

HIGHWAY SAFETY IMPROVEMENT PROGRAM

IMPLEMENTATION PLAN



AUGUST 2022

HSIP Implementation Plan Guidance

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Background

The Highway Safety Improvement Program (HSIP) is a core Federal-aid highway program, the purpose of which is to achieve a significant reduction in fatalities and serious injuries on all public roads. The HSIP is a federally-funded, State-administered program under 23 U.S.C. 148, 23 U.S.C. 150, and 23 U.S.C. 130 and regulated by 23 CFR Parts 924 and 490. Under 23 CFR Part 490, each State is required to establish annual safety performance targets for five measures: 1) number of fatalities, 2) number of serious injuries, 3) fatality rate (per hundred million vehicle miles traveled (HMVMT)), 4) serious injury rate (per HMVMT), and 5) number of non-motorized fatalities and serious injuries.

If the State does not meet or make significant progress towards meeting its annual safety performance targets, the State must comply with the provisions set forth in 23 U.S.C. 148(i) for the subsequent fiscal year. The State must: 1) use obligation authority equal to the HSIP apportionment for the year prior to the year for which the targets were not met or significant progress was not made, only for HSIP projects; and 2) submit an annual HSIP Implementation Plan that describes actions the State will take to meet or make significant progress toward meeting its subsequent targets. Under 23 U.S.C. 148(i), the HSIP Implementation Plan must:

- Identify roadway features that constitute a hazard to road users;
- Identify highway safety improvement projects on the basis of crash experience, crash potential, or other data-supported means;
- Describe how HSIP funds will be allocated, including projects, activities, and strategies to be implemented;
- Describe how the proposed projects, activities, and strategies funded under the State HSIP will allow the State to make progress toward achieving the safety performance targets; and
- Describe the actions the State will undertake to achieve the performance targets.

While the HSIP Implementation Plan has specific requirements as listed above, the State also must meet all HSIP planning requirements [23 U.S.C. 148(c)(2)(B) & (E) and 23 CFR Part 924.9] and consider those requirements as part of its HSIP Implementation Plan development efforts.

Purpose

The purpose of this guidance is to clarify the requirements of 23 U.S.C. 148(i). Specifically, this guidance addresses the requirements for the HSIP Implementation Plan. The HSIP Implementation Plan is a key component of the State's Decision Support System (DSS) and is used to track and report on the State's progress toward meeting its annual safety performance targets.

The HSIP Implementation Plan was developed to demonstrate Florida's progress toward meeting its annual safety performance targets as required by the Federal Highway Administration (FHWA) under 23 U.S.C. 148(i). The HSIP Implementation Plan will help the state continue to focus limited resources on reducing the number of fatalities and serious injuries on the transportation system with the understanding that no death is acceptable on Florida's transportation system.

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EXECUTIVE SUMMARY

Florida adopted a vision of zero fatalities and serious injuries on its transportation system and identified this vision as the highest priority. The Florida Department of Transportation (FDOT) set zero as the target for all safety performance measures required by the Federal Highway Administration (FHWA), including fatalities, fatality rate, serious injuries, serious injury rate, and non-motorized fatalities and serious injuries.

Florida's traffic safety fatalities, like much of the nation, are expected to be at an all-time high, and it is clear additional more must be done to reverse this alarming trend. In response to these trends, this document identifies the activities FDOT will undertake with its partners in federal fiscal year 2023 to make progress toward achieving its target of zero fatalities and serious injuries. This plan goes beyond specific FHWA requirements following the assessment that Florida has not met or made significant progress toward achieving its safety performance targets. This plan also provides an opportunity for FDOT and its partners – metropolitan planning organizations, local governments, and educational, law enforcement, emergency management, and other safety professionals – to recommit to the vision and target of zero, as well as additional actions each organization can take to help make this target a reality.

Consistent with FHWA requirements, this plan focuses specifically on implementation of the Highway Safety Improvement Program (HSIP) as a core federal-aid highway program focused on the mission of reducing fatalities and serious injuries. The plan documents the continued enhancements planned for Florida's HSIP to better leverage the benefits of this program. However, recognizing that FDOT already allocates all HSIP funding to safety programs - and building on the integrated approach that underscores FDOT's safety strategy - this plan also documents how additional FDOT and partner activities may contribute to progress toward zero.

Key FY 2023 commitments identified in the HSIP Implementation Plan include the following:

- Improve Partner Coordination and Align Safety Activities
- Maximize HSIP Infrastructure Investments
- Enhance Safety Data Systems and Analysis
- Implement Key Safety Countermeasures
- Focus Safety Marketing and Education on Target Audiences
- Capitalize on New and Existing Funding Opportunities



OVERVIEW

Florida's Focus on Target Zero

The Florida Department of Transportation (FDOT) and its traffic safety partners are committed to eliminating fatalities and serious injuries with the understanding that the death of any person is unacceptable. Therefore, zero deaths is the state's safety vision and performance target. With the update of the [Florida Transportation Plan](#) (FTP) Policy Element in late 2020 and [Florida's Strategic Highway Safety Plan](#) (SHSP) in early 2021, Florida recommitted to the target of zero traffic fatalities and serious injuries and refreshed its vision of "Target Zero." This target is consistent throughout the FTP, SHSP, [Highway Safety Improvement Program](#) (HSIP), and [Highway Safety Plan](#) (HSP). Florida's Target ZERO vision is documented for each of the statewide transportation performance measures in the Florida HSIP Annual Report. Florida's SHSP aligns with the Safe System approach.

SAFE SYSTEM APPROACH

Safe System emphasizes that traffic deaths and serious injuries are unacceptable and, while understanding no crash is desirable, the fatal and serious injury crashes take the highest priority. Safe System principles also recognize humans will make mistakes and are susceptible to serious injury or even death if the transportation system is not designed and operated to accommodate the common mistakes humans make.

Florida understands one agency alone cannot solve the state's safety challenges. The responsibility must be shared with all partners taking proactive steps to identify and mitigate risks in the transportation system so they do not lead to fatal and serious injuries.

Following guidance from the Federal Highway Administration (FHWA), Florida prioritizes Safe Road Users, Safe Vehicles, Safe Speeds, Safe Roads, and Post-Crash Care to support a Safe System approach.

The Safe System approach expands on traditional traffic safety planning and implementation activities by considering a more holistic approach. Florida's HSIP will build on this holistic approach to evaluate and prioritize new and emerging countermeasures and infrastructure solutions that proactively address multiple elements of the Safe System approach, where possible. Going forward, Florida's HSIP will continue to evaluate qualifying projects to consider their impact toward achieving not only safe roads but also consider the way these solutions encourage behaviors of safe road users, anticipate human error, consider human injury tolerance, accommodate new vehicles and technologies that make vehicles safer, encourage safer speeds, and support the needs of first responders engaging in post-crash care.



FDOT’s vision is to “provide a transportation network that is well planned, supports economic growth, and has the goal of being congestion and fatality free.” Figure 1 highlights the alignment between key safety-related plans and Target Zero.

To achieve its target of a fatality-free transportation system, FDOT coordinates with metropolitan planning organizations (MPO) and local governments to align safety priorities at the regional and local levels. Transportation projects are identified and prioritized with Florida’s 27 MPOs as well as local governments in non-metropolitan areas. Data are analyzed for each potential project, using traffic safety data and traffic demand modeling, among other data. MPOs and local governments consider safety data analyses when determining project priorities.

Florida’s transportation decisions are guided by several documents including the FTP, the [Strategic Intermodal System \(SIS\) Policy Plan](#), the [Statewide Transportation Improvement Program \(STIP\)](#), SHSP, HSIP, and HSP. Other activities that help the state achieve the safety target include the Program Planning Workshops and FDOT’s Development, Design, and Construction Standards.

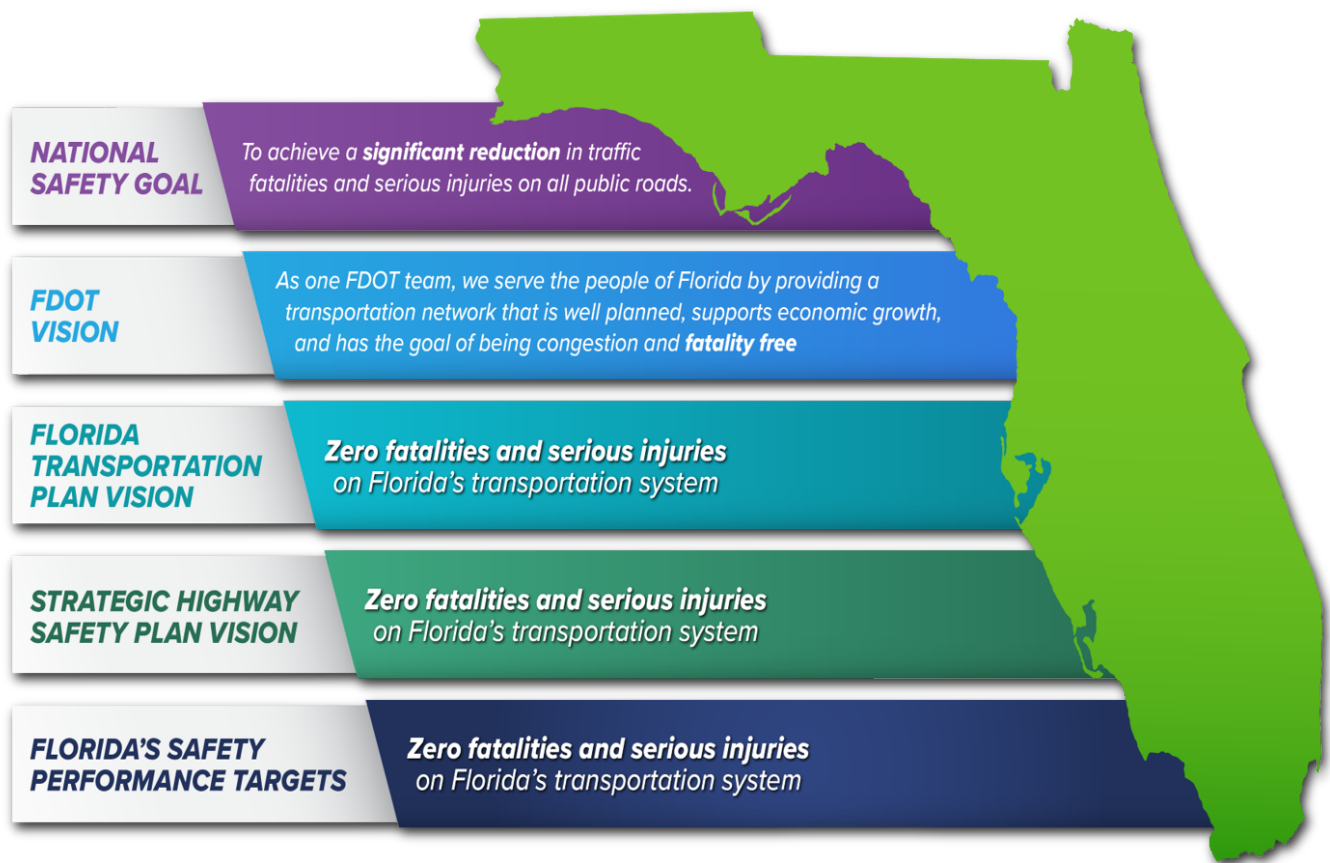


Figure 1: Florida’s Alignment with the National Safety Goal



Federal Performance Requirements

Federal rule (23 CFR 490.209(a)) requires state DOTs to establish targets and report performance on five safety performance measures, including:

- » Number of fatalities;
- » Rate of fatalities per 100 million vehicle-miles traveled (VMT);
- » Number of serious injuries;
- » Rate of serious injuries per 100 million VMT; and
- » Number of non-motorized fatalities and number of non-motorized serious injuries.

In the 2017 HSIP Annual Report, FDOT established statewide 2018 safety targets, which set the target at “0” for each safety performance measure to reflect the vision of zero deaths. These targets were reaffirmed for each subsequent calendar year through 2023.

As part of this process, FDOT worked with Florida’s 27 MPOs to establish both the state and MPO safety targets. A total of 19 MPOs adopted the state’s safety targets of zero. The remaining eight MPOs established MPO-specific targets committing to gradual progress toward zero, while still supporting the state’s vision of zero traffic fatalities and serious injuries.

23 CFR 490.211(c)(2) specifies that a state department of transportation (DOT) has met or made significant progress toward meeting its safety performance targets when at least four of the five safety performance targets are met or the actual outcome is better than the baseline performance for the year prior to the establishment of the target.

On April 21, 2022, FHWA reported the results of its calendar year 2020 safety performance target assessment. FHWA concluded that Florida did not meet or make significant progress toward its safety targets, noting that zero was not achieved for any measure and that only three out of five measures (number of serious injuries, serious injury rate, and number of non-motorized fatalities and serious injuries) were better than baseline.

Table 1 summarizes the findings of the most recent assessment.



| PERFORMANCE MEASURE | 2016-2020 TARGET | 2016-2020 ACTUAL | 2014-2018 BASELINE | MET TARGET? | BETTER THAN BASELINE? | MET OR MADE SIGNIFICANT PROGRESS? |
|---|------------------|------------------|--------------------|-------------|-----------------------|-----------------------------------|
| Number of Fatalities | 0 | 3,188.6 | 2,971.8 | No | No | No |
| Rate of Fatalities | 0 | 1.462 | 1.392 | No | No | |
| Number of Serious Injuries | 0 | 18,979.6 | 20,736.8 | No | Yes | |
| Rate of Serious Injuries | 0 | 8.694 | 9.762 | No | Yes | |
| Number of Non-Motorized Fatalities and Serious Injuries | 0 | 3,189.0 | 3,308.4 | No | Yes | |

Table 1: Federal Performance Targets (2015-2019)

Based on this assessment and consistent with 23 U.S.C. 148(i), FHWA requested that FDOT develop and submit an HSIP Implementation Plan for FY 2023. Based on FHWA’s HSIP Implementation Plan Guidance, this plan must:

- Identify roadway features that constitute a hazard to road users;
- Identify highway safety improvement projects on the basis of crash experience, crash potential, or other data-supported means;
- Describe how HSIP funds will be allocated, including projects, activities, and strategies to be implemented;
- Describe how the proposed projects, activities, and strategies funded under the HSIP will allow Florida to make progress toward achieving the safety performance targets; and
- Describe the actions Florida will undertake to achieve the performance targets.

How We Are Doing

Florida’s traffic fatalities increased every year since 2018 and preliminary data suggests that fatalities in 2021 were an all-time high. Florida’s rate of fatalities per 100 million vehicle miles traveled (VMT), however, has been flat since 2015 before reaching a high of 1.60 fatalities per 100 million VMT in 2020. This fluctuating trend reflects the national trend of traffic fatalities and illustrates the need for new and innovative approaches to safety in Florida and across the United States.

In contrast to the trend in traffic fatalities, Florida’s serious injury trends are improving at a steadier pace. Between 2016 and 2020, the number of serious injuries in Florida declined by 27 percent while the serious injury rate (per 100 million VMT) declined by more than 25 percent. Florida will continue to build on the successes of reducing serious injuries while focusing on countermeasures to mitigate and eliminate the most severe crash situations and dangerous behaviors that lead to fatalities.



How We Got Here

Prior HSIP Implementation Plans have identified key activities Florida continues to prioritize to address rising fatalities and build on the progress made in reducing serious injuries. The accomplishments listed below represent critical ongoing activities that help strengthen Florida's safety foundation and create a framework for prioritizing and implementing safety activities in the future. Florida will continue to:

Fully Implement Florida's Strategic Highway Safety Plan

Florida's Strategic Highway Safety Plan (SHSP) is the state's safety roadmap, guiding traffic safety-related decision making for all of Florida. The 2021 SHSP recognizes the need to approach safety differently and embraces the Safe System approach by introducing the 4Is (Information Intelligence, Innovation, Insight Into Communities, and Investments and Policies) to strengthen that alignment. The 2021 SHSP also introduces Evolving Emphasis areas to create opportunities for new pilot projects and educational messaging on previously underrepresented safety challenges such as work zones, roadway transit, rail crossings, drowsy and ill driving, connected and automated vehicles, and micromobility.

Advance Safety Priorities

In Florida, nine out of every ten fatal crashes and three out of every four serious injury crashes involve either a lane departure, intersection, or pedestrian or bicyclist. FDOT recognized this trend and established an internal team of traffic safety champions to think outside the box and drive institutional change to move the needle toward zero fatalities and serious injuries. This internal team of safety champions led to several key changes within FDOT to better emphasize safety across the entire agency, including:

- Develop an action plan that outlines short-term safety actions.
- Develop an internal communication plan that strengthens FDOT's safety culture and illustrates how to deliver safety messaging to an internal FDOT audience.
- Identify priority safety projects and priorities based on proven safety countermeasures such as target speeds, leading pedestrian intervals, and complete streets.
- Establish FDOT District Safety Administrators to better coordinate safety activities and priorities at a regional level.
- Develop a Safety Data Integration Space to integrate available safety data and tools in a single platform with several, easy to use applications.

Enhance HSIP Funding Allocation Processes

FDOT enhanced coordination both internally (between FDOT Central Office and FDOT Districts) and externally (specifically, with MPOs and local governments) to help identify and advance HSIP projects that are anticipated to deliver a significant reduction in fatalities and serious injuries. FDOT provides technical assistance to local jurisdictions for the development of local road safety plans (LRSP) and uses those priorities to identify actionable projects eligible for HSIP funding.



Integrate Safety into Florida's Family of Plans

The Florida Transportation Plan (FTP) is a plan for all of Florida. It is the single overarching statewide plan that guides Florida's transportation future. The FTP Policy Element was adopted in 2020 and continues to prioritize safety, establishing Vision Zero as a top priority.

The Strategic Intermodal System (SIS) Policy Plan addresses Florida's high priority network of transportation facilities important to the state's economy and mobility. The SIS focuses the state's limited transportation resources on the facilities most significant for interregional, interstate, and international travel. The SIS Policy Plan was updated in 2022 and includes an expanded emphasis on safety, including recommendations to give greater priority to SIS projects that are anticipated to improve safety.

Each of Florida's modal plans (aviation, seaports, waterways, rail, motor carrier, spaceports) along with others like the Freight Mobility and Trade Plan, TSM&O Strategic Plan, and Electric Vehicle Infrastructure Master Plan consider safety as it relates to their specific topic, each with the perspective that zero fatalities and serious injuries is the only acceptable goal.

Support Florida's Traffic Safety Coalitions and Community Traffic Safety Teams

Florida manages implementation of much of its safety program through statewide coalitions that are organized based on the SHSP emphasis areas. This structure helped institutionalize safety throughout the state and ensure that all aspects of safety are addressed by a broad group of safety stakeholders at quarterly coalition meetings. Several of these traffic safety coalitions have conducted program assessments and updated their strategic plans following the update of the SHSP. The updated strategic plans give new direction to each coalition and ensure continued alignment with the SHSP, the Safe System approach, and national best practices.

Florida's Community Traffic Safety Teams (CTSTs) also provide consistent input into the highway safety planning process. CTSTs are locally based groups of highway safety advocates that are committed to solving traffic safety problems through a comprehensive, multi-jurisdictional, multi-disciplinary approach. Members include city, county, state, and occasionally federal agencies, as well as private industry representatives and local citizens. Community boundaries are determined by the organizations comprising a CTST: a city, an entire county, a portion of a county, multiple counties, or some other jurisdictional arrangement may be the basis for a CTST. CTSTs provide a valuable local perspective in identifying potential HSIP projects and monitoring the implementation of these projects.



HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP) OVERVIEW

The HSIP is a state-administered federal-aid highway program with the purpose of achieving a significant reduction in traffic fatalities and serious injuries on all public roads. Funding is apportioned to Florida per Fixing America's Surface Transportation (FAST) Act formulas as explained on the [FHWA website](#). In recent years, Florida received over \$150 million annually for the HSIP. Florida continues to allocate all available HSIP funding to safety projects.

Florida's HSIP Update Process

FDOT's State Safety Office works closely with FDOT Districts and regional and local traffic safety partners to update the HSIP annually. Historic, risk-based, and predictive safety analyses are conducted to identify appropriate proven countermeasures to reduce fatalities and serious injuries associated with Florida's SHSP emphasis areas, resulting in a list of projects that reflect the greatest needs and are anticipated to achieve the highest benefit. While these projects and the associated policies and standards may take years to implement, they are built on proven countermeasures for improving safety and addressing serious crash risks or safety problems identified through a data-driven process.

Florida's HSIP focuses on highway safety improvement projects that are:

- Low cost (typically under \$1,000,000);
- Shorter-term, with concept to construction in under three years;
- Implemented on a public road; and
- Address a problem known to result in fatalities and serious injuries.

The primary intent of the HSIP is to implement engineering safety improvements. However, the Safe System and the integrated approach for the SHSP covering the 4 Es and 4 Is of safety should be considered in developing HSIP projects. Safety studies should determine whether engineering is an effective way to improve safety at each location. Comprehensive strategies pairing engineering projects in the HSIP with supplementary efforts from other disciplines is a proven way to increase the effectiveness of safety improvements.

A list of projects representing the greatest safety needs anticipated to achieve the highest benefit is maintained by each District. Proposed HSIP projects are authorized and funded based on assessments of District-level and statewide needs. Beginning in fiscal year 2024, HSIP funding will be distributed among FDOT Districts based on statutory formula to allow the Districts to more clearly define funding levels for which they can better plan to select and fund projects. FDOT Central Office will continue to provide guidance and support. Strong coordination with MPOs, local governments, and community traffic safety teams by the Districts is encouraged to identify needs and potential projects. Figure 5 summarizes roles in the HSIP program.





Figure 2: HSIP Program Roles

HSIP Funding Eligibility and Use of Funding

23 U.S.C. 148(a) provides a sample listing of eligible highway safety improvement project types. Any project meeting all the following requirements is potentially eligible for funding in the HSIP:

- Implements safety infrastructure countermeasures or improves safety data collection, integration, and analysis such that HSIP stakeholders can better plan, implement, and evaluate highway safety improvement projects in the future;
- Consistent with an emphasis area, strategy, or activity identified in the Florida SHSP;
- Estimated benefit-cost ratio (BCR) of 1.0 or greater;
- Addresses a serious crash risk or safety problem identified through a data-driven process; and
- Likely to result in a reduction of fatalities and serious injuries.

[FDOT's HSIP Guidelines](#) provide detailed information on this data-driven process and funding eligibility.

Florida received an allocation of approximately \$177 million in HSIP funds for use during the 2020 state fiscal year from July 1, 2020 through June 30, 2021, and fully allocated those funds to safety projects. FDOT used these HSIP funds to complete projects, which address intersections, lane departure, pedestrian and bicyclist safety, and other programs representing the remaining SHSP emphasis areas. The emphasis areas (Lane Departures, Intersection, and Pedestrians and Bicyclists) account for 90 percent of fatal crashes and 75 percent of injury crashes and also account for 58 percent of HSIP funding. Florida projects to invest more than 15 percent of HSIP funds toward programs, strategies, and activities directly related to the state's pedestrians and bicyclists,



while many of the activities listed in remaining categories include countermeasures that benefit the state’s most vulnerable road users. Table 1 summarizes the estimated number of projects and funding goals by program, strategy, or activity.

Table 2: HSIP Summary Table

| Program, Strategy, or Activity | Estimated Funding | Percent of Total (approximate) |
|--------------------------------|------------------------|--------------------------------|
| Data | \$0.6 Million | 0.3% |
| Intersections | \$73.0 Million | 38.0% |
| Lane Departure | \$26.0 Million | 13.0% |
| Multiple | \$53.7 Million | 28.4% |
| Pedestrian and Bicyclist | \$33.8 Million | 17.8% |
| Rail Crossings | \$3.2 Thousand | 0.1% |
| Wrong-Way Driving | \$2.0 Million | 1.0% |
| Grand Total | \$189.0 Million | |

Florida’s HSIP allocated \$159.7 million in infrastructure investments on state-maintained roadways and \$22.1 million in infrastructure investments on local roadways. The remaining \$7.2 million, included supporting activities such as transportation safety planning, preliminary engineering, traffic engineering studies, transportation statistics, and public information or education. Figure 6 illustrates the breakdown of HSIP funding.

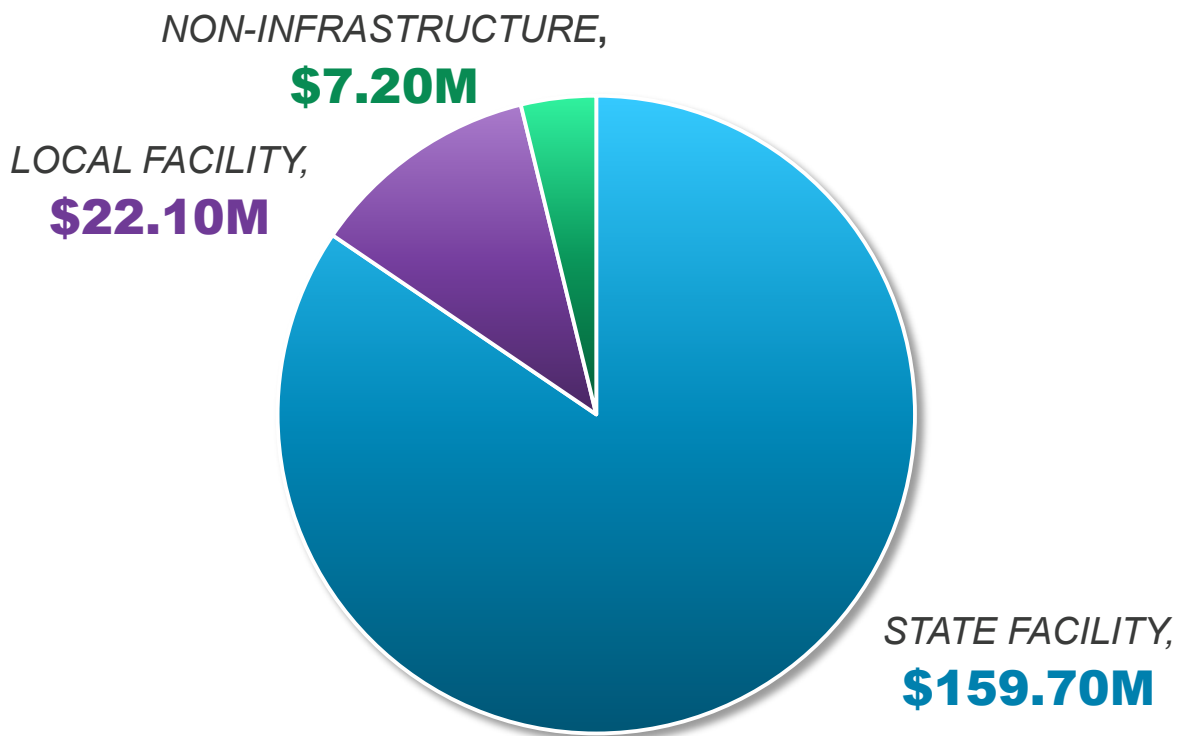


Figure 3: HSIP Funding Allocation

The latest list of HSIP projects can be found in the [HSIP Annual Report](#).



WHAT WE WILL DO NEXT

Florida recently updated existing efforts guiding safety planning and project implementation and established new approaches to prioritizing safety. FDOT will continue to program all HSIP funding to safety projects and continue to support the HSIP with additional safety investments through the FDOT Work Program and the state's committed safety partners.

Building on the success of ongoing HSIP and supporting safety investments, in FY 2023, Florida is committing to:

- Improve Partner Coordination and Align Safety Activities
- Maximize HSIP Infrastructure Investments
- Enhance Safety Data Systems and Analysis
- Implement Key Safety Countermeasures
- Focus Safety Marketing and Education on Target Audiences
- Capitalize on New and Existing Funding Opportunities

Improve Partner Coordination and Align Safety Activities

Collaboration with Florida's MPOs to Prioritize Safety Targets

FDOT continues to collaborate with Florida's 27 MPOs on setting and monitoring safety performance targets. To build on this target setting, FDOT continues to encourage Florida's MPOs to give greater attention to actionable steps toward improving safety within their planning, project identification, and project prioritization processes. FDOT is updating Florida Planning Emphasis: A Resource Guide to Notable Practices, which includes a range of both Florida and national best practice examples for improving safety, mobility, equity, and resilience. These examples are intended to provide Florida's MPOs with the tools needed to adapt and replicate effective solutions in their own regions.

FDOT in partnership with FHWA is also hosting an MPO Safety Peer Exchange in August 2022. This peer exchange will include representation from several MPOs from around the United States and many, if not all of Florida's MPOs. This will be an opportunity for Florida's MPOs to engage with their partners in other states and hear how they have addressed their most pressing challenges while demonstrating how Florida's MPOs have tackled challenges in their regions.

Local Road Safety Plans

A local road safety plan (LRSP) is a valuable tool providing a framework for identifying, analyzing, and prioritizing roadway safety improvements, specifically on local roads. The LRSP development process and content are tailored to local issues and needs and result in a list of challenges, risks, actions, and solutions aligned with the needs of a specific community or local roadway.



Because almost half of traffic fatalities and serious injuries occur on local roadways, LRSPs are critical in helping Florida achieve Target Zero. FDOT understands the importance of LRSPs and provides technical assistance to local governments to support their development. From 2020 through 2022, FDOT identified six rural counties in Florida and collaborated with them to develop County Road Safety Plans with a focus on addressing fatal and serious injury crashes in high-crash locations and in locations that present a high crash risk. Safety improvements that are low-cost and high-benefit were identified to maximize the reduction of fatal and serious injury crashes on local roadways.

FDOT is expanding the program of LRSPs to include counties in Florida with significant opportunities to improve traffic safety. Local representatives will manage their respective safety plans in coordination with FDOT district representatives.

Training Opportunities

FDOT uses its Florida Local Technical Assistance Program (LTAP) to improve the skills and increase the knowledge of local and transportation workforces on roadway safety via training and technical assistance. Florida LTAP provides no-cost safety-related trainings to all attendees. Within the three years of the program's creation, 50 new courses have been added with an average virtual attendance of 434 transportation professionals from across the nation. FDOT will continue to expand its LTAP to ensure transportation professionals from across the nation have access to this critical safety training.

Maximize HSIP Infrastructure Investments

Florida is improving on the existing three-prong approach to safety infrastructure funded by HSIP to optimize resources for maximum effectiveness.

Systemic Improvements

Incorporating safety countermeasures in various updates to engineering criteria give the ability to improve safety with every project in the FDOT Work Program. Criteria updates made in 2014 are now being reflected in recently completed construction projects.

Current High Crash Location Analysis

Florida conducts a statewide analysis on historic crash patterns to identify locations where the crash rate is highest, and gather requests for safety improvements from the public and safety partners. Safety analyses are conducted in those specific locations and improvements are prioritized and implemented through the HSIP process.

Systematic Improvements

Due to the random nature of crash types and locations over time, Florida conducts predictive and risk-based analysis to identify the top common roadway characteristics where fatal and serious crashes occur. This analysis informs a network screening to identify where these characteristics exist on Florida's roadway system. These locations are systematically improved at a statewide level and the predictive analysis and network screening is used to inform additional safety policy and criteria updates.



Enhance Safety Data Systems and Analysis

Predictive Analysis Tools

FDOT's System Analysis and Forecast Evaluation (SAFE) is a subprogram under the State Traffic Roadway and Intersection Data Evaluation System (STRIDES) 2 Zero program. SAFE STRIDES 2 Zero was established to leverage FDOT data, roadway characteristics, and crash data to screen roadway sites for improving safety and mobility. This program uses predictive analytics for business decisions on roadway and operational improvement projects while tracking and documenting the return on investment. Phase I of the SAFE subprogram included the development of a network screening tool that strictly follows the network screening guidelines in the Highway Safety Manual and focused on signalized intersections on the State Highway System. Phase II has started and will expand that analysis to include roadway segments and non-signalized intersections.

This enhanced predictive network screening program relies on a quantitative evaluation of Florida-specific crash models and analytical tools. Eventually, FDOT will be able to rely on this network screening methodology to identify potential high-crash locations before they become a safety concern and apply life-saving countermeasures.

Improved Data Integration

FDOT continues to make progress toward integrating the state's numerous traffic safety data resources and making them widely available for both FDOT staff and the state's transportation partners. The FDOT Crash Analysis and Reporting (CAR) System is undergoing a rewrite to improve the accuracy of crash locations in the Signal Four Analytics Database, the statewide interactive web-based geospatial crash analytical tool developed and hosted by the University of Florida. It will consolidate data and support the integration of the street network used by the Safety Office and the University of Florida. Once the rewrite is complete, CAR and Signal Four Analytics will be seamlessly integrated, provided improved data quality and available for all traffic safety partners.

FDOT is building on the Safety Data Integration Space (SDIS) as an internal web tool that collects Florida's various data analyses, evaluations, tools, and products and provides access to them in a one-stop-shop for the state's traffic data needs. The SDIS is a critical tool for improving data availability and reducing unnecessary redundancy and gives FDOT a range of resources and tools to better identify projects for prioritization in the HSIP process. Eventually, the SDIS will be available for Florida's MPOs, local governments, and other safety partners to further improve consistency and support the state's data-driven decision making process.

FDOT continues to integrate the linear reference system for state roads, roadway data elements, and commercial geospatial data into the All Roads Base Map (ARBM) and Florida All Roads Intersections and Streets (FLARIS). Traffic safety analyses, location verification of crashes, and strategic planning for systematic safety improvements across all public roads (i.e., state and local) are enhanced by the ARBM and FLARIS. FDOT is refining the development processes to achieve annual update cycles with model inventory of roadway elements (MIRE) fundamental data elements (FDE).

FDOT is further refining and innovating to focus on the most significant factors accounting for the most fatal or serious injuries. FDOT applies root cause analysis with the Pareto principle for outcomes, whereby nearly 80



percent of consequences come from 20 percent of causes. This practice helps to concentrate resources, countermeasures, and improvement initiatives on factors with the most significant impact on traffic safety.

Safety Related Research

Florida continues to search for new innovations and establish best practices to implement safety countermeasures. Research and pilot applications have led to the discovery of many of Florida's recent safety best practices and improvement of already effective countermeasures. Some examples of ongoing safety research include the application of crash prediction methodologies to better predict where crashes could occur and address them before they happen; evaluation of the effectiveness of rumble strips based on FDOT context-based design criteria; development of best practice guide and toolbox for leading bicycle interval implementation; application of virtual reality to better visualize the impact of speed management countermeasures on a corridor; and the development of roadway corridor safety approach to identify high-risk corridors and countermeasures to proven fatalities and serious injuries on those corridors.

Implement Key Safety Countermeasures

Target Speeds

In July 2021, revisions to the FDOT Design Manual (FDM) and Project Development and Environment Manual (PD&E Manual) were introduced to implement target speeds on projects where a design speed is required. These revisions include new requirements for multidisciplinary participation in the target speed selection process. The use of target speed will be used to influence design speed selection and is based on definitions and best practices outlined in the FDOT Context Sensitive Classification Guide and the FDOT Speed Zoning Manual.

FDOT understands that pedestrians and bicyclists have a much higher risk of being seriously injured or killed at speeds above 35 miles per hour, yet until this change in the FDM, three of the five context classifications where pedestrians and bicyclists were most often present include a range of speeds in excess of 35 miles per hour. Aligning target speeds with context classification has helped FDOT achieve a better understanding of how to appropriately deliver projects and implement countermeasures that ensure design speeds reflect the desired target speed.

Leading Pedestrian Intervals

Leading Pedestrian Intervals (LPIs) are used to aid pedestrians crossing intersections by delaying the green interval from timing at the beginning of the walk interval. This advanced walk time provides a buffer to allow pedestrians a "head start" to traverse across an intersection prior to vehicles entering the green interval. LPIs are being introduced at intersection locations with high occurrences of fatal and serious injury crashes involving pedestrians. LPIs allow pedestrians to better establish their presence within the crosswalk and provide increased visibility and reduced conflicts between pedestrians and turning vehicles.

Enhanced Complete Streets Resources

FDOT adopted an official complete streets policy in 2014 and has continued to refine and enhance roadway design practices since then to better align with community context. In 2021, FDOT completely redesigned their



complete streets website and introduced additional tools to better communicate the design opportunities and safety benefits of complete streets design and countermeasures.

In 2022, FDOT updated the Context Classification Guide to further emphasize consideration for all roadway users, regardless of age and ability, and reaffirm the state's commitment to Target Zero. The Context Classification Guide illustrates the importance of considering the needs of all road users and the community at the earliest stages of the planning and design processes and applying solutions that align with those needs.

More information is available at www.flcompletestreets.com.

Rumble Strips to Prevent Lane Departures on Rural Roadways

Lane departures are among the most common contributing factors to fatal and serious injury crashes on Florida's roadways, and especially on Florida's rural roadways. Florida has identified low-cost rumble strips as a quickly deployable solution that can provide up to 20 percent reduction in lane departure crashes. This solution has an extremely high cost-benefit ratio and can be easily integrated into nearly all resurfacing projects. Florida is prioritizing implementation on flush shoulder corridors where the posted speed limit is 50 miles per hour or greater. FDOT has started development on an implementation plan that includes streamlined standard plans, a list of priority roadway corridors, and evaluation and prioritization criteria so this solution can be easily and consistently implemented at the FDOT District level.

Focus Safety Marketing and Education on Target Audiences

Target Zero Campaign

Target Zero is Florida's statewide initiative to reduce traffic fatalities and serious injuries with an ultimate goal of zero. On average, eight people are killed and 49 are seriously injured on Florida's roads every day. In the majority of those serious and fatal crashes, driver behavior is a contributing factor. This initiative focuses on connecting, interacting, and designing our transportation system to specifically relate to those road users that are most involved in crashes that resulted in serious injuries and fatalities.

NHTSA reports the vast majority of crashes nationally involve driver error as a contributing factor, including recognition errors, decision errors, and performance and non-performance errors. Previous safety campaigns in Florida have focused on educating the public about laws and rules, however they have been unsuccessful in changing behaviors. Conducting focus groups with drivers around the state revealed the traffic safety challenges in Florida are actually due to larger overarching societal challenges which lead to dangerous behaviors behind the wheel. For example, the need for constant connection leads to distraction, making up time on the road, and thrill-seeking leads to speeding, and stress and lack of empathy leads to aggression. Florida is taking education efforts to the next level by employing a human-factors marketing approach to address these life challenges and influence safer driving behavior to prevent crashes before they occur. This supports the 'Safe Road Users' component of our Safe System Approach to implementing Florida's Strategic Highway Safety Plan. Utilizing human-factors research and the results of data analysis, the paid, earned, shared, and owned media and marketing efforts are focusing on specific target audiences and their interests, in specific regions, regarding specific behaviors, and are accompanied by a robust performance evaluation plan.



FDOT will continue to align and commit HSIP, NHTSA, and other available resources to the Target Zero Campaign, building an immediately recognizable brand in Florida that will eventually become the umbrella for all of Florida's traffic safety messaging, like Click It or Ticket and Drive Sober or Get Pulled Over. More information about Target Zero can be found on the [Target Zero website](#).

Targeted Education through Geofencing

FDOT has begun to incorporate geofencing into their public engagement toolbox to more effectively deliver safety education messaging to the right audience. Geofencing allows FDOT to connect with regular users of a specific transportation facility, in some cases, down to a specific intersection, to deliver important information about upcoming construction activities or new safety countermeasures. Many of Florida's education and outreach efforts rely on geofencing to target messaging to specific audiences or locations, including Target Zero.

FDOT District 5, for example, has relied on geofencing and targeted social media marketing strategies to deliver information on roundabouts to road users in an area where roundabout construction was proposed. This allowed FDOT to create short, informative social media posts about the use, safety, and efficiency benefits of a roundabout and ensure they were delivered directly to the people most likely to use them.

Florida also partners with local law enforcement to coordinate high visibility enforcement activity with targeted education through geofencing to maximize resources while addressing key safety challenges in a specific location.

Capitalize on New and Existing Funding Opportunities

Transportation Alternatives Program and Safe Routes to School (SRTS)

The Transportation Alternatives Program (TAP) is intended to fund a variety of small-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. The Bipartisan Infrastructure Law (BIL) increased TAP funding by 60 percent to allow states to better address bicycle and pedestrian projects, Safe Routes to Schools programs, and recreational trails.

Strategic Intermodal System (SIS) Safety Emphasis

Among the SIS Policy Plan's five focus areas for implementation strategies is a commitment to a vision of zero fatalities and serious injuries on SIS facilities. To achieve this vision the SIS will change its needs and prioritization process to have a greater emphasis on safety. In addition to a emphasizing safety in capacity project prioritization, the SIS will further increase coordination of safety feature inclusion in SIS capacity and enhancement projects. SHSP emphasis areas overrepresented on the SIS such as lane departure crashes and commercial vehicle crashes will be addressed in SIS investments through engineering and operational solutions. Lastly, the SIS will provide safe alternatives to highways for interregional travel through investments in passenger rail and transit.



The SIS Policy Plan implementation will further the commitment to safety through increased planning and collaboration to support the aggressive deployment of in-vehicle and roadside safety technologies, and working with partners to identify targeted strategies to improve safety on SIS facilities.

Engaging Local Stakeholders on Federal Grant Opportunities

One of the greatest challenges all states face revolves around the allocation and management of limited resources among competing priorities and Florida is no exception. The Bipartisan Infrastructure Law (BIL) is the reauthorization of the federal surface transportation act and was signed in November 2021. BIL extends and increases formula funding for transportation while increasing potential grant funds in new and existing grant opportunities.

Existing programs, such as HSIP, HSP, Transportation Alternatives Program, and Safe Routes to School, are beneficiaries of additional funding availability and flexibility while new programs such as Safe Streets and Roads for All Grant program, will present additional opportunities to deliver measurable safety improvements on Florida's transportation system. FDOT is committed to providing technical assistance to regional and local agencies seeking support in applying to these new and updated grant opportunities.

TRACKING PROGRESS

Federal Performance Tracking and Reporting

Under 23 CFR Part 490, each state is required to establish annual safety performance targets for five measures:

- Number of fatalities;
- Number of serious injuries;
- Fatality rate (per 100 million VMT);
- Serious injury rate (per 100 million VMT); and
- Number of non-motorized fatalities and serious injuries.

FHWA requires states to analyze safety performance targets using five-year rolling averages to support the forecasting of long-term trends. This methodology calculates the average number of fatalities occurring over a five-year period, considering data from 2011-2015 to report the performance metric for 2015, for example.

While Florida has not met or made significant progress toward meeting the target of zero for each of the federally identified performance targets, the state remains committed to these targets and will continue to prioritize projects that advance the vision of zero traffic fatalities and serious injuries. Florida acknowledges that zero is a difficult target but when considering that each fatality or serious injury on the state's transportation system involves someone's husband, wife, father, mother, brother, sister, son, daughter, friend, co-worker, or business partner – it is clear that zero is the only target Florida can strive to achieve.

The following figures show Florida data for each of these five measures between 2016 and 2020.



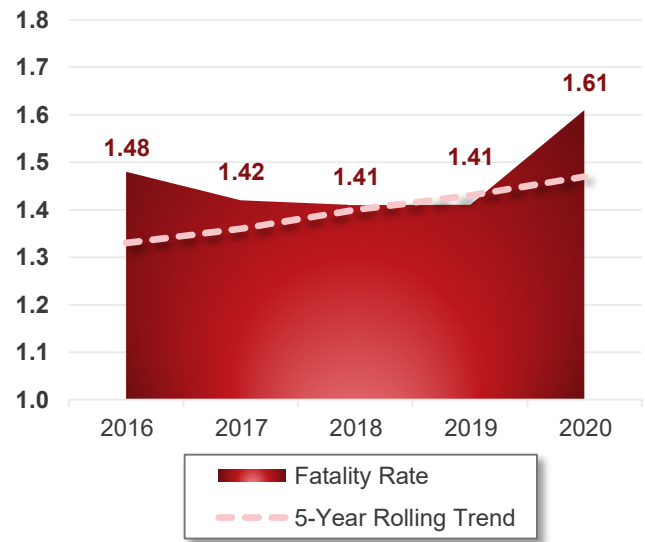
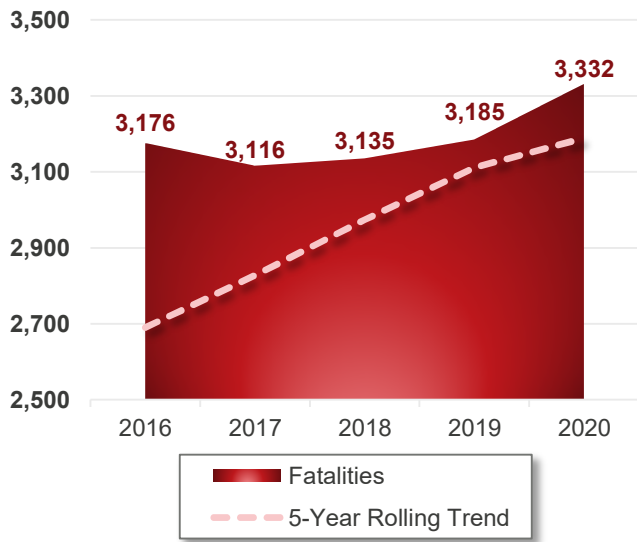


Figure 4: Florida's Total Annual Fatalities (2016-2020)

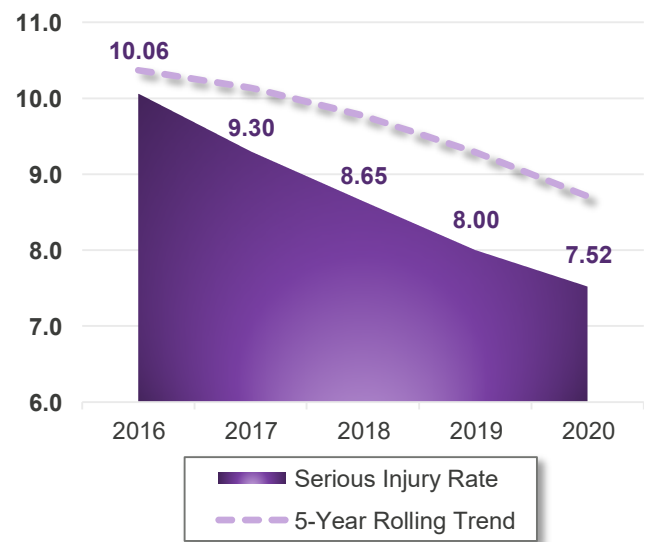
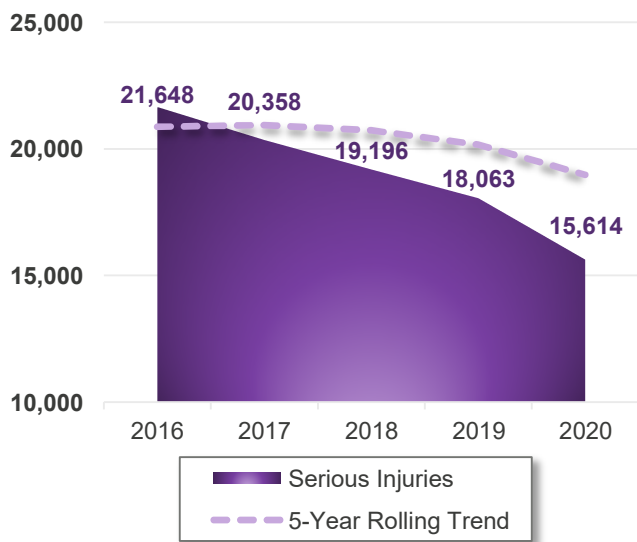


Figure 5: Florida's Total Annual Serious Injuries (2016-2020)



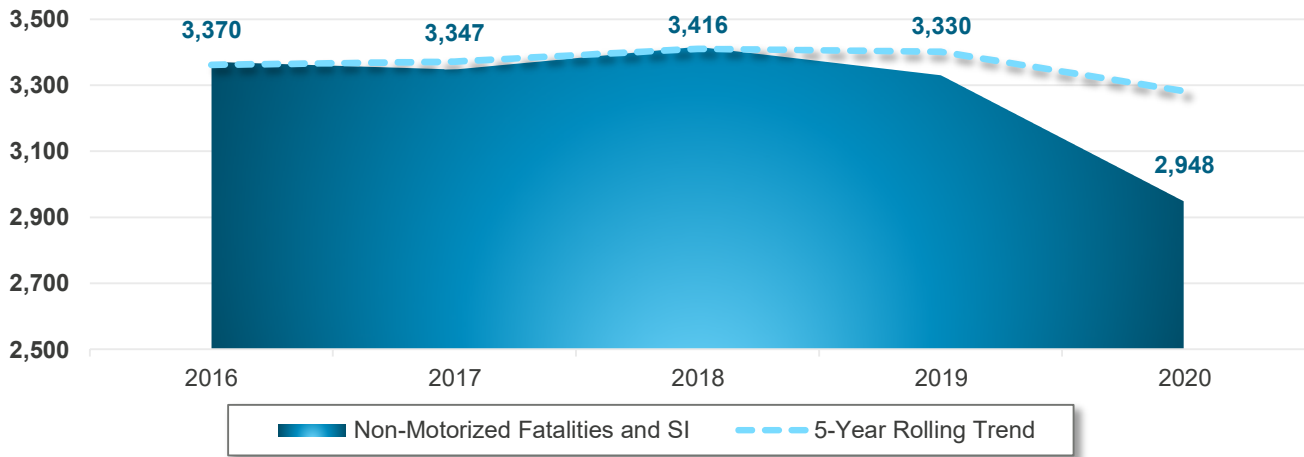


Figure 6: Florida's Non-motorized Fatalities and Serious Injuries (2016-2020)

Evaluating Effectiveness of Safety Investments

Florida is analyzing and evaluating the effectiveness of safety investments by linking the HSIP Work Program to the state's traffic crash data.

Figure 7 is a sample snapshot of FDOT's 2017 construction projects funded by HSIP. Florida experienced a 37 percent reduction in fatalities and a 35 percent reduction in serious injuries specifically in those corridors when comparing 3 years of before and after crash data.

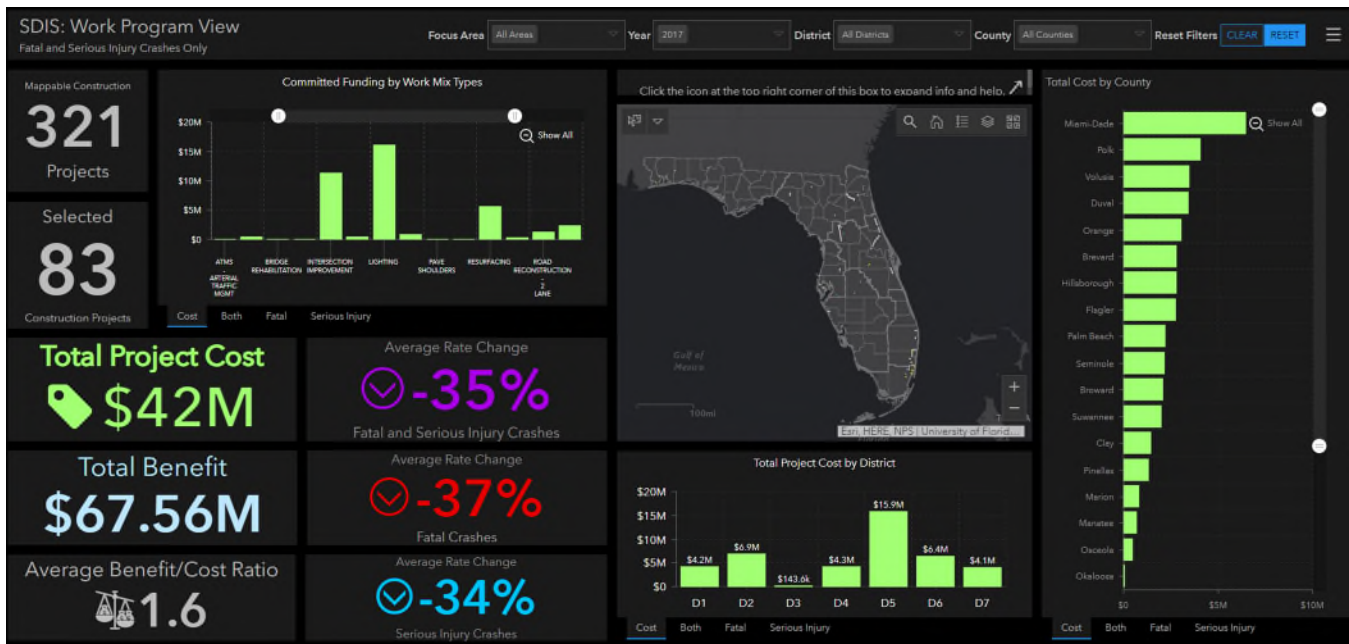


Figure 7: Summary of HSIP Investment Monitoring

As statewide systematic projects are programmed, work program codes are used to track those investments so the effectiveness of that specific countermeasure can be monitored.



Figure 8 is a sample snapshot of Florida’s statewide systematic rail crossing safety countermeasure implementation for the additional pavement markings to denote the foul zone approaching the tracks. Not only does Florida track the status of implementation, changes in vehicles observed stopping within that zone are also tracked. Eventually, changes in the number of crashes occurring in these zones will be able to be monitored.

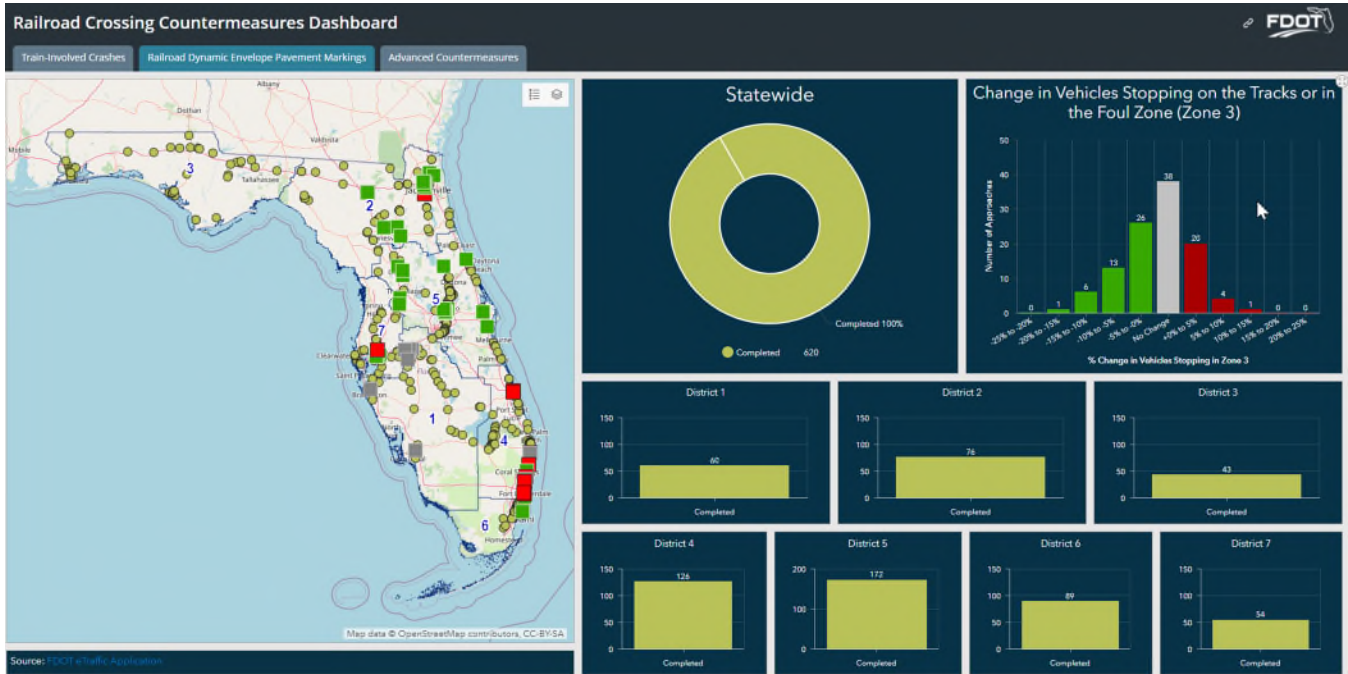


Figure 8: Rail Crossing Countermeasure Monitoring

