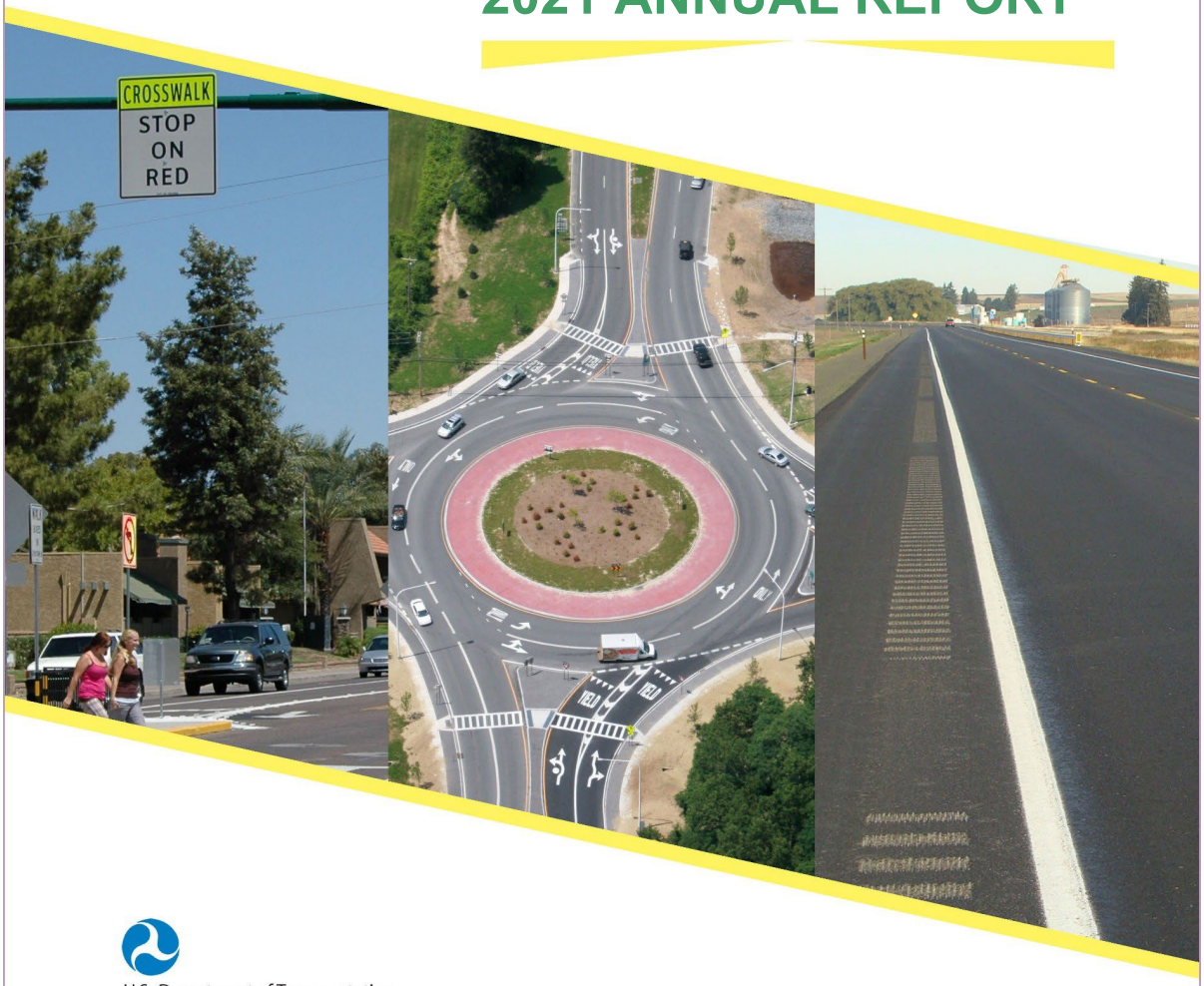
SOUTH DAKOTA

# HIGHWAY SAFETY IMPROVEMENT PROGRAM

## 2021 ANNUAL REPORT




U.S. Department of Transportation
**Federal Highway Administration**

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# Disclaimer

## *Protection of Data from Discovery Admission into Evidence*

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

23 U.S.C. 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 South Dakota Highway Safety Improvement Program (HSIP) is administered through the Office of Project Development in the South Dakota Department of Transportation (SDDOT) Central Office. The SDDOT uses Road Safety Audits Review (RSAR), Roadway Safety Review (RSR) inspections, Safety Module software program, and ArcGIS to identify locations that would benefit from a safety improvement project. RSR inspections are developed by utilizing the South Dakota Department of Public Safety's

(SDDPS) crash reporting database, SDDOT's roadway and traffic data, and ArcGIS software to determine high crash locations. Both the RSAR process and RSR inspections are available for use on all public roadways in South Dakota. HSIP projects are selected for implementation by determining which project will result in the greatest safety improvement for the investment. The overall coordination and collaboration efforts for HSIP projects involve Regional SDDOT personnel, city representatives, county representatives, township representatives, consultant firms, law enforcement representatives, among other agencies. The SDDOT HSIP process will be expanded in further detail in the Program Methodology section of this report.

# 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.

HSIP is managed by the Highway Safety Engineer within the Planning and Engineering Division. A portion of the funds are set aside for a countywide signing project, systemic improvements, and spot locations with improvements ranked by benefit/cost.

### Where is HSIP staff located within the State DOT?

Other-Planning and Engineering

### How are HSIP funds allocated in a State?

- Other-Central Office using SHSP Emphasis Area Data

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

The SDDOT administers a County wide signing program which conducts approximately four County wide signing projects each year. Counties are prioritized by crash rate based on serious injury and fatal crashes per million vehicle miles traveled.

Routes are also identified for improvements by conducting both RSR and RSAR inspections and by an over representation of crash clusters and higher than average crash rates. Routes are also identified to deploy systemic improvements.

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

- Design
- Districts/Regions
- Local Aid Programs Office/Division
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety

### Describe coordination with internal partners.

The SHSP is used along with crash record analysis and mapping to hold meetings with operation and maintenance personal to identify locations to apply safety improvements.

During the planning and design process of a project, the HSM and IHSDM software is used to compare options to increase safety.

### Identify which external partners are involved with HSIP planning.

- FHWA
- Governors Highway Safety Office
- Law Enforcement Agency
- Local Government Agency
- Local Technical Assistance Program
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
- Tribal Agency

### Describe coordination with external partners.

Coordination with the FHWA Division Office takes place throughout the year. HSIP staff take part in an annual Tribal Transportation Safety Summit which brings together several tribal agencies, engineering consultants, universities, city, county, township representatives. Coordination with the Highway Safety Office also takes place throughout the year.

## *Program Methodology*

### Select the programs that are administered under the HSIP.

- Horizontal Curve
- Intersection
- Local Safety
- Low-Cost Spot Improvements
- Roadway Departure
- Shoulder Improvement
- Sign Replacement And Improvement
- Skid Hazard

## Program: Horizontal Curve

### *Date of Program Methodology:3/1/2013*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes | • Traffic<br>• Volume | • Horizontal curvature |

### *What project identification methodology was used for this program?*

- Crash frequency
- Crash rate

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

Yes

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

Yes

### *How are projects under this program advanced for implementation?*

- Other-B/C ratio

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

**Rank of Priority Consideration**

Ranking based on B/C:1
Available funding:4
Ranking based on net benefit:2
Cost Effectiveness:2

## Program: Intersection

### *Date of Program Methodology:3/1/2013*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|

- All crashes
- Traffic Volume
- Other-Intersection Type

### *What project identification methodology was used for this program?*

- Crash frequency
- Crash rate
- Excess expected crash frequency using SPFs

### *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?*

No

### *Describe the methodology used to identify local road projects as part of this program.*

When ADT is available and intersects with State road.

### *How are projects under this program advanced for implementation?*

- Other-B/C ratio

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

**Rank of Priority Consideration**

Ranking based on B/C:1
Incremental B/C:4
Ranking based on net benefit:2
Cost Effectiveness:2

## Program: Local Safety

### *Date of Program Methodology:3/1/2015*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes | • Traffic<br>• Volume | |

### *What project identification methodology was used for this program?*

- Crash frequency
- Crash rate

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

Yes

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

No

### *Describe the methodology used to identify local road projects as part of this program.*

Crash rates and crash clusters

### *How are projects under this program advanced for implementation?*

- Other-SDDOT Project Developement Personel

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

**Rank of Priority Consideration**

Ranking based on B/C:1
Available funding:4
Ranking based on net benefit:2
Cost Effectiveness:2

## Program: Low-Cost Spot Improvements

### *Date of Program Methodology:5/1/2014*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes | • Traffic<br>• Volume | |

### *What project identification methodology was used for this program?*

- Crash frequency
- Crash rate

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

Yes

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

Yes

### *How are projects under this program advanced for implementation?*

- Other-B/C ratio

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

**Rank of Priority Consideration**

Ranking based on B/C:1
Available funding:4
Ranking based on net benefit:2
Cost Effectiveness:2

## Program: Roadway Departure

### *Date of Program Methodology:2/2/2014*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|

- All crashes
- Traffic
- Volume
- Horizontal curvature
- Functional classification
- Roadside features

### *What project identification methodology was used for this program?*

- Crash frequency
- Crash rate
- Equivalent property damage only (EPDO Crash frequency)
- Excess expected crash frequency using SPFs

### *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-B/C ratio

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

**Rank of Priority Consideration**

Ranking based on B/C:1
Available funding:4
Ranking based on net benefit:2
Cost Effectiveness:2

## Program: Shoulder Improvement

### *Date of Program Methodology:5/1/2014*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes | • Traffic<br>• Volume | |

### *What project identification methodology was used for this program?*

- Crash frequency
- Crash rate

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

Yes

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

Yes

### *How are projects under this program advanced for implementation?*

- Other-B/C ratio

### *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:4
Available funding:1
Ranking based on net benefit:2
Cost Effectiveness:2

## Program: Sign Replacement And Improvement

### *Date of Program Methodology:5/1/2017*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes | • Traffic<br>• Volume | |

### *What project identification methodology was used for this program?*

- Crash rate

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

Yes

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

Yes

### *How are projects under this program advanced for implementation?*

- Other-B/C ratio

### *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:4
Available funding:1
Ranking based on net benefit:2
Cost Effectiveness:2

## Program: Skid Hazard

### *Date of Program Methodology:2/1/2016*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes | • Traffic<br>• Volume | |

### *What project identification methodology was used for this program?*

- Crash frequency

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

Yes

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

Yes

### *How are projects under this program advanced for implementation?*

- Other-B/C ratio

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

**Rank of Priority Consideration**

Ranking based on B/C:1
Available funding:4
Ranking based on net benefit:2
Cost Effectiveness:2

### What percentage of HSIP funds address systemic improvements?

50

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

- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Pavement/Shoulder Widening
- Rumble Strips
- Upgrade Guard Rails

### What process is used to identify potential countermeasures?

- Crash data analysis
- Engineering Study
- SHSP/Local road safety plan
- Stakeholder input

## Does the State HSIP consider connected vehicles and ITS technologies?

Yes

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

ITS technologies such as adaptive signal controls, and intersection conflict warning systems are installed within the HSIP program.

## 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.

The HSM was used in the development of in-house software which is used to identify locations and improvement types for rural 2 lane segments and intersections. The HSM is also used during corridor planning studies to compare different design alternatives.

# Project Implementation

## *Funds Programmed*

### Reporting period for HSIP funding.

State Fiscal Year
July 1, 2020 to June 30, 2021

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

| FUNDING CATEGORY | PROGRAMMED | OBLIGATED | % OBLIGATED/PROGRAMMED |
|---|---|---|---|
| **HSIP (23 U.S.C. 148)** | $44,681,000 | $40,794,229 | 91.3% |
| **HRRR Special Rule (23 U.S.C. 148(g)(1))** | $41,446,000 | $44,124,029 | 106.46% |
| **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** | $0 | $0 | 0% |
| **Totals** | $86,127,000 | $84,918,258 | 98.6% |

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

$3,899,000

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

$3,275,203

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

$130,000

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

$121,500

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

$30,000,000

## 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.

The way projects are reported is based on the amount obligated when the first 292 is submitted for the project. In a lot of cases that amount is not the total project cost so that funding amount is tough to compare to the programmed amount. Although a project is only programmed within one study period it could be obligated over multiple study periods. A multi-million dollar project could be let within this study period but only a couple hundred thousand dollars is obligated during the same study period.

Typical project obstacles such as estimating project costs to be programmed, projects time line slipping due to environmental impacts, right-of-way impacts, can all be expected on any type of project.

Ways to overcome these obstacles is to do a better job of estimating projects and when scheduling projects allow for the proper time to accomplish environmental and ROW activities.

## *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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04HG | Roadside | Barrier- metal | 23 | Locations | $1422680.84 | $1578333.34 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Interstate | 16,280 | 80 | State Highway Agency | Systemic | Roadway Departure | Guardrail Improvements |
| 04HK | Alignment | Horizontal and vertical alignment | 11.7 | Miles | $10495670.24 | $15930168.97 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Rural | Major Collector | 751 | 65 | State Highway Agency | Spot | Roadway Departure | Shoulder Widening |
| 04K8 | Alignment | Horizontal and vertical alignment | 5.4 | Miles | $5198952.69 | $8371983.19 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 1,680 | 65 | State Highway Agency | Spot | Roadway Departure | Shoulder Widening |
| 04UL | Alignment | Horizontal and vertical alignment | 7 | Miles | $7878535.22 | $11126655.02 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 1,374 | 45 | State Highway Agency | Spot | Roadway Departure | Shoulder Widening |
| 04KT | Alignment | Horizontal and vertical alignment | 11.7 | Miles | $9731078.52 | $12176894.82 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 833 | 65 | State Highway Agency | Spot | Roadway Departure | Shoulder Widening |
| 04JY | Alignment | Horizontal and vertical alignment | 11.1 | Miles | $10545098.74 | $12372287.96 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 1,240 | 65 | State Highway Agency | Spot | Roadway Departure | Shoulder Widening |
| 04K0 | Shoulder treatments | Widen shoulder – paved or other (includes add shoulder) | 17.9 | Miles | $13906247.92 | $16147718.39 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Rural | Minor Arterial | 1,629 | 65 | State Highway Agency | Spot | Roadway Departure | Shoulder Widening |
| 04J5 | Alignment | Horizontal and vertical alignment | 9.4 | Miles | $17401763.61 | $23454078.74 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Rural | Minor Arterial | 2,906 | 65 | State Highway Agency | Spot | Roadway Departure | Shoulder Widening |
| 04JK | Roadway signs and traffic control | Roadway signs (including post) - new or updated | 0 | | $710113.71 | $900188.27 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Multiple/Varies | Multiple/Varies | 200 | 65 | County Highway Agency | Systemic | Intersections | Signing |
| 04JL | Roadway delineation | Longitudinal pavement markings - remarking | 1.5 | Miles | $132121.95 | $135621.95 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Rural | Principal Arterial-Other | 2,109 | 45 | State Highway Agency | Systemic | Lane Departure | Durable Pavement Markings |
| 04KF | Roadway delineation | Longitudinal pavement markings - remarking | 3.3 | Miles | $141331.32 | $153331.32 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 5,000 | 45 | State Highway Agency | Systemic | Lane Departure | Durable Pavement Markings |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04KG | Roadway delineation | Longitudinal pavement markings - remarking | 63.4 | Miles | $171762.51 | $174762.51 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 602 | 65 | State Highway Agency | Systemic | Lane Departure | Durable Pavement Markings |
| 04KH | Roadway delineation | Longitudinal pavement markings - remarking | 4.5 | Miles | $349517.65 | $355517.65 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 11,884 | 45 | State Highway Agency | Systemic | Lane Departure | Durable Pavement Markings |
| 04KJ | Roadway delineation | Longitudinal pavement markings - remarking | 27.7 | Miles | $180064.53 | $184064.53 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Interstate | 4,464 | 80 | State Highway Agency | Systemic | Lane Departure | Durable Pavement Markings |
| 04KM | Miscellaneous | Transportation safety planning | 10 | Numbers | $121500 | $135000 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Multiple/Varies | Multiple/Varies | 250 | 55 | State Highway Agency | Spot | Data | Highway Safety Planning |
| 05HC | Roadway signs and traffic control | Roadway signs (including post) - new or updated | 100 | Miles | $1236893.03 | $1581293.9 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Multiple/Varies | Multiple/Varies | 200 | 65 | County Highway Agency | Systemic | Intersections | Signing |
| 06AY | Roadside | Fencing | 10 | Locations | $18000 | $20000 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Rural | Principal Arterial-Interstate | 4,000 | 80 | State Highway Agency | Spot | Lane Departure | Snow Fence |
| 06K2 | Intersection geometry | Add/modify auxiliary lanes | 5 | Intersections | $2443169.68 | $2771632.99 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 3,399 | 65 | State Highway Agency | Spot | Intersections | Turn Lane |
| 06TR | Roadway | Pavement surface – high friction surface | 9 | Curves | $1208432.16 | $1348702.41 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 5,337 | 55 | State Highway Agency | Spot | Lane Departure | High Friction Surface Treatment |
| 07WU | Roadway delineation | Longitudinal pavement markings - remarking | 64 | Miles | $51656.85 | $52156.85 | HSIP (23 U.S.C. 148) | Rural | Multiple/Varies | 200 | 65 | County Highway Agency | Systemic | Lane Departure | Durable Pavement Markings |
| 07WW | Roadway delineation | Longitudinal pavement markings - remarking | 105 | Miles | $1276540.02 | $1277040.02 | HSIP (23 U.S.C. 148) | Rural | Multiple/Varies | 200 | 65 | County Highway Agency | Systemic | Lane Departure | Durable Pavement Markings |
| 07AM | Roadway signs and traffic control | Roadway signs (including post) - new or updated | 2.2 | Miles | $101718.45 | $104218.45 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Rural | Principal Arterial-Other Freeways & Expressways | 4,591 | 80 | State Highway Agency | Systemic | Intersections | Signing |

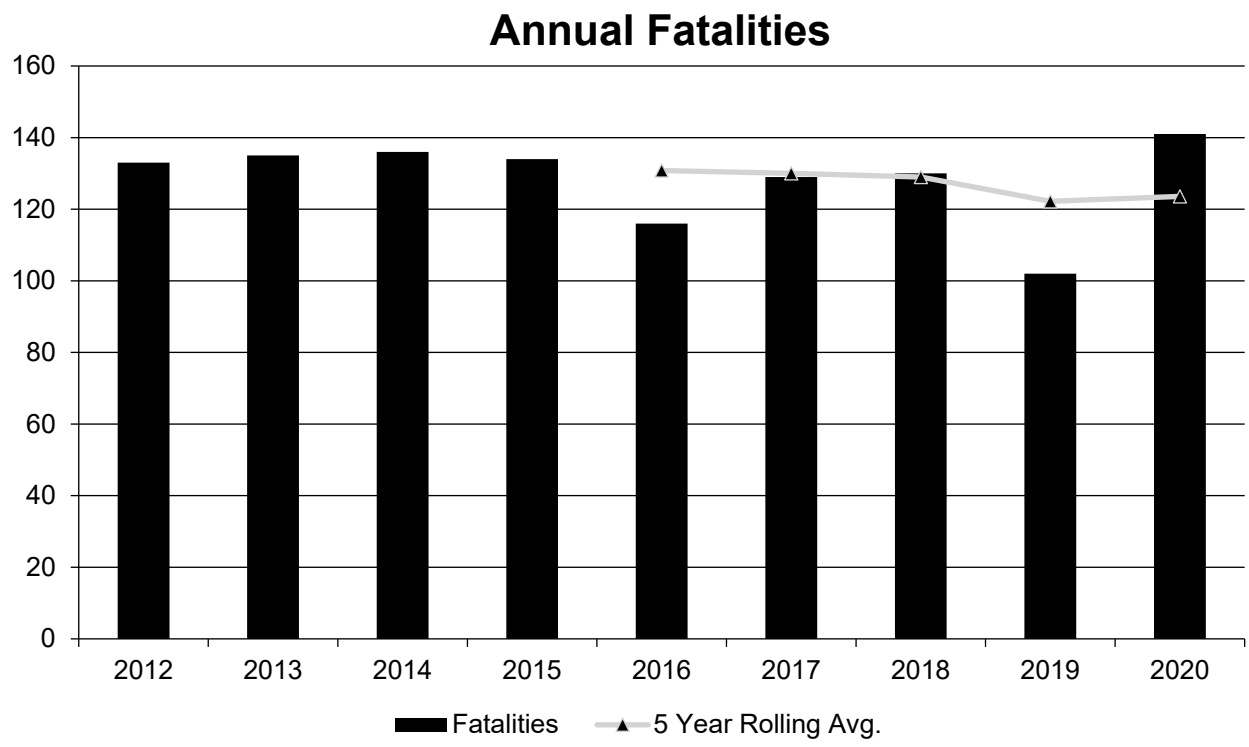
| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 07WT | Roadway | Rumble strips - transverse | 33 | Intersections | $195407.79 | $219407.79 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 1,476 | 65 | State Highway Agency | Systemic | Intersections | Transverse Rumble Strips |

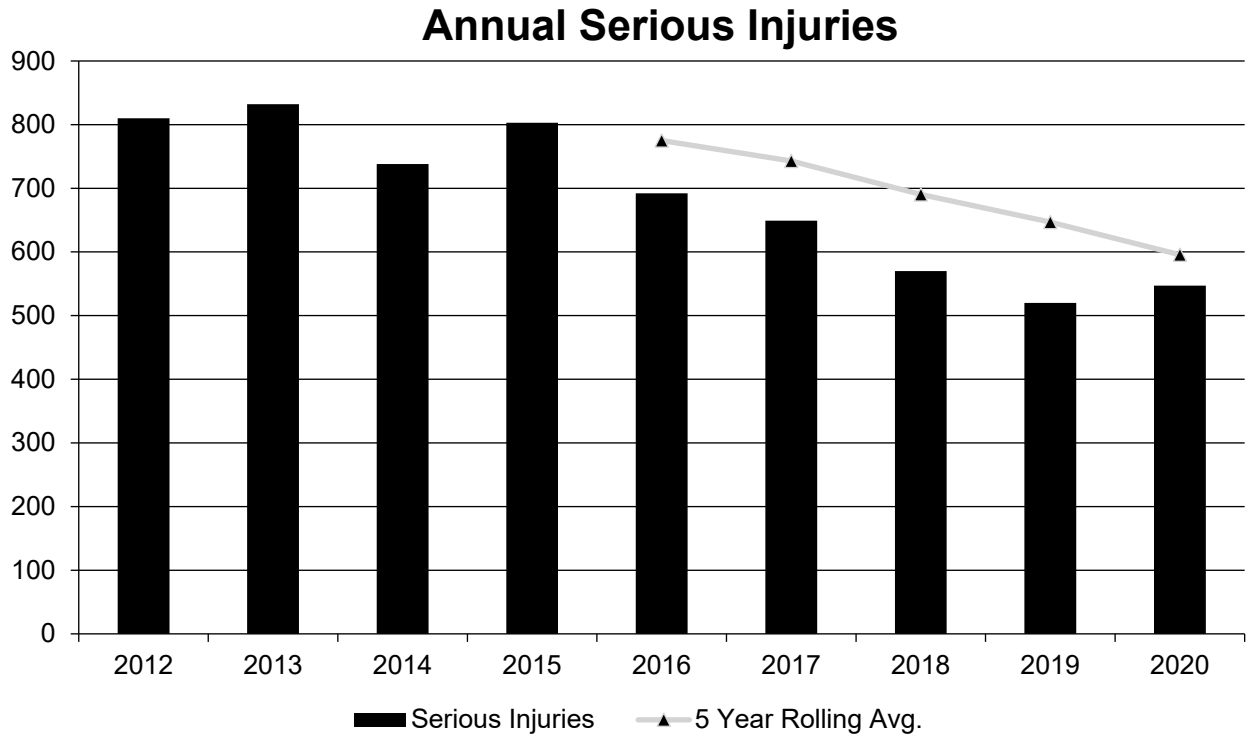
# Safety Performance

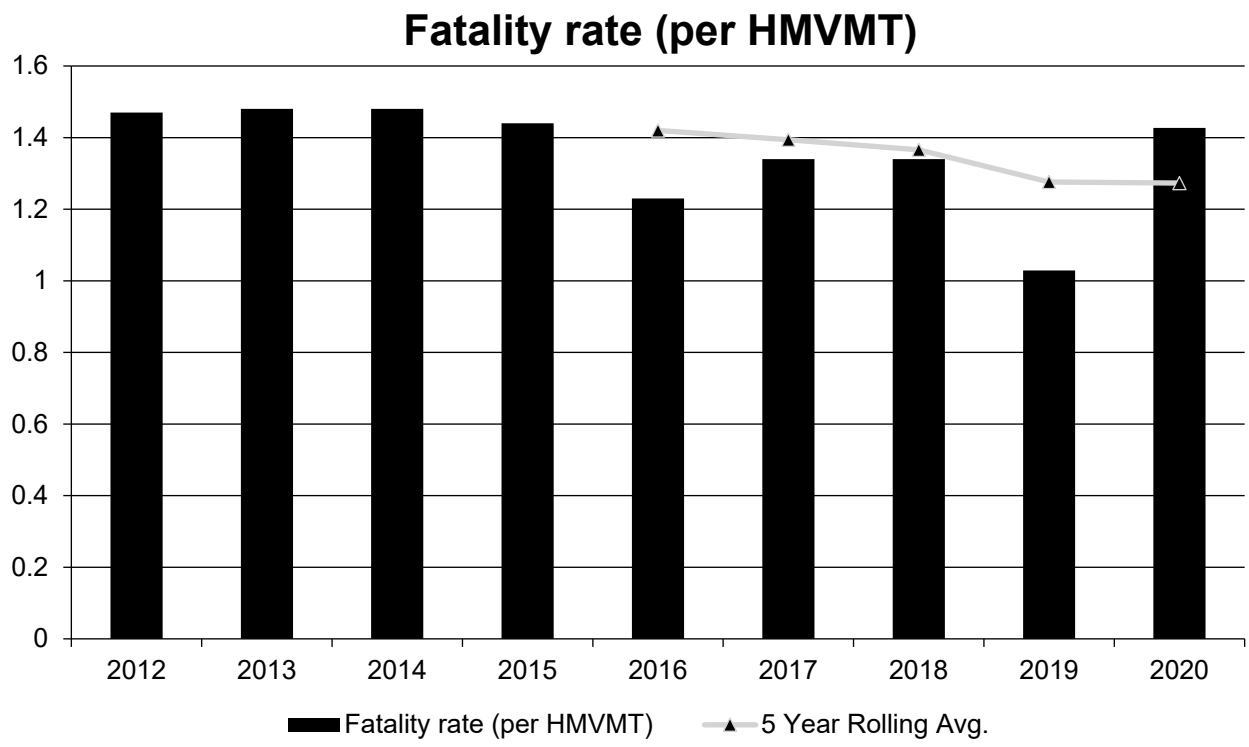
## *General Highway Safety Trends*

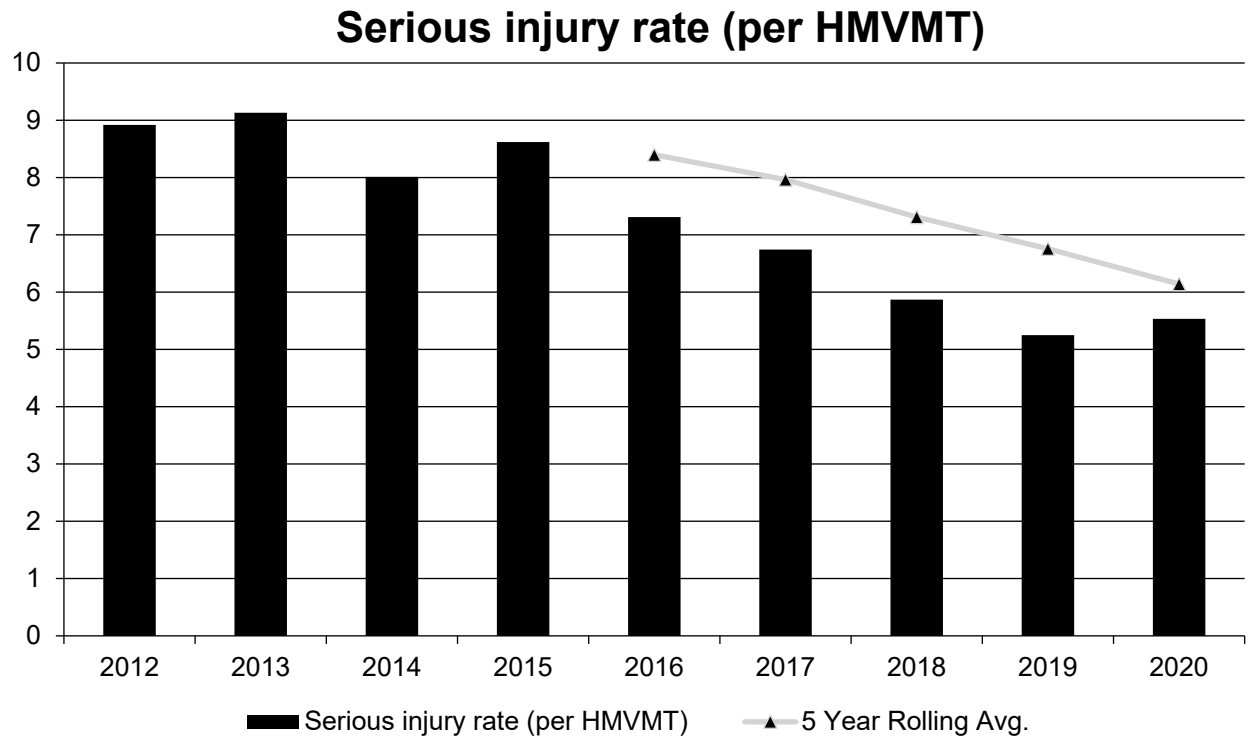
### Present data showing the general highway safety trends in the State for the past five years.

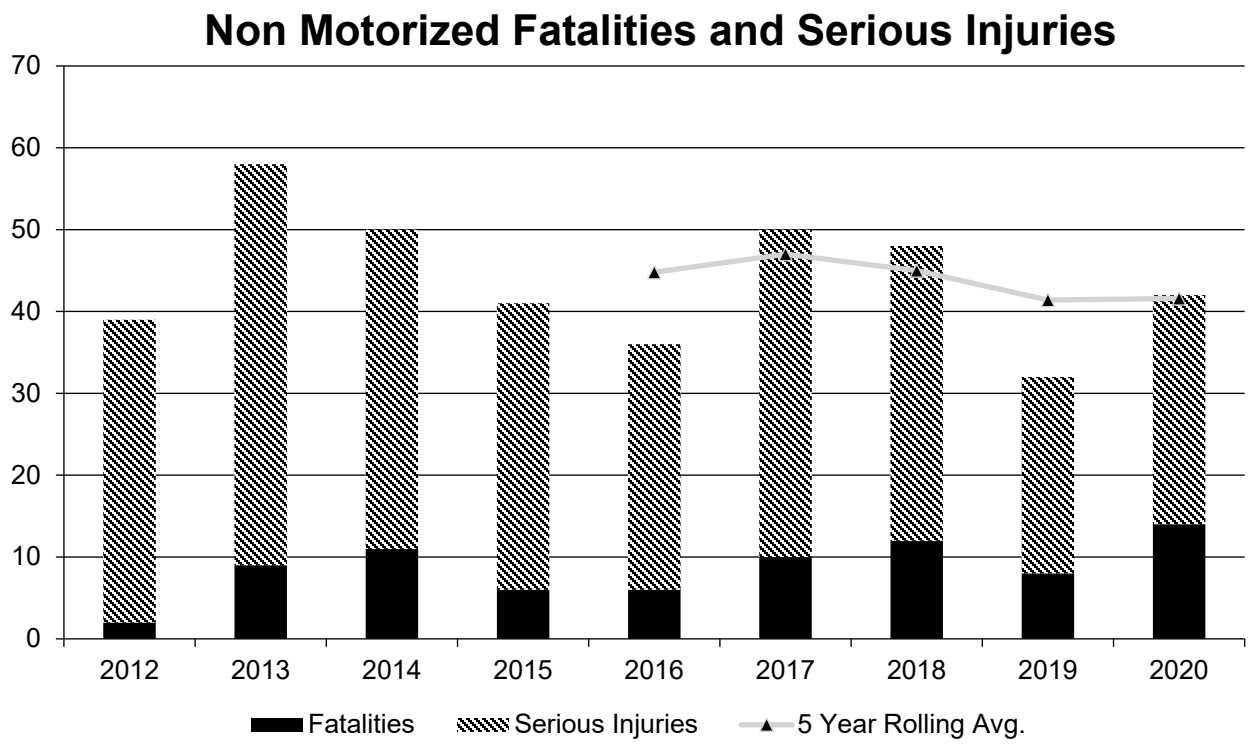
| PERFORMANCE MEASURES | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|
| Fatalities | 133 | 135 | 136 | 134 | 116 | 129 | 130 | 102 | 141 |
| Serious Injuries | 810 | 832 | 738 | 803 | 692 | 649 | 570 | 520 | 547 |
| Fatality rate (per HMVMT) | 1.470 | 1.480 | 1.480 | 1.440 | 1.230 | 1.340 | 1.340 | 1.029 | 1.427 |
| Serious injury rate (per HMVMT) | 8.920 | 9.130 | 8.010 | 8.620 | 7.310 | 6.744 | 5.870 | 5.248 | 5.535 |
| Number non-motorized fatalities | 2 | 9 | 11 | 6 | 6 | 10 | 12 | 8 | 14 |
| Number of non-motorized serious injuries | 37 | 49 | 39 | 35 | 30 | 40 | 36 | 24 | 28 |


Annual Fatalities
160
140
120
100
80
60
40
20
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
900
800
700
600
500
400
300
200
100
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.6
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)
10
9
8
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.

**Other**
**If Other Please describe**

FARS & South Dakota Accident Records System

## 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 | 11 | 63.8 | 0.52 | 3.05 |
| Rural Principal Arterial (RPA) - Other Freeways and Expressways | | | | |
| Rural Principal Arterial (RPA) - Other | 34.6 | 116.4 | 1.77 | 5.94 |
| Rural Minor Arterial | 17.4 | 67.8 | 1.69 | 6.61 |
| Rural Minor Collector | 3.4 | 13.6 | 2.28 | 9.13 |

| 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 Major Collector | 24 | 87.2 | 2.23 | 8.08 |
| Rural Local Road or Street | 12.4 | 61.2 | 2.71 | 13.38 |
| Urban Principal Arterial (UPA) - Interstate | 4.8 | 23.4 | 0.62 | 3.02 |
| Urban Principal Arterial (UPA) - Other Freeways and Expressways | | | | |
| Urban Principal Arterial (UPA) - Other | 4 | 47 | 0.81 | 9.48 |
| Urban Minor Arterial | 6.6 | 60 | 0.67 | 6.05 |
| Urban Minor Collector | | | | |
| Urban Major Collector | 2.4 | 20.4 | 0.85 | 7.22 |
| Urban Local Road or Street | 3 | 32.8 | 1.08 | 11.84 |

**Year 2016**

| 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 | 58.4 | 303 | 0.94 | 4.89 |
| County Highway Agency | 25.6 | 120 | 2.01 | 9.4 |
| Town or Township Highway Agency | 3.4 | 29 | 1.4 | 11.88 |
| City or Municipal Highway Agency | 8.6 | 135.4 | 0.65 | 10.17 |
| 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 | | | | |

## *Safety Performance Targets*

### Safety Performance Targets

### Calendar Year 2022 Targets *

***Number of Fatalities:123.9***

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

A trend line analysis was performed using FARS data and South Dakota Accident Records System data. External factors such as VMT, laws, and investments along with stakeholder feedback were also considered when establishing this target. The identified target supports the goals of the SHSP by annually measuring the effectiveness of the program which then lends the opportunity to shift resources between emphasis areas.

### *Number of Serious Injuries:646.2*

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

A trend line analysis was performed using FARS data and South Dakota Accident Records System data. External factors such as VMT, laws, and investments along with stakeholder feedback were also considered when establishing this target. The identified target supports the goals of the SHSP by annually measuring the effectiveness of the program which then lends the opportunity to shift resources between emphasis areas.

### *Fatality Rate:1.210*

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

A trend line analysis was performed using FARS data and South Dakota Accident Records System data. External factors such as VMT, laws, and investments along with stakeholder feedback were also considered when establishing this target. The identified target supports the goals of the SHSP by annually measuring the effectiveness of the program which then lends the opportunity to shift resources between emphasis areas.

### *Serious Injury Rate:6.330*

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

A trend line analysis was performed using FARS data and South Dakota Accident Records System data. External factors such as VMT, laws, and investments along with stakeholder feedback were also considered when establishing this target. The identified target supports the goals of the SHSP by annually measuring the effectiveness of the program which then lends the opportunity to shift resources between emphasis areas.

### *Total Number of Non-Motorized Fatalities and Serious Injuries:39.0*

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

A trend line analysis was performed using FARS data and South Dakota Accident Records System data. External factors such as VMT, laws, and investments along with stakeholder feedback were also considered when establishing this target. The identified target supports the goals of the SHSP by annually measuring the effectiveness of the program which then lends the opportunity to shift resources between emphasis areas.

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

A one day work shop was conducted on April 4th, 2017 with SDDOT, SD Office of Highway Safety, FHWA SD Division Office, Rapid City MPO, Sioux City MPO, and Sioux Falls MPO representatives in attendance. The work shop went through the 5 performance measures in detail and the reporting requirements. There was a lot of discussion on current crash trends and external factors such as VMT, laws, and investments. Everyone involved agreed that the targets shall be data driven, realistic and attainable.

### Does the State want to report additional optional targets?

No

### 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** | 126.4 | 123.6 |
| **Number of Serious Injuries** | 667.4 | 595.6 |
| **Fatality Rate** | 1.280 | 1.273 |
| **Serious Injury Rate** | 6.740 | 6.141 |
| **Non-Motorized Fatalities and Serious Injuries** | 43.0 | 41.6 |

Based on the numbers inputted at reporting time, all 5 safety targets were met; Fatalities, Serious Injuries, Fatality Rate, Serious Injury Rate, and Non-Motorized Fatalities and Serious Injuries.

## *Applicability of Special Rules*

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

No

Based on the data reported in section 32, the 2014-2018 rate is 2.61 and the 2016-2020 rate is 2.36 so the HRRR special rule does not apply.

### 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 | 22 | 14 | 16 | 20 | 23 | 11 | 25 |
| Number of Older Driver and Pedestrian Serious Injuries | 61 | 90 | 62 | 53 | 55 | 44 | 54 |

# Evaluation

## *Program Effectiveness*

### How does the State measure effectiveness of the HSIP?

- Change in fatalities and serious injuries

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

The goal of the 2019 SHSP is to reduce traffic fatalities to 100 and serious injuries to 400 by 2024. There were 141 traffic fatalities and 547 serious injuries in 2020. Although based on the 2020 numbers they are trending the in the wrong direction, the 2019 numbers set a record low for fatalities and serious injuries. The measures taken with the HSIP program are showing positive results when looking at a 5 year average trend.

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

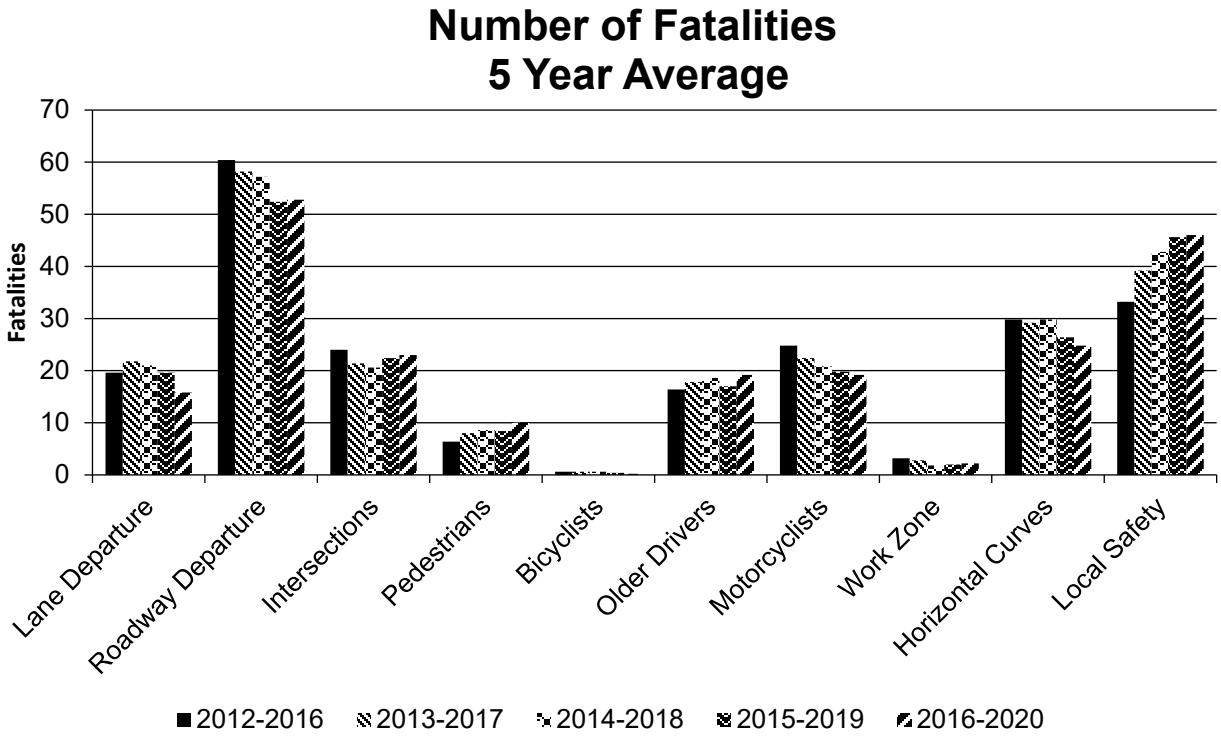
- HSIP Obligations

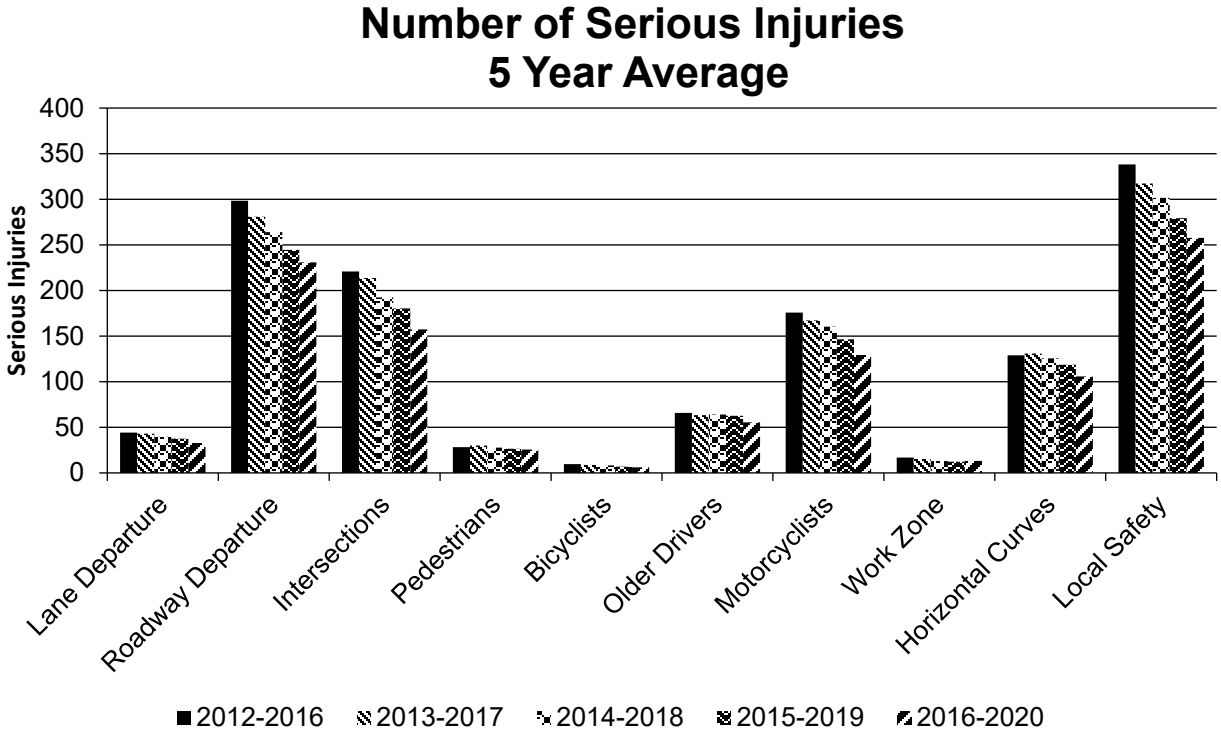
## *Effectiveness of Groupings or Similar Types of Improvements*

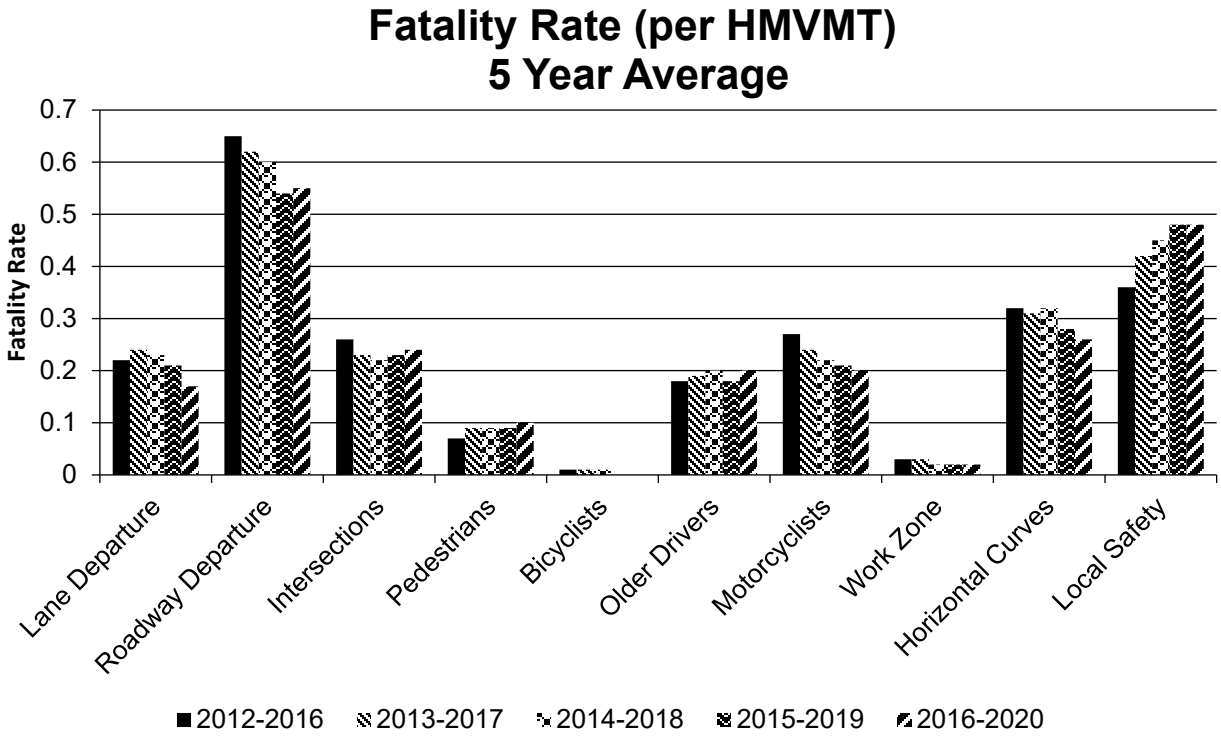
### Present and describe trends in SHSP emphasis area performance measures.

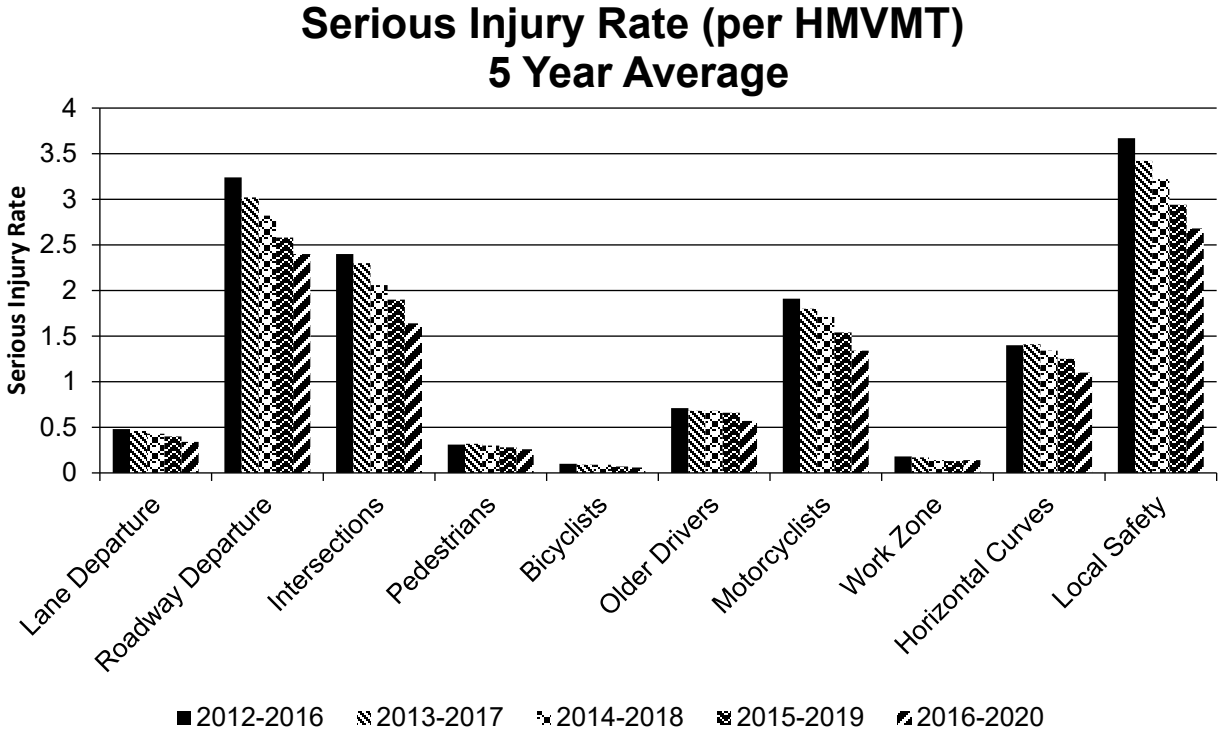
**Year 2020**

| 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 | | 15.8 | 32.8 | 0.17 | 0.34 |
| Roadway Departure | | 52.8 | 230.8 | 0.55 | 2.4 |
| Intersections | | 23 | 157.4 | 0.24 | 1.64 |
| Pedestrians | | 10 | 25.6 | 0.1 | 0.26 |
| Bicyclists | | 0.2 | 6.2 | 0 | 0.06 |
| Older Drivers | | 19.2 | 55.4 | 0.2 | 0.57 |
| Motorcyclists | | 19.2 | 129.2 | 0.2 | 1.34 |
| Work Zone | | 2.2 | 13.2 | 0.02 | 0.14 |
| Horizontal Curves | | 24.8 | 105.8 | 0.26 | 1.1 |
| Local Safety | | 46 | 257.6 | 0.48 | 2.68 |


Number of Fatalities
5 Year Average
Fatalities
70
60
50
40
30
20
10
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zone
Horizontal Curves
Local Safety
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020


Number of Serious Injuries
5 Year Average
Serious Injuries
400
350
300
250
200
150
100
50
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Work Zone
Horizontal Curves
Local Safety
2012-2016
2013-2017
2014-2018
2015-2019
2016-2020




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

Yes

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

| | |
|---|---|
| **CounterMeasures:** | Radar Speed Feedback Signs |
| **Description:** | RSFS were placed upstream of horizontal curves and displayed the drivers speed entering the curve and a advisory speed plaque was displayed below the driver speed. |
| **Target Crash Type:** | Run-off-road |
| **Number of Installations:** | 10 |
| **Number of Installations:** | 10 |
| **Miles Treated:** | |
| **Years Before:** | 3 |
| **Years After:** | 3 |
| **Methodology:** | Simple before/after |
| **Results:** | 37.5% reduction in RwD crashes and a 78% reduction in motorcycle crashes. |

File Name: Hyperlink

## *Project Effectiveness*

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

| LOCATION | FUNCTIONAL CLASS | IMPROVEMENT CATEGORY | IMPROVEMENT TYPE | PDO BEFORE | PDO AFTER | FATALITY BEFORE | FATALITY AFTER | SERIOUS INJURY BEFORE | SERIOUS INJURY AFTER | ALL OTHER INJURY BEFORE | ALL OTHER INJURY AFTER | TOTAL BEFORE | TOTAL AFTER | EVALUATION RESULTS (BENEFIT/COST RATIO) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Various Locations Statewide | Rural Principal Arterial (RPA) - Other | Roadway | Pavement surface – high friction surface | 42.00 | 25.00 | 1.00 | 3.00 | 5.00 | 2.00 | 16.00 | 7.00 | 64.00 | 37.00 | 7.4 |
| Various Locations Statewide | Rural Principal Arterial (RPA) - Other | Shoulder treatments | Shoulder treatments - other | 42.00 | 61.00 | 2.00 | | 4.00 | 6.00 | 22.00 | 15.00 | 70.00 | 82.00 | 14 |
| Various Locations in the Aberdeen Region | Rural Principal Arterial (RPA) - Other | Roadway | Rumble strips – center | 39.00 | 68.00 | | | 4.00 | | 25.00 | 19.00 | 68.00 | 87.00 | 42 |

## Compliance Assessment

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

08/19/2019

**What are the years being covered by the current SHSP?**

From: 2019 To: 2024

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

2024

**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] | 1 | 1 | | | | | 1 | 1 | 1 | 1 |
| | Route Number (8) [8] | 1 | 1 | | | | | | | | |
| | Route/Street Name (9) [9] | 1 | 1 | | | | | | | | |
| | Federal Aid/Route Type (21) [21] | 1 | 1 | | | | | | | | |
| | Rural/Urban Designation (20) [20] | 1 | 1 | | | | | 1 | 1 | | |
| | Surface Type (23) [24] | 1 | 1 | | | | | 1 | 1 | | |
| | Begin Point Segment Descriptor (10) [10] | 1 | 1 | | | | | 1 | 1 | 1 | 1 |
| | End Point Segment Descriptor (11) [11] | 1 | 1 | | | | | 1 | 1 | 1 | 1 |
| | Segment Length (13) [13] | 1 | 1 | | | | | | | | |
| | Direction of Inventory (18) [18] | 1 | 1 | | | | | | | | |
| | Functional Class (19) [19] | 1 | 1 | | | | | 1 | 1 | 1 | 1 |

| 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] | 1 | 1 | | | | | | | | |
| | Access Control (22) [23] | 1 | 1 | | | | | | | | |
| | One/Two Way Operations (91) [93] | 1 | 0.95 | | | | | | | | |
| | Number of Through Lanes (31) [32] | 1 | 1 | | | | | 1 | 1 | | |
| | Average Annual Daily Traffic (79) [81] | 1 | 1 | | | | | 1 | 1 | | |
| | AADT Year (80) [82] | 1 | 1 | | | | | | | | |
| | Type of Governmental Ownership (4) [4] | 1 | 1 | | | | | 1 | 1 | 1 | 1 |
| **INTERSECTION** | Unique Junction Identifier (120) [110] | | | 1 | 1 | | | | | | |
| | Location Identifier for Road 1 Crossing Point (122) [112] | | | 1 | 1 | | | | | | |
| | Location Identifier for Road 2 Crossing Point (123) [113] | | | 1 | 1 | | | | | | |
| | Intersection/Junction Geometry (126) [116] | | | 1 | 1 | | | | | | |
| | Intersection/Junction Traffic Control (131) [131] | | | 1 | 1 | | | | | | |
| | AADT for Each Intersecting Road (79) [81] | | | 1 | 1 | | | | | | |
| | AADT Year (80) [82] | | | 1 | 1 | | | | | | |
| | Unique Approach Identifier (139) [129] | | | 1 | 1 | | | | | | |
| **INTERCHANGE/RAMP** | Unique Interchange Identifier (178) [168] | | | | | 1 | | | | | |
| | Location Identifier for Roadway at | | | | | 1 | | | | | |

| 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] | | | | | 1 | | | | | |
| | Ramp Length (187) [177] | | | | | 1 | | | | | |
| | Roadway Type at Beginning of Ramp Terminal (195) [185] | | | | | 1 | | | | | |
| | Roadway Type at End Ramp Terminal (199) [189] | | | | | 1 | | | | | |
| | Interchange Type (182) [172] | | | | | 1 | | | | | |
| | Ramp AADT (191) [181] | | | | | 1 | | | | | |
| | Year of Ramp AADT (192) [182] | | | | | 1 | | | | | |
| | Functional Class (19) [19] | | | | | 1 | | | | | |
| | Type of Governmental Ownership (4) [4] | | | | | 1 | | | | | |
| **Totals (Average Percent Complete):** | | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** | **0.00** | **1.00** | **1.00** | **1.00** | **1.00** |

*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.**

South Dakota is aggressively collecting the needed data for the MIRE fundamental data elements. South Dakota will continue on this path as only a few data elements remain incomplete on the list.

## Optional Attachments

Program Structure:

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.