NORTH DAKOTA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2023 ANNUAL REPORT

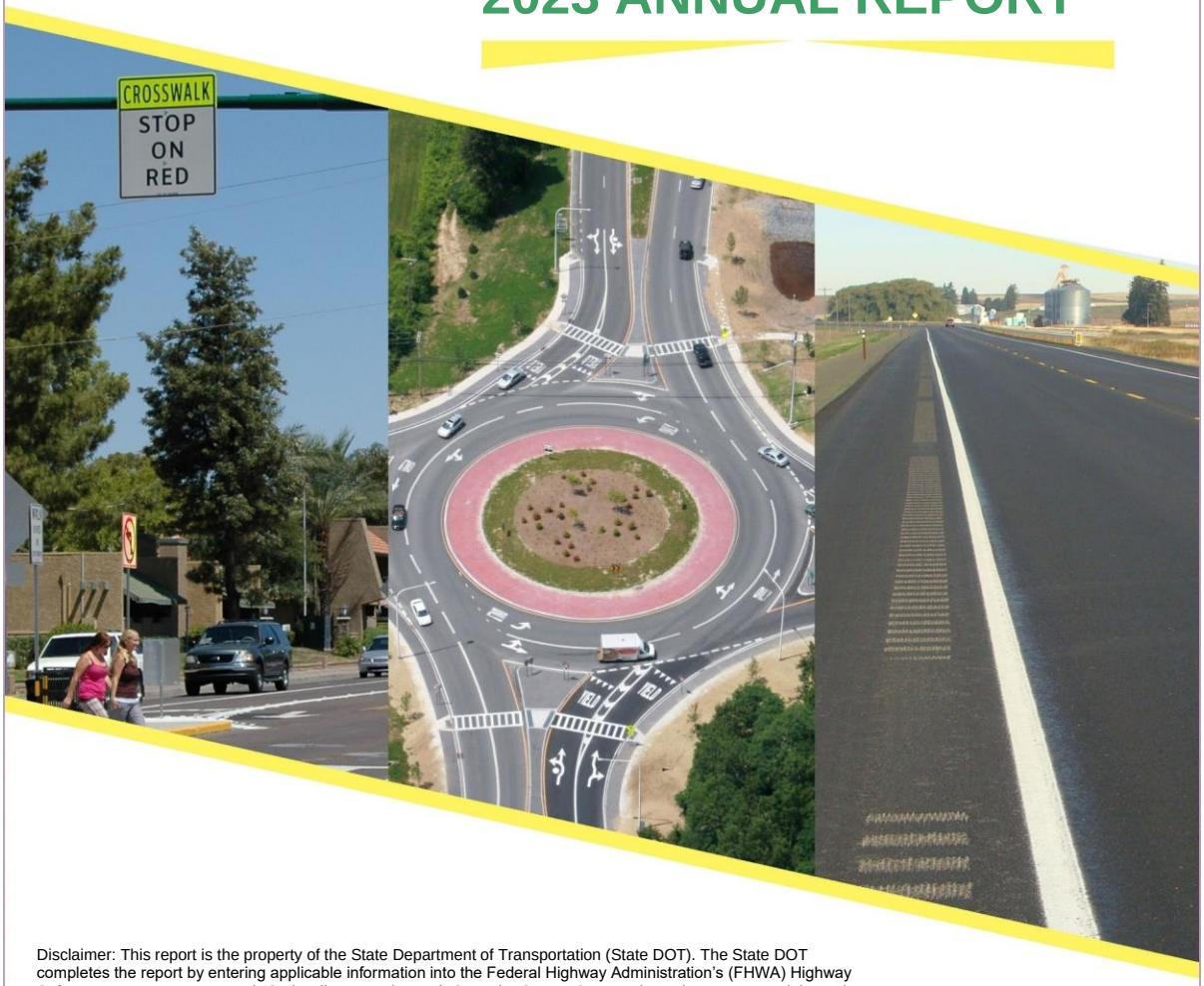

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Photo source: Federal Highway Administration

Table of Contents

Disclaimer

Protection of Data from Discovery Admission into Evidence

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

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

Executive Summary

The North Dakota HSIP is administered through the Programming Division in the North Dakota Department of Transportation (NDDOT). Safety investments are based on the state's current Strategic Highway Safety Plan (SHSP). The current SHSP document is called ND Vision Zero Plan and has six priority emphasis areas:

• Lane departure

• Intersections

• Alcohol and/or drug related

• Unbelted vehicle occupants

• Speeding/aggressive driving

• Young drivers

Safety projects are developed by a reactive process (high crash listings, road safety reviews, fatal crash review teams) and a systemic process (local road safety plans). Project solicitation takes place every fall and HSIP applications are submitted from local agencies and NDDOT district offices. Projects are reviewed for eligibility and are then prioritized into the Statewide Transportation Improvement Program (STIP).

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 NDDOT solicits state and local agencies to submit safety project applications each year. Potential projects are identified through the traditional "reactive" approach that address high crash locations, fatal crash locations or areas where road safety reviews took place. Projects are also developed using a "systemic" approach that apply low-cost treatments over a large area. The NDDOT central office reviews applications and selects/prioritizes. After projects are programmed, they get designed and implemented with the same process as regular federally funded transportation projects. Overall evaluation of the program is done though monitoring of the fatal and serious injury statistics as part of this annual report.

Where is HSIP staff located within the State DOT?

Other-Programming

How are HSIP funds allocated in a State?

- Central Office via Statewide Competitive Application Process

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

The NDDOT addresses safety on local and tribal roads through the Local Road Safety Program (LRSP). Local public agencies and tribal nations can also submit applications for non-LRSP safety projects each year during the solicitation period. Selection of local and tribal road projects use the same methodology as State roads.

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

- Design
- Districts/Regions
- Governors Highway Safety Office
- Local Aid Programs Office/Division
- Planning
- Traffic Engineering/Safety
- Other-Safety Division, Local Government

Describe coordination with internal partners.

Design

The Design Division is included in the distribution of the high crash listings. All road safety reviews require at least one member of the Design Division. Their participation and review of at-risk locations helps in the development of potential project countermeasures.

Planning

The Planning Division provides data for the development of the HSIP. Roadway features are collected and maintained in the Planning Division include: traffic volume, truck volumes, traffic projections, roadway features, roadway viewer (for state highways) and mapping. The Planning Division is also included in the distribution of the high crash listings.

Safety Highway Safety Office (SHSO)

The SHSO is the lead entity for the State's Strategic Highway Safety Plan (SHSP) and involves law enforcement and other partners in the process. In North Dakota, the behavioral strategies in the SHSP are largely funded through the National Highway Traffic Safety Administration (NHTSA) funds with funding going to various traffic safety partners including law enforcement agencies statewide for overtime enforcement of traffic safety laws. The SHSP process drives HSIP project priorities. Infrastructure strategies in the North Dakota SHSP are largely funded through HSIP and deployed through the State's Local Road Safety Program (LRSP) and State Road Safety Program (SRSP). These programs identify proven, low-cost road safety strategies and prioritize the road safety strategies for implementation at identified at-risk locations on the local and state road systems.

Local Government

Members of the Local Government Division provide project development through city, county and tribal agencies. The local government assists in the solicitation of safety projects. They also participate in road safety reviews.

Identify which external partners are involved with HSIP planning.

- Academia/University
- FHWA
- Law Enforcement Agency
- Local Government Agency
- Local Technical Assistance Program
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
- Tribal Agency
- Other-and other traffic safety advocates/partners

Describe coordination with external partners.

All the entities are involved at SHSP at some level (Executive Leadership Team, SHSP Steering Committee, SHSP Implementation Team or general SHSP stakeholder).

Regional Planning Organizations: North Dakota has 3 MPO's that must approve any HSIP applications that are submitted by their respective cities. The MPO's were also included in the team that developed the ND Local Road Safety Program (LRSP).

Local Government Agency, Tribal Agency: The cities, counties, and tribal agencies are solicited each year for potential safety projects. They are encouraged to submit projects directly from the LRSP or at high crash locations.

Law Enforcement Agency: Law enforcement and HSIP personnel are extensively involved in North Dakota's SHSP process. The Programming Division Director serves on the SHSP Steering Committee and as chairperson for two SHSP emphasis area teams (Lane Departure and Intersection implementation Teams). Law enforcement serve at all levels of the SHSP including the SHSP Executive Leadership Team, the SHSP Steering Committee and SHSP Implementation Teams.

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

Schedule for HSIP requests:

- Fall – send out HSIP solicitation letter, HSIP application forms (SFN 59959) are due by the end of the year
- Winter – NDDOT analysis of HSIP requests and Draft HSIP project listing
- Spring – verify the construction year for previously approved projects
- Summer – finalize HSIP project listing, send responses out on approvals (or non-approvals) for the HSIP applications and send out high crash location lists/maps
- August 31st – Final HSIP project list due to FHWA, HSIP online reporting due

Program Methodology

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

Yes

Select the programs that are administered under the HSIP.

- HSIP (no subprograms)

Program: HSIP (no subprograms)

Date of Program Methodology:3/1/2017

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
• All crashes	• Traffic	• Horizontal curvature

What project identification methodology was used for this program?

- Crash frequency
- Equivalent property damage only (EPDO Crash frequency)
- Other-Systemic

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

Available funding:1

What percentage of HSIP funds address systemic improvements?

31

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

- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Rumble Strips

What process is used to identify potential countermeasures?

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

- Other-National Cooperative Highway Research Program (NCHRP) and other evidence-based practices

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

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

ND has an improvement category for “Advanced Technology & ITS” on the HSIP application form. Any local jurisdiction may submit potential ITS project to address their safety needs. The state currently has ITS projects under development including wrong-way detection for vehicles on Interstate ramps, and an “Intersection Conflict Warning System” in 2024.

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

No

NDDOT is currently working on integrating the HSM into its HSIP process using AASHTO software.

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

The North Dakota legislature passed a primary seat belt law which went into effect on August 1, 2023.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

Federal Fiscal Year

2023 Federal Fiscal Year (Oct 1, 2022 through September 30, 2023)

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$13,929,314	$13,573,349	97.44%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
VRU Safety Special Rule (23 U.S.C. 148(g)(3))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$5,836,686	$5,836,686	100%
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	$19,766,000	$19,410,035	98.2%

Total Programed was $19,766,000

Obligated 13,573,349.29 of 16,668,391.26 non penalty funds as of 8/7/23

Obligated all 5,836,686 of penalty funds.

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

$1,472,000

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

$1,726,000

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

$482,500

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

$405,000

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

$0

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

$0

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

None

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
23834: Exit 24 - East Medora Interchange	Intersection traffic control	Intersection signing –other	1	Intersections	$38251	$42501	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	1,404	55	State Highway Agency	Spot	Intersections	
20097: Bismarck State St (Divide to I-94)	Intersection geometry	Intersection geometry - other	4	Intersections	$4773860	$5304288	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	30,887	40	State Highway Agency	Spot	Intersections	
20098: Bismarck State St (I-94 to Calgary)	Intersection geometry	Intersection geometry - other	5	Intersections	$8560038	$9511153	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	33,491	40	State Highway Agency	Spot	Intersections	
23181: TRNP Crossroad Guardrail	Roadside	Barrier- metal	1	Locations	$394950	$438834	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	262	35	State Park, Forest, or Reservation Agency	Spot	Roadway Departure	
23225: W of Washington St to E of 2nd St	Pedestrians and bicyclists	Medians and pedestrian refuge areas	5	Locations	$1359182	$1510202	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	23,534	40	State Highway Agency	Spot	Intersections	
23149: Minot to East of Balfour	Roadway	Install / remove / modify passing zone	7	Locations	$9185203	$23495075	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,500	65	State Highway Agency	Spot	Lane Departure	
23180: Minot, US 2 & 54th St	Lighting	Intersection lighting	1	Locations	$132563	$147293	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	10,118	60	State Highway Agency	Spot	Intersections	
23372: Bismarck Citywide RRFB	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	9	Locations	$508731	$565257	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	0		City or Municipal Highway Agency	Spot	Intersections	
23529: Various Hwys - Roundabout Signs	Intersection traffic control	Intersection signing –other	7	Intersections	$218901	$243224	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0		State Highway Agency	Systemic	Intersections	
23570: Burke County Wide-HSIP	Roadway delineation	Longitudinal pavement markings – new	23.86	Miles	$380059	$422287	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		County Highway Agency	Systemic	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
23791: Various Hwys - Standing Rock Reservation	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$142867	$142867	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23792: Various Hwys - Bismarck District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1172252	$1302502	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23793: Various Hwys - Valley City District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$968990	$1076655	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23796: Various Hwys - Dickinson District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1474395	$1638217	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23797: Various Hwys - Grand Forks District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1352913	$1503237	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23799: Various Hwys - Fargo District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1411423	$1568248	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23522: Ward County Rumble Strips	Roadway	Rumble strips – edge or shoulder	67.5	Miles	$567000	$630000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		County Highway Agency	Systemic	Lane Departure	
23523: Ward County Lighting	Lighting	Intersection lighting	5	Intersections	$237600	$264000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		County Highway Agency	Spot	Intersections	
23573: Valley City 8th Ave SW	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	1	Locations	$33091	$36768	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	6,935	25	City or Municipal Highway Agency	Spot	Intersections	
23788: US 281 - Turtle Mountain Reservation	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$37501	$37501	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	

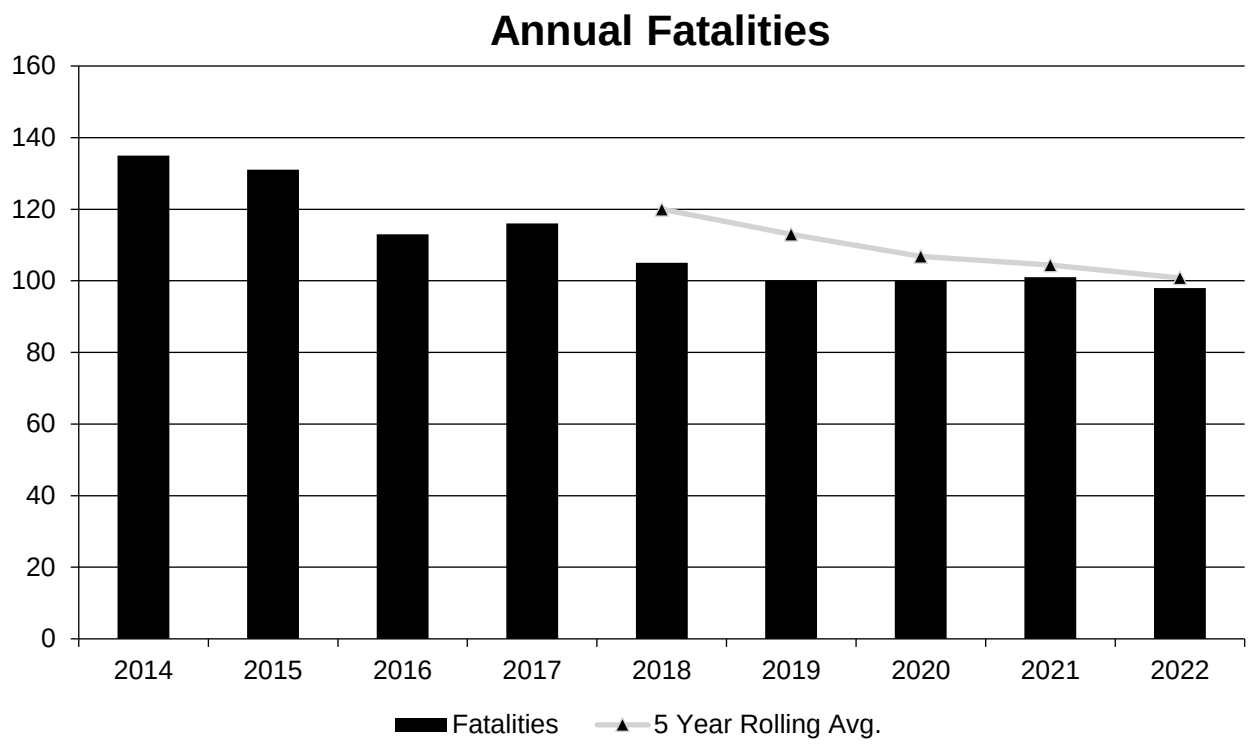
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
23789: Various Hwys - Spirit Lake Reservation	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$66980	$66980	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23790: Various Hwys - Fort Berthold Reservation	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$500442	$500442	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23794: Various Hwys - Devils Lake District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1028342	$1142603	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23795: Various Hwys - Minot District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1448132	$1609036	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23798: Various Hwys - Williston District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$820979	$912198	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	

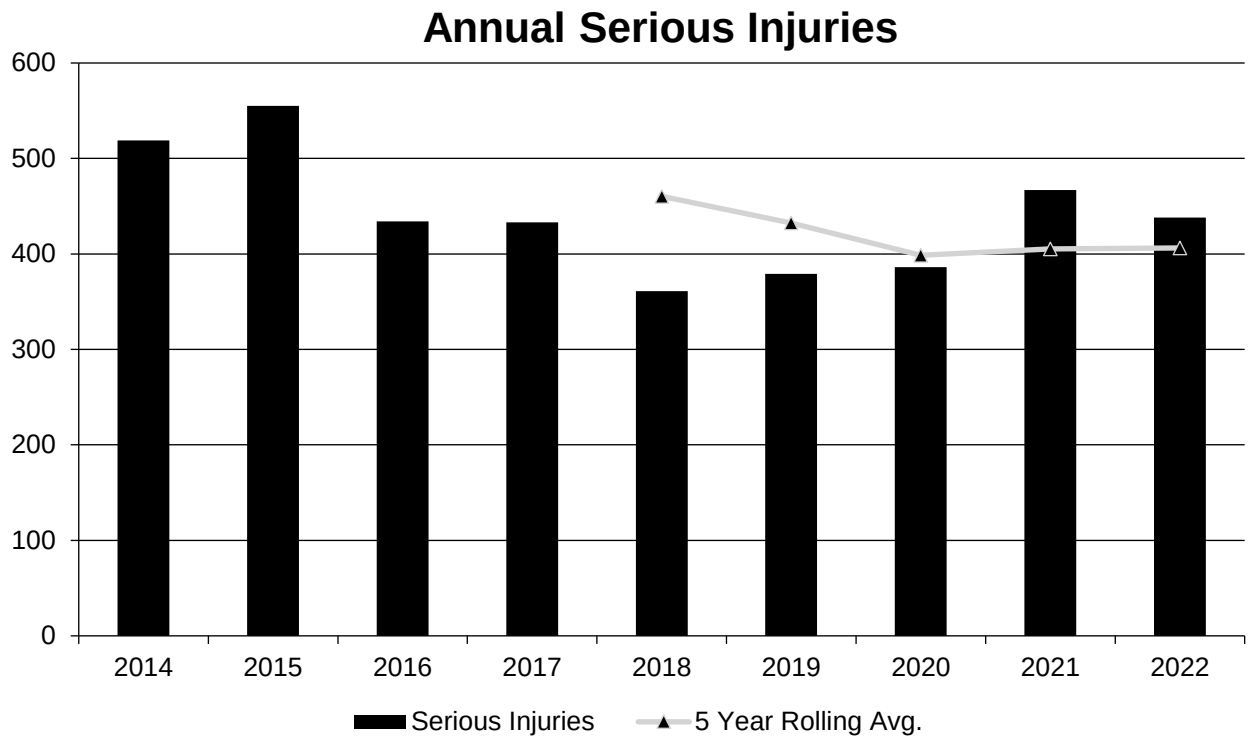
Safety Performance

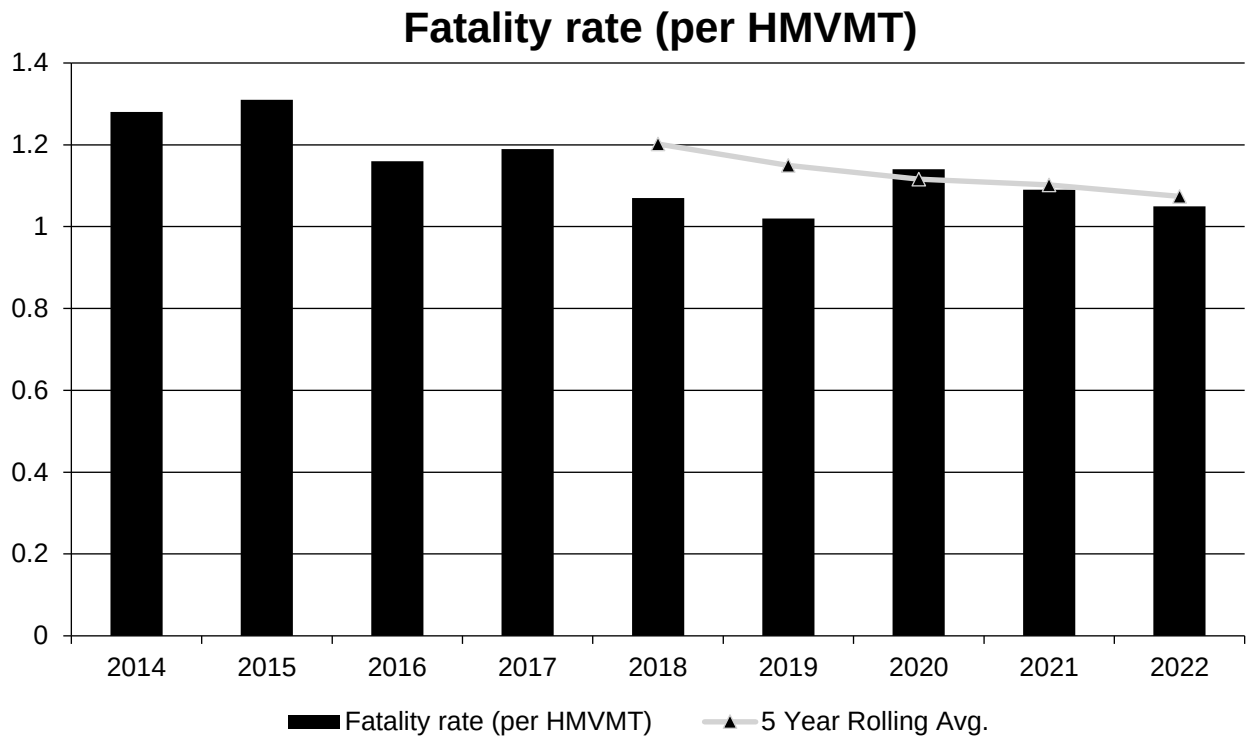
General Highway Safety Trends

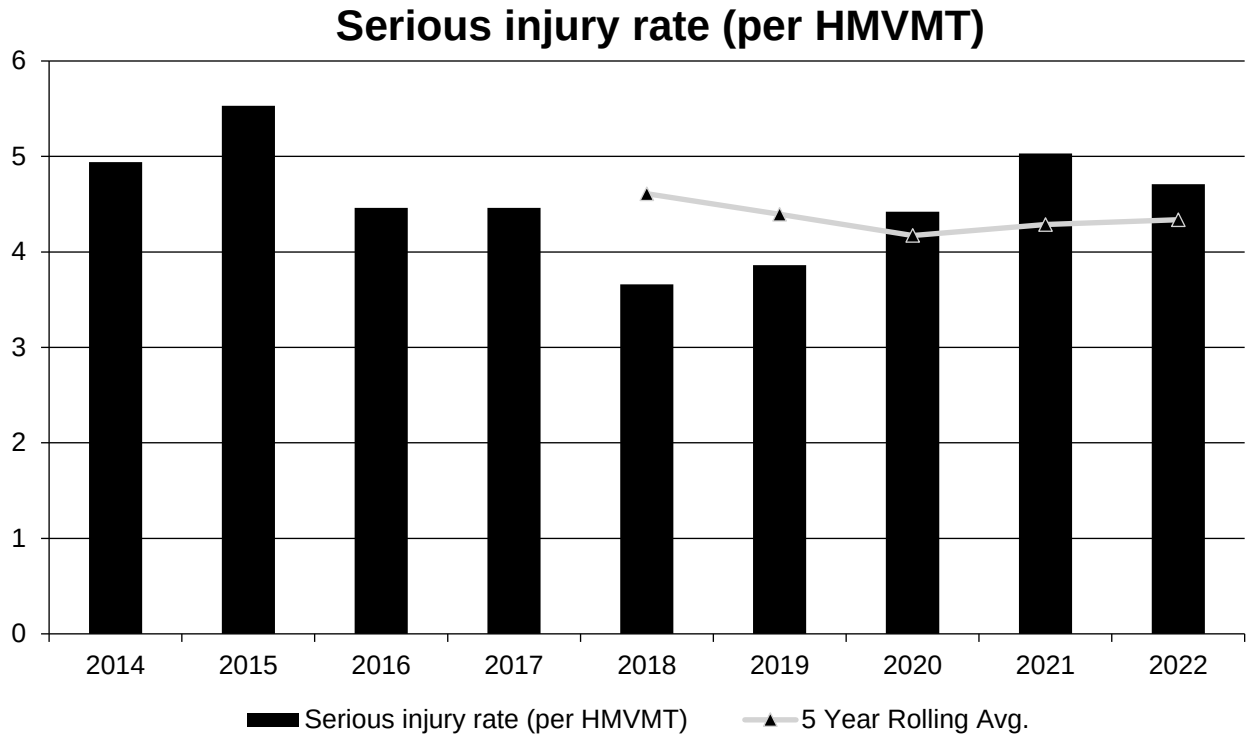
Present data showing the general highway safety trends in the State for the past five years.

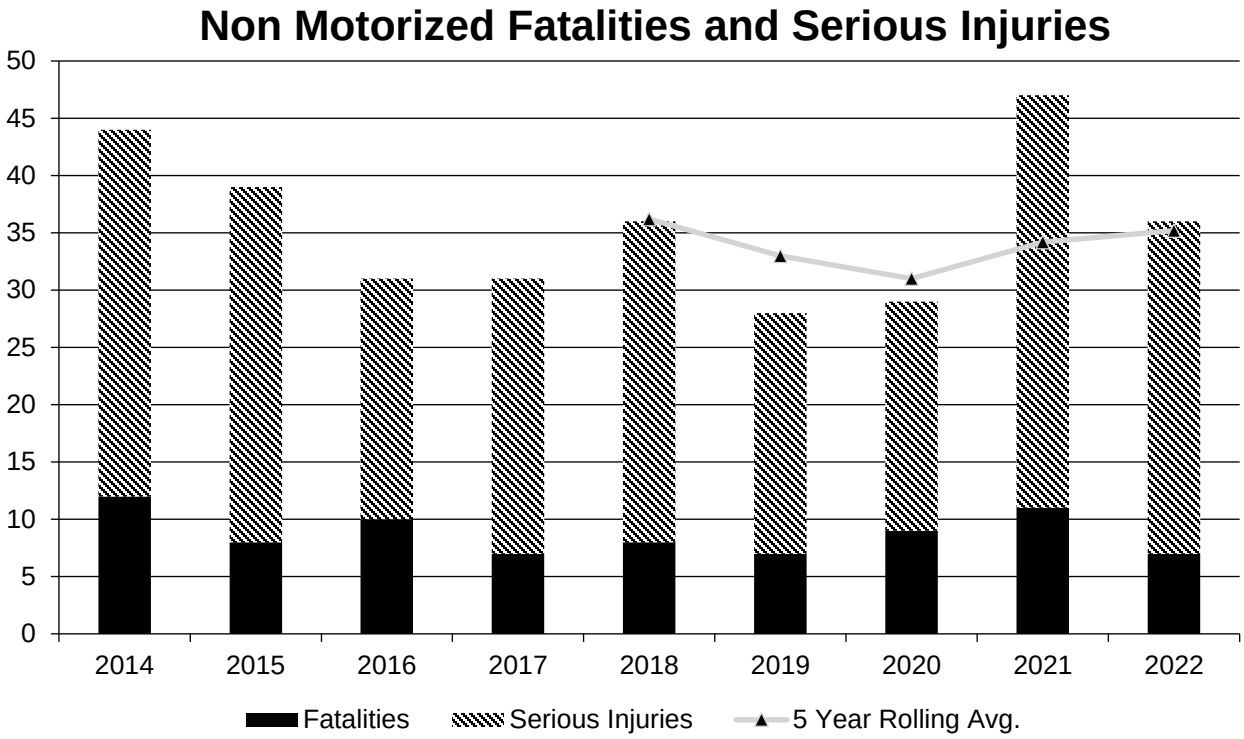
PERFORMANCE MEASURES	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fatalities	135	131	113	116	105	100	100	101	98
Serious Injuries	519	555	434	433	361	379	386	467	438
Fatality rate (per HMVMT)	1.280	1.310	1.160	1.190	1.070	1.020	1.140	1.090	1.050
Serious injury rate (per HMVMT)	4.940	5.530	4.460	4.460	3.660	3.860	4.420	5.030	4.710
Number non-motorized fatalities	12	8	10	7	8	7	9	11	7
Number of non-motorized serious injuries	32	31	21	24	28	21	20	36	29


Annual Fatalities
160
140
120
100
80
60
40
20
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
600
500
400
300
200
100
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
6
5
4
3
2
1
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

State Motor Vehicle Crash Database

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

Year 2022

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	9	29.4	0.59	1.96
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	26.4	76.2	1.28	3.73
Rural Minor Arterial	12.8	34.6	1.66	4.54
Rural Minor Collector				
Rural Major Collector	20.6	60.2	2.02	5.94

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 Local Road or Street	14	58.6	1.26	5.26
Urban Principal Arterial (UPA) - Interstate	0.8	9		1.73
Urban Principal Arterial (UPA) - Other Freeways and Expressways				
Urban Principal Arterial (UPA) - Other	7.2	61.4	0.87	7.42
Urban Minor Arterial	5.2	36.8	0.86	6.04
Urban Minor Collector				
Urban Major Collector	2.4	15	0.81	5.09
Urban Local Road or Street	2.4	20.2	0.39	3.35

Year 2022

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	58.6	206.8		
County Highway Agency	20.8	73.6		
Town or Township Highway Agency				
City or Municipal Highway Agency	9.2	79		
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				
Other				

Safety Performance Targets

Safety Performance Targets

Calendar Year 2024 Targets *

Number of Fatalities:95.8

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

Review of historical data and expert group input.

Number of Serious Injuries:398.1

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

Review of historical data and expert group input.

Fatality Rate:1.053

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

Review of historical data and expert group input.

Serious Injury Rate:4.250

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

Review of historical data and expert group input.

Total Number of Non-Motorized Fatalities and Serious Injuries:34.5

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

Review of historical data and expert group input.

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

The State Highway Safety Office (SHSO) resides in the NDDOT. The SHSO (i.e., the NDDOT Safety Division) and other NDDOT Divisions including Local Government, Programming and planning/Asset Management review performance measure data and define the method to set the targets. Proposed targets are then shared by the NDDOT at a regular meeting between NDDOT and the MPOs.

Does the State want to report additional optional targets?

No

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

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	96.4	100.8
Number of Serious Injuries	359.7	406.2
Fatality Rate	1.094	1.074

Serious Injury Rate	4.089	4.336
Non-Motorized Fatalities and Serious Injuries	29.8	35.2

The NDDOT will continue to set aggressive goals even though only one out the six targets were met. Not meeting the 5-year rolling average targets is a learning opportunity—NDDOT is looking at fatal and serious injury data and is working with safety partners to adjust our policies/strategies for the SHSP update. NDDOT is also hard at work improving its crash data and linking it to roadway attributes. The data is being fed into the AASHTOWare Safety Analysis program to get better insights on where crashes are happening and where to direct and prioritize safety funds.

The 5-yr rolling average hides some of the positive trends when comparing calendar years: all six performance measures decreased in 2022 compared to 2021 (see question 30).

Applicability of Special Rules

Does the VRU Safety Special Rule apply to the State for this reporting period?

No

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	2016	2017	2018	2019	2020	2021	2022
Number of Older Driver and Pedestrian Fatalities	9	14	19	17	16	13	18
Number of Older Driver and Pedestrian Serious Injuries	36	28	29	39	23	40	37

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.

While national trends in fatalities have increased, North Dakota has hovered around 100 fatalities per year for the last five years. This time period coincides with the state's current SHSP which went into effect in 2018. North Dakota is currently evaluating its "Vision Zero" program and is developing a new SHSP, due later this year. This will include updated analysis of crash trends and will determine what program elements are most effective. In 2022 the number of fatalities dropped below 100, which drew some positive media attention. All six performance measures (shown in question 30) decreased from 2021 numbers. This past year, NDDOT selected one project for a before/after evaluation. This project was a roundabout installation at the intersection of ND 1804 & Washington Street completed in 2019. The before period (2016-2018) had 3 crashes—2 PDO and 1 non-incapacitating injury, the after period (2020-2022) had 1 PDO crash.

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

- # miles improved by HSIP
- Increased awareness of safety and data-driven process
- Increased focus on local road safety
- More systemic programs

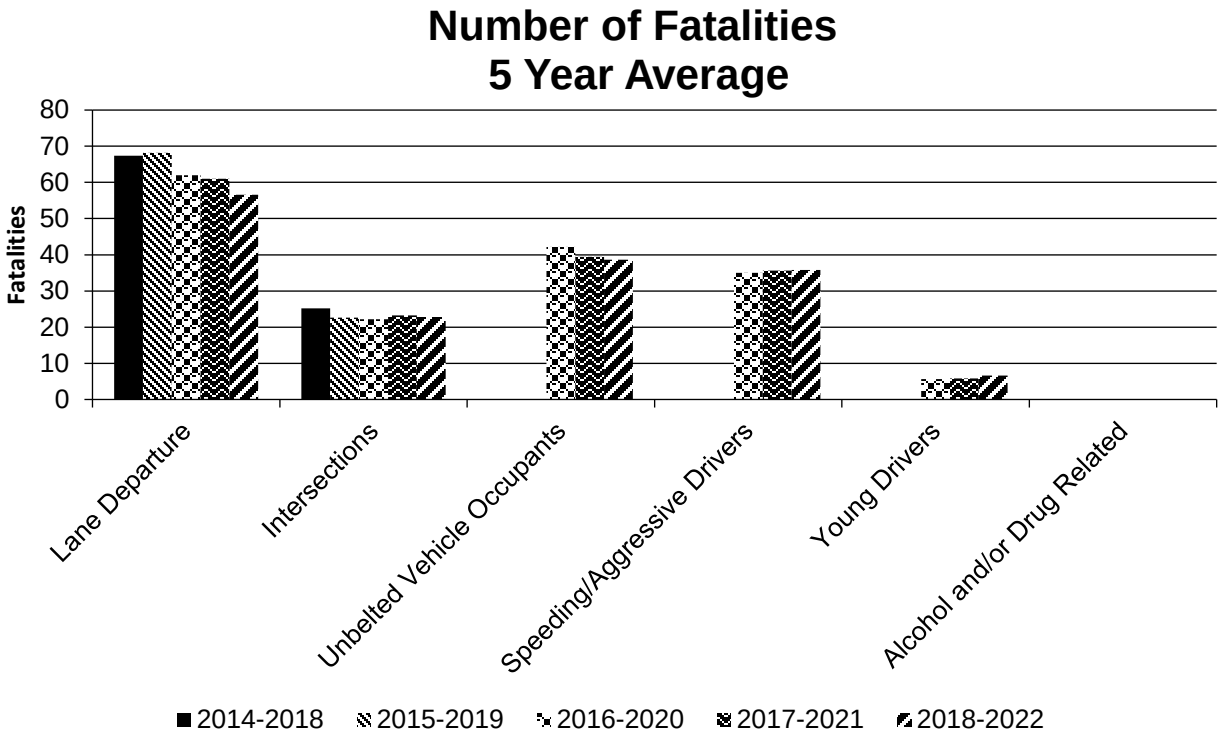
Effectiveness of Groupings or Similar Types of Improvements

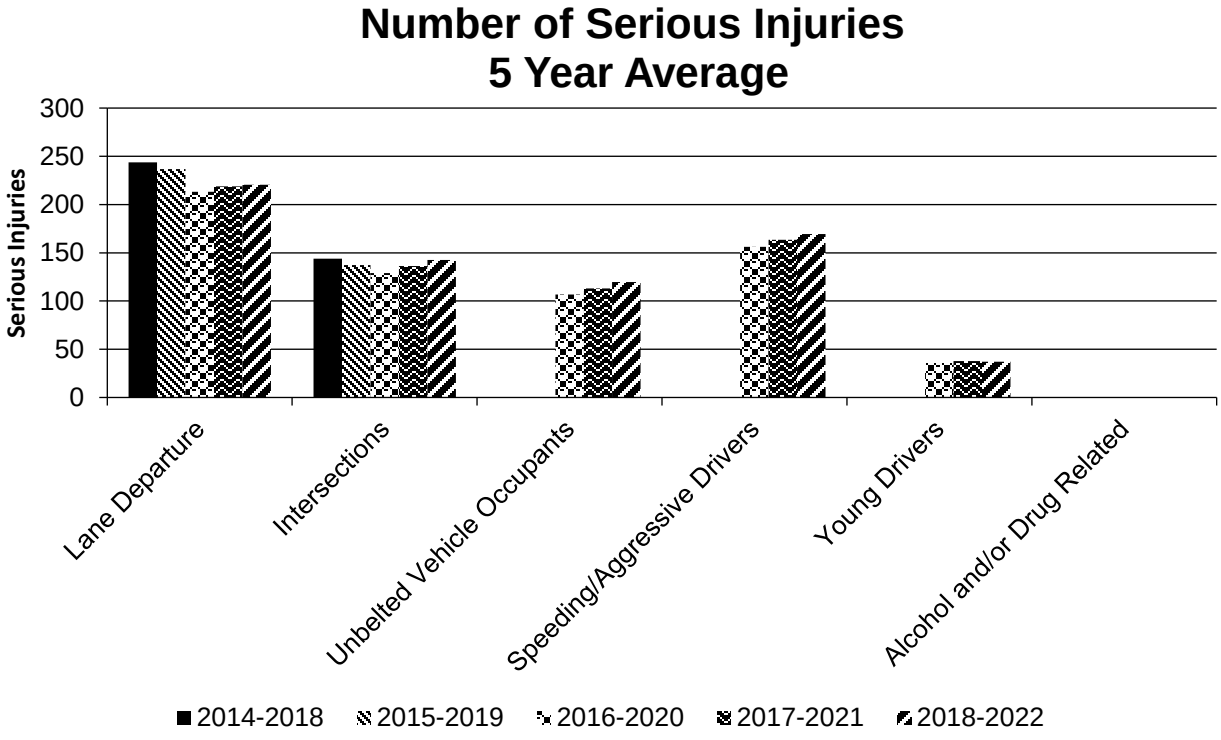
Present and describe trends in SHSP emphasis area performance measures.

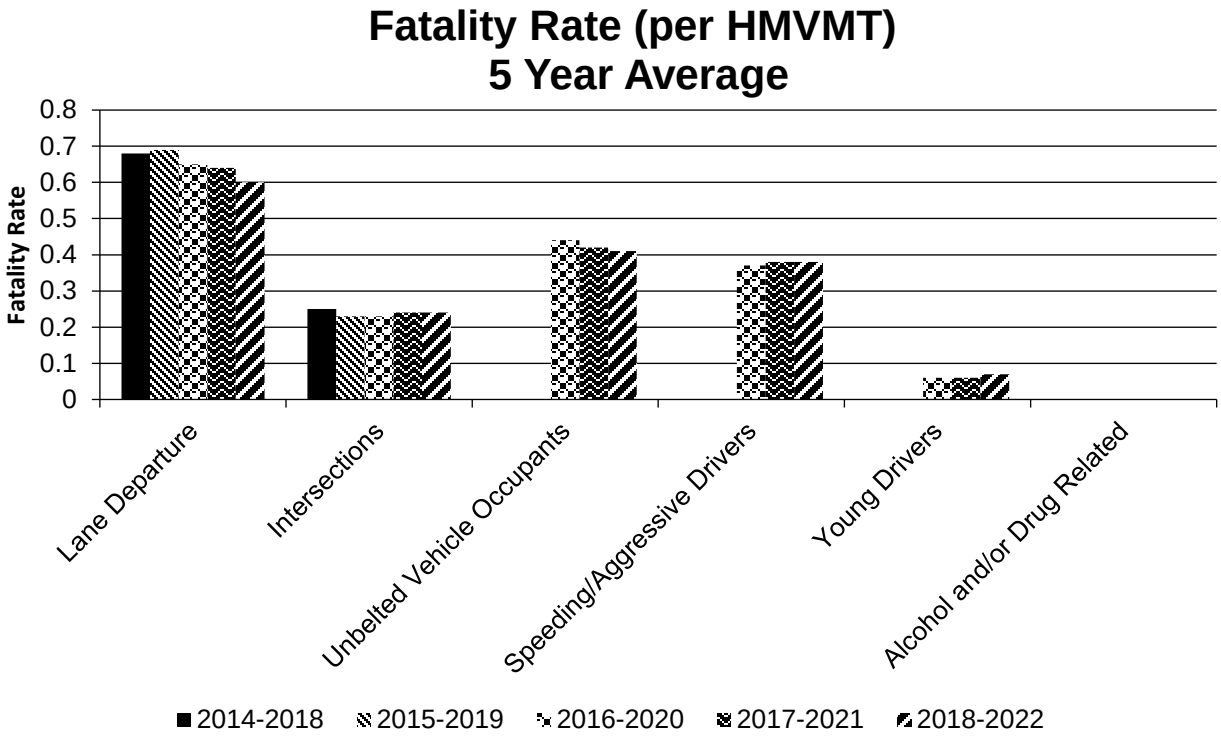
Year 2022

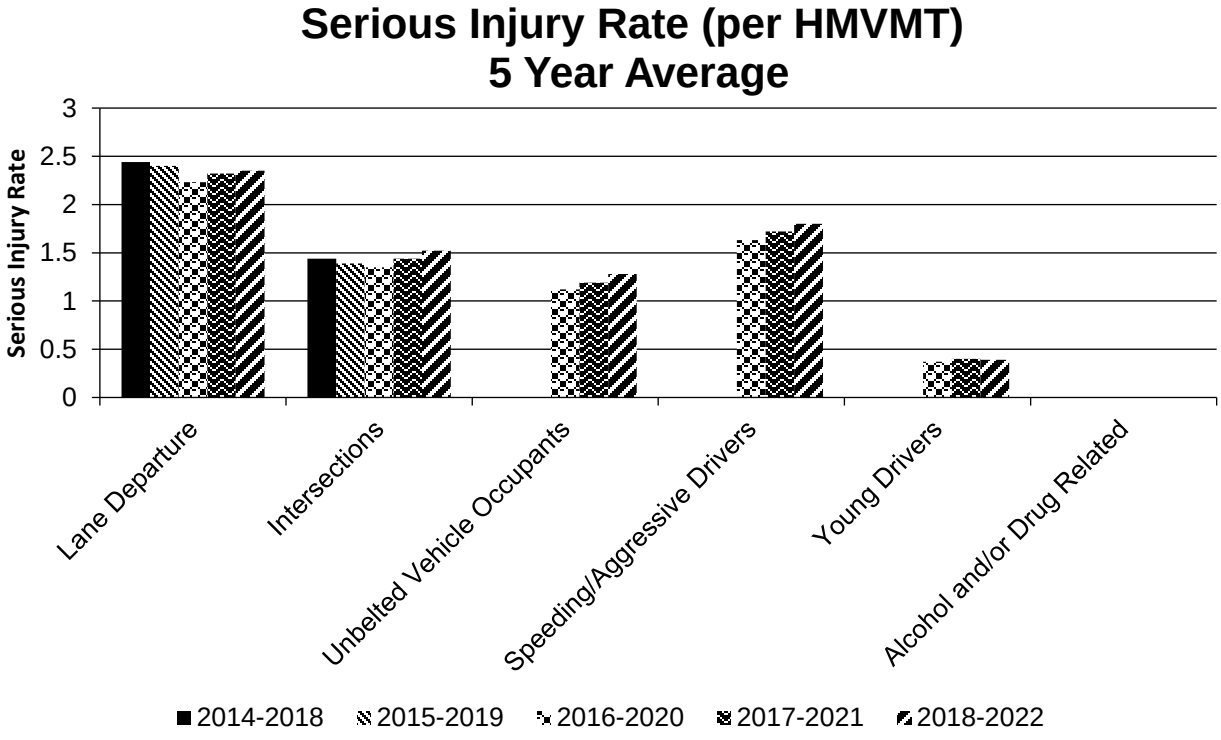
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Lane Departure		56.6	220.4	0.6	2.35
Intersections		22.8	142.4	0.24	1.52
Unbelted Vehicle Occupants		38.6	119.8	0.41	1.28
Speeding/Aggressive Drivers		35.8	169.4	0.38	1.8
Young Drivers		6.6	37	0.07	0.39

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)
Alcohol and/or Drug Related					


Number of Fatalities
5 Year Average
Fatalities
80
70
60
50
40
30
20
10
0
Lane Departure
Intersections
Unbelted Vehicle Occupants
Speeding/Aggressive Drivers
Young Drivers
Alcohol and/or Drug Related
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Number of Serious Injuries
5 Year Average
Serious Injuries
300
250
200
150
100
50
0
Lane Departure
Intersections
Unbelted Vehicle Occupants
Speeding/Aggressive Drivers
Young Drivers
Alcohol and/or Drug Related
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022





Note: historic data was updated for unbelted vehicle occupants -- reported data based on definition "without seatbelt-eligible criteria".

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)
ND 1804 & Washington St	Urban Minor Arterial	Intersection traffic control	Modify control – Modern Roundabout	2.00	1.00					1.00		3.00	1.00	

Compliance Assessment

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

09/18/2018

What are the years being covered by the current SHSP?

From: 2018 To: 2023

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

2023

The NDDOT is currently in the process of updating the SHSP for the 2023-2028 cycle.

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					75	75	75	75
	Route Number (8) [8]	20	20								
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]	20	20								
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100	100					100	100		
	Begin Point Segment Descriptor (10) [10]	100	100					75	75	75	75
	End Point Segment Descriptor (11) [11]	100	100					75	75	75	75
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]	100	100								

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Functional Class (19) [19]	100	100					100	100	100	100
	Median Type (54) [55]	20	20								
	Access Control (22) [23]	20	20								
	One/Two Way Operations (91) [93]	100	100								
	Number of Through Lanes (31) [32]	100	100					100	100		
	Average Annual Daily Traffic (79) [81]	100	100					100	100		
	AADT Year (80) [82]	100	100								
	Type of Governmental Ownership (4) [4]	100	100					100	100	100	100
INTERSECTION	Unique Junction Identifier (120) [110]			40	40						
	Location Identifier for Road 1 Crossing Point (122) [112]			40	40						
	Location Identifier for Road 2 Crossing Point (123) [113]			40	40						
	Intersection/Junction Geometry (126) [116]			40	40						
	Intersection/Junction Traffic Control (131) [131]			5	5						
	AADT for Each Intersecting Road (79) [81]			40	40						
	AADT Year (80) [82]			40	40						
	Unique Approach Identifier (139) [129]			5	5						
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					85	85				

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Location Identifier for Roadway at Beginning of Ramp Terminal (197) [187]					85	85				
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					85	85				
	Ramp Length (187) [177]					85	85				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					85	85				
	Roadway Type at End Ramp Terminal (199) [189]					85	85				
	Interchange Type (182) [172]					85	85				
	Ramp AADT (191) [181]					85	85				
	Year of Ramp AADT (192) [182]					85	85				
	Functional Class (19) [19]					85	85				
	Type of Governmental Ownership (4) [4]					85	85				
Totals (Average Percent Complete):		**82.22**	**82.22**	**31.25**	**31.25**	**85.00**	**85.00**	**91.67**	**91.67**	**85.00**	**85.00**

*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.

The NDDOT has developed the following goals to meet MIRE requirements and future road data management:

- The database for “Intersection/Junction Traffic Control (131-FDE)” need to be updated.
- Robust/integrated data warehouse will connect all geodatabases with each other.
- More efficiently and effectively extract information from the database:
  - Nested-Querying will be the initial capability of Datawarehouse.
  - Develop a framework that allows tools and models to be shared by NDDOT.
  - Capability of applying AI/ML-based techniques over the Datawarehouse.
- The Datawarehouse will be an efficient framework for data governance in NDDOT
  - Other geo-databases (safety, construction, maintenance, etc.) could be integrated into the Datawarehouse

Optional Attachments

Program Structure:

HSIP Guidebook 2021.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.