Manatee County FLORIDA

MANATEE COUNTY
TRAFFIC ROAD SAFETY PROGRAM AND ACTION PLAN

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Kimley»Horn

Executive Summary

Manatee County is formalizing its existing safety culture through the Manatee County Traffic Road Safety Program and Action Plan (TRSPAP) to create consistent, data-driven solutions for traffic and road safety. This approach will help identify challenges and opportunities while prioritizing projects that enhance overall road safety. Manatee County has experienced an 11% population growth since 2018, with a 17% increase in crashes on Manatee County owned and operated roadways. The TRSPAP aims to address both short-term and long-term safety enhancements while proactively meeting the needs of future population growth.

Supported by funding from the Safe Streets and Roads for All (SS4A) Program, a U.S. Department of Transportation (USDOT) federal grant, the TRSPAP is designed to enhance road and intersection safety, reduce risks, and prevent serious injuries and fatalities. Manatee County plans to use the TRSPAP as a key resource for prioritizing projects, addressing existing safety concerns, and minimizing future issues.

Key Objectives

Objectives of the TRSPAP include:

- **Reduce Fatalities and Serious Injuries:** The TRSPAP focuses on reducing traffic-related fatalities and serious injury crashes through strategic interventions.
- **Data-Driven Solutions:** The TRSPAP utilizes detailed safety analysis and trends to identify high-risk areas and prioritize projects that will have the most significant impact on road safety.
- **Comprehensive Safety Measures:** The TRSPAP includes a toolbox of countermeasures and strategies to address specific types of issues/concerns, such as safety, vulnerable road users, and high levels of left-turn crashes.
- **Project Prioritization:** The development of the TRSPAP includes a data-based prioritization tool which can be routinely updated to identify priority project locations for road safety enhancements.
- **Community Engagement:** Feedback from elected officials and community members is integral to developing the TRSPAP, ensuring the plan reflects local needs and priorities.
- **Performance Monitoring:** The prioritization tool is a mechanism to routinely evaluate and monitor safety conditions on County owned and operated roadways.

TRSPAP Findings

The TRSPAP uses prioritization criteria to rank top priority locations. The prioritization tool that has been developed utilizes these criteria to determine safety projects that are high priority. The prioritization tool is dynamic in nature allowing for continuous analysis of evolving data to identify priority corridors and monitoring and evaluating effectiveness of completed projects. The TRSPAP also provides a matrix of performance measures that could be assessed over time for safety performance.

The TRSPAP identified key issues and challenges for road safety on County owned and operated roads, including:

- Safety at Signalized and Unsignalized Intersections
- Bicycle and Pedestrian Crashes
- High Levels of Left Turn Crashes
- Aging and Teen Driver Lane Departure and Run-Off-the-Road Crashes

These findings call for targeted safety measures and infrastructure enhancements to increase road safety in Manatee County. A toolbox of safety strategies and countermeasures to address these issues are included to help mitigate the identified safety challenges.

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LIST OF ABBREVIATIONS

AADT – Annual Average Daily Traffic
ACS – American Community Survey
ATP – Active Transportation Plan
BOCC – Board of County Commissioners
CIP – Capital Improvement Plan
EPDO – Equivalent Property Damage Only
ETC – Equitable Transportation Community
FDOT – Florida Department of Transportation
FHWA – Federal Highway Administration
GIS – Geographic Information Systems
HIN – High Injury Network
KA – Fatal or Suspected Serious Injury
KABCO – FHWA injury severity classification scale
KSI – Killed or Seriously Injured
LPI – Leading Pedestrian Interval
LRTP – Long Range Transportation Plan
MPO – Metropolitan Planning Organization
MVMT – Million Vehicle Miles Traveled
NHTSA – National Highway Traffic Safety Administration
PDO – Property Damage Only
PHB – Pedestrian Hybrid Beacon
RPMs – Retroreflective Pavement Markers
RRFB – Rectangular Rapid Flashing Beacon
SAP – Safety Action Plan
SS4A – Safe Streets and Roads for All
TRSPAP – Traffic Road Safety Program and Action Plan
USDOT – United States Department of Transportation
VMT – Vehicle Miles Traveled
VPD – Vehicles Per Day
VRU – Vulnerable Roadway User

Introduction

Manatee County is dedicated to developing a safe and convenient transportation system that serves all users, including motorists, cyclists, pedestrians, transit and school bus drivers, delivery and service personnel, freight haulers, and emergency responders. In 2022, the Sarasota/Manatee Metropolitan Planning Organization (MPO) adopted the Destination Zero Action Plan, committing to safer streets for all road users in Manatee County. The Manatee County Public Works Department pursued and received funding from the SS4A program to further this goal by formalizing its existing safety culture through the development of the Traffic Road Safety Program and Plan (TRSPAP) for a consistent data-drive solution to road safety.

Promoting traffic and road safety for all users is a complex task that requires a comprehensive and coordinated approach. The TRSPAP identifies traffic and road safety enhancements and a prioritization process to implement road safety projects. The Manatee County Public Works Department has overseen the development of the TRSPAP and will continue to monitor traffic and road safety conditions and identify future safety projects.

FOREWORD

Between January 1, 2018 and December 31, 2023, there were 1,185 fatal and serious injury-causing crashes on roads owned and operated by Manatee County. The TRSPAP was developed to reduce crashes, increase safety, and proactively address future safety concerns on County owned and operated roads.

This TRSPAP includes the following:

- **Safety Trends and Patterns –** An in-depth analysis of the factors and trends that contribute to fatal and injury-causing crashes on Manatee County owned and operated roads.
- **Plan and Policy Analysis –** An analysis of existing plans and policies in Manatee County related to transportation safety and potential new policies not currently in place to prevent fatal and injury-causing crashes systematically.
- **Safety Strategies and Priority Projects –** A toolbox of safety strategies to prevent crashes and address priority crash factors, including engineering, enforcement, and a prioritized list of potential road safety projects.
- **Engagement –** A summary of feedback received from elected officials and community members from the presentation of the draft TRSPAP.
- **Next Steps –** A framework for implementing the recommendations of the TRSPAP, including timing and performance measures.

Efforts to eliminate traffic deaths, serious injuries, and crashes will take time and partnerships. Many of the roads owned and operated by Manatee County are designed to accommodate high vehicle volumes at high speeds, with limited accommodations for bicyclists and pedestrians. To most effectively utilize available resources in a county with many infrastructure needs, the County seeks to strategically invest in critical safety enhancements. The TRSPAP focuses on roads owned and operated by Manatee County.

SAFE SYSTEM APPROACH

The TRSPAP is grounded in the Safe System Approach to transportation safety, as shown in **Figure 1**. This approach is the guiding safety paradigm of the United States Department of Transportation (USDOT) and is a key part of the Toward Zero Deaths National Strategy.

While a conventional approach to road safety aims to change human behavior to prevent crashes, the Safe System Approach acknowledges that humans make mistakes, and we have a responsibility to build layers of protection to prevent crashes and minimize harm when crashes happen.

Road safety is a shared responsibility. Manatee County has its greatest impacts through three components of the Safe Systems approach: safer roads, safer speeds, and safer people.

Figure 1. Safe System Approach (Source: USDOT)

Objectives of a Safe System Approach

- **Safer Roads –** Design roadway environments to mitigate human mistakes and account for injury tolerances, encourage safer behaviors, and facilitate safe travel by the most vulnerable users.
- **Safer Speeds –** Promote safer speeds in all roadway environments through a combination of thoughtful, equitable, context-appropriate roadway design, appropriate speed-limit setting, targeted education, outreach campaigns, and enforcement.
- **Safer People –** Encourage safe, responsible driving and behavior by people who use our roads and create conditions that prioritize their ability to reach their destination unharmed.
- **Safer Vehicles –** Expanding the availability of vehicle systems and features that help to prevent crashes and minimize the impact of crashes on both occupants and non-occupants.
- **Post-Crash Care –** Enhance the survivability of crashes through expedient access to emergency medical care, while creating a safe working environment for vital first responders and preventing secondary crashes through traffic incident management practices.

VULNERABLE ROAD USERS

Vulnerable road users (VRUs) are individuals more likely to incur serious injury or death when involved in a traffic crash due to the lack of physical protection from a vehicle. These users include, but are not limited to pedestrians, cyclists, people operating wheelchairs or other personal mobility devices, electric scooters, and motorcyclists. Individuals working on or near roadways, such as construction workers, law enforcement, firefighters, and other first responders, are also under increased risk. As seen in **Figure 2**, based on national data, vehicle speeds are a significant factor in whether a pedestrian who is hit survives the crash or is killed.

As determined in the development of the TRSPAP, crashes involving a VRU have increased in recent years across the country, as well as on Manatee County owned and operated roads. Crashes specifically involving pedestrians, cyclists, and motorcyclists have increased by 13% since 2021. VRUs are three times more likely to be hurt or killed if involved in a crash than those traveling in an enclosed vehicle. More information regarding VRU crashes can be found in the Safety Trends section and **Appendix A**.

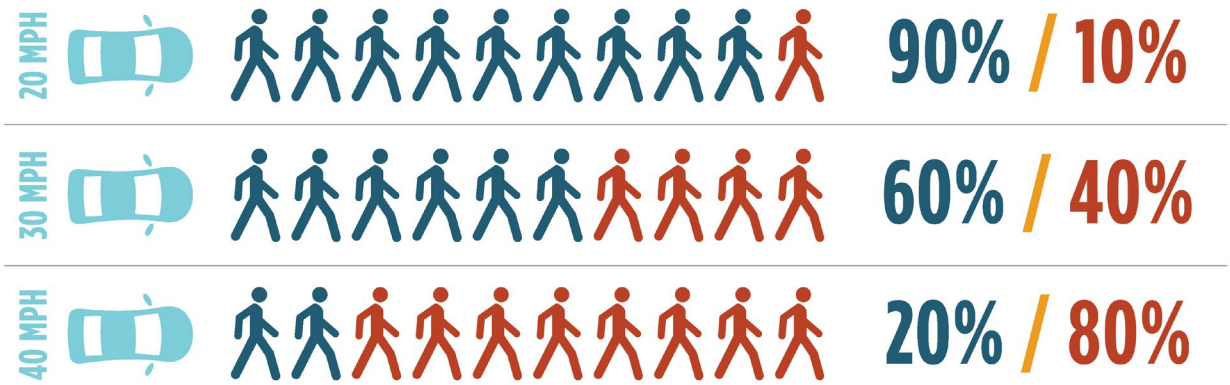


Figure 2. Vehicle Speed and Fatality Risk Among Pedestrian Crashes

KEY OBJECTIVES

Manatee County is growing, and crashes on County owned and operated roads have increased disproportionately along with the population. Since 2018, the county population increased by 11%, and total crashes have increased by 17%. As the County continues to grow, addressing existing safety concerns and preventing future safety issues is essential.

On Manatee County owned and operated roads, an average of 198 people have been killed or seriously injured in crashes each year since 2018. Between 2018 and 2023, fatal and serious injury crashes have declined each year on roads owned and operated by Manatee County. The County's current approach has proven effective in reducing fatal and serious injury crashes but requires a consistent and uniform data-driven approach to reducing overall crashes.

The TRSPAP lays the groundwork for identifying priority safety issues and providing a framework for prioritizing roadway projects within the County's road network. The TRSPAP aims to create safer roads and intersections, to save lives and reduce life-altering injuries.

The key objectives of TRSPAP are:

- **Reduce Fatalities and Serious Injuries:** The TRSPAP focuses on reducing traffic-related fatalities and serious injury crashes through strategic interventions.
- **Data-Driven Solutions:** The plan utilizes detailed safety analysis and trends to identify high-risk areas and prioritize projects that will have the most significant impact on road safety.
- **Comprehensive Safety Measures:** The plan includes a toolbox of countermeasures and strategies to address specific types of issues/concerns, such as safety, vulnerable road users, and high levels of left-turn crashes.
- **Project Prioritization:** The development of the TRSPAP includes a data-based prioritization tool which can be routinely updated to identify priority project locations for road safety enhancements.
- **Community Engagement:** Feedback from elected officials and community members is integral to developing the TRSPAP, ensuring that the plan reflects local needs and priorities.
- **Performance Monitoring:** The prioritization tool is a mechanism to routinely evaluate and monitor safety conditions on County owned and operated roadways. The TRSPAP identifies potential performance measures to track the effectiveness of implemented projects and adjust strategies as needed.

The TRSPAP outcomes carry additional benefits, including:

- **Economic Impact -** Crashes have both a human cost and a direct economic impact. Each year, motor vehicle crashes cost the nation approximately $417 billion, according to the National Highway Traffic Safety Administration (NHTSA). This figure includes property damage, medical costs, lost productivity, and other factors. The crash cost, sometimes referred to as the "crash tax", is roughly equivalent to $1,268 for every person living in the United States and represents 1.45% of the U.S. Gross Domestic Product. Minimizing crashes saves lives and lessens their economic impact.
- **More Reliable Commute Times -** Crashes can cause significant traffic delays that impact Manatee County commuters. Reducing crashes on our roads creates more reliable and consistent commute times, something that can greatly increase quality of life.

- **Health Benefits -** Safer bike and pedestrian routes promote active transportation, directly enhancing public health. In addition to health benefits, investing in active transportation facilities can lower medical expenses. According to a literature review by the American Heart Association in 2011, every $1 spent on biking trails and walking paths could save around $3 in medical bills (American Trails).
- **Support Aging Populations -** Over 28% of Manatee County's population is 65 years or older, which is higher compared to the state (21%) and national (17%) averages. The safety enhancements in this TRSPAP provide infrastructure to prevent and reduce the severity of crashes for the County's aging population.

Safety Trends

An analysis of safety trends and patterns on Manatee County owned and operated roads is essential to informing the priorities, recommendations, and implementation of the TRSPAP. The TRSPAP safety analysis includes the following components:

- Evaluation of crash trends on Manatee County owned and operated roadways
- Analysis of overall crash trends, fatal/injury crash trends, location trends, and trends in crashes by mode (vehicular, bicycle, pedestrian, and motorcycle)
- Analysis of top crash characteristics and contributing factors
- Establishment of the High Injury Network (HIN) for all users, as well as a HIN for Vulnerable Road Users (VRUs)
- Economically constrained community analysis of crash patterns based on census tracts designated as disadvantaged by the USDOT's Equitable Transportation Community (ETC) Explorer tool

The key takeaways from this analysis are summarized in this section. **Only roadways owned and operated by Manatee County were reviewed in the safety analysis and the development of the High Injury Network (HIN).** Full results of the safety analysis can be found in **Appendix A**.

KEY TAKEAWAYS

Key takeaways from the six-year crash trends and pattern analysis are shown below.

Intersections

On County owned and operated roads, 42% of all crashes are intersection related and 47% of all fatal and serious injury crashes are also intersection related.

Vulnerable Road Users

VRU crashes have increased by 13% since 2021 and are 3 times more likely to be hurt or killed in a crash on Manatee County roads. 30% of motorcycle-involved crashes resulted in fatalities or serious injuries and 32% resulted in minor injuries. 31% of bicycle crashes resulted in fatalities or serious injuries and 59% resulted in minor injuries. 41% of pedestrian crashes resulted in fatalities or serious injuries and 43% resulted in minor injuries.

Aging and Teen Drivers

On County owned and operated roads, a higher proportion of fatal or serious injury lane departure or run off the road crashes involved aging and teen drivers than on the countywide network (19% and 9%, respectively). The top three contributing factors in a fatal or serious injury crash for aging and teen drivers are intersection related, lane departure, and distracted driving.

Distracted Driving

Distracted driving crashes make up 14% of all crashes and 12% of all fatal and serious injury crashes on County owned and operated roads. Distracted driving is the cause of more crashes and fatal and serious injuries than aggressive driving/speeding and impaired driving.

Left Turn Crashes

28% of all crashes on County owned and operated roads are left turn crashes but make up 36% of all fatal and serious injury crashes.

Other Key Takeaways:

- ***Time of day.*** *A disproportionate percentage of fatal and serious crashes occur in the evening and late-night hours. This can be attributed to lighting conditions, lack of roadway lighting, impaired driving, and expectation of fewer roadway users.*
- ***Seasonal conditions.*** *Overall crashes and fatal and serious injury crashes show a connection to peak season in Florida and when there are more drivers on the roadways during holiday months and spring break.*
- ***Angle crashes.*** *19% of all crashes on Manatee County owned and operated roads are angle crashes and make up 25% of all fatal and serious injury crashes.*

The full Crash Trends and Patterns analysis is on the following pages and the full safety analysis can be found in **Appendix A.**

CRASH TRENDS AND PATTERNS

From 2018 to 2023, the number of total crashes in Manatee County has increased along with the population, as shown in **Figure 3**. During this time, the population has increased by 11%, and the number of total crashes increased by 16%. **The six-year historical crash trends suggests that as the population continues to increase, so will the number of total crashes.** However, the percentage of fatal or serious injury crashes has decreased by 46% since 2018. This decrease illustrates Manatee County's commitment to providing a safe and functional transportation system and progress that has been made in recent years. The goal of this TRSPAP is to build on that progress and identify additional safety emphasis areas.

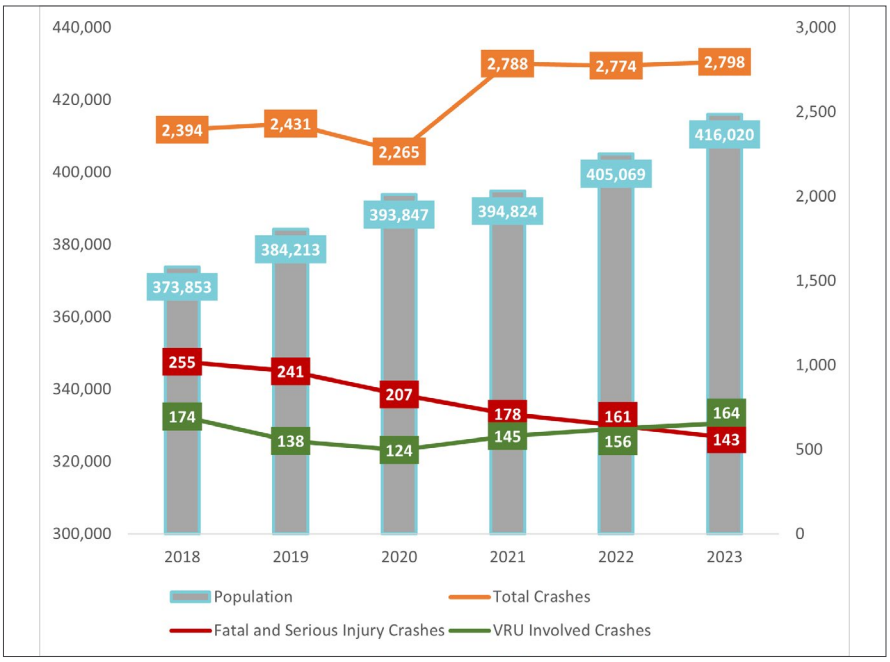


Figure 3. Annual Crashes and Population.

Source: American Community Survey (ACS) 5-Year Estimates, Signal 4 Analytics

Safety Emphasis Areas

Based on the crash analysis and review of crash trends, six safety emphasis areas were identified. The emphasis areas serve as a way to categorize crash types and contributing factors with the highest frequency or rate of fatal or serious injury crashes (KA).

- Vulnerable Road Users
- Intersections
- Lane Departure and Run Off Road
- User Behavior
- Time of Day/Lighting Conditions
- Seasonal Conditions

Vulnerable Roadway Users

Crashes involving Vulnerable Road Users (VRUs) on Manatee County owned and operated roadways show to be steadily increasing over the last six years, shown in **Figure 4**. Crashes involving VRUs are three times more likely to lead to injury or death, as shown in **Figure 5**.

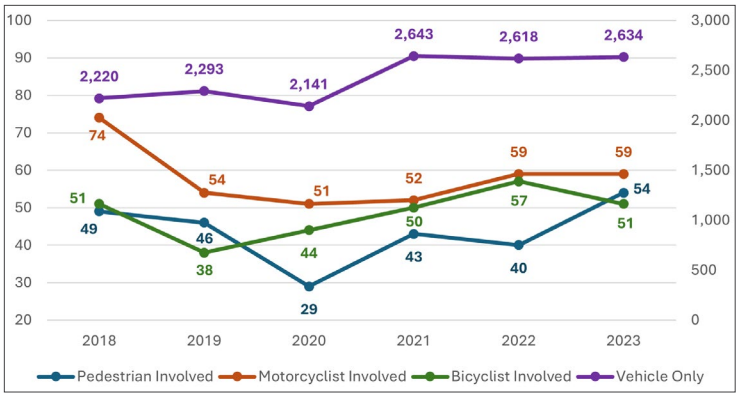


Figure 4. Annual Crashes by Roadway User

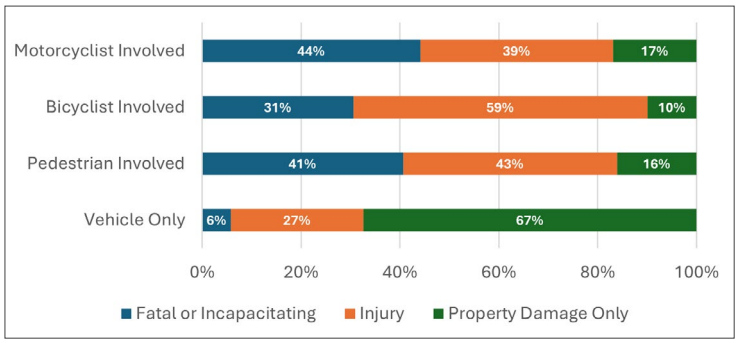


Figure 5. Crash Severity by Type of Roadway User

Motorcyclist Involved

44%
Resulted in Fatalities or Serious Injuries

58
Annual Crashes

26
Annual KA Crashes

Bicycle Involved

31%
Resulted in Fatalities or Serious Injuries

49
Annual Crashes

15
Annual KA Crashes

Pedestrian Involved

41%
Resulted In Fatalities or Serious Injuries

44
Annual Crashes

18
Annual KA Crashes

Intersection Related

- *Approx.1/3 of motorcyclist involved crashes are intersection related*
- *Approx.1/2 of bicyclist involved crashes are intersection related*
- *Approx.1/4 of pedestrian involved crashes are intersection related*

Roads with Posted Speed Greater Than 35 mph

- *35% of bike crashes on these roads result in fatality or serious injury*
- *44% of pedestrian crashes on these roads result in fatality or serious injury*

Transit Routes

- *54% of fatal and serious injury bicycle and 54% of pedestrian crashes occur on transit routes*

Aging and Teen Drivers

Aging drivers (those 65 years of age or older) and teen drivers are also VRUs based on their greater risk of injury or death in a crash due to age related circumstances.

Top 3 KA Crash Contributing Factors for Crashes Involving Aging or Teen Drivers

- *Intersection Related*
- *Lane Departure*
- *Distracted Driving*

Intersection Crashes

Intersections are inevitably the locations where the most motorists and non-motorists will cross paths and have the greatest potential for conflicts. On Manatee County owned and operated roads, **intersection related crashes are one of the most common contributing factors for crashes overall and leading to fatal and serious injury crashes.**

Angle and left-turn crashes are two of the most common crash types at intersections and lead to a high percentage of fatal and serious injury crashes. This is indicative of high-risk crashes happening at intersections during turning vehicle conflicts.

4 Lane Roads

42% of fatal and serious injury right turn crashes occur on 4-lane roads.

Intersection Related

42%	47%	92
All Crashes	*KA Crashes*	*Annual KA Crashes*

Left-Turn and Intersection Related

28%	36%	34
All Crashes	*KA Crashes*	*Annual KA Crashes*

Angle and Intersection Related

19%	25%	23
All Crashes	*KA Crashes*	*Annual KA Crashes*

Proportion of Intersection Related Crashes

59%	55%
KA Crashes Involving Teen Drivers	*KA Crashes Involving Aging Drivers*

Lane Departure and Run-Off-the-Road Crashes

Lane departure or run-off-the-road crashes often occur due to driver operating behavior like improper passing, overcorrecting, weaving, and wrong way driving, as well as cognitive behavior like aggressive, distracted, or impaired driving. Crashes coded as rollover crashes are also characteristic of lane departure and run-off-the-road crashes with similar contributing factors.

Lane Departure and Run-Off-the-Road

28%	32%	63
All Crashes	*KA Crashes*	*Annual KA Crashes*

Roads with Posted Speed Greater Than 45 mph

- *16% of fatal and serious rollover crashes occur on roads with posted speeds greater than 45 mph.*

User Behavior

Aggressive Driving and Speed Related Crashes

The likelihood of a fatal crash and risk for the driver and the other roadway users increases with a vehicle's operating speed. Speeding and aggressive driving is a driver behavior choice, but the design of a roadway can be conducive to a driver's ability to operate at unsafe speeds.

Aggressive or Speed Related

2%	5%	9
All Crashes	*KA Crashes*	*Annual KA Crashes*

Distracted Driving

Using a cell phone is the most common activity related to distracted driving, but it also includes any action that takes the drivers attention from the roadway including visual, manual, and cognitive distractions. Aging and teen drivers are often involved in distracted driving crashes which is attributed to the inability to handle multiple actions. **Approximately 40% of all distracted crashes involved aging or teen drivers.**

Distracted Driving

14%	12%	24
All Crashes	*KA Crashes*	*Annual KA Crashes*

Drug or Alcohol Involved Crashes

Impaired driving can lead to improper behavior like distracted driving or incorrect operating maneuvers like wrong-way driving and lane departures. An impaired driver may also pose a greater risk to other roadway users due to unsafe and reckless maneuvers on the roadway.

Drug or Alcohol Involved

4%	10%	20
All Crashes	*KA Crashes*	*Annual KA Crashes*

Time of Day / Light Conditions

During periods of congestion, there tends to be more crashes on the roadway but a lower proportion of crashes leading to fatal and serious injury. In the evening and late night hours, a disproportionate percentage of fatal or serious injury crashes occur when compared to daytime hours. This can be attributed to several factors including the light conditions, lack of roadway lighting, impaired driving, and expectation of fewer roadway users. Of all crashes, 10% occurred in dark conditions, but 17% of fatal or serious injury crashes occurred in dark conditions.

Time of Day

3 PM to 6 PM has the highest percentage of all crashes

24%

From 7 PM to 7 AM, KA crashes are occurring at a higher rate than all crashes

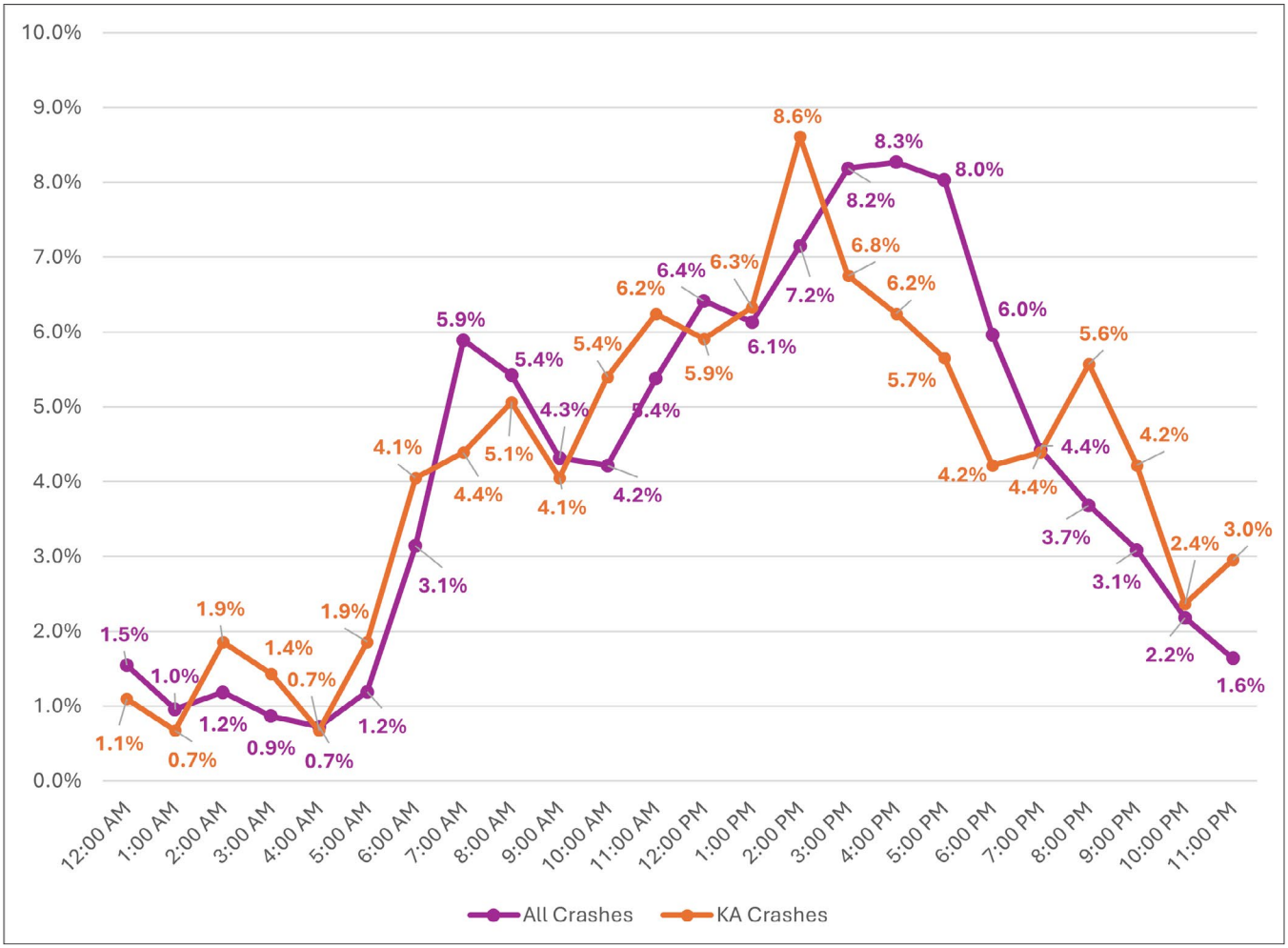


Figure 6. Crashes by Time of Day

Seasonal Conditions

On Manatee County owned and operated roads, October through March have a disproportionate percentage of fatal or serious injury crashes compared to all crashes, with December and March having the highest percentage. Annual crashes are highest in March (9%), October (8.8%), and December (8.9%). KA and annual crash trends show a connection to peak tourist and part-time resident season in Florida and when there are more drivers on the roads during holiday months and spring break season.

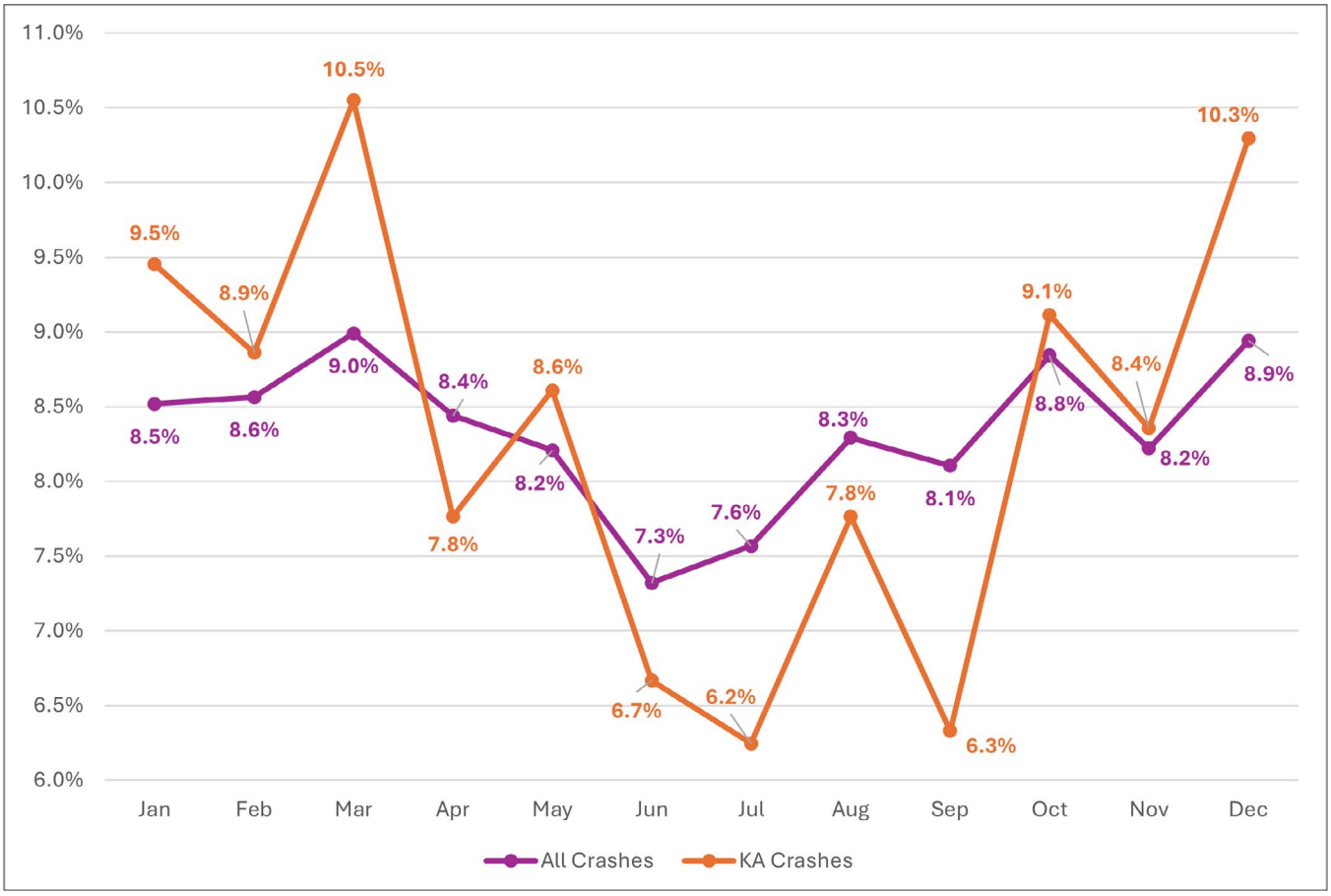


Figure 7. Crash Severity by Time of Year

HIGH RISK CHARACTERISTICS

There are several characteristics the indicate a road is more likely to be high risk for crashes. These roads typically have:

- Posted speed limits between 40-55 mph
- Four or more travel lanes
- High number of vehicles per day (VPD)
- Car-oriented uses adjacent to the corridor
- Many driveway openings adjacent to the corridor
- Transit routes and stops

The six-year crash trends on County owned and operated roads were analyzed using these high risk characteristics. The following are key takeaways from this analysis, the full analysis can be found in **Appendix A**.

- 58% of fatal and severe injury crashes occur on 40 to 45 MPH roads, but these roads make up 48% of the Manatee County owned and operated road network in miles.
- 57% of bicycle crashes occurring on roads with a speed limit > 45 MPH resulted in a fatality or severe injury, compared to 33% of bicycle crashes that occurred on the entire Manatee County owned and operated road network that resulted in a fatality or severe injury.
- 24% of fatal and severe injury crashes occur on 4-lane roads, but these roads make up only 15% of the Manatee County owned and operated road network in miles. A higher percentage of all fatal and severe injury crash types occur on these roads compared to the proportion of miles.
- 32% of fatal and severe injury crashes occur on > 15,000 VPD roads, but these roads make up only 13% of the Manatee County owned and operated road network in miles.
- 41% of all fatal and severe injury crashes occur along transit routes
- 54% of all fatal and severe injury pedestrian crashes occur along transit routes, but only 41% of all fatal and severe injury crashes occur on these roads.

HIGH INJURY NETWORK

A High Injury Network (HIN) identifies segments of roadway and intersections with the highest rate of crashes that result in death or injury. During the development of this TRSPAP, crashes from 2018-2023 on Manatee County owned and operated roads were analyzed. **Figure 8** below shows the HIN segments for all road users; segments in blue indicate corridors that also have a high number of VRU crashes. HIN for signalized and unsignalized intersections were also developed. Additional details on how these networks were developed can be found in **Appendix B**.

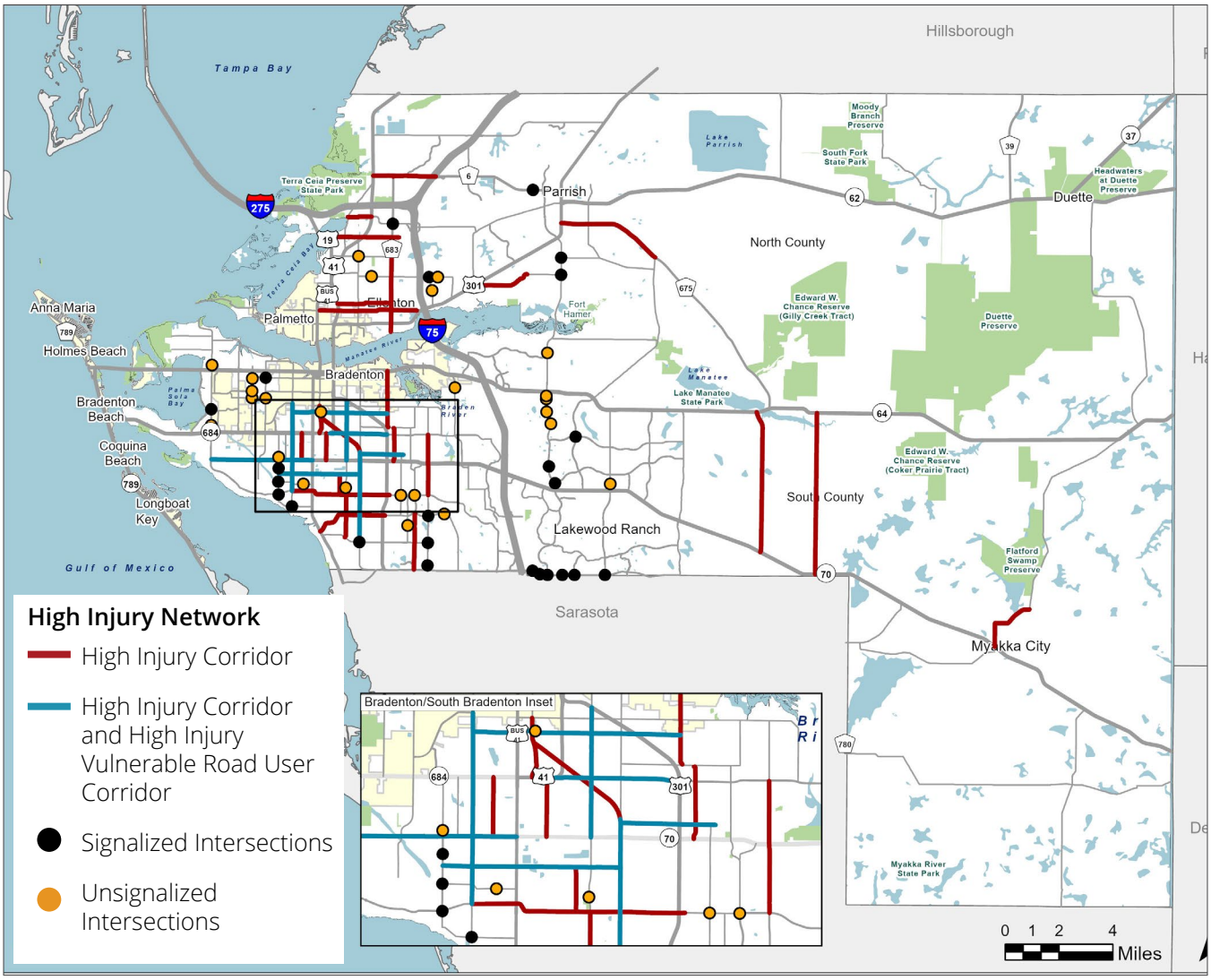


Figure 8. High Injury Network

High Injury Network: Corridors

As shown on **Figure 9** and the table on the following page, the HIN for all road users typically includes major roads with multiple lanes, roads with frequent access points and driveways, and high-speed roads. The HIN for VRUs typically includes streets in urban areas where people are more frequently walking, biking, or using transit.

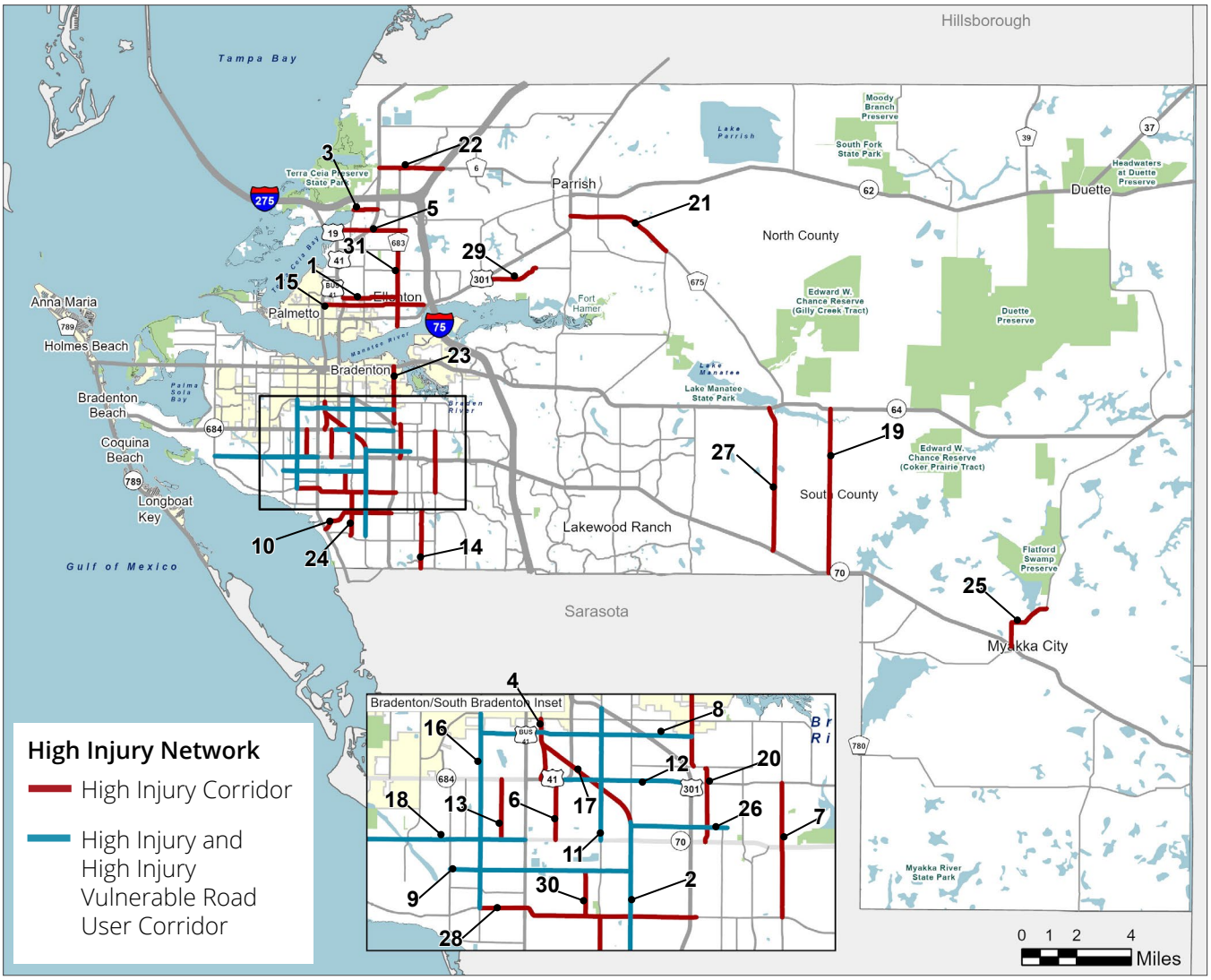


Figure 9. High Injury Network Corridors for All Road Users and High Injury Network for Vulnerable Road Users

High Injury Network: Corridors

Map ID	Road	Limits	VRU HIN	KA Crashes (2018-2023)	VRU Crashes (2018-2023)
1	21st St. E	US 41 to 36th Ave. E/Ellenton Gillette Rd.	N	16	2
2	15th St. E/301 Blvd.	Rome Ave. to 51st Ave. E	Y	77	55
3	72nd St. Ct. E/73rd St. E	Bayshore Rd. to US 41	N	11	0
4	9th St. W	44th Ave. W to 301 Blvd. W	N	11	3
5	61st St. E/Palm View Rd.	US 19 to Dead End	N	11	4
6	5th St. W	53rd Ave. W to 44th Ave. W	N	25	8
7	45th St. E/Lockwood Ridge Rd.	63rd Ave. E to 44th Ave. E	N	37	5
8	30th Ave. E/W	26th St. W to 27th St. E	Y	48	22
9	57th Ave. E	34th St. W to 301 Blvd. E	Y	49	30
10	Whitfield Ave.	US 41 to 26th Ct. E	N	27	4
11	9th St. E	53rd Ave. E to 301 Blvd. E	Y	51	15
12	44th Ave. E	S Tamiami Trl. to US 301	Y	20	13
13	20th St. W	53rd Ave. W to 44th Ave. W	N	10	13
14	Tuttle Ave.	University Pkwy. to Whitfield Ave.	N	13	3
15	17th St. E	6th Ave. W to 51st Ave. E	N	20	10
16	26th St. W	Bayshore Gardens Pkwy. to Southern Pkwy.	Y	74	26
17	301 Blvd. E	15th St. E to 26th Ave W.	N	40	14
18	53rd Ave. W	75th St. W to 14th St. W	Y	54	26
19	Verna Bethany Rd.	SR 70 to SR 64	N	13	2
20	30th St. E	53rd Ave. E to 38th Ave. E	N	15	7
21	Rutland Rd.	N Rye Rd. to US 301	N	11	0
22	Moccasin Wallow Rd.	US 41 to I-75 SB On- Ramp	N	14	5
23	27th St. E	38th Ave. E to Manatee Ave.	N	15	9
24	9th St. E/Pennsylvania Ave.	Tallevast Rd. to 63rd Ave.	N	10	3
25	Wachula Rd.	SR 70 to Ballard Rd.	N	7	0
26	51st Ave. E	301 Blvd. E to 33rd St. E	Y	30	7
27	Waterbury Rd.	SR 70 to SR 64	N	11	2
28	63rd Ave. W	26th St. W to 28th St. E	N	64	29
29	Old Tampa Rd.	US 301 to Chin Rd.	N	22	3
30	5th St. E	63rd Ave. E to 57th Ave. E	N	6	6
31	36th Ave. E/ Ellenton Gillette Rd.	Dead End Palm View Rd.	N	20	8

Table 1. High Injury Network: Corridors

High Injury Network: Signalized Intersections

As shown in **Figure 10** and the table on the following page, the high injury signalized intersections are typically located on streets that are major, multi-lane, and high-speed roads.

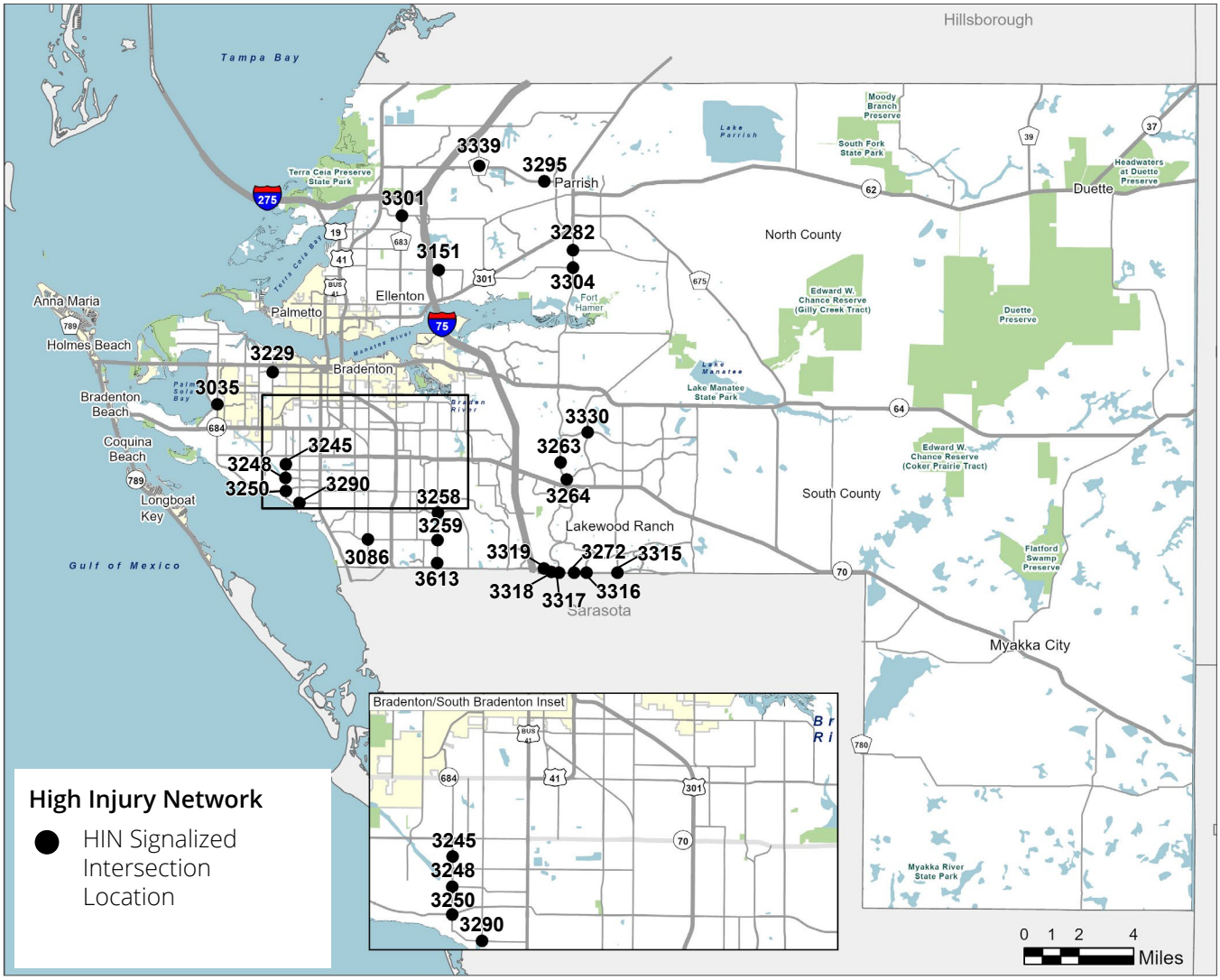


Figure 10. High Injury Network for Signalized Intersections

High Injury Network: Signalized Intersection Locations

Map ID	Intersection	KA Crashes (2018-2023)	PDO Crashes (2018-2023)	Total Crashes (2018-2023)	EPDO Score
3319	University Pkwy. & Market St.	6	21	124	2020
3258	Lockwood Ridge Rd. & Whitfield Ave.	4	12	33	1345
3317	University Pkwy. & Lakewood Ranch Blvd.	4	9	51	1235
3330	White Eagle Blvd. & 44th Ave. E	4	5	15	1135
3316	University Pkwy. & Legacy Blvd.	3	15	35	1055
3259	Lockwood Ridge Rd. & Tallevast Rd.	3	9	41	965
3248	34th St. W & 60th Ave. W	3	10	20	960
3318	University Pkwy. & Town Center Pkwy.	3	5	20	880
3290	Florida Blvd. & 26th St. W	3	5	14	874
3304	Fort Hamer & Old Tampa Rd.	2	14	41	785
3086	15th St. E & Tallevast Rd.	2	13	47	775
3263	Lakewood Ranch Blvd. & Lost Creek Terr.	2	11	29	725
3264	Lakewood Ranch Blvd. & Rangeland Pkwy.	2	10	43	723
3315	University Pkwy. & Lorraine Rd.	2	9	38	702
3151	Buffalo Rd. & 37th St. E	2	7	31	663
3035	75th St. W & 29th Ave. W	2	7	13	645
3272	University Pkwy. & Waterview Blvd.	2	5	18	618
3245	34th St. W & 54th Dr. W/ Bayshore High School	2	4	23	607
3613	Lockwood Ridge Rd. & Walmart Entrance	1	16	54	570
3229	43rd St. W & 9th Ave. W	2	2	12	564
3282	Fort Hamer & Golf Course Rd.	2	1	11	547
3250	Bayshore Gardens Pkwy. & 34th St. E	1	9	25	525
3339	Carter Rd. & Moccasin Wallow Rd.	1	12	23	443
3301	36th Ave. E/Ellenton Gillette Rd. & 69th St. E	1	15	23	395
3295	Moccasin Wallow Rd. & 115th Ave. E	1	12	20	392

Table 2. High Injury Network: Signalized Intersection Locations

High Injury Network: Unsignalized Intersections

As shown in **Figure 11** and the table on the following page, the high injury unsignalized intersections are typically located on streets that are collector or local roads. These are also located in areas that are experiencing growth or generating an increase in commercial activity.

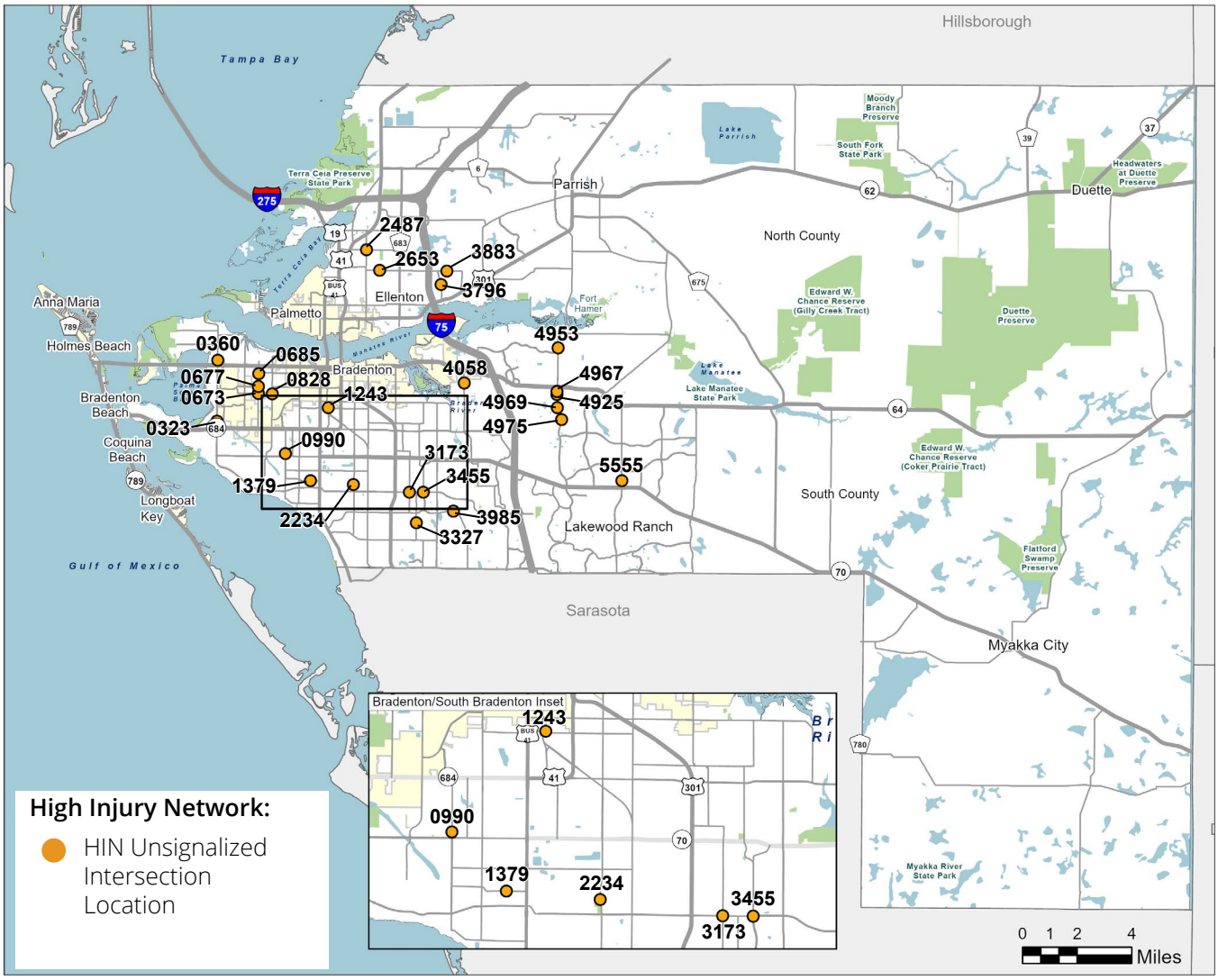


Figure 11. High Injury Network for Unsignalized Intersections

High Injury Network: Unsignalized Intersection Locations

Map ID	Intersection	KA Crashes (2018-2023)	PDO Crashes (2018-2023)	Total Crashes (2018-2023)	EPDO Score
3173	33rd St. E & 63rd Ave. E	4	39	62	1406
4925	Lakewood Ranch Blvd. & Portal Crossing/Arcade Pl.	4	13	26	1210
3455	Tuttle Ave. & 63rd Ave. E	3	27	39	963
0828	43rd St. W & 21st Ave. W	3	25	34	910
4975	Lakewood Ranch Blvd. & Wood Fern Trl.	3	7	14	858
4953	Upper Manatee River Rd. NE & 3rd Ave. NE	3	4	11	855
0677	51st St. W & 17th Ave. W	3	3	10	854
2234	9th St. E & 61st Ave. E	3	19	25	853
2653	37th St. E & 24th Ave. E	3	3	8	820
0323	75th St. W & 40th Ave. W	2	5	14	646
3796	29th St. E & 60th Ave. E	2	9	16	616
3883	37th St. E & 64th Ave. E	2	5	9	561
1379	Dartmouth Dr. & 60th Ave. W	2	3	7	599
4969	Lakewood Ranch Blvd. & Crowders Plaza	2	7	10	546
0360	75th St. W & 2nd Ave. W	2	3	6	542
3985	W Country Club Ln. & Whitfield Ave.	2	3	6	542
3327	Prospect Rd. & 72nd Ave. E	2	0	3	539
4967	Lakewood Ranch Blvd. & Lakewood Ranch Plaza Shopping Center	1	18	33	517
0673	51st St. W & 21st Ave. W	1	26	36	440
0685	51st St. W & 9th Ave. Dr. W	1	5	12	368
5555	Loraine Rd. & 59th Ave. E	1	12	17	341
2487	49th St. E & 16th Ave. E	1	8	13	337
4058	57th St. E & 13th Ave. E	1	2	7	331
0990	34th St. W & 52nd Ave. Dr. W	1	14	18	326
1243	8th St. Ct. W & 30th Ave. W	1	9	13	321

Table 3. High Injury Network: Unsignalized Intersection Locations

EQUITY ANALYSIS

According to the Equitable Transportation Community (ETC) Explorer, 48 of Manatee County's 93 census tracts are designated as disadvantaged. The ETC web application uses 2020 census tracts and data to explore the cumulative burden communities experience because of underinvestment in transportation. The ETC uses several metrics to develop a rating based on income, poverty, and other metrics. **Roads in disadvantaged areas account for about 48% of all roadway miles owned and operated by the County, but 63% of fatal and injury crashes occur on these roads.** This indicates disadvantaged communities bear a disproportionate burden regarding fatal and injury crashes. Additionally, 68% of VRU crashes occurred in disadvantaged census tracts, which is disproportionate compared to the entire County.

Age is an important factor for road safety, as teen and aging drivers account for a substantial number of KA crashes on Manatee County owned and operated roads. In Manatee County, 28% of the population is aged 65 and over which exceeds the state average of 21% and the national average of 17%. **Figure 12** shows where economically constrained areas overlap with the HIN.

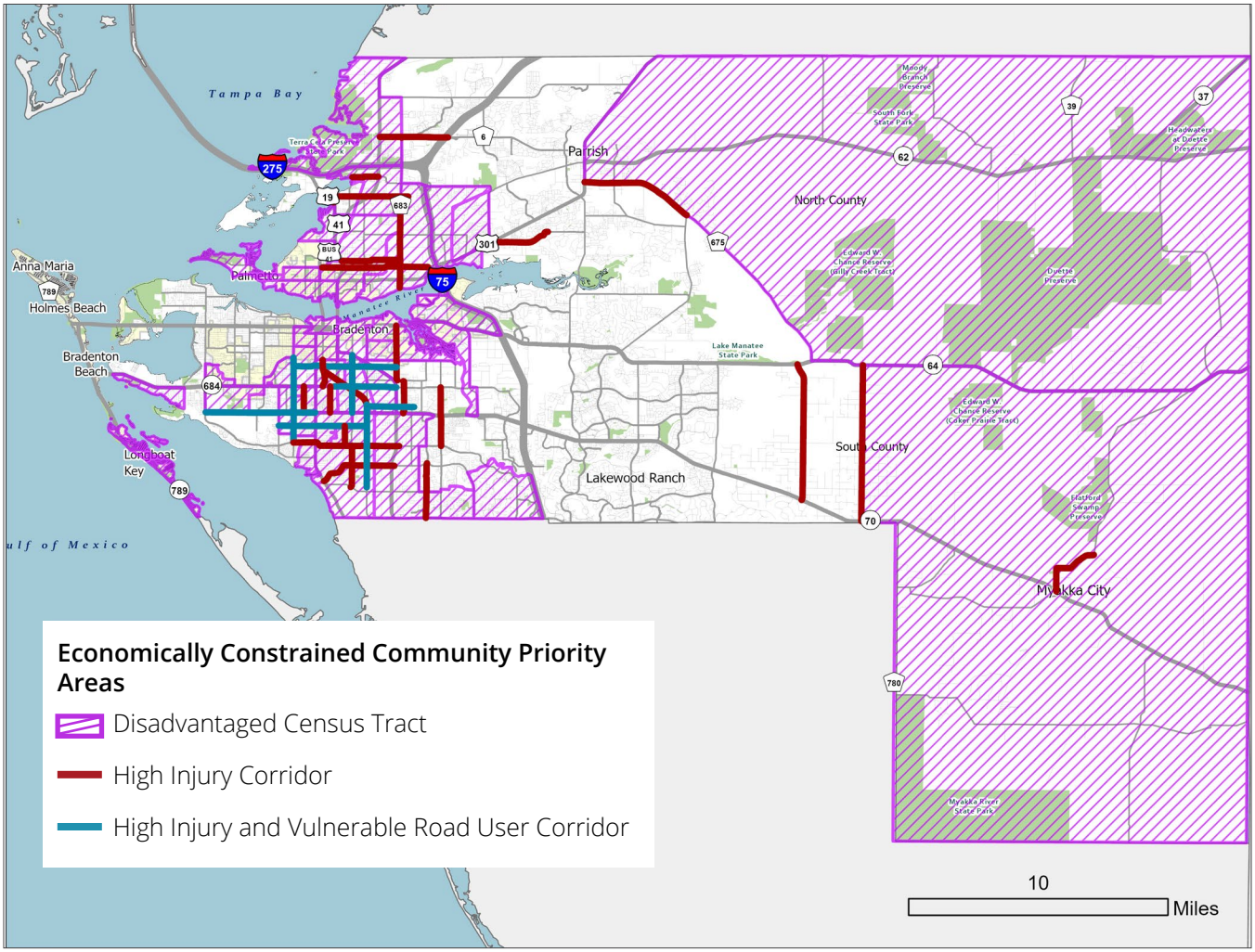


Figure 12. ETC Disadvantaged Census Tracts and High Injury Network

Plan & Policy

REVIEW OF EXISTING PLANS AND POLICIES

In addition to physical projects that address safety and enhance on-the-ground infrastructure, policies are key for setting standards within Manatee County and prioritizing projects. Updating road safety policies and programs that address topics such as VRU safety, speeding, and intersection design can aid in reducing road deaths and serious injuries.

Traffic and road safety is a multi-faceted issue that can be approached through different lenses. The TRSPAP team reviewed various plans and policies, including those from partner agencies, such as the Sarasota/Manatee Metropolitan Planning Organization (MPO) and Florida Department of Transportation (FDOT). The specific plans reviewed as part of the TRSPAP include:

- Transform 2045: Sarasota/Manatee MPO LRTP
- Sarasota/Manatee MPO Destination Zero Action Plan
- Manatee County Comprehensive Plan: Transportation Element
- Manatee County Comprehensive Plan: Capital Improvements Element
- Manatee County Trailways Master Plan
- Sarasota/Manatee MPO Active Transportation Plan
- FDOT District 1 Safety Action Plan
- Manatee Moves

The review assisted in the inventory of previously identified safety projects and goals and also the development of TRSPAP. These efforts will help the County design, build, and maintain safe streets for everyone on a routine basis.

Current Strengths

Manatee County has existing policies and programs in place to enhance road safety. These policies and programs are recognized as strengths upon which the County can further build to enhance safety. The following is a summary of these plans, programs, and policies that are part of existing efforts to enhance safety for Manatee County roadway users:

Manatee County Comprehensive Plan	The Comprehensive Plan identifies areas for growth and establishes a future multimodal transportation system that seeks to promote mobility that is safe, convenient, efficient, and meets present needs, protects roadway capacity, is coordinated with the Future Land Use Map, provides for an affordable balance of alternative transportation modes, and encourages intermodal transportation linkages.
Manatee County Trailways Master Plan	The Master Plan identifies the County future trail network which provides connection to destinations while providing recreation opportunities. The Master Plan identifies gaps in the system and ways to increase safety and accessibility for trail users.
Light Up Manatee	Light Up Manatee is an initiative aimed at increasing street lighting in poorly lit neighborhoods throughout Manatee County to enhance safety, reduce crime, and build community. The Manatee Board of County Commissioners (BOCC) has allocated $3 million for the initial phase, focusing on Commission Districts 2, 3, and 4 and adopted Resolution R-24-018 to establish a formal street lighting policy. The County is collaborating with Florida Power and Light (FPL) and Streetleaf to install streetlights where infrastructure exists and explore solar lighting solutions where it does not.
Neighborhood Traffic Calming Program	Manatee County allows requests for Traffic Calming measures on any roadway within Unincorporated Manatee County to reduce cut-through traffic in residential areas and preserve neighborhood character. Techniques may include speed tables, roundabouts, and modified intersections. Communities must establish a working group to identify the need for enhancements and then contact the Traffic Management Division to proceed with the request process.

Manatee Moves: Manatee County Mobility Plan	The Manatee Moves Plan provides a comprehensive framework for mobility planning in the County, featuring a clear vision, objectives, and performance indicators. It evaluates current mobility conditions across various transportation modes and outlines strategies to develop a safer, more equitable, and multimodal transportation system. The Plan identifies candidate corridors for "Complete Streets" projects, considers land use and policy factors, and provides recommendations for updating regulatory processes and implementing the Plan effectively, particularly in the southwestern quadrant of the County where congestion and serious crashes are more prevalent.

Safety Strategies & Projects

SAFETY STRATEGIES

This section contains proven strategies to make roads safer and promote safe driving, walking, and bicycling. The following safety strategies include systemic countermeasures to address crash emphasis areas. The crash emphasis areas based on findings from the safety analysis include:

- Signalized intersections
- Time of Day
- Impaired Driving
- Speeding
- Distracted Driving
- Pedestrians
- Bicyclists
- Motorcyclists
- Young Drivers
- Aging Drivers
- Lane Departure
- Time of Day/Light Conditins

Safety Countermeasures

The countermeasures on the following pages are grouped by crash emphasis area to provide clear guidance as to which countermeasure may be appropriate to address specific safety issues. The safety countermeasures are intended as a guidance resource for addressing identified safety concerns but do not provide a comprehensive list of all countermeasures. The countermeasures are designed for all roadway users and various roadway contexts. Each countermeasure addresses at least one emphasis area, with many addressing multiple areas. Safety countermeasure by crash type can be found in **Appendix E**.

Safety Countermeasures

Countermeasures	Emphasis Area										
	Signalized Intersections	Time of Day / Light Conditions	Impaired Driving	Speeding	Distracted Driving	Pedestrians	Bicyclists	Motorcyclists	Teen Drivers	Aging Drivers	Lane Departure
Roadway/Corridor Lighting		●				●	●	●	●	●	●
Pavement Friction Treatment	●							●			●
Shoulder Rumble Strips			●		●						●
Centerline Rumble Strips			●		●						
Shoulder Widening			●		●						●
Safety Edge			●		●						●
Wider Edge Lines			●	●						●	●
Enhanced Conspicuity at Horizontal Curves/ Retroreflective Strips on Signage		●	●	●	●			●			●
Dynamic Curve Warning Signs, Chevrons, and Delineators		●	●	●	●			●			●
Pavement Markings at Horizontal Curves		●	●	●				●			●
Clear Zone			●			●	●				●
Slope Flattening							●	●			●
Guardrail			●				●	●			●
Appropriate Speed Limits for All Road Users				●		●	●	●	●	●	●
Intersection Lighting	●	●	●			●	●	●	●	●	
Red Light Cameras	●		●	●					●		
Automated Enforcement in School Zones and Work Zones				●		●			●		

Table 4. Safety Countermeasures by Emphasis Area

Countermeasures	Emphasis Area										
	Signalized Intersections	Time of Day / Light Conditions	Impaired Driving	Speeding	Distracted Driving	Pedestrians	Bicyclists	Motorcyclists	Teen Drivers	Aging Drivers	Lane Departure
Convert Permissive/Protected Signals to Protected	●					●	●	●			
Convert Permissive/Protected Signals to Flashing Yellow Arrows	●					●	●	●			
High-Visibility Crosswalks	●	●			●	●	●		●	●	●
Median Refuge Islands	●			●		●	●				
Leading Pedestrian Interval (LPI)	●				●	●	●				
Extended Time Pushbutton	●					●	●				
Restrict Right Turn On Red	●					●	●				
Curb Extensions	●			●		●	●				
Ped and Bike Exclusive Signal Head or Crossing Phase	●					●	●				
Mid-block Pedestrian Crossings with Rectangular Rapid Flashing Beacons (RRFBs)		●		●		●	●				
Coordinated Signal Timing between Intersections	●			●			●				
Bike Enhancements at Intersections: Bike Box, Two Stage Turn Queue Boxes, Bicycle Push Buttons	●						●				
Protected/Separated Bike Lanes							●				
Raised Crosswalk				●	●	●					
Raised Intersections	●			●	●	●	●	●			
Pedestrian Hybrid Beacons (PHBs)		●		●		●	●				

Table 4. Safety Countermeasures by Emphasis Area

Countermeasures	Emphasis Area										
	Signalized Intersections	Time of Day / Light Conditions	Impaired Driving	Speeding	Distracted Driving	Pedestrians	Bicyclists	Motorcyclists	Teen Drivers	Aging Drivers	Lane Departure
Convert Intersection to Roundabout	●			●		●	●				
Variable Speed Limits				●							
Driver Feedback Speed Limit Sign				●	●				●	●	
Traffic Calming: Lane Narrowing				●		●	●				
Traffic Calming: Bulb-Outs/Curb Extension				●		●	●				
Traffic Calming: Medians				●	●	●	●				●
Traffic Signal Backplates with Retroreflective Borders	●	●								●	
Convert Intersection to Reduced Left-Turn Conflict Intersection	●					●	●	●			
Yellow Change Intervals	●			●							
Retroreflective Raised Pavement Markers (RPMs)		●	●						●	●	●
Street Trees				●		●					

Table 4. Safety Countermeasures by Emphasis Area

PROJECT PRIORITIZATION

Manatee County already has successful history in implementing road safety enhancements. The project prioritization in the TRSPAP prioritizes the HIN corridors, signalized intersections, and unsignalized intersections to address the most dangerous locations on Manatee County owned and operated roads first.

Corridor Prioritization

The priority projects for corridors was determined using the highest KA crash rate and highest KA crash frequency for corridor segments. Additional information on how the HIN was developed and the analysis can be found in **Appendix B**. The highest 25 scores (KA crash rate or frequency) from the HIN were included in the priority project list.

Signalized and Unsignalized Intersection Prioritization

The priority projects for signalized and unsignalized intersections was determined by the Equivalent Property Damage Only (EPDO) score. The EPDO method applied weight factors based on the societal cost of each crash severity relative to the societal costs of one property damage only crash (PDO) crash. The EPDO score for individual intersections was determined by summing the product of the EPDO weight and the number of crashes by severity at each intersection. The highest 25 EPDO scores from the HIN were included in the priority project list.

Priority Projects

To establish the priority project list, corridors were ranked according to their overall KA crash rate and intersections were ranked according to their EPDO score, resulting in the development of priority projects lists for corridors, signalized intersections, and unsignalized intersections. Many of the priority projects identified herein will require further evaluation for feasibility and constructibility which may impact project implementation. **Figure 13** shows the top priority projects identified by the TRSPAP project prioritization.

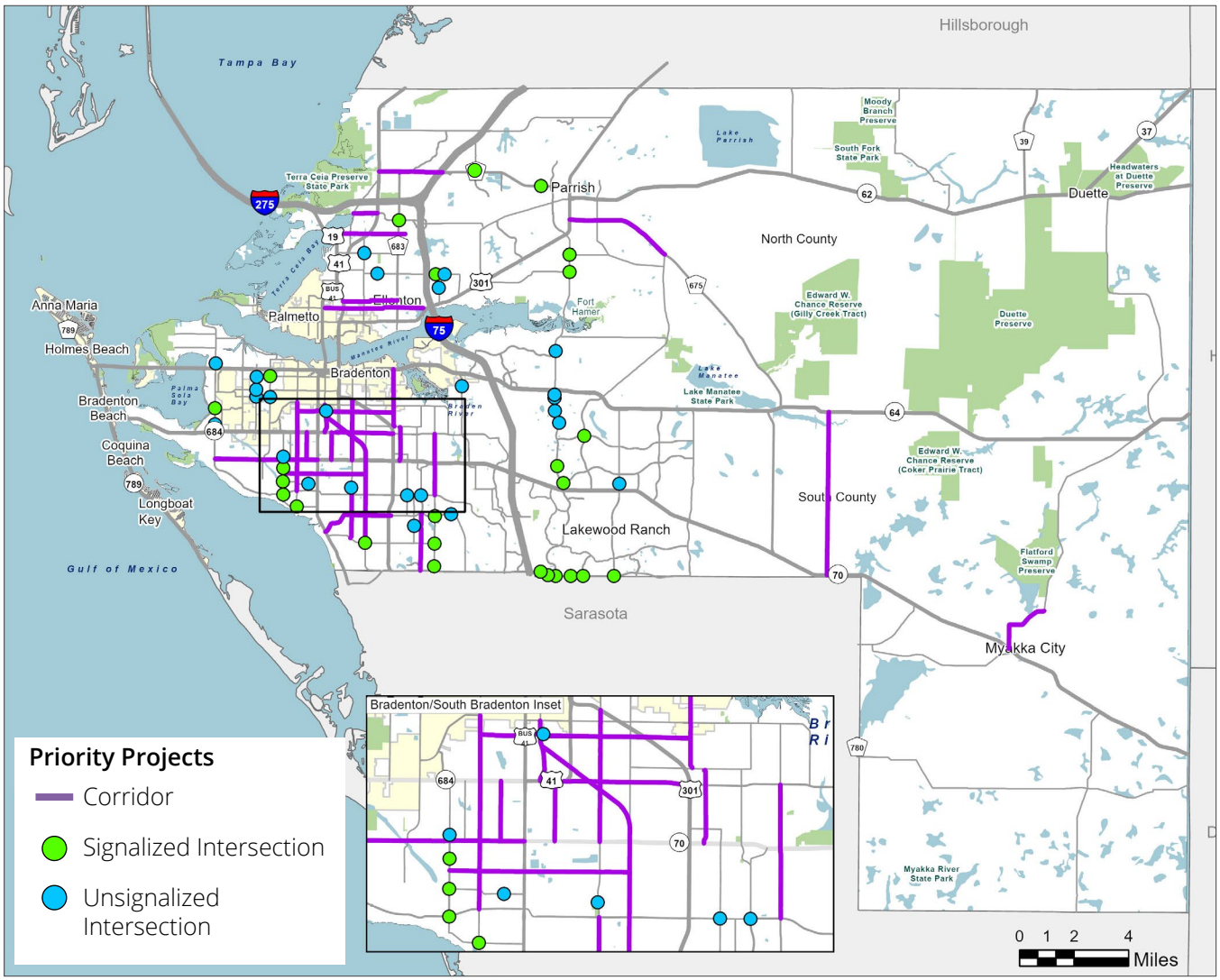


Figure 13. Priority Projects

Priority Projects: Corridors

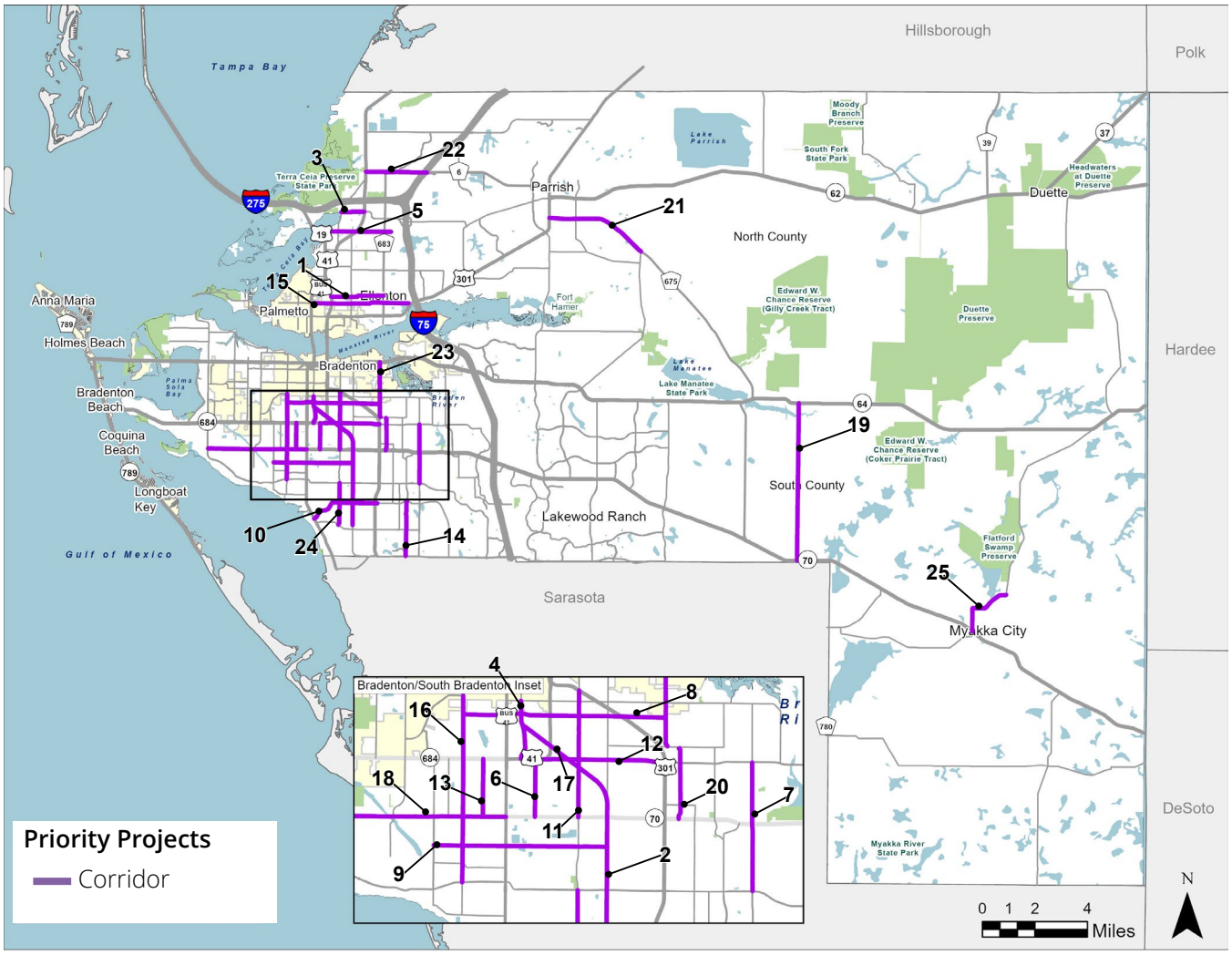


Figure 14. Priority Projects: Corridors

Priority Projects List: Corridors

Map ID	Road	Limits	Length (Miles)	VRU HIN	Annual KA Crashes	KA Crash Rate (2018-2023)
1	21st St. E	US 41 to 36th Ave. E/ Ellenton Gillette Rd.	2.0	N	3	356
2	15th St. E/301 Blvd.	Rome Ave. to 51st Ave. E	3.2	Y	13	250
3	72nd St. Ct. E/73rd St. E	Bayshore Rd. to US 41	0.9	N	2	223
4	9th St. W	44th Ave. W to 301 Blvd. W	0.6	N	2	216
5	61st St. E/Palm View Rd.	US 19 to Dead End	2.7	N	2	144
6	5th St. W	53rd Ave. W to 44th Ave. W	1.0	N	4	143
7	45th St. E/Lockwood Ridge Rd.	63rd Ave. E to 44th Ave. E	2.3	N	6	139
8	30th Ave. E/W	26th St. W to 27th St. E	3.5	Y	8	131
9	57th Ave. E	34th St. W to 301 Blvd. E	3.0	Y	8	129
10	Whitfield Ave.	US 41 to 26th Ct. E	2.7	N	5	125
11	9th St. E	53rd Ave. E to 301 Blvd. E	2.2	Y	9	112
12	44th Ave. E	S Tamiami Trl. to US 301	2.1	Y	5	106
13	20th St. W	53rd Ave. W to 44th Ave. W	1.0	N	2	105
14	Tuttle Ave.	University Pkwy. to Whitfield Ave.	2.1	N	2	99
15	17th St. E	6th Ave. W to 51st Ave. E	3.6	N	3	97
16	26th St. W	Bayshore Gardens Pkwy. to Southern Pkwy.	3.3	Y	12	93
17	301 Blvd. E	15th St. E to 26th Ave W.	2.4	N	7	90
18	53rd Ave. W	75th St. W to 14th St. W	3.8	Y	9	84
19	Verna Bethany Rd.	SR 70 to SR 64	6.0	N	2	83
20	30th St. E	53rd Ave. E to 38th Ave. E	1.3	N	3	81
21	Rutland Rd.	N Rye Rd. to US 301	3.9	N	2	75
22	Moccasin Wallow Rd.	US 41 to I-75 SB On- Ramp	2.4	N	2	75
23	27th St. E	38th Ave. E to Manatee Ave.	2.1	N	3	75
24	9th St. E/ Pennsylvania Ave.	Tallevast Rd. to 63rd Ave.	1.6	N	2	75
25	Wachula Rd.	SR 70 to Ballard Rd.	2.4	N	1	75

Table 5. Priority Project List: Corridors

Priority Projects: Signalized Intersections

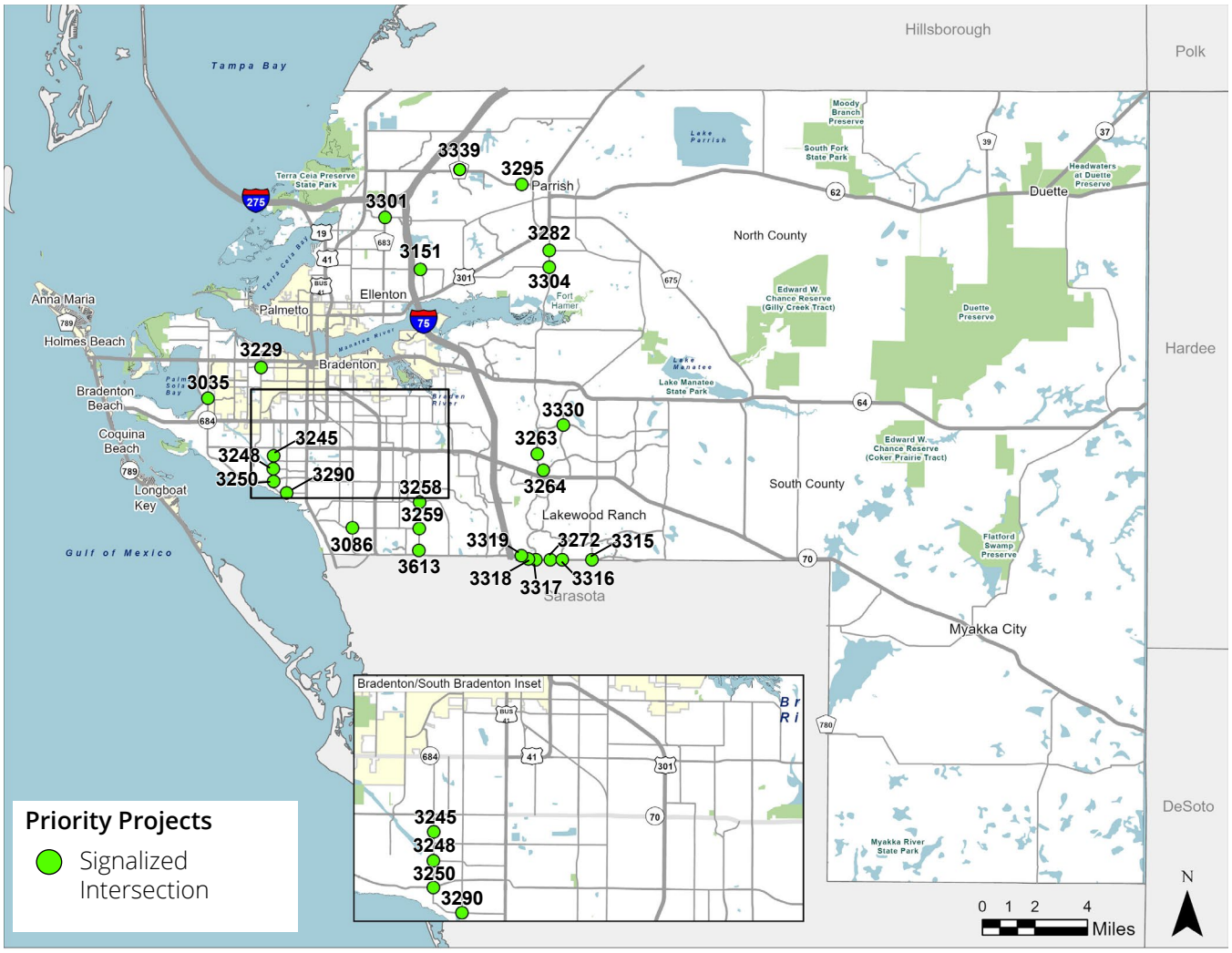


Figure 15. Priority Projects: Signalized Intersections

Priority Projects List: Signalized Intersections

Map ID	Intersection	KA Crashes (2018-2023)	EPDO Score
3319	University Pkwy. & Market St.	6	2020
3258	Lockwood Ridge Rd. & Whitfield Ave.	4	1345
3317	University Pkwy. & Lakewood Ranch Blvd.	4	1235
3330	White Eagle Blvd. & 44th Ave. E	4	1135
3316	University Pkwy. & Legacy Blvd.	3	1055
3259	Lockwood Ridge Rd. & Tallevast Rd.	3	965
3248	34th St. W & 60th Ave. W	3	960
3318	University Pkwy. & Town Center Pkwy.	3	880
3290	Florida Blvd. & 26th St. W	3	874
3304	Fort Hamer & Old Tampa Rd.	2	785
3086	15th St. E & Tallevast Rd.	2	775
3263	Lakewood Ranch Blvd. & Lost Creek Terr.	2	725
3264	Lakewood Ranch Blvd. & Rangeland Pkwy.	2	723
3315	University Pkwy. & Lorraine Rd.	2	702
3151	Buffalo Rd. & 37th St. E	2	663
3035	75th St. W & 29th Ave. W	2	645
3272	University Pkwy. & Waterview Blvd.	2	618
3245	34th St. W & 54th Dr. W/ Bayshore High School	2	607
3613	Lockwood Ridge Rd. & Walmart Entrance	1	570
3229	43rd St. W & 9th Ave. W	2	564
3282	Fort Hamer & Golf Course Rd.	2	547
3250	Bayshore Gardens Pkwy. & 34th St. E	1	525
3339	Carter Rd. & Moccasin Wallow Rd.	1	443
3301	36th Ave. E/Ellenton Gillette Rd. & 69th St. E	1	395
3295	Moccasin Wallow Rd. & 115th Ave. E	1	392

Table 6. Priority Project List: Signalized Intersections

Priority Projects: Unsignalized Intersections

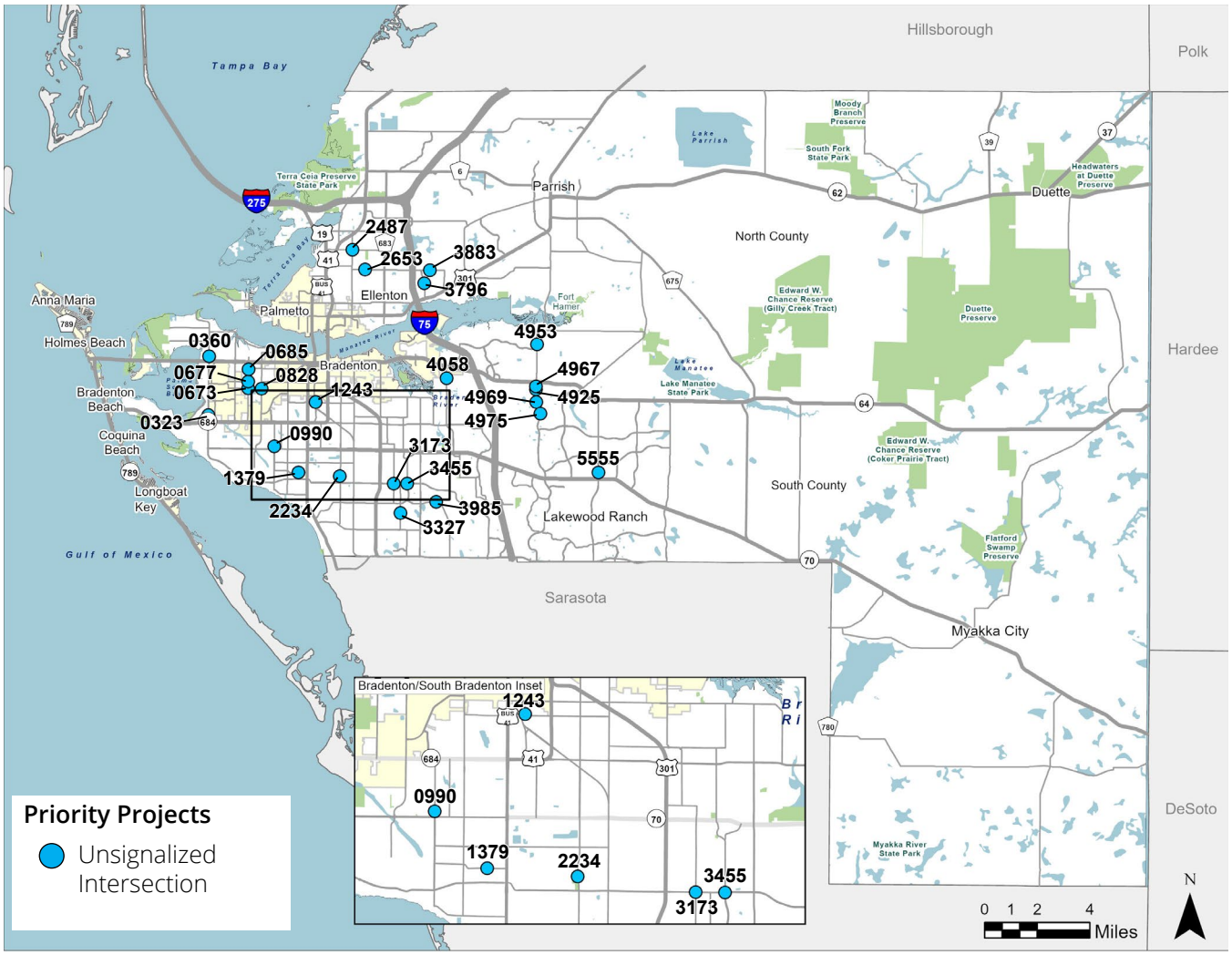


Figure 16. Priority Projects: Unsignalized Intersections

Priority Projects List: Unsignalized Intersections

Map ID	Intersection	KA Crashes (2018-2023)	EPDO Score
3173	33rd St. E & 63rd Ave. E	4	1406
4925	Lakewood Ranch Blvd. & Portal Crossing/Arcade Pl.	4	1210
3455	Tuttle Ave. & 63rd Ave. E	3	963
0828	43rd St. W & 21st Ave. W	3	910
4975	Lakewood Ranch Blvd. & Wood Fern Trl.	3	858
4953	Upper Manatee River Rd. NE & 3rd Ave. NE	3	855
0677	51st St. W & 17th Ave. W	3	854
2234	9th St. E & 61st Ave. E	3	853
2653	37th St. E & 24th Ave. E	3	820
0323	75th St. W & 40th Ave. W	2	646
3796	29th St. E & 60th Ave. E	2	616
3883	37th St. E & 64th Ave. E	2	561
1379	Dartmouth Dr. & 60th Ave. W	2	599
4969	Lakewood Ranch Blvd. & Crowders Plaza	2	546
0360	75th St. W & 2nd Ave. W	2	542
3985	W Country Club Ln. & Whitfield Ave.	2	542
3327	Prospect Rd. & 72nd Ave. E	2	539
4967	Lakewood Ranch Blvd. & Lakewood Ranch Plaza Shopping Center	1	517
0673	51st St. W & 21st Ave. W	1	440
0685	51st St. W & 9th Avenue Dr. W	1	368
5555	Loraine Rd. & 59th Ave. E	1	341
2487	49th St. E & 16th Ave. E	1	337
4058	57th St. E & 13th Ave. E	1	331
0990	34th St. W & 52nd Ave. Dr. W	1	326
1243	8th St. Ct. W & 30th Ave. W	1	321

Table 7. Priority Project List: Unsignalized Intersections

Engagement

The draft TRSPAP was presented to the Manatee County Board of County Commissioners (BoCC) at the regular work session on June 17, 2025. The TRSPAP was included in the agenda package and publicly advertised in advance of the meeting. This meeting provided an opportunity for the public to review and provide their comments and feedback regarding the draft TRSPAP. The TRSPAP was well-received by the BoCC who expressed their support for a strategic approach to address current safety concerns and proactively address future safety issues on County owned and operated roadways.

Below are key takeaways from the feedback and discussion surrounding the draft TRSPAP:

- Interest in the high percentage of aging driver crashes on County owned and operated roadways
- Acknowledgment that land uses can play a role in crash hot spots and certain types of crashes
- Questions and interest regarding traffic calming measures and how those vary between urban, suburban, and rural roadways
- Discussion about current rural roadway and intersection challenges
- Discussion about safety countermeasures and strategies to reduce fatalities and serious injuries on rural roadways

Next Steps

PRIORITIZATION TOOL

The preliminary project prioritization, found in the Safety Strategies section of the TRSPAP, was developed using the HIN network to identify high-priority locations for traffic and road safety enhancements. In addition to this preliminary prioritization, the TRSPAP developed a prioritization tool as part of a structured approach to identify safety issues, propose solutions, and prioritize projects both now and in the future based on select data types and prioritization factors.

The prioritization tool framework assesses road safety elements, focusing on locations with a recorded crash history or those with characteristics that have been shown to contribute to higher crash rate. Additionally, the framework incorporates other community data, acknowledging that safety enhancements can also influence other priorities such as quality of life. By integrating all these factors into the decision-making process, Manatee County can identify which projects offer the greatest benefit and ensure the most effective use of limited funding resources.

Data-Driven Approach

The prioritization tool uses a data-driven methodology to prioritize all roads and intersections owned and operated by the County to identify additional high-priority locations which may include locations outside of the HIN. Currently, the types of data used in the prioritization tool include:

- KA Crash Rates
- VRUs Crash Rates
- KA Crashes
- Posted Speed
- Traffic Volume
- Number of Travel Lanes
- Focus Crash Types
- Located on a HIN Segment
- Intersection EPDO Scores
- VRU Crashes
- Roadway Lighting Locations
- Manatee County Capital Projects
- Underserved Community Census Tracts
- Locations for Parks, Public Schools, Libraries, and Community Centers
- Public Transit Stop Locations

Prioritization Factors and Criteria

The prioritization criteria for corridors, signalized intersections, and unsignalized intersections are organized into four main factors: safety impact, access, and project readiness. Each project is scored using spatial analysis to evaluate the geographical context and proximity to priority elements. This approach highlights the direct implications of the project, its broader effects on the community, and each projects' readiness for implementation. Prioritized projects will be subject to further feasibility analysis for construction and implementation.

Safety Impact

The safety impact prioritization factor measures historic crash data and roadway characteristics which includes existing conditions data and roadway design characteristics that typically result in higher crashes. The criteria evaluate the potential to address locations of high safety concern for all road users and implement safety enhancements that address the top contributing risk factors identified by the safety analysis.

Access

The access prioritization factor evaluates proximity to specific areas and assets within the County as these may be high activity areas and provide important connections. The tool measures project proximity to certain areas in which includes underserved communities, areas of growth, and proximity to employment centers, institutions, and areas of activity in the County.

Project Readiness

The project readiness prioritization factor evaluates potential opportunities for coordination and collaboration to implement safety enhancements into upcoming planned projects within the County.

Lighting

The lighting factor examines lighting conditions on County owned and operated roadways as these are locations for potential lighting projects in the future which can increase traffic and road safety.

The complete prioritization factors and criteria can be found in **Appendix F**.

PERFORMANCE EVALUATION AND MONITORING

As projects are completed, the prioritization tool can be updated to identify new priority locations for traffic and road safety enhancements. The tool is designed to be updated and used, making it dynamic in nature and allowing for continuous analysis of evolving data to identify priority corridors and intersections throughout the County regularly. The tool has been built with the capability to introduce additional data and factors over time. This proactive approach also facilitates the identification of safety enhancements while also monitoring and evaluating the effectiveness of completed projects.

The performance measures aid in tracking safety progress and determining the effectiveness of safety enhancement projects on a regular basis. The prioritization tool developed for Manatee County will help monitor progress and evaluate safety enhancements as projects are delivered and data is updated, and project start to fall off the prioritized project list. Some of the metrics used in the tool are also performance measures in other regional plans, including the Sarasota/Manatee MPO Destination Zero Action Plan, the Sarasota/Manatee MPO Transform 2045 LRTP, and the Manatee Moves plan.

Annual Performance Measures	Performance Measures included in:		
	Destination Zero Action Plan (2022)	Transform 2045 LRTP	Manatee Moves Plan
Total number of traffic fatalities and injuries	Y	Y	Y
Number of traffic-related deaths and serious injuries by crash type	Y	N	N
Number of traffic-related deaths and serious injuries by roadway type, number of travel lanes, and speed limit	Y	N	N
Rate of fatalities and injuries per 100 million vehicle miles traveled (VMT)	N	Y	Y
Total fatalities and injuries in crashes involving Vulnerable Roadway Users (VRUs)	N	Y	Y
Fatalities and injuries on HIN for All Users and VRUs	N	N	Y
Fatalities and injuries in disadvantaged census tracts	N	N	N
Changes in top contributing crash factors over time	N	N	N
Number of safety projects along the HIN for All Users and VRUs	N	N	N
Annual new and total mileage of dedicated bicycle infrastructure	Y	N	N
Non-capital improvements (policies, processes, or programs) started or completed annually that contribute to enhancing traffic and road safety	Y	N	N

Table 8. Annual Performance Measures

FUNDING AND TIMING

The projects on the priority project list will undergo an annual feasibility assessment to determine factors that may impact implementation and construction such as: location and site constraints, costs, CIP projects, project readiness, and funding availability. This document may be utilized as a reference when funding becomes available and should be creatively applied alongside other enhancements, such as road resurfacing, restoration and rehabilitation, and utility repair projects. For instance, when a roadway is rebuilt for maintenance reasons, Manatee County should consult this TRSPAP to pinpoint any overlapping safety enhancements or opportunities.

PARTNERSHIPS

The County may seek partnerships with local municipalities, Sarasota/Manatee MPO, and the FDOT to identify future opportunities to advance traffic and road safety. Many of these agencies also have Safety Action Plans or Vision Zero Plans whose HINs may intersect with Manatee County owned and operated roads. These are opportunities to collaborate and ensure preferred safety treatments are deployed to achieve the goals of all agencies.

APPENDIX A:

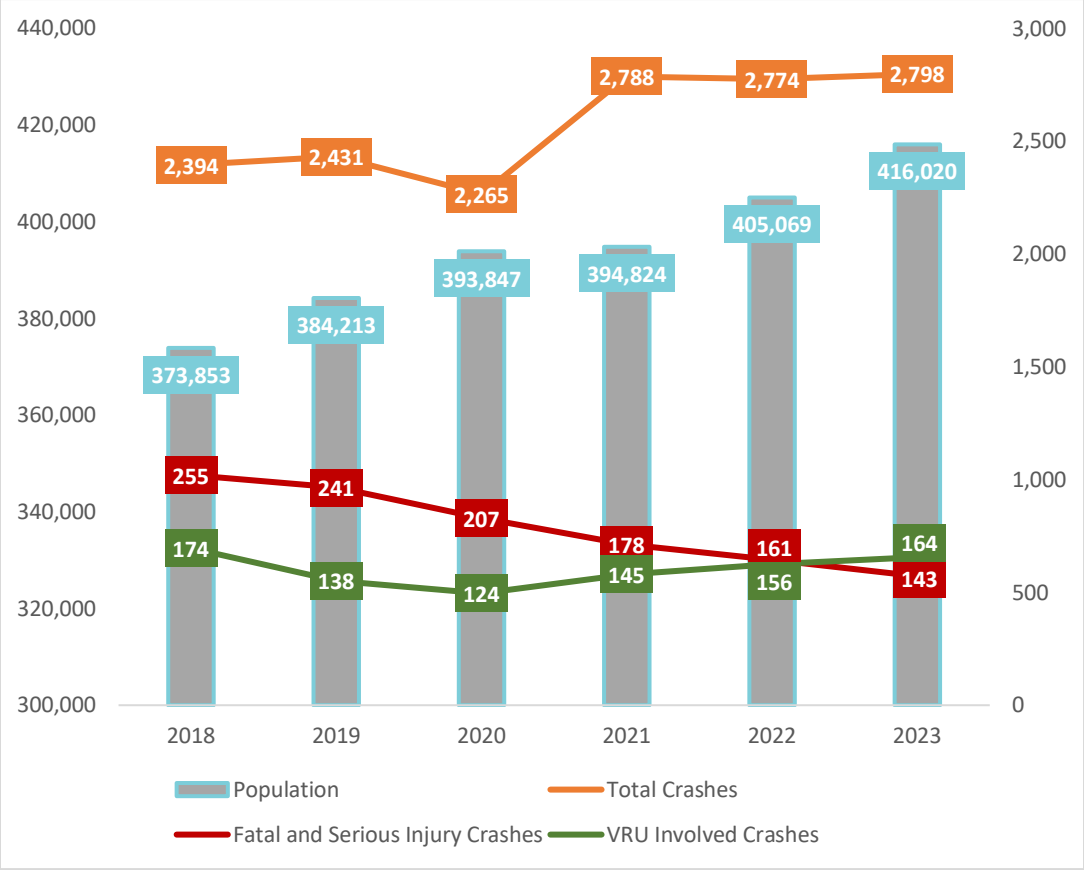
SAFETY ANALYSIS

Crash Trends and Safety Emphasis Areas – 02.04.25

An analysis and review of crash trends in Manatee County was completed to establish the historical crash patterns on County-owned roads, identify where high-risk crashes are happening, and inform safety emphasis areas and recommendations. The crash analysis uses crash data from January 1, 2018, to December 31, 2023. Six years of crash data was analyzed to account for unique trends that occurred in 2020 during the COVID-19 pandemic.

The number of total crashes on Manatee County-owned roads has increased along with the population, as shown in **Figure 1**. While the population has increased by 11%, the number of total crashes has increased by 17% since 2018. The 6-year historical crash trends suggests that as the population continues to increase, so will the number of total crashes. However, the percentage of fatal or serious injury crashes has decreased by 44% since 2018. This decrease illustrates Manatee County's commitment to providing a safe and convenient multimodal transportation system and progress that has been made in recent years. The goal of this action plan is to build on that progress and identify additional safety emphasis areas.

Figure 1: Annual Crashes and Population



Source: American Community Survey (ACS) 5-year Estimates, Signal4 Analytics

Safety Emphasis Areas

Based on the crash analysis and review of crash trends, six safety emphasis areas were identified. The emphasis areas serve as a way to categorize crash types and contributing factors with the highest frequency or rate of serious injuries and fatalities.

1. Vulnerable Road Users
2. Intersections
3. Lane Departure and Run Off Road
4. User Behavior
5. Time of Day / Lighting Conditions
6. Seasonal Conditions

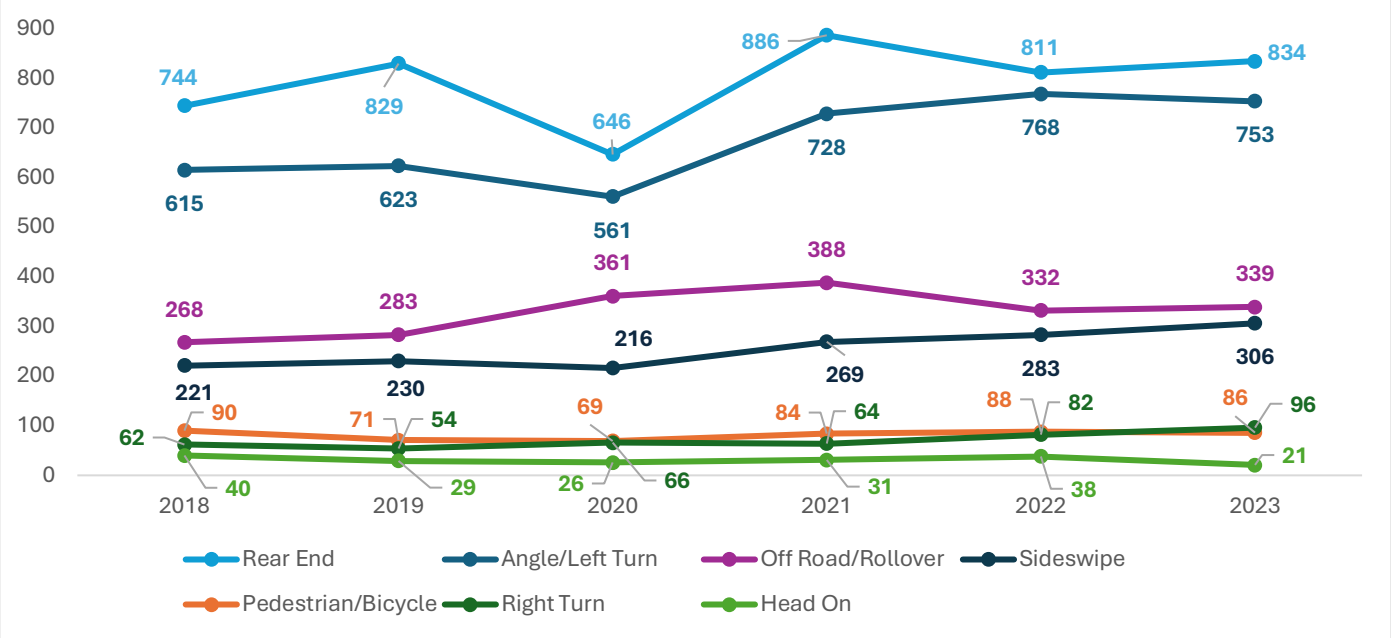
These emphasis areas will be a focus for project and programs in the Manatee County Traffic Road Safety Program and Action Plan, and countermeasures and strategies will align with the emphasis areas.

The emphasis areas include statistics based on crash data from FDOT's Signal4 Analytics from 2018 to 2023. Annual total crashes and annual fatal and serious injury crashes (KA crashes) are summarized for the emphasis areas.

Crash type trends on Manatee County roads, broken down by year, are documented below in **Figure 2**. The following provides a summary of the historical crash type trends over the past six years. Crash type by severity is discussed in further detail in the corresponding focus areas sections of the report. Crash types coded as "other", "unknown", and "animal" were excluded from the trends analysis.

- Crash type and overall crash trends generally align, both peaking in 2021.
- Single-vehicle crashes (off-road and rollover) were more frequent in 2020, a result of reduced traffic volumes during the pandemic. In contrast, rear, angle and left-turn crashes tend to increase when traffic volumes rise as shown in 2021 to 2023.
- Nationwide rear-end crashes represent the most frequent crash type, which is reflected in Manatee County trends.
- Angle and left-turn crashes have shown an upward trend year over year and are among the most severe crash types, indicating a potential trend toward more severe crashes.

Figure 2: Crash Type by Year


900
800
700
600
500
400
300
200
100
0
2018
2019
2020
2021
2022
2023
744
829
646
886
811
834
615
623
561
728
768
753
268
283
361
388
332
339
221
230
216
269
283
306
62
90
71
54
69
84
64
88
82
86
96
40
29
26
66
31
38
21
Rear End
Angle/Left Turn
Off Road/Rollover
Sideswipe
Pedestrian/Bicycle
Right Turn
Head On

Vulnerable Road Users

Vulnerable road user crashes have increased in recent years across the country, and that is not dissimilar to the trends occurring on Manatee County roads. Crashes involving pedestrians, cyclists, and motorcyclists have increased by 13% since 2021, as shown in **Figure 3**. These vulnerable road users are 3 times more likely to be hurt or killed in a crash on Manatee County roads, as shown in **Figure 4**.

- Motorcyclist Involved crashes
  - 58 annual motorcyclist-involved crashes including 26 annual KA crashes.
  - 44% of motorcycle-involved crashes resulted in fatalities or serious injuries and 39% resulted in minor injuries.
  - 41% of crashes involving motorcyclists were intersection related.
- Bicycle Involved crashes
  - 49 annual bicycle crashes including 15 annual KA crashes.
  - 31% of bicycle crashes resulted in fatalities or serious injuries and 59% resulted in minor injuries.
  - 47% of crashes involving bicycles were intersection related.
- Pedestrian Involved crashes
  - 44 annual pedestrian crashes including 18 annual KA crashes.
  - 41% of pedestrian crashes resulted in fatalities or serious injuries and 43% resulted in minor injuries.
  - 23% of crashes involving pedestrians were intersection related.

Figure 3: Annual Crashes by Roadway User

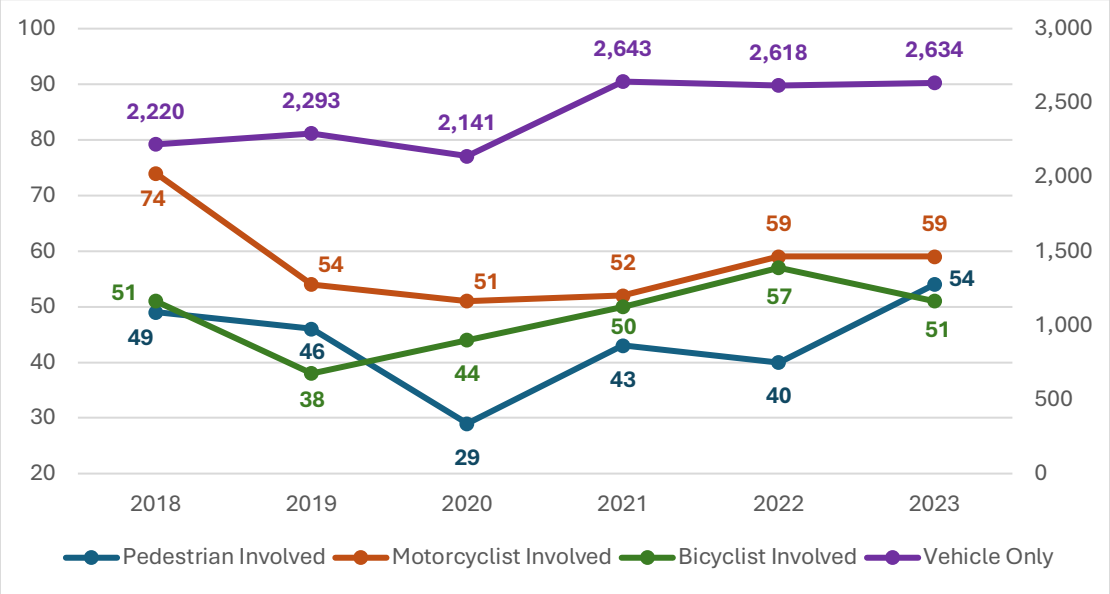
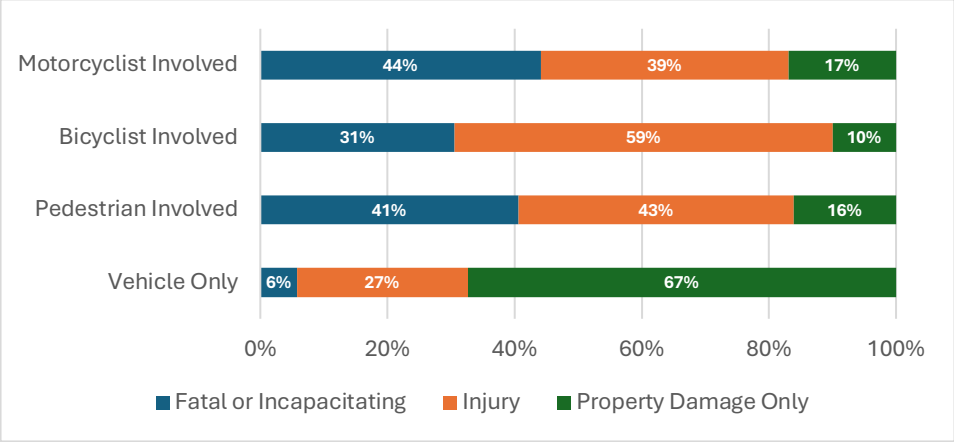


Figure 4: Crash Severity by Type of Roadway User



Aging drivers (those 65 years of age or older) and teen drivers are also vulnerable road users based on their greater risk of injury or death in a crash due to age related circumstances. Aging drivers' natural decline in characteristics like vision and reaction time and teen drivers' inexperience and higher likelihood of underestimating a dangerous situation may result in higher risk crashes for these road users. The top 3 contributing factors in a KA crash for aging and teen drivers are intersection related, lane departure, and distracted driving.

Top 3 KA Crash Contributing Factors
For Crashes Involving Teen or Aging Drivers

1. Intersection Related
2. Lane Departure
3. Distracted

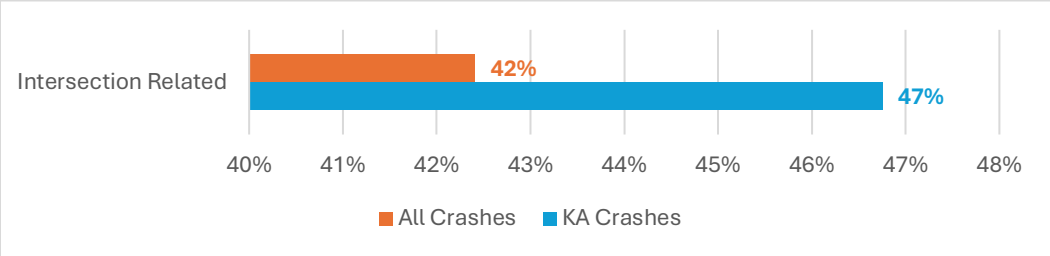
Intersection Crashes

Intersections are inevitably the locations where the most motorists and non-motorists will cross paths and have the greatest potential for conflicts. On Manatee County roads, intersection related crashes are one of the most common contributing factors for crashes overall and leading to KA crashes.

- 42% of all crashes are intersection related (1,092 crashes annually)
- 47% of all KA crashes are intersection related (92 KA crashes annually)

As shown in **Figure 5**, 42% of all crashes in the County are intersection related, but 47% of KA crashes are intersection related. A disproportionate percentage of intersection related crashes lead to a fatal or serious injury, representing a high-risk crash location.

Figure 5: Intersection Related Crashes

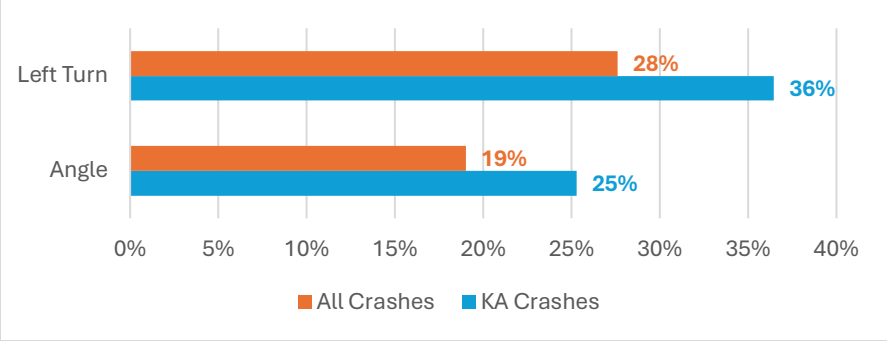


Approximately 44% of all intersection-related crashes and 38% of fatal or serious injury intersection-related crashes occur at signalized intersections. Based on a network level review of the intersection-related crashes, the remaining crashes generally occurred at unsignalized intersection locations like open medians or stop controlled intersections.

Angle and left turn crashes are two of the most common crash types at intersections, and lead to a high percentage of fatal and serious injury crashes. This is indicative of high-risk crashes happening at intersections during turning vehicle conflicts. **Figure 6** details crash severity for intersection related angle and left turn crashes.

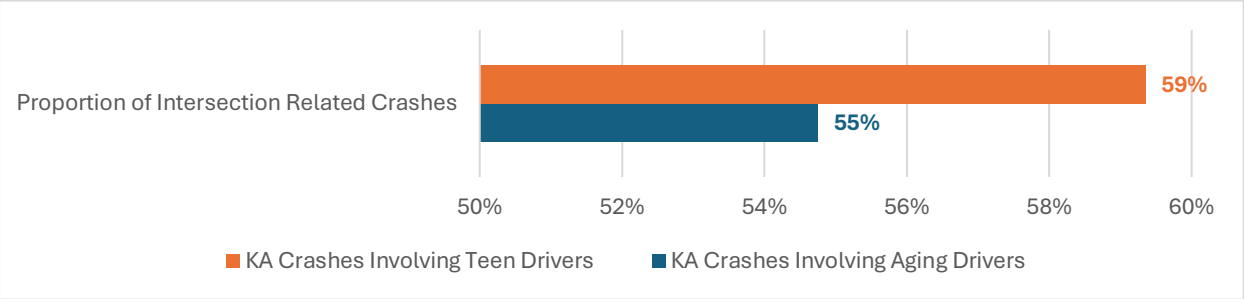
- Angle Crashes
  - 208 total angle crashes annually, including 23 annual KA crashes
  - Angle crashes are 19% of intersection-related crashes but are 25% of intersection-related KA crashes
- Left Turn Crashes
  - 301 total left turn crashes annually, including 34 annual KA crashes
  - Left turn crashes are 28% of intersection-related crashes but are 36% of intersection-related KA crashes

Figure 6: Intersection Related Angle and Left Turn Crashes



As shown in **Figure 7**, 55% to 59% of intersection related crashes involving teen or aging drivers resulted in a fatality or serious injury.

Figure 7: Fatal and Serious Injury Intersection Related Crashes by Driver Type

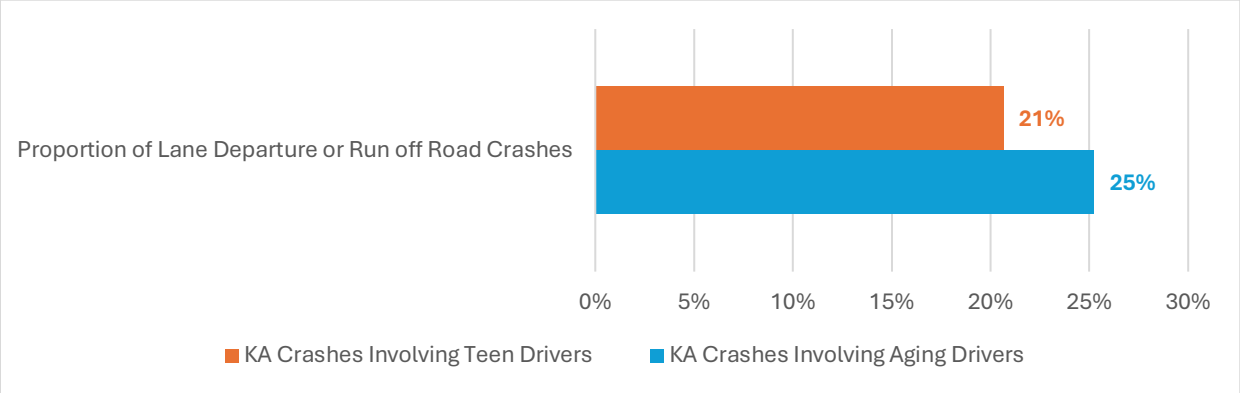


Lane Departure and Run off the Road Crashes

Lane departure or run off the road crashes often occur due to driver operating behavior like improper passing, overcorrecting, weaving, and wrong way driving, as well as cognitive behavior like aggressive, distracted, or impaired driving. **Figure 8** details fatal and serious injury lane departure or run off road crashes by driver type.

- 730 lane departure or run off road related crashes annually, including 63 annual KA crashes.
  - 28% of all crashes and 32% of KA crashes are lane departure or run off road crashes
- 25% of all lane departure or run off road related KA crashes involved aging drivers and 21% teen drivers.
  - 125 lane departure and run off road related crashes annually involved aging drivers, including 13 annual KA crashes
  - 82 lane departure and run off road related crashes annually involved teen drivers, including annual 5 KA crashes

Figure 8: Fatal and Serious Injury Lane Departure or Run Off Road Crashes by Driver Type



User Behavior

Aggressive driving and speed related crashes – the likelihood of a fatal crash and risk for the driver and the other roadway users increases with a vehicle's operating speed. Speeding and aggressive driving is a driver's behavior choice, but the design of a roadway can also impact a driver's ability to operate at unsafe speeds.

- 49 aggressive or speed related crashes annually, including 9 annual KA crashes
- Aggressive driving or speed related crashes make up 2% of all crashes and 5% of KA crashes.
- 7 aggressive driving or speed related crashes annually involved aging drivers, including 2 annual KA crashes
- 11 aggressive driving or speed related crashes annually involved teen drivers, including 2 annual KA crashes

Distracted driving – Using a cell phone is the most common activity related to distracted driving, but it also includes any action that takes the driver's attention from the roadway including visual, manual and cognitive distractions. Aging and teen drivers are often involved in distracted driving crashes which is attributed to the inability to handle multiple actions.

- 371 distracted crashes annually, including 24 annual KA crashes
- Distracted crashes make up 14% of all crashes and 12% of KA crashes.
- 81 distracted crashes annually involved aging drivers, including 6 annual KA crashes.
- 67 distracted crashes annually involved teen drivers, including 4 annual KA crashes.
- Approximately 40% of all distracted crashes involved aging or teen drivers.

Drug or alcohol involved crashes – Impaired driving may lead to improper behavior like distracted driving or incorrect operating maneuvers like wrong way driving and lane departures. An impaired driver also imposes higher risk to other roadway users through improper and dangerous maneuvering on the roadway.

- 103 drugs or alcohol related crashes annually, including 20 annual KA crashes.
- Drugs or alcohol related crashes made up 4% of all crashes but 10% of KA crashes.
- 13 drugs or alcohol related crashes annually involved aging drivers, including 4 annual KA crashes.
- 9 drugs or alcohol related crashes annually involved teen drivers, including 2 annual KA crash.

Figure 9: Crashes by Contributing Factor

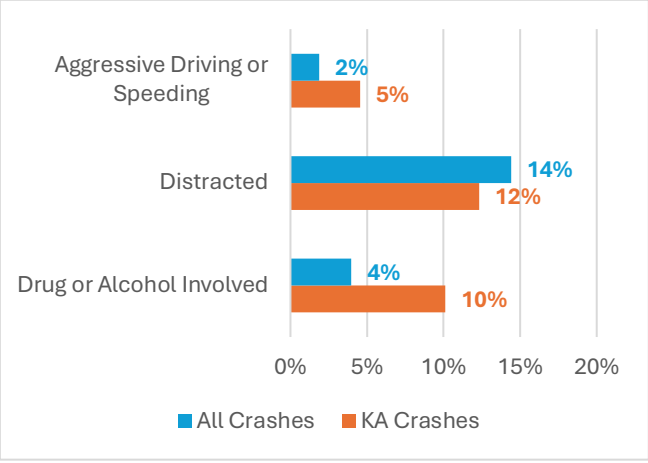


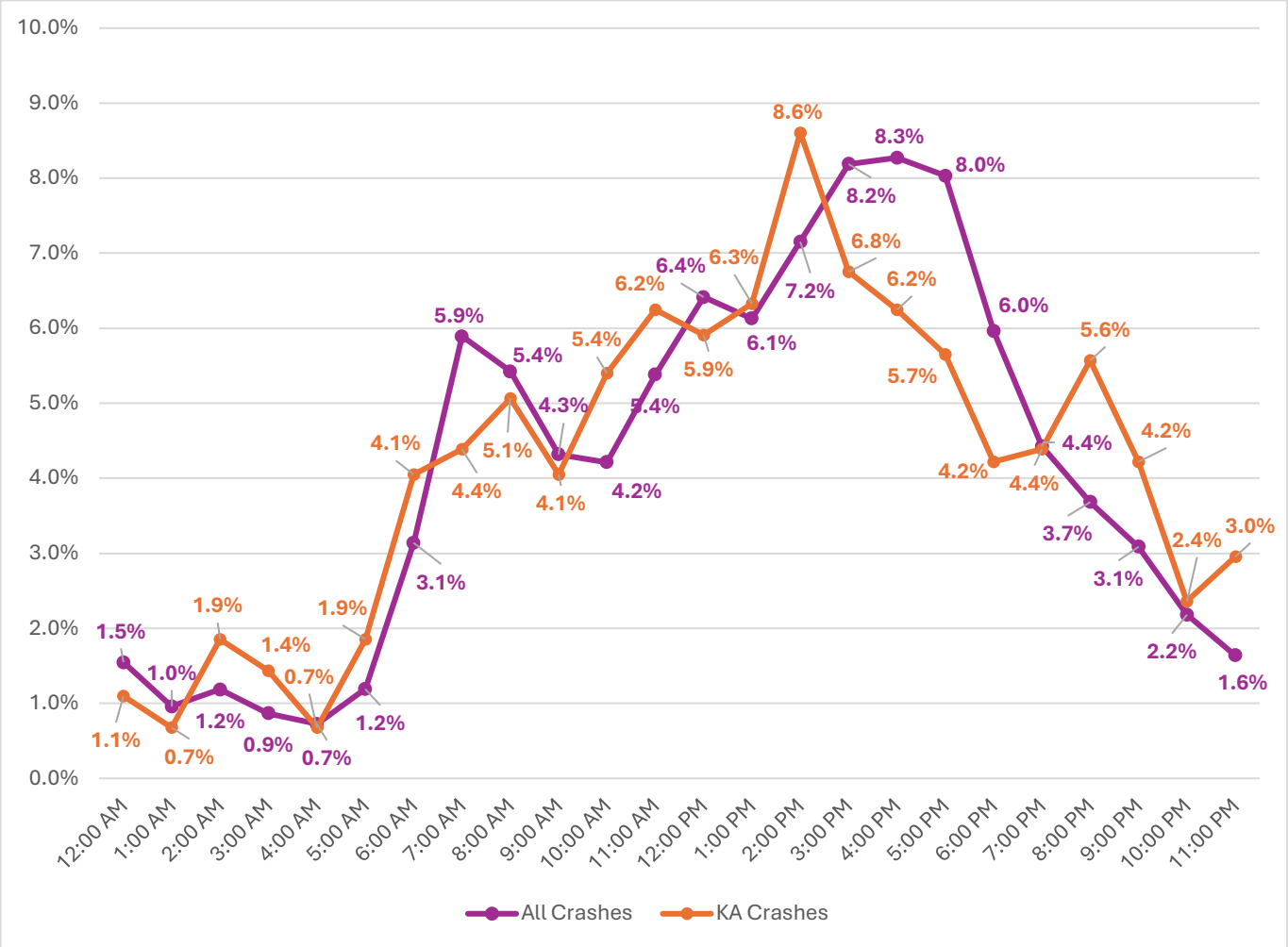
Figure 9 details a crash severity comparison for aggressive driving and speed related crashes, distracted driving crashes, and drug or alcohol involved crashes.

Time of Day / Light Conditions

During hours when there is congestion, there tends to be more crashes on the roadway but a lower proportion of crashes leading to fatal and serious injury. In the evening and late-night hours, a disproportionate percentage of KA crashes are occurring when compared to daytime hours. This can be attributed to a number of factors including the lighting conditions, lack of roadway lighting, impaired driving, and expectation of fewer roadway users. **Figure 10** compares crash severity by the time of day.

- 10% of all crashes occurred in dark conditions but 17% of KA crashes occurred in dark conditions
- Time of day
    - 3 PM to 6 PM has the highest percentage of all crashes (24%)
    - From 7 PM to 7 AM, KA crashes are occurring at a higher rate than all crashes.

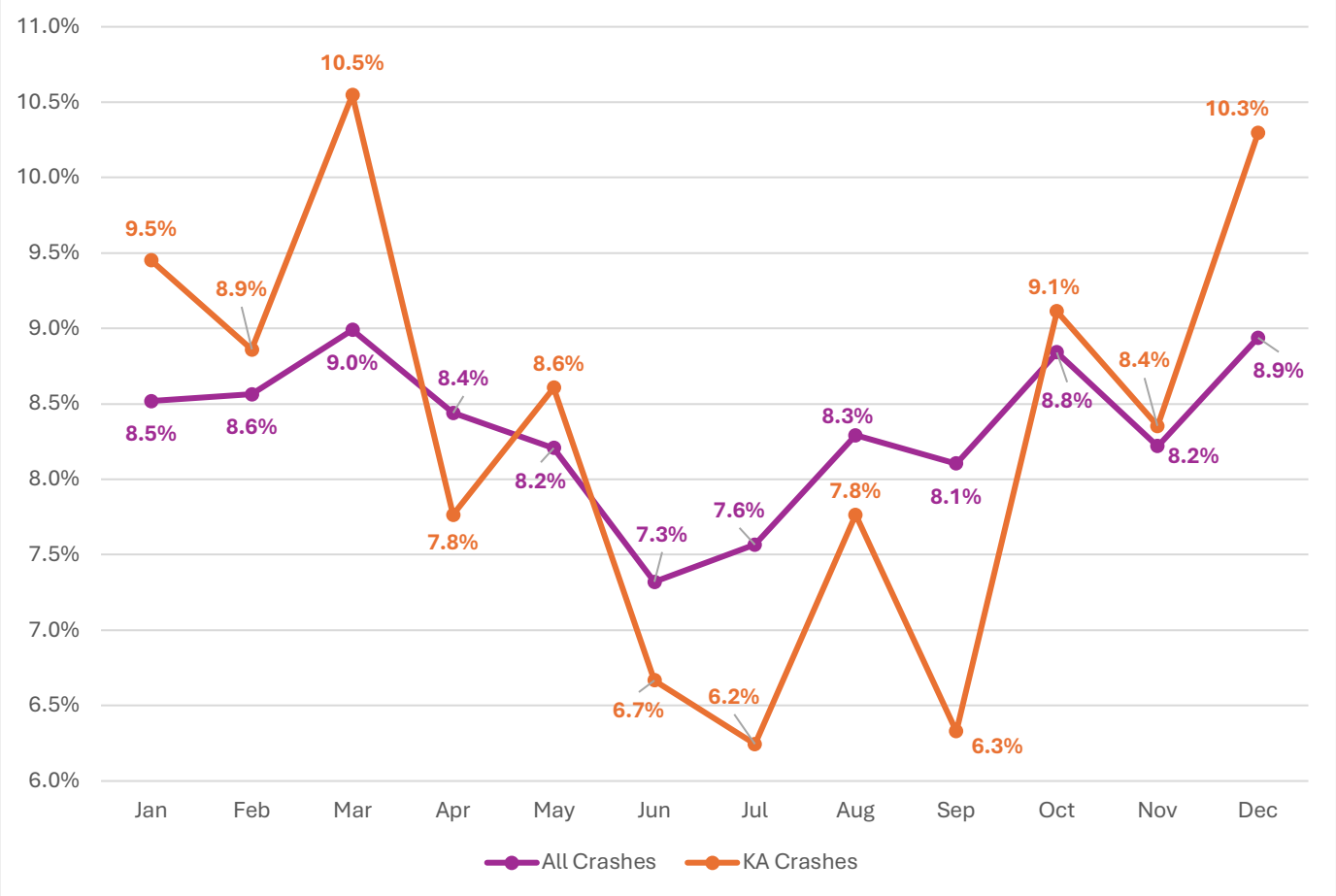
Figure 10: Crashes by Time of Day



Seasonal Conditions

In Manatee County, October through March have a disproportionate percentage of KA crashes compared to all crashes with December and March having the highest percentage. While overall crashes generally occur at the same rate across the year, there is a minor spike in March with 9% of the annual crashes. As shown in **Figure 11**, KA and overall crash trends show a connection to peak season in Florida and when there are more drivers on the roads who are less familiar with the area during holiday months and spring break season.

Figure 11: Crash Severity by Time of Year



High Risk Characteristics in Manatee County

Manatee County's goal is to be proactive in preventing roadways and intersections from becoming crash hot spots. In addition to systemic approaches, there are certain roadway characteristics that can be monitored and modified to prevent crashes from increasing in the future.

The following are crash trends from Manatee County roads that exhibit high risk characteristics. These characteristics include speed, number of lanes, AADT, and transit routes.

High Risk Characteristic	Crash Type	Crash Trends
Speed		
40 to 45 MPH	**All Fatal and Serious Injury**	○ **58%** of fatal and serious injury crashes occur on **40 to 45 MPH** roads, but these roads make up only **48%** of the network in miles. In fact, a higher percentage of all fatal and serious injury crash types, except for angle crashes, occur on these roads compared to the proportion of miles.
> 45 MPH	**Rollover**	○ **16%** of all fatal and serious injury **rollover** crashes occur on **> 45 MPH** roads, but only **9%** of all fatal and serious injury crashes occur on these roads.
> 45 MPH	**Bicycle**	○ **57%** of **bicycle** crashes occurring on roads with a speed limit **> 45 MPH** resulted in a fatality or serious injury, compared to **33%** of **bicycle** crashes that occurred on the entire road network that resulted in a fatality or serious injury. ○ It should be noted that there were 7 total bicycle crashes and 4 fatal or serious injury bicycle crashes over the 6-year period on the > 45 MPH roads. The low number of crashes and high crash severity may be attributed to a low number of cyclists on the roads because they are uncomfortable with the conditions – high vehicle travel speeds and lack of bicycle facilities.
40 to 45 MPH	**Bicycle**	○ Based on the crashes that occurred on the **40 to 45 MPH** roads, **33%** of **bicycle** crashes, 9 annually, resulted in a fatality or serious injury. This indicates that a speed reduction alone (from > 45 MPH to slower) would not reduce crashes involving bicycles.

High Risk Characteristic	Crash Type	Crash Trends
> 40 MPH	**Pedestrian**	○ **46% and 49%** of **pedestrian** crashes occurring on roads with a speed limit **> 45 MPH** and **40 to 45 MPH**, respectively, resulted in a fatality or serious injury, compared to **45%** of pedestrian crashes that occurred on the entire road network that resulted in a fatality or serious injury.
> 45 MPH	**Head-on**	○ **40%** of **head-on** collisions occurring on roads with a speed limit greater than **45 MPH** resulted in a fatality or serious injury, compared to **23%** of head-on collisions that occurred on the entire road network that resulted in a fatality or serious injury.
Number of Travel Lanes		
4 Lanes	**All Fatal and Serious Injury**	○ **24%** of fatal and serious injury crashes occur on **4 lane** roads, but these roads make up only **15%** of the network in miles. In fact, a higher percentage of all fatal and serious injury crash types occur on these roads compared to the proportion of miles.
4 Lanes	**Bicycle**	○ **39%** of **bicycle** crashes occurring on **4 lane** roads resulted in a fatality or serious injury, compared to **33%** of **bicycle** crashes that occurred on the entire road network that resulted in a fatality or serious injury. ○ **36%** of fatal and serious injury **bicycle** crashes occur on **4 lane** roads, but only **24%** of all fatal and serious injury crashes occur on these roads.
4 Lanes	**Right Turn**	○ **42%** of fatal and serious injury **right turn** crashes occur on **4 lane** roads, but only **24%** of all fatal and serious injury crashes occur on these roads.
6 Lanes	**All Fatal and Serious Injury**	○ **8%** of fatal and serious injury crashes occur on **6 lane** roads, but these roads make up only **2%** of the network in miles. In fact, a higher percentage of all fatal and serious injury crash types, except for angle crashes, occur on these roads compared to the proportion of miles.
6 Lanes	**Bicycle**	○ **43%** of **bicycle** crashes occurring on **6 lane** roads resulted in a fatality or serious injury, compared to **33%** of **bicycle** crashes that occurred on the entire road network that resulted in a fatality or serious injury.

High Risk Characteristic	Crash Type	Crash Trends
6 Lanes	**Head-On**	○ **40%** of **head-on** collisions occurring on **6 lane** roads resulted in a fatality or serious injury, compared to **23%** of **head-on** collisions that occurred on the entire road network that resulted in a fatality or serious injury.
6 Lanes	**Left Turn**	○ **20%** of **left-turn** crashes occurring on **6 lane** roads resulted in a fatality or serious injury, compared to **10%** of **left-turn** crashes that occurred on the entire road network that resulted in a fatality or serious injury.
6 Lanes	**Pedestrian**	○ **50%** of **pedestrian** crashes occurring on **6 lane** roads resulted in a fatality or serious injury, compared to **45%** of **pedestrian** crashes that occurred on the entire road network that resulted in a fatality or serious injury.
6 Lanes	**Rollover**	○ **37%** of **rollover** crashes occurring on **6 lane** roads resulted in a fatality or serious injury, compared to **22%** of **rollover** crashes that occurred on the entire road network that resulted in a fatality or serious injury.
6 Lanes	**Sideswipes**	○ **18%** of fatal and serious injury **sideswipe** crashes occur on **6 lane** roads, but only **8%** of all fatal and serious injury crashes occur on these roads.
AADT		
> 15,000 VPD	**All Fatal and Serious Injury**	○ **32%** of fatal and serious injury crashes occur on **> 15,000 VPD** roads, but these roads make up only **13%** of the network in miles. In fact, a higher percentage of all fatal and serious injury crash types occur on these roads compared to the proportion of miles.
> 15,000 VPD	**Right Turn**	○ **67%** of all fatal and serious injury **right-turn** crashes occur on **> 15,000 VPD** roads, but only **32%** of all fatal and serious injury crashes occur on these roads.
> 15,000 VPD	**Bicycle**	○ **37%** of all fatal and serious injury **bicycle** crashes occur on **> 15,000 VPD** roads, but only **32%** of all fatal and serious injury crashes occur on these roads. ○ **36%** of **bicycle** crashes occurring on > **15,000 VPD** roads resulted in a fatality or serious injury, compared to **33%** of **bicycle** crashes that occurred on the entire road network that resulted in a fatality or serious injury.

High Risk Characteristic	Crash Type	Crash Trends
> 15,000 VPD	**Left Turn**	○ **12%** of **left-turn** crashes occurring on > **15,000 VPD** roads resulted in a fatality or serious injury, compared to **10%** of **left-turn** crashes that occurred on the entire road network that resulted in a fatality or serious injury.
> 15,000 VPD	**Rollover**	○ **25%** of **rollover** crashes occurring on > **15,000 VPD** roads resulted in a fatality or serious injury, compared to **22%** of **rollover** crashes that occurred on the entire road network that resulted in a fatality or serious injury.
Transit Routes		
Transit Routes	**All Fatal and Serious Injury**	○ **41%** of all fatal and serious injury crashes occur along **transit routes**
Transit Routes	**Bicycle**	○ **54%** of all fatal and serious injury **bicycle** crashes occur along **transit routes**, but only **41%** of all fatal and serious injury crashes occur on these roads.
Transit Routes	**Pedestrian**	○ **54%** of all fatal and serious injury **pedestrian** crashes occur along **transit routes**, but only **41%** of all fatal and serious injury crashes occur on these roads.
Transit Routes	**Right-Turn**	○ **50%** of all fatal and serious injury **right-turn** crashes occur along **transit routes**, but only **41%** of all fatal and serious injury crashes occur on these roads.
Transit Routes	**Rollover**	○ **32%** of **rollover** crashes occurring along **transit routes** resulted in a fatality or serious injury, compared to **22%** of **rollover** crashes that occurred on the entire road network that resulted in a fatality or serious injury.

APPENDIX B:

HIGH INJURY NETWORK METHODOLOGY

High Injury Network Determination Methodology – 02.28.25

This memorandum is provided to outline the methodology to develop the High Injury Network (HIN) for the Manatee County Traffic Road Safety Program and Action Plan (TRSPAP). The HIN consists of the segments and intersections with the highest fatal and serious injury crash rates and crash frequencies on Manatee County's roadway network.

Data Collection

The HIN is developed in a Geographic Information System (GIS) database utilizing publicly available information acquired from the County.

Roadway network information is based on information from the Manatee County Comprehensive Plan Maps and the Florida Department of Transportation (FDOT), including road names, lane geometry, Annual Average Daily Traffic (AADT) volumes, posted speed limit, and segment length. The roadway network used to create the HIN includes only County-maintained facilities. Information on intersection characteristics is from the Manatee County GIS database, including location and intersecting road names. The intersections used to create the HIN includes only County-owned intersections. Where necessary, the data is supplemented with information using aerial imagery from Google Street View and Nearmap.

Historical crash data is obtained from *SignalFour Analytics* for the six-year period from January 1, 2018 through December 31, 2023. The crash history includes geospatial identification of crash locations, as well as information regarding the severity of crashes, the types of road users involved (including vulnerable users), the crash types, and information regarding the circumstances, vehicles, and conditions surrounding each crash, as recorded by the law enforcement officers who reported them.

Safety Analysis

Segments – Crash Rate and Frequency Determination

Crash rate and crash frequency are used to determine the roadway segments in the HIN. Roadway segments with the highest crash rates and frequency are prioritized in the HIN including total crashes, fatal and serious injury crashes, and vulnerable user crashes.

Before the segment crash rate and frequency is determined, the geospatial crash data points are linked to the nearest roadway facilities in the GIS database. A 250-foot buffer around each roadway segment is utilized to assign crashes to specific County-owned roadways. Crashes occurring on interstate freeways, ramps, parking lots, and private roadways are excluded from the sample before assigning crashes to specific road segments. Longer roadways are segmented into links no longer than 2.0 miles in length to better identify specific locations along roadway segments with high crash densities.

Crash rate is used to normalize the crash data to the traffic volumes on the roadways within the Manatee County network. Once the crashes are linked to individual roadway segments, the following formula is utilized to calculate each segment's crash rate per 100 million vehicle miles traveled (MVMT):

$$Crash\ Rate\ per\ 100\ MVMT = \frac{Number\ of\ Crashes * 100{,}000{,}000}{365\ days * (AADT * 6\ years) * Segment\ Length}$$

The crash rate and crash frequency is calculated for fatal and serious injury (KA) crashes, vulnerable road user crashes (VRU), as well as for the overall dataset of all crashes (KABCO).

After calculating KA, VRU, and KABCO crash rates and frequencies for the Manatee County roadway network, the highest percentile crash rates and frequencies are identified to develop a prioritized list of segments. The segments with KA crash rates in the 80th percentile (top 20%) *or* crash frequencies in the 80th percentile (top 20%) are initially prioritized. The prioritization list is evaluated, beginning with the highest-ranked segments.

Intersections – Crash Severity Determination

Crash severity is used to determine the intersections in the HIN. Intersections with the highest severity will be prioritized in the HIN based on the Equivalent Property Damage Only (EPDO) score.

A 250-foot buffer around County-owned signalized intersections and unsignalized intersection on County-maintained roads was used to identify intersection-related crashes. Crashes were assigned to the intersection nearest the reported crash location. Observed crash counts by injury severity level were standardized using Equivalent Property Damage Only (EPDO) scores. The EPDO method applies weight factors based on the societal cost of each crash severity relative to the societal cost of one property damage only (PDO) crash.

As shown in *Table 1*, a modified (weighted average) EPDO weight factor was calculated combining the fatal and serious injury crashes, and moderate and minor injury crashes weight values. The EPDO score for individual intersections was determined by summing the product of the EPDO weight and the number of crashes by severity at each intersection.

Table 1: FDOT Societal Crash Costs by Injury Severity Level

Crash Severity	KABCO Code	Comprehensive Crash Cost	EPDO Weight	Modified EPDO Weight
Fatal	K	$10,890,000	1,414	261
Serious Injury	A	$888,030	115	
Moderate Injury	B	$180,180	23	17
Minor Injury	C	$103,950	14	
Property Damage Only	O	$7,700	1	1
Source: 2025 FDM Table 122.6.2 – Published by FDOT State Safety Office in February 2022				

High Injury Network

Segments

Roadway segments with the highest crash rates and frequency were prioritized in the HIN including total crashes, fatal and serious injury crashes, and vulnerable user crashes. Based on the crash analysis on County owned and operated roads, segments with a KA crash rate greater than 44 or KA crash frequency greater than 7 were prioritized for review in the HIN. The attached map illustrates the segments with a KA crash rate and KA crash frequency on the network which were reviewed to define the HIN. Similarly, segments with a VRU crash rate greater than 28 or a VRU crash frequency greater than 8 were prioritized for review in the HIN. The attached map illustrates segments with a VRU crash rate and VRU crash frequency on the network which were reviewed to define the HIN.

Following the crash rate and crash frequency determination, the top segments were reviewed for inclusion in the high injury network. Where multiple segments of the same corridor were ranked high, the segments were combined into one segment and assigned the highest KA crash rate of any one segment within the combined corridor. Locations where high KA crash rates were more indicative of intersection crash patterns than road segment crash patterns were reviewed for inclusion in the intersection priority locations.

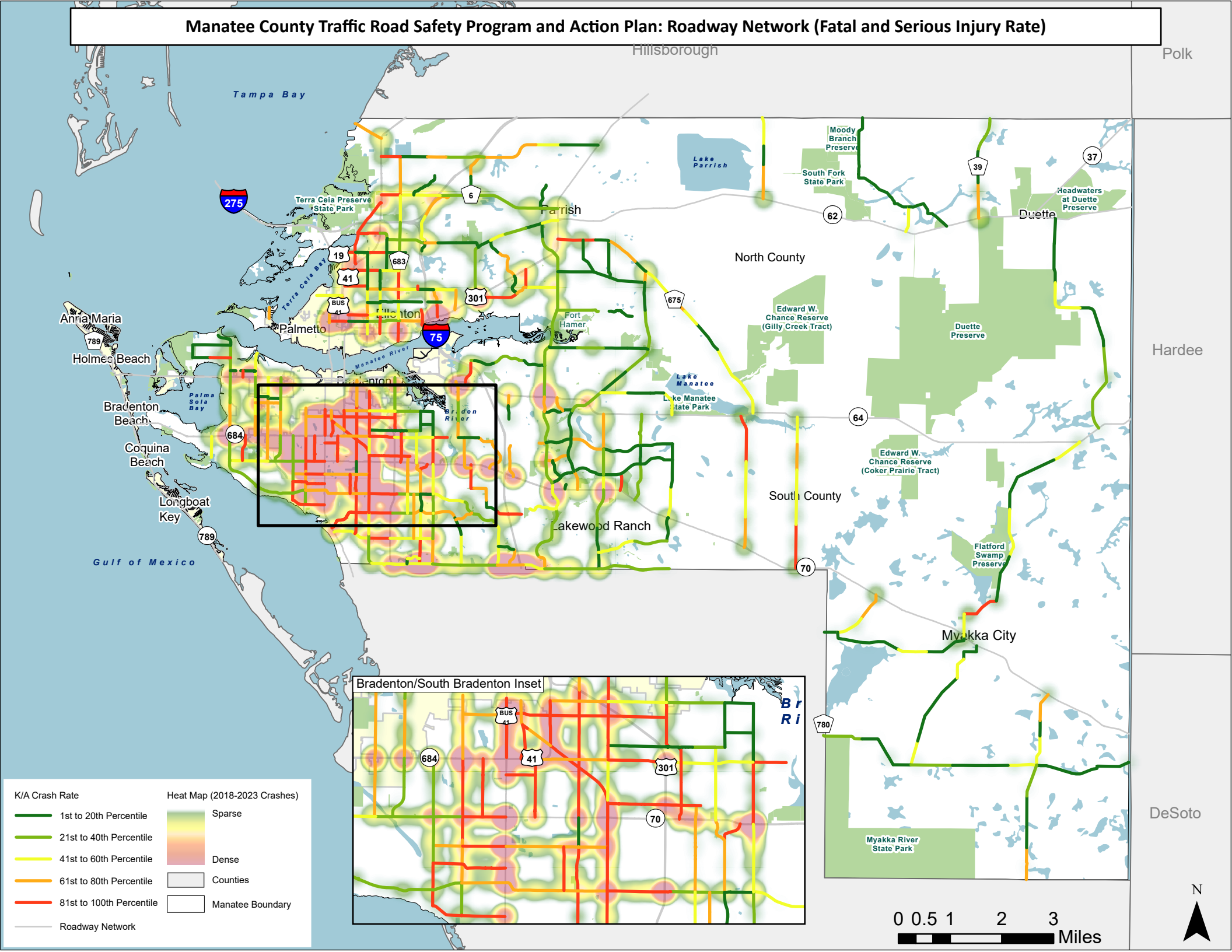
Segments with a crash rate or crash frequency that is not indicative of an overarching crash pattern were also removed. The intent of this was to not prioritize instances of low-volume roadways with a single crash, and prioritize segments with a higher frequency of crashes where enhancements could be expected to reduce the number of fatal and serious injury crashes in the County.

The attached table and map include the preliminary High Injury Network including the High Injury Segments and Vulnerable User Segments.

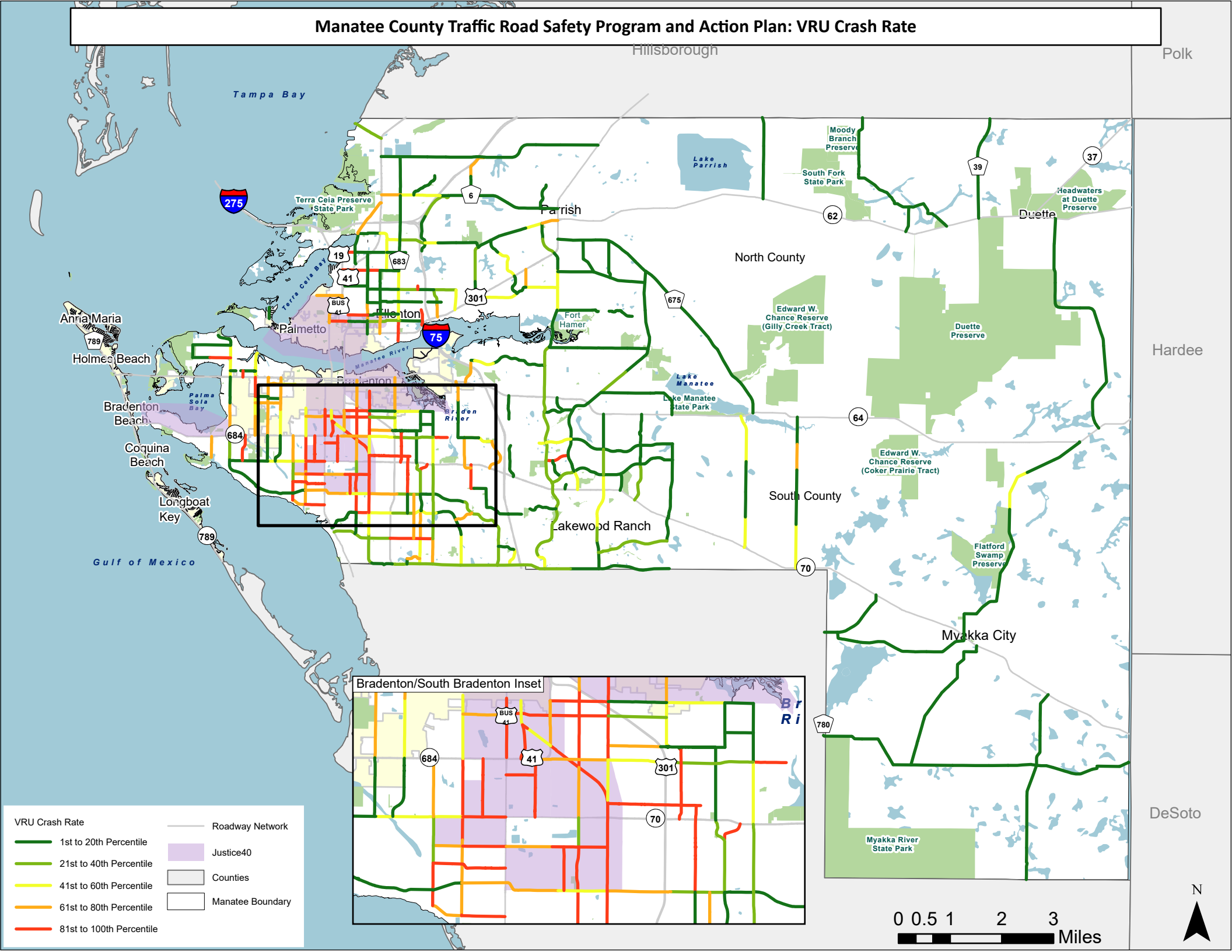
Intersections

Intersections with the highest EPDO score were prioritized in the HIN based on the severity and frequency of the crashes. Based on the crash analysis, signalized intersections on County owned and operated roads with an EPDO score greater than 1,123 are prioritized for reviewed in the HIN. The attached map illustrates the top signalized intersections with highest EPDO scores which were reviewed further to define the HIN. The top intersections that did not overlap with the preliminary HIN were included in the attached map and table.

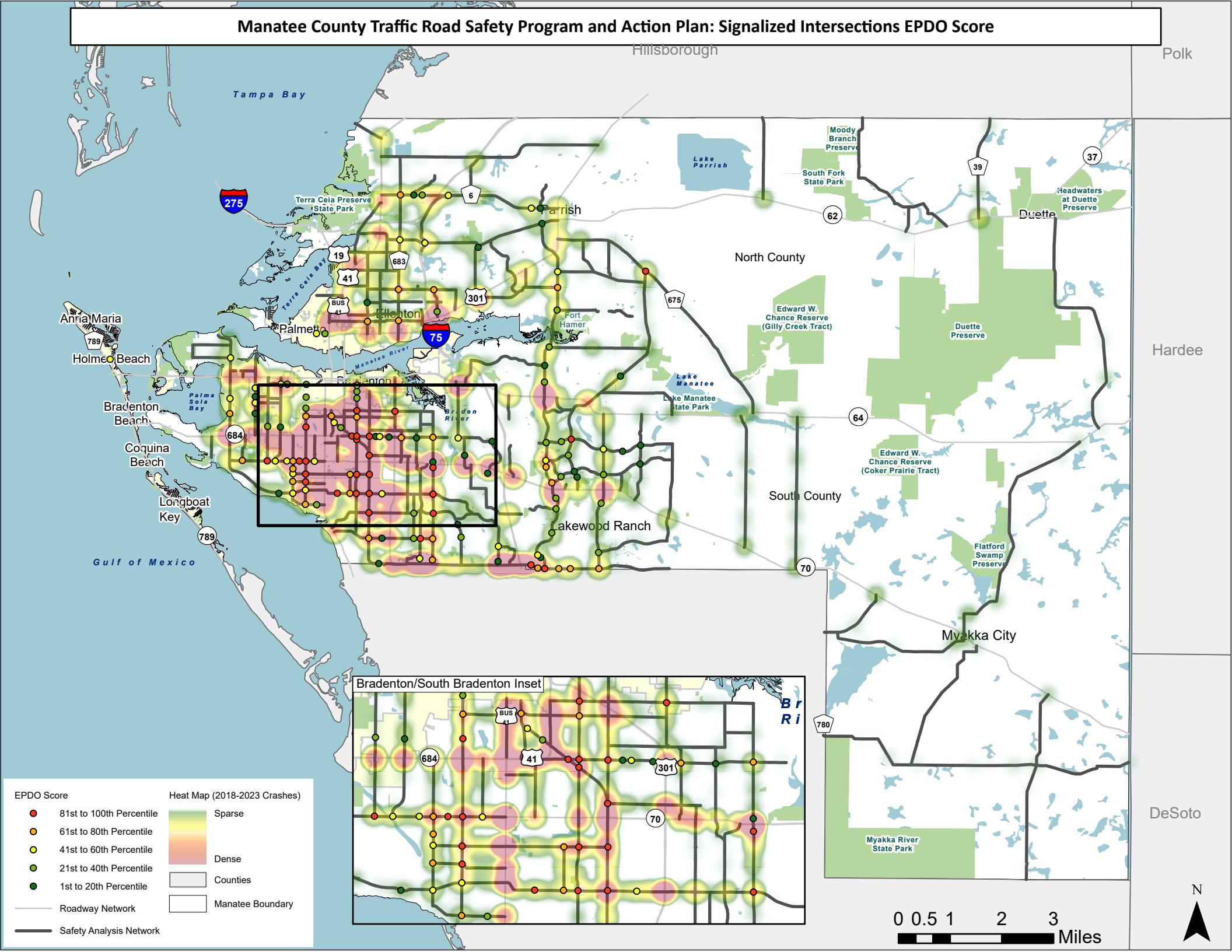
Manatee County Traffic Road Safety Program and Action Plan: Roadway Network (Fatal and Serious Injury Rate)

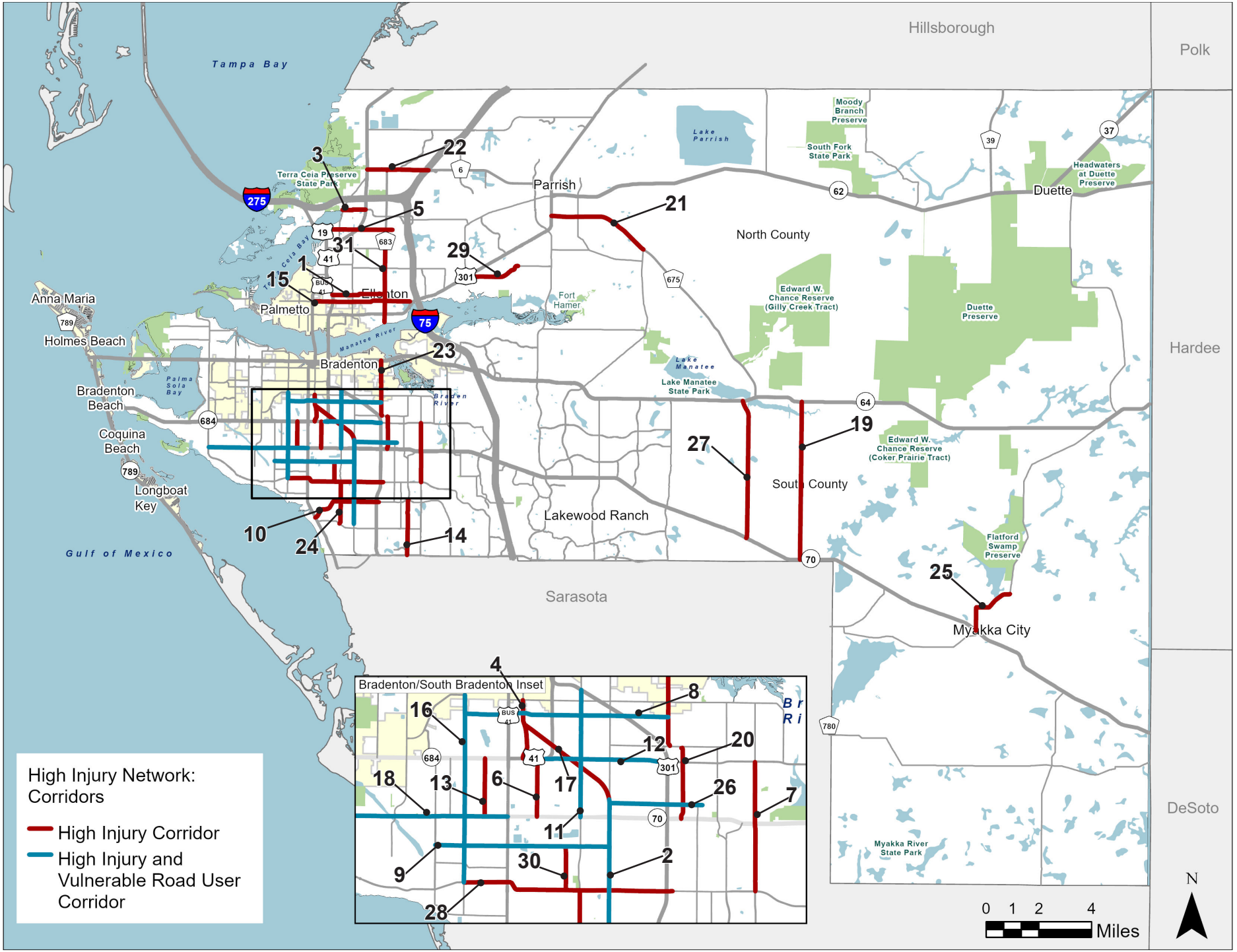


Manatee County Traffic Road Safety Program and Action Plan: VRU Crash Rate



Manatee County Traffic Road Safety Program and Action Plan: Signalized Intersections EPDO Score

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Palmetto
Ellenton
Bradenton
Parrish
North County
South County
Lakewood Ranch
Myakka City
Fort Hamer
Lake Parrish
Lake Manatee
Lake Manatee State Park
Terra Ceia Preserve State Park
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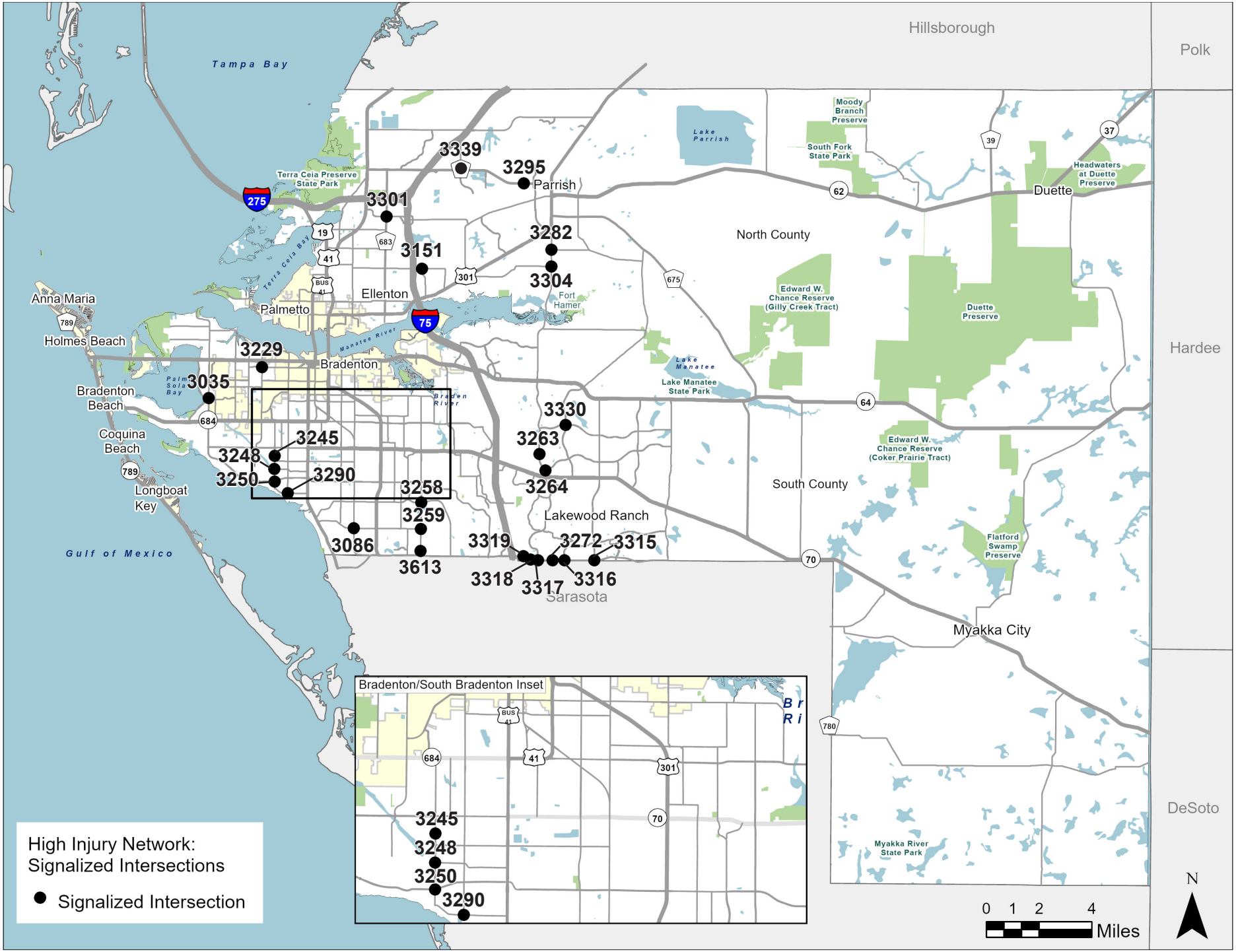
Headwaters at Duette Preserve
Duette
Duette Preserve
Edward W. Chance Reserve (Gilly Creek Tract)
Edward W. Chance Reserve (Coker Prairie Tract)
Flatford Swamp Preserve
Myakka River State Park
Manatee River
Palma Sola Bay
Braden River
Terra Ceia Bay
Bradenton/South Bradenton Inset
High Injury Network: Corridors
High Injury Corridor
High Injury and Vulnerable Road User Corridor
0 1 2 4
Miles
N

Map ID	Roadway	Begin	End	Total Length (mi)	Max AADT (2023)	VRU HIN	KA Crashes (2018-2023)	Annual KA Crashes	Max KA Crash Rate	VRU Crashes (2018-2023)	Annual VRU Crashes	Max VRU Crash Rate	Total Crashes (2018-2023)	Annual Total Crashes	Max Total Crash Rate
1	21ST ST E	US 41 - ELLENTON GIL	SR 683/36TH AVE E	2.0	2500	N	16	3	356	2	< 1	47	95	16	2016
2	15TH ST E/301 BLVD	51ST AVE E	ROME AVE	3.2	10900	Y	77	13	250	55	9	143	832	139	2820
3	72nd ST CT E/73 ST E	BAYSHORE RD	SR 45/US 41	0.9	2500	N	11	2	223	0	0	0	111	19	2253
4	9TH ST W	301 BLVD W	US 41/44TH AVE W	0.6	3229	N	11	2	216	3	1	59	171	29	3359
5	PALMVIEW RD/61ST ST	SR 55/US 19	61ST ST E (DEAD END)	2.7	2500	N	11	2	144	4	1	100	88	15	1178
6	5TH ST W	US 41/44TH AVE W	53RD AVE E/SR 70	1.0	7879	N	25	4	143	8	1	46	277	46	1589
7	45 ST E/LOCKWOOD RIDGE RD	63RD AVE E/HONORE AVE	44TH AVE E	2.3	18500	N	37	6	139	5	1	15	516	86	1752
8	30TH AVE E	26 ST W	27 ST E	3.5	10300	Y	48	8	131	22	4	65	597	100	1806
9	57 AVE E	34TH ST W	15TH ST E	3.0	12600	Y	49	8	129	30	5	62	725	121	1922
10	WHITFIELD AVE	US41/TAMIAMI TR	26TH CT E	2.7	7600	N	27	5	125	4	1	42	354	59	2242
11	9TH STREET EAST	301 BLVD E	53RD AVE E/SR 70	2.2	14200	Y	51	9	112	15	3	31	490	82	1123
12	44TH AVE	1ST ST	US HWY 301	2.1	12100	Y	30	5	106	7	1	17	331	55	972
13	20TH ST W	53RD AVE W	SR 684/CORTEZ RD/44TH AVE W	1.0	4288	N	10	2	105	13	2	137	177	30	1866
14	TUTTLE AVE	WHITFIELD AVE	UNIVERSITY PKWY	2.1	4900	N	13	2	99	3	1	17	225	38	1837
15	17 ST E	6TH AVE W	51ST AVE E	3.6	10200	N	20	3	97	10	2	58	359	60	1635
16	26 ST W	BAYSHORE GARDENS PKW	SOUTHERN PKWY W/25TH AVE W	3.3	18000	Y	74	12	97	26	4	34	913	152	1038
17	301 BLVD E	26TH AVE W	15TH ST E	2.4	13400	N	40	7	93	14	2	33	681	114	1604
18	53 AVE W	EL CONQUISTADOR PKWY/75TH ST W	SR 45/US 41/14TH ST W	3.8	25000	Y	54	9	90	26	4	44	872	145	1471
19	VERNA BETHANY RD	SR 70	SR 64	6.0	2500	N	13	2	84	2	< 1	18	73	12	304
20	30TH ST E	38TH AVE E	53RD AVE E/SR 70	1.3	6373	N	15	3	83	7	1	39	142	24	783
21	CR 675/RUTLAND RD	N RYE RD	US HWY 301	3.9	3000	N	11	2	81	0	0	0	94	16	822
22	MOCCASIN WALLOW RD	US 41/S TAMIAMI TRL	ON-RAMP TO I-75 SB	2.4	8500	N	14	2	75	5	1	19	184	31	894
23	27TH ST E	38 AVE E	SR 64/MANATEE AVE	2.1	12000	N	15	3	75	9	2	20	224	37	623
24	PENNSYLVANIA AVE	TALLEVAST RD	63RD AVE/SAUNDERS	1.6	5700	N	10	2	75	3	1	32	95	16	897
25	MYAKKA-WAUCHULA RD	SR 70/ONECO-MYAKKA	BALLARD RD	2.4	2500	N	7	1	75	0	0	0	26	4	261
26	51ST AVE E	301 BLVD	33RD ST E	1.6	7787	Y	20	3	72	13	2	47	204	34	738
27	CR 675/WATERBURY RD	SR 70 E	SR 64 E	5.3	2500	N	11	2	69	2	< 1	15	64	11	344
28	63 AVE W	26TH ST W	28TH ST E	3.7	20200	N	64	11	62	29	5	26	927	155	980
29	OLD TAMPA RD	US 301	CHIN RD	2.1	9000	N	22	4	58	3	< 1	9	213	36	605
30	5TH ST E	63RD AVE E	57TH AVE E	0.8	6525	N	6	1	55	6	1	55	55	9	506
31	36TH AVE E/LEFFINGWELL AVE	49TH ST E	DEAD END	2.8	8600	N	20	3	48	8	1	30	262	44	949

Table B1: High Injury Network - Segments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Hardee
DeSoto
Tampa Bay
Gulf of Mexico
Terra Ceia Bay
Palma Sola Bay
Manatee River
Braden River
Lake Parrish
Lake Manatee
Moody Branch Preserve
South Fork State Park
Headwaters at Duette Preserve
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Edward W. Chance Reserve (Coker Prairie Tract)
Flatford Swamp Preserve
Myakka River State Park
Terra Ceia Preserve State Park
Anna Maria
Holmes Beach
Bradenton Beach
Coquina Beach
Longboat Key
Palmetto
Ellenton
Bradenton
Fort Hamer
Parrish
Duette
North County
South County
Lakewood Ranch
Sarasota
Myakka City
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Bradenton/South Bradenton Inset
High Injury Network:
Signalized Intersections
Signalized Intersection
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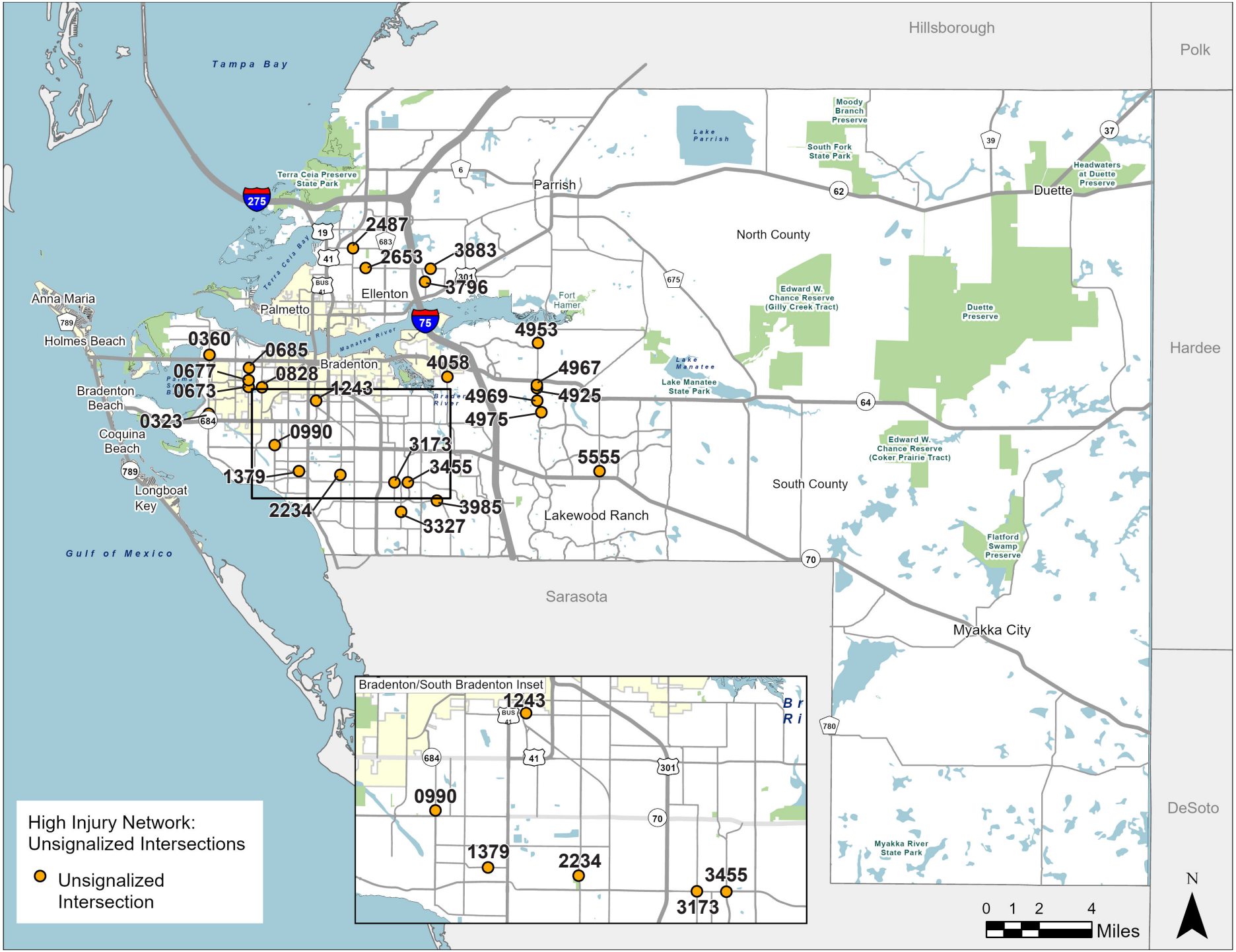
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Myakka River State Park
Fort Hamer
Lake Parrish
Lake Manatee
Manatee River
Terra Ceia Bay
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2653
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5555
Bradenton/South Bradenton Inset
High Injury Network:
Unsignalized Intersections
Unsignalized Intersection
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Miles
N

Map ID	SIGNALIZED INTERSECTION Name	KA Crashes (2018-2023)	Injury Crashes (2018-2023)	PDO Crashes (2018-2023)	Total Crashes (2018-2023)	EPDO Score
3319	University Pkwy @ Market St	6	21	97	124	2020
3258	Lockwood Ridge Rd @ Whitfield Ave	4	17	12	33	1345
3317	University Pkwy @ Lakewood Ranch Rd	4	9	38	51	1235
3330	White Eagle Blvd @ 44th Ave E	4	5	6	15	1135
3316	University Pkwy @ Legacy Blvd	3	15	17	35	1055
3259	Lockwood Ridge Rd @ Tallevast Rd	3	9	29	41	965
3248	34th St W @ 60th Ave W	3	10	7	20	960
3318	University Pkwy @ Town Center Pkwy	3	5	12	20	880
3290	Florida Blvd @ 26th St W	3	5	6	14	874
3304	Ft Hamer @ Old Tampa Rd	2	14	25	41	785
3086	15th St E @ Tallevast Rd	2	13	32	47	775
3263	Lakewood Ranch @ Lost Creek	2	11	16	29	725
3264	Lakewood Ranch @ Rangeland	2	10	31	43	723
3315	University Pkwy @ Lorraine Rd	2	9	27	38	702
3151	Buffalo Rd @ 37th St E	2	7	22	31	663
3035	75th St W @ 29th Ave W	2	7	4	13	645
3272	University @ Waterview Blvd	2	5	11	18	618
3245	34th St W @ Bayshore High School	2	4	17	23	607
3613	Lockwood Ridge Rd @ Walmart Ent.	1	16	37	54	570
3229	43rd St W @ 9th Ave W	2	2	8	12	564
3282	Ft Hamer @ Golf Course Rd	2	1	8	11	547
3250	34th St W @ Bayshore Gardens Pkwy	1	15	9	25	525
3339	Moccasin Wallow Rd @ Carter Rd	1	10	12	23	443
3301	36th Ave E/Ellenton Gillette Rd @ 69th St E	1	7	15	23	395
3295	Moccasin Wallow Rd @ 115th Ave E	1	7	12	20	392

Map ID	UNSIGNALIZED INTERSECTION Name	KA Crashes (2018-2023)	Injury Crashes (2018-2023)	PDO Crashes (2018-2023)	Total Crashes (2018-2023)	EPDO Score
3173	33RD ST E & 63RD AVE E	4	19	39	62	1406
4925	LAKEWOOD RANCH BLVD & PORTAL XING/ARCADE PL	4	9	13	26	1210
3455	TUTTLE AVE & 63RD AVE E	3	9	27	39	963
0828	43RD ST W & 21ST AVE W	3	6	25	34	910
4975	LAKEWOOD RANCH BLVD & WOOD FERN TRL	3	4	7	14	858
4953	UPPER MANATEE RIVER RD NE & 3RD AVE NE	3	4	4	11	855
0677	51ST ST W & 17TH AVE W	3	4	3	10	854
2234	9TH ST E & 61ST AVE E	3	3	19	25	853
2653	24TH AVE E & 37TH ST E	3	2	3	8	820
0323	75TH ST W & 40TH AVE W	2	7	5	14	646
3796	60TH AVE E & 29TH ST E	2	5	9	16	616
3883	COVERED BRIDGE XING & 37TH ST E	2	2	5	9	561
1379	DARTMOUTH DR & 60TH AVE W	2	2	3	7	559
4969	LAKEWOOD RANCH BLVD & CROWDERS PLAZA	2	1	7	10	546
0360	75TH ST W & 2ND AVE W	2	1	3	6	542
3985	W COUNTRY CLUB LN & WHITFIELD AVE	2	1	3	6	542
3327	PROSPECT RD & 72ND AVE E	2	1	0	3	539
4967	LAKEWOOD RANCH BLVD & GATEWAY NORTH SHOPPING CENTER	1	14	18	33	517
0673	51ST ST W & 21ST AVE W	1	9	26	36	440
0685	51ST ST W & 9TH AVE DR W	1	6	5	12	368
5555	LORAINE RD & 59TH AVE E	1	4	12	17	341
2487	49TH ST E & 16TH AVE E	1	4	8	13	337
4058	57TH ST E & 13TH AVE E	1	4	2	7	331
0990	34TH ST W & 52ND AVE DR W	1	3	14	18	326
1243	30TH AVE W & 8TH ST CT W	1	3	9	13	321

Table B2: High Injury Network - Intersections

APPENDIX C:

EQUITY ANALYSIS

Equity Analysis

The main objective of this plan is to increase safety for all roadway users. It is crucial to consider equity by evaluating how safety impacts may differ among various socioeconomic groups. By adopting an equitable approach to safety and infrastructure investments, we can ensure that all individuals are represented and can benefit from the countermeasures proposed in this plan. Equity was assessed by examining disparities in safety risks among disadvantaged communities in Manatee County.

This Economically Constrained Community Analysis evaluates national trends and Manatee County crash patterns based on census tracts designated as disadvantaged by the USDOT's Equitable Transportation Communities (ETC) explorer tool.

Definition of Equity

To analyze equity considerations within this plan, it is important to define equity regarding road safety. The USDOT defines Equity as the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, and persons otherwise adversely affected by persistent poverty or inequality. Equity involves various factors beyond race and income, acknowledging the diverse backgrounds and experiences that shape individuals' opportunities in society.

Age is an important factor to consider, as young people frequently encounter challenges when trying to enter the job market, while older adults often face ageism. In Manatee County, a striking 28.2% of the population is aged 65 and over. This figure not only exceeds the state average of 21.1% but also stands in stark contrast to the national average of 16.8%. Such demographics highlight the unique challenges and opportunities present in this vibrant community.

Additionally, abilities play a crucial role; people with disabilities may face barriers in education, employment, and public spaces. Creating accessible and inclusive environments is essential for true equity. By recognizing equity as a multifaceted issue, we can better address the needs of all individuals, ensuring everyone has a fair chance to succeed.

When analyzing the equity of traffic safety throughout Manatee County, it is important to include certain metrics to evaluate if proposed safety measures and/or prioritized projects address equity when selecting the correct mitigation strategies and project location to provide consistent and fair treatment to all individuals, particularly those in underserved communities.

National Trends

Traffic safety is also an equity issue. Nationally, people of color and low-income communities bear a disproportionate burden of traffic-related injuries and fatalities. Indigenous and Black people are much more likely to be killed when walking than other racial and ethnic groups (Figure 1), and lower-income census tracts nationally have much higher pedestrian fatality rates than wealthier communities (Figure 2). In addition, age is also a factor that impacts traffic safety. Pedestrians aged 50-64 and 75+ are more likely to be killed than any other age bracket (Figure 3).

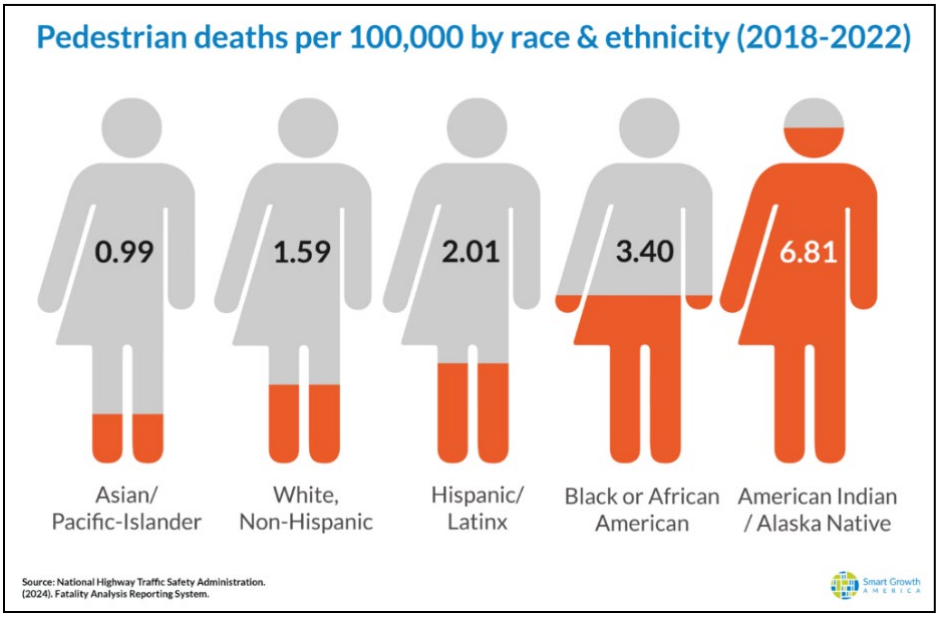

Figure 1: Traffic Safety Equity Disparities – Race (Source: Dangerous by Design 2024, Smart Growth America.)

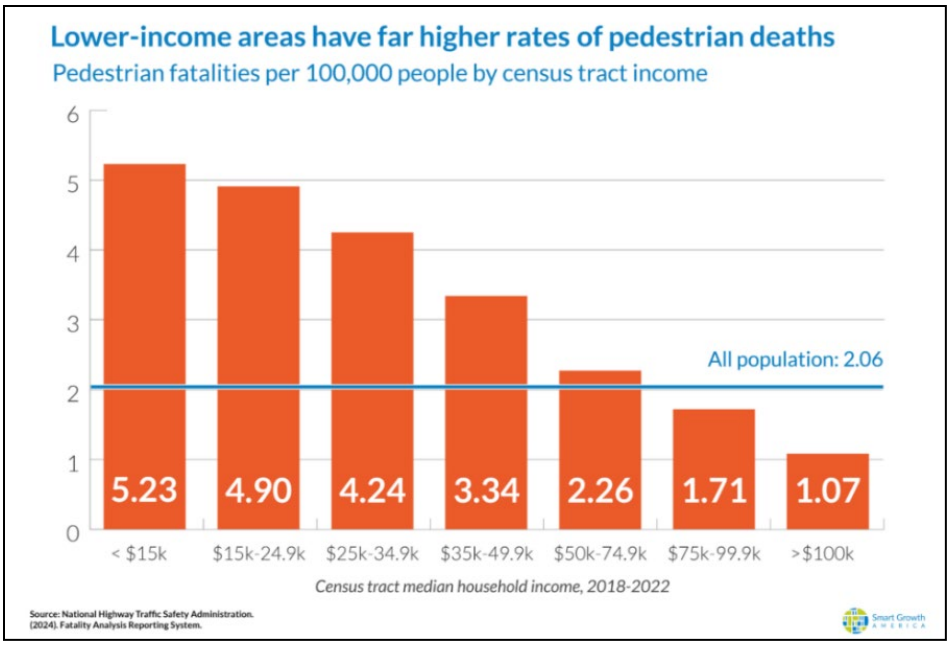

Figure 2: Traffic Safety Equity Disparities – Income (Source: Dangerous by Design 2024, Smart Growth America.)

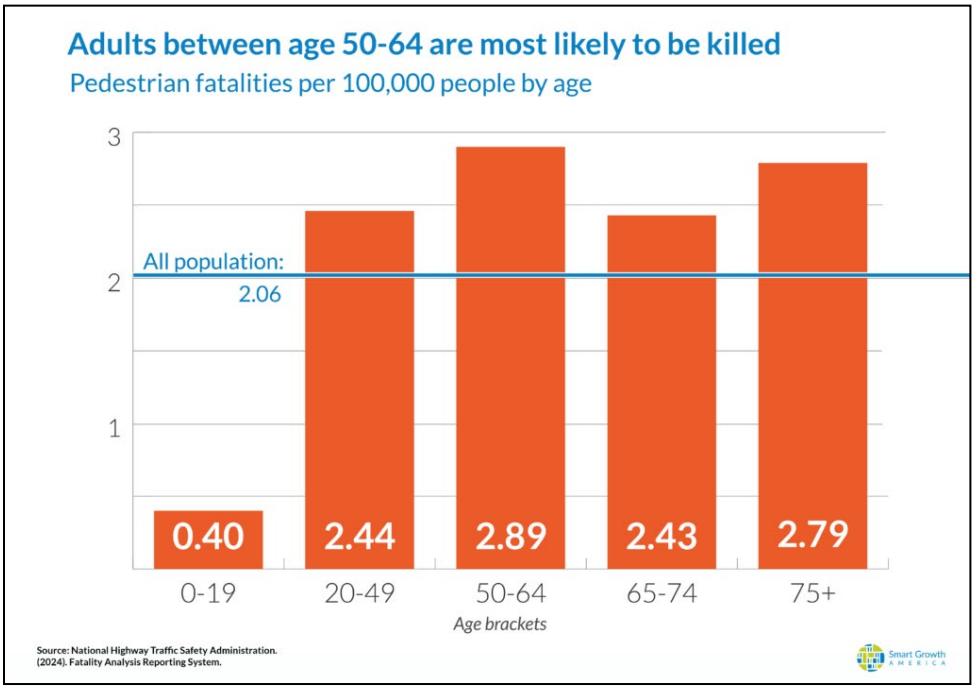

Figure 3: Traffic Safety Equity Disparities – Age (Source: Dangerous by Design 2024, Smart Growth America.)

While the crash data published by Signal 4 does not include demographic variables for each crash, analysis is conducted at the locations of crashes and the HINs alongside where high concentrations of disadvantaged communities live.

Analysis of Crashes in Manatee County

USDOT Disadvantaged Census Tracts

The primary evaluation criteria for equity in the SS4A and other federal programs is the USDOT's Equitable Transportation Community (ETC) Explorer tool. The ETC is a web application that uses 2020 census tracts and data to explore the cumulative burden communities experience because of underinvestment in transportation. The ETC uses many metrics to assess disadvantage, including income, poverty, and environmental justice.

Underserved Areas in Manatee County

According to the ETC Explorer, 48 of Manatee County's 93 census tracts are designated as disadvantaged. As shown in Figure 4, Disadvantaged census tracts are mostly located in western areas of the county near the Manatee River, such as the Palmetto and Bradenton areas. Areas in southwest Manatee County, such as Whitfield, Tallevast, and University Park, are considered disadvantaged areas. Two of the larger, more rural census tracts in the eastern part of the county near Myakka City are also classified as disadvantaged.

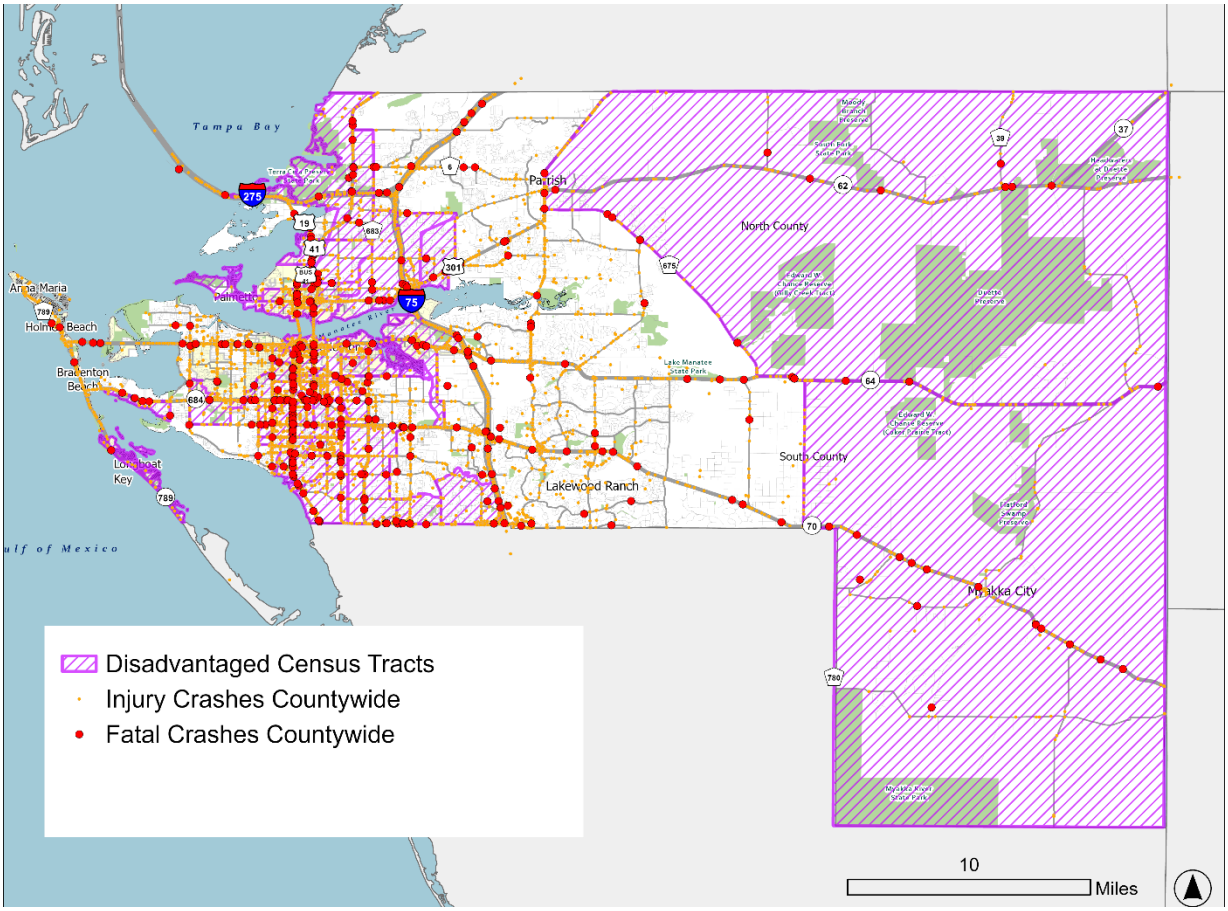

Figure 4: USDOT Equitable Transportation Communities Disadvantaged Census Tracts and Fatal/Injury Crashes, 2018-2022

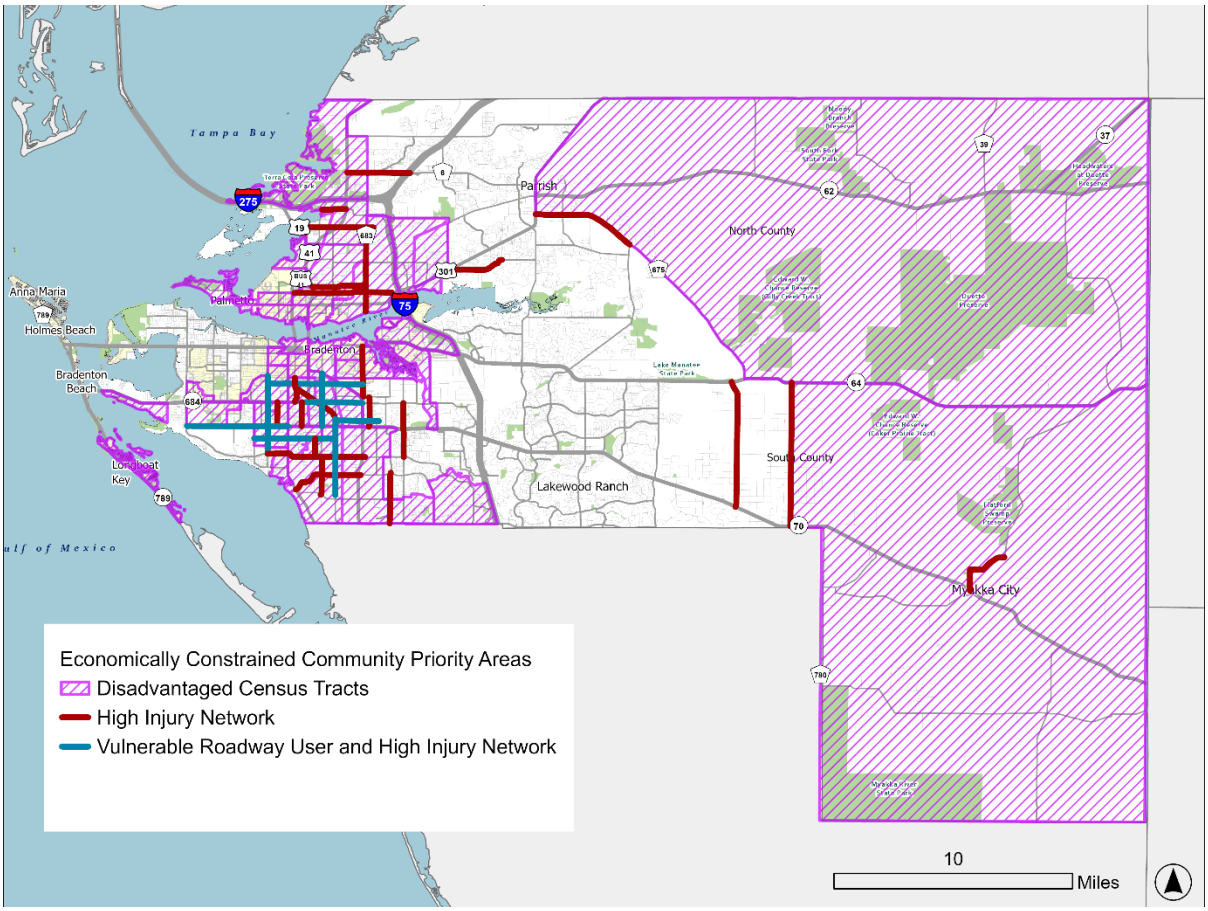

Figure 5: ETC Disadvantaged Census Tracts and High Injury Network for All Road Users

As shown in Table 1, 52.0% of Manatee County residents live in disadvantaged census tracts. In the last 6 years, these areas have had an outsized portion of the County's crashes, with 64.0% of total crashes and 66.3% of fatal crashes occurring in disadvantaged areas.

The disadvantaged census tracts in Manatee County significantly overlap with the High Injury Network (HIN and Vulnerable Roadway Users High Injury Network (VRU HIN), as shown in Figure 5, which emphasizes the importance of addressing safety concerns in these areas.

Roads in disadvantaged areas account for about 48% of all roadway mileage maintained by the County, but 63.0% of injury and fatal crashes occur on county roads. This suggests that disadvantaged communities bear a disproportionate burden when it comes to injury and fatal crashes. In addition, 68.0% of vulnerable road user crashes occurred in disadvantaged census tracts, which is disproportional compared to the entire county. A vulnerable roadway user includes pedestrians, individuals riding bicycles, motorcycles, or scooters, those riding animals, and people operating legally on the roadway, in public rights-of-way, crosswalks, or on the shoulders of roadways.

Table 1: Manatee County Disadvantaged Census Tracts (2018-2023)

	USDOT Disadvantaged Census Tracts	Non-Disadvantaged Census Tracts	Entire Manatee County
Number of Census Tracts	48	45	93
Population	205,227 (52%)	188,620 (48%)	393,847
Area (square miles)	535	210	745
Population Density (people per square mile)	384	898	529

Table 2: Crashes in Disadvantaged Census Tracts Entire County (2018-2023)

	USDOT Disadvantaged Census Tracts	Non-Disadvantaged Census Tracts	Entire Manatee County
Fatal Crashes	256 (66.3%)	130 (33.7%)	386
Injury Crashes	11,275 (64.0%)	6,350 (36.0%)	17,625
Vulnerable road user crashes	2,138 (69.0%)	958 (31.0%)	3,096
Roadway Mileage	1,454 (45.6%)	1,728 (54.4%)	3,182

Table 3: Crashes in Disadvantaged Census Tracts Manatee County Network (2018-2023)

	USDOT Disadvantaged Census Tracts	Non-Disadvantaged Census Tracts	Manatee County Roadway Network
Fatal Crashes	95 (58%)	70 (42%)	165
Injury Crashes	5,355 (63%)	3,131 (37%)	8,486
Vulnerable road user crashes	843 (68%)	397 (32%)	1,240
Roadway Mileage	195 (48%)	210 (52%)	405

Manatee County Trends

The following ETC metrics evaluate the locations of populations that do not have access to cars and minority populations. These metrics are then compared to the location of the High Injury Network (HIN), which helps demonstrate the need to enhance these roads as they tend to be located near populations that are more likely to walk and have been historically disenfranchised.

Households without Vehicle Access

It is crucial to meet the needs of individuals who lack access to a car and must depend on alternative modes of transportation such as walking, biking, and public transit. According to Figure 6, the areas with the most people without vehicle access are generally the Bradenton area. This overlaps significantly with the HIN. Multimodal enhancements should consider the areas where the highest volume of people rely on non-motorized transportation.

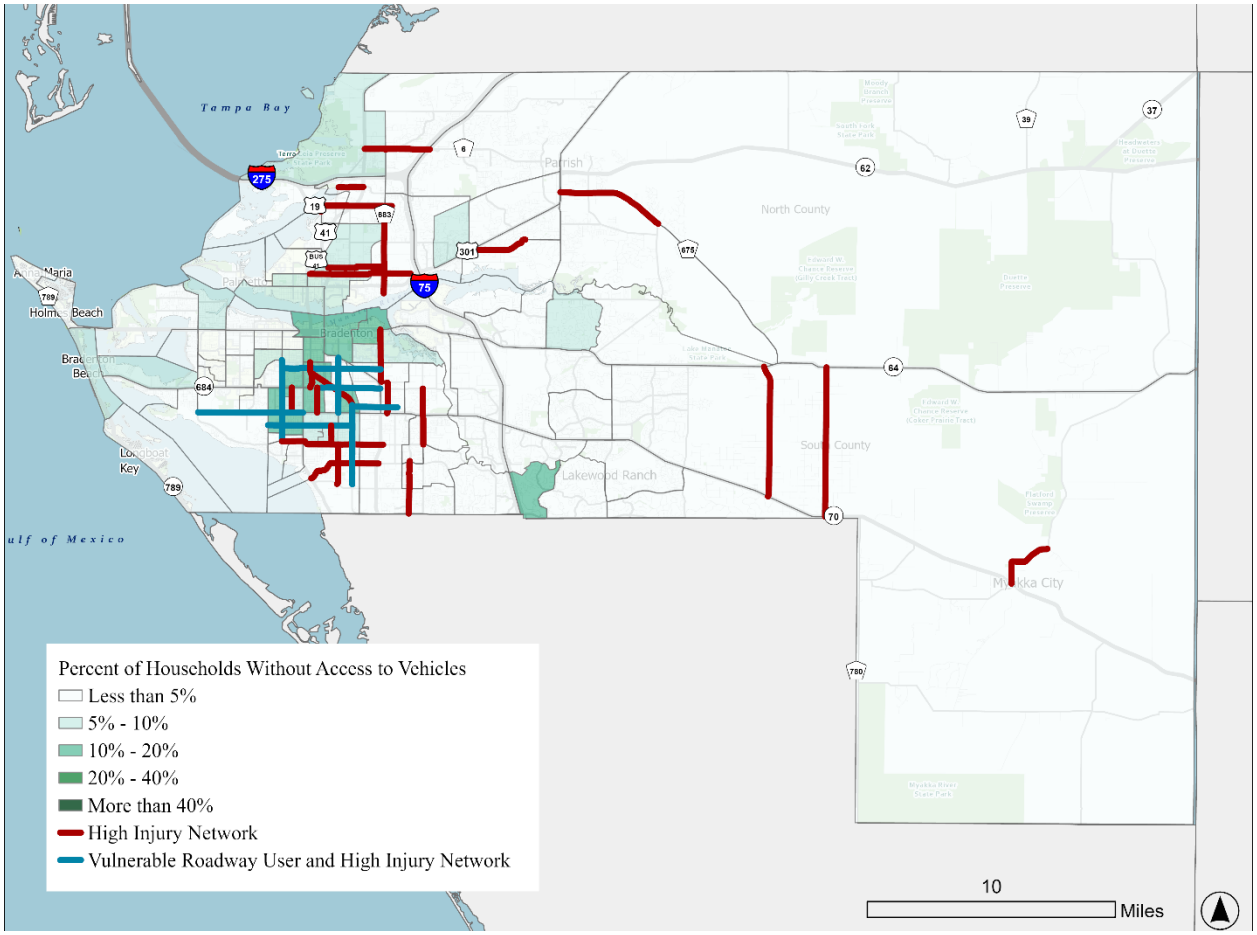

Figure 6: Percent of Households Without Vehicle Access and HIN (Source: US Census ACS via USDOT ETC)

Communities of Color

Racial equity is also essential to consider in transportation investments. Although the crash data from Signal 4 does not allow for breakdowns of crashes by race, we can examine the areas with higher concentrations of racial and ethnic minority residents. As seen in Figure 7, Manatee County has concentrations of residents of color on the west side of the county, generally in West Bradenton, Cortez, Foxleigh, West Samoset, South Bradenton, Palmetto and Bradenton areas. The HIN intersects with several communities of color. Racial equity is a key consideration in transportation planning to ensure that public investments in health and safety benefit historically marginalized communities.

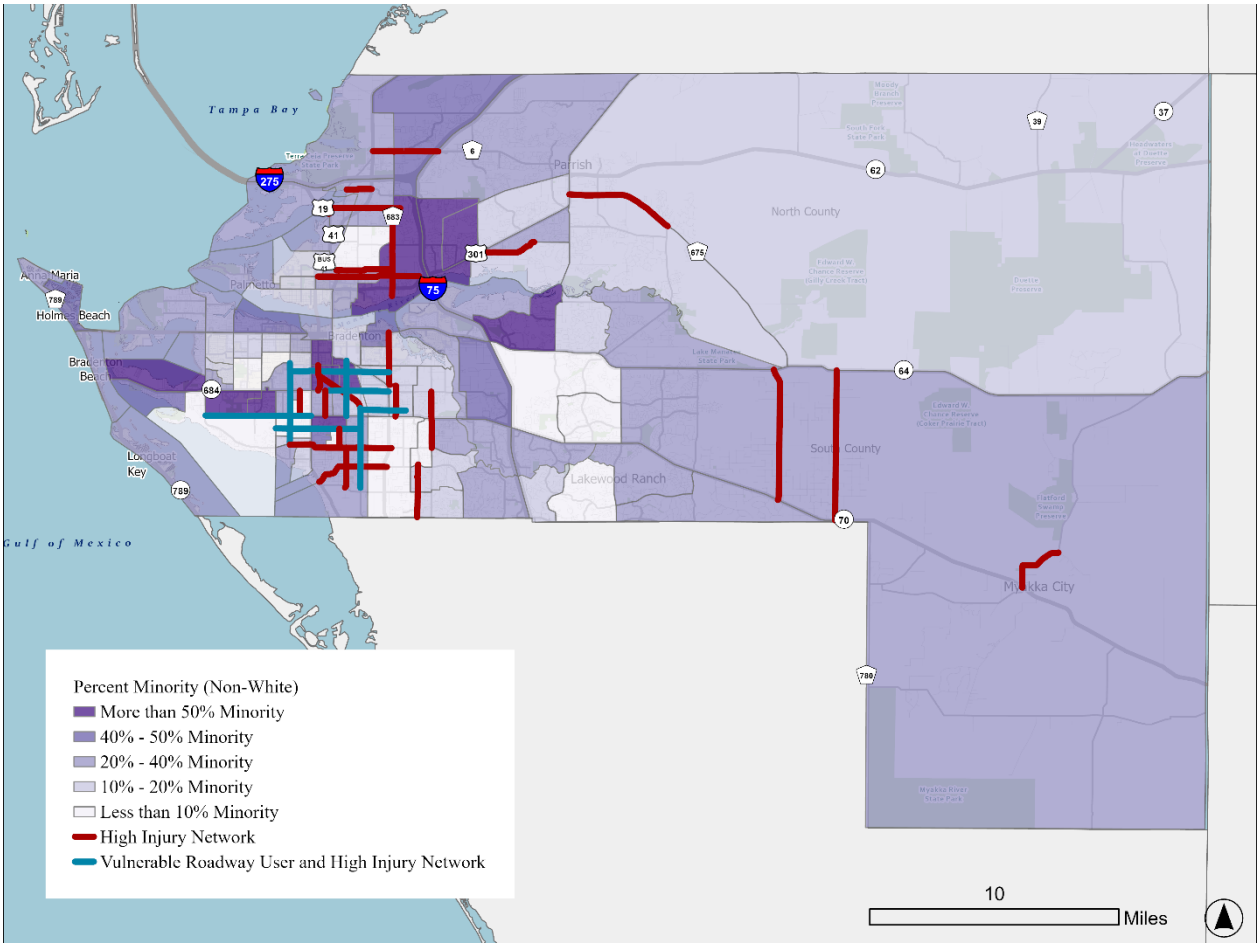

Figure 7: Percent Racial/Ethnic Minority (Nonwhite or Hispanic) by Census Tract (Source: US Census ACS 2018-2022)

APPENDIX D:

PLAN, POLICY AND STRATEGY REVIEW

Policy and Plan Review

Existing plans, policies, and projects that were recently completed or planned were compiled at the start of the Manatee County Traffic Road Safety Program and Action Plan (TRSPAP) process to gain perspective on the existing effort for transportation-related safety enhancements within Manatee County. High-level key points regarding the transportation policies, goals, and safety-related topics were identified to inform decision making in the TRSPAP. This process allows the county to evaluate the existing policies and practices to determine how best to reduce fatal and serious injury (KSI) crashes and identify gaps in the existing programs that will lead Manatee County closer to the goal of reducing KSI crashes. The Relevant Plan Review Matrix outlines the relevant existing County policies. The table is organized according to plan and includes the following information: a description of the plan and its purpose; the safety policies and goals that are discussed; safety data and analysis that was either completed to inform those policies and goals or that will be done to meet the goals; countermeasures and/or strategies which will be implemented to obtain the policies and goals; and the safe system element link, which connects the countermeasures/strategies to one of the five pillars of the Safe System Approach (Safer People, Safer Vehicles, Safe Speeds, Safe Roads, and Post-Crash Care).

Review of Existing Policy Documents

Various Manatee County plans were reviewed for the TRSPAP, including Transform 2045: Sarasota/Manatee MPO Long Range Transportation Plan (2020), Destination Zero Action Plan (2022), Manatee County Comprehensive Plan: Transportation Element (2023), Manatee County Comprehensive Plan: Capital Improvements Element (2023), Manatee County Trailways Master Plan (2023), Sarasota/Manatee MPO Active Transportation Plan (2024), and Manatee County Mobility Plan (2023). These plans include broad strategies related to safety, namely pedestrian and bicycle enhancements that can be made throughout the County and ways to decrease crashes occurring on the County's roadways.

Manatee County Trends for Safety Policies and Plans

This section summarizes the results of the policy plan reviews in comparison to the existing county policies and plans. In some areas, the County aligns with suggested best practices, while others require further effort to fully incorporate safety into community practices. The strengths and opportunities in County policies are outlined in this section.

Strengths of County Safety Policies

Manatee County has policies aimed at improving traffic safety. These policies are recognized as strengths for which the County can build upon to enhance safety further. The following plans and policies are part of existing efforts to increase safety and provide a strong base on which to continually enhance safety outcomes for Manatee County roadway users.

Manatee County Comprehensive Plan

The Comprehensive Plan identifies a multimodal transportation system that serves to increase mobility, is safe, convenient, efficient, and meets present needs, protects roadway capacity, is coordinated with the Future Land Use Map, provides for an affordable balance of alternative transportation modes, and encourages intermodal transportation linkages. The Transportation Element of the Comprehensive Plan outlines specific goals for a traffic circulation system that meets the community's needs in a sensitive manner. This system aims to be safe, efficient, economical, and environmentally sound. It also focuses on creating a safe and convenient bikeway and pedestrian circulation system. Regarding growth, the Comprehensive Plan commits to developing a thoroughfare system that aligns with the adopted Future Thoroughfare Plan and Maps. This is based on a Future Land Use Plan that outlines proposed population densities, along with residential and employment patterns, and other land uses.

Manatee County Trailways Master Plan

The Manatee County Trailways master plan has been developed to serve as a guide for expanding, improving, and promoting Manatee County's trailways network that will serve to enhance the quality of life for residents, promote a unique sense of place, and enhance economic investment. The plan includes continuous monitoring and evaluation of the plan and program new trailways. The Trailways master plan aims to improve connectivity to local destinations, close gaps in the trail system, and increase safety and accessibility for all trail users.

Manatee County Mobility Plan

The Manatee Moves plan provides a comprehensive framework for mobility planning in Manatee County, featuring a clear vision, objectives, and performance indicators. It includes an evaluation of current mobility conditions across various transportation modes and outlines strategies to develop a safer, more equitable, and multimodal transportation system. The plan identifies candidate corridors for "Complete Streets" projects, along with projected costs, and considers land use and policy factors that support multimodal infrastructure investments. Additionally, it offers recommendations for updating the County's regulatory processes in response to changes in Florida's Growth Management Act and outlines strategies for implementing and monitoring the Plan effectively. The following candidate corridors are concentrated in the southwestern quadrant of the county, where more roadways are congested, non-motorized facilities are lacking, and there is a higher history of severe crashes.

- 9th Ave. W (26th St. W to 51st St. W)
- 9th St. E (US 301 to 301 Blvd.)
- 9th St. E (301 Blvd. to 57th Ave. E)
- 9th St. W (26th Ave. W to 44th Ave. W)
- 26th Ave. E (US 41 to 27th St. E)
- 26th St. W (26th Ave. W to Bayshore Gardens Pkwy.)
- 30th Ave. (26th St. W to 27th St. E)
- 44th Ave. E (US 41 to 15th St. E)
- 57th Ave. (26th St. W to 301 Blvd.)
- 301 Blvd. (University Pkwy. to 63rd Ave. E)
- Bayshore Gardens Pkwy. (34th St. W to US 41)
- 53rd Ave. W/SR 70 (34th St. W to 301 Blvd.)
- 14th St. W/ Business 41 (26th Ave. W to Cortez Rd.)
- US 41 (26th Ave. to 53rd Ave. W)
- US 301 (Canal Rd./16th Ave. E to I-75 W Signal)
- US 301 (I-75 E Signal to Erie/Old Tampa Rd.)
- Manatee Ave./SR 64 (Bridge to 34th St. W)
- 53rd Ave. E/SR70 (301 Blvd. to River Club Dr.)

Light Up Manatee

Light Up Manatee is an innovative initiative designed to provide sufficient street lighting in several poorly lit neighborhoods throughout Manatee County. With a focus on safety, crime reduction, and community building, the Manatee County Board of County Commissioners (BCC) aims to illuminate a significant portion of county-owned streets. On January 9, 2024, the BCC voted to adopt Resolution R-24-018, which establishes a formal policy for street lighting in Manatee County with an initial allocation of $3M, prioritizing districts 4, 2, and 3. The County plans to collaborate with Florida Power and Light (FPL) to facilitate the installation of the proposed streetlights where infrastructure already exists. The County is also collaborating with Streetleaf, a solar street lighting solutions company for possible options where infrastructure doesn't exist.

Other Regional Safety Plans

Transform 2045: Sarasota/Manatee MPO Long Range Transportation Plan

Transform 2045 is a plan designed to shape the future of air, land, and sea transportation for Sarasota and Manatee Counties. This initiative, developed over 20 months of collaboration and public engagement, outlines transportation projects expected to be funded through 2045. It also serves as a roadmap for the Sarasota/Manatee MPO, offering insights into the potential future of the region through scenario-based planning and vision development. The LRTP incorporates corridor and intersection projects into the TIP for future funding and implementation and this could be an opportunity to enhance corridors and intersections on County roads.

Sarasota-Manatee MPO Active Transportation Plan

The Sarasota/Manatee Metropolitan Planning Organization (MPO) adopted the 2019 Active Transportation Plan as an update to the 2013 Bicycle, Pedestrian, and Trails Master Plan. This plan is a key component of the 2045 Long-Range Transportation Plan (LRTP) and outlines projects for funding and implementation. As the MPO prepares for the 2050 LRTP, the ATP will be updated to enhance investments that increase connectivity, accessibility, and safety for cyclists, pedestrians, and transit users. The updated plan will assess current bicycle and pedestrian infrastructure in Sarasota and Manatee Counties, identify gaps in connectivity, and aim to create safer connections for non-motorized transportation.

FDOT District 1 Safety Action Plan

FDOT District 1 developed this Safety Action Plan to address the KSI crashes on non-limited access, FDOT-maintained roads in Manatee County. This plan identifies a High Injury Network where a disproportionate number of crashes that result in a person being killed or seriously injured (KSI) occur. The plan presents road safety enhancements to address these crashes and the underlying risk factors that lead to these types of crashes. A Summary of the FDOT District 1 Safety Action Plan is included in Appendix D.

Destination Zero Action Plan

The Destination Zero Action Plan is the start to implementing the Sarasota/Manatee Metropolitan Planning Organization's (MPO) long-term commitment to safe streets for all roadway users. Destination Zero is the Sarasota/Manatee MPO's effort to reduce fatal and serious injury crashes until the ultimate goal of zero deaths and

injuries is achieved. Beyond reducing fatal and serious injury crashes, Destination Zero seeks to increase healthy and equitable mobility for all road users of all abilities.

FDOT District 1 Safety Action Plan Overview

Safe System Approach

FDOT District 1 developed a Safety Action Plan (SAP) that utilizes the Safe System Approach to eliminate fatalities and serious injuries on non-limited access FDOT-maintained roads in Manatee County. The plan acknowledges that human mistakes are unavoidable and aims to design the transportation system to minimize severe consequences. Key elements include safe roads, road users, speeds, vehicles, and effective post-crash care. Implementation strategies focus on separating road users, managing vehicle speeds, reducing conflict points, and raising hazard awareness. The goal of the SAP is to create a safer transportation environment that accommodates human error while striving for zero fatalities and serious injuries.

Safety Analysis

As a part of the Safety Action Plan, a safety analysis was performed using crash data. From 2018 to 2022, FDOT-maintained, non-limited access roads in Manatee County totaled 22,376 crashes, resulting in 188 fatalities and 1,398 serious injuries. Streets with speeds of 40-45 mph accounted for 25% of crashes; 50-55 mph streets accounted for 30% and 64% of KSI incidents. Suburban Commercial Streets and Urban Principal Arterials are high-risk areas, making up 20% and 53% of centerline miles, resulting in 47% and 90% of crashes and KSI crashes, respectively. Most crashes occurred on streets with four or more lanes. Narrower medians correlate with higher severity. Wet road conditions and poor lighting at night lead to more severe outcomes. Peak crash frequency was in the afternoon, while nighttime crashes tended to be more severe. Recommendations include focusing safety efforts on high-risk roads and times and enhancing infrastructure to reduce severe crash outcomes.

High Injury Network (HIN)

As a part of the SAP, FDOT developed a HIN for FDOT roadways in Manatee County. Approximately 40% of KSI (killed or seriously injured) crashes occur on about 39 miles of FDOT roads in Manatee County, which represents 5% of FDOT centerline miles. This area is identified as the High-Injury Network (HIN), where a significant number of serious crashes happen. The roads within the HIN account for 41% of all KSI crashes in the County and 67% on FDOT roads.

Systematic Analysis

FDOT utilized a proactive approach of analysis to look at the entire road network by utilizing a systematic approach. This approach utilized a proactive method for evaluating road networks by analyzing crash history to identify high-risk roadway characteristics. By cross-referencing roadway features with crash factors, relationships between these factors and the likelihood of fatal and serious injuries can be identified. This process involves a tiered approach to prioritize key safety issues and locations. In Manatee County, crash

profiles were developed to capture the primary factors leading to fatal and serious injury crashes on the High-Injury Network. This analysis highlights the combinations of risk factors associated with such crashes and aids in identifying effective countermeasures based on roadway characteristics.

Existing Policy Review

The SAP included a review of regional transportation and land use policies in relation to Safe System principles. The policy scan identified barriers to achieving zero deaths and serious injuries (KSI) and opportunities for enhancement, which will inform the Safety Action Plan. Evaluation of policies against Safe System best practices aids in understanding effective crash reduction measures. The assessment categorizes strengths, challenges, and opportunities related to safety measures, Vision Zero elements, barriers, and data integration. Successful findings indicate that the comprehensive incorporation of proven safety countermeasures in FDOT guidelines and alignment with Vision Zero are strongest in certain areas, such as Project Delivery and Complete Streets for All.

Community & Stakeholder Engagement

The development of the SAP involved engaging local communities, stakeholders, and the public to enhance the Sarasota-Manatee MPO's Destination Zero Action Plan and inform the upcoming Vision Zero Action Plan. Key strategies included coordination between FDOT District 1, and the Sarasota-Manatee MPO, as well as an online survey and interactive map to gather public input on traffic safety. Identified issues included traffic congestion and limited public transportation, especially in areas like South of Holmes Beach and Moccasin Wallow Road. Additional efforts involved a Working Group, three meetings, a Leadership Group Meeting with elected officials, and a Public Workshop to collect feedback. Overall, the process emphasized community participation to support traffic safety enhancements.

Goals and Actions

The plan outlines six goals for improving road safety in Manatee County, with specific action items organized by general timeframes to assist leaders in prioritizing their efforts.

Goal 1: Enhance Agency Collaboration: FDOT District 1 will foster collaboration among FDOT, Manatee County, and related agencies through working groups, data sharing, and training to promote the Target Zero initiative.

Goal 2: Promote Safe System Awareness: FDOT will boost awareness of Target Zero in local communities and advocate for Vision Zero through educational campaigns on safe behavior and street design.

Goal 3: Design Safe Streets: This goal focuses on redesigning streets for safety by updating design guidelines, creating safety toolkits, and prioritizing quick-build initiatives in High-Injury Network areas.

Goal 4: Enhance Crash Data Collection: FDOT District 1 will enhance crash data collection and analysis for local agencies, factoring in the built environment and providing regular updates to the crash database.

Goal 5: Secure Funding for Safety: The district will prioritize funding for safety strategies in its 5-Year Work Program and coordinate with local agencies to secure resources for High-Injury Network projects.

Goal 6: Advocate for Legislative Support: FDOT will collaborate with local entities to advocate for road safety legislation, including speed limits and safety cameras, to reduce serious crashes.

Project Prioritization Framework

The SAP developed a prioritization framework that helps FDOT District 1 and Manatee County identify projects to eliminate fatal and serious injuries. It includes both location-specific and systemic projects, using a data-driven approach to rank road segments on the High-Injury Network without planned interventions. Four metrics—crash history, severity, risk, and transportation disadvantage—are weighted for effective prioritization, supporting the Target Zero goal. The framework focuses resources on critical locations and promotes broad systemic enhancements to increase safety across Manatee County.

Countermeasure Toolkit

The Countermeasure Toolkit developed by SAP promotes road safety strategies in Manatee County using the Safe System Approach. It outlines various safety countermeasures, their applications, expected crash reduction, typical placement, costs, and delivery timelines. The toolkit is intended as a guidance resource for addressing identified safety concerns but does not provide a comprehensive list of all countermeasures. It emphasizes the need for engineering investigation and context-sensitive design before implementing tools. Community members should report safety issues rather than request specific tools, as analyzing existing issues is necessary before considering solutions.

Implementation

The implementation of each project will involve partnerships and collaboration with organizations such as FDOT District 1, the Sarasota-Manatee MPO, Manatee County, and other agencies. The timeline for project completion will vary, with some being lengthy while others can be initiated as "quick build" projects.

Incorporating the SAP in the Manatee County TRSPAP

The SAP provides important findings and analysis trends that inform the Manatee County Traffic Road Safety Program and Action Plan (TRSPAP). Many of the same analyses were included in the TRSPAP, with a specific focus on the county roadway network. Together, these two documents contribute to the county's overall safety strategy and aim to enhance safety on all roadways.

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
Transform 2045: Sarasota/Manatee MPO Long Range Transportation Plan	Transform 2045 is the plan shaping the future of air, land and sea transportation to benefit the people of Sarasota and Manatee Counties. Transform 2045 is the culmination of more than 20 months of collaboration and community involvement that relied on technical analysis, community visioning, and public engagement resulting in a list of transportation projects anticipated to be funded through 2045. Additionally, it is a roadmap to the future for the Sarasota/Manatee MPO that provides insight into what Manatee and Sarasota Counties could become through an evaluation of scenario-based planning and the development of a future vision.	Increase the safety and security of the transportation system for motorized and non-motorized users.	- Number of fatalities. - Rate of fatalities or 100 million vehicle miles traveled (VMT). - Number of serious injuries. - Rate of serious injuries per 100 million VMT. - Number of non-motorized fatalities and non-motorized serious injuries. - Identification of high crash locations,	Decrease vehicle crashes at hazardous sites. Reduce crashes and conflict between all users and modes. Improve safety for vulnerable users. Improve system for evacuation and recovery. Provide education to increase safety and security.	Safe People Safe People Safe People Safer Roads Post-Crash Care Safe People
		Maintain highway infrastructure in a state of good repair.	- Percent of interstate pavements in good condition. - Percent of interstate pavements in poor condition. - Percent of non-Interstate National Highway System (NHS) pavements in good condition. - Percent of non-Interstate NHS pavements in poor condition. - Percent of NHS bridges (by deck area) classified as in good condition. - Percent of NHS bridges (by deck area) classified as in poor condition.	Preserve and maintain the existing transportation system. Retrofit and replace aging bridges to include multimodal options. Identify and mitigate the effect of extreme weather events on the transportation system.	Safe Roads Safe Roads Safe Roads

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Promote efficient system management and operation.	- Leveraging emerging data sources such as mobility data to measure project performance. - Consideration of future technologies should be a component of the project ranking process.	Improve operating efficiency using intelligent transportation systems. Identify infrastructure needed for Autonomous/ Connected/ Electric/ Shared-Use technology.	Safer Roads Post-Crash Care
		Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.	- Three of the primary documents and partnerships that guide the way that the LRTP addresses the topics of Environment / Conservation include: - 2045 LRTP Environmental Mitigation Report - National Estuary Program Comprehensive Conservation and Management Plans (CCMP) - Tampa Bay Regional Resiliency Coalition - Safety data include a list of Potential Mitigation Alternatives by Resource Impact Type	Reduce vehicle miles traveled. Safeguard critical habitat, wetlands, and endangered species. Support green infrastructure, energy conservation, and natural redevelopment. Achieve climate appropriate tree cover, community-wide. Promote environmental and public health. Increase infill development to reduce urban sprawl.	Safe People

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Increase the accessibility and mobility of people and freight.	- Percentage of non-revenue, support-service and maintenance vehicles that have met of exceeded their useful life benchmark. - Percentage of revenue vehicles within a particular asset class that have either met or exceeded their useful life benchmark. - Percentage of tack segments with performance restrictions. - Percentage of facilities within as asset class rated below condition 3 on the TERM scale. - The number and promotion of Limited English Proficiency (LEP) person in the eligible service areas. - The frequency with which LEP persons encounter MPO programs. - The resources available and overall cost to the MPO.	Increase access to bus stops and transfer stations; and availability of park-n-rides. Expand access to essential services and affordable housing. Improve access for persons with disabilities. Ensure equity in all transportation decisions. Future transit options: Multimodal emphasis corridors TSMO transit management On demand service Transit accessibility Transit corridor preservation US 41 Alternatives Study Transit priority infrastructure Employee van pools Autonomous transit	Safe People Safe People Safe People
		Reduce project costs, promote jobs and the economy, expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.	- The three primary documents that guide this goal and were considered are: - Central Manatee Network Alternatives Analysis Study (2020) - Sarasota/Manatee Barrier Island Traffic Study (3030) - US 41 Multimodal Emphasis Corridor (2019)	Analyze project readiness and monitor progress to reduce delay. Prioritize projects with local match and/or public/private partnership. Implement projects recommended form plans, studies, and LRTP.	Safe People Safe Roads Safe Vehicles Safe Speeds Post-Crash Care

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
Destination Zero Action Plan	The Destination Zero Action Plan is the start to implementing the Sarasota/Manatee Metropolitan Planning Organization's (MPO) long-term commitment to safe streets for all roadway users. Destination Zero is the Sarasota/Manatee MPO's effort to reduce fatal and serious injury crashes until the ultimate goal of zero deaths and injuries is achieved. Beyond reducing fatal and serious injury crashes, Destination Zero seeks to increase healthy and equitable mobility for all road users of all abilities.	Equity: Promote Equity and inclusiveness and protect people of all ages and abilities, paying particular attention to underserved and vulnerable populations.	Performance Measures: - Number of safety improvements completed in communities identified as environmental injustice areas - Level of participation in engagement activities in historically underserved communities - Incorporation of equity measures in crash data analysis and transportation project decision-making	Equity strategies include: - Promote transportation safety and mobility - Include equity measures (demographic and environmental justice inputs) when prioritizing transportation safety projects - Work with community members and monitor engagement to ensure historically underserved communities are being represented - Work with law enforcement to ensure equitable traffic enforcement strategies - Identify the conditions and institutional practices that create traffic-safety inequities in the first place	Safe People Safe People Safe People Safe Speeds/Safe People Safe Roads
		Engineering: Creating a safe environment through transportation planning, engineering, and design can help to create a transportation system that encourages safe behaviors, proactively addresses safety issues, and quickly responds to new concerns.	Performance Measures: - Number of safety-focused projects implemented, miles of streets and intersections receiving safety treatments - Total number and percentage of street reconstruction projects with multimodal safety needs and improvements made to address those needs - Number of completed Road Safety Audits/safety assessments - Number of roadway miles and intersection where lighting is enhanced - Number of speed management studies completed - Number of roadway miles where posted speed limits reduced - Number of new/enhanced sidewalk lane miles installed - Number of dedicated bicycle lane	Engineering strategies include: - Annual crash analysis - Countermeasure projects - Road Safety Audits - Quick-build programs - Update local transportation design guidelines and standards - Expand sidewalk and bicycle facility networks - Update local development codes to reflect and support Destination Zero goals - Evaluate existing maintenance of traffic (MOT) processes and requirements - Incorporate Complete Streets principles where roadway design reflects the context of surrounding area - Establish target speeds on key corridors - Evaluate roadway lighting	Safe People Safe Roads Safe Roads Safe Roads Safe Roads Safe Roads/Safe People Safe Roads Safe Roads Safe Roads Safe Speeds Safe Roads

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
			miles installed - Number of separated/protected bicycle lane miles installed	conditions - Conduct safety analysis of transit stop locations	Safe Roads
		Education: Changing behaviors to improve safety begins with education. Destination Zero should seek to raise awareness about traffic safety while explaining the connections between specific actions that are implemented (i.e., speed management) and efforts to eliminate traffic-related deaths and serious injuries.	Performance Measures: - Number of Destination Zero training sessions held with local agency staff - Number of schools visited - Progress on developing and implementing public awareness campaigns - Progress on development of a centralized Destination Zero information portal	Education strategies include: - Develop targeted educational campaign - Develop Destination Zero training aimed at local agency staff - Participate in Safe Streets Summits - Advocate for state-level change to driver's education and testing requirements - Develop a local agency Destination Zero support network - Share resources with the community and school district on teen driver training classes and information - Partner with school districts to encourage greater participation in walking and biking to/from school	Safe People Safe People Safe People Safe People Safe People Safe People Safe People

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Engagement: Engaging citizens will help to promote the safety message of Destination Zero while also promoting a sense of ownership and responsibility in achieving its goal.	Performance Measures: - Number of community members reached by Destination Zero engagement activities - Number of neighborhoods/communities visited - Activity related to social media posts about Destination Zero - Number of Destination Zero and safety-focused events held - Number of safety demonstrations provided	Engagement strategies include: - Bolster social media engagement - Streamline safety concern submissions through a centralized database that can respond to community traffic safety concerns in a timely manner - Organize training for partner agency staff on how to speak to the public about KSI crashes and efforts to reduce them - Educational campaign - Pop-up safety demonstrations - Implement tactical urbanism techniques - Develop series of informational and how-to videos on safety initiatives - Work with community members to hold informational meetings in neighborhoods and community centers rather than in government buildings - Make safety and crash data and information easily accessible	 Safe Roads Safe Roads Safe People Safe People Safe Roads Safe People Safe People Safe Roads / Post-Crash Care

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Enforcement: Traffic safety enforcement is associated with and an important component of the efforts to reduce traffic-related deaths and serious injuries. Enforcement also provides an opportunity to increase public awareness of traffic safety.	Performance Measures: - Percentage of traffic stops based on contributing crash factors - Number of speeding citations issued - Number of failure to yield citations issued - Number of improper restraint citations issued - Number of driving under the influence citations issued - Number of law enforcement training sessions conducted - Progress towards identified legislative priorities	Enforcement strategies include: - Develop a series of Destination Zero traffic safety trainings that can be provided to local law enforcement - Coordinate monthly KSI crash reviews - Increase traffic safety enforcement in locations with higher KSI crashes - Partner with local law enforcement and healthcare providers to provide crash reporting and crash-related injury coding best practices - Increase access and referrals to driver diversion classes that focus on education more than punishment - Advocate for state-level changes to enforcement techniques	Safe People Safe Roads Post-Crash Care Safe People

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Emergency Response: Every second from the time a crash occurs to when care is administered is critical. Coordination with first responders to ensure rapid response and care is an important aspect of Destination Zero.	Performance Measures: - Average crash response times - Number of intersections enhanced to include priority pre-emption signal technology - Progress towards coordination with public health officials on obtaining data to enhance crash and crash severity reporting	Emergency Response strategies include: - Collaborate with emergency responders to identify priority routes/ensure rapid response to known frequent crash locations - Monitor average response times and develop strategies to improve them - Incorporate technological advances to provide emergency response - Conduct monthly coordination meetings between transportation engineering staff, law enforcement, fire department/EMS, and other relevant staff to review recent crashes - Coordinate with Traffic Management Centers to reduce crash clearance times - Work with the Public Health Departments to obtain hospital data to determine the extent of underreporting to traffic crashes that result in death or serious injury	Post-Crash Care Post-Crash Care Post-Crash Care Pots-Crash Care Post-Crash Care Post-Crash Care

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Policy and Other Actions: These actions include but are not limited to policy changes and the identification of Destination Zero champions that can help promote and advocate for the changes that are needed to achieve the desired goals of Destination Zero.	Performance Measures: - Number and type of agencies and community members represented in Destination Zero Working Group - Number of local governments that adopt Destination Zero or a similar approach - Local policy changes to advance Destination Zero	Policy and Other Actions strategies include: - Establish a Destination Working Group Committee that should meet quarterly - Convene a Destination Zero Leadership panel - Draft and adopt a resolution in support of Destination Zero - Provide grant-writing support to partner agencies for transportation and safety-related project funding - Support legislation to increase funding available for safety projects aimed at reducing KSI crashes - Identify potential legislative barriers to achieving better safety outcomes	Safe Roads
Manatee County Comprehensive Plan: Transportation Element	The Capital Improvement Plan provides a planned and programmed approach to utilizing the County's financial resources in the most responsive and efficient manner to meet its infrastructure, equipment and facility needs. The CIP serves as a "blueprint" for the future of the community's growth and development.	A multimodal transportation system that servers to increase mobility, is safe, convenient, efficient, and meets present needs, protects roadway capacity, is coordinated with the Future Land Use Map, provides for an affordable balance of alternative transportation modes, and encourages intermodal transportation linkages.	No data provided.	Development of a thoroughfare system consistent with the adopted Future Thoroughfare Plan and Maps. A safe, convenient, and energy efficient multimodal transportation system shall be provided. All traffic, transit, port, airport, bicycle, and rail plans and programs should be coordinated with the plans and programs of other local jurisdictions, the MPO, and regional, state, and federal agencies.	Safe Roads Safe Roads

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		A traffic circulation system that provides for the needs of the community in a sensitive manner, which is safe, efficient, economical, and environmentally sound.		Maintain a traffic circulation map series as the guiding document for development of an adequate network of major roadways to address the 2045 forecasted vehicular travel demand in Manatee County. Implement adopted roadway Level of Service Standards for review of proposed development orders, for use in capital improvements programming, and for quantifying the long-range goals for operation of major roadways.	Safe Roads Safe Roads

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Use of the traffic circulation map series to implement ad adequate major roadway system.		Utilize the traffic circulation map series to review proposed development orders, determine level of service for roadways, achieve consistency with the MPO and FDOT LRTPs, including SIS, identify and review capital improvement projects, and ensure right-of-way protection and reservation to implement an adequate major road system through Manatee County. Utilize adopted design standards for the review of proposed development orders and for ensuring the proper functioning of publicly-provided transportation facilities. To guarantee that transportation facilities are available concurrent with the impacts of development approved by Manatee County and requiring the issuance of a Certificate of Level of Service Compliance, in a manner consistent with adopted level of service standards.	Safe Roads Safe Roads Safe Roads

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		A traffic circulation system coordinated with future land uses, other public facilities, and natural resource constraints.		Coordination of future land uses with traffic circulation systems. Ensure that all transportation improvement are conducted in a manner which minimizes adverse impact on important natural resources. Design roadways to accommodate all users, including, but not limited to, motorists, cyclists, pedestrians, transit and school bus drivers, delivery and service personnel, freight haulers, and emergency responders.	Safe Roads Safe People / Safe Roads
		A safe and convenient bikeway and pedestrian circulation system.		Provision of a safe and convenient bikeways system and adequate bicycle facilities. Provide a safe and convenient pedestrian circulation system.	Safe People / Safe Roads Safe People / Safe Roads
		A coordinated intergovernmental and interagency transportation planning process.		Coordinated transportation planning with local, state, regional, and federal agencies.	

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
Manatee County Comprehensive Plan: Capital Improvements Element	The Capital Improvements Element (CIE) functions as an executive summary of the short range public facility needs identified in the other elements of the Comprehensive Plan. It serves as the public sector's development plan by scheduling the construction of major capital projects. The CIE also tabulates the estimated cost of major capital projects and analyzes the capability of Manatee County to finance and construct these improvements. Therefore, the CIE contains important financial policies which will be used to guide the funding of capital improvements.	Adequate public facilities as determined by adopted Level of service (LOS) standards	No data provided.	Cautious use of long-term financing to implement certain major capital projects. Prioritization of capital improvement projects in a manner that achieves and maintains adopted LOS standards within the shortest time frame possible. Maximum utilization of user fees, intergovernmental transfers, or other funding sources to limit reliance on local ad valorem revenues for funding capital improvements. Maintenance of adopted LOS standards, and meeting existing and future facility needs by coordinating land use decisions with a schedule of capital improvements. Management of the land development and capital improvements programming processes so that public facility needs do not exceed Manatee County's ability to fund and provide needed capital improvements. Programming and funding of capital projects consistent with the Goals, Objectives, and Policies of the Comprehensive Plan and the Future Land Use Map, to maintain adopted Level of Service Standards, and to meet other public facility needs not dictated by Level of Service Standards.	Safe Roads Safe Roads Safe Roads

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
				Maintenance and appropriate improvement of infrastructure which connects Manatee County to the Tampa Bay Region, the entire State of Florida, other states, and international markets. Maintain adopted Level of Service Standards by ensuring that the impacts of previously issued development orders can be accommodated. Limiting public investments in the Coastal High Hazard Area to those necessary or those designed to minimize loss of public investment. Utilize funding derived directly from growth to offset costs for provision of public facilities to serve this new growth where a nexus between both is established.	Safe Roads Safe Roads

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
Manatee County Trailways Master Plan		A set of proposed trailways was identified through the plan's baseline conditions evaluation and public engagement. Each potential project potential project has been evaluated and prioritized based on how well it is expected to meet key needs of the County. This methodology aligns with the performance-based planning and programming approach, which transportation agencies can use to create a system-level, data-driven process to identify long-term planning strategies and investments.	The listed strategies were used to compile a list of 60 trail projects which are prioritized in the Trailways Master Plan.	Each project was evaluated according to the following criteria: - Equity - Access to Opportunity (Education) - Access to Opportunity (Transportation) - Proximity to Other Key Public Facilities - Safety - Connectivity - Economic Benefits - Buildability - Trip Attraction Potential/Healthy Communities (Population) - Trip Attraction Potential/Healthy Communities (Aesthetics)	Safe People
		The design of new trails in Manatee County shall address a list of factors to include the appropriate elements that follow best practice guidance.	No safety data is available.	Incorporate elements of the natural landscape suitable to the land use context. Provide an appealing natural environment that leads to safe roadway crossings. Utilize materials and minimum widths that facilitate the expected types of trips. Include amenities of a type and spacing that fit the context. Conform with the Americans with Disabilities Act and other applicable design guidance.	

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
Sarasota Manatee MPO Active Transportation Plan	The Sarasota/Manatee Metropolitan Planning Organization (MPO) adopted the 2019 Active Transportation Plan as a major update to the 2013 Bicycle, Pedestrian, and Trails Master Plan. The 2019 Active Transportation Plan (ATP) was a foundational component of the 2045 Long-Range Transportation Plan (LRTP), identifying plans and projects for funding and implementation. As the MPO begins the 2050 LRTP, there is a need to update the ATP to further guide transportation investments to improve connectivity, accessibility, and safety for bicyclists, pedestrians, and transit users. This Plan assesses the current state of bicycle and pedestrian infrastructure in Sarasota and Manatee Counties and identifies gaps in facilities connecting to and from destinations. This Plan aims to support the creation of safer and more robust connections between destinations using non-motorized transportation modes.	Improve safety for people walking, bicycling, and riding transit.	- Project intersects with high, medium-high, or medium crash locations - Project intersects with high crash location on countywide map	Reduce total number of crashes.	Safer people
		Improve safety for people walking, bicycling, and riding transit.	- Bicycle or pedestrian project intersects with high, medium-high, or medium non-motorized crash location	Reduce number of non-motorized crashes.	Safer people

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Improve safety for people walking, bicycling, and riding transit.	- Project provides new pedestrian crossings or bike lanes in high or medium-high non-motorized crash locations.	Increase crossing opportunities for vulnerable users.	Safer People
		Improve safety for people walking, bicycling, and riding transit.	- Project is located on a designed evacuation route in Zones A-B/C-E.	Improve emergency evacuation routes.	Safer People
		Increase the number of walking, bicycling, and transit trips in the region.	- Project includes new or improved sidewalks or trails: 5-7 ft, 8-9 ft, or greater than 10 ft wide. - Project includes new or improved bicycle facility: 4-5 ft on street or 6-7 ft on street/separated facility	Expand bicycle and pedestrian network.	Safer People
		Increase the number of walking, bicycling, and transit trips in the region.	- Project is located along/intersects/within 1/4 mile of a transit route	Improve first-last-mile connections to transit.	Safer people
		Increase the number of walking, bicycling, and transit trips in the region.	- Multimodal project located on travel time reliability priority segment.	Promote transportation options on unreliable corridors.	Safer People Safer Roads
		Promote equity in the transportation planning, design, funding, implementation, and evaluation processes.	- Project improves accessibility to affordable housing - Project is located within designated infill development areas	Support and enhance livable communities.	

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Promote equity in the transportation planning, design, funding, implementation, and evaluation processes.	- Multimodal project provides improved access for low-income or historically marginalized communities (within 1/2 mile)	Provide transportation options in areas with high transportation cost.	
		Promote equity in the transportation planning, design, funding, implementation, and evaluation processes.	- Project improves accessibility to transit in low-income or historically marginalized communities - Project addresses ADA compliance issues through retrofit at transit stops - Project includes transit shelters at priority stops	Improve access to transit.	
		Achieve a connected, safe, accessible, and comfortable network for bicyclists, pedestrians, trail users, and transit riders.	- Multimodal project located within 1/2 mile of qualified food, medical, or educational facility	Promote comfortable walk and bike networks and areas with essential services.	Safer People
		Achieve a connected, safe, accessible, and comfortable network for bicyclists, pedestrians, trail users, and transit riders.	- Project is located along/intersects/within a 1/4 mile of a transit route	Improve first-/last-mile connections to transit	Safer People
		Achieve a connected, safe, accessible, and comfortable network for bicyclists, pedestrians, trail users, and transit riders.	- Multimodal project located on travel time reliability priority segment	Promote transportation options on unreliable corridors.	Safer People

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
Manatee County Mobility Plan (2023)	The Manatee Moves plan provides a broad template for mobility planning in Manatee County and includes the following major components: • Statement and explanation of the Plan's Vision, Goals, and Performance Measures • Assessment of existing mobility conditions across all major transportation modes • Identification of mobility principles and infrastructure strategies to achieve a safer, more equitable and more multimodal transportation system. • Identification of "Complete Streets" project candidate corridors and approximation of cumulative program costs. • Discussion of land use, land development code, and other policy elements that can help to support and complement investments in multimodal infrastructure. • Recommendations related to how changes to Florida's Growth Management act over the prior decade predicate necessary modifications to the County's process for regulating the transportation impacts of new development. • Discussion of implementation and monitoring strategies.	Enhance safety	- The overall number of serious and fatal crashes, serious and fatal crashes per vehicle miles traveled, and crashes involving bicyclists and pedestrians	The County should seek to reduce traffic crashes and eliminate traffic fatalities and serious injuries by improving the safety performance of the transportation system and reducing vehicle miles traveled through shifting travel to safer modes.	Safer People Safer Roads
		Provide travel mode options.	- Mode split, the extent to which residents choose to walk, bike, use transit, or micro-mobility devices, to commute or complete utilitarian trips provides the best measure of effectiveness for this goal. - Interim progress can be assessed based on the extent to which the County has provided realistic and safe modal alternatives to cars by investing in necessary infrastructure.	The County should seek to provide and encourage multi-modal travel - including public transit, walking, biking, micro-mobility solutions, and micro-transit - through investment in mobility infrastructure and land use patterns that allow for meaningful choices when making trips.	Safer People Safer Roads

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Maximize efficient use of public infrastructure	- The extent to which Fire/EMS, stormwater, and potable water utility service areas are optimized and people have convenient access to transit stops, schools, and park and recreational facilities.	The County should seek to provide public services and infrastructure in a cost-effective manner, which can be achieved in part through mobility investments that encourage denser, better-connected development patterns.	Safer Roads
		Provide cost-effective solutions to manage traffic congestion.	- Evaluate the extent of roadway congestion along key corridors and bottleneck locations during both rush-hour and throughout the day	The County should seek to identify and mitigate areas of acute congestion at critical bottleneck locations and create predictability and reliability in the road network through a careful development review process that is sensitive to and mitigates potential rapid changes in traffic conditions.	Safer Roads Safer People
FDOT District 1 Safety Action Plan (2024)	FDOT District 1 developed this Safety Action Plan to address the KSI crashes on non-limited access, FDOT-maintained roads in Manatee County. This plan identifies the streets where a disproportionate number of crashes that result in a person being killed or seriously injured (KSI) occur. The plan presents road safety improvements to address these crashes and the underlying risk factors that lead to these types of crashes.	Establishing the High-Injury Network	The High-Injury Network (HIN) is a collection of streets where a disproportionate number of crashes result in a fatal or serious injury.	The County Should seek to develop the High Injury Network	Safer Roads Safer People
		Conducting a Systemic Analysis	A systemic analysis looks at crash history on an aggregate basis to identify high-risk roadway characteristics. By cross referencing the roadway features with crash factors, relationships can be uncovered between contextual factors and the risk of fatal and serious injury crashes.	The County should conduct a systematic analysis of the crash analysis of the roadway in Manatee County.	Safer Roads Safer People

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Improve Collaboration between Agencies	The Department will encourage collaboration between the FDOT District 1, Manatee County, and allied agencies through convening working groups, sharing traffic safety data and strategies, and providing training and support systems.	The County should seek to improve Collaboration between agencies.	Safer Roads Safer People
		Increase Awareness and Adoption of Safe System Principles	FDOT District 1 in collaboration with the Sarasota-Manatee MPO and Manatee County will increase awareness of Target Zero among local communities, local governments and related transportation agencies and support the adoption of Vision Zero or similar local safety plans or strategies by local governments. This will include educational campaigns targeted at increasing safer behaviors and street design principles that promote safer speeds.	The County should seek to improve Collaboration between agencies.	Safer People

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Design and Retrofit Streets and Roads to Prioritize People's Safety	FDOT District 1 will continue to promote the design and construction of streets and roads that prioritize safety for all road users. This includes the promotion of updates to local street design guidelines and codes to prioritize safety, developing toolkits to help identify opportunities to incorporate safety countermeasures as part of eligible projects in the District's 5-Year Work Program, and strategically prioritizing quick-build or "push-button" safety projects whenever applicable. Projects should be prioritized along the High-Injury Networks or at locations identified through Systemic Analysis that will reduce the risk of fatal and serious injury crashes. Redesigning and rebuilding streets and roads to prioritize safety can significantly reduce the number of fatal and serious injury crashes throughout Manatee County.	The County should seek to design and retrofit streets and roads that prioritize safety for all users.	Safer Roads
		Improve Data Collection and Reporting	Promote improved collection, analysis, and reporting of crash data to local communities, local governments, and relevant agencies. This will include frequent updates to the crash database (Signal 4 Analytics) and improved data collection that includes built environment factors, such as transit, land use, and signal phasing.	The County should seek to improve data collection and reporting.	Safer Roads Safer People

Document Name	Description	Safety Policies and Goals	Safety Data and Analysis	Countermeasures and/or Strategies	Safe System Element Link
		Promote Increased Funding and Resources	Prioritize funding for the implementation of safety strategies as part of eligible projects (such as RRR projects) in the District's 5-Year Work Program. FDOT District 1 will coordinate with Manatee County and allied agencies to prioritize funding for safety as part of their respective Transportation Improvement Program (particularly those along the High-Injury Network or address a crash profile) and dedicating Capital Improvement Project funds to traffic safety projects or providing grant-writing support.	The County should seek to prioritize funding and resources.	Safer Roads
		Increase Legislative Support	Coordinate with Manatee County and allied agencies to support legislation that results in a wider range of road safety improvements and supporting strategies that can be implemented, including enforcement and post-crash care. Legislation may address speed limit setting, safety cameras and other methods of reducing crashes as safety research evolves. FDOT District 1, Manatee County and allied agencies can help elected officials better understand the scope of crashes causing death and serious injuries throughout the County and pursue and support legislation to reduce them. Changes to legislation will provide governments with a greater set of tools and resources and reduce barriers to making improvements that reduce fatal and serious injury crashes.	The County should seek to improve Collaboration between agencies.	Safer Roads Safer People

APPENDIX E:

SAFETY STRATEGIES

Countermeasures	Emphasis Areas									
	Angle	Pedestrian	Bicycle	Motorcycle	Head On	Left Turn	Off Road	Rear End	Right Turn	Rollover
Roadway/Corridor Lighting		●	●	●			●			
Pavement Friction Treatment		●		●		●	●	●	●	●
Shoulder Rumble Strips					●		●			●
Centerline Rumble Strips					●		●			
Shoulder Widening							●			●
Safety Edge							●			●
Wider Edge Lines							●			●
Enhanced Conspicuity at Horizontal Curves/Retroreflective Strips on Signage				●			●			
Dynamic Curve Warning Signs, Chevrons, and Delineators				●			●			
Pavement Markings at Horizontal Curves				●			●			
Clear Zone							●			●
Slope Flattening							●			●
Guardrail					●		●			●
Appropriate Speed Limits for All Road Users		●	●	●						
Intersection Lighting		●	●	●						
Red Light Cameras	●				●	●			●	
Automated Enforcement in School Zones and Work Zones		●								
Convert Permissive/Protected Signals to Protected						●				
Convert Permissive/Protected Signals to Flashing Yellow Arrows						●				
High-Visibility Crosswalks		●	●							
Median Refuge Islands		●	●							
Leading Pedestrian Interval		●	●							
Extended Time Pushbutton		●	●							
Restrict Right Turn On Red		●	●						●	
Curb Extensions		●	●							
Ped and Bike Exclusive Signal Head or Crossing Phase		●	●							
Mid-block Pedestrian Signals with Rectangular Rapid Flashing Beacons (RRFBs)		●	●							
Coordinated Signal Timing between Intersections	●							●		
Bike Improvements at Intersections: Bike Box, Two Stage Turn Queue Boxes, Bicycle Push Buttons			●							
Protected/Separated Bike Lanes			●							
Raised Crosswalk		●								
Raised Intersections	●	●	●	●		●		●	●	
Pedestrian Hybrid Beacons		●	●							
Convert Intersection to Roundabout	●				●	●				
Variable Speed Limits							●	●		
Driver Feedback Speed Limit Sign							●			
Traffic Calming		●	●		●		●	●		
Traffic Calming: Lane Narrowing		●	●					●		
Traffic Calming: Bulb-Outs/Curb Extension		●	●							
Traffic Calming: Medians		●	●		●	●				
Traffic Signal Backplates with Retroreflective Borders	●				●	●		●	●	
Convert Intersection to Reduced Left-Turn Conflict Intersection	●				●	●				
Yellow Change Intervals	●					●		●	●	
Retroreflective Raised Pavement Markers					●		●			
Street Trees		●			●					
Total	7	20	19	8	10	10	17	8	6	8

Table E1: Safety Countermeasures by Crash Type

Systemic Safety Programs

A systemic safety approach provides a more comprehensive method for safety planning and implementation that *complements* traditional site analysis. A traditional analysis for identifying sites for safety enhancements is often based on a site analysis approach or focusing on locations with a history of severe crashes or "hot spots". Systemic analysis, however, addresses the crash types that result in a significant number of fatal and serious injury crashes spread across the network rather than focusing only on specific sites experiencing a history of severe crashes.

The Federal Highway Administration (FHWA) published the *Systemic Safety Project Screening Tool* in 2013 and is currently completing a substantial update to be titled the *Systemic Safety User Guide*. Both documents include steps of the systemic safety planning process as show in the figure below. Several county and state agencies have implemented the process based on the crash trends on their network. A summary of the peer review of select number of agencies is included in the following table.

Figure 1: Systemic Safety Planning Process (Source: FHWA Systemic Safety Project Selection Tool)

	Summary	Identify Focus Crash Types and Risk Factors	Screen and Prioritize Candidate Locations	Select Countermeasures	Prioritize Projects

BOONE COUNTY'S LOCAL ROAD SAFETY PLAN	Plan Objective: reduce the occurrence of fatal and severe crashes in the county. Data collection included county road crash data (2016-2020) and roadway feature data. Crash patterns occurring on Boone County roadways were compared to those on all county roads as well as statewide trends.	• Single vehicle collisions on rural roadways
		• County Collectors
			• Equivalent Property Damage Only (EPDO)
			• Roadway Hazard Rating
			  ○ Horizontal curve density
			  ○ Operating speed
			  ○ ADT
			  ○ Vertical curvature
			  ○ Clear zone
			  ○ Roadway width
				• Site-specific countermeasures based on crash history and field observations for the highest ranked roadways
				• Systemwide horizontal curve improvements
					• The EPDO and hazard rankings were totaled to find a final rating
					• Final rating used to rank site locations

	Summary	Identify Focus Crash Types and Risk Factors	Screen and Prioritize Candidate Locations	Select Countermeasures	Prioritize Projects

MINNESOTA DEPARTMENT OF TRANSPORTATION STRATEGIC HIGHWAY SAFETY PLAN (SHSP)	Plan Objective: assist counties in Minnesota in identifying low-cost countermeasures to implement systemically with the overall goal of reducing fatal and severe crashes on the local road system. The project involved developing a Road Safety Plan (RSP) for each county. A statewide crash analysis was conducted, and based on the data potential countermeasures were evaluated on effectiveness, cost, and agency policies. The result was a concise list of countermeasures for each focus crash type.	• Two-lane, rural county highways
		• Roadway departures
		  ○ Curves
		  ○ Intersections
		  ○ Segments
			• 504 curves evaluated
			• 32 priority curves selected
			  ○ Number of severe crashes
			  ○ Design features
			  ○ Traffic volume
			  ○ Curve radius
				• Priority safety strategies for the 3 focus areas
				  ○ Rumble strips
				  ○ 6-inch edge lines
				  ○ Enhanced curve delineation
				  ○ Upgrade traffic signs and streetlights for intersections
					• Counties prioritize projects based on the Road Safety Plan (RSP) program

	Summary	Identify Focus Crash Types and Risk Factors	Screen and Prioritize Candidate Locations	Select Countermeasures	Prioritize Projects
THURSTON COUNTY, WA	Plan Objective: to implement a proactive safety planning approach through the use of the Systemic Safety Project Selection Tool to evaluate severe crashes throughout the county and identify low-cost countermeasures.	• Roadway departures along horizontal curves • Arterial and collector roads	• Risk factors selected based on crash data, curve geometry, and other roadway conditions. ○ Risk factors assigned a score of 0.5 or 1 based on level of confidence	• Five low-cost countermeasures were selected for implementation ○ Traffic signs ○ Pavement markings ○ Rumble strips ○ Roadside improvements	• Risk factor was totaled for each curve • 270 signed curves were prioritized for low-cost countermeasures

APPENDIX F:

PRIORITIZATION TOOL

PRIORITIZATION TOOL AND CRITERIA

The prioritization criteria for corridors, signalized intersections, and unsignalized intersections are organized into four main factors: safety impact, access, project readiness, and lighting. Manatee County owned and operated roadways, signalized intersections, and unsignalized intersections may be evaluated for project priority using these criteria. Each project is scored using spatial analysis to evaluate the geographical context and proximity to priority elements. This approach highlights the direct implications of the project, its broader effects on the community, and each projects' readiness for implementation.

Corridor Prioritization Criteria

Priority Factor	Criteria	Description	Value
Safety Impact	KA Crash Rate	Corridors with higher fatal and serious injury crash rates scored higher.	High
	Vulnerable Road User Crash Rate	Corridors with higher vulnerable roadway user crash rates scored higher.	High
	K and A Crashes	Corridors with a pattern of fatal and serious injury crashes scored higher.	High
	Posted Speed	Corridors that are on roadways with higher speeds (greater than 45 mph) scored higher.	Medium
	Traffic Volume	Corridors located on roadways with higher Traffic Volume scored higher.	Medium
	Number of Travel Lanes	Corridors with higher number of travel lanes scored higher.	Low
	Focus Crash Types: Rear End, Head On, Sideswipe, and Off Road	Corridors with focus crash type crashes greater than 25% of the total crashes on a corridor scored higher.	High-Medium
	Presence on HIN Segment	Corridors located on HIN corridor segments scored higher.	High
Access	Located in an underserved community	Corridors entirely located in US DOT Disadvantaged Census Tracts (per the US DOT's Equitable Transportation Community Explorer tool) scored higher.	Medium
	Connects road users to jobs and businesses, or enhances safety in job cluster/business area	Corridors that are located closer to areas with a high concentration of jobs scored higher.	Low
	Proximity to public schools, colleges and universities, libraries, community centers, transit, and regional destination parks	Corridors that are closer to a school, park, library, community center, or transit stop scored higher.	High
	Areas of growth	Corridors that are located on corridors showing increase in AADT over a 6 year period scored higher.	High
Project Readiness	Alignment with other planned improvements	Corridors that align with other planned improvements within the County scored higher	Medium
Lighting	Lighting	Corridors without the presence of lighting scored higher.	High

Signalized Intersection Prioritization Criteria

Priority Factor	Criteria	Description	Value
Safety Impact	Intersection EPDO Score	Signalized intersections with higher EPDO scores scored higher.	High
	K and A Crashes	Signalized intersections with a history of fatal and serious injury crashes scored higher.	High
	Posted Speed	Signalized intersections that are on roadways with higher speeds scored higher.	Low
	Number of Travel Lanes	Signalized intersections with higher number of travel lanes scored higher.	Low
	Focus Crash Types: Left Turn, Angle, Rear End, and Off-Road	Signalized intersections with focus crash type crashes greater than 25% of the total crashes at intersection scored higher.	High-Medium
	VRU Crashes	Signalized intersections with a history of VRU crashes scored higher.	High
	Presence on HIN Segment	Signalized intersections on the HIN corridor segments scored higher.	High
Access	Located in an underserved community	Signalized intersections entirely located in US DOT Disadvantaged Census Tracts (per the US DOT's Equitable Transportation Community Explorer tool) scored higher.	Medium
	Proximity to public schools, colleges and universities, libraries, community centers, transit, and regional destination parks	Signalized intersections that are closer to a school, park, library, community center, or transit stop scored higher.	High
Project Readiness	Alignment with other planned improvements	Signalized intersections that align with other planned improvements within the County scored higher.	Medium
Lighting	Lighting	Signalized intersections without the presence of lighting scored higher.	High

Unsignalized Intersection Prioritization Criteria

Priority Factor	Criteria	Description	Value
Safety Impact	Intersection EPDO Score	Unsignalized intersections with higher EPDO scores scored higher.	High
	K and A Crashes	Unsignalized intersections with a history of fatal and serious injury crashes scored higher.	High
	Posted Speed	Unsignalized intersections that are on roadways with higher speeds scored higher.	Low
	Number of Travel Lanes	Unsignalized intersections with higher number of travel lanes scored higher.	Low
	Focus Crash Types: Left Turn, Angle, Rear End, and Off-Road	Unsignalized intersections with focus crash type crashes greater than 25% of the total crashes at intersection scored higher.	High-Medium
	VRU Crashes	Unsignalized intersections with a history of VRU crashes scored higher.	High
	Presence on HIN Segment	Unsignalized intersections on the HIN corridor segments scored higher.	High
Access	Located in an underserved community	Unsignalized intersections entirely located in US DOT Disadvantaged Census Tracts (per the US DOT's Equitable Transportation Community Explorer tool) scored higher.	Medium
	Proximity to public schools, colleges and universities, libraries, community centers, transit, and regional destination parks	Unsignalized intersections that are closer to a school, park, library, community center, or transit stop scored higher.	High
Project Readiness	Alignment with other planned improvements	Unsignalized intersections that align with other planned improvements within the County scored higher.	Medium
Lighting	Lighting	Unsignalized intersections without the presence of lighting scored higher.	High