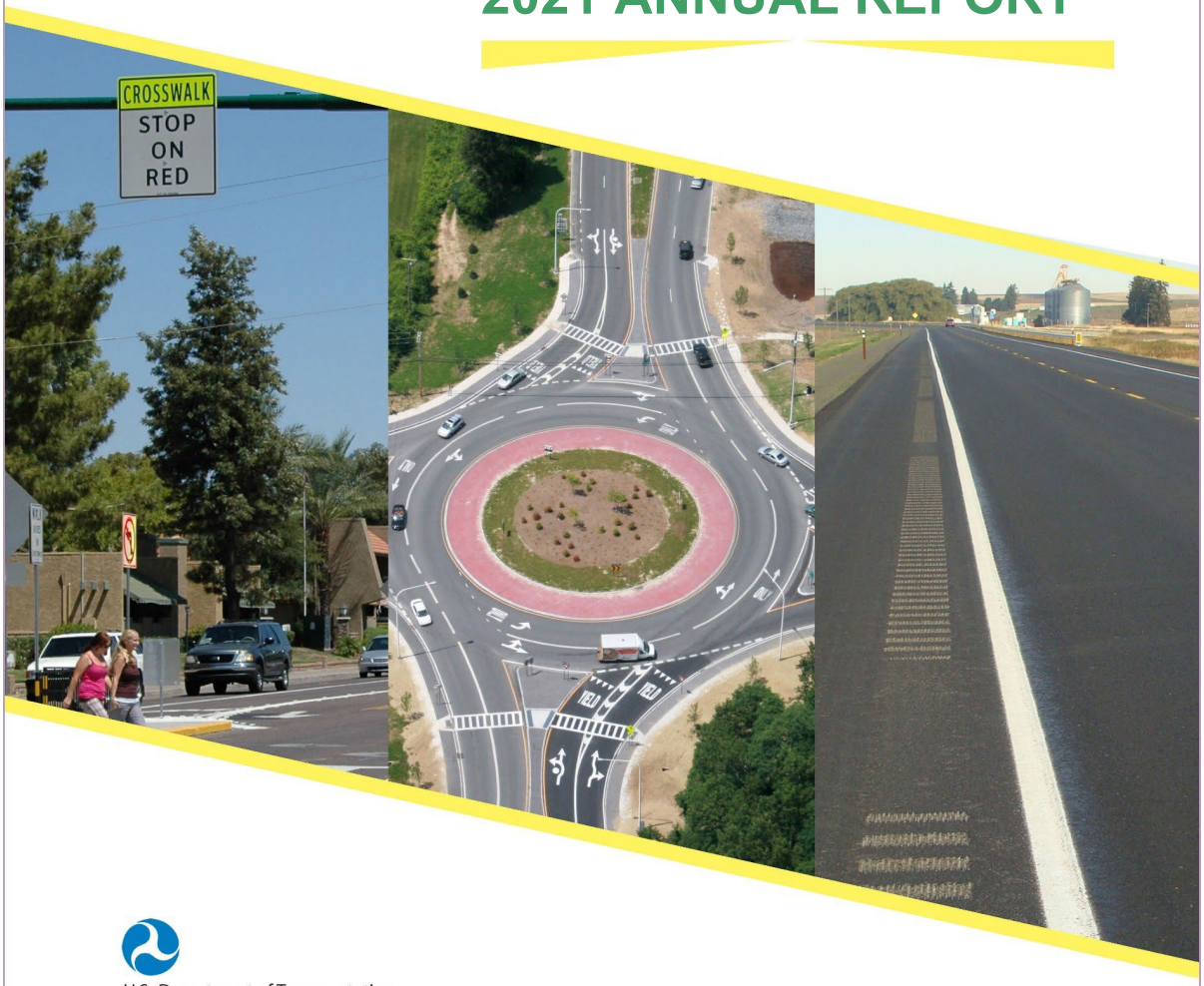
MICHIGAN

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2021 ANNUAL REPORT



U.S. Department of Transportation
Federal Highway Administration

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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. 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. 409 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 2021 HSIP Annual Report for the Michigan Department of Transportation (MDOT) will be for the one year time period of FY 2020 which commenced on October 1, 2019 and ended on September 30, 2020. This report addresses safety improvements funded through MDOT on both trunkline and non-trunkline roadways.

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 general structure of the HSIP is to select cost-effective safety improvements, as identified in Michigan's Strategic Highway Safety Plan (SHSP), to address locations with correctable fatality (K) and serious injury (A) crashes. Projects are selected and identified during the annual Call for Projects process for trunkline and non-trunkline roadways. The selected projects are designed and implemented via the Region offices and Local Agency Programs oversight. Before and After studies are conducted to evaluate the effectiveness of a particular countermeasure.

Where is HSIP staff located within the State DOT?

Other-TSMO (Transportation Systems Management and Operations)

The HSIP Trunkline program is managed out of the MDOT Central Office in the Bureau of Field Services - TSMO Division - Traffic and Safety Section - Safety Programs/Pavement Markings.

The HSIP Local Agency Non-Trunkline Program is managed out of the MDOT Central office in the Bureau of Highway Development - Development Services Division - Local Agency Programs (Local Safety).

How are HSIP funds allocated in a State?

- Other-Central Office via Statewide Formula via MDOT Regions
- Other-Central Office via Statewide Competitive Application Process for Local Agencies
- Other-Central Office via Funding Set Aside

The Lansing Central Office manages a separate Call for Projects process for both Trunkline and Non-Trunkline roadways. There is also a funding set aside amount directly for Trunkline pavement markings and delineation.

The Local Agency Call for Projects is a competitive application process between all of the Local Agencies of Michigan and cycles on a two-year call for projects.

The Statewide Trunkline Call for Projects has specific funding targets for each of the 7 MDOT Regions. The funding targets are calculated based on lane miles, traffic volumes, and Fatality and Serious Injuries that occur within each Region. The State Trunkline Call for Projects cycles on a five-year call for projects platform.

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

For the local roadway network, HSIP funds (~$15.8 M) are administered by the Local Agency Programs Safety Engineer located in the Central Office. The HSIP funds were allocated to three separate Call for Projects: $6 M for High Risk Rural Roads (HRRR), $7.5 M for Highway Safety Improvement Program (HSIP), and $1.5 M for Streamlined Systemic HSIP. Typically, only the construction phase is eligible for federal aid. Preliminary engineering costs were eligible for federal participation if it was for a project identified on the Transparency (5%) Report, by the Local Safety Initiative, in a Road Safety Audit (RSA) or in a traffic signal optimization project. Otherwise, preliminary engineering was not eligible for federal safety funds. Projects are federally funded at 80 or 90 percent up to an amount not to exceed $600,000 of Federal funding, with a 20 or 10 percent Local Agency match, respectively.

All Local Agencies within Metropolitan Planning Organizations (MPO) areas must coordinate with their MPO to ensure inclusion of their project in the area's Transportation Improvement Plan (TIP). Those agencies that are part of a rural task force are to notify their members that they applied for these funds. Rural task force approval is not necessary. MDOT Local Agency Programs (LAP) coordinates with MDOT Planning to ensure these projects are included in the Statewide Transportation Improvement Plan (STIP).

The planning and selection of projects for the local roadway system is very similar to that of the state trunkline. Local agencies were invited by a May 7, 2018 memorandum to submit proposed projects for consideration as part of an annual Call for Projects (CFP). All local agencies (counties, cities, and villages) are able to apply for the funds. Townships and tribal organizations are also eligible to receive the safety funds but must work with their respective county for submittal of the application. The emphasis of the local FY 2020 CFP was to address those locations with correctable fatality and injury crashes to support the department's efforts of reducing fatalities and serious injuries striving for Toward Zero Deaths. Per the CFP, the Local Agency was to provide a Time of Return (TOR) analysis showing how the proposed improvement would address fatalities and all injuries. In the TOR, all crash types and severity levels correctable by the proposed improvement can be included. A maximum of five years of available crash data is to be used in the TOR analysis. For FY 2020 call for projects, 2012 to 2016 (or the current availability) crash data was used.

Eligible projects must meet current standards and warrants. Project types may be either systemic or spot locations and may include replacement, installation or elimination of guardrail, removal of fixed objects from clear zones, traffic and pedestrian signal optimization, installation and upgrades of traffic signals, access management, horizontal and vertical curve modifications, sight distance and drainage improvements, bridge railing replacement or retrofit, roadway intersection improvements specifically to improve safety, mid-block pedestrian crossings, improvements to school zones, shoulder and centerline rumble strips, and improved permanent signing and pavement markings, or any other safety related work.

For the FY 2020 CFP, a greater emphasis was placed on the identification of correctable fatalities and serious injuries, both in the selection and the prioritization of safety projects. In FY 2020, a small portion of the local safety funds were allocated to six subprograms (compared to eight subprograms in 2019), with the elimination of Systemic Lane Departure projects and Centerline and Shoulder Rumble Strips as the separate program for streamlined systemic projects was created. Allocations remained the same as 2019 for three subprograms: Regional Traffic Safety Plans ($3 M), Safety Edge ($500 K), and Road Safety Audits ($50 K). Allocations for Non-motorized Facility/Pedestrian Improvements ($500 K) and High Friction Surface Treatment ($500 K) were increased compared to 2019. Meanwhile, allocation for Guardrail Upgrades and Clear Zone Improvements ($750 K) was reduced compared to 2019. Each selected project could count towards multiple subprograms. Local agencies were informed of the listed subprograms and encouraged to submit related projects.

The Streamlined Systemic program allowed the submittal of four specific project types: Horizontal Curve Delineation, Edgeline Pavement Markings (on roadways that did not previously have striped edgelines), Rumble Strips/Corrugations (both centerline and edgeline, or both), and Dual Stop and Stop Ahead intersection signing. Projects were federally funded at 90 percent up to an amount not to exceed $250,000 of

Federal funding.

There were not any funds directed to tribal organizations in 2020. In 2021, the CFP letter (for FY 2023) was updated to clarify the eligibility of tribal organizations and tribal roadways. Additionally, a PowerPoint presentation summarizing the program was prepared for tribal outreach. Outreach was conducted by the MDOT Tribal Liaison.

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

- Design
- Districts/Regions
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety
- Other-Local Agency Programs
- Other-TSMO

Describe coordination with internal partners.

MDOT's Safety Programs Unit provides support and coordination to internal partners within the Department. Each of the seven Regions is comprised of a Traffic Safety and Operations Engineer as well as Traffic and Safety Engineers located in the Transportation Service Center (TSC) offices. Employees within the Safety Programs Unit distribute the High Crash List and Pavement Friction Analysis to the Region and TSC staff for their use in project selection. Road Safety Audits and 3R/4R Safety Reviews are conducted with various internal partners located within the Central, Region, and TSC offices. In addition, the Safety Programs Unit supports the Regions and TSC's with special data requests in the development of their safety program including various types of GIS mapping.

HSIP funding partnering is also coordinated between the Safety Programs Unit and Local Agency Programs.

Internal training is also provided to new Traffic and Safety staff including the TOR form, HSM spreadsheet, Roadsoft, and general safety information related to the call for projects and MDOT standards and guidance.

Identify which external partners are involved with HSIP planning.

- Academia/University
- FHWA
- Local Government Agency
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
- Other-County Road Association of Michigan
- Other-Office of Highway Safety Planning
- Other-Michigan's Local Technical Assistance Progam
- Other-State Highway Strategic Planning Action Teams

Describe coordination with external partners.

MDOT coordinates with various Colleges and Universities to provide research opportunities on existing and up and coming safety countermeasures. MDOT coordinates with FHWA on existing and proposed federal legislation and standards. MDOT also coordinates with the County Road Association, Regional Planning

Organizations, and Local Government Agencies to help communicate safety initiatives and safety countermeasures. Overall, MDOT is vigilant about coordination with external partners specifically to promote Toward Zero Deaths (TZD) initiatives as a member of the Governors Traffic Safety Advisory Council (GTSAC). MDOT assists the Office of Highway Safety Planning (OHSP) and the GTSAC in planning Engineering sessions for the Annual Michigan Traffic Safety Summit. MDOT provides scholarship opportunities to Local Agencies to attend the Traffic Safety Summit to help educate them on TZD Initiatives and to help reduce fatalities and serious injuries on every roadway in Michigan.

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

A Towards Zero Death (TZD) Champion and Strategic Highway Safety Plan (SHSP) Engineer Position was added since the last reporting period. The position serves as MDOT's specialist for the SHSP representing MDOT’s interests on each of the emphasis areas in the SHSP. This position also serves as MDOT’s TZD specialist, which involves identifying best practices and innovative ideas to promote TZD both within other state departments, county/local road agencies, and private partners with safety interests.

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

For the State Trunkline Program, safety funds are administered by the Safety Template Program Manager in Traffic and Safety (Central Office). For FY 2020, $21.5 M in safety funding was available, of which $15.6 M was allocated to the seven MDOT Regions as funding targets. Additional template funding was added after the original call for projects letter. The allocations were based on the percentage of fatalities and serious injuries, lane miles and Vehicle Miles Traveled in each Region. The goal is that all Regions receive a minimum of 5 percent of the Safety Target.

Beyond the allocated $15.6 M, an additional $4.5 M of the safety funds was reserved by the Traffic and Safety area to apply to projects in any Region at their discretion. The Regions were permitted to submit candidate projects with total costs exceeding their funding targets; the central office review team then selected the projects to be funded in each Region, taking into account priorities expressed by the Regional staffs, and use their discretionary funds to apply to worthy projects that exceeded a particular Region’s funding target. All project phases; preliminary engineering, construction engineering, right of way and construction are eligible for safety funding.

In addition to the $20.1 M of project funding described above, in which project selection was approved by central office staff, each Region was given $200,000 for low-cost safety improvements to be chosen at the discretion of the Region staff. The Regions use this pot of money for a variety of minor roadside safety improvements which can be performed in a timely manner by state forces or contract agencies. Individual Safety Work Authorizations (SWA) are the most cost effective method of funding these types of improvements and can be initiated quickly throughout the fiscal year in response to safety needs. Federal funds are used for those improvements meeting funding criteria.

Once the FY 2020 program was developed, it was reviewed and approved by the Project Screening Committee (PSC). The PSC consists of Region and Central Office Program Managers and Planning staff who help develop the MDOT’s Five Year Plan for approval by the Transportation Commission. The PSC ensures coordination between Regions on various corridors and between the programs.

In FY 2020, the use of HSIP funding continued in the administration of the pavement marking program. Under 23 U.S.C. 148(e)(1)(c), HSIP funds may be obligated for any project to maintain minimum levels of retroreflectivity of traffic signs and pavement markings, without regard to whether that project is included in an applicable State SHSP. Prior to FY 2013 Surface Transportation Safety funding was used in the placement of pavement markings in the Annual Pavement Marking Program.

Local Safety HSIP administration is explained in Question #6.

Program Methodology

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

Yes
A HSIP Manual pertaining to the Trunkline HSIP Program, describing the planning, selection, evaluation and implementation of HSIP projects was published in June of 2021. This manual is updated yearly to reflect changing subcommittees, funding targets and any changes that may be necessary.

A HSIP Manual relating to the Local Agency HSIP Program describing the planning, project selection, implementation, and evaluation processes was published in August of 2019. The intent is to update this manual periodically as methodology pertaining to the local safety program changes.

MDOT Safety Programs created a guidance that was finalized in July 2020 for trunkline related programs.

Select the programs that are administered under the HSIP.

- Other-Pavement Markings
- Other-Highway Safety Call for Projects
- Other-Local Safety Call for Projects
- Other-Local Safety High Risk Rural Roads
- Other-Delineation

Program: Other-Pavement Markings

Date of Program Methodology:9/1/2015

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
	• Lane miles	• Functional classification

What project identification methodology was used for this program?

- Other-Retroreflectivity of pavement marking

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-funding set aside per each Region

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
Cost Effectiveness:2

Program: Other-Highway Safety Call for Projects

Date of Program Methodology:9/15/2011

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

- Other-Focus on fatal and serious injury crashes along with fixes based on crash types and patterns

Exposure

- Volume
- Lane miles

Roadway

- Median width
- Horizontal curvature
- Functional classification
- Roadside features

What project identification methodology was used for this program?

- Excess expected crash frequency using SPFs
- Expected crash frequency with EB adjustment
- Level of service of safety (LOSS)
- Probability of specific crash types
- Relative severity index

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
- 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).

Rank of Priority Consideration

Ranking based on B/C:3
Available funding:1
Cost Effectiveness:2

Program: Other-Local Safety Call for Projects

Date of Program Methodology:5/8/2015

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	Exposure	Roadway
• All crashes	• Traffic • Volume	• Horizontal curvature • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- Excess expected crash frequency using SPFs
- Expected crash frequency with EB adjustment
- Level of service of safety (LOSS)
- Probability of specific crash types
- Relative severity index

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?

Yes

How are projects under this program advanced for implementation?

- Competitive application process
- 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).

Rank of Priority Consideration

Ranking based on B/C:2
Available funding:1
Cost Effectiveness:3
Other-Funding set asides for specific countermeasures:4

Program: Other-Local Safety High Risk Rural Roads

Date of Program Methodology:3/22/2016

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
• All crashes	• Traffic • Volume	• Horizontal curvature • Functional classification • Roadside features

What project identification methodology was used for this program?

- Crash frequency
- Excess expected crash frequency using SPFs
- Expected crash frequency with EB adjustment

- Level of service of safety (LOSS)
- Probability of specific crash types
- Relative severity index

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?

Yes

How are projects under this program advanced for implementation?

- Competitive application process
- 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).

Rank of Priority Consideration

Ranking based on B/C:2
Available funding:1
Cost Effectiveness:3

Program: Other-Delineation

Date of Program Methodology:10/1/2017

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-Lane departure crashes	• Volume	• Roadside features

What project identification methodology was used for this program?

- Probability of specific crash types

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-funding set aside

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
Cost Effectiveness:2

What percentage of HSIP funds address systemic improvements?

64

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

- Cable Median Barriers
- Clear Zone Improvements
- High friction surface treatment
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Pavement/Shoulder Widening
- Rumble Strips
- Safety Edge
- Traffic Control Device Rehabilitation
- Upgrade Guard Rails
- Wrong way driving treatments

Systemic projects selected through the Local Safety Call for Projects (CFP) process are awarded a higher federal funding percentage (90 percent federal with 10 percent local match) as compared to non-systemic projects which have a base funding percentage of 80 percent federal with a 20 percent local match. It should be noted that all selected projects that address a fatal or serious (Type A) injury crash are funded at 90 percent federal participation. Additionally, the local safety CFP has set asides for High Friction Surface Treatment, Rumble Strips, Clear Zone improvements, and Guardrail upgrade projects that are systemic in nature along with a separate Streamlined Systemic program described in question #6. Of the Federal HSIP funds obligated on the local system in fiscal year 2020, approximately 65 percent of funds went towards systemic projects.

The Trunkline Call for Projects (CFP) allowed for up to 25 percent of systemic funded projects. Along with the Annual CFP, MDOT elects to construct longitudinal and special pavement markings as part of the HSIP program. Overall, in FY 2020, 64 percent of the total HSIP Trunkline Program funds (Safety, Pavement Markings, and Delineation) was used for systemic type projects. 20 percent of Trunkline Safety CFP project funds were systemic type fixes. See attached Low-cost Safety Improvement Projects that is used to select systemic type projects.

Overall, 64 percent of HSIP project funds selected were considered to be systemic type fixes (Trunkline Safety, Pavement markings, Delineation, and Local Safety).

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
- SHSP/Local road safety plan
- Other-High Crash List
- Other-Transparency Report
- Other-Fatality and Serious Injury Region-wide Maps
- Other-3R/4R Safety Reviews
- Other-Pavement Friction Analysis
- Other-Customer Concerns
- Other-Local Safety Initiative

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

Describe how the State HSIP considers connected vehicles and ITS technologies.

MDOT is currently considering connected vehicles and ITS technologies as part of the HSIP program. In response to the need for wider lane markings and proposed changes to national standards, MDOT has moved forward with six-inch-wide lane markings on all freeways in summer 2020. MDOT contractors also placed white dotted line extensions on exit and entrance ramps to provide further lane guidance to road users. The additional $200,000 investment for six-inch lane markings and $450,000 for dotted line extensions were done as part of MDOT’s annual pavement marking restriping projects. Starting in 2021, MDOT will move its attention to non-freeways in changing both white and yellow lane lines to six inches wide. This effort will take three to four years.

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.

Michigan DOT utilizes Part B of the HSM through continued development and use of AASHTOWare Safety Analyst for the trunkline roadways. The locations that are determined from Safety Analyst are then provided to Region and Transportation Service Center offices. As they evaluate the locations on the list, Michigan’s own HSM spreadsheet is utilized to develop a substantive perspective. The quantitative performance of alternatives allowed in the spreadsheet have come from what will soon been three separate research efforts to better understand safety performance in Michigan. Regionally, it was found that there are differences resulting in the latest version of our HSM spreadsheet to account for this in the analysis. Road Safety Audits have been

performed both informally and formally that utilize the Michigan HSM spreadsheet based on suggested improvements. Training on the Interactive Highway Safety Design Model (IHSDM) was completed in 2016 and 2018. Since then, a build of the software has been provided throughout MDOT and is available for use external to the agency. The latest version of the software is being evaluated to incorporate the research outputs for non-freeway urban and rural site types. In Safety Analyst, the emphasis areas of Bicycle, Pedestrian, Run-off-Road, Alcohol, Commercial Vehicle, Work Zone and light condition have been built in to provide additional functionality. Safety Analyst was also used as one of the deciding factors in the determination of the locations for increasing speed limits.

The Trunkline Safety Call for Projects requires that a HSM analysis be completed for all qualifying non-freeway, non-systemic projects. The Local Safety Call for Projects recommends the HSM to be submitted for additional project support. An internal MDOT HSM training was conducted in June of 2019 including an updated analysis spreadsheet.

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

The annual Trunkline process for submitting safety projects starts with a Call for Projects (CFP) issued to the seven MDOT Regions from the Safety Template Program Manager. The FY 2020 Safety Call request was made to the Regions on September 15, 2014. In response to the CFP, the Regions identify locations where safety improvements (i.e. add a center left turn lane, right turn lane, geometric improvements to accommodate signalization, median protection, etc.) could be made. These locations are to be identified through the current Transparency (5%) Report, Fatality and Serious Injury Regionwide Maps, High Crash List, 3R/4R Safety Reviews, customer concerns, and Pavement Friction Analyses. Upon location identification an engineering study is conducted by the Region to determine the appropriate safety improvement. The emphasis of the Safety Call was to address those locations with correctable fatality and serious injury crashes to support the department’s efforts of reducing fatalities and serious injuries and support the vision of Toward Zero Deaths (TZD).

All safety projects and proposed candidates must address a focus area of the Michigan Strategic Highway Safety Plan (SHSP). Submitted concepts must meet a maximum Time-of-Return (TOR) to qualify for safety funding. The TOR is a cost benefit analysis of proposed safety improvement which considers all crash types and severity levels that are correctable by the proposed safety improvement. A minimum of the latest three years of available crash data is to be used in the TOR analysis. For FY 2020 project, in which 2011 to 2013 (or most current data available) crash data was used. The following TOR criteria was established:

- Stand alone safety improvement - TOR of 7 years or less
  • Stand alone safety improvement for location on the current Transparency (5%) or High Crash Report – TOR of 10 years or less.
  • Safety improvement in conjunction with another Construction project (Bridge, R&R, etc.) - TOR of 9 years or less.

Each Region’s submittal was reviewed by the Central office review team to ensure all criteria was met. The Regions were permitted to submit candidate projects with total costs exceeding their funding targets. The review team, taking into account priorities expressed by the Regions, used the TOR values as a means to develop project rankings (lowest to highest TOR value) within each Region. Due to increased funding for 2018 to 2023, the discretionary allocation for FY 2020 was $4.5 M. The TOR values for projects beyond funding targets were used to allocate $4.5 M of discretionary funds statewide.

For FY 2020, funding was included in programmed preliminary engineering for outer year safety projects to conduct a road safety audit (RSA). For guidance, a RSA should be conducted for all proposals exceeding $750,000 in programmed construction costs. Each Region was required to conduct at least one RSA for a FY 2020 improvement projects. The RSA should be done prior to 30 percent completion of the plans. The purpose of the RSA is to ensure that the appropriate safety fixes are incorporated into the overall design based on crash patterns within the project limits.

Continuing in FY 2020 each Region was required to allocate up to a certain percent of their funding target for low cost safety improvements. This amount is in addition to the Safety Work Authorizations (SWA funding). The focus is to be on system wide safety improvements done by work authorization or through the letting process, each Region received $200,000 for FY 2019. A TOR justification is not required if the proposed improvement is selected from the list of approved and proven safety system wide fixes (Eligibility Guidelines for Low Cost Safety Improvement Projects-see attachment). For FY 2018 through 2020 this percentage was increased to 25 percent. For FY 2021 to FY 2025 the percentage submitted shall be a minimum of 25 percent up to a maximum of 50 percent over a five-year rolling average period.

In an effort to incorporate the Highway Safety Manual (HSM) into MDOT’s business process all safety projects submitted for FY 2020 to present, except for freeway improvements, shall have the HSM predictive analysis performed on them. A comparison of future conditions with and without the proposed improvement shall be provided. Starting for FY 2020 and continuing for FY 2021 to FY 2025, all submitted concepts must address two or more fatal and/or serious injury crashes and align with their Region Toward Zero Deaths plan.

See Question #6 for the HSIP methodology for Local HSIP/HRRR Safety.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year
The State Fiscal year ran from October 1, 2019 to September 30, 2020.

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$66,085,505	$63,651,527	96.32%
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	$205,863	$205,863	100%
Totals	$66,291,368	$63,857,390	96.33%

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

$19,261,096

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

$16,827,118
The local safety program is generally over programmed (above $15.8 M) to ensure that all allocated local HSIP funds are obligated and utilized. Additionally, obligational authority for the local safety program comes out of the local urban obligational authority and projects are obligated on a first come first serve basis. Therefore, the local safety program occasionally obligates additional federal funds over the budgeted (~$15.8 M) amount.

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

0%

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

0%

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?

$0

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

Overall, the time frame to obligate a specific project is longer due to MPO required approvals. During the end of the fiscal year when there is bid savings from earlier projects coming under budget, some Regions cannot use said money for a new project due to the lengthy approval process of the MPO.

MDOT promotes the Toward Zero Deaths campaign to the citizens of Michigan, however not being able to use HSIP funds for educational and promotional materials has made this social media campaign challenging, as we have to seek other funding sources within the department, which are also constrained.

Describe any other aspects of the State's progress in implementing HSIP projects on which the State would like to elaborate.

During the reporting period, FY 2020, 0.22 percent of the programmed and obligated funds of the HSIP State Trunkline system were directed to miscellaneous (previously non-infrastructure) safety items such as Road Safety Audits and Work Zone Enforcement.

On the Local Agency side no HSIP funds were directed toward tribal safety projects. In FY 2020, none of the obligated funds for the Local system were directed to non-infrastructure safety items such as Road Safety Audits and a Before and After study. Overall, 24.6 percent of the total programmed and 26.0 percent of the total obligated federal HSIP/HRRR funds were directed to local safety projects.

Overall, 14.9 percent of obligated (11.3 percent programmed) funds used were from State and Local funding sources.

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
127506 - US-10, Flajole Rd to I-75	Roadside	Barrier- metal	10.914	Miles	$3221715	$3221715	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other Freeways & Expressways	31,000	70	State Highway Agency	Spot	Roadway Departure	Reduce F's & A's
129185 US-23 NB, Baldwin Rd to Hill Rd	Roadside	Barrier- metal	4.55	Miles	$1204747	$1204747	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other Freeways & Expressways	48,300	70	State Highway Agency	Spot	Roadway Departure	Reduce F's & A's
201953 - M-57 at Irish Rd	Intersection geometry	Intersection geometry - other	1	Intersections	$231507	$231507	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	6,100	55	State Highway Agency	Spot	Intersections	Reduce F's & A's
202009 - M-20 at US-127 NB Ramps	Interchange design	Interchange design - other	1	Locations	$348295	$348295	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	13,200	55	State Highway Agency	Spot	Intersections	Reduce F's & A's
204857 - I69BL-E, 27th St to 6th St	Roadway signs and traffic control	Roadway signs and traffic control - other	1.54	Miles	$93875	$93875	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	3,550	0	State Highway Agency	Spot	Roadway Departure	Reduce F's & A's
204911 - I-75 NB Exit Ramp at M-21	Roadside	Increase clear zone – tangent	1	Intersections	$79121	$79121	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	12,000	55	State Highway Agency	Spot	Intersections	Reduce F's & A's
204923 - US-23 N, Thompson Rd to Baldwin Rd	Roadside	Roadside - other	1.531	Miles	$117930	$117930	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	48,300	70	State Highway Agency	Spot	Lane Departure	Reduce F's & A's
209392 - M-15 at Coldwater Rd	Intersection geometry	Intersection geometry - other	1	Intersections	$80000	$80000	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	5,800	55	State Highway Agency	Spot	Intersections	Reduce F's & A's
126117 - M-57, Farland Ave to Ramsdell Dr	Roadway	Roadway widening - add lane(s) along segment	2.01	Miles	$39000	$39000	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	13,100	55	State Highway Agency	Spot	Lane Departure	Reduce F's & A's
127038 - M-91, Peck Rd to Colby Rd	Intersection geometry	Intersection realignment	0.863	Miles	$1552000	$1552000	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	6,000	55	State Highway Agency	Spot	Lane Departure	Reduce F's & A's
208003 - Regionwide	Roadside	Barrier- metal	0.788	Miles	$125863	$125863	State and Local Funds	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
209415 - US-131 at Hall St and Wealthy St	Advanced technology and ITS	Wrong-way Driving Detection System	0.545	Miles	$80000	$80000	State and Local Funds	Urban	Principal Arterial-Other Freeways & Expressways	105,200	70	State Highway Agency	Systemic	Intersections	Reduce F's & A's
127697 - M-3, Gratiot Ave at I-75 Connector	Pedestrians and bicyclists	Medians and pedestrian refuge areas	0.258	Miles	$401299	$401299	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	19,200	55	State Highway Agency	Spot	Pedestrians	Reduce F's & A's

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
128781 - Various locations in Macomb County	Pedestrians and bicyclists	Pedestrians and bicyclists – other	0	Miles	$565047	$565047	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Spot	Pedestrians	Reduce F's & A's
129205 - Regionwide	Roadway signs and traffic control	Roadway signs and traffic control - other	0	Miles	$72118	$72118	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Spot	Intersections	Reduce F's & A's
132599 - Regionwide	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	0	Miles	$86000	$86000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
132615 - Regionwide	Roadway	Rumble strips – edge or shoulder	0	Miles	$158000	$158000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
201987 - M-53, 18 Mile to 27 Mile	Roadside	Barrier – cable	9.636	Miles	$244352	$244352	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other Freeways & Expressways	35,750	70	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
204904 - M-10 SB Exit Ramps	Advanced technology and ITS	Wrong-way Driving Detection System	0.75	Miles	$160000	$160000	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other Freeways & Expressways	52,700	55	State Highway Agency	Systemic	Intersections	Reduce F's & A's
204953 - I-75 BL, Woodward Ave at South Blvd	Interchange design	Innovative Interchange Modifications	0.585	Miles	$475000	$475000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	23,800	45	State Highway Agency	Spot	Intersections	Reduce F's & A's
209356- I-94 EB	Roadway	Pavement surface – high friction surface	1.354	Miles	$590593	$590593	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	91,500	70	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
209692 - Regionwide	Miscellaneous	Work zone enforcement	1	Locations	$94000	$94000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Spot	Work Zones	Reduce F's & A's
209693 - Regionwide	Miscellaneous	Work zone enforcement	1	Locations	$94000	$94000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Spot	Work Zones	Reduce F's & A's
210125 - M-10, M-10 Ramp to Bagley St	Roadway	Pavement surface – high friction surface	0.364	Miles	$279497	$279497	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other Freeways & Expressways	35,800	55	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
128971 - US-31, W Silver Lake Rd to Sullivan Rd	Roadway	Roadway widening - add lane(s) along segment	0.687	Miles	$1323450	$1323450	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	14,700	55	State Highway Agency	Spot	Intersections	Reduce F's & A's
132593 - US-31, Griffin St to north of 11th St	Roadway	Roadway widening - add lane(s) along segment	0.299	Miles	$1265479	$1265479	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	19,700	45	State Highway Agency	Spot	Intersections	Reduce F's & A's
132601 - M-32, Fair Rd to W. Otsego County Line	Roadway	Roadway - other	34.457	Miles	$127802	$127802	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's

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
201929 - I-75, M-93 to Marlette Rd	Roadside	Removal of fixed objects (trees, poles, etc.)	11.683	Miles	$91344	$91344	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	17,500	75	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
201999 - I-75, Marlette Rd to I-75 BL	Roadside	Removal of fixed objects (trees, poles, etc.)	8.249	Miles	$1077734	$1077734	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	15,500	75	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
207196 - US-31, Holiday Rd to Five Mile Rd	Pedestrians and bicyclists	Medians and pedestrian refuge areas	0.9	Miles	$353493	$353493	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	23,900	45	State Highway Agency	Spot	Pedestrians	Reduce F's & A's
209094 - Regionwide	Roadway signs and traffic control	Curve-related warning signs and flashers	15.213	Miles	$121609	$121609	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
210154 - US-31 at M-22	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$209270	$209270	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	19,200	30	State Highway Agency	Spot	Intersections	Reduce F's & A's
210293 - M-113 at Vans Rd and M-22 at River Rd	Roadway	Pavement surface – high friction surface	2	Locations	$211034	$211034	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Intersections	Reduce F's & A's
210313 - Regionwide	Pedestrians and bicyclists	Pedestrian signal - other	0	Miles	$87000	$87000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Spot	Pedestrians	Reduce F's & A's
127639 - I-94 W Ramp at Wheatfield Rd	Roadway	Roadway - other	1	Locations	$414000	$414000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	3,600	70	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
129071 - M-43 at 28th St	Intersection geometry	Intersection realignment	1	Intersections	$120000	$120000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	12,500	55	State Highway Agency	Spot	Intersections	Reduce F's & A's
201123 - US-12 throughout Branch County	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	27.138	Miles	$122000	$122000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
201967 - I-94 W between I-94 Bl and 40th St	Roadside	Removal of fixed objects (trees, poles, etc.)	6.812	Miles	$52835	$52835	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	45,500	70	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
201994 - M-60 throughout Marshall TSC area	Intersection traffic control	Intersection traffic control - other	0	Miles	$77000	$77000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Spot	Intersections	Reduce F's & A's
202018 - M-62 at May St	Intersection geometry	Intersection geometry - other	1	Intersections	$280000	$280000	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	9,100	45	State Highway Agency	Spot	Intersections	Reduce F's & A's
204804 - M-40, US-12 to Marcellus Village Limit	Roadway	Rumble strips – center	15.097	Miles	$80000	$80000	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	3,300	55	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's

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
209402 - US-12, Edwardsburg Village limit east to Brady Rd	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	2.347	Miles	$133161	$133161	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	6,600	55	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
210101 - Regionwide	Intersection traffic control	Intersection signing – add enhanced regulatory sign (double-up and/or oversize)	30.274	Miles	$93500	$93500	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Spot	Intersections	Reduce F's & A's
120388 - M-28, FFH-13 to M-94	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	7.29	Miles	$76100	$76100	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,600	65	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
127585 - Regionwide	Roadway delineation	Roadway delineation - other	0	Miles	$149624	$149624	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
129413 - Regionwide	Roadway	Rumble strips – edge or shoulder	0	Miles	$1240000	$1240000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
132465 - Regionwide	Roadway	Rumble strips –other	0	Miles	$60000	$60000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
201941 - US-41 at Lakeshore Dr	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$805775	$805775	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	15,600	45	State Highway Agency	Spot	Intersections	Reduce F's & A's
201944 - US-41 from 0.5 miles esat of Pond Rd to Forest Dr	Intersection geometry	Intersection geometry - other	1.29	Miles	$104876	$104876	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	17,800	55	State Highway Agency	Spot	Intersections	Reduce F's & A's
209385 - M-28 from M-64 South to M-64 North	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	4.08	Miles	$14300	$14300	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	1,700	55	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
209758 - US-41 at Boston Rd	Access management	Change in access - close or restrict existing access	1	Intersections	$274000	$274000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	6,000	55	State Highway Agency	Spot	Intersections	Reduce F's & A's
210805 - various locations along US-2	Access management	Change in access - close or restrict existing access	11.464	Miles	$50000	$50000	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	0	0	State Highway Agency	Spot	Intersections	Reduce F's & A's
129137 - Various Locations on M-156	Pedestrians and bicyclists	Install sidewalk	0.33	Miles	$50000	$50000	HSIP (23 U.S.C. 148)	Multiple/Varies	Major Collector	1,750	35	State Highway Agency	Spot	Pedestrians	Reduce F's & A's
129167 - M-99 Eaton County	Roadway	Roadway - other	2.235	Miles	$199357	$199357	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	6,100	55	State Highway Agency	Systemic	Intersections	Reduce F's & A's

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
129168 - I-96 near Okemos Rd	Roadside	Barrier- metal	1.619	Miles	$117990	$117990	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	50,000	70	State Highway Agency	Spot	Roadway Departure	Reduce F's & A's
132613 - M-59 from Cullen Rd to 950' east of Hartland Woods	Intersection geometry	Add/modify auxiliary lanes	0.672	Miles	$2315111	$2315111	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	16,500	55	State Highway Agency	Spot	Intersections	Reduce F's & A's
204947 - I-96 from Clinton County Line to I-69	Roadside	Barrier – cable	9.608	Miles	$467500	$467500	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	53,100	70	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
205833 - M-17 sidewalks in Ann Arbor and Ypsilanti	Pedestrians and bicyclists	Install sidewalk	0.095	Miles	$74062	$74062	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Spot	Pedestrians	Reduce F's & A's
206241 - US-23 N from Geddes Rd to Ellsworth	Roadside	Barrier – cable	3.155	Miles	$351465	$351465	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	67,000	70	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
206504 - M-43 and I-69 BL sidewalks	Pedestrians and bicyclists	Install sidewalk	0.276	Miles	$34000	$34000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	24,700	45	State Highway Agency	Spot	Pedestrians	Reduce F's & A's
209346 - Statewide 2020 Safety Summit Local Agency Workforce Development	Miscellaneous	Training and workforce development	7	Regions	$25000	$25000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Spot	Data	Reduce F's & A's
210042 - Statewide RSAs	Miscellaneous	Road safety audits	7	Regions	$300000	$300000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Spot	Data	Reduce F's & A's
210127 - Statewide Before and After Study 2012-2015	Miscellaneous	Data analysis	7	Regions	$50000	$50000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Spot	Data	Reduce F's & A's
211084 - Statewide Data Driven Safety Analysis Implementation	Miscellaneous	Data analysis	7	Regions	$65000	$65000	HSIP (23 U.S.C. 148)	N/A	N/A	0	0	State Highway Agency	Spot	Data	Reduce F's & A's
206483 - Bay Region Longitudinal Pavement Marking Application	Roadway delineation	Longitudinal pavement markings - remarking	4800	Miles	$2970000	$2970000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206487 - Bay Region - Special pavement marking application	Roadway delineation	Roadway delineation - other	1863	Locations	$727500	$727500	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's

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206558 - Bay Region retroreflectivity readings	Roadway delineation	Improve retroreflectivity	1046	Miles	$14664	$14664	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
207279 - Bay Region Longitudinal Pavement Marking Design	Roadway delineation	Longitudinal pavement markings - remarking	0	Miles	$20000	$20000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
207281 - Bay Region Special Pavement Marking Design	Roadway delineation	Roadway delineation - other	0	Locations	$10000	$10000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206495 - Grand Region Longitudinal Pavement Marking Appilcation	Roadway delineation	Longitudinal pavement markings - remarking	4242	Miles	$2992500	$2992500	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206541 - Grand Region Special Pavement Marking Application	Roadway delineation	Roadway delineation - other	844	Locations	$342500	$342500	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206559 - Grand Region Pavement Marking Retroreflectivity Readings	Roadway delineation	Improve retroreflectivity	1161	Miles	$17000	$17000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
207283 - Grand Region Longitudinal Pavement Marking Design	Roadway delineation	Longitudinal pavement markings - remarking	0	Miles	$10000	$10000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206002 - Metro Region Pavement Marking Retroreflectivity Readings	Roadway delineation	Improve retroreflectivity	591	Miles	$19000	$19000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206542 - Metro Region Longitudinal Pavement Marking Appilcation	Roadway delineation	Longitudinal pavement markings - remarking	2687	Miles	$2935000	$2935000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206543 - Metro Region Special Pavement Marking Application	Roadway delineation	Roadway delineation - other	2717	Locations	$1135000	$1135000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
207286 - Metro Region Longitudinal	Roadway delineation	Longitudinal pavement markings - remarking	0	Miles	$10200	$10200	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's

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Pavement Marking Design															
207287 - Metro Region Special Pavement Marking Design	Roadway delineation	Roadway delineation - other	0	Locations	$10000	$10000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206003 - North Region Pavement Marking Retroreflectivity Readings	Roadway delineation	Improve retroreflectivity	1079	Miles	$17000	$17000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206544 - North Region Longitudinal Pavement Marking Appilcation	Roadway delineation	Longitudinal pavement markings - remarking	4773	Miles	$2098500	$2098500	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206545 - North Region Special Pavement Marking Application	Roadway delineation	Roadway delineation - other	1004	Locations	$532500	$532500	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
207288 - North Region Longitudinal Pavement Marking Design	Roadway delineation	Longitudinal pavement markings - remarking	0	Miles	$11600	$11600	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
207291 - North Region Special Pavement Marking Design	Roadway delineation	Roadway delineation - other	0	Locations	$13000	$13000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206006 - Southwest Region Pavement Marking Retroreflectivity Readings	Roadway delineation	Improve retroreflectivity	770	Miles	$12000	$12000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206546 - Southwest Region Longitudinal Pavement Marking Appilcation	Roadway delineation	Longitudinal pavement markings - remarking	3050	Miles	$1825000	$1825000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206547 - Southwest Region Special Pavement Marking Application	Roadway delineation	Roadway delineation - other	1681	Locations	$455000	$455000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
207293 - Southwest Region Longitudinal Pavement Marking Design	Roadway delineation	Longitudinal pavement markings - remarking	0	Miles	$10000	$10000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's

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
207295 - Southwest Region Special Pavement Marking Design	Roadway delineation	Roadway delineation - other	0	Locations	$10000	$10000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206549 - Superior Region Longitudinal Pavement Marking Appilcation	Roadway delineation	Longitudinal pavement markings - remarking	4535	Miles	$2246000	$2246000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206551 - Superior Region Special Pavement Marking Application	Roadway delineation	Roadway delineation - other	808	Locations	$535000	$535000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206561 - Superior Region Pavement Marking Retroreflectivity Readings	Roadway delineation	Improve retroreflectivity	882	Miles	$17000	$17000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
207296 - Superior Region Longitudinal Pavement Marking Design	Roadway delineation	Longitudinal pavement markings - remarking	0	Miles	$12000	$12000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
207297 - Superior Region Special Pavement Marking Design	Roadway delineation	Roadway delineation - other	0	Locations	$18000	$18000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206553 - University Region Longitudinal Pavement Marking Appilcation	Roadway delineation	Longitudinal pavement markings - remarking	4036	Miles	$2737500	$2737500	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206555 - University Region Special Pavement Marking Application	Roadway delineation	Roadway delineation - other	1448	Locations	$515000	$515000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
206562 - University Region Pavement Marking Retroreflectivity Readings	Roadway delineation	Improve retroreflectivity	910	Miles	$15000	$15000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Lane Departure	Reduce F's & A's
201946 - I-75 S Genessee County Line north to Wilder Rd, All of I-675	Roadway delineation	Roadway delineation - other	38.622	Miles	$157400	$157400	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
201998 - Metro Region Various Routes install	Roadway delineation	Roadway delineation - other	66.606	Miles	$106758	$106758	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's

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
flexible delineators on exit and entrance ramps															
132466 - US-31 non-freeway roadside delineator installation	Roadway delineation	Roadway delineation - other	86.736	Miles	$22027	$22027	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
201948 - M-55 delineation installation in Wexford and Manistee County	Roadway delineation	Roadway delineation - other	157.227	Miles	$345000	$345000	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
201952 - Delineation Installation on various routes in Traverse City TSC area	Roadway delineation	Roadway delineation - other	75.214	Miles	$22263	$22263	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
204917 - I-75 guardrail delineation in Gaylord TSC area	Roadway delineation	Roadway delineation - other	123.268	Miles	$312906	$312906	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	75	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
209782 - Delineation Installation in Alpena TSC area	Roadway delineation	Roadway delineation - other	65.192	Miles	$197853	$197853	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
209601 - US-223 Delineation Installation	Roadway delineation	Roadway delineation - other	2.232	Miles	$113771	$113771	HSIP (23 U.S.C. 148)	Multiple/Varies	N/A	0	0	State Highway Agency	Systemic	Roadway Departure	Reduce F's & A's
206921 Systemic intersection signing - Calhoun County	Intersection traffic control	Intersection signing – add enhanced regulatory sign (double-up and/or oversize)	6	Intersections	$23455	$25696	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	1,750	45	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207208 13 Mile Road at Michigan Avenue	Intersection traffic control	Intersection signing – add enhanced regulatory sign (double-up and/or oversize)	1	Intersections	$2160	$3435	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	750	55	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
206743 Systemic curve signing - Clinton County	Roadway signs and traffic control	Curve-related warning signs and flashers	32	Curves	$33711	$37457	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	1,800	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
206922 Systemic curve signing - Dickinson County	Roadway signs and traffic control	Curve-related warning signs and flashers	16.7	Miles	$55779	$61976	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	420	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries

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
206923 Systemic curve signing - Emmet County	Roadway signs and traffic control	Curve-related warning signs and flashers	19.83	Miles	$178758	$198620	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	4,974	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
206924 Systemic Edgelines - Jackson County	Roadway delineation	Longitudinal pavement markings – new	100.52	Miles	$214684	$238539	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	4,500	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207182 Systemic intersection signing - Jackson County	Intersection traffic control	Intersection signing – add enhanced regulatory sign (double-up and/or oversize)	9	Intersections	$19862	$22069	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	7,500	55	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207188 Systemic intersections - Kalamazoo County	Intersection traffic control	Intersection signing – add enhanced regulatory sign (double-up and/or oversize)	794	Signs	$265500	$269841	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	2,000	55	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207191 Systemic rumble strips - Macomb County	Roadway	Rumble strips – center	30	Miles	$241200	$252995	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	14,612	45	County Highway Agency	Systemic	Lane Departure	Reduce Fatalities and Serious Injuries
207192 Systemic rumble strips - Macomb County	Roadway	Rumble strips – center	20	Miles	$136350	$142053	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	16,336	45	County Highway Agency	Systemic	Lane Departure	Reduce Fatalities and Serious Injuries
209154 Armada Ridge Road	Roadway	Rumble strips – center	1.21	Miles	$11010	$12233	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,653	55	County Highway Agency	Systemic	Lane Departure	Reduce Fatalities and Serious Injuries
207193 Systemic curve signing - Midland County	Roadway signs and traffic control	Curve-related warning signs and flashers	1201	Signs	$196756	$263846	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	8,742	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207195 Systemic curve signing - Muskegon County	Roadway signs and traffic control	Curve-related warning signs and flashers	838	Signs	$176400	$197598	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	1,500	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207197 Systemic intersection signing - Muskegon County	Intersection traffic control	Intersection signing – add enhanced regulatory sign (double-up and/or oversize)	10	Intersections	$37837	$42041	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	1,500	55	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207198 Systemic curve signing - Oceana County	Roadway signs and traffic control	Curve-related warning signs and flashers	47.8	Miles	$174859	$194090	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	2,000	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries

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207203 CR437 and CR498	Roadway	Rumble strips – center	16.5	Miles	$82589	$91765	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	1,050	55	County Highway Agency	Systemic	Lane Departure	Reduce Fatalities and Serious Injuries
207261 Barry County guardrail	Roadside	Barrier- metal	13	Locations	$339978	$377754	HSIP (23 U.S.C. 148)	Multiple/Varies	Major Collector	2,736	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207262 village of Lake Ann guardrail	Roadside	Barrier- metal	7	Locations	$221779	$249421	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	2,106	55	Town or Township Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207264 Calhoun County overhead flashing beacons	Intersection traffic control	Intersection flashers –sign-mounted or overhead	3	Intersections	$48490	$53878	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	1,918	55	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207265 Partello Road at 20 Mile Road	Intersection traffic control	Intersection flashers –sign-mounted or overhead	1	Intersections	$16455	$18283	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	1,512	55	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207349 S Drive South from M-66 to 1 1/2 Mile Road	Roadside	Removal of fixed objects (trees, poles, etc.)	1.63	Miles	$21973	$24414	HSIP (23 U.S.C. 148)	Rural	Major Collector	828	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207351 CR 420 (21st Road) from the Escanaba River to west of 0.85 Road	Roadside	Barrier- metal	0.68	Miles	$134496	$149440	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,400	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
207352 Systemic backplates - city of Grand Blanc	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	7	Intersections	$304785	$317790	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	34,900	35	City or Municipal Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207353 Davision Road from Oak Road to Cummings Road	Roadway	Roadway widening - travel lanes	0.5	Miles	$378000	$495568	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	7,453	55	County Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries
207354 Genesee County restriping to create headed-up left turn lanes	Intersection geometry	Modify lane assignment	14	Intersections	$38880	$41938	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	25,065	55	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207355 McCulloch Road from Beaverton Road to Spicer Road	Roadway	Pavement surface – high friction surface	0.64	Miles	$152000	$186534	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,430	55	County Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries

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207407 Hockaday Road at Weber Road	Roadway	Pavement surface – high friction surface	0.19	Miles	$96282	$120353	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,590	55	County Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries
207411 Gratiot County guardrail	Roadside	Barrier- metal	8	Locations	$141300	$152950	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	1,208	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207412 Begole Road at Cheesman Road	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$600000	$737430	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	6,522	45	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
207413 Harrison Road from E Michigan Avenue (M-143) to W Grand River Avenue (M-43) road-diet and bike lanes	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.3	Miles	$122268	$233888	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	9,670	25	City or Municipal Highway Agency	Spot	Bicyclists	Reduce Fatalities and Serious Injuries
207419 Waverly Road from Old Lansing Road to St. Joseph Highway shared use path	Pedestrians and bicyclists	Pedestrians and bicyclists – other	1.17	Miles	$333000	$352988	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	20,200	45	County Highway Agency	Spot	Pedestrians	Reduce Fatalities and Serious Injuries
207421 F-41 from Lake State Railway to Beard Road	Roadway	Pavement surface – high friction surface	0.3	Miles	$243000	$267418	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	8,900	40	County Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries
207422 East Paris Avenue SE at Burton Street SE	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$178400	$235589	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	12,700	35	City or Municipal Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
207424 Fuller Avenue at Malta Street, Fuller Avenue at Short Street/Bradford Street, Fuller Avenue at Sweet Street	Intersection traffic control	Modify traffic signal –other	3	Intersections	$349155	$406129	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	12,700	35	City or Municipal Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
207426 Fuller Avenue at Leonard Street, Fuller Avenue at Knapp Street, Fuller Avenue at Aberdeen	Intersection traffic control	Modify traffic signal – modernization/replacement	4	Intersections	$494204	$561672	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	12,700	35	City or Municipal Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries

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Street, Fuller Avenue at 3 Mile Road															
207427 Leonard Street at Scribner Avenue	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$237600	$244973	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	12,700	35	City or Municipal Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
207428 Backplates - Macomb County	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	8	Intersections	$81000	$82539	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	29,600	50	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207431 Backplates - Macomb County	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	21	Intersections	$155700	$165063	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	27,500	50	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207434 Schoenherr at Metro Parkway, Metro Parkway at Dodge Park, Moravian at 15 Mile Road, Hayes Road at Shoreline	Intersection traffic control	Modify traffic signal – modernization/replacement	4	Intersections	$241200	$909688	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	29,600	50	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207435 12 Mile Road at Milton, 12 Mile Road at Tech Drive/Arsenal, 12 Mile Road at Burnet, 9 Mile Road at Mound Road	Intersection traffic control	Modify traffic signal – modernization/replacement	4	Intersections	$190800	$238166	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	27,500	50	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207436 CR 492 (CR HQ) from US-41 to Commerce Drive/Forestville Road	Roadway	Roadway - other	0.62	Miles	$94770	$106144	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	6,424	45	City or Municipal Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries
207437 Baldwin Avenue between Cesar Chavez and Walton Boulevard	Intersection traffic control	Modify traffic signal – modernization/replacement	6	Intersections	$624000	$904334	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	16,400	35	City or Municipal Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
207438 Martin Luther King Jr. Boulevard at Featherstone Street and at University Drive	Intersection traffic control	Modify traffic signal – modernization/replacement	2	Intersections	$375520	$532249	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	25,530	35	City or Municipal Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries

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207439 Systemic backplates - Oakland County	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	85	Intersections	$322920	$332602	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	21,880	55	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
207443 Ottawa Beach Road between Bower Street and 3rd Avenue	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	4	Locations	$56530	$70579	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	9,672	35	County Highway Agency	Spot	Pedestrians	Reduce Fatalities and Serious Injuries
207444 Schoolcraft County - 5 roadways	Roadway signs and traffic control	Roadway signs (including post) - new or updated	17.4	Miles	$58945	$65494	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	780	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207446 Schoolcraft County guardrail	Roadside	Barrier- metal	4	Locations	$84370	$93745	HSIP (23 U.S.C. 148)	Rural	Major Collector	730	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207447 Huron Parkway at Glazier Way and Huron Parkway at Baxter Street	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	2	Locations	$84558	$93953	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	25,800	40	City or Municipal Highway Agency	Systemic	Pedestrians	Reduce Fatalities and Serious Injuries
207448 S Hewittt Road between Burns Avenue and Harding Avenue	Pedestrians and bicyclists	Install sidewalk	0.08	Miles	$280667	$293061	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	8,254	45	County Highway Agency	Spot	Pedestrians	Reduce Fatalities and Serious Injuries
207449 Wagner Road from approximately 900 feet south of Liberty Road to Huron River Drive	Roadway	Roadway - other	3.4	Miles	$327227	$363586	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	7,208	45	County Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries
207451 Wagner Road from Ann Arbor-Saline Road to approximately 900 feet south of Liberty Road	Roadway	Roadway - other	3.54	Miles	$600000	$680912	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	9,902	45	County Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries
207452 city of Dearborn pedestrian crossings	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	4	Locations	$87456	$100358	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	10,800	35	City or Municipal Highway Agency	Systemic	Pedestrians	Reduce Fatalities and Serious Injuries
207453 Kelly Road near Cushing Street	Pedestrians and bicyclists	Pedestrian hybrid beacon	1	Locations	$151408	$168231	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	18,700	35	City or Municipal Highway Agency	Spot	Pedestrians	Reduce Fatalities and Serious Injuries

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
207454 Ecorse Road at Pelham Road	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$220783	$266043	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	27,000	40	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
207455 Eureka Road at Dix Toledo Highway	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$227775	$272739	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	47,000	40	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
207456 Hannan Road at North Line Road	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$169705	$1530842	HSIP (23 U.S.C. 148)	Urban	Major Collector	3,150	50	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
207457 Van Born Road at Beech-Daly Road	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$204962	$235705	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	19,900	45	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
210416 Barry County guardrail	Roadside	Barrier- metal	18	Locations	$495888	$524034	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	2,427	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
202898 Genesee County - Preliminary Engineering for backplates	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	14	Intersections	$8358	$9194	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	18,000	45	County Highway Agency	Systemic	Intersections	Reduce Fatalities and Serious Injuries
203421 Maple Road at Southfield Road intersection	Intersection geometry	Intersection realignment	1	Intersections	$265700	$485277	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	25,000	25	City or Municipal Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
127385 Drake Road shared use path from West Michigan Avenue to Greenmeadow Road	Pedestrians and bicyclists	Pedestrians and bicyclists – other	0.42	Miles	$316376	$636957	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	27,827	45	County Highway Agency	Spot	Pedestrians	Reduce Fatalities and Serious Injuries
200454 Isabella Road at Bluegrass Road; Isabella Road at Broomfield Road; Isabella Road at Remus Road	Intersection traffic control	Modify traffic signal –other	3	Intersections	$600000	$863992	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	14,450	45	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
210237 Preliminary Engineering for County Road 582 at Amy School Road (East Intersection)	Roadway	Install / remove / modify passing zone	0.2	Miles	$8578	$17156	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,817	55	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries

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
210243 Preliminary Engineering for Federal Road from Pierson Road to Cannonsville Road	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1.15	Miles	$18550	$37100	HSIP (23 U.S.C. 148)	Rural	Major Collector	6,070	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
210234 Preliminary Engineering for Wood Street at Sam's Way	Roadway	Pavement surface – high friction surface	1	Intersections	$8109	$16218	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	8,500	45	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
210306 Hinckley Boulevard/Stonewall Road at Badgley Road and Hinckley Boulevard at Browns Lake Road	Miscellaneous	Road safety audits	1	Study	$16000	$20000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	19,865	40	County Highway Agency	Spot	Safety Analysis	Reduce Fatalities and Serious Injuries
210307 Hinckley Boulevard/Stonewall Road at Badgley Road and Hinckley Boulevard at Browns Lake Road	Miscellaneous	Road safety audits	1	Study	$16000	$20000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	6,923	40	County Highway Agency	Spot	Safety Analysis	Reduce Fatalities and Serious Injuries
207217 Pine River Road from east of LaClair Road to the Pine River	Roadway	Superelevation / cross slope	1.03	Miles	$382817	$506682	HSIP (23 U.S.C. 148)	Rural	Minor Collector	405	55	County Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries
207218 Linco Road from east of Hollywood Road to west of Garr Road	Roadside	Barrier- metal	2.33	Miles	$410055	$449199	HSIP (23 U.S.C. 148)	Rural	Minor Collector	1,227	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207219 Southern Road from Whaley Road to Flint Road	Roadway	Superelevation / cross slope	1	Miles	$180900	$219867	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,332	45	County Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries
207221 Banfield Road from M-37 to Base Line Road	Roadside	Removal of fixed objects (trees, poles, etc.)	0.96	Miles	$12178	$13531	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,182	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207222 N Drive North from 9 1/2 Mile Road to 12 Mile Road	Roadside	Removal of fixed objects (trees, poles, etc.)	2.26	Miles	$8285	$9205	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	1,462	50	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207223 N Drive North from 12 Mile Road to 14 Mile Road	Roadside	Removal of fixed objects (trees, poles, etc.)	1.97	Miles	$8884	$9871	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,832	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries

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
207224 Whittemore Road from South Towerline Road to South Britt Road; Kokosing Road from Lakeside Boulevard to M-65	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	2.1	Miles	$198000	$227677	HSIP (23 U.S.C. 148)	Rural	Major Collector	600	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
207225 Jefferson Road from Meridian Road (US-127) to Hyde Road	Roadside	Removal of fixed objects (trees, poles, etc.)	1.04	Miles	$62200	$69111	HSIP (23 U.S.C. 148)	Rural	Major Collector	6,100	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207226 W Michigan Avenue from Chapel Road to N Sandstone Road	Roadside	Removal of fixed objects (trees, poles, etc.)	2.01	Miles	$109333	$121481	HSIP (23 U.S.C. 148)	Rural	Major Collector	6,400	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
207227 South Jackson Road at Lindsey Road	Intersection geometry	Intersection realignment	1	Intersections	$166105	$184562	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,200	55	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
207248 S Avenue from west of 34th Street to 36th Street	Roadway	Roadway widening - add lane(s) along segment	1.2	Miles	$513000	$1415500	HSIP (23 U.S.C. 148)	Rural	Major Collector	598	55	County Highway Agency	Spot	Lane Departure	Reduce Fatalities and Serious Injuries
207249 G Avenue from 2nd Street to 6th Street	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	2.07	Miles	$317700	$776840	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	776	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
207252 North Avenue from 26 Mile Road to Bordman Road	Roadway signs and traffic control	Roadway signs (including post) - new or updated	12.42	Miles	$93577	$103974	HSIP (23 U.S.C. 148)	Rural	Major Collector	8,000	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
207253 95th Avenue from Eisenhower Road to 1 Mile Road and 150th Avenue from Buchannan Road to M-20	Roadside	Removal of fixed objects (trees, poles, etc.)	6.9	Miles	$447444	$470260	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,200	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
207257 F-97 from south of Clear Lake Ranch Road to north of Wolverine Drive	Roadway	Roadway widening - curve	2.63	Miles	$183771	$218241	HSIP (23 U.S.C. 148)	Rural	Major Collector	792	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
207258 Farrand Road at Colon Road	Intersection traffic control	Modify control – Compact/Mini-roundabout	1	Intersections	$292500	$329608	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	3,171	55	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries

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
207259 Fawn River Road from west of Mill Pond Road (west junction) to east of Mill Pond Road (east junction)	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1.36	Miles	$288000	$372823	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,653	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
202885 Redfield Street between Fir Road and Brush Road, in Milton Township	Roadside	Removal of fixed objects (trees, poles, etc.)	1.01	Miles	$26244	$35488	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,458	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
202886 Dailey Road between Pokagon Highway and Besson Street, in LaGrange Township	Roadside	Removal of fixed objects (trees, poles, etc.)	2	Miles	$25272	$28129	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,657	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
203174 Downey Street between Indian Trail and Red Mill Road, in Silver Creek Township	Roadside	Removal of fixed objects (trees, poles, etc.)	0.99	Miles	$36558	$42913	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	413	55	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
203473 Monroe County guardrail	Roadside	Barrier- metal	4	Locations	$243900	$266349	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	1,770	45	County Highway Agency	Systemic	Roadway Departure	Reduce Fatalities and Serious Injuries
210236 Preliminary Engineering for Montcalm Area Career Center West Driveway to M-66	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	1.65	Miles	$22585	$45170	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,294	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
200117 Preliminary Engineering for Evergreen Road segment and 8th Street/James Road at Coho Lane intersection	Roadway delineation	Roadway delineation - other	4.04	Miles	$5500	$11000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	275	55	County Highway Agency	Spot	Roadway Departure	Reduce Fatalities and Serious Injuries
209075 Preliminary Engineering for Colony Road at US-127	Intersection geometry	Intersection geometry - other	2	Miles	$25000	$50000	HSIP (23 U.S.C. 148)	Rural	Major Collector	650	55	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries
210245 Preliminary Engineering for CR 612 at Crawford Lake Road	Alignment	Vertical alignment or elevation change	0.95	Miles	$33000	$66000	HSIP (23 U.S.C. 148)	Rural	Major Collector	5,000	55	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries

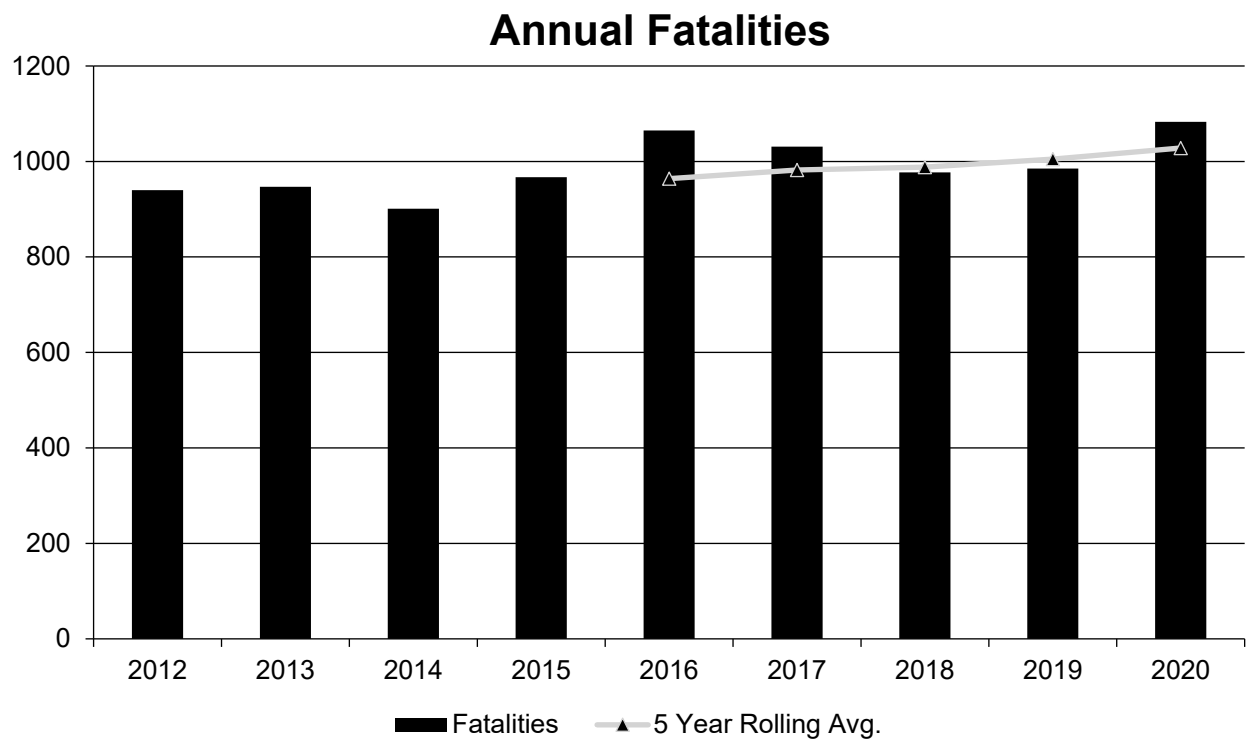
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
210252 Preliminary Engineering for Waldo Road at Monroe Road	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$37501	$75002	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	3,027	55	County Highway Agency	Spot	Intersections	Reduce Fatalities and Serious Injuries

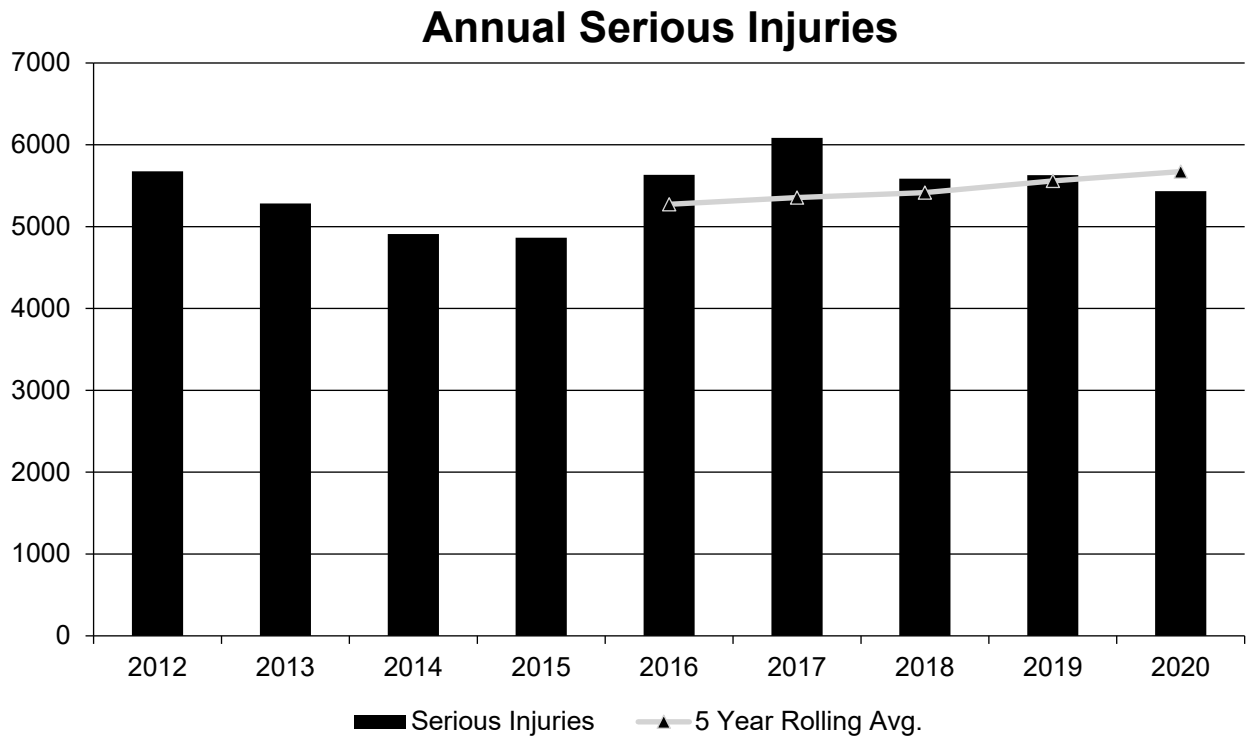
Safety Performance

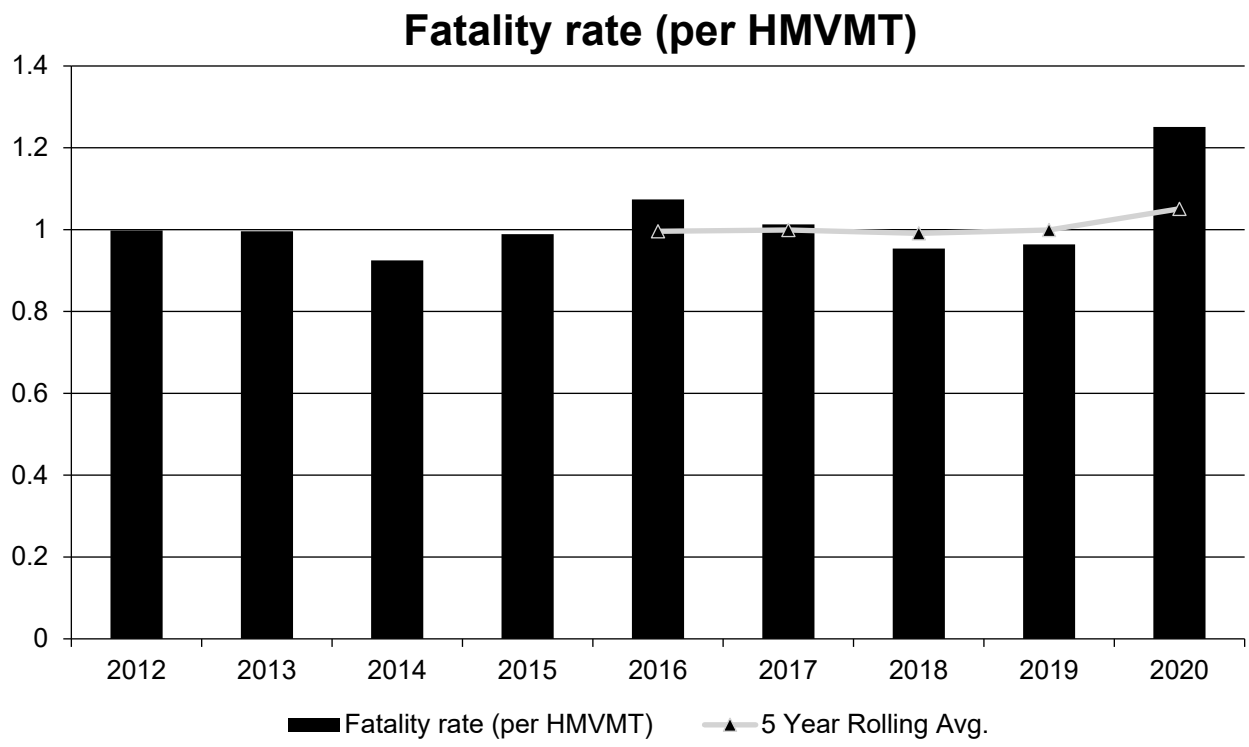
General Highway Safety Trends

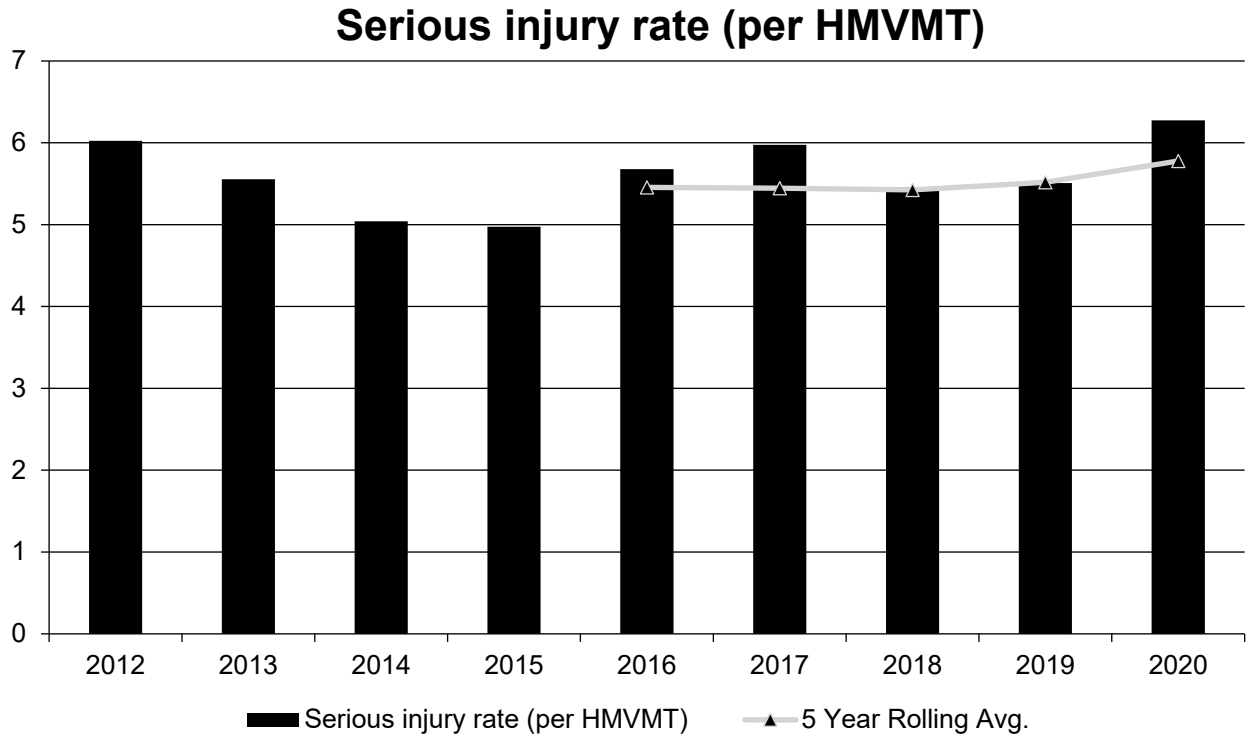
Present data showing the general highway safety trends in the State for the past five years.

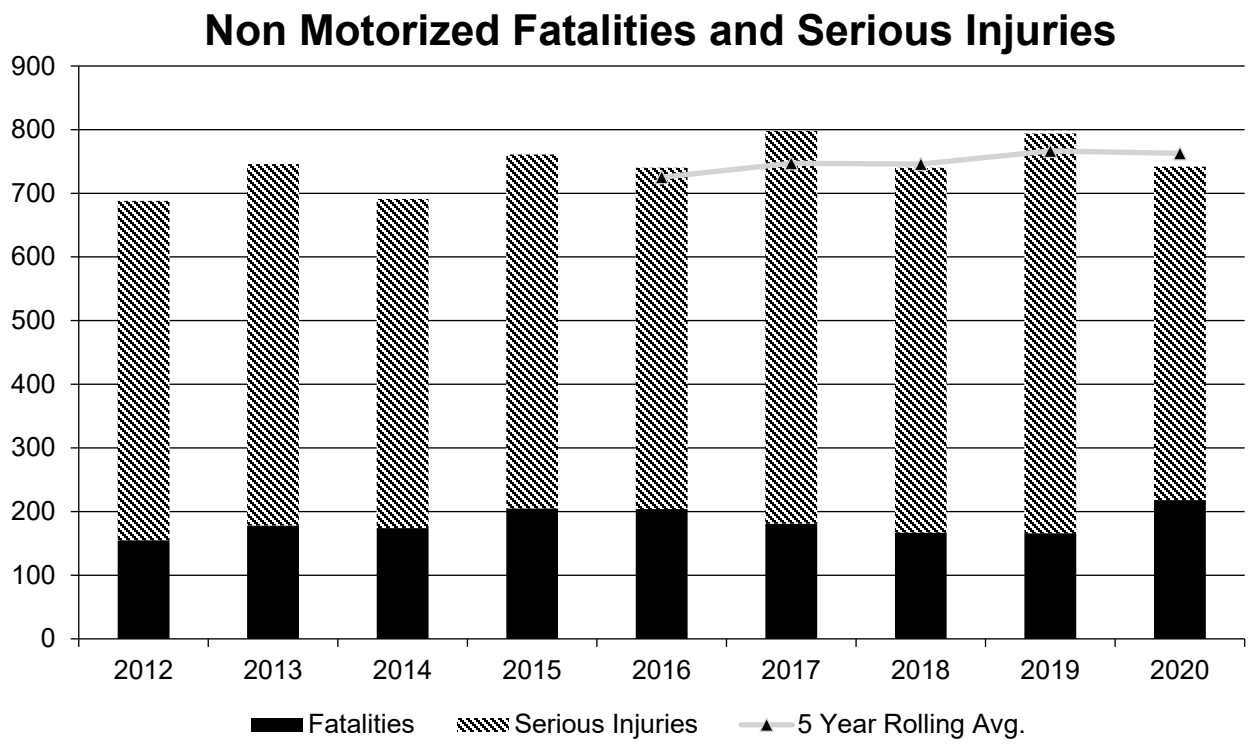
PERFORMANCE MEASURES	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fatalities	940	947	901	967	1,065	1,031	977	985	1,083
Serious Injuries	5,676	5,283	4,909	4,865	5,634	6,084	5,586	5,629	5,433
Fatality rate (per HMVMT)	0.998	0.996	0.925	0.989	1.074	1.013	0.954	0.964	1.251
Serious injury rate (per HMVMT)	6.025	5.555	5.040	4.974	5.679	5.976	5.455	5.508	6.274
Number non-motorized fatalities	155	178	174	205	204	181	167	166	218
Number of non-motorized serious injuries	533	568	517	556	536	617	573	628	524


Annual Fatalities
1200
1000
800
600
400
200
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
7000
6000
5000
4000
3000
2000
1000
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
7
6
5
4
3
2
1
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

FARS

FARS data is used to calculate the 2022 performance targets and 2012 thru 2020 Fatality data. All other data included in the report uses Michigan's Statewide Crash database for reporting (Emphasis Areas, Road Classification, Road Ownership, etc)

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

Year 2020

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	21.6	93.4	0.4	1.69
Rural Principal Arterial (RPA) - Other Freeways and Expressways	11.4	53.6	0.43	2.04
Rural Principal Arterial (RPA) - Other	53	223.4	1.27	5.34
Rural Minor Arterial	93.8	450.4	1.4	6.7

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 Collector	13.6	75.2	1.58	8.69
Rural Major Collector	141.2	648.4	1.75	8.02
Rural Local Road or Street	77.6	1,183.4	3.47	57.22
Urban Principal Arterial (UPA) - Interstate	76	391.6	0.45	2.29
Urban Principal Arterial (UPA) - Other Freeways and Expressways	31.2	172.2	0.51	2.77
Urban Principal Arterial (UPA) - Other	221.6	1,250	1.31	7.33
Urban Minor Arterial	133.53	1,033.8	1.08	6.71
Urban Minor Collector	1.6	5.6	1.6	5.63
Urban Major Collector	53.4	310	1.67	6.23
Urban Local Road or Street	60.4	421.8	0.85	5.88

Year 2019

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				
Non-Trunkline (County, City, Local Owned Roadways)	576.6	3,196.6	1.22	6.76
Trunkline (State Owned Roadways)	426.2	2,348.4	0.8	4.39
County Highway Agency				
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				
Private (Other than Railroad)				
Railroad				
State Toll Authority				
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				
Trunkline (State Owned Roadways)				
Non-Trunkline (County, City, Local Owned Roadways)				

Provide additional discussion related to general highway safety trends.

In review of the 5-Year Rolling Average Statewide, state trunkline and local roadways, fatalities have seen an increase of 7.2 percent over the 5 year span. State trunkline fatalities had an overall increase of 8.3 percent while local roadway fatalities had an overall increase of 6.5 percent.

Serious injuries statewide have seen an increase of 7.6 percent over the 5 year rolling average. State trunkline serious injuries had an overall increase of 8.5 percent while local roadway serious injuries had an overall increase of 7.3 percent.

In regard to rates, the fatality and serious injury rates are lower on state trunkline than on local roadways. Overall, the fatality rate increased 9.9 percent while the serious injury rate decreased 3.5 percent. The state trunkline saw a 7.4 percent increase in the fatality rate and a 8.6 percent serious injury rate decrease. The local roadways saw a 11.9 percent fatality rate increase and a 1.4 percent serious injury rate increase.

For both statewide and state trunkline the fatality rate has been at or below 1.10 fatality per 100 million vehicle miles traveled for 2012-2016 to 2016-2020. The local roadway fatality rate was at or below 1.27 during the entire analysis time period, while the state trunkine fatality rate was at or below 0.85 for the same time period.

Safety Performance Targets

Safety Performance Targets

Calendar Year 2022 Targets *

Number of Fatalities:1065.2

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

To determine a forecasted value for the five-year rolling average for the first four measures, the decision was made to use the change model created by UMTRI used for establishing previous targets. UMTRI predicts 967 fatalities in CY 2021, and 1065 in 2022. The change model predicts change in fatalities from the previous year based on several predictors. This log-change regression model is tied closely to whatever happened recently, so it cannot diverge very far from the current time unless we predict many years out into the future. In the future, the change model predicts a steady (slow) decrease in fatalities. The dataset is a set of differences from one year to the next within the state, expressed as a percentage of the previous year. Thus, the predictors can influence exposure and/or risk. The count model, however, directly predicts counts so it could diverge from observed by a lot if the patterns change in the real world. Based on known factors the count model shows a steady increase in fatalities through 2025. As this is not what is expected the change model was selected in developing the targets. This supports the SHSP by identifying Michigan's key safety needs and guide investment decisions to achieve significant reductions in traffic fatalities and serious injuries on public roadways.

Number of Serious Injuries:5733.2

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

The model predicts 5,409 serious injuries in CY 2021, and 5,673 in 2022. While serious injuries have fluctuated over the past several years, the linear relationship of the ratio of serious injuries and fatalities (A/K) going back to 2003 is still evident. However, this trend suggests a greater reduction in serious injuries than being observed. Therefore, a linear model using the last eight year of data was used which projects a flattening

pattern. This supports the SHSP by identifying Michigan's key safety needs and guide investment decisions to achieve significant reductions in traffic fatalities and serious injuries on public roadways.

Fatality Rate:1.098

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

VMT values have been predicted for CYs 2020, 2021 and 2022. VMT estimates for CY 2020 are reduced due to COVID-19. Using the fatal injury values, along with the respective predicted VMT, the forecasted fatality rates are 0.945 for CY 2021, and 1.051 for CY 2022.This supports the SHSP by identifying Michigan's key safety needs and guide investment decisions to achieve significant reductions in traffic fatalities and serious injuries on public roadways.

Serious Injury Rate:5.892

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

VMT values have been predicted for CYs 2020, 2021 and 2022. VMT estimates for CY 2020 are reduced due to COVID-19. Using the fatal injury values, along with the respective predicted VMT, the forecasted serious injury rates are 5.287 for CY 2021, and 5.778 for CY 2022.This supports the SHSP by identifying Michigan's key safety needs and guide investment decisions to achieve significant reductions in traffic fatalities and serious injuries on public roadways.

Total Number of Non-Motorized Fatalities and Serious Injuries:791.6

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

Results from the UMTRI model as described (the fatality and serious injury relationship) were also used to generate non-motorized forecasted annual values of 799 for CY 2021, and 762 for CY 2022.This supports the SHSP by identifying Michigan's key safety needs and guide investment decisions to achieve significant reductions in traffic fatalities and serious injuries on public roadways.

The annual forecasted values for CY 2021 and CY 2022 along with the actual values from CY 2018 to 2020 to determine the 2022 Targets (five-year rolling average) are shown in the table. In addition, actual values dating back to CY 2012 are included as part of the determination of the 2020 baseline condition.

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

The Michigan DOT, the Michigan Office of Highway Safety Planning (OHSP), and the University of Michigan Transportation Research Institute (UMTRI) collaborated to establish the safety performance targets for Michigan. This collaboration included meetings with the analysis team along with input from MPO's and FHWA. The OSHP is a division under the Michigan State Police. The Director of OHSP serves as the chair to the Governor's Traffic Safety Advisory Commission (GTSAC) in Michigan.

Does the State want to report additional optional targets?

No
N/A

Describe progress toward meeting the State's 2020 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	999.4	1028.2
Number of Serious Injuries	5520.4	5673.2
Fatality Rate	0.970	1.051
Serious Injury Rate	5.340	5.778
Non-Motorized Fatalities and Serious Injuries	735.8	762.8

Based on Targets vs Actual, Michigan will preliminarily not meet any of the 5 performance targets for FY 2020. While FY 2020 total crashes were down 22% compared to FY 2012 fatalities were up 10%. The greatest impacts on the increase to fatalities were alcohol (+11%), drugs (+13%), young drivers (+6%), bicycle (+81%), motorcyclists (+25%), ORVs (+114%) pedestrian (+17%) and cell phone (+33%).

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	2014	2015	2016	2017	2018	2019	2020
Number of Older Driver and Pedestrian Fatalities	126	133	172	155	159	159	181
Number of Older Driver and Pedestrian Serious Injuries	434	393	506	558	509	574	464

Data has been updated with 2020 crash data information based on the State of Michigan Crash database.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Other-Decrease of both fatal and serious injuries on a five-year rolling average

MDOT acknowledges the increasing trend of fatalities and serious injuries that are occurring on our roadway network. MDOT is focusing on projects that affect the roadway networks in large areas including:

- Non-infrastructure – training and workforce development, traffic studies, data analysis
- Advance technology and ITS – ITS
- Alignment – horizontal and vertical alignment
- Interchange design – interchange improvements
- Intersection geometry – auxiliary lanes, geometry improvements
- Intersection traffic control – flasher install, conversion to roundabout, signal modernization, intersection upgrades
- Pedestrian and bicyclist – median and refuge areas, sidewalks, crosswalks, pedestrian signal improvements
- Railroad grade crossings – widen crossing
- Roadside – barrier install (cable, concrete, metal), drainage and grading improvements, roadside object removal
- Roadway – access management, high friction pavement surface, roadway narrowing/widening, rumble strips
- Roadway delineation – delineators, pavement markings, retroreflectivity improvements
- Roadway signs and traffic control – curve warning signs, signing upgrades and/or replacement
- Shoulder treatments – shoulder paving, shoulder widening
- Speed management – radar speed signs
- Lighting – lighting improvements

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

MDOT plans on conducting a Trunkline before and after study evaluation for years 2012, 2013, 2014 and 2015 in the next fiscal year. Any future before and after study will utilize the data-driven approach to safety decisions focusing on the Towards Zero Deaths initiative.

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

- # RSAs completed
- Increased awareness of safety and data-driven process
- Increased focus on local road safety
- Other-Before and After Studies
- Other-Additional Systemic Treatments based on crash data

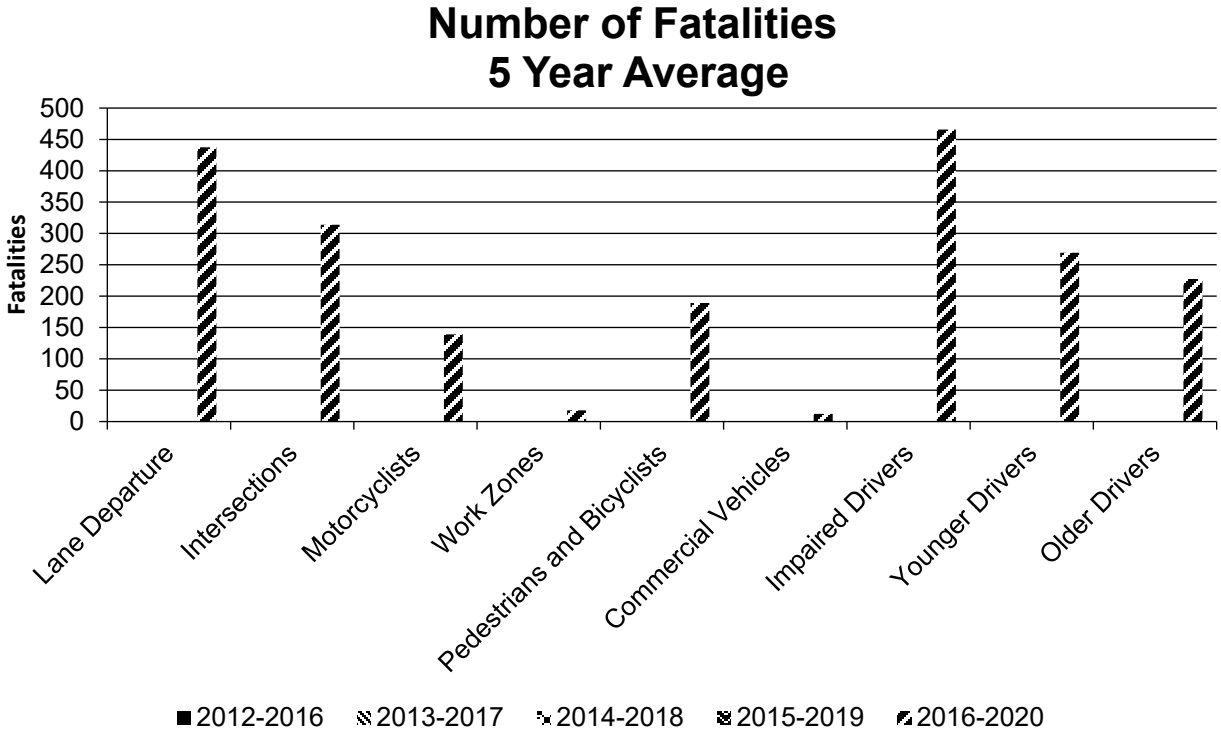
N/A

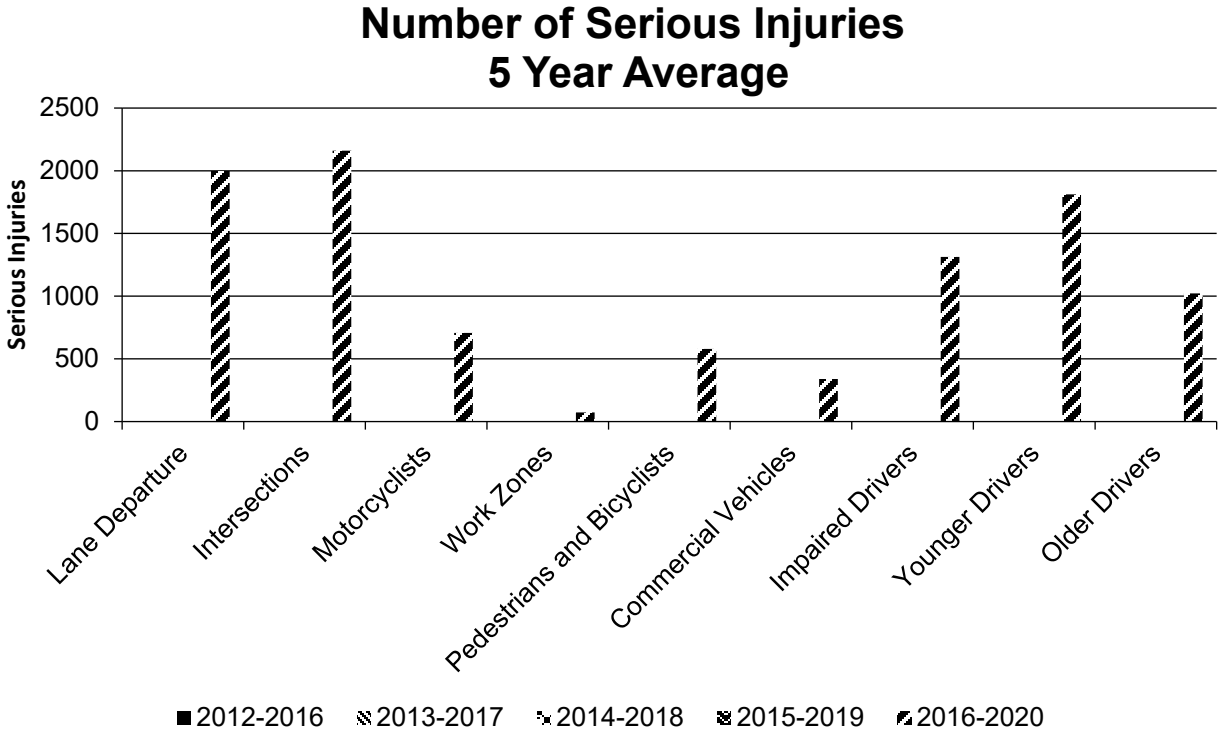
Effectiveness of Groupings or Similar Types of Improvements

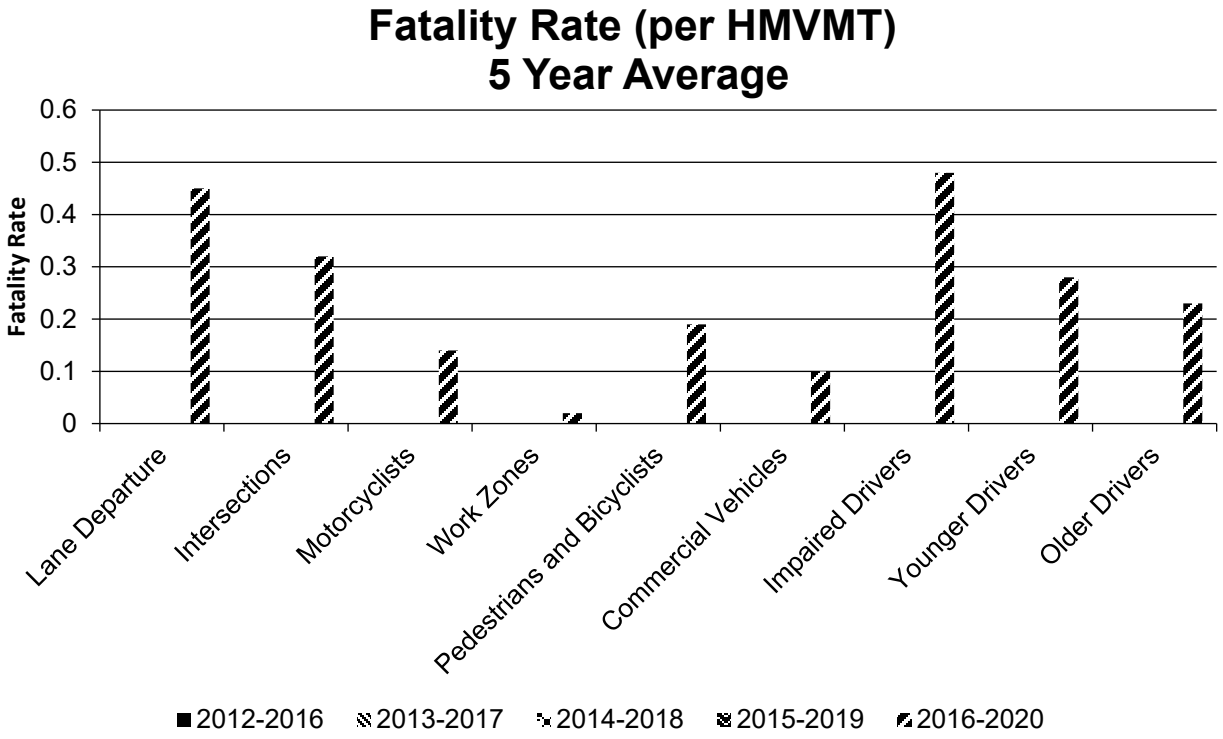
Present and describe trends in SHSP emphasis area performance measures.

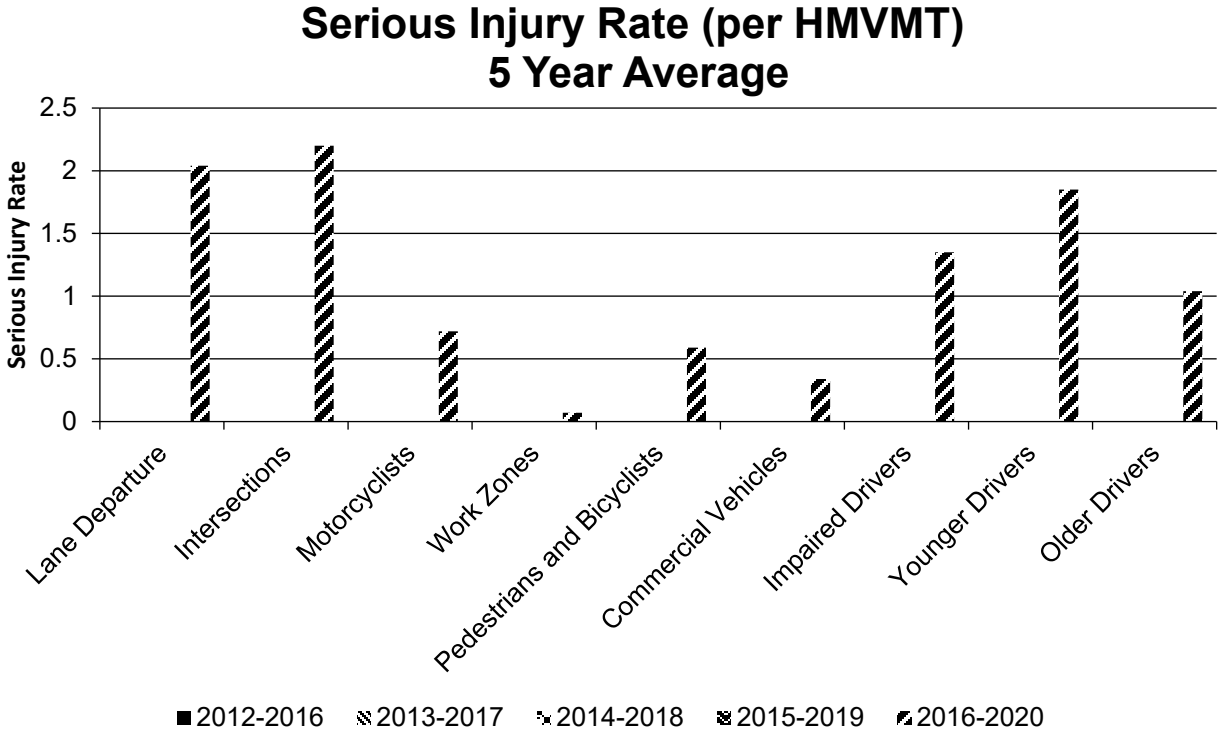
Year 2020

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)
Lane Departure	Cross median, fixed object, side swipe, head-on, run off road	437.4	1,997.6	0.45	2.04
Intersections	Intersections	314	2,159.6	0.32	2.2
Motorcyclists	All	139	706.6	0.14	0.72
Work Zones	All	18	73.2	0.02	0.07
Pedestrians and Bicyclists	All	189	579	0.19	0.59
Commercial Vehicles	All	12.2	339.2	0.1	0.34
Impaired Drivers	All	465.6	1,313.6	0.48	1.35
Younger Drivers	All	269.2	1,811.6	0.28	1.85
Older Drivers	All	227.4	1,022	0.23	1.04


Number of Fatalities
5 Year Average
Fatalities
500
450
400
350
300
250
200
150
100
50
0
Lane Departure
Intersections
Motorcyclists
Work Zones
Pedestrians and Bicyclists
Commercial Vehicles
Impaired Drivers
Younger Drivers
Older Drivers
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Number of Serious Injuries
5 Year Average
Serious Injuries
2500
2000
1500
1000
500
0
Lane Departure
Intersections
Motorcyclists
Work Zones
Pedestrians and Bicyclists
Commercial Vehicles
Impaired Drivers
Younger Drivers
Older Drivers
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
0.6
0.5
0.4
0.3
0.2
0.1
0
Lane Departure
Intersections
Motorcyclists
Work Zones
Pedestrians and Bicyclists
Commercial Vehicles
Impaired Drivers
Younger Drivers
Older Drivers
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
2.5
2
1.5
1
0.5
0
Lane Departure
Intersections
Motorcyclists
Work Zones
Pedestrians and Bicyclists
Commercial Vehicles
Impaired Drivers
Younger Drivers
Older Drivers
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020

Project Effectiveness

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

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

In FY 2018 and 2019 MDOT installed sinusoidal mumble strips as a pilot project. Analysis of the functionality of the effectiveness of the installation was conducted during FY 2019 and 2020. Rumble strips are proving to be a cost-effective countermeasure to lane-departure crashes on Michigan’s state highways. A final analysis will be completed in FY 2021.

Compliance Assessment

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

11/07/2019

What are the years being covered by the current SHSP?

From: 2019 To: 2022

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

2022

https://www.michigan.gov/documents/msp/SHSP_2019-2022_22_web_no_draft_678858_7.pdf

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									
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]										
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100	100					100	15		
	Begin Point Segment Descriptor (10) [10]	100	100								
	End Point Segment Descriptor (11) [11]	100	100								
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]										
	Functional Class (19) [19]	100	100					100	100	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
	Median Type (54) [55]	80	95								
	Access Control (22) [23]										
	One/Two Way Operations (91) [93]	95	10								
	Number of Through Lanes (31) [32]	100	80					100			
	Average Annual Daily Traffic (79) [81]	100	95								
	AADT Year (80) [82]	100	95								
	Type of Governmental Ownership (4) [4]	100	100					100			
INTERSECTION	Unique Junction Identifier (120) [110]			100	100						
	Location Identifier for Road 1 Crossing Point (122) [112]			100	100						
	Location Identifier for Road 2 Crossing Point (123) [113]			100	100						
	Intersection/Junction Geometry (126) [116]										
	Intersection/Junction Traffic Control (131) [131]										
	AADT for Each Intersecting Road (79) [81]			100	95						
	AADT Year (80) [82]										
	Unique Approach Identifier (139) [129]										
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					100	100				
	Location Identifier for Roadway at					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
	Beginning of Ramp Terminal (197) [187]										
	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				
	Roadway Type at End Ramp Terminal (199) [189]						100				
	Interchange Type (182) [172]					100	100				
	Ramp AADT (191) [181]					98	100				
	Year of Ramp AADT (192) [182]					98	100				
	Functional Class (19) [19]					100	100				
	Type of Governmental Ownership (4) [4]					100	100				
Totals (Average Percent Complete):		**81.94**	**70.83**	**50.00**	**49.38**	**81.45**	**100.00**	**66.67**	**35.00**	**40.00**	**40.00**

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

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.

MDOT is still continuing to collect the MIRE FDE data using the Roadsoft program updated by Michigan Technological University through 2022 and beyond. MDOT currently is on pace to have complete access to the MIRE FDE by September 30, 2026.

Optional Attachments

Program Structure:

Highway CFP Manual_June_2021.pdf
MDOT Safety Manual.pdf
Local Agency HSIP Manual_August 2019.pdf Project Implementation:

Safety Performance:

Evaluation:

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.