MPO SAFETY ELEMENT 2050 LRTP - Draft

INTRODUCTION

What is Vision Zero?

Vision Zero is a strategy that has been increasingly adopted across the United States to address the unacceptable toll of roadway deaths and serious injuries on human life. It reframes traffic safety by shifting from a reactive model to a proactive one, prioritizing human life in every aspect of transportation planning and design.

Vision Zero is a holistic approach to road safety under the core principles that fatal and serious injury crashes are preventable. Further, Vision Zero promotes the FHWA Safe System Approach which includes the five elements of Safer Roads, Safer Speeds, Safer People, Safer Vehicles, and Post-Crash Care.

The MPO acknowledges and supports FDOT's statewide safety targets, which set the target at "0" for each of their five performance measures to reflect the Department's goal of zero deaths as shown below.

- Fatalities
- Serious injuries
- Non-motorized fatalities and serious injuries
- Rate of fatalities per 100 million vehicle miles traveled (MVMT)
- Rate of serious injuries per 100 MVMT

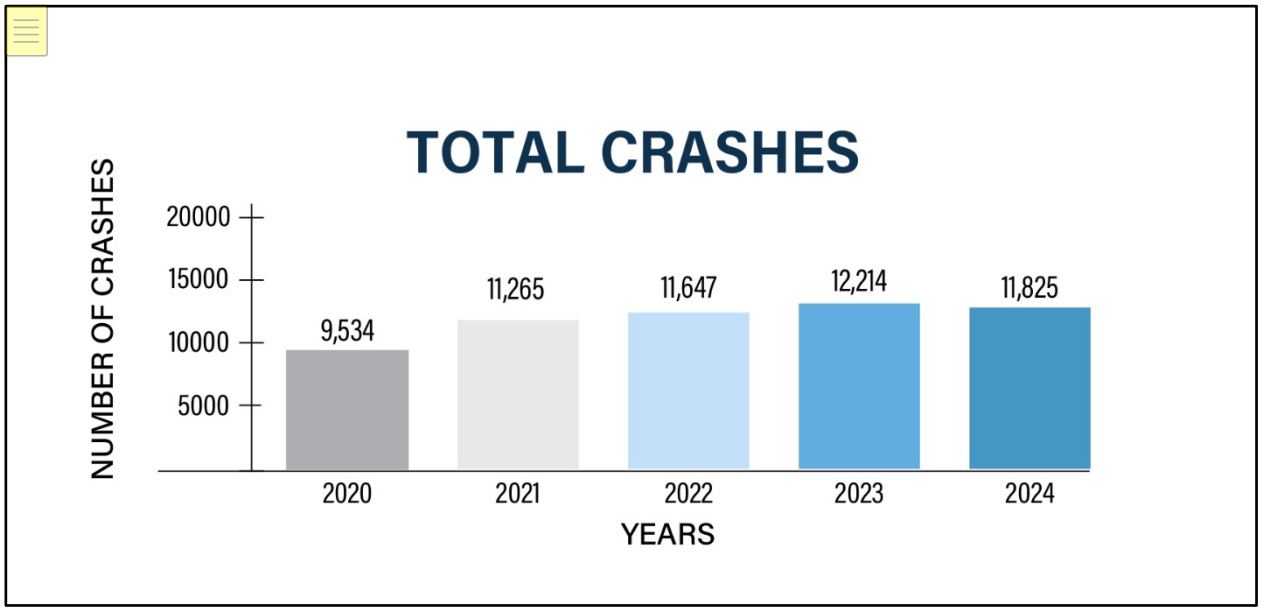
Lake-Sumter Vision Zero Initiatives

There are three regional vision zero plans that are currently underway in the MPO region including the Lake County Vision Zero Safety Action Plan, the Sumter County Vision Zero Safety Action Plan, and the MPO's Regional Vision Zero Safety Action Plan, which is being done in collaboration with University of Central Florida (UCF). These plans will be coordinated, and once complete, the information and recommendations will be integrated into the LRTP to serve as criteria for future decision-making. The Lake-Sumter MPO has a goal of zero fatal and serious injury crashes by the year 2050; this is reflected in all three safety action plans.

Lake and Sumter County Crash Statistics

Reviewing crash data helps highlight not just how many crashes occur, but also the circumstances and contributing factors that shape roadway safety outcomes. The graphics on the following pages illustrate five-year crash totals (2020–2024) and then break them down by KSI (Killed and Seriously Injured) crash type, severity, and frequency over time. These statistics provide a comprehensive snapshot of historical roadway safety conditions and point to key areas of concern that will guide future planning efforts.

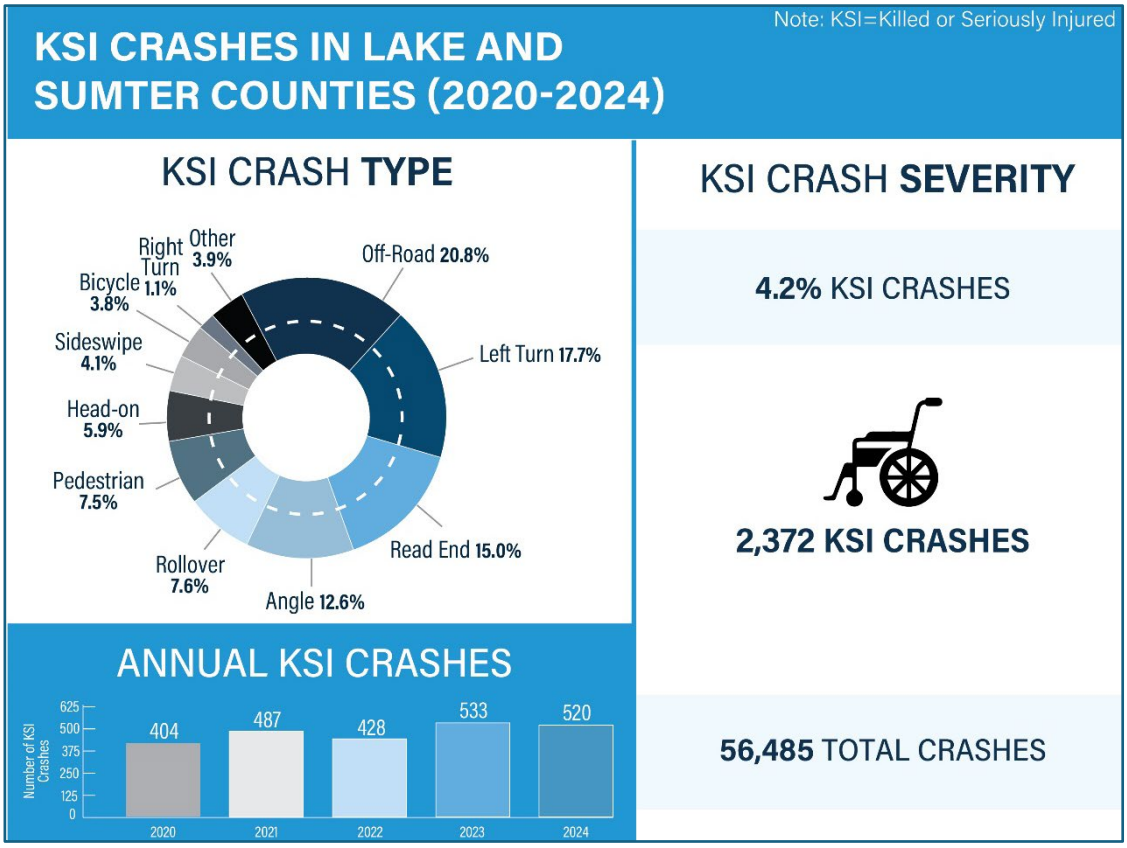
The following statistics show Lake County and Sumter County 5-year total crashes from 2020 through 2024.

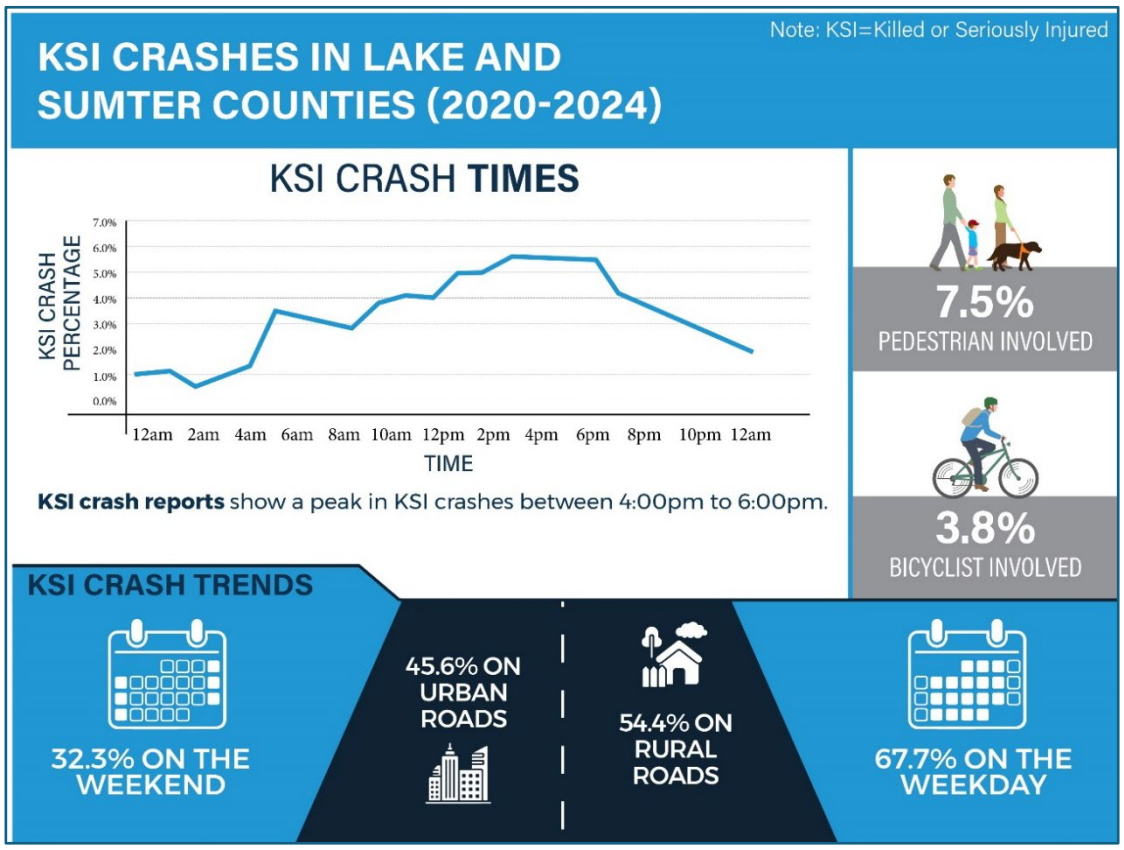


KSI (Killed and Seriously Injured) Crash Statistics

Vision Zero focuses on KSI crashes with the goal of identifying high-risk locations and applying targeted interventions to reduce all deaths and serious injuries on the road to zero, ensuring the most severe and life-altering crashes are prevented.

- KSI is defined as killed or serious injury.
- "Killed" refers to a fatal injury that results in death at the scene or within 30 days after the motor vehicle crash in which the injury occurs.
- "Serious Injury" is any major injury other than fatal.





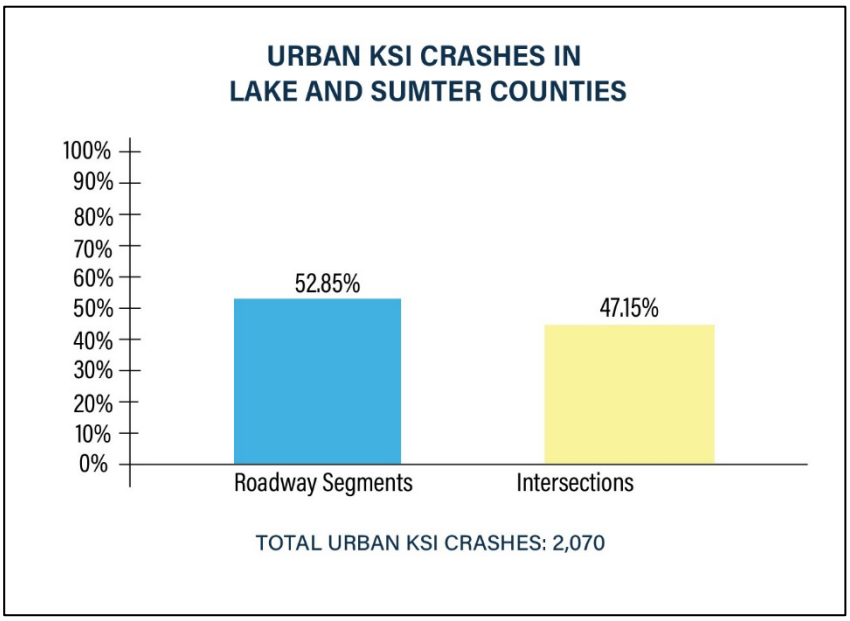
Urban and Rural Roadways

The MPO region contains both urban and rural roadways within its planning area. The Lake~Sumter planning area is primarily a rural region, with growing areas of suburban and more limited urban development.

Urban and rural roadways have different characteristics in terms of physical design and how they function within the transportation network. FHWA and FDOT have identified dozens of proven safety countermeasures to effectively reduce fatal and serious injury crashes on both urban and rural roadways.

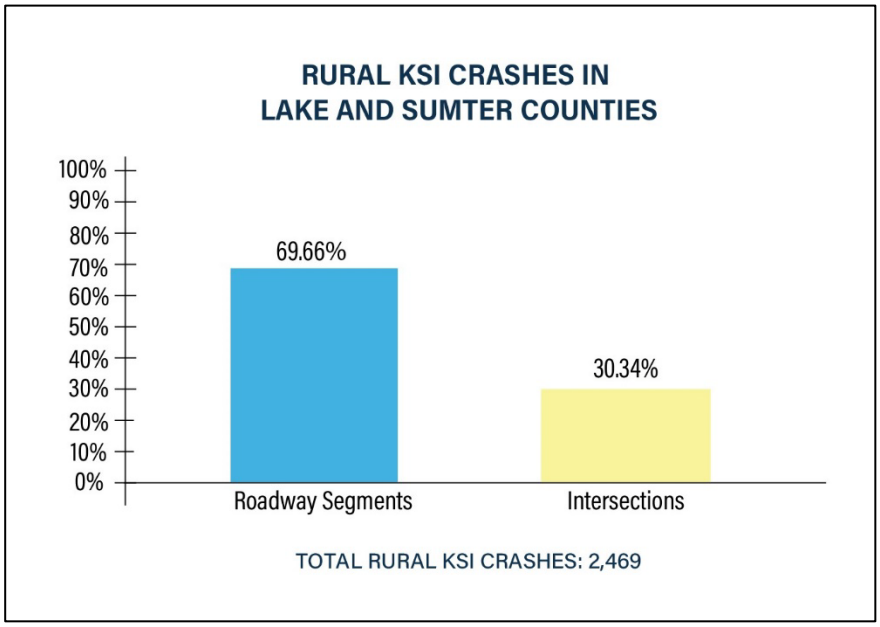
Urban Roadway Characteristics

Urban roads are typically located within areas of higher population density, have lower speed limits, frequent intersections to support the more highly developed areas, and experience greater pedestrian, bicyclist, and transit activity. This requires safety countermeasures that address the higher volume of multimodal travel. The chart below shows the total number of KSI crashes in urban areas in Lake and Sumter Counties separated into crashes at intersections and along roadway segments. In urban areas, there are more crashes at intersections than along roadway segments, though the difference is only a 5 percent variance.



Rural Roadway Characteristics

In contrast, rural roadways are typically located in areas of lower population density, are often two-lane roads with higher posted speed limits, have fewer intersections because of the lesser built-out environment and motorists often travel longer distances on rural roads. The chart below shows the total number of KSI crashes in rural areas broken down into crashes that occur along roadway segments and at intersections. Similar to urban areas, more crashes in rural areas occur along segments, however the difference is much greater in rural areas with nearly 70 percent of KSI crashes occurring along segments and 30 percent at intersections; a difference of nearly 40 percent.



POLICY RECOMMENDATIONS

The following policy recommendations incorporate Vision Zero principles and address the safety needs of Lake and Sumter Counties. This section provides policies on safer speeds, safer roads, safer people, safer vehicles, and post-crash care.

How do Vision Zero policies benefit the community?

Vision Zero aims to eliminate severe crashes altogether, ensuring that mobility does not come at the cost of traffic-related fatalities and serious injuries. Because the Lake~Sumter MPO is a policy-focused organization, this plan includes a series of recommendations that the MPO can directly influence or support through collaboration with other agencies. These recommendations are designed to guide local decision-making and strengthen regional coordination, ensuring that safety considerations are fully integrated into current and future planning development processes.

Safer Speeds

Managing speed is one of the most effective ways to reduce the likelihood and severity of crashes, making it central to the Safe System approach.

- Support the use of context-based roadway design to achieve target speeds using speed management safety measures such as lane narrowing, roundabouts, curb extensions, and transition zones where the roadway context classification changes.
- Support the implementation of school zone safety cameras by local municipalities.

- Support the use of red-light cameras where state law allows, prioritizing rural intersections with documented severe angle crashes.
- Adopt context-based target speed policies for local and regional roadways.
- Collaboration with local and regional partners will be important, including law enforcement, Lake and Sumter Counties, and municipal partners.

Safer Roads

The design of our roadways influences how people drive, walk, and bike, and roadway improvements are essential to reducing conflicts and crash risks.

- Encourage the integration of proven safety countermeasures into all phases of transportation projects - programming, planning, design, and maintenance.
- Prioritize proven safety countermeasure evaluation for rural transportation projects including speed management techniques, curve delineation, high friction surface treatment, high visibility signing/markings, horizontal curve redesign, use of centerline and edge line rumble strips, and shoulder widening.
- Encourage the evaluation of intersection configurations for all new and reconstructed locations including roundabouts, displaced left-turns, and median U-turns.
- Prioritize lighting and visibility improvements with all transportation projects including roadway/intersection lighting, intersection daylighting, high visibility markings, and signage.
- Recommend the Integration of appropriate traffic operational safety countermeasures such as protected left-turn phases, flashing yellow/red turns, no right on red, and leading pedestrian intervals.
- Identify engineering solutions and best practices for wrong-way driving, lane departures, and intersection crashes that may be greater risks for impaired drivers.
- Require curb management policies (designated loading and pick-up/drop-off areas) in town centers and around schools to reduce unsafe lane blockages.
- Prioritize the evaluation of fatal and serious injury crashes within planning studies and traffic impact assessments.
- Collaboration with local and regional partners will be important, including FDOT, Lake and Sumter Counties, and municipal partners.

Safer People

Education, enforcement, and community engagement are critical to shaping safe behaviors and ensuring that all users share responsibility for safety.

- Encourage advanced education and outreach focused on reducing or eliminating the risky driving behaviors that can result in KSI crashes.
- Develop behavioral safety programs focused on rural risk factors: seat belt use, impaired driving, and speeding. Pair with campaigns tied to school safety and high-injury corridors.

- Promote education programs and educate teens, parents, caregivers, and other partners about Florida's graduated driver licensing (GDL) laws and the resources available.
- Develop and implement outreach and communication strategies focused on the demographics with low safety belt and child restraint use.
- Provide transparent safety reporting and community engagement tools.
- Prioritize integrated safety measures aligned with streets with high pedestrian and transit users to include refuge islands, walkways, pedestrian crossing islands, lane reallocations, separated bike lanes, leading pedestrian intervals, median channelization, marking enhancement, lighting, and innovative signals and beacons.
- Prioritize improved lighting and visibility within and in advance of all pedestrians, transit, or work zones areas.
- Encourage and prioritize Accessible Pedestrian Signals (APS) where vulnerable users would benefit.
- Coordinate with FDOT and federal partners to improve railroad crossing safety during projects with current safety measures to include dynamic envelopes, gates, beacons, medians, signage, and lighting.
- Collaboration with partners will be important, including FRA, FDOT, Lake and Sumter Counties, and municipal partners.

Safer Vehicles and Fleets

Vehicle technology and fleet management practices play a major role in protecting both occupants and vulnerable road users on our transportation network. Some of these recommendations are largely out of the control of the MPO, but the MPO can support the implementation of these policies.

- Recommend that public fleets upgrade to modern safety technologies to include crash reduction technologies, speed monitoring, and other safety integration.
- Encourage local agencies to upgrade public fleet vehicles to include truck guards to eliminate fatal and severe turning crashes.
- Identify major freight corridors and hubs in the planning process to integrate freight specific design considerations for regional safety.
- Promote long-term vehicle safety standards and connected vehicle readiness by partnering with local agencies.
- Collaboration with local and regional partners will be important, including law enforcement, Lake and Sumter Counties, and municipal partners.

Post-Crash Care

When crashes do occur, rapid response and effective care are vital to reducing the severity of injuries and improving survival outcomes. Some of these recommendations are largely out of the control of the MPO, but the MPO can support the coordination of agencies which are directly involved in post-crash care.

- Encourage data-sharing agreements and advocate for improved data integration with local hospitals and EMS.

- Be aware of emergency response coordination, preemption, and regular monitoring.
- Publish a high-injury network (HIN) updated annually, including severe injury risk indicators.
- Establish a near-miss reporting channel for residents and staff, using the data to inform safety planning.
- Collaboration with local and regional partners will be important, including law enforcement, Lake and Sumter Counties, and municipal partners.

EVALUATION

Monitoring Progress to Zero: Evaluation is a required component of the Safety Action Plan and serves to measure how effectively the MPO is advancing its safety goals. Through the SS4A grant program, MPOs are required to establish an annual evaluation process that tracks progress toward reducing fatal and serious injury crashes. This process will allow for transparent reporting and, as the plan evolves, the evaluation framework will be further refined and realigned to ensure it remains responsive to emerging data, community needs, and regional priorities.

To meet the goal of zero deaths by the year 2050, the MPO will evaluate and track the crash rates within the region on an annual basis for fatal and serious injury crash rates. The specific process for monitoring progress will be developed through the three Vision Zero Safety Action Plans and will be incorporated into the LRTP upon completion.

2050 Performance Measures

The following safety performance measures have been included in the 2050 LRTP and are described in further detail within the Performance Targets section.

Safety Performance Targets

1. Fatalities
2. Serious Injuries
3. Non-motorized fatalities and serious injuries
4. Rate of Fatalities per 100 Million Vehicle Miles Traveled (MVMT)
5. Rate of Serious Injuries per 100 MVMT

Identification of High Injury Network (HIN)

The High Injury Network (HIN) is method of screening to identify corridors with a history of severe crashes. The HIN can be utilized to prioritize corridor programming to achieve regional safety goals. The HIN is being developed as part of the vision zero safety action plans that are currently underway and will be incorporated in the LRTP upon completion.

Identification of High-Risk Network (HRN)

The development of an HRN is a means to proactively plan for roads that may not yet be on the High Injury Network but have the characteristics to become part of the HIN if crashes increase. The HRN is created by analyzing collision history to identify roadway features that lead to the most severe crashes and identify the corridors with those high-risk roadway characteristics. This is a predictive analysis of where crashes may occur/are likely to occur so that these corridors can be the focus of safety countermeasures. These roads would become a future focus of safety countermeasures and

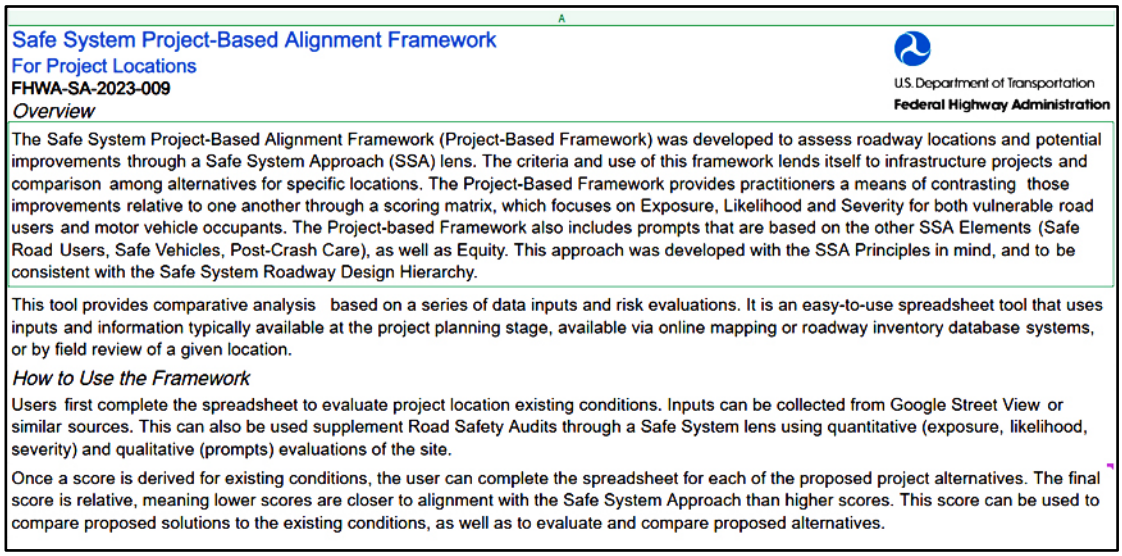
prioritized projects, in addition to the roads on the High Injury Network (where injury crashes are already historically high).

Corridor Safety Evaluations

Another method of evaluating the safety of roadways that can be utilized by the Lake~Sumter MPO is the FHWA Safety Screening Tool. This is a recently developed evaluation tool which uses the Safe System Project-Based Alignment Framework to calculate high-risk scores along the roadway network. This tool combines crash and roadway data to highlight corridors with the highest potential for severe crashes. By systematically identifying high-injury and high-risk corridors, the MPO can prioritize projects that address the most pressing safety concerns. This allows funding to be directed where it will save the most lives and provides a foundation for improvements in the Transportation Improvement Program and Long Range Transportation Plan.

See the figures below showing the Safe System Project-based Alignment Framework and example of the scoring, for an example roadway.

Safe System Project-based Alignment Framework



Safe System Project-Based Alignment Framework
For Project Locations
FHWA-SA-2023-009
U.S. Department of Transportation
Federal Highway Administration

Overview

The Safe System Project-Based Alignment Framework (Project-Based Framework) was developed to assess roadway locations and potential improvements through a Safe System Approach (SSA) lens. The criteria and use of this framework lends itself to infrastructure projects and comparison among alternatives for specific locations. The Project-Based Framework provides practitioners a means of contrasting those improvements relative to one another through a scoring matrix, which focuses on Exposure, Likelihood and Severity for both vulnerable road users and motor vehicle occupants. The Project-based Framework also includes prompts that are based on the other SSA Elements (Safe Road Users, Safe Vehicles, Post-Crash Care), as well as Equity. This approach was developed with the SSA Principles in mind, and to be consistent with the Safe System Roadway Design Hierarchy.

This tool provides comparative analysis based on a series of data inputs and risk evaluations. It is an easy-to-use spreadsheet tool that uses inputs and information typically available at the project planning stage, available via online mapping or roadway inventory database systems, or by field review of a given location.

How to Use the Framework

Users first complete the spreadsheet to evaluate project location existing conditions. Inputs can be collected from Google Street View or similar sources. This can also be used supplement Road Safety Audits through a Safe System lens using quantitative (exposure, likelihood, severity) and qualitative (prompts) evaluations of the site.

Once a score is derived for existing conditions, the user can complete the spreadsheet for each of the proposed project alternatives. The final score is relative, meaning lower scores are closer to alignment with the Safe System Approach than higher scores. This score can be used to compare proposed solutions to the existing conditions, as well as to evaluate and compare proposed alternatives.

Framework Final Scoring Matrix

Alignment Framework – Final Scoring Matrix

Project Location: **Existing- 19th Street**

Category	Vulnerable Road Users (VRU)	VRU Score	Motor Vehicles	Motor Vehicles Score
Exposure Score:	Vulnerable Road Users Subtotal	***20***	Motor Vehicles Subtotal	***20***
Likelihood Score:	Vulnerable Road Users Subtotal	***9***	Motor Vehicles Subtotal	***12***
Severity Score:	Vulnerable Road Users Subtotal	***20***	Motor Vehicles Subtotal	***12***
Mode Subtotal:	Vulnerable Road Users	***3,600***	Motor Vehicles	***2,880***

Total Score: **6,480**