WISCONSIN

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2022 ANNUAL REPORT

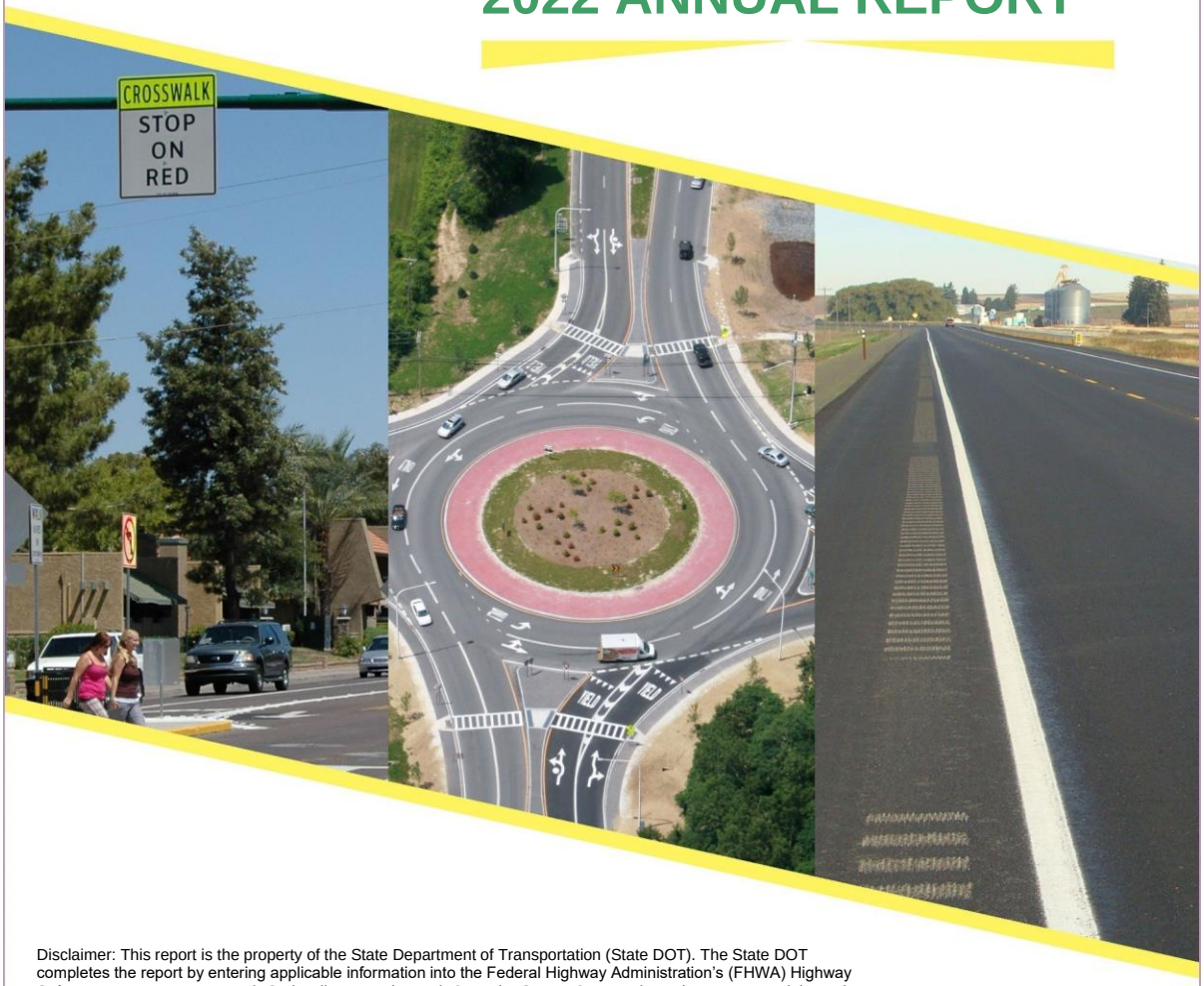

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Photo source: Federal Highway Administration

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Disclaimer

Protection of Data from Discovery Admission into Evidence

23 U.S.C. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section[HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.”

23 U.S.C. 407 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

The following report outlines the details of projects obligated in state fiscal year 2022 for Wisconsin's Highway Safety Improvement Program (HSIP). Details of the report include:

- Program Structure
  - projects are identified by state DOT staff on the state-owned system and by local government staff on the local system. All candidate projects must compile crash data and develop a proposed treatment strategy as part of a competitive application process.
- Project Implementation
  - WisDOT manages the HSIP on a state fiscal year (SFY) basis. There were 71 projects with HSIP funds obligated to them in SFY 2022 totaling $44,851,799.15 in federal funds.
- Safety Performance
  - Wisconsin has seen an increase in crashes across all five federal safety performance measure areas: fatalities, fatality rate, serious injuries, serious injury rate, and number of non-motorized fatalities and serious injuries.
  - WisDOT continues to establish aspirational safety targets in an effort to increase safety on all public roads.
- Evaluation
  - Program effectiveness is evaluated using benefit/cost ratio and crash data analysis. Previous HSIP projects and countermeasures are evaluated to help identify any programmatic changes needed.
- Compliance Assessment
  - The current Strategic Highway Safety Plan is undergoing an update and should be completed before the next reporting cycle. All aspects of federal data reporting and collecting requirements are being monitored for compliance.

Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

Program Structure

Program Administration

Describe the general structure of the HSIP in the State.

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. Projects are identified by statewide screenings and DOT regional safety engineers on the state-owned system and by local government staff on the local system. All candidate projects must compile crash data and develop a proposed treatment strategy as part of a competitive application process. The applications are considered through a peer review process that involves statewide and regional safety engineering staff, as well as HSIP program management staff.

Where is HSIP staff located within the State DOT?

Other-Programming

How are HSIP funds allocated in a State?

- Central Office via Statewide Competitive Application Process

Describe how local and tribal roads are addressed as part of HSIP.

HSIP applications from local and tribal governments are solicited by the WisDOT Regions as part of the regular HSIP Program. All HSIP applications derived from local governments are selected and submitted voluntarily by local governments. Projects on the local system or sponsored by local or tribal governments must meet the same requirements and follow the same process as HSIP applications submitted by WisDOT Regions for improvements on the State Trunk Network.

In addition, Wisconsin has continued the High Risk Rural Roads Program (HRRRP) despite its formal elimination in MAP-21. Wisconsin has developed a statewide data analysis methodology which identifies county rural roads with run-off-road non-intersection crash issues. Counties with such corridors are offered a field review of the corridor, at no cost, that identifies potential treatments and are invited to apply for HSIP funding to implement some or all of the identified treatment options. A primary goal of the program is to install low-cost safety treatments on these roadways to reduce fatal and serious injury crashes as quickly as possible. Evaluating and addressing safety concerns at a corridor level on these roadways enables more cost-effective investments in safety treatments that might otherwise not compete well for federal safety funding.

Identify which internal partners (e.g., State departments of transportation (DOTs) Bureaus, Divisions) are involved with HSIP planning.

- Design
- Districts/Regions
- Operations
- Planning
- Traffic Engineering/Safety
- Other-Division of State Patrol
- Other-Division of Motor Vehicles

Describe coordination with internal partners.

The HSIP Program is managed by WisDOT's Division of Transportation Investment Management (DTIM) and the Bureau of State of Highway Programs (BSHP). DTIM/BSHP makes all final application approvals or denials and reviews/approves project change orders or cost increase requests. However, DTIM/BSHP coordinates its efforts with several internal partners that both directly and indirectly influence the decision-making process. Below is a summary of these partners and their role in the program.

- Division of Motor Vehicles (DMV): DMV receives, edits, and maintains all law enforcement crash report files.

- Traffic Safety Council (TSC): The TSC is comprised of representatives from Division of Transportation System Development (DTSD), DTIM, DMV, Division of State Patrol (DSP), and various Executive Offices within WisDOT. Among this group's responsibilities is developing and maintaining the Wisconsin Strategic Highway Safety Plan (SHSP), which helps guide the safety efforts of the HSIP Program.

- Traffic Safety Engineering Workgroup (TSEWG): TSEWG is comprised of the State HSIP Manager, State Traffic Safety Engineer, and the Regional Traffic Safety Engineers. In some cases, the Regional HSIP Coordinators also participate. This group identifies and evaluates potential safety initiatives both within and outside of the HSIP Program, provides peer support, and reviews proposed HSIP projects. After a group evaluation, a recommendation to approve or not approve is forwarded to the State HSIP Manager for final review.

- State Project Oversight Engineers: The State Project Oversight Engineers are a critical component of the joint process with the TSEWG for application review and approval. The DTSD State Project Oversight Engineers, Regional Traffic Safety Engineers, the State Traffic Safety Engineer, and the State HSIP Coordinator provide a recommendation of approval or disapproval of HSIP funding after a comprehensive peer review facilitated by the State HSIP Manager. Each Region has one Project Oversight Engineer. State Project Oversight Engineers only review applications originating from the Region in which they are assigned. This consensus approval or disapproval is advisory to the DTIM/BSHP.

Identify which external partners are involved with HSIP planning.

- Academia/University
- FHWA
- Local Government Agency
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)

Describe coordination with external partners.

The HSIP is fully coordinated and integrated with the work of other organizations, associations, and stakeholders (e.g., law enforcement, academia, local governments, Metropolitan Planning Organizations) that

play a role in reducing fatalities and serious injuries. One of the basic foundations of the HSIP is the direct linkage between the data-driven priorities established in the Strategic Highway Safety Plan (SHSP) and the identification, development and implementation of HSIP projects. Local and regional governments alike contribute towards achieving the goals and objectives of the SHSP. More specifically, WisDOT encourages local jurisdictions to develop and implement HSIP projects that address priority safety issues on locally owned roadways . These projects are typically completed through the state let process, but can be implemented by local forces in limited situations.

Program Methodology

Does the State have an HSIP manual or similar that clearly describes HSIP planning, implementation and evaluation processes?

Yes

The WisDOT HSIP manual is updated annually. The 2022 update was not finalized at the time of this reporting. An updated version of the manual can be made available once finalized.

Select the programs that are administered under the HSIP.

- Horizontal Curve
- HRRR
- Intersection
- Median Barrier

Program: Horizontal Curve

Date of Program Methodology:7/11/2022

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes

- All crashes

Exposure

- Volume
- Lane miles

Roadway

- Horizontal curvature

What project identification methodology was used for this program?

- Crash frequency
- Excess proportions of specific crash types
- Other-benefit cost ratio

Are local roads (non-state owned and operated) included or addressed in this program?

No

Are local road projects identified using the same methodology as state roads?

How are projects under this program advanced for implementation?

- Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Ranking based on B/C:2
Available funding:1

Program: HRRR

Date of Program Methodology:7/1/2018

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• Other-Run off road		• Functional classification

What project identification methodology was used for this program?

- Crash frequency
- Crash rate

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

How are projects under this program advanced for implementation?

- selection committee

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Program: Intersection

Date of Program Methodology:7/11/2022

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Traffic • Volume	

What project identification methodology was used for this program?

- Excess expected crash frequency using SPFs
- Level of service of safety (LOSS)

Are local roads (non-state owned and operated) included or addressed in this program?

No

Are local road projects identified using the same methodology as state roads?

How are projects under this program advanced for implementation?

- Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must

equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Ranking based on B/C:1
Available funding:2

Program: Median Barrier

Date of Program Methodology:7/1/2021

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes

- All crashes
- Other-All CMC

Exposure

- Other-Centerline miles

Roadway

- Functional classification

What project identification methodology was used for this program?

- Crash frequency

Are local roads (non-state owned and operated) included or addressed in this program?

No

Are local road projects identified using the same methodology as state roads?

How are projects under this program advanced for implementation?

- Other-Non-competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

Available funding:1

What percentage of HSIP funds address systemic improvements?

3

HSIP funds are used to address which of the following systemic improvements?

- Cable Median Barriers
- Other-High Risk Rural Roads

What process is used to identify potential countermeasures?

- Crash data analysis
- Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)
- Engineering Study
- Road Safety Assessment
- Other-County Traffic Safety Commission recommendations

Does the State HSIP consider connected vehicles and ITS technologies?

No

Does the State use the Highway Safety Manual to support HSIP efforts?

Yes

Please describe how the State uses the HSM to support HSIP efforts.

HSIP Project Prioritization
Wisconsin evaluates potential HSIP projects by comparing the estimated crash reduction benefits expected from the project and the cost of that project. Crash reduction benefits are estimated by multiplying up to two crash modification factors (CMF) by 5-years of observed crash data. CMFs and target crashes are identified by the safety analyst and a spreadsheet tool is used to calculate the estimated crash reduction benefits. The spreadsheet tool incorporates the WisDOT CMF Table and logic described in our statewide policy described at the link below.

http://wisconsindot.gov/dtsdManuals/traffic-ops/manuals-and-standards/teops/12-03.pdf

HSIP Safety Effectiveness Evaluations
Wisconsin evaluates the effectiveness of all HSIP projects that were prioritized based on crash history. The Empirical-Bayes Before/After Safety Evaluation method, described in chapter 9 of the Highway Safety Manual, is used for these safety effectiveness evaluations. No evaluations are completed for systemic safety projects within our HSIP.

Describe program methodology practices that have changed since the last reporting period.

Wisconsin's HSIP continues to utilize the Intersection Network Screening tool that utilizes safety performance functions (SPFs).

SPFs are equations that predict crash frequency and severity as a function of traffic volume and roadway characteristics. WisDOT developed network screening level SPFs for multiple intersection types using Wisconsin specific data. The SPFs are used to determine performance measures. Level of Service of Safety (LOSS) with Empirical Bayes (EB) adjustment was selected to set the performance threshold for when to flag intersections as Sites of Promise. Potential for Safety Improvement (PSI), also called Excess Expected Average Crash Frequency with EB Adjustment was selected to provide context on how the intersection is performing compared to similar sites. These performance measures were selected based on their ability to account for:

· regression to the mean (RTM) bias

· changes in traffic volume

· the nonlinear relationship between crash frequency and traffic volume

The intersection network screening tool is used to identify potential locations for HSIP applications. One screening change since the last reporting period was to establish a separate eligibility criteria for urban versus rural locations. This change will allow a better opportunity for funding by comparing locations with similar characteristics. Once those locations are identified via the tool, the standard HSIP application process is followed.

Describe other aspects of the HSIP methodology on which the State would like to elaborate.

A key component in the development of the HSIP is the Project Evaluation Factor (PEF). The PEF is a measurement that is used to evaluate and compare proposed projects. It provides a comparison of the estimated crash reduction potential of a proposed improvement with the overall cost of the project. Although it has similarities to a benefit/cost analysis, it does not include all of the elements of a traditional benefit/cost analysis tool for ranking the relative merits of a group of projects, and should not be compared to a benefit/cost analysis.

An Excel-based program is used to perform a safety project analysis and computes the PEF. The following provides a general overview of several key elements of the PEF:

• All costs associated with the project (design, utilities, real estate, construction, etc.) must be included in the PEF calculation, regardless of whether HSIP funds are requested for all elements of the project. Cost estimates must be in current year dollars.

• The analysis requires crash data from the most recent 5-year period for which crash information is available. Ideally, the analysis would include crash data from the most recent calendar year. For example, an analysis submitted in 2020 would include crash information from the 2015-2019 period. However, given that: (a) it can take several months after the end of a calendar year for the Department to finalize crash information and integrate the crash information into departmental datasets; and (b) it can take several months for a safety proposal to be developed and scoped, the use of an additional, older year of crash data is allowed. For example, an analysis submitted in calendar year 2020 may use crash data from either the 2015-2019 period or the 2014-2018 period.

For local projects, it is the responsibility of the project sponsor to compile and provide the required crash data to the regional office for the PEF evaluation. WisDOT facilitates this process by providing funding to the University of Wisconsin Traffic Operations and Safety Laboratory (UW TOPS Lab) to make this data available to local governments.

• Although Wisconsin designs solutions to reduce all crashes, a number of targeted engineering, educational and enforcement efforts have been implemented with the defined goal of reducing crashes involving serious injuries and fatalities. Because of this focus on reducing serious injuries and fatalities, the PEF scoring mechanism assigns higher values to these crash types.

• The current values used within the PEF tool to calculate the potential crash reduction benefits of a safety improvement are influenced by the Highway Safety Manual (HSM) developed by the American Association of State Highway and Transportation Officials (AASHTO).

• Standardized crash reduction factors are included in the Excel tool for a wide range of safety improvements. These factors are based on national safety research and are regularly updated as new research becomes available.

• Projects generally require a PEF of 1.0 or greater for approval. However, the HSIP Review Committee acknowledges the PEF contains many variables and that sometimes additional expense is needed to sufficiently address a safety issue. As such, the HSIP Review Committee may consider applications with a PEF greater than or equal to 0.9 for approval. Projects with a PEF less than 0.9 will not be approved.

• Projects treating locations identified on the annual "Locations of Interest Report" (LOIR) and Intersection Network Screening list may be approved with a PEF of 0.50 or greater. LOIR and Intersection Network Screening locations with a PEF less than 0.5 will not be approved.

• The PEF requirement is generally waived for projects identified through a statewide safety analysis. The PEF requirement is currently waived for:

o High Risk Rural Roads Program projects

o Crossover Median Crash Initiative projects

o Beam Guard Initiative projects

o Shoulder Rumble Strip Initiative

o Horizontal Curve Initiative

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

Enter the programmed and obligated funding for each applicable funding category.

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$44,851,799	$44,851,799	100%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$6,097,590	$6,097,590	100%
Totals	$50,949,389	$50,949,389	100%

Actual programmed amount is a dynamic value due to project change order requests, schedule changes, etc. WisDOT monitors the HSIP to ensure an adequate amount of funds are programmed each fiscal year.

For SFY 2022, there were $3,940,458.44 in state funds and $2,157,131.52 in local funds obligated to the program.

How much funding is programmed to local (non-state owned and operated) or tribal safety projects?

$10,333,245

How much funding is obligated to local or tribal safety projects?

$10,333,245

There were a total of 34 local projects for SFY 2022.

Federal share obligated = $10,333,244.71

Local share obligated = $1,929,000.16

How much funding is programmed to non-infrastructure safety projects?

$90,000

How much funding is obligated to non-infrastructure safety projects?

$90,000

There was one non-infrastructure project in SFY 2022.

Federal share = $90,000

State share = $10,000

How much funding was transferred in to the HSIP from other core program areas during the reporting period under 23 U.S.C. 126?

$0

How much funding was transferred out of the HSIP to other core program areas during the reporting period under 23 U.S.C. 126?

$17,000,000

Discuss impediments to obligating HSIP funds and plans to overcome this challenge in the future.

Project delays can make it challenging to fully utilize HSIP funding. Such delays occur for a variety of reasons, including changes in project scope during the design process (which triggers a required re-evaluation of the project), changes in associated projects that are linked to the HSIP project, and unforeseen issues arising during the project development process. WisDOT continues to work on developing a list of projects that could be advanced from later program years into earlier program years to ensure that HSIP funding is fully utilized even if projects are delayed or fall out of the program.

General Listing of Projects

List the projects obligated using HSIP funds for the reporting period.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
1000-99-78	Miscellaneous	Data collection	0	Miles	$90000	$100000	HSIP (23 U.S.C. 148)	N/A	N/A	0		HRRRP support ID	HRRRP Support	Data	
1020-00-14	Roadside	Barrier – cable	1.51	Miles	$74160	$82400	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	0		State Highway Agency	Systemic	Lane Departure	
1020-02-15	Intersection traffic control	Modify traffic signal timing – left-turn phasing	0.043	Miles	$46443	$51603	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		City or Municipal Highway Agency	Spot	Lane Departure	
1050-00-10	Roadside	Barrier – cable	4.39	Miles	$76941	$85490	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	0		State Highway Agency	Systemic	Lane Departure	
1058-23-02	Access management	Change in access - close or restrict existing access	0.084	Miles	$392135	$435706	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	9,090		State Highway Agency	Spot	Intersections	
1190-01-16	Roadside	Barrier – cable	1.32	Miles	$27810	$30900	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	0		State Highway Agency	Systemic	Lane Departure	
1198-00-09	Roadway	Pavement surface – high friction surface	0.16	Miles	$57600	$64000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0		State Highway Agency	Spot	Lane Departure	
1400-01-70	Roadway	Rumble strips – edge or shoulder	12.171	Miles	$149739	$166376	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,377		State Highway Agency	Spot	Lane Departure	
1400-01-73	Roadway	Rumble strips – edge or shoulder	10.271	Miles	$323487	$359430	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,168		State Highway Agency	Spot	Lane Departure	
1410-01-71	Intersection traffic control	Modify control – Modern Roundabout	0.39	Miles	$1277010	$1418900	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	8,256		State Highway Agency	Spot	Intersections	
1440-40-71	Intersection geometry	Add/modify auxiliary lanes	0.089	Miles	$743906	$826562	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency	Spot	Lane Departure	
1480-29-71	Intersection geometry	Innovative Intersection (e.g. MUT, RCUT, QR)	0.73	Miles	$1386900	$1541000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0		State Highway Agency	Spot	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
1530-00-11	Alignment	Vertical alignment or elevation change	0.05	Miles	$67500	$75000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Spot	Intersections	
1550-04-82	Roadway	Rumble strips – edge or shoulder	7.002	Miles	$248814	$276460	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	5,254		State Highway Agency	Spot	Lane Departure	
1570-05-63	Roadway	Rumble strips – edge or shoulder	8.3	Miles	$354695	$394105	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,509		State Highway Agency	Spot	Lane Departure	
1706-01-73	Roadway	Rumble strips – edge or shoulder	9.69	Miles	$212447	$236052	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	5,001		State Highway Agency	Spot	Lane Departure	
2050-12-00	Intersection traffic control	Modify traffic signal – add additional signal heads	0.029	Miles	$83430	$92700	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		County Highway Agency	Spot	Intersections	
2160-05-71	Intersection traffic control	Modify traffic signal – add additional signal heads	0.008	Miles	$389648	$432942	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Intersections	
2305-02-00	Intersection traffic control	Modify traffic signal – add additional signal heads	0.023	Miles	$27810	$30900	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		County Highway Agency	Spot	Intersections	
2330-08-70	Roadway	Rumble strips – edge or shoulder	3.889	Miles	$119478	$132754	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Systemic	Lane Departure	
2355-08-00	Intersection traffic control	Modify traffic signal – add additional signal heads	0.008	Miles	$62637	$69597	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		County Highway Agency	Spot	Intersections	
2565-09-70	Intersection geometry	Intersection geometry - other	0.054	Miles	$322763	$358626	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency	Spot	Lane Departure	
2707-09-00	Intersection traffic control	Modify traffic signal – add additional signal heads	0.054	Miles	$337031	$374479	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		City or Municipal Highway Agency	Spot	Intersections	
2740-02-00	Intersection geometry	Intersection geometry - other	0.011	Miles	$97823	$108692	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	16,140		State Highway Agency	Spot	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
2814-03-00	Intersection traffic control	Modify control – Modern Roundabout	0.027	Miles	$215846	$239829	HSIP (23 U.S.C. 148)	Rural	Minor Collector	0		County Highway Agency	Spot	Intersections	
2816-03-00	Intersection traffic control	Modify control – Modern Roundabout	0.024	Miles	$216569	$240632	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Spot	Intersections	
2967-00-77	Intersection traffic control	Modify traffic signal – add additional signal heads	0.117	Miles	$880740	$978600	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		City or Municipal Highway Agency	Spot	Intersections	
2984-13-95	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0	Miles	$336897	$374330	HSIP (23 U.S.C. 148)	Urban	Local Road or Street	0		City or Municipal Highway Agency	Spot	Intersections	
2984-13-96	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0	Miles	$293845	$326495	HSIP (23 U.S.C. 148)	Urban	Local Road or Street	0		City or Municipal Highway Agency	Spot	Intersections	
2984-21-01	Intersection traffic control	Modify traffic signal timing – left-turn phasing	0.009	Miles	$207000	$230000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Lane Departure	
2984-21-02	Intersection traffic control	Modify traffic signal timing – left-turn phasing	0.031	Miles	$234000	$260000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Lane Departure	
2984-21-03	Intersection traffic control	Modify traffic signal timing – left-turn phasing	0.015	Miles	$209250	$232500	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Intersections	
2995-04-74	Intersection traffic control	Modify traffic signal – add additional signal heads	0.005	Miles	$1022792	$1136436	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Intersections	
2995-05-77	Intersection traffic control	Modify traffic signal – add additional signal heads	0.07	Miles	$329006	$365562	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Intersections	
3120-01-61	Roadway	Pavement surface – high friction surface	9.61	Miles	$208566	$231739	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,965		State Highway Agency	Spot	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
3576-01-64	Roadway	Rumble strips – edge or shoulder	9.745	Miles	$357980	$397756	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,011		State Highway Agency	Spot	Lane Departure	
3588-00-30	Roadway	Rumble strips – edge or shoulder	5.75	Miles	$54600	$60667	HSIP (23 U.S.C. 148)	Rural	Minor Collector	0		County Highway Agency	Systemic	Lane Departure	
3755-03-70	Roadway	Rumble strips – edge or shoulder	5.757	Miles	$208325	$231473	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Systemic	Lane Departure	
3996-00-09	Intersection traffic control	Modify traffic signal – add additional signal heads	0.31	Miles	$180559	$200621	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Intersections	
3996-00-11	Intersection traffic control	Modify traffic signal – add additional signal heads	0.17	Miles	$67562	$75069	HSIP (23 U.S.C. 148)	Urban	Major Collector	0		City or Municipal Highway Agency	Spot	Intersections	
4060-05-72	Intersection traffic control	Modify control – Modern Roundabout	0.571	Miles	$1530000	$1700000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,338		State Highway Agency	Spot	Intersections	
4075-39-72	Roadway	Rumble strips – edge or shoulder	4.94	Miles	$73800	$82000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Spot	Lane Departure	
4125-14-60	Roadway	Rumble strips – edge or shoulder	11.695	Miles	$457306	$508118	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Spot	Lane Departure	
4236-02-71	Roadway	Rumble strips – edge or shoulder	7.229	Miles	$109754	$121949	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Systemic	Lane Departure	
4580-10-71	Roadway	Rumble strips – edge or shoulder	3.667	Miles	$139788	$155320	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency	Spot	Lane Departure	
4677-10-00	Access management	Change in access - close or restrict existing access	0.101	Miles	$94332	$104813	HSIP (23 U.S.C. 148)	Urban	Major Collector	0		County Highway Agency	Spot	Lane Departure	
4822-07-01	Roadway	Rumble strips – edge or shoulder	8.953	Miles	$41400	$46000	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Systemic	Lane Departure	
5010-06-72	Roadway	Rumble strips – edge or shoulder	9.741	Miles	$576695	$640772	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,590		State Highway Agency	Spot	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
5120-02-70	Intersection traffic control	Modify traffic signal – add additional signal heads	0.157	Miles	$284837	$316486	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	13,160		State Highway Agency	Spot	Intersections	
5235-03-71	Roadway	Rumble strips – edge or shoulder	1.479	Miles	$66067	$73408	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,000		State Highway Agency	Spot	Lane Departure	
5310-00-70	Intersection geometry	Add/modify auxiliary lanes	0.138	Miles	$186462	$207180	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	12,180		State Highway Agency	Spot	Lane Departure	
5400-00-72	Intersection geometry	Add/modify auxiliary lanes	0.128	Miles	$585792	$650880	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	36,803		State Highway Agency	Spot	Lane Departure	
5400-00-72	Intersection geometry	Add/modify auxiliary lanes	0.128	Miles	$1530000	$1700000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	36,803		State Highway Agency	Spot	Lane Departure	
5845-01-78	Intersection traffic control	Modify control – Modern Roundabout	0.359	Miles	$176150	$195722	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	11,142		State Highway Agency	Spot	Intersections	
5845-01-78	Intersection traffic control	Modify control – Modern Roundabout	0.359	Miles	$1530000	$1700000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	11,142		State Highway Agency	Spot	Intersections	
5849-02-05	Intersection traffic control	Modify traffic signal – add additional signal heads	0.271	Miles	$774065	$860072	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		County Highway Agency	Spot	Intersections	
5880-00-66	Roadway	Rumble strips – edge or shoulder	7.858	Miles	$284136	$315707	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,546		State Highway Agency	Spot	Lane Departure	
5880-00-67	Roadway	Rumble strips – edge or shoulder	5.626	Miles	$326017	$362241	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,520		State Highway Agency	Spot	Lane Departure	
5897-00-60	Roadway	Rumble strips – edge or shoulder	11.358	Miles	$485584	$539538	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,730		County Highway Agency	Systemic	Lane Departure	
5990-01-28	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0	Miles	$443175	$492417	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Intersections	
5990-01-30	Intersection traffic control	Modify traffic signal – add backplates with	0	Miles	$275368	$305964	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal	Spot	Intersections	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
		retroreflective borders										Highway Agency			
5990-01-33	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	1.33	Miles	$182754	$203060	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		City or Municipal Highway Agency	Spot	Lane Departure	
5990-01-35	Intersection traffic control	Modify traffic signal – add additional signal heads	0.285	Miles	$195162	$216847	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		City or Municipal Highway Agency	Spot	Intersections	
5992-07-06	Intersection traffic control	Modify traffic signal – add additional signal heads	0.101	Miles	$108366	$120407	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Intersections	
5992-07-18	Intersection geometry	Add/modify auxiliary lanes	0.102	Miles	$67500	$75000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Intersections	
6020-00-70	Intersection traffic control	Modify control – Modern Roundabout	0.616	Miles	$734284	$815872	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,640		State Highway Agency	Spot	Intersections	
6020-00-70	Intersection traffic control	Modify control – Modern Roundabout	0.616	Miles	$2081779	$2313088	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,640		State Highway Agency	Spot	Intersections	
6040-00-65	Roadway	Rumble strips – edge or shoulder	7.614	Miles	$374303	$415892	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,432		State Highway Agency	Spot	Lane Departure	
6085-02-07	Intersection traffic control	Modify traffic signal – add additional signal heads	0.275	Miles	$93497	$103886	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency	Spot	Intersections	
6240-22-71	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	10.871	Miles	$395053	$438948	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0		State Highway Agency	Spot	Lane Departure	
6290-09-70	Intersection traffic control	Modify traffic signal – add additional signal heads	0.495	Miles	$2349610	$2610678	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	32,063		State Highway Agency	Spot	Lane Departure	
6290-09-71	Intersection traffic control	Modify traffic signal – add additional signal heads	0.159	Miles	$805412	$894902	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	18,753		State Highway Agency	Spot	Lane Departure	

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6380-00-62	Intersection geometry	Add/modify auxiliary lanes	8.444	Miles	$1317751	$1464168	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	6,654		State Highway Agency	Spot	Lane Departure	
6560-08-71	Intersection traffic control	Modify control – Modern Roundabout	0.493	Miles	$1530000	$1700000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Spot	Intersections	
6570-09-71	Roadway	Rumble strips – edge or shoulder	13.591	Miles	$255157	$283508	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Spot	Lane Departure	
6610-04-70	Intersection traffic control	Modify control – Modern Roundabout	0.319	Miles	$1266568	$1407298	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	6,413		State Highway Agency	Spot	Intersections	
7027-00-01	Alignment	Horizontal curve realignment	0.203	Miles	$74160	$82400	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Spot	Lane Departure	
7028-00-73	Intersection geometry	Add/modify auxiliary lanes	0.057	Miles	$488624	$542916	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency	Spot	Lane Departure	
7076-01-02	Alignment	Horizontal curve realignment	0.149	Miles	$85769	$95299	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Spot	Lane Departure	
7080-03-75	Roadway	Rumble strips – edge or shoulder	9.667	Miles	$401131	$445701	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,754		State Highway Agency	Spot	Lane Departure	
7110-00-70	Roadway	Rumble strips – edge or shoulder	15.177	Miles	$622035	$691150	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,889		State Highway Agency	Spot	Lane Departure	
7220-00-78	Roadway	Rumble strips – edge or shoulder	6.273	Miles	$272993	$303326	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,832		State Highway Agency	Spot	Lane Departure	
7373-00-70	Roadway	Rumble strips – edge or shoulder	1.79	Miles	$191549	$212832	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Spot	Lane Departure	
7570-05-64	Roadway	Rumble strips – edge or shoulder	8.071	Miles	$267847	$297608	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,394		State Highway Agency	Spot	Lane Departure	
7575-07-70	Intersection traffic control	Modify traffic signal – add additional signal heads	0.083	Miles	$432911	$481012	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	13,160		State Highway Agency	Spot	Intersections	

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7575-07-73	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.887	Miles	$1620000	$1800000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	10,926		State Highway Agency	Spot	Lane Departure	
7600-01-75	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	1.025	Miles	$1448505	$1609450	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency	Spot	Lane Departure	
7849-03-04	Alignment	Vertical alignment or elevation change	0.012	Miles	$101970	$113300	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		County Highway Agency	Spot	Intersections	
7896-02-70	Roadway	Rumble strips – edge or shoulder	7.627	Miles	$359276	$399195	HSIP (23 U.S.C. 148)	Rural	Minor Collector	0		County Highway Agency	Systemic	Lane Departure	
8072-00-71	Roadway	Rumble strips – edge or shoulder	9.962	Miles	$405675	$450750	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,792		State Highway Agency	Spot	Lane Departure	
8110-01-76	Intersection geometry	Add/modify auxiliary lanes	0.177	Miles	$455684	$506316	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	8,253		State Highway Agency	Spot	Lane Departure	
8160-00-09	Intersection geometry	Add/modify auxiliary lanes	0.004	Miles	$83430	$92700	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Spot	Lane Departure	
8590-00-01	Alignment	Horizontal curve realignment	0.797	Miles	$168714	$187460	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Spot	Lane Departure	
8939-03-08	Roadway	Rumble strips – edge or shoulder	6.933	Miles	$60630	$67367	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Systemic	Lane Departure	
8944-04-01	Intersection traffic control	Modify control – Modern Roundabout	0.058	Miles	$114021	$126690	HSIP (23 U.S.C. 148)	Rural	Minor Collector	0		County Highway Agency	Spot	Intersections	
8949-00-07	Intersection geometry	Add/modify auxiliary lanes	0.015	Miles	$96408	$107120	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		State Highway Agency	Spot	Lane Departure	
8949-00-71	Intersection traffic control	Modify control – two-way stop to all-way stop	8.628	Miles	$277273	$308081	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,785		State Highway Agency	Spot	Lane Departure	
9080-14-72	Intersection geometry	Add/modify auxiliary lanes	2.212	Miles	$257480	$286089	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	10,016		State Highway Agency	Spot	Lane Departure	

2022 Wisconsin Highway Safety Improvement Program

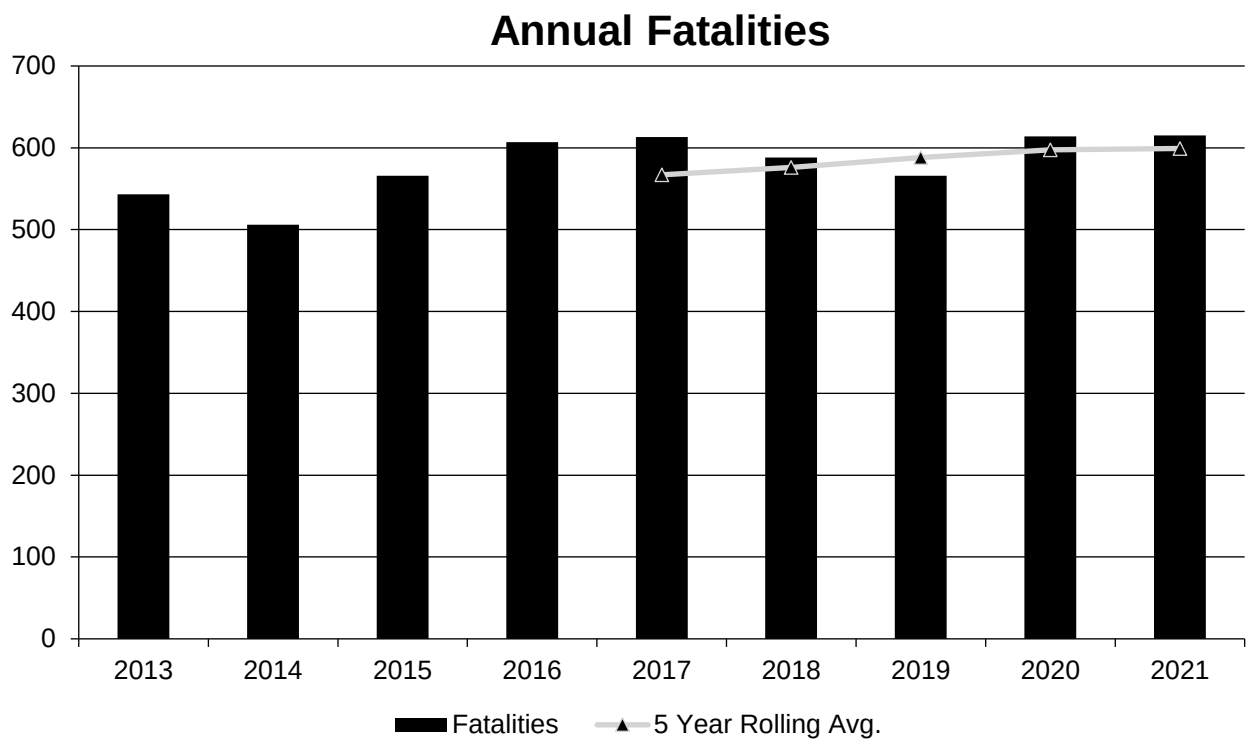
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
9170-12-71	Roadway	Rumble strips – edge or shoulder	10.154	Miles	$375680	$417422	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Spot	Lane Departure	
9180-25-71	Roadway	Rumble strips – edge or shoulder	3.498	Miles	$176325	$195917	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Spot	Lane Departure	
9660-01-04	Intersection geometry	Intersection geometry - other	0.144	Miles	$129364	$143738	HSIP (23 U.S.C. 148)	Rural	Major Collector	600		County Highway Agency	Spot	Lane Departure	

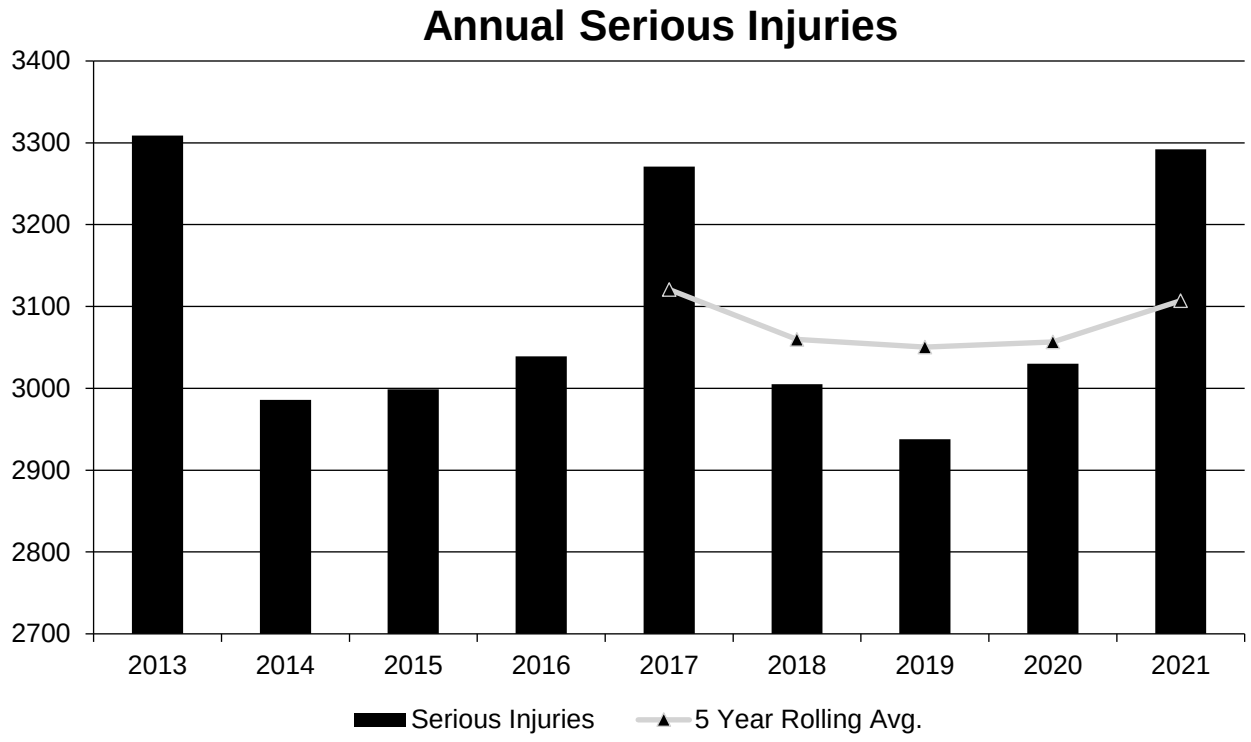
Safety Performance

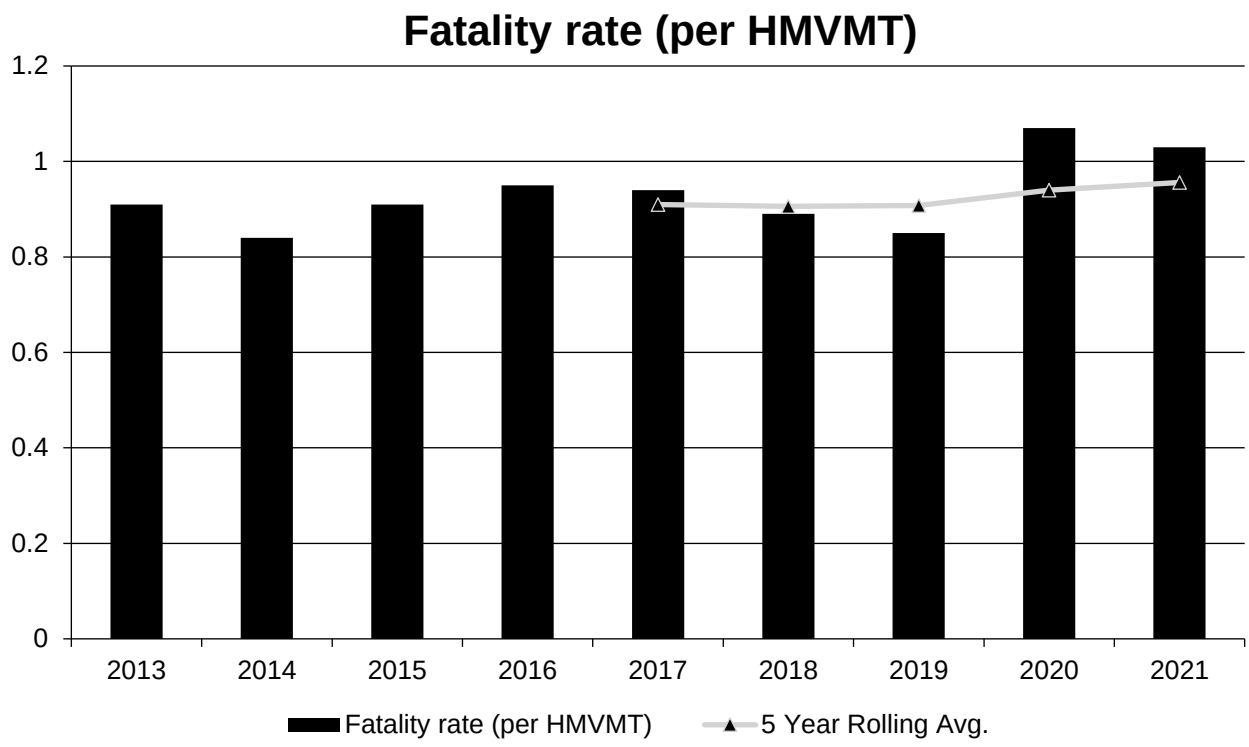
General Highway Safety Trends

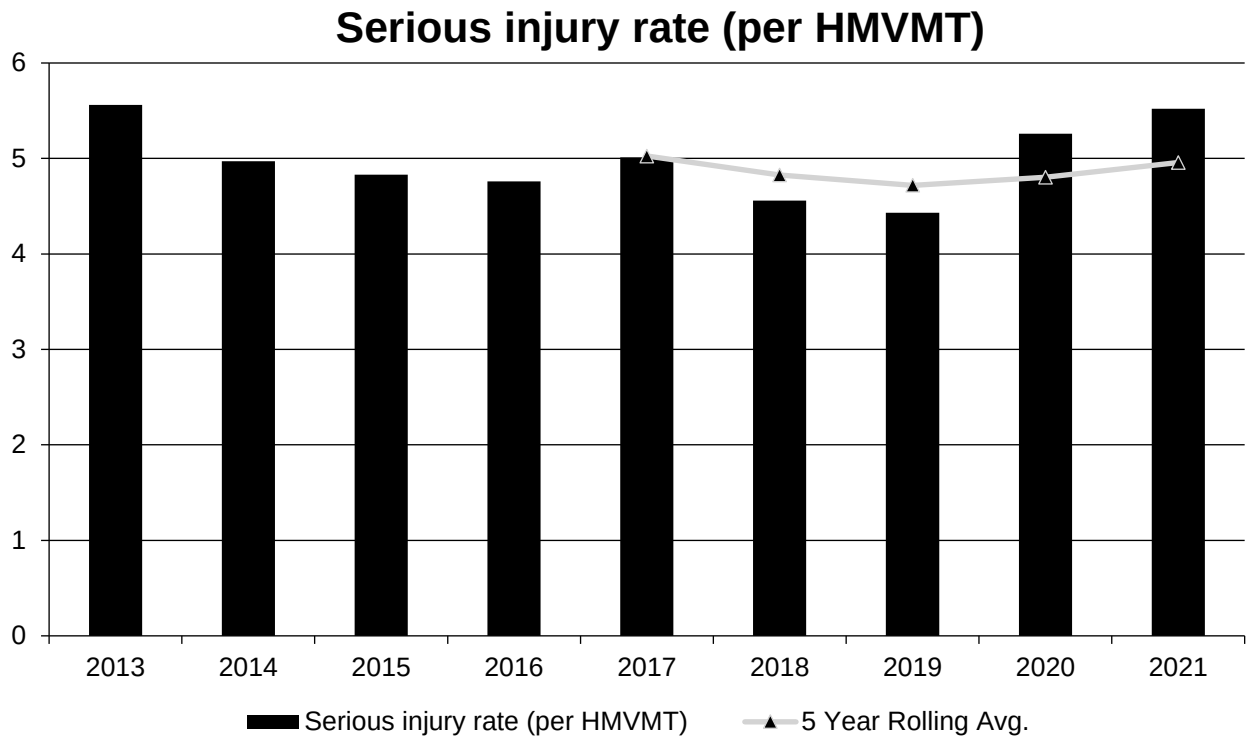
Present data showing the general highway safety trends in the State for the past five years.

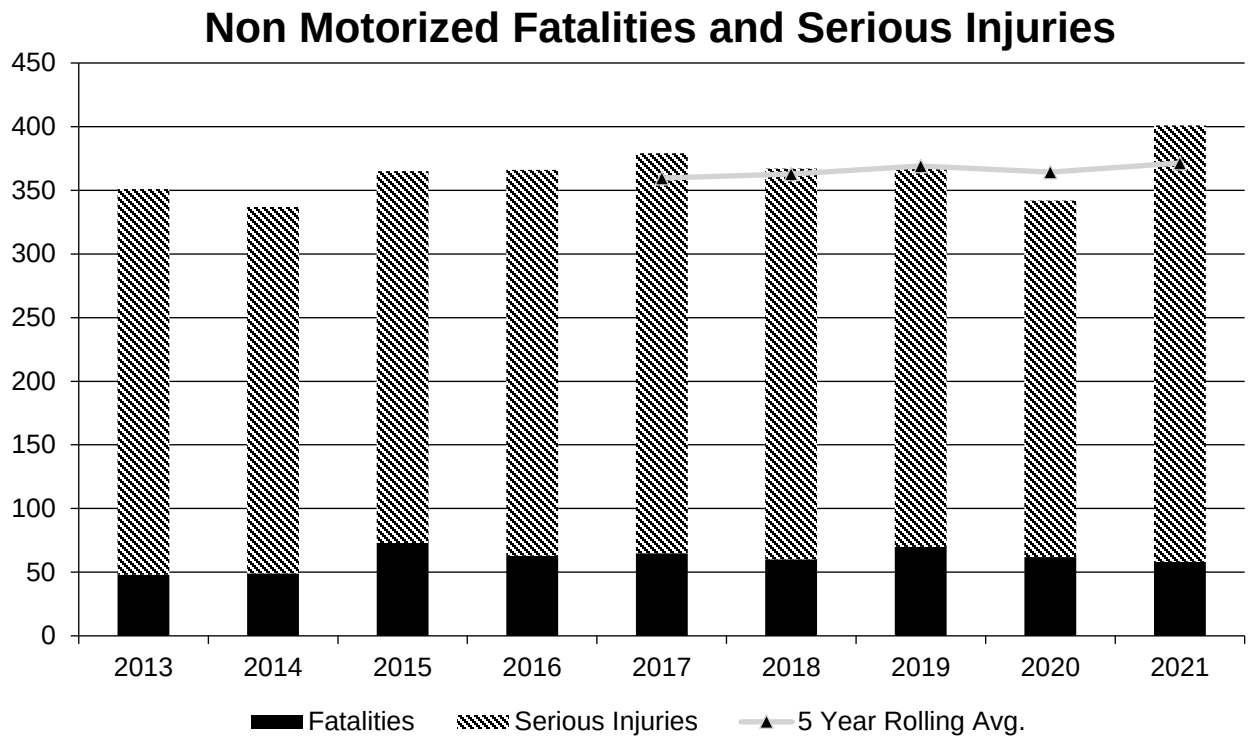
PERFORMANCE MEASURES	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fatalities	543	506	566	607	613	588	566	614	615
Serious Injuries	3,309	2,986	2,999	3,039	3,271	3,005	2,938	3,030	3,292
Fatality rate (per HMVMT)	0.910	0.840	0.910	0.950	0.940	0.890	0.850	1.070	1.030
Serious injury rate (per HMVMT)	5.560	4.970	4.830	4.760	5.010	4.560	4.430	5.260	5.520
Number non-motorized fatalities	48	49	73	63	65	60	70	62	58
Number of non-motorized serious injuries	303	288	292	303	314	307	298	280	343


Annual Fatalities
700
600
500
400
300
200
100
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
3400
3300
3200
3100
3000
2900
2800
2700
2013
2014
2015
2016
2017
2018
2019
2020
2021
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.2
1
0.8
0.6
0.4
0.2
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
6
5
4
3
2
1
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

State Motor Vehicle Crash Database

FARS data was not available for use before the HSIP annual report deadline. State fatality numbers were used as a baseline to estimate final FARS numbers. Historically, FARS numbers have been higher than the state fatality numbers. The average difference between FARS and state numbers was calculated using 2016-2020 data.

To the maximum extent possible, present this data by functional classification and ownership.

Year 2021

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	31.75	134.75	0.54	9.32
Rural Principal Arterial (RPA) - Other Freeways and Expressways	27.25	111.25	2.27	4.86
Rural Principal Arterial (RPA) - Other	77.5	311	1.21	7.68

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Minor Arterial	83.5	364.5	1.77	6.2
Rural Minor Collector	24.75	133.25	1.15	5.45
Rural Major Collector	92.5	422.75	1.19	9.66
Rural Local Road or Street	64.25	388.25	1.61	1.5
Urban Principal Arterial (UPA) - Interstate	17	118.25	0.22	1.02
Urban Principal Arterial (UPA) - Other Freeways and Expressways	6.75	33.5	0.21	5.68
Urban Principal Arterial (UPA) - Other	68	509.75	0.76	4.07
Urban Minor Arterial	28	228	0.5	8.67
Urban Minor Collector				
Urban Major Collector				
Urban Local Road or Street	28	328.75	1.04	11.95
City Street Urban				
City Street Rural				
Town Road Rural				
County Trunk Urban				
County Trunk Rural				
State Highway Urban				
State Highway Rural				
Interstate Highway Urban				
Interstate Highway Rural				
Urban Collector	33.75	237.25	1.22	2.29

Year 2021

Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	289.2	1,358.4	0.79	3.7
County Highway Agency	125.8	647.2	1.04	5.33
Town or Township Highway Agency				
City or Municipal Highway Agency				
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency	146	1,101.6	0.97	7.25
Private (Other than Railroad)				
Railroad				
State Toll Authority				
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				

Wisconsin does not currently have each crash directly associated to the roadway functional classification. Several data sources and methodologies were used to combine crash data from 2017-2021 to roadway functional classification. As such, there may be some discrepancies in actual crash data and functional classification.

Not all 2021 crashes have been mapped at the time of this reporting so preliminary data was used. Additionally, the VMT for 2021 was not final at the time of this reporting, so a preliminary VMT was used.

Data sources used for this effort do not currently split Urban Collector into "Minor" and "Major", so only a general Urban Collector total was provided.

Safety Performance Targets

Safety Performance Targets

Calendar Year 2023 Targets *

Number of Fatalities:587.2

Describe the basis for established target, including how it supports SHSP goals.

Number of fatalities target is calculated as a 2% reduction from the most recent 5-year rolling average, which is the performance measure goal identified in the SHSP.

FARS data was not available at the time of HSP target submittal. Since several HSP targets and HSIP targets must match exactly, all the HSIP targets were established at the same time as the HSP targets. State data was used to calculate the 2023 target for number of fatalities. The historical difference between state fatality data and FARS data was also factored in and accounted for.

Number of Serious Injuries:3044.3

Describe the basis for established target, including how it supports SHSP goals.

Number of serious injuries target is calculated as a 2% reduction from the most recent 5-year rolling average, which is the performance measure goal identified in the SHSP.

Fatality Rate:0.937

Describe the basis for established target, including how it supports SHSP goals.

Fatality rate (per HMVMT) target is calculated as a 2% reduction from the most recent 5-year rolling average, which is the performance measure goal identified in the SHSP.

FARS data was not available at the time of HSP target submittal. Since several HSP targets and HSIP targets must match exactly, all the HSIP targets were established at the same time as the HSP targets. State data was used to calculate the 2023 target for number of fatalities. The historical difference between state fatality data and FARS data was also factored in and accounted for.

Serious Injury Rate:4.857

Describe the basis for established target, including how it supports SHSP goals.

Serious Injury Rate (per HMVMT) target is calculated as a 2% reduction from the most recent 5-year rolling average, which is the performance measure goal identified in the SHSP.

Total Number of Non-Motorized Fatalities and Serious Injuries:364.0

Describe the basis for established target, including how it supports SHSP goals.

Total number of non-motorized fatalities and serious injuries target is calculated as a 2% reduction from the most recent 5-year rolling average, which is the performance measure goal identified in the SHSP.

FARS data was not available at the time of HSP target submittal. Since several HSP targets and HSIP targets must match exactly, all the HSIP targets were established at the same time as the HSP targets. State data was used to calculate the 2023 target for number of fatalities. The historical difference between state fatality data and FARS data was also factored in and accounted for.

Describe efforts to coordinate with other stakeholders (e.g. MPOs, SHSO) to establish safety performance targets.

The HSIP is fully coordinated and integrated with the work of other organizations, associations, and stakeholders (e.g., law enforcement, academia, local governments, MPOs) that play a role in reducing fatalities and serious injuries. One of the basic foundations of the HSIP is the direct linkage between the data-driven priorities established in the Strategic Highway Safety Plan (SHSP) and the identification, development and implementation of HSIP projects. Local and regional governments alike which contribute towards achieving the goals and objectives of the SHSP help guide program decisions and project selections. More specifically, where there are a high percentage of crashes that occur off the State system, WisDOT works with local jurisdictions to help them develop and implement HSIP projects that address priority safety issues on locally-owned roadways. This is either done by locals doing work as local forced accounts or they are let by WisDOT. Stakeholders will continue to contribute to and support the goals established in the SHSP. This in turn encourages safety projects that meet established safety performance targets.

WisDOT coordinates with the MPOs in the establishment of the state's annual federal safety targets reported in the HSIP. WisDOT shares Metropolitan Planning Area (MPA) level crash data with the MPOs for their analysis. MPOs establish safety targets by developing their own MPA targets or by agreeing to support WisDOT's state targets. The approved MPO federal safety targets are reported to WisDOT.

Does the State want to report additional optional targets?

No

Describe progress toward meeting the State's 2022 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	576.0	599.2
Number of Serious Injuries	2897.9	3107.2
Fatality Rate	0.890	0.956
Serious Injury Rate	4.482	4.956
Non-Motorized Fatalities and Serious Injuries	350.2	371.4

Targets for all five performance measure categories are not anticipated to be met based on available data at the time of this reporting.

Wisconsin did see a decrease trend in all performance measure areas except one (non-motorized fatalities and serious injuries) for the period of 2017-2019. Numbers increased across all performance measure areas in 2020 and continued the increasing trend in 2021. Traffic and crash impacts from the Covid-19 pandemic likely contributed to the increase in numbers in 2020 and 2021. This trend was seen nationally as well.

Wisconsin will continue to set aspirational safety targets and adjust its HSIP accordingly, in an effort to increase safety on all public roads.

Applicability of Special Rules

Does the HRRR special rule apply to the State for this reporting period?

No

Provide the number of older driver and pedestrian fatalities and serious injuries 65 years of age and older for the past seven years.

PERFORMANCE MEASURES	2015	2016	2017	2018	2019	2020	2021
Number of Older Driver and Pedestrian Fatalities	99	91	92	96	102	80	99
Number of Older Driver and Pedestrian Serious Injuries	198	227	249	262	290	258	311

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Benefit/Cost Ratio
- Change in fatalities and serious injuries

While a simple change in fatal and serious injury crashes is an overall indicator of the effectiveness of the safety culture in the state, there are many other factors outside the scope of normal HSIP projects that influences. For this reason, we rely on a "before and after" Empirical Bayes Analysis of HSIP projects to determine their performance.

Based on the measures of effectiveness selected previously, describe the results of the State's program level evaluations.

WisDOT has contracted with the University of Wisconsin - Traffic Operations and Safety (UW-TOPS) Laboratory to complete project evaluations. Wisconsin HSIP projects implemented between 2013 and 2019 were evaluated. The evaluation process consisted of data collection, safety effectiveness, economic assessment, reporting, and development of program specific CMFs. The safety effectiveness and economic assessment was conducted using the Empirical Bayes (EB) method at the site specific or project level.

There was an overall positive safety and economic effect of projects implemented with 43 out of 64 projects showing B/C ratios greater than one. The 64 HSIP projects evaluated in Wisconsin provided a B/C ratio of 2.71 for a horizon of 10 years. Alternatively, using the observed data during the study period of each project (between three to five years after implementation), the current return on investment was estimated. Current overall crash cost benefit is equal to $72 million which corresponds to a B/C ratio of 1.10. Therefore, the benefit of the 64 HSIP projects have already surpassed the cost of the projects at three to five years of the projects’ life cycle.

Using the Wisconsin CODES data, hospital and crash databases were linked to categorize injuries by part of the body, fracture involvement, and threat to life. Using the estimated number of persons injured per crash by severity, HSIP projects are estimated to have prevented a total of 536 crashes which translates to seven lives saved, 379 person injuries prevented (29 A, 134 B, and 217 C), and 1,067 persons loss of property avoided (no injuries).

Roadway facilities where similar treatments were implemented were selected to develop Wisconsin specific CMFs. Treatments such as roundabouts, J-turns, and cable barrier/guardrail showed similar results as the literature with significant potential for reduction in crashes, especially for fatal and injury crashes.

The complete evaluation report completed by UW-TOPS is available upon request.

What other indicators of success does the State use to demonstrate effectiveness and success of the Highway Safety Improvement Program?

- # miles improved by HSIP
- HSIP Obligations
- Increased awareness of safety and data-driven process
- Increased focus on local road safety
- Policy change

Describe significant program changes that have occurred since the last reporting period.

Since the last reporting period, WisDOT has worked to improve its HSIP by implementing the following program changes and/or initiatives:

State System :

· Implementation of the Intersection Network Screening Spreadsheet using Level of Service of Safety and Potential for Safety Improvement criteria for urban and rural locations.

· Updated cross-median crash analysis

· Developed a horizontal curve initiative policy to address run off the road crashes

· Developed a shoulder rumble strip initiative policy to address run off the road crashes

Local System :

· Increase local participation in HSIP

o Easy to access public website

o Standard project solicitation notification message

o Program presentations at appropriate local conferences, meetings, etc

· Local system focused pilot program

· Continuation of High Risk Rural Roads program

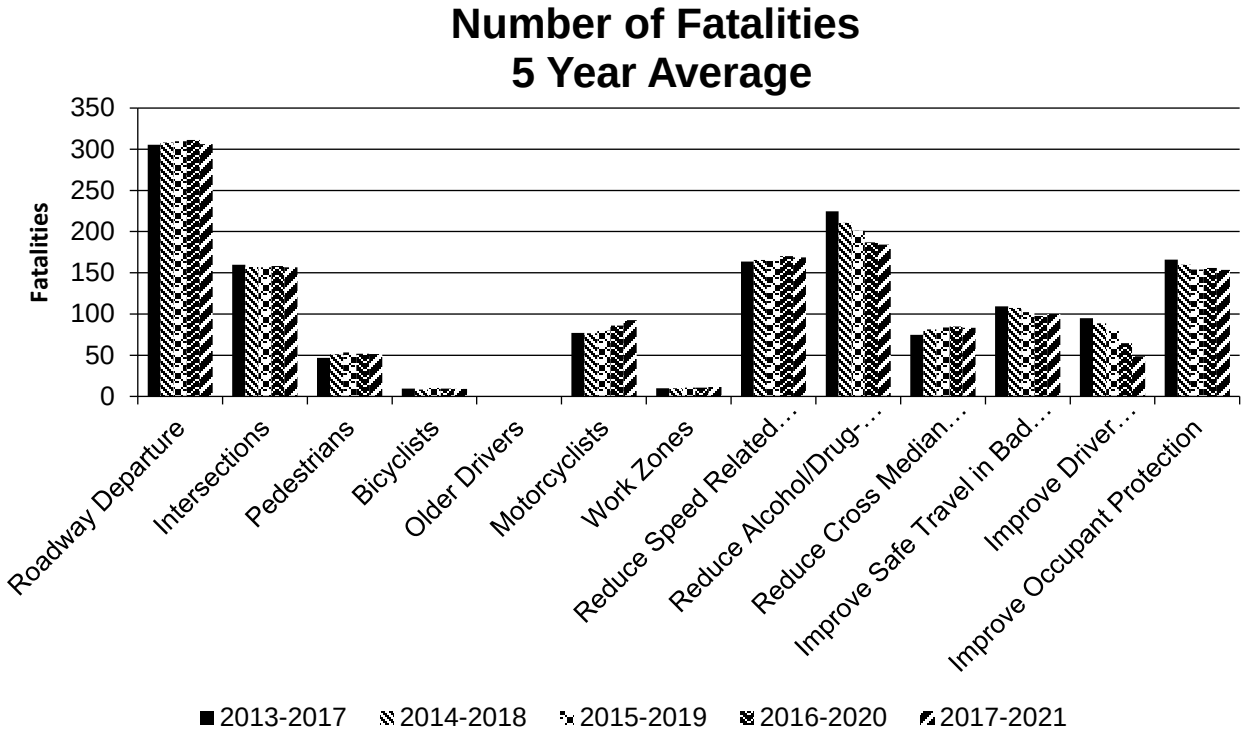
Effectiveness of Groupings or Similar Types of Improvements

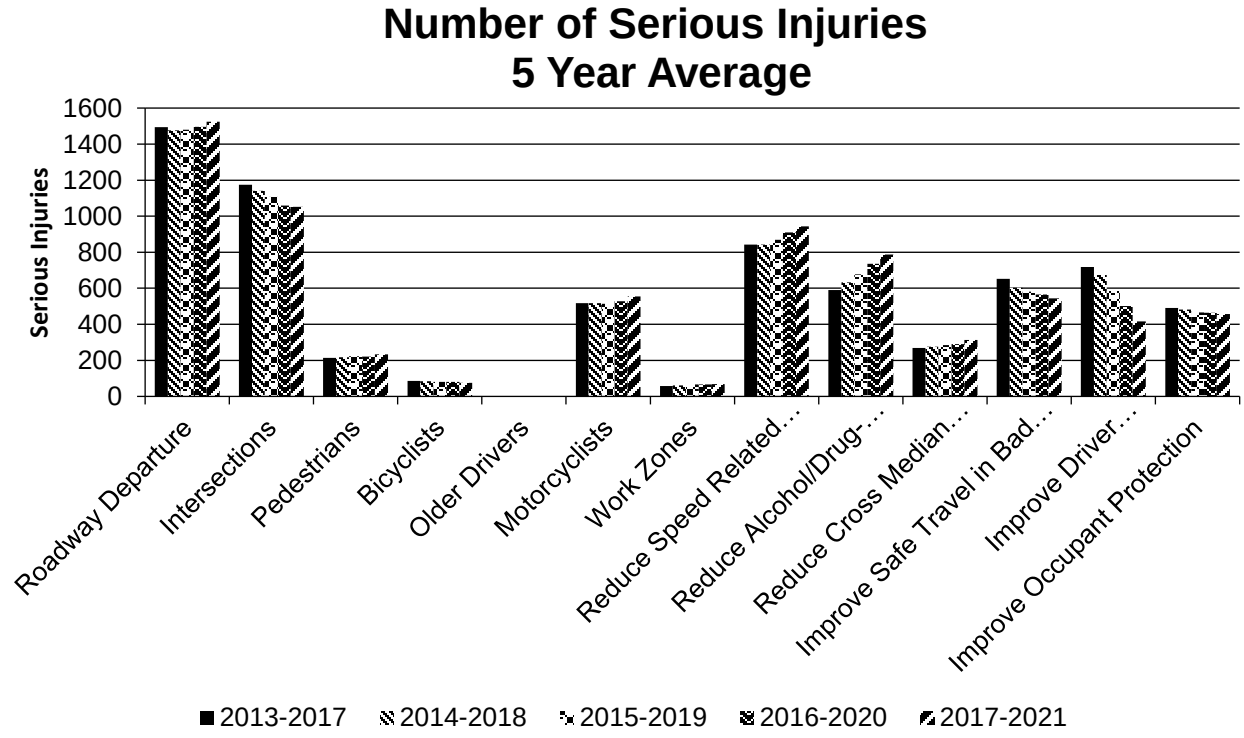
Present and describe trends in SHSP emphasis area performance measures.

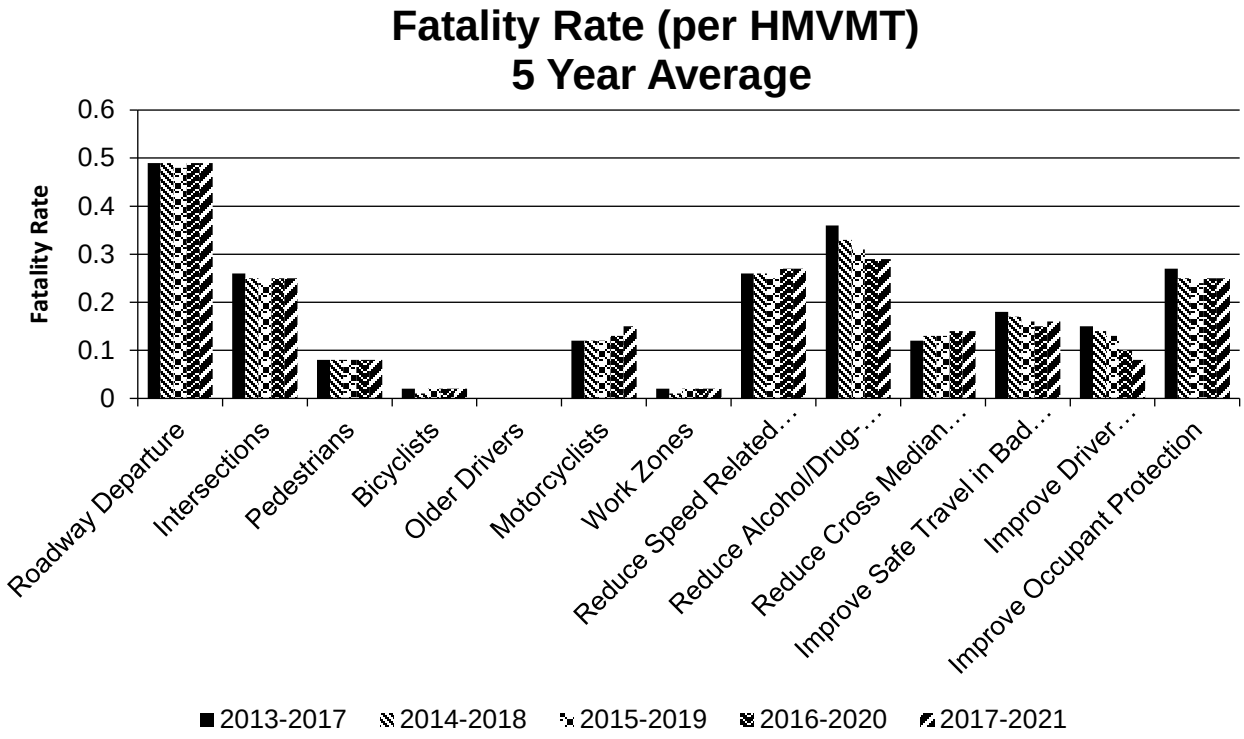
Year 2021

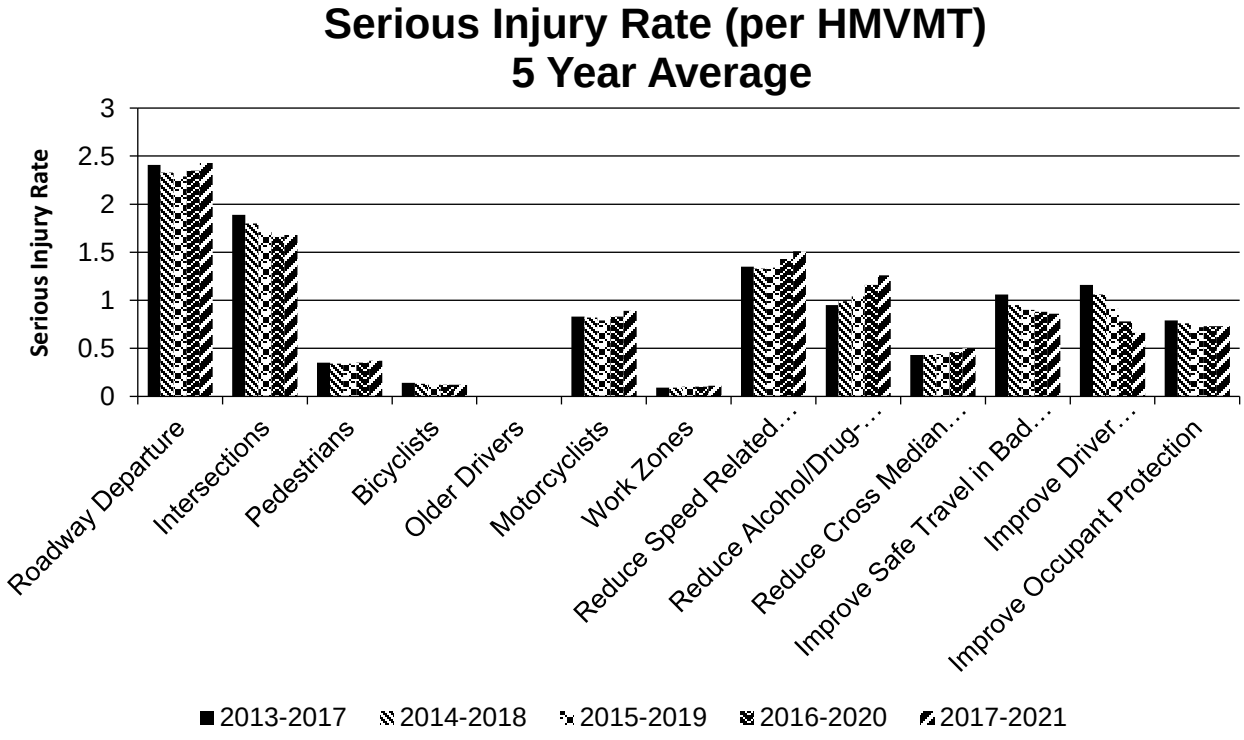
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Roadway Departure		306.4	1,523.4	0.49	2.43

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Intersections		156.8	1,052.4	0.25	1.68
Pedestrians		51.6	232.6	0.08	0.37
Bicyclists		9.2	75.8	0.02	0.12
Older Drivers		0	0	0	0
Motorcyclists		92.6	554.8	0.15	0.89
Work Zones		11.6	68.6	0.02	0.11
Reduce Speed Related Crashes		168.6	943.6	0.27	1.51
Reduce Alcohol/Drug-Impaired Driving		184.4	787.8	0.29	1.26
Reduce Cross Median Crashes		83.4	312.4	0.14	0.5
Improve Safe Travel in Bad Weather		99.8	543.6	0.16	0.86
Improve Driver Alertness/Reduce Driver Distraction		48.8	416.2	0.08	0.66
Improve Occupant Protection		153.6	456.6	0.25	0.73


Number of Fatalities
5 Year Average
Fatalities
350
300
250
200
150
100
50
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Reduce Speed Related…
Reduce Alcohol/Drug-…
Reduce Cross Median…
Improve Safe Travel in Bad…
Improve Driver…
Improve Occupant Protection
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021


Number of Serious Injuries
5 Year Average
Serious Injuries
1600
1400
1200
1000
800
600
400
200
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zones
Reduce Speed Related…
Reduce Alcohol/Drug-…
Reduce Cross Median…
Improve Safe Travel in Bad…
Improve Driver…
Improve Occupant Protection
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021





Has the State completed any countermeasure effectiveness evaluations during the reporting period?

Yes

Please provide the following summary information for each countermeasure effectiveness evaluation.

CounterMeasures:	all
Description:	
Target Crash Type:	All
Number of Installations:	64
Number of Installations:	64
Miles Treated:	
Years Before:	5
Years After:	3
Methodology:	Before/after using empirical Bayes or Full Bayes
Results:	64 HSIP projects between 2013 and 2019 were evaluated. B/C rations greater than one were observed in 43 of the 64 projects. A full breakdown of treatment types and results can be found in the attached report.

File Name: WisDOT_HSIP_Report_08-12-2021.pdf

Project Effectiveness

Provide the following information for previously implemented projects that the State evaluated this reporting period.

Compliance Assessment

What date was the State's current SHSP approved by the Governor or designated State representative?

11/07/2017

What are the years being covered by the current SHSP?

From: 2017 To: 2020

When does the State anticipate completing it's next SHSP update?

2021

Updates to the current SHSP have been delayed due to the Covid-19 pandemic. Updates are anticipated to be completed in 2022.

Provide the current status (percent complete) of MIRE fundamental data elements collection efforts using the table below.

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT	Segment Identifier (12) [12]	100	100					100	100	100	100
	Route Number (8) [8]	100	100								
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]	100	100								
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100	100					100	60		
	Begin Point Segment Descriptor (10) [10]	100	100					100	100	100	100
	End Point Segment Descriptor (11) [11]	100	100					100	100	100	100
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]	100	100								

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Functional Class (19) [19]	100	100					100	100	100	100
	Median Type (54) [55]	100	75								
	Access Control (22) [23]	100	100								
	One/Two Way Operations (91) [93]	100	100								
	Number of Through Lanes (31) [32]	100	100					100	100		
	Average Annual Daily Traffic (79) [81]	100	65					100	1		
	AADT Year (80) [82]	100	65								
	Type of Governmental Ownership (4) [4]	100	95					100	95	100	95
INTERSECTION	Unique Junction Identifier (120) [110]			95							
	Location Identifier for Road 1 Crossing Point (122) [112]			95							
	Location Identifier for Road 2 Crossing Point (123) [113]			95							
	Intersection/Junction Geometry (126) [116]			90							
	Intersection/Junction Traffic Control (131) [131]			85							
	AADT for Each Intersecting Road (79) [81]			95							
	AADT Year (80) [82]			95							
	Unique Approach Identifier (139) [129]			95							
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					100	100				

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Location Identifier for Roadway at Beginning of Ramp Terminal (197) [187]					100	100				
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					100	100				
	Ramp Length (187) [177]					100	100				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					100	100				
	Roadway Type at End Ramp Terminal (199) [189]					100	100				
	Interchange Type (182) [172]										
	Ramp AADT (191) [181]					100	100				
	Year of Ramp AADT (192) [182]					100	100				
	Functional Class (19) [19]					100	100				
	Type of Governmental Ownership (4) [4]					100	95				
Totals (Average Percent Complete):		**100.00**	**94.44**	**93.13**	**0.00**	**90.91**	**90.45**	**100.00**	**84.00**	**100.00**	**99.00**

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

Some percentages were lowered from previous reporting periods as a result of more refined data. Wisconsin is still on track to meet all requirements for this effort.

Describe actions the State will take moving forward to meet the requirement to have complete access to the MIRE fundamental data elements on all public roads by September 30, 2026.

Wisconsin already collects most of the MIRE FDEs. Based on current data collection efforts and targets, Wisconsin is on track to meet the September 30, 2026 deadline. The Division of Transportation System Development, Bureau of Traffic Operations will be starting a project to update the intersection inventory which contains intersections on the state system. Part of this project could include adding MIRE FDE elements and attributes. The framework used for the state system could then be evaluated for use on the local system.

Optional Attachments

Program Structure:

04-01-10e.pdf
Project Implementation:

Safety Performance:

Evaluation:

WisDOT_HSIP_Report_08-12-2021.pdf
Compliance Assessment:

Glossary

5 year rolling average: means the average of five individuals, consecutive annual points of data (e.g. annual fatality rate).

Emphasis area: means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

Highway safety improvement project: means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.

HMVMT: means hundred million vehicle miles traveled.

Non-infrastructure projects: are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.

Older driver special rule: applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.

Performance measure: means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

Programmed funds: mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.

Roadway Functional Classification: means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

Strategic Highway Safety Plan (SHSP): means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Systematic: refers to an approach where an agency deploys countermeasures at all locations across a system.

Systemic safety improvement: means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.

Transfer: means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.