connectivity study
- Gateway feature with low-cost, quick-build safety improvements
- Install R-1 series signage at signalized intersections
- Road Safety Audit

2030 Planning Level Cost: $1,519,926

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Dedicated left turn lanes
- Directionalization of closure of full access median openings
- Reduced curb radii
- Mast-arm installation
- Access management evaluation
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Enhanced landscaping with canopy trees in existing raised medians
- Pedestrian refuge islands
- Provide advance road name and overhead lane use signage on approach to major intersections
- Interchange Operations Analysis Report Study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

Flagler County

8: N OCEAN SHORE BLVD (A1A) from Cedar Point Rd to Camino Del Mar

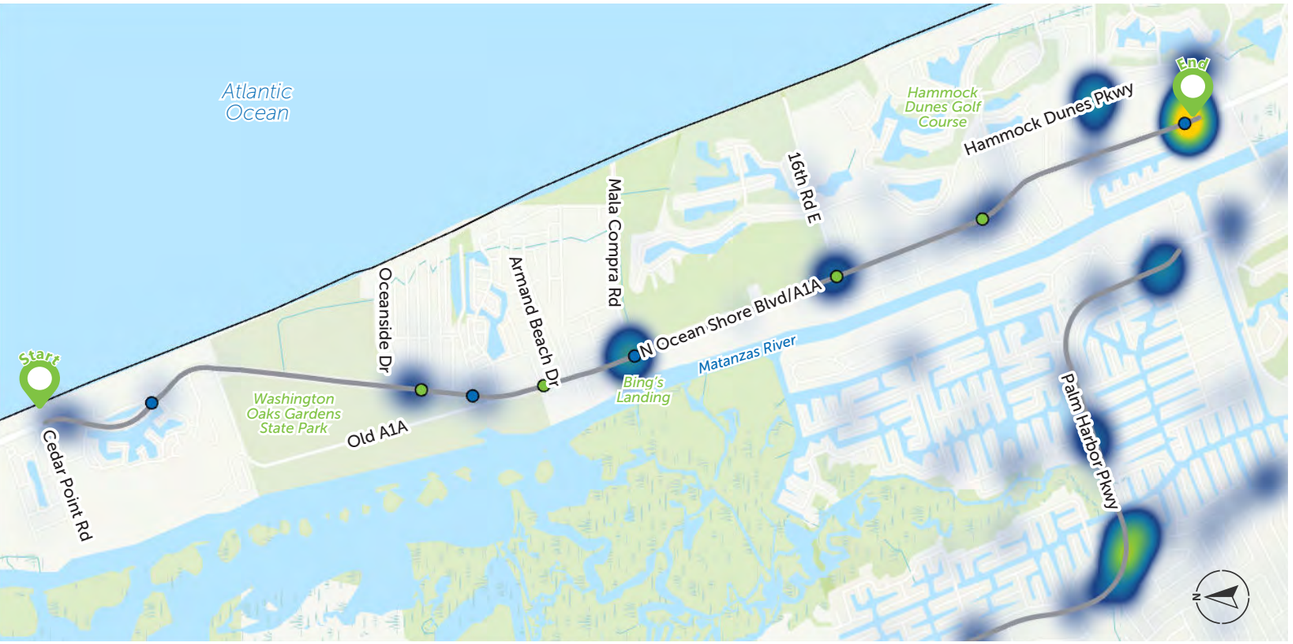
89 Total Crashes | 9 KSI Crashes | 3.4 Miles

Project Prioritization Score: 20.8

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Minor Arterial
Posted Speed Limit: 50 MPH
Number of Lanes: 2 - 4
Roadway Volume: 5,000 - 10,000

Presence of School Zone: N
Presence of Bike Lanes: Y
Presence of Sidewalks: Intermittent
Presence of Medians: N

Lighting Condition: None
Equity HIN Corridor: N
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

FDOT PD&E Study: The Flagler Beach Gap Trail PD&E will evaluate shared use path options to expand the SUN Trail network for improved safety, enhanced bicycle and pedestrian mobility, and increased trail connectivity to extend the St. Johns River-to-Sea Loop (SJR2C). Improvements will also be made due to hurricane and storm damage.

SYSTEMIC CRASH FACTORS

Portions of A1A have been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County. Significant risk factors include lack of sidewalks or sidewalk barrier and percent of households without a vehicle.

NO SIDEWALKS **40%** Percentile

NO VEHICLE **40%** Percentile

CRASH TRENDS (2019 - 2023)

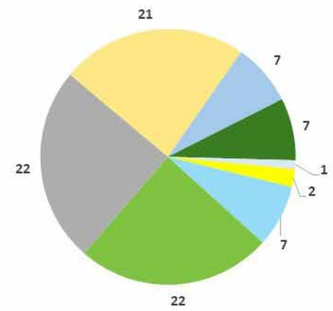
7 Serious Injuries
2 Fatalities

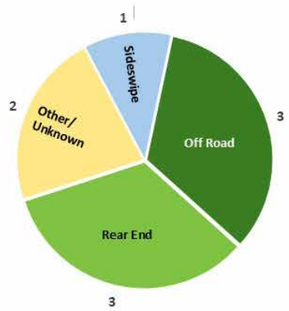
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	0	0	5	4
Total	0	0	14	75

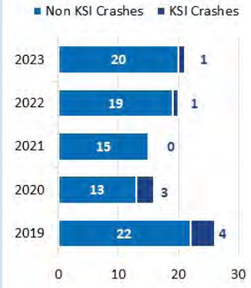
BY CRASH TYPE

Rear End
Angle/Left Turn
Other / Unknown
Sideswipe
Off Road
Pedestrian
Head On
Bicycle
Right Turn
Rollover
Animal





BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	0	0	1	3	2
Total	2	7	21	5	18

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons at major intersections
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Bicycle signage and additional pavement markings
- Green striping for bicycle lanes through intersections
- Road Safety Audit
- Mobility Study

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Dedicated left turn lanes
- Reduced curb radii
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Completion of sidewalk gaps
- Bicycle lane buffer with vertical deflection
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Signalize intersections with LPIs and high-emphasis crosswalks
- Road upgrades to include paved shoulders and drainage improvements
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Assessment of SUN Trail facilities for additional safety treatments
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy

2030 Planning Level Cost: $634,512

Flagler County

9: CR 302 from CR 305 to State Hwy 100 W

29 Total Crashes | 5 KSI Crashes | 3.5 Miles

Project Prioritization Score: 14.3

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing

Functional Classification: Minor Collector
Posted Speed Limit: 45 MPH
Number of Lanes: 2
Roadway Volume: < 5,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks:N
Presence of Medians: N

Lighting Condition: Unlit
Equity HIN Corridor: N
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

Flagler County Capital Improvement Program: There are two current and future improvement projects for CR 302. The first includes safety improvements currently underway at the intersection of CR 302 and CR 305; additional future improvements including paving adjacent roads.

SYSTEMIC CRASH FACTORS

CR 302 was not identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County.

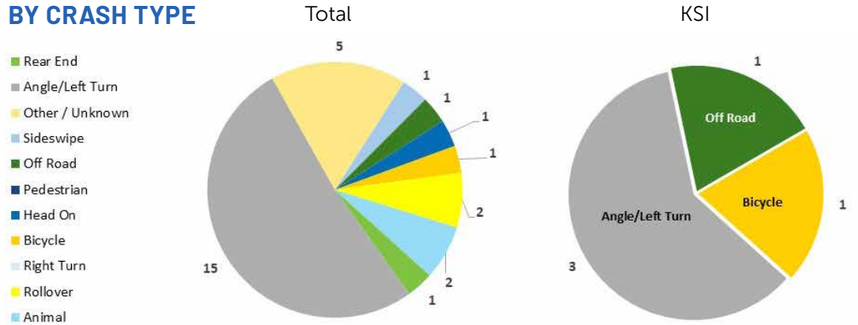
CRASH TRENDS (2019 - 2023)

3 Serious Injuries
2 Fatalities

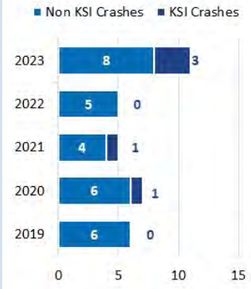
BY MODE

	Pedestrian	Bicycle	Motorcycle	Vehicle-Only
KSI	0	1	0	4
Total	0	1	1	27

BY CRASH TYPE



BY YEAR



OTHER FACTORS

	Impairment*	Aggressive**	Distracted	Unrestrained	Dark
KSI	1	0	5	2	1
Total	2	4	201	8	5

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Sidewalk/trail connectivity study
- Intersection improvements which may include traffic signals

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Dedicated left turn lanes
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Signalize intersections with LPIs and high-emphasis crosswalks
- Road upgrades to include paved shoulders and drainage improvements
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)

2030 Planning Level Cost: $1,072,000

Flagler County

10: SR 100 W from John Campbell Dr to CR 305

37 Total Crashes | 7 KSI Crashes | 4.2 Miles

Project Prioritization Score: 10.6

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing

Functional Classification: Principal Arterial
Posted Speed Limit: 60 MPH
Number of Lanes: 2
Roadway Volume: 5,000 - 10,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: N
Presence of Medians: N

Lighting Condition: Unlit
Equity HIN Corridor: N
Transit Route: N

RECENT OR PLANNED IMPROVEMENTS

There are no recent or planned improvements for SR 100 W.

SYSTEMIC CRASH FACTORS

SR 100 W has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Flagler County. Significant risk factors include lack of sidewalks or sidewalk barrier and lack of bicycle lanes.

NO SIDEWALKS **40%** Percentile
NO BICYCLE LANE **40%** Percentile

CRASH TRENDS (2019 - 2023)

DRIVE SAFELY

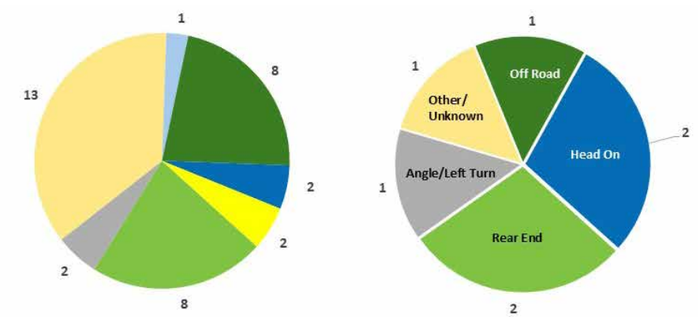
5 Serious Injuries
2 Fatalities

BY MODE

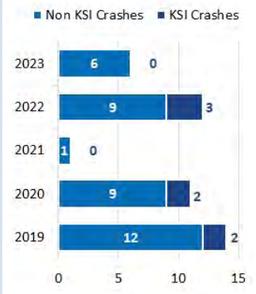
	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	0	0	1	6
Total	0	0	2	35

BY CRASH TYPE

Rear End
Angle/Left Turn
Other / Unknown
Sideswipe
Off Road
Pedestrian
Head On
Bicycle
Right Turn
Rollover
Animal



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	1	3	0	3	4
Total	1	7	5	4	16

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Sidewalk/trail connectivity study
- Widen edge lines
- Intersection improvements which may include traffic signals

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Dedicated left turn lanes
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Signalize intersections with LPIs and high-emphasis crosswalks
- Road upgrades to include paved shoulders and drainage improvements
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)

2030 Planning Level Cost: $1,072,000

Volusia County

1: W INTERNATIONAL SPEEDWAY BLVD (US 92) from Tomoka Farms Rd to N Beach St

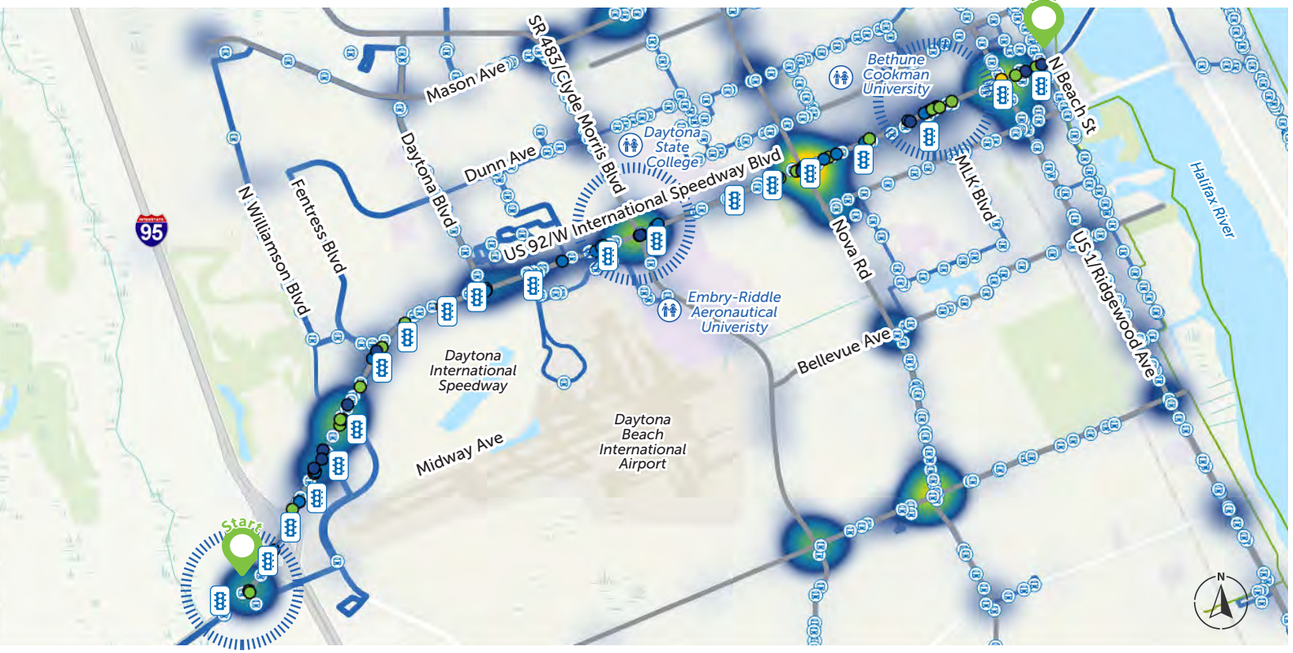
2,761 Total Crashes | 73 KSI Crashes | 5.5 Miles

Project Prioritization Score: 72.9

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Principal Arterial
Posted Speed Limit: 30 - 50 MPH
Number of Lanes: 4 - 8
Roadway Volume: 10,000 - 50,000

Presence of School Zone: Y
Presence of Bike Lanes: Intermittent
Presence of Sidewalks: Intermittent
Presence of Medians: Intermittent

Lighting Condition: Lit
Equity HIN Corridor: Y
Transit Route: Intersects with Transit Routes

RECENT OR PLANNED IMPROVEMENTS

FDOT 5-Year Work Program: Interchange Improvements (Item 450643-1), ITS Surveillance System at I-95 (Item 450227-2), Rigid Pavement Rehabilitation from LPGA Blvd to Educators Rd (Item 455919-1), Traffic Signals at Daytona State College main entrance (Item 442316-2), and Traffic Control Devices / System at Lockhart St (Item 447698-1).

SYSTEMIC CRASH FACTORS

W International Speedway Boulevard (US 92) has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include location within a school buffer and percent of households without a vehicle.

SCHOOL ZONE **40%** Percentile

NO VEHICLE **40%** Percentile

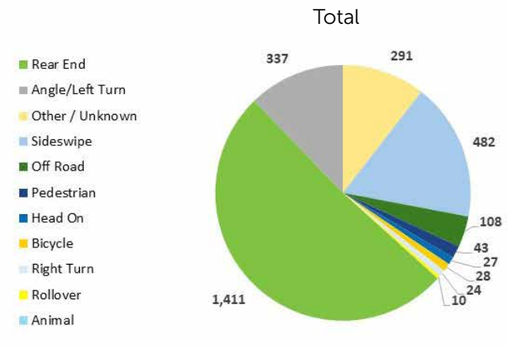
CRASH TRENDS (2019 - 2023)

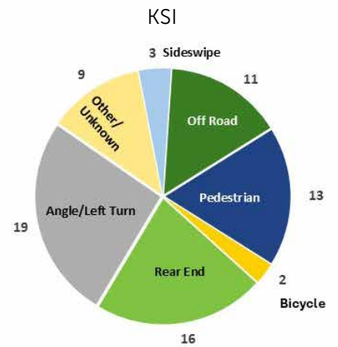
DRIVE SAFELY

60 Serious Injuries
13 Fatalities

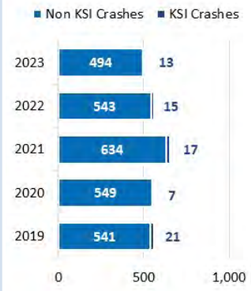
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	13	2	31	27
Total	43	28	148	2,542





BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	5	13	10	5	36
Total	48	196	273	54	647

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Bicycle signage
- Green striping for bicycle lanes through intersections
- Install R-1 series signage at signalized intersections
- Road Safety Audit

2030 Planning Level Cost: $4,042,920

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Provide advance road name and overhead lane use signage on approach to major intersections
- Directionalization or closure of full access median openings
- Reduced curb radii
- Mast-arm installation
- Access management evaluation
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Enhanced landscaping with canopy trees in existing raised medians
- Pedestrian refuge islands
- Completion of sidewalk gaps
- Bicycle lane buffer with vertical deflection

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy
- Evaluate alternative crossing opportunities such as a pedestrian bridge
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

Volusia County

2: N RIDGEWOOD AVE (US 1) from Mason Ave to W International Speedway Blvd (US 92)

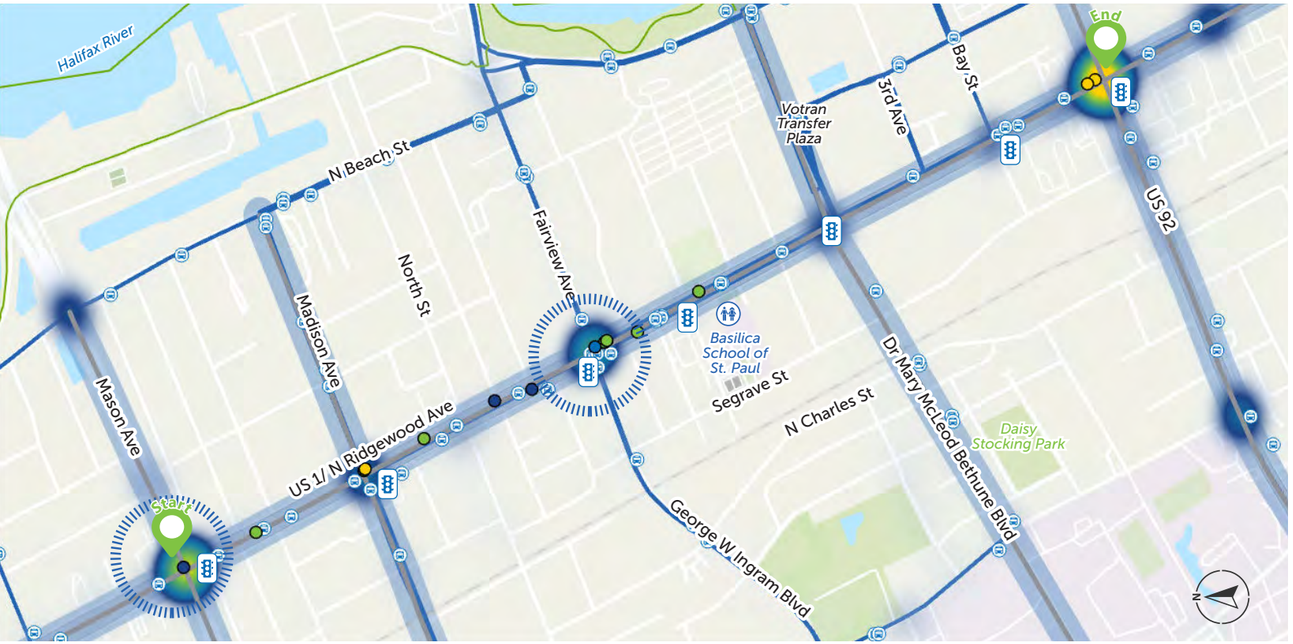
439 Total Crashes | 14 KSI Crashes | 1.2 Miles

Project Prioritization Score: 68.8

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Principal Arterial
Posted Speed Limit: 35 MPH
Number of Lanes: 4
Roadway Volume: 25,000 - 30,000

Presence of School Zone: Y
Presence of Bike Lanes: N
Presence of Sidewalks: Y
Presence of Medians: Y

Lighting Condition: Lit
Equity HIN Corridor: Y
Transit Route: Y

RECENT OR PLANNED IMPROVEMENTS

There are no recent or planned improvements for N Ridgewood Avenue (US 1).

SYSTEMIC CRASH FACTORS

N Ridgewood Avenue (US 1) has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include location within a school buffer and percent of households without a vehicle.

SCHOOL ZONE **40%** Percentile

NO VEHICLE **40%** Percentile

CRASH TRENDS (2019 - 2023)

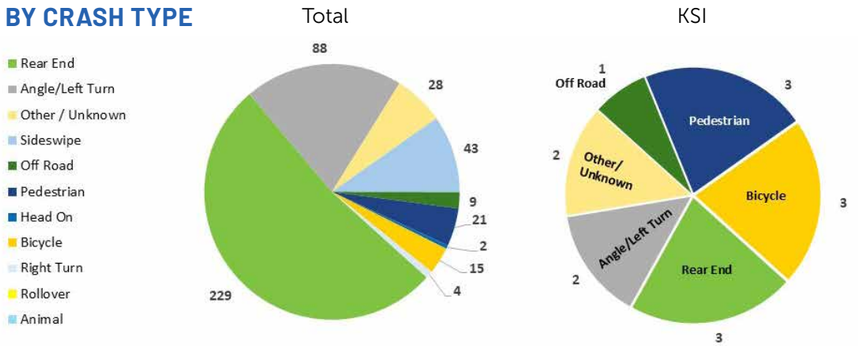
DRIVE SAFELY

12 Serious Injuries
2 Fatalities

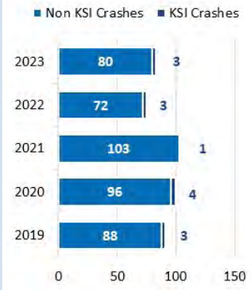
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	3	3	1	7
Total	21	15	24	379

BY CRASH TYPE



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	1	3	1	1	6
Total	10	25	39	6	111

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Improve shoulder as bicycle lane with signage, pavement markings, & green striping through intersections
- Install R-1 series signage at signalized intersections
- Speed cameras in school zone
- Road Safety Audit

2030 Planning Level Cost: $1,178,244

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Extend median noses into crosswalks
- Reduced curb radii
- Access management evaluation
- Co-locate bus stops with mid-block crossings and improved bus shelters
- Upgrade school crosswalks to raised crosswalks with RRFB, advanced warning signs, yield markings, and in-pavement lighting
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Bicycle lane buffer with vertical deflection
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

Volusia County

3: N NOVA RD (SR 5A) from 3rd St to Volusia Ave (US 92)

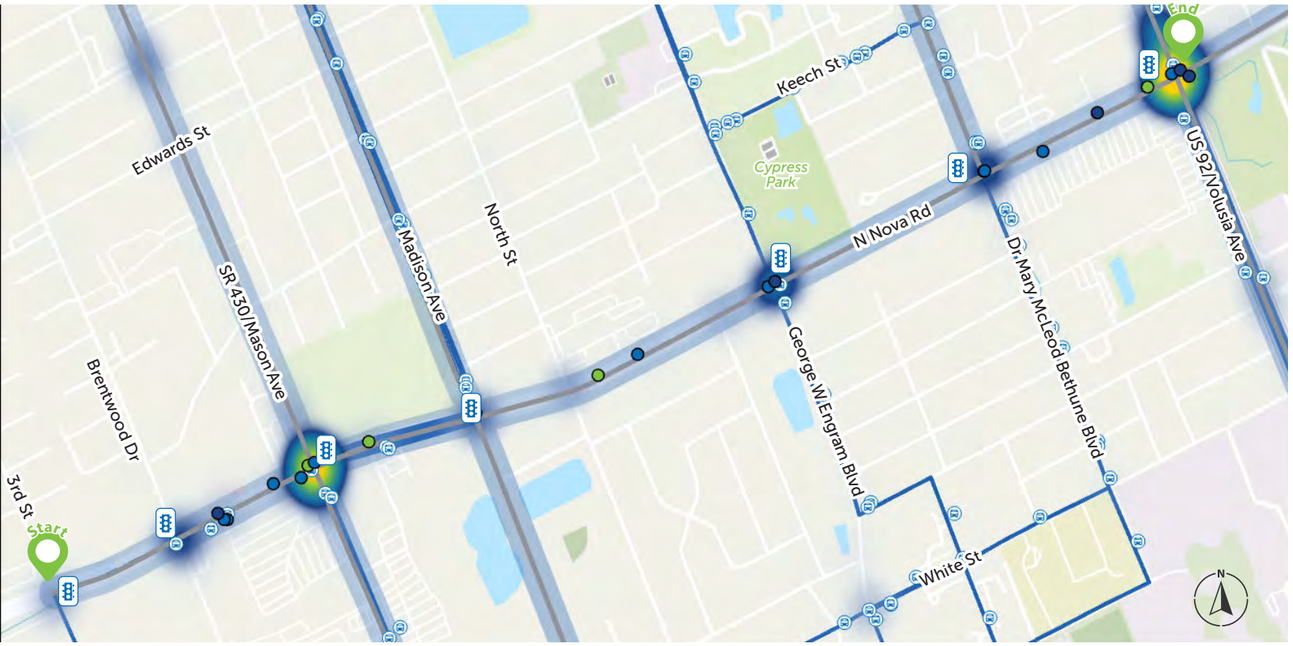
679 Total Crashes | 22 KSI Crashes | 1.6 Miles

Project Prioritization Score: 56.8

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
High / Low Density of All Crashes
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Principal Arterial
Posted Speed Limit: 45 - 50 MPH
Number of Lanes: 6
Roadway Volume: 30,000 - 35,000

Presence of School Zone: N
Presence of Bike Lanes: Intermittent
Presence of Sidewalks: Y
Presence of Medians: Y

Lighting Condition: Intermittent
Equity HIN Corridor: Y
Transit Route: Y

RECENT OR PLANNED IMPROVEMENTS

FDOT 5-Year Work Program: Resurfacing from Flomich Avenue to US 1 (Item 450644-1) is planned for construction in 2026.

SYSTEMIC CRASH FACTORS

N Nova Road (CR 5A) has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include lack of bike lanes and percent of households without a vehicle.

NO BICYCLE LANE **40%** Percentile

NO VEHICLE **40%** Percentile

CRASH TRENDS (2019 - 2023)

DRIVE SAFELY

18 Serious Injuries
4 Fatalities

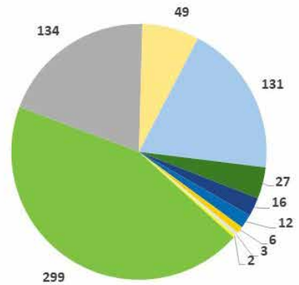
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	0	5	11	6
Total	16	6	32	625

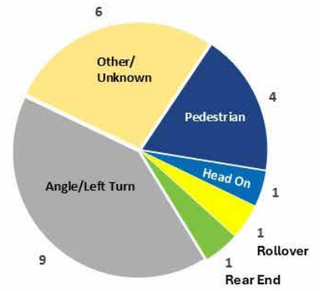
BY CRASH TYPE

Rear End
Angle/Left Turn
Other / Unknown
Sideswipe
Off Road
Pedestrian
Head On
Bicycle
Right Turn
Rollover
Animal

Total



KSI



BY YEAR

OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	0	0	0	1	8
Total	13	45	46	11	161

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Bicycle signage
- Green striping for bicycle lanes through intersections
- Install R-1 series signage at signalized intersections
- Road Safety Audit

2030 Planning Level Cost: $1,632,936

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Reduced curb radii
- Access management evaluation
- Extend median noses into crosswalks
- Co-locate bus stops with mid-block crossings and improved bus shelters
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Bicycle lane buffer with vertical deflection
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy south of Brentwood Drive
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

Volusia County

4: E INTERNATIONAL SPEEDWAY BLVD (US 92) from US Hwy 92 to Beach Access

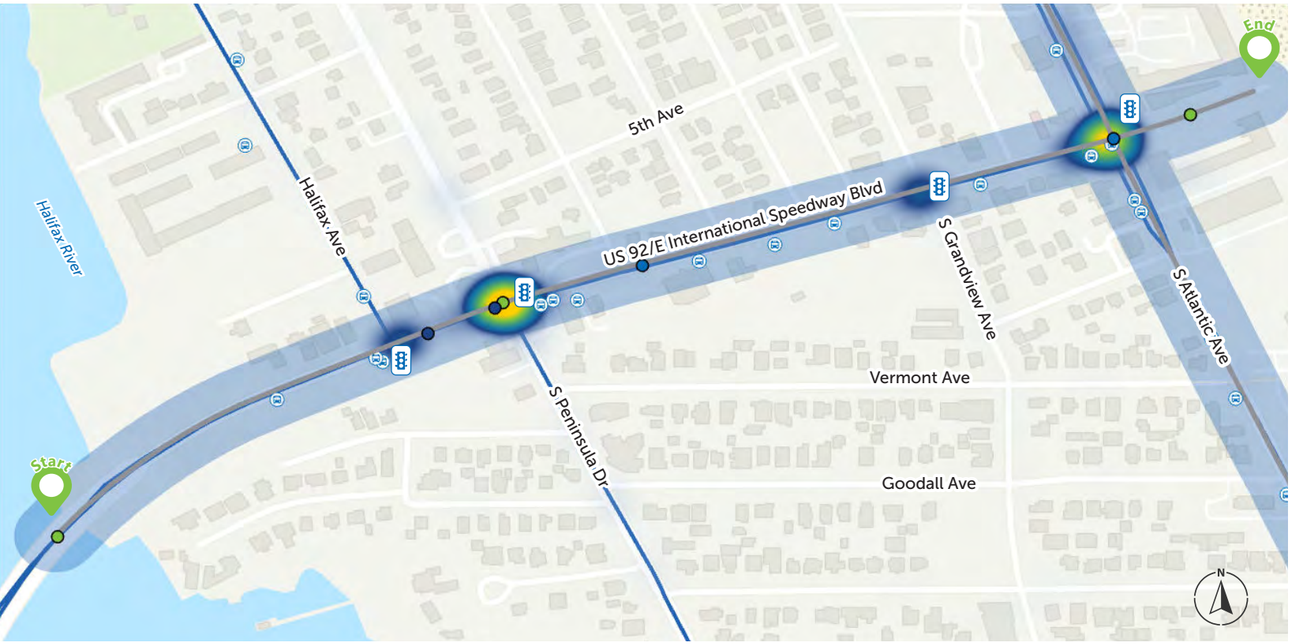
214 Total Crashes | 7 KSI Crashes | 0.6 Miles

Project Prioritization Score: 55.8

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
High / Low Density of All Crashes
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Principal Arterial
Posted Speed Limit: 30 MPH
Number of Lanes: 4 - 6
Roadway Volume: 5,000 - 10,000

Presence of School Zone: N
Presence of Bike Lanes: Intermittent
Presence of Sidewalks: Y
Presence of Medians: Intermittent

Lighting Condition: Lit
Equity HIN Corridor: Y
Transit Route: Y

RECENT OR PLANNED IMPROVEMENTS

There are no recent or planned improvements for E International Speedway Boulevard (US 92).

SYSTEMIC CRASH FACTORS

E International Speedway Boulevard (US 92) has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include lack of bicycle lanes and percent of households without a vehicle.

NO BICYCLE LANE **40%** Percentile

NO VEHICLE **40%** Percentile

CRASH TRENDS (2019 - 2023)

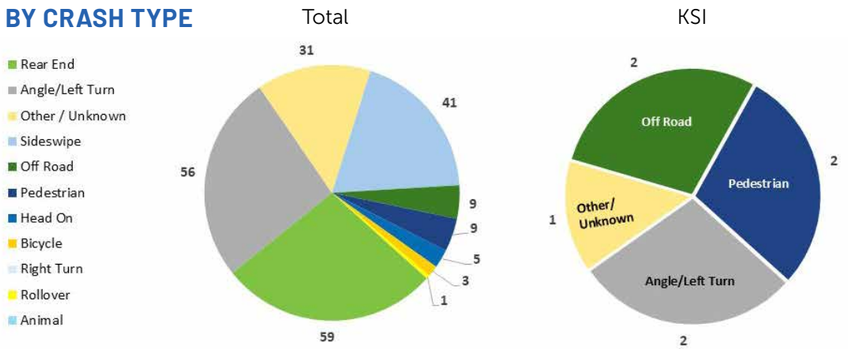
DRIVE SAFELY

7 Serious Injuries
0 Fatalities

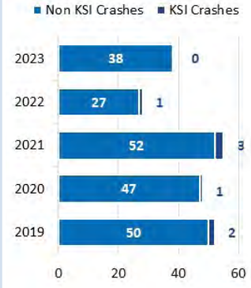
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	2	0	2	3
Total	9	3	17	185

BY CRASH TYPE



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	0	0	1	1	3
Total	7	13	13	4	56

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Backplates with retroreflective borders on signal heads
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Bicycle signage
- Bicycle pavement markings
- Gateway feature with low-cost, quick-build safety improvements
- Lighting justification study
- Install R-1 series signage at signalized intersections
- Road Safety Audit

MID-TERM (BY 2040)

- Reduced curb radii
- Co-locate bus stops with mid-block crossings and improved bus shelters
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- New buffered bike lanes
- Chicanes with enhanced landscaping

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

2030 Planning Level Cost: $574,542

Volusia County

5: S NOVA RD (SR 5A) from Madeline Ave to S Ridgewood Ave (US 1)

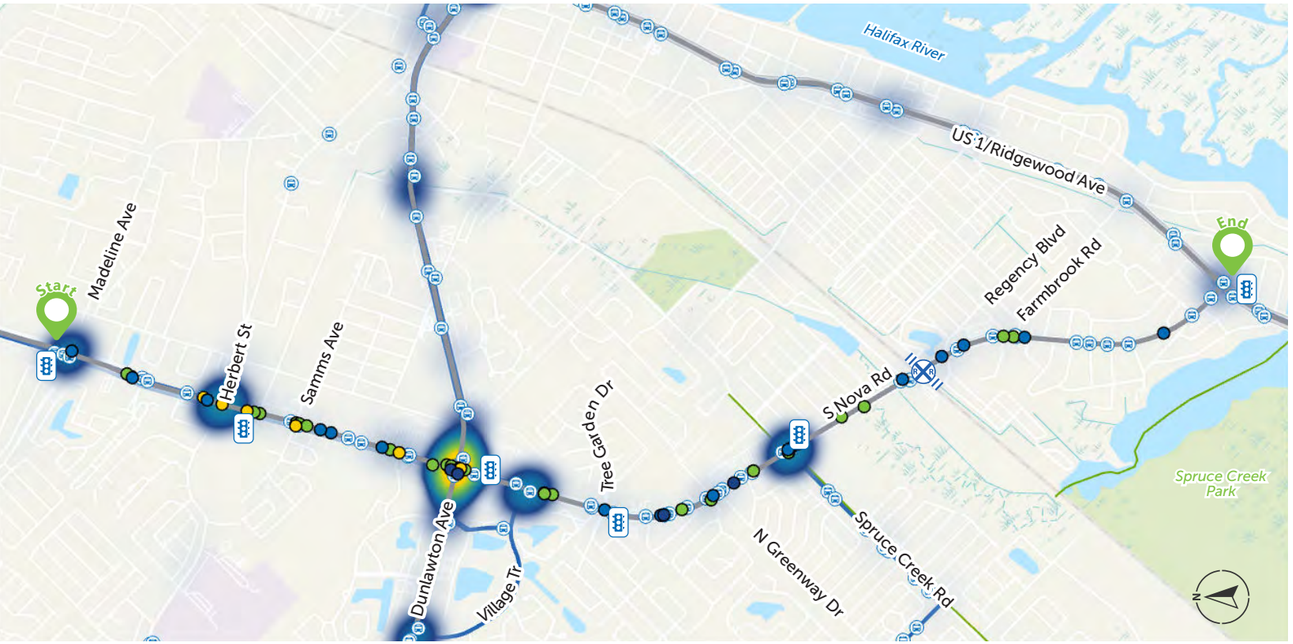
666 Total Crashes | 66 KSI Crashes | 3.8 Miles

Project Prioritization Score: 49.0

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Principal Arterial
Posted Speed Limit: 45 - 50 MPH
Number of Lanes: 6 - 8
Roadway Volume: 15,000 - 30,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: Y
Presence of Medians: Y

Lighting Condition: N
Equity HIN Corridor: Y
Transit Route: Y

RECENT OR PLANNED IMPROVEMENTS

FDOT 5-Year Work Program: Pavement Only Resurfacing from US 1 to Herbert Street (Item 450643-1) planned for construction in 2027.

SYSTEMIC CRASH FACTORS

S Nova Road (CR 5A) has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include lack of bike lanes and percent of households without a vehicle.

NO BICYCLE LANE **40%** Percentile

NO VEHICLE **40%** Percentile

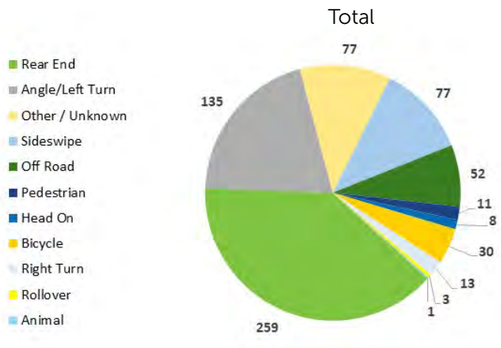
CRASH TRENDS (2019 - 2023)

DRIVE SAFELY

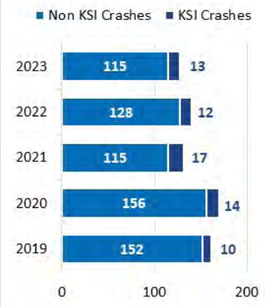
59 Serious Injuries
7 Fatalities

BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	4	8	16	38
Total	11	30	39	586



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	3	1	3	3	15
Total	15	33	55	14	131

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Improve existing shoulder as bicycle lane with bicycle signage and pavement markings including green striping through intersections
- Install R-1 series signage at signalized intersections
- Road Safety Audit

2030 Planning Level Cost: $1,713,768

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Dedicated left turn lanes
- Directionalization or closure of full access median openings
- Reduced curb radii
- Mast-arm installation
- Access management evaluation
- Co-locate bus stops with mid-block crossings and improved bus shelters
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Bicycle lane buffer with vertical deflection

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy

Volusia County

6: MASON AVE (SR 430) from Williamson Blvd to N Beach St

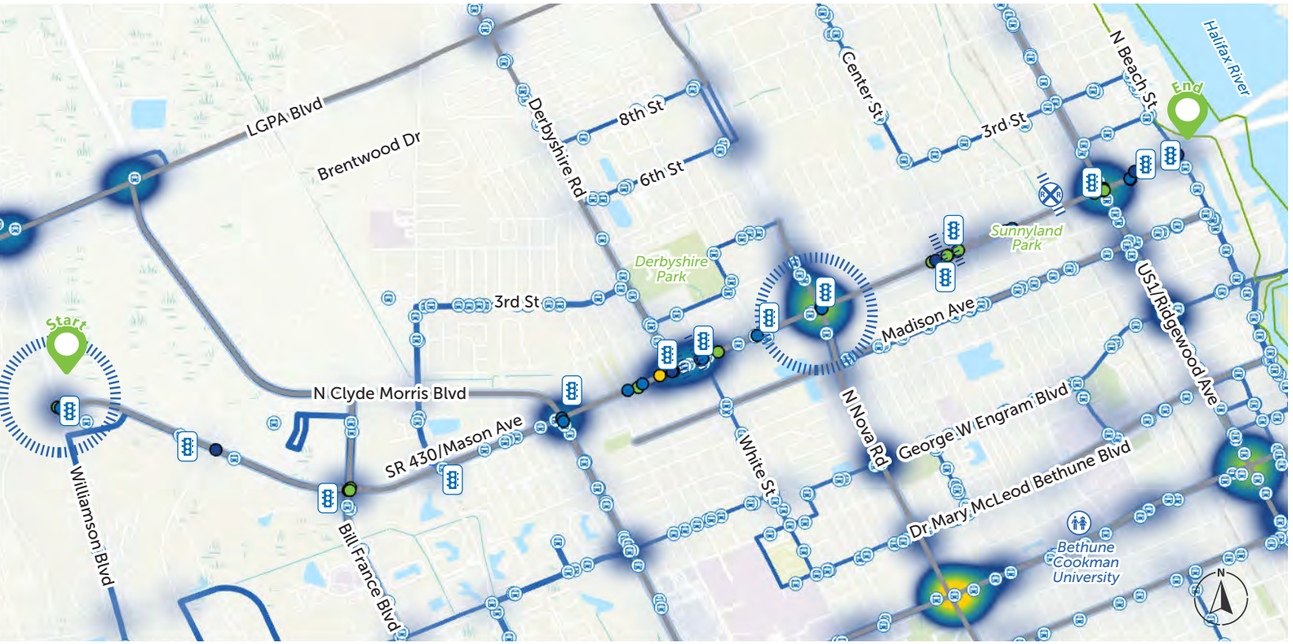
1,367 Total Crashes | 49 KSI Crashes | 4.2 Miles

Project Prioritization Score: 46.0

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Minor Arterial
Posted Speed Limit: 35 MPH
Number of Lanes: 4
Roadway Volume: 15,000 - 20,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: Intermittent
Presence of Medians: N

Lighting Condition: Lit
Equity HIN Corridor: Y
Transit Route: Y

RECENT OR PLANNED IMPROVEMENTS

There are no recent or planned improvements for Mason Avenue (SR 430).

SYSTEMIC CRASH FACTORS

Mason Avenue (SR 430) has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include lack of sidewalks or sidewalk buffer and percent of households without a vehicle.

NO SIDEWALKS **40%** Percentile

NO VEHICLE **40%** Percentile

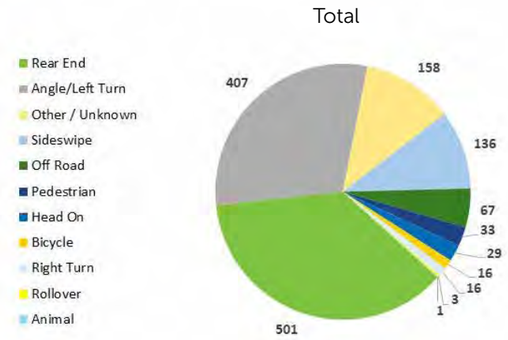
CRASH TRENDS (2019 - 2023)

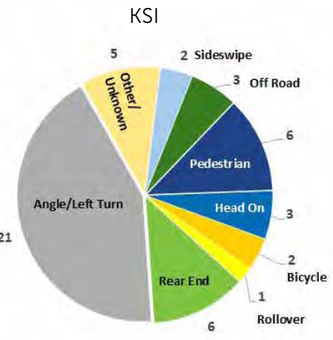
DRIVE SAFELY

34 Serious Injuries
15 Fatalities

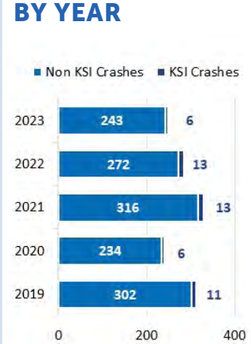
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	6	2	19	22
Total	33	17	59	1,258





BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	2	17	4	3	3
Total	25	105	91	24	11

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Sidewalk/trail connectivity study to identify parallel bicycle facilities
- Install R-1 series signage at signalized intersections
- Road Safety Audit

2030 Planning Level Cost: $1,263,264

MID-TERM (BY 2040)

- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Reduced curb radii
- Access management evaluation
- Complete sidewalk gaps
- Co-locate bus stops with mid-block crossings and improved bus shelters
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Raised crosswalks or upgrade existing crosswalks to raised crosswalk
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Upgrade adjacent roads to include bicycle lanes with buffer, signage, additional pavement markings, and green striping through intersections
- Road upgrades to include paved shoulders and drainage improvements
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

Volusia County

7: ORANGE AVE from S Nova Rd to S Beach St

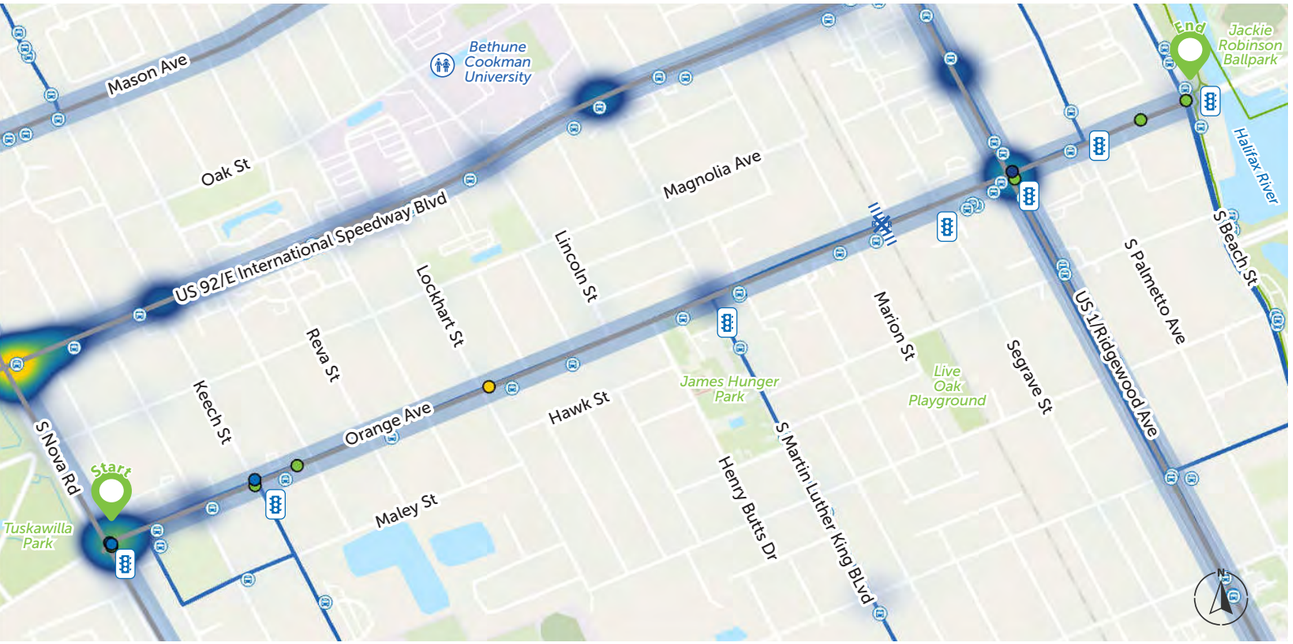
413 Total Crashes | 12 KSI Crashes | 1.4 Miles

Project Prioritization Score: 44.1

ROADWAY PROFILE

LEGEND

HIN · HIN Intersection · Density of All Crashes (High / Low) · Equity Area · Pedestrian KSI Crash · Bicycle KSI Crash · Motorcycle KSI Crash · Motor Vehicle KSI Crash · Bus Route/Stop · Traffic Signal · School · Trail · Railroad Crossing · Midblock Crossing



Functional Classification: Major Collector
Posted Speed Limit: 30 MPH
Number of Lanes: 2 - 4
Roadway Volume: 5,000 - 10,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: Y
Presence of Medians: Intermittent

Lighting Condition: Lit
Equity HIN Corridor: Y
Transit Route: Y

RECENT OR PLANNED IMPROVEMENTS

Daytona Beach Community Redevelompent Area (CRA): The CRA Agency anticipates further improvements this coming year to the Orange Avenue Trail, or SUN Trail, adding dedicated shared use pedestrian and bicycle facilities.

SYSTEMIC CRASH FACTORS

Orange Avenue has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include lack of bike lanes and percent of households without a vehicle.

NO BICYCLE LANE **40%** Percentile

NO VEHICLE **40%** Percentile

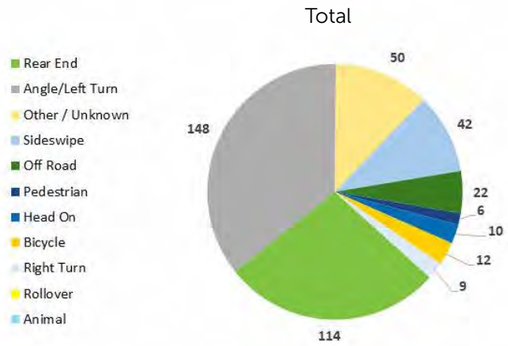
CRASH TRENDS (2019 - 2023)

DRIVE SAFELY

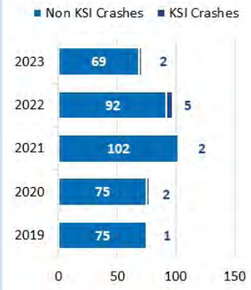
10 Serious Injuries
2 Fatalities

BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	1	1	3	7
Total	6	12	12	383



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	1	0	1	1	4
Total	9	38	29	12	86

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Speed feedback signs
- Review of signal phasing, timing, and yellow change intervals
- Signal coordination analysis
- Refresh faded crosswalks and pavement markings
- Bicycle signage and additional pavement markings
- High-emphasis crosswalks on all legs of intersections
- Install R-1 series signage at signalized intersections
- Road Safety Audit

MID-TERM (BY 2040)

- Reduced curb radii
- Co-locate bus stops with mid-block crossings and improved bus shelters
- Raised crosswalks or upgrade existing crosswalks to raised crosswalk
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

2030 Planning Level Cost: $651,660

Volusia County

8: S RIDGEWOOD AVE (US 1) from W International Speedway Blvd (US 92) to Ocean Ave

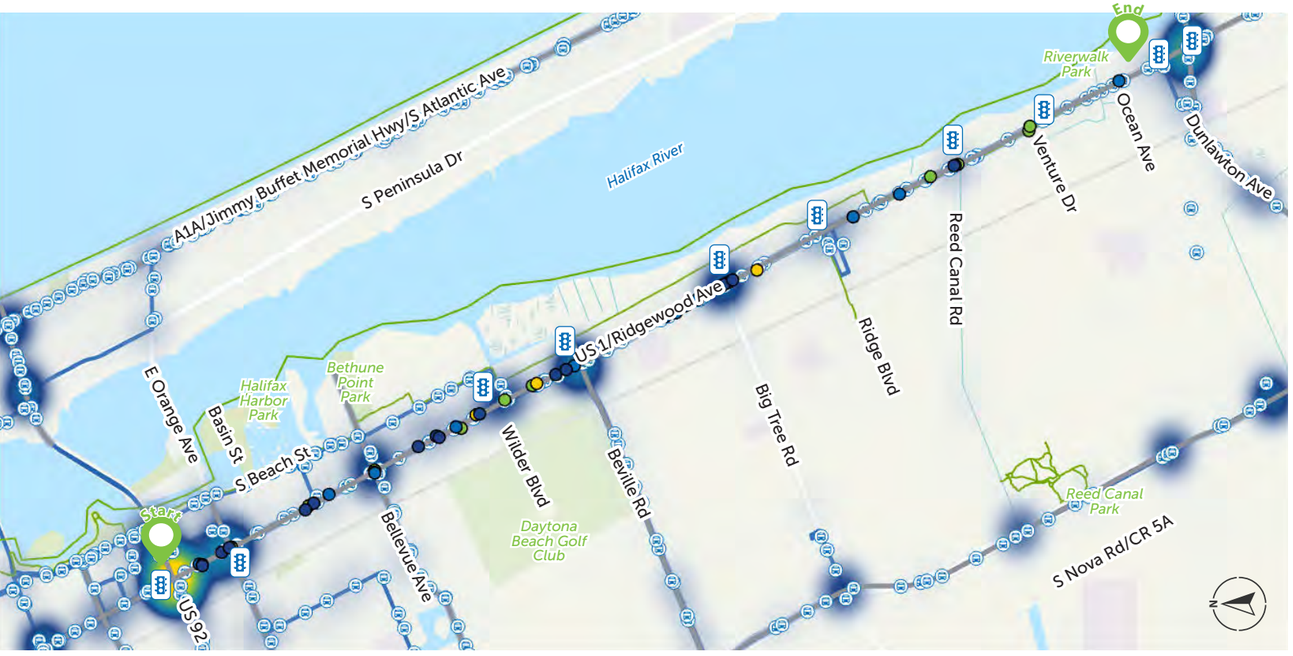
988 Total Crashes | 49 KSI Crashes | 4.8 Miles

Project Prioritization Score: 39.8

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Principal Arterial
Posted Speed Limit: 35 - 45 MPH
Number of Lanes: 4
Roadway Volume: 25,000 - 30,000

Presence of School Zone: N
Presence of Bike Lanes: Intermittent
Presence of Sidewalks: Y
Presence of Medians: Y

Lighting Condition: Lit
Equity HIN Corridor: Y
Transit Route: Y

RECENT OR PLANNED IMPROVEMENTS

There are no recent or planned improvements for S Ridgewood Avenue (US 1).

SYSTEMIC CRASH FACTORS

S Ridgewood Avenue (US 1) has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include lack of bicycle lanes and percent of households without a vehicle.

NO BICYCLE LANE **40%** Percentile

NO VEHICLE **40%** Percentile

CRASH TRENDS (2019 - 2023)

DRIVE SAFELY

37 Serious Injuries
12 Fatalities

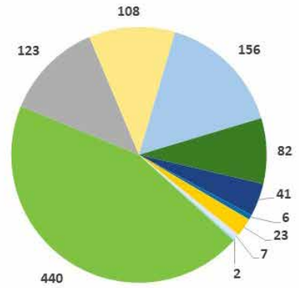
BY MODE

	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	15	5	13	16
Total	41	23	48	876

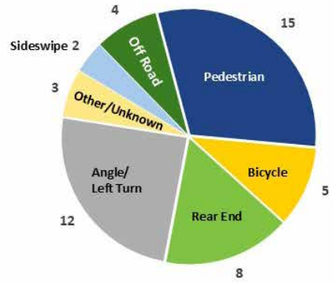
BY CRASH TYPE

Rear End
Angle/Left Turn
Other / Unknown
Sideswipe
Off Road
Pedestrian
Head On
Bicycle
Right Turn
Rollover
Animal

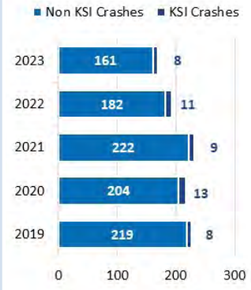
Total



KSI



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	2	11	3	7	21
Total	38	92	128	36	204

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Sidewalk/trail connectivity study
- Install R-1 series signage at signalized intersections
- Lighting justification study
- Road Safety Audit

2030 Planning Level Cost: $1,199,760

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Lane narrowing
- Access modifications to reduce left-turn conflicts
- Extend median noses into crosswalks
- Reduced curb radii
- Access management evaluation
- Co-locate bus stops with mid-block crossings and improved bus shelters
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Convert on street parking to bicycle lane with buffer with vertical deflection, signage, additional pavement markings, and green striping through intersections
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Residential street tree canopy program
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Elimination of on-street bike lanes and re-establishment of on-street parking
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy north of Riverwalk Park
- Future Land Use and Zoning revisions to accommodate shared access facilities off the corridor

Volusia County

9: SAXON BLVD from W Normandy Blvd to Sterling Silver Blvd

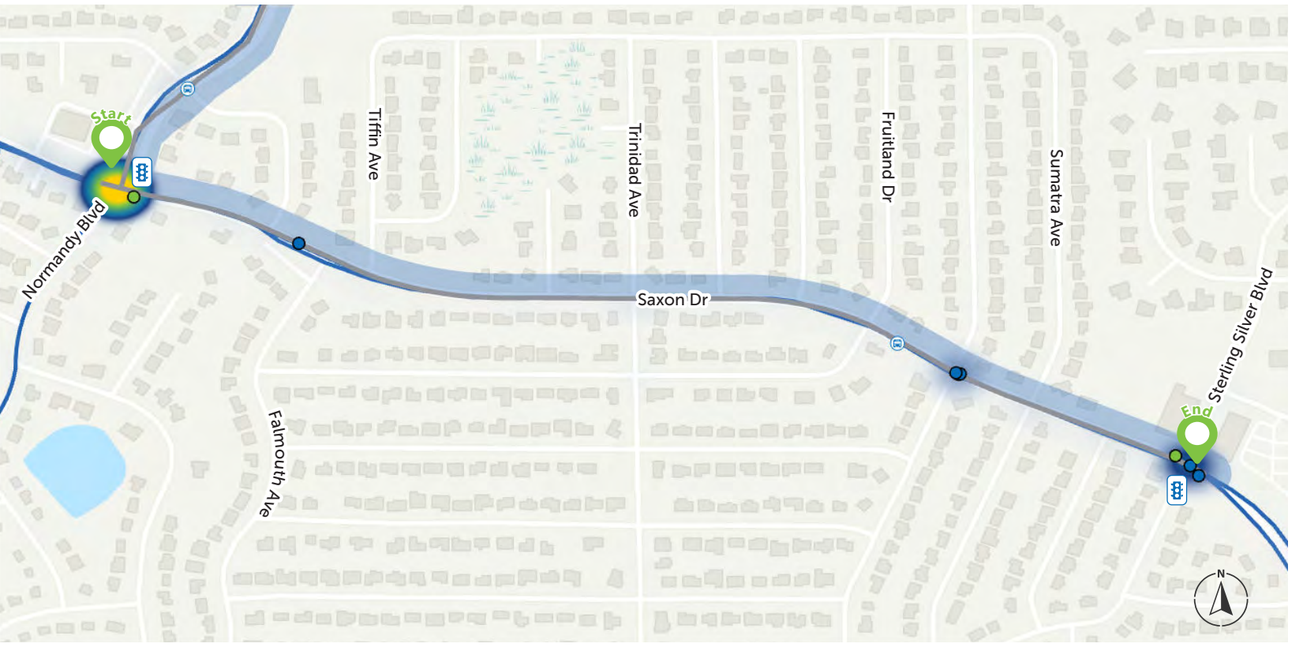
206 Total Crashes | 9 KSI Crashes | 0.8 Miles

Project Prioritization Score: 38.1

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Minor Arterial
Posted Speed Limit: 40 MPH
Number of Lanes: 4
Roadway Volume: 20,000 - 25,000

Presence of School Zone: N
Presence of Bike Lanes: N
Presence of Sidewalks: Y
Presence of Medians: Intermittent

Lighting Condition: Intermittent
Equity HIN Corridor: Y
Transit Route: Y

RECENT OR PLANNED IMPROVEMENTS

There are no recent or planned improvements for Saxon Boulevard.

SYSTEMIC CRASH FACTORS

Saxon Boulevard has been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include lack of bicycle lanes and percent of households without a vehicle.

NO BICYCLE LANE **40%** Percentile

NO VEHICLE **40%** Percentile

CRASH TRENDS (2019 - 2023)

DRIVE SAFELY

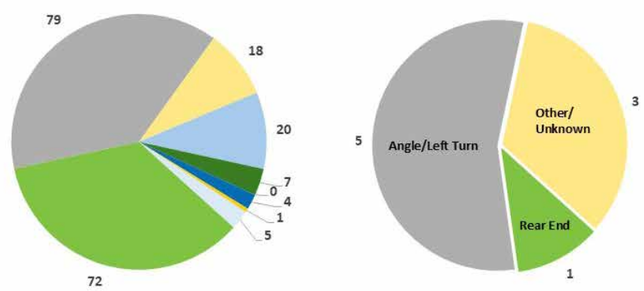
6 Serious Injuries
3 Fatalities

BY MODE

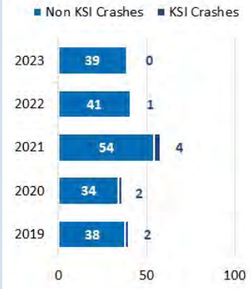
	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
KSI	0	0	5	4
Total	0	1	10	195

BY CRASH TYPE

Rear End
Angle/Left Turn
Other / Unknown
Sideswipe
Off Road
Pedestrian
Head On
Bicycle
Right Turn
Rollover
Animal



BY YEAR



OTHER FACTORS

	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
KSI	0	3	0	0	3
Total	6	29	14	4	56

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Backplates with retroreflective borders on signal heads
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Sidewalk/trail connectivity study
- Install R-1 series signage at signalized intersections
- Road Safety Audit

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Access modifications to reduce left-turn conflicts
- Reduced curb radii
- Co-locate bus stops with mid-block crossings and improved bus shelters
- Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Hardened centerlines and raised medians with landscaping and pedestrian refuge islands
- Residential street tree canopy program
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy north of Riverwalk Park

2030 Planning Level Cost: $398,640

Volusia County

10: HOWLAND BLVD from Catalina Blvd to Fort Smith Blvd

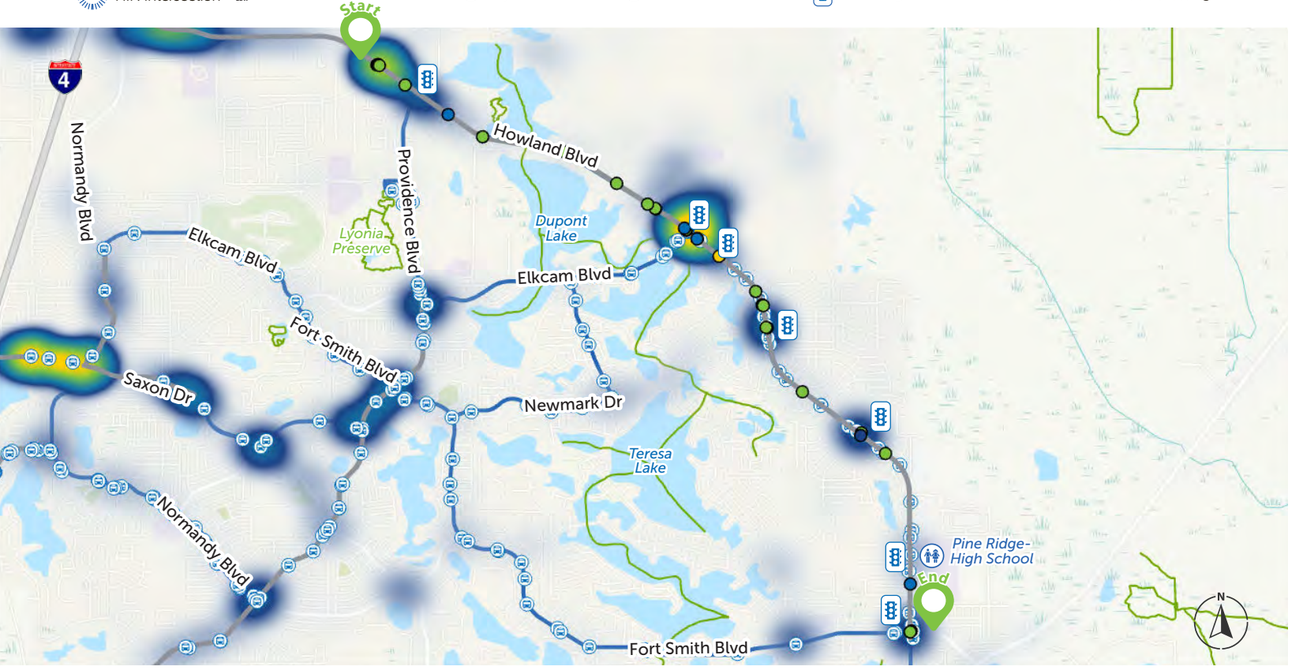
730 Total Crashes | 33 KSI Crashes | 6.4 Miles

Project Prioritization Score: 36.1

ROADWAY PROFILE

LEGEND

HIN
HIN Intersection
Density of All Crashes (High / Low)
Equity Area
Pedestrian KSI Crash
Bicycle KSI Crash
Motorcycle KSI Crash
Motor Vehicle KSI Crash
Bus Route/Stop
Traffic Signal
School
Trail
Railroad Crossing
Midblock Crossing



Functional Classification: Minor Arterial
Posted Speed Limit: 40 - 45 MPH
Number of Lanes: 2 - 4
Roadway Volume: 15,000 - 35,000

Presence of School Zone: Y
Presence of Bike Lanes: N
Presence of Sidewalks: Y
Presence of Medians: Y

Lighting Condition: Intermittent
Equity HIN Corridor: Y
Transit Route: Y

RECENT OR PLANNED IMPROVEMENTS

There are no recent or planned improvements for Howland Boulevard.

SYSTEMIC CRASH FACTORS

Portions of Howland Boulevard have been identified as a top 40 percentile crash risk for pedestrians and bicyclists in Volusia County. Significant risk factors include lack of bicycle lanes and and location within a school buffer.

NO BICYCLE LANE **40%** Percentile

SCHOOL ZONE **40%** Percentile

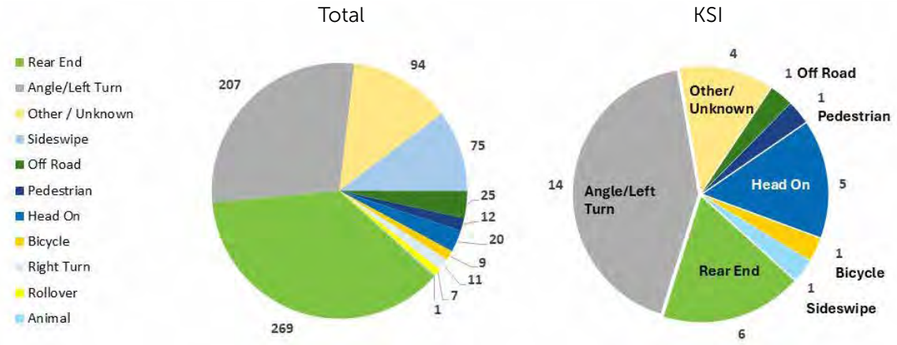
CRASH TRENDS (2019 - 2023)

DRIVE SAFELY

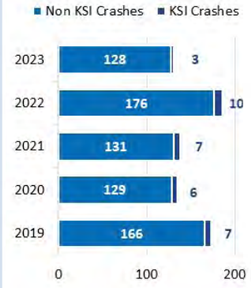
28 Serious Injuries
5 Fatalities

BY MODE

	KSI	PEDESTRIAN	BICYCLE	MOTORCYCLE	VEHICLE-ONLY
	Total	1 / 12	1 / 9	4 / 15	27 / 694



BY YEAR



OTHER FACTORS

	KSI	IMPAIRMENT*	AGGRESSIVE**	DISTRACTED	UNRESTRAINED	DARK
	Total	4 / 26	7 / 76	2 / 103	7 / 27	15 / 178

*Impairment crash data includes both drug and alcohol impairment. **Aggressive crash data includes both aggressive driving and speeding.

PROPOSED SAFETY COUNTERMEASURES

NEAR-TERM (BY 2030)

- Appropriate speed limit assessment
- Speed feedback signs
- Leading Pedestrian Intervals (LPIs) with audible push buttons
- Review of signal phasing, timing, and yellow change intervals
- Backplates with retroreflective borders on signal heads
- Signal coordination analysis
- Striping through intersections for left turn movements
- Refresh faded crosswalks and pavement markings
- High-emphasis crosswalks on all legs of intersections
- Sidewalk/trail connectivity study
- Speed cameras in school zone
- Install R-1 series signage at signalized intersections
- Road Safety Audit

2030 Planning Level Cost: $1,203,780

MID-TERM (BY 2040)

- Re-assessment of appropriate speed limit
- Access modifications to reduce left-turn conflicts
- Reduced curb radii
- Mast arm design at signalized intersections
- Co-locate bus stops with mid-block crossings and improved bus shelters
- Upon speed limit reduction, upgrade school crosswalks to raised crosswalks with RRFB, advanced warning signs, yield markings, and in-pavement lighting
- Co-locate bus stops with mid-block crossings and improved bus shelters
  Mid-block crossings with high-emphasis crosswalks, crosswalk lighting, and/or pedestrian signalization (PHB or HAWK)
- Enhanced landscaping with canopy trees in existing raised medians
- Hardened centerlines and raised medians with landscaping and pedrefuge islands
- Residential street tree canopy program
- Lighting justification study

LONG-TERM (BY 2050)

- Roundabout or signalization of intersection(s)
- Expand existing sidewalks to a minimum of 10 feet to accomodate a multiuse trail or shared-use path with tree canopy

POLICY RECOMMENDATIONS

The policy review evaluated the alignment of seven existing policy documents in Volusia and Flagler Counties against key elements of the Safe System Approach as identified in three benchmark plans from other jurisdictions. Documents were evaluated for barriers to reaching the goal of zero traffic fatalities and serious injuries as well as opportunities to integrate data, contents, and recommendations into the Vision Zero Action Plan.

Group of people sitting at a table reviewing plans

The policy documents reviewed are identified in Table 9.

TABLE 9: VOLUSIA AND FLAGLER COUNTY PLANS IDENTIFIED FOR REVIEW

Agency	Documents
VFTPO	• Connect 2045 Long Range Transportation Plan (LRTP) (2020) • Transportation Impact Analysis (TIA) Guidelines Methodology (2016)
Volusia County	• Volusia County Transportation Element of the Comprehensive Plan • Votran Transit Development Plan (TDP) (2021) • Votran Transit Development Plan (TDP) Minor Update (2024)
Flagler County	• Flagler County Transportation Element of the Comprehensive Plan • Flagler Forward: Flagler County Transit Development Plan (TDP) (2022)

POLICY ALIGNMENT WITH VISION ZERO CORE ELEMENTS

The following provides an assessment of the incorporation of Vision Zero Core Elements into the seven policy documents and programs for Volusia and Flagler counties.

Vision Zero Core Element	Plan Alignment – Low, Medium, High
Comprehensive Evaluation and Adjustments Process for evaluating performance of safety interventions and to address underreporting.	○ ○ ○ No documents incorporate this element
Context Appropriate Speeds Posted speed limits, policies, and roadway design promote safe speeds to protect all roadway users.	○ ○ ○ No documents incorporate this element
People-Focused Analysis and Programs Program vision, goals, project prioritization, and report of outcomes reflect the impact on people.	● ○ ○
Proactive, Systemic Planning Data is at the center of decision-making and project prioritization including the development of the HIN, application of countermeasures, and ongoing data improvements.	● ○ ○
Responsive Hot Spot Planning The HIN is analyzed according to demographics, and data is reported to the public.	● ○ ○
Strategic Planning A plan for reaching Vision Zero is in place including crash data, goals and a timeline, metrics for success, and clear action items with responsible parties and funding identified.	● ○ ○

Vision Zero Core Element	Plan Alignment – Low, Medium, High
Public, High-Level, and Ongoing Commitment County leaders commit to the elimination of transportation-related fatalities and serious injuries within a specific timeframe.	● ● ○
Authentic Engagement Public engagement is representative of the community, held regularly at convenient times, involves community organizations and leaders, provides grant opportunities, and engages Vision Zero advocate organizations.	● ● ●
Project Delivery Project selection and implementation prioritizes the use of countermeasures or explicit safety policies and multi-modal transportation options, with sufficient funding allocated.	● ● ●
Complete Streets for All Complete Streets principles, including the prioritization of vulnerable users, connectivity, and accommodation of multi-modal options, are incorporated into project planning and implementation with funding allocated.	● ● ●

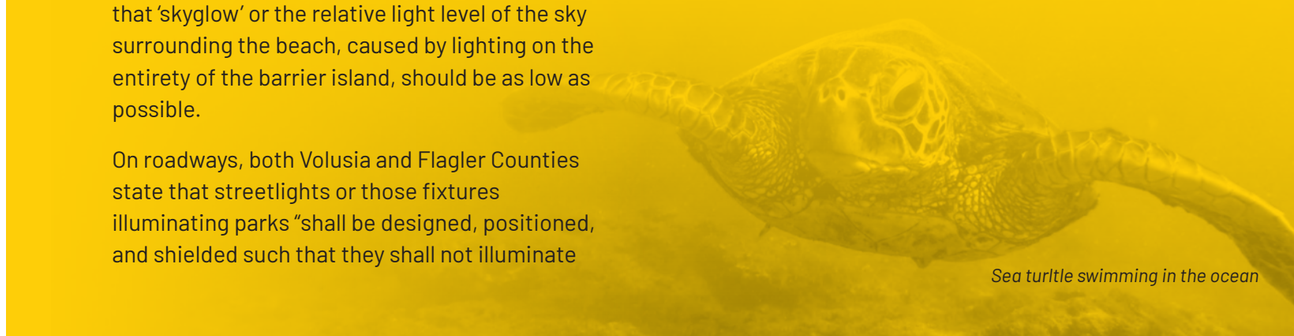
SEA TURTLES SAFETY POLICY

Lighting standards directed to protect the nesting, hatching, and eventual maturity of sea turtles have been drafted at the state and county levels with some municipalities in the VFTPO planning area passing individual ordinances demonstrating support as well.

Broadly,no lighting should be visible to an individual standing on the beach, including the shadow of the lighting. The Volusia County Beach Lighting Management Plan even notes that 'skyglow' or the relative light level of the sky surrounding the beach, caused by lighting on the entirety of the barrier island, should be as low as possible.

On roadways, both Volusia and Flagler Counties state that streetlights or those fixtures illuminating parks "shall be designed, positioned, and shielded such that they shall not illuminate the beach". This applies to both direct and indirect illumination. Both counties also exempt from these requirements lights which are aids to navigation, motion sensors, and traffic control devices.

For footpaths and walking routes, the State recommends low-level fixtures such as step, paver, path, or recessed wall lights or bollard lights. These fixtures should not exceed 42 inches in height and should be directed downward, using long wavelength lamps and beachside shields.



Sea turtle swimming in the ocean

SUMMARY OF RECOMMENDATIONS

The Policy Review identified various preliminary recommendations for Volusia County, Flagler County, and the VFTPO. Recommendations primarily include adopting direct Vision Zero commitments into key documents, adopting FDOT's multimodal guidelines, revising speed limit policies, and integrating crash data into project prioritization and capital improvement programs.

Crash Data to Inform Prioritization

- Create a process for using crash data to prioritize funding for HIN projects.
- Integrate Vision Zero goals into the prioritization process for public transportation projects.

Expand on Existing Safety Policies and Best Practices

- Build upon local safety efforts.
- Incorporate Vision Zero into existing roles such as the Chief Safety Officer.
- Continue investment in public transportation systems.

Adopt Vision Zero Commitments

- Adopt Vision Zero into planning documents.
- Make safety a CIP prioritization criteria.
- Provide technical assistance on achieving Vision Zero.
- Partner with FDOT on Target Zero.

Revise Speed Limit Policies

- Establish clear and transparent guidelines for determining speed limits based on context.
- Integrate Chapter 9 of FDOT's Speed Zoning Manual.
- Adopt speed limit policies and frameworks near schools and areas with vulnerable users.

Reference FDOT Guidelines

- Incorporate Multimodal Transportation Site Impact Handbook into TIA methodology.
- Incorporate Complete Streets guidelines into planning documents.
- Create a process for allocating funds to Complete Streets projects.

The following are specific recommendations for the TPO and counties to increase alignment of key policy documents with the Vision Zero goals and principles.

VOLUSIA-FLAGLER TPO

- Incorporate guidance for complete streets and context classification implementation in TPO documents.
- Integrate speed management practices and identify the High Injury Network in TPO planning guidance.
- Provide technical assistance to local governments on achieving Vision Zero.

VOLUSIA AND FLAGLER COUNTIES

- Integrate FDOT's Multimodal Transportation Site Impact Handbook into the local Traffic Impact Analysis (TIA) methodology.
- Adopt Vision Zero goals in the Transportation Element of both counties with clear objectives and policies to achieve zero roadway fatalities and serious injuries.
- Review current speed limit practices and align design, posted, and target speeds.
- Integrate complete streets plans into county planning documents based on the local needs and context.
- Evaluate Level of Service (LOS) policies in relation to road safety, considering various metrics of roadway success better suited to the context of different areas.
- Develop a procedure to prioritize funding for safety projects in High Injury Network (HIN) corridors and intersections.

VOLUSIA COUNTY

- Align public transportation investments with Vision Zero objectives of promoting safe and diverse transportation options.

FLAGLER COUNTY

- Appoint a Chief Safety Officer.

THE FUTURE OF VISION ZERO

The path to zero deaths and serious injuries on VFTPO-area roadways begins with acknowledging the need and desire for change among the community and formalizing it within an Action Plan like this one. After identifying the HIN and prioritizing implementable actions, the VFTPO will have a clear path forward which considers current conditions across various factors and the feedback received from the communities within the planning area. Once planned action becomes reality, the VFTPO will have the resources and guidance to effectively monitor both progress and effectiveness over time.

The Vision Zero Action Plan will ultimately be used as a means to secure funding for the implementation of roadway safety projects. This section of the plan provides guidelines for transforming countermeasure recommendations into future action by identifying potential future funding opportunities. Other outlined next steps include guidelines for the tracking of countermeasure progress to consistently evaluate key performance indicators over time and the use these indicators to refine future strategies as needed.

Bicyclist riding in a bike lane

FUNDING

Completing a Vision Zero Action Plan provides the VFTPO with the opportunity to pursue implementation funding within the Safe Streets and Roads for All (SS4A) grant program. Implementation funding will provide the TPO with the dollars to execute the actions and recommendations enclosed within this plan.

SAFE STREETS AND ROADS FOR ALL (SS4A) IMPLEMENTATION GRANT

The SS4A Implementation Grant is a 5-billion-dollar grant program appropriated by the U.S. Department of Transportation to support transportation safety initiatives using the Safe System approach. The program allocates $1 billion per year through 2026 for a range of eligible project types with approximately $2 billion remaining for future funding[1].

After the completion of a comprehensive safety action plan, funds may be applied for through the implementation grant program for projects identified by the plan. The Volusia-Flagler VZAP was developed according to SS4A guidance and identifies a range of projects which align with the program's goal of using a community and data-driven strategy to eliminate serious injuries and fatal crashes.

ELIGIBLE SS4A IMPLEMENTATION GRANT ACTIVITIES

Implementation grant funds can be used for the following activities[2]:

- Countermeasure projects and strategies identified by the VZAP
- Demonstration activities
- Supplemental planning to further develop the countermeasures
- Project-level planning, design, and development activities for projects and strategies identified in the VZAP
- Projects and strategies that address broad, programmatic safety recommendations and goals from the VZAP

LOCAL MATCH

In addition to the federal contribution, Implementation Grants under the SS4A program mandate that at least 20 percent of the total project cost must be covered by non-Federal sources (i.e. the local government). This local contribution may be in the form of direct financial support or in-kind contributions, consistent with the requirements of 2 CFR Part 200.

Recipients are required to document their matching contributions throughout the grant's performance period to ensure alignment with the activities and budget specified in the award. Any amount above the required 20 percent is subject to audit and must be thoroughly documented.

[1] U.S. Department of Transportation (USDOT), 2025. *Safe Streets and Roads for All (SS4A) Grant Program.* Retrieved from https://www.transportation.gov/grants/SS4A

[2] USDOT, March 2025. *USDOT FY 25 Safe Streets and Roads for All Funding.* Retrieved from https://www.transportation.gov/sites/dot.gov/files/2025-03/SS4A-FY25-NOFO.pdf

SECONDARY FUNDING SOURCES

FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STATE SAFETY OFFICE SUBGRANTS

Subgrants are provided to partners by the FDOT State Safety Office for initiatives aimed at enhancing transportation safety and decreasing the incidence of crashes, serious injuries, and fatalities. To be considered for funding in the upcoming fiscal year, applicants must submit a concept paper between January 1st and February 28th. The funding for these subgrants is allocated annually to states by the National Highway Traffic Safety Administration and does not apply to the local match requirement.

FLORIDA SAFE ROUTES TO SCHOOL (SRTS) GRANTS

The FDOT Safe Routes to School (SRTS) program is a statewide initiative designed to ensure safer walking and biking environments to school. This competitive grant funds the development and implementation of projects intended to enhance safety near K-12 schools. Eligible projects must be located within two miles of the school and fall within its attendance boundary. Generally, the SRTS grant application period extends from October to January. Funding for SRTS grants comes from Florida's highway toll revenue, which can be applied toward the SS4A program's local match requirements.

AARP COMMUNITY CHALLENGE GRANTS

The AARP Community Challenge Grant program, initiated in 2017, is part of the nationwide AARP Livable Communities initiative aimed at enhancing community livability for individuals of all ages. Offering "quick-action" grants, the program supports local projects that are swiftly implementable to meet community needs. Eligible applicants include government bodies and nonprofit organizations. In 2025, the Demonstration Grants range from 10,000 to 20,000, focusing on priorities like improving pedestrian safety, expanding high-speed internet access, reuniting communities divided by infrastructure, and launching design competitions for housing. Applications are generally due in March.

LOCAL FUNDS

The local match requirement can be fulfilled through staff time or the general fund, which is supported by ad valorem taxes, sales taxes, and other locally authorized revenue sources. Local governments have the option to employ various value capture strategies in addition to traditional finance sources. These can include mobility fees, developer contributions, joint development ventures, asset recycling, and advertising or naming rights initiatives. Moreover, funding partnerships may be established with other local agencies for projects that benefit both parties.

PROGRESS TRACKING

An important component of the VZAP is to monitor progress of plan implementation for projects following plan adoption. This is achieved by identifying performance criteria in the form of a Performance Scorecard and creating tools to measure and visualize project performance over time.

Successful progress tracking efforts should incorporate the foundational elements of progress monitoring and measuring, accountability, and continuous improvement. Together these elements help to sustain momentum, improve public confidence, and ensure VZAP efforts are data-driven, transparent, and adaptable.

PERFORMANCE SCORECARD

The Performance Scorecard was developed to track key performance criteria over time. The six performance criteria focus areas are representative of key goals and objectives of the VZAP and include Safety, Equity, Safe Speeds, Documented Policy Changes, Community Engagement, and Prioritization Corridor Countermeasures. Each focus area includes one or more performance measures which quantify the degree of progress made by comparing actual versus targeted values for each measurement. The scorecard categories and measurements are displayed in Table 10.

Progress of projects along the HIN prioritized corridors are also tracked by monitoring the amount funded, percent completion of project design, percent completion of project construction, and the year completed.

VISION ZERO PERFORMANCE TRACKING TOOLS

The measurements generated by the Performance Scorecard results will be presented through a dynamic online Story Map. This tracking tool will allow for quick updates and progress assessments to determine the effectiveness of measures identified within the VZAP, meeting the progress tracking goals of accountability and continuous improvement. As progress measures are routinely updated, they will help to inform areas of highest priority as project implementation and funding decisions are made in the future.

TABLE 10: PERFORMANCE SCORECARD

Focus Area	Performance Measures
Safety	1. Number of traffic-related fatalities 2. Number of serious injuries 3. Fatalities/Serious injuries per 100M VMT 4. Crash Rate by Mode
Equity	1. % of projects benefiting high-vulnerability communities 2. % of pedestrian/bike crashes in underserved areas addressed
Safe Speeds	1. % of arterial corridors with speed management treatments 2. % of roads posted < 35 mph in urban areas
Documented Policy Changes	1. Report of policies from local governments adopted/changed (create their own vision)
Community Engagement	1. Number of outreach events per year 2. % of projects influenced by community input
Prioritization Corridor Countermeasures	1. % of funded safety strategies implemented

Small family walking and pushing a baby stroller

VOLUSIA • FLAGLER

VISION ZERO ACTION PLAN

VOLUSIA FLAGLER TPO

TRANSPORTATION PLANNING ORGANIZATION