NORTH DAKOTA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2022 ANNUAL REPORT

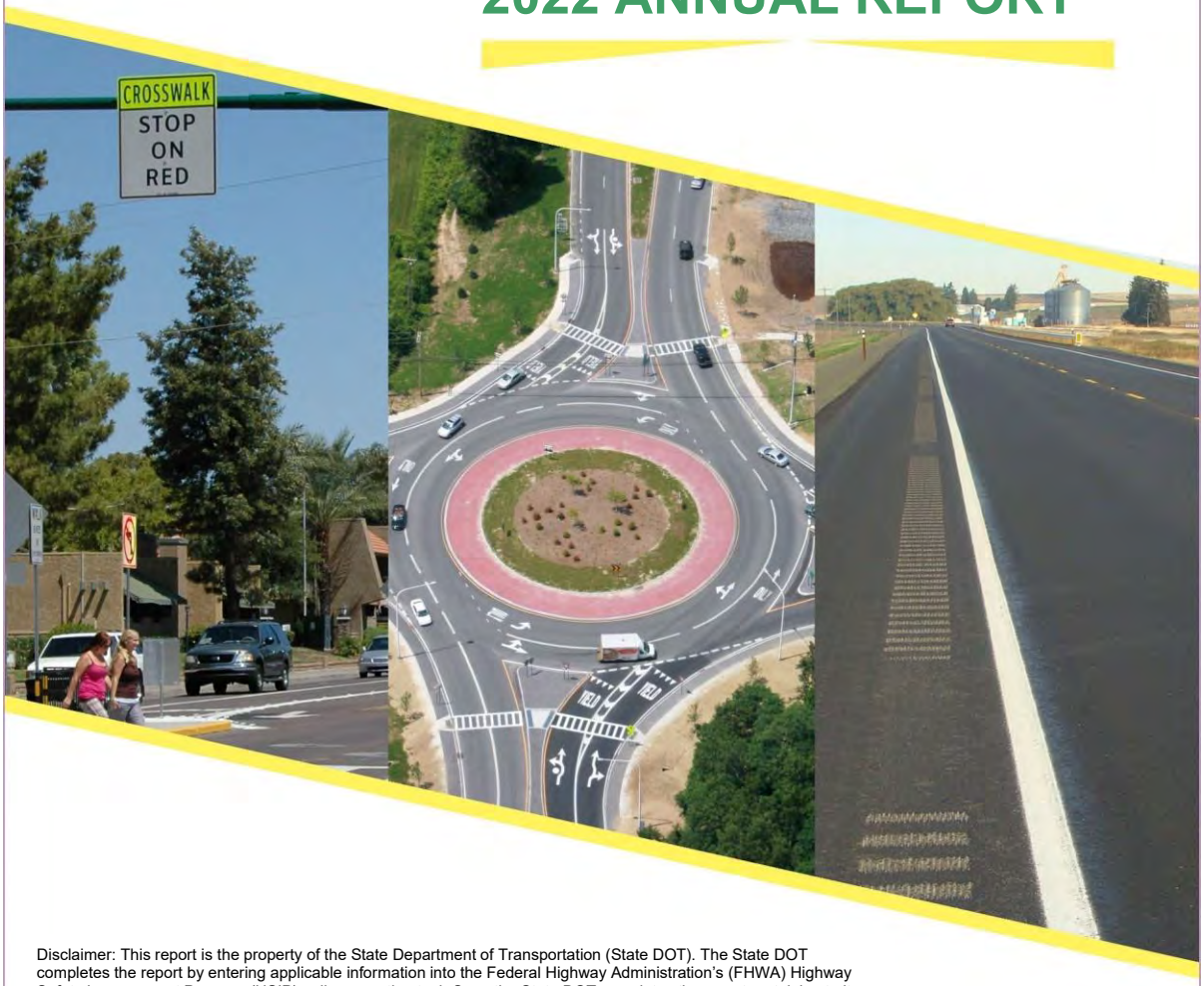

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Photo source: Federal Highway Administration

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Disclaimer

Protection of Data from Discovery Admission into Evidence

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

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

Executive Summary

The 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?

57

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

- Cable Median Barriers
- Horizontal curve signs
- Install/Improve Lighting
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Rumble Strips
- Traffic Control Device Rehabilitation

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.

The NDDOT has implemented the ITS technology of ICWS (Intersection Conflict Warning Systems). One of the 2022 HSIP projects will install environmental sensor stations (ESS) to show messages on message boards and possibly to vehicles (V2i).

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.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

Federal Fiscal Year
2022 Federal Fiscal Year (Oct 1, 2021 through July 26, 2022)

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$29,132,380	$15,599,460	53.55%
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)	$5,722,242	$5,722,242	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	$34,854,622	$21,321,702	61.17%

2022 Federal Fiscal Year (as of July 26, 2022)*

*9.7M Remaining HSIP apportionment is planned to be obligated by the end of 2022 Federal Fiscal Year.

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

$1,154,000

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

$3,662,000

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

$483,000

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

$720,000

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
22715: Stanley Ped Crossings	Pedestrians and bicyclists	Modify existing crosswalk	15	Intersections	$35000	$39000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	0		City or Municipal Highway Agency	Spot	Intersections	
22829: Burdick Expwy to Evergreen Ave	Intersection geometry	Intersection geometry - other	1	Intersections	$1860000	$2744000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	18,195	50	State Highway Agency	Spot	Intersections	
23155: Bismarck Burlington to Main Ave	Lighting	Continuous roadway lighting	1.34	Miles	$489000	$543000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	14,285	50	State Highway Agency	Spot	Older Drivers	
23425: Various Hwys - Standing Rock Reservation	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$78000	$86000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23426: Various Hwys - Bismarck District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1128000	$1253000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23427: Various Hwys - Valley City District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$871000	$968000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23430: Various Hwys - Dickinson District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1453000	$1614000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23431: Various Hwys - Grand Forks District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1425000	$1583000	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
23433: Various Hwys - Fargo District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$987000	$1097000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23269: US 85 ESS	Advanced technology and ITS	Advanced technology and ITS - other	1	Locations	$251000	$228000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	6,435	65	State Highway Agency	Spot	Lane Departure	
23423: Various Hwys - Spirit Lake Reservation	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$49000	$49000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23424: Various Hwys - Fort Berthold Reservation	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$305000	$339000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23428: Various Hwys - Devils Lake District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$901000	$1001000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23429: Various Hwys - Minot District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$1071000	$1190000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23432: Various Hwys - Grand Forks District	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$703000	$781000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
23437: US 281 - Turtle Mount Reservation	Roadway delineation	Longitudinal pavement markings - remarking	1	Locations	$44000	$44000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0		State Highway Agency	Systemic	Lane Departure	
22831: Bowman, W of 3rd Ave SE	Intersection geometry	Add/modify auxiliary lanes	2	Intersections	$943000	$1047000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,595	35	State Highway Agency	Spot	Speeding or Aggressive Drivers	
22832: US 85 & 38th St SW	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$575000	$639000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	1,936	65	State Highway Agency	Spot	Intersections	
21874: McKenzie Co.- Charlie	Alignment	Horizontal and vertical alignment	0.67	Miles	$2518000	$2797000	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	78		County Highway Agency	Spot	Lane Departure	

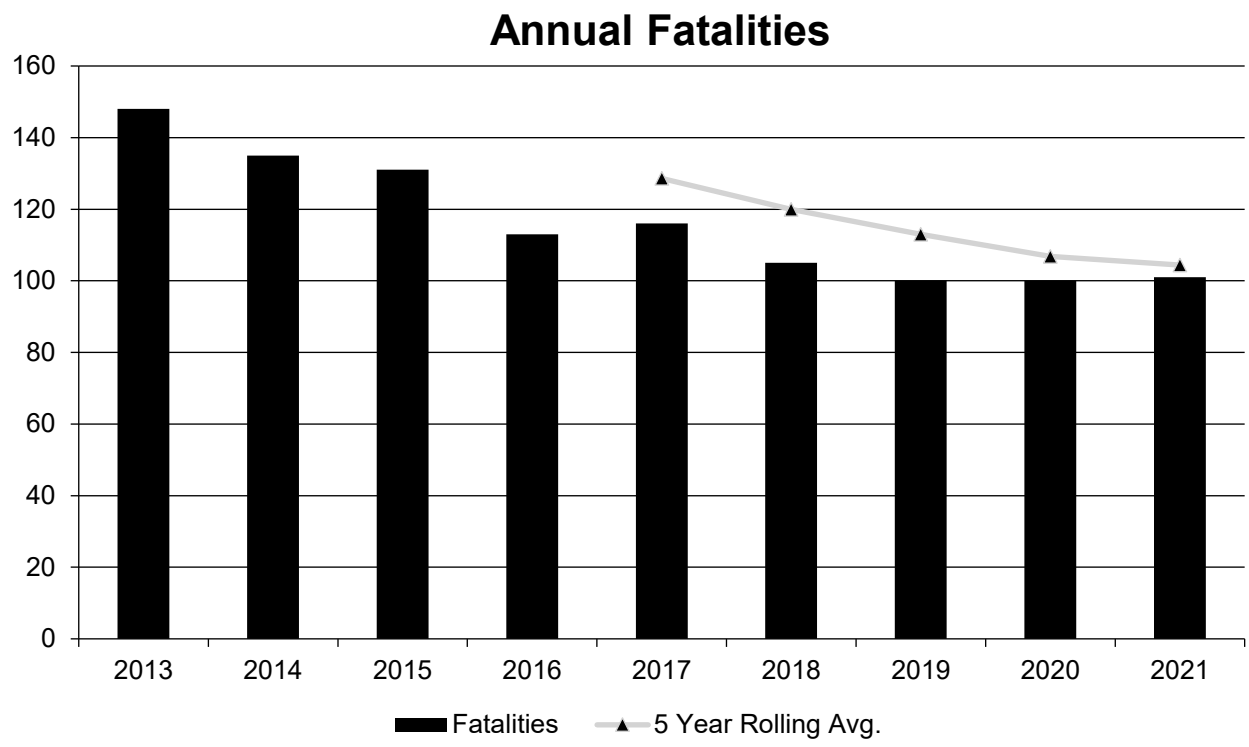
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
Bob Creek Road															

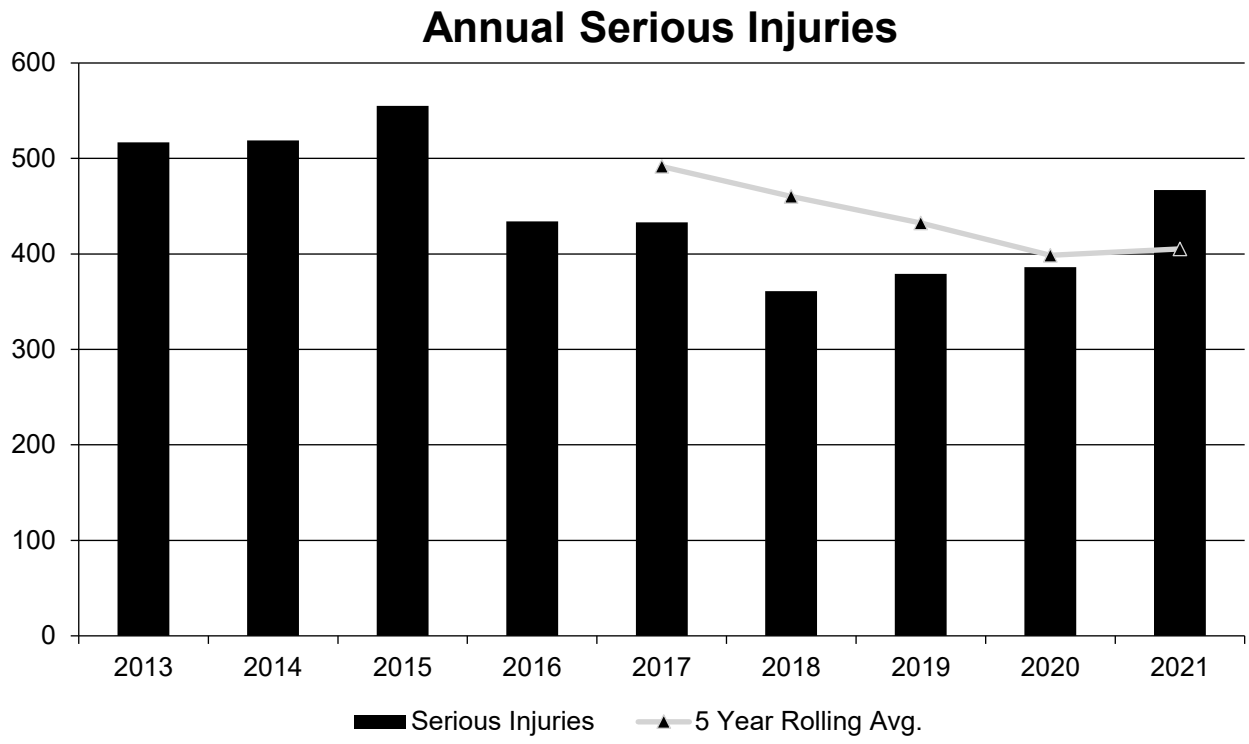
Safety Performance

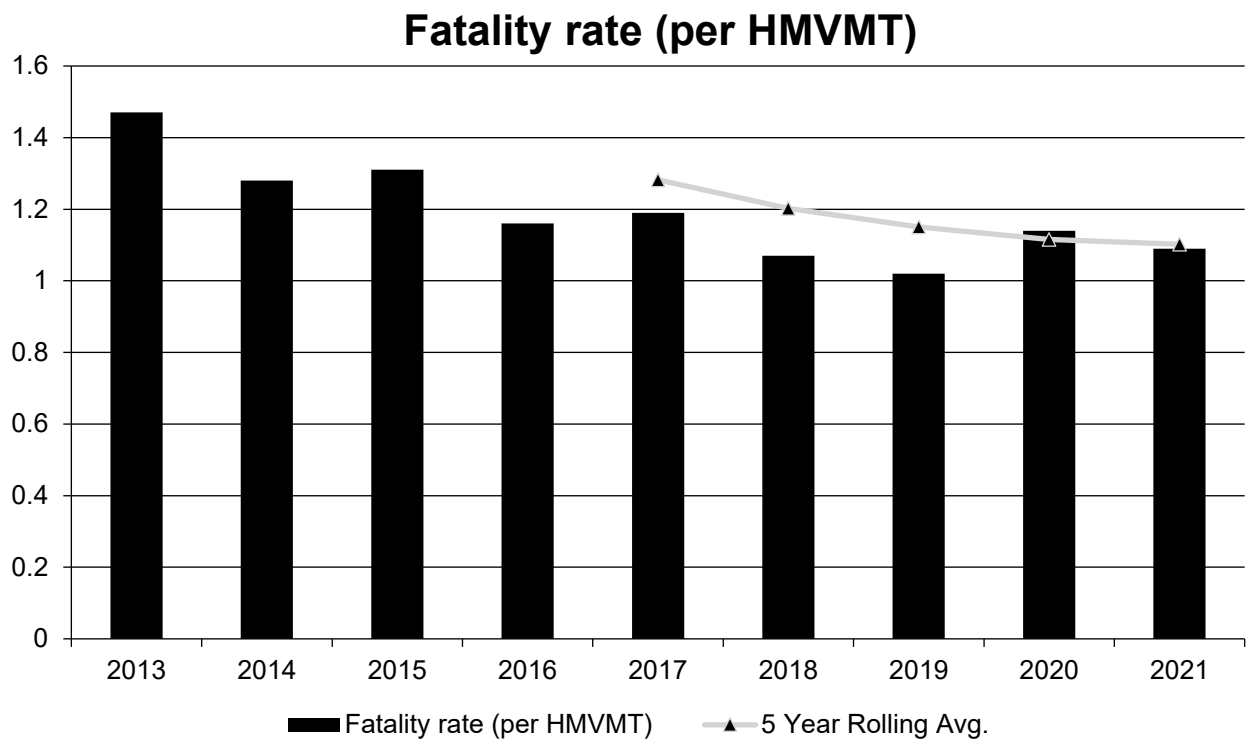
General Highway Safety Trends

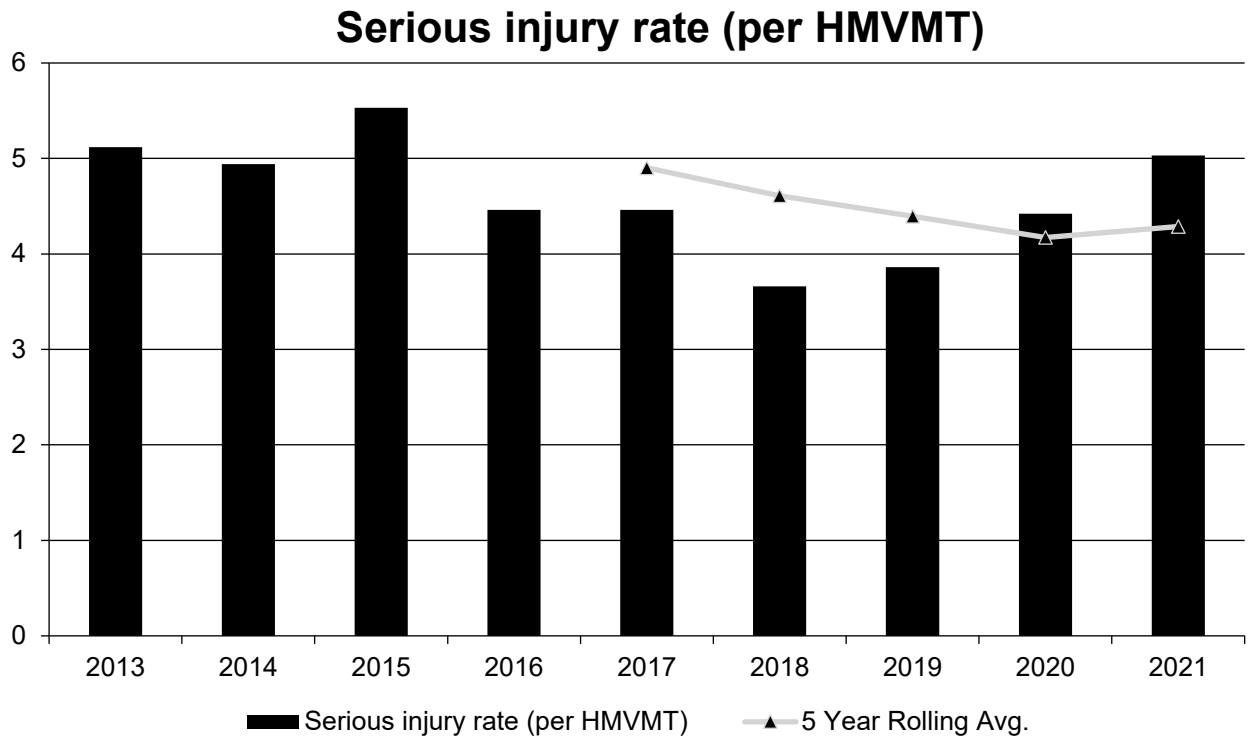
Present data showing the general highway safety trends in the State for the past five years.

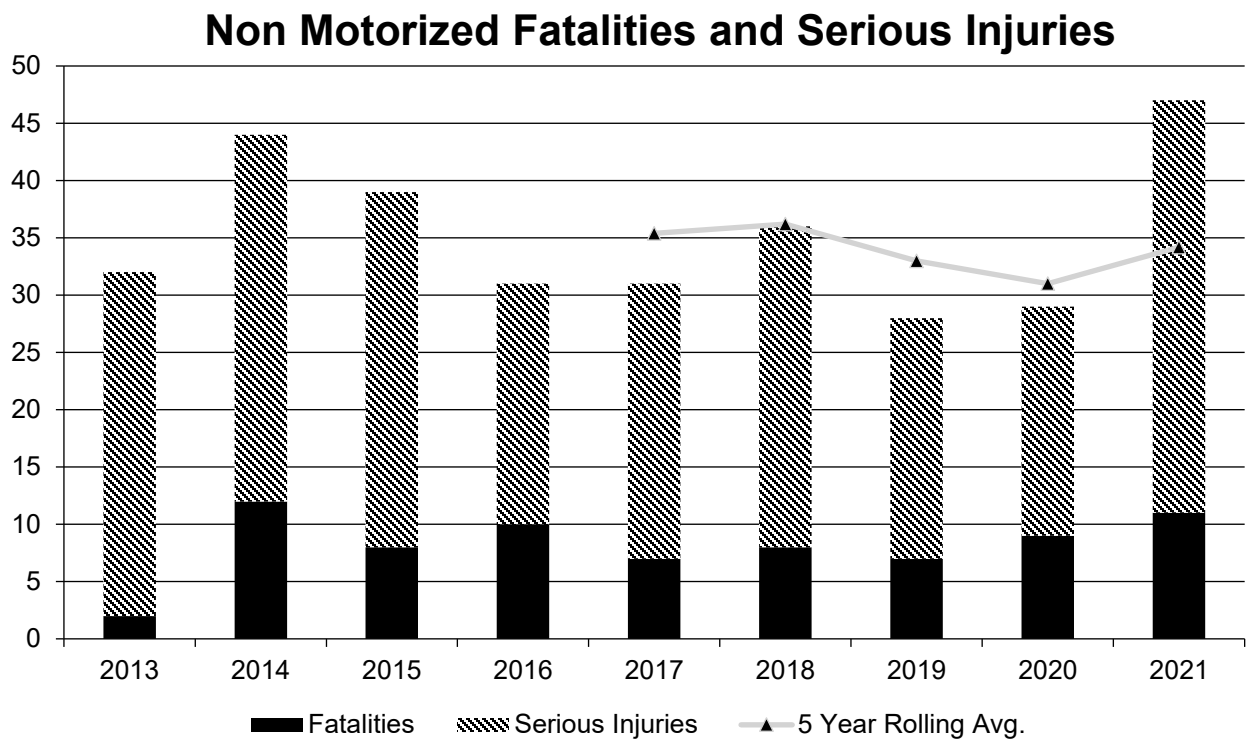
PERFORMANCE MEASURES	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fatalities	148	135	131	113	116	105	100	100	101
Serious Injuries	517	519	555	434	433	361	379	386	467
Fatality rate (per HMVMT)	1.470	1.280	1.310	1.160	1.190	1.070	1.020	1.140	1.090
Serious injury rate (per HMVMT)	5.120	4.940	5.530	4.460	4.460	3.660	3.860	4.420	5.030
Number non-motorized fatalities	2	12	8	10	7	8	7	9	11
Number of non-motorized serious injuries	30	32	31	21	24	28	21	20	36


Annual Fatalities
160
140
120
100
80
60
40
20
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
600
500
400
300
200
100
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
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
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fatality rate (per HMVMT)
5 Year Rolling Avg.


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



Describe fatality data source.

State Motor Vehicle Crash Database

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

Year 2021

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	8.6	28.6	0.56	1.9
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	26.2	76.6	1.23	3.64
Rural Minor Arterial	12.8	34	1.62	4.33
Rural Minor Collector				
Rural Major Collector	20.2	65.8	1.93	6.32

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	18	57.4	1.59	5.11
Urban Principal Arterial (UPA) - Interstate	0.6	7.8		1.51
Urban Principal Arterial (UPA) - Other Freeways and Expressways				
Urban Principal Arterial (UPA) - Other	7.4	53.6	0.9	6.54
Urban Minor Arterial	5.6	33.2	0.91	5.3
Urban Minor Collector				
Urban Major Collector	1.6	14.8	0.56	5.18
Urban Local Road or Street	3	23.2	0.51	4.03

Year 2021

Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	59.4	206.4		
County Highway Agency	24.2	81		
Town or Township Highway Agency				
City or Municipal Highway Agency	9.4	74.2		
State Park, Forest, or Reservation Agency	4.2	4.2		
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 2023 Targets *

Number of Fatalities:99.2

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

Review of historical data and expert group input. The current NDDOT SHSP has a short term goal of fewer than 75 fatalities by 2025. The target set for 2023 matches this trend line.

Number of Serious Injuries:397.1

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

Review of historical data and expert group input.

Fatality Rate:1.080

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

Review of historical data and expert group input.

Serious Injury Rate:4.201

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:33.5

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	102.0	104.4
Number of Serious Injuries	382.1	405.2
Fatality Rate	1.103	1.102
Serious Injury Rate	4.046	4.286
Non-Motorized Fatalities and Serious Injuries	30.4	34.2

The NDDOT set lofty targets in 2021, but came up short on a few of them. Even though we didn't meet some of our targets we still met the baseline data for most of the performance targets. We did see an increase in

serious injuries in the state this year, but our fatalities continued to be about the same as previous years. We will continue to push for lofty targets and strategies to get us to them.

Applicability of Special Rules

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

No

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

PERFORMANCE MEASURES	2015	2016	2017	2018	2019	2020	2021
Number of Older Driver and Pedestrian Fatalities	11	9	14	19	17	16	13
Number of Older Driver and Pedestrian Serious Injuries	37	36	28	29	39	23	40

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.

In the last few years, the number of fatalities and the fatality rate has plateaued. Serious injuries are rising along with the serious injury rate. Since these measures of effectiveness is statewide data, the numbers may be hiding any successes that are occurring due to individual safety projects. More detailed project level evaluations may be necessary in the future to determine which treatments are working and which are not. Nevertheless, the overall trends are a concern, and the data is being investigated with NDDOT's upcoming revision of its SHSP.

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

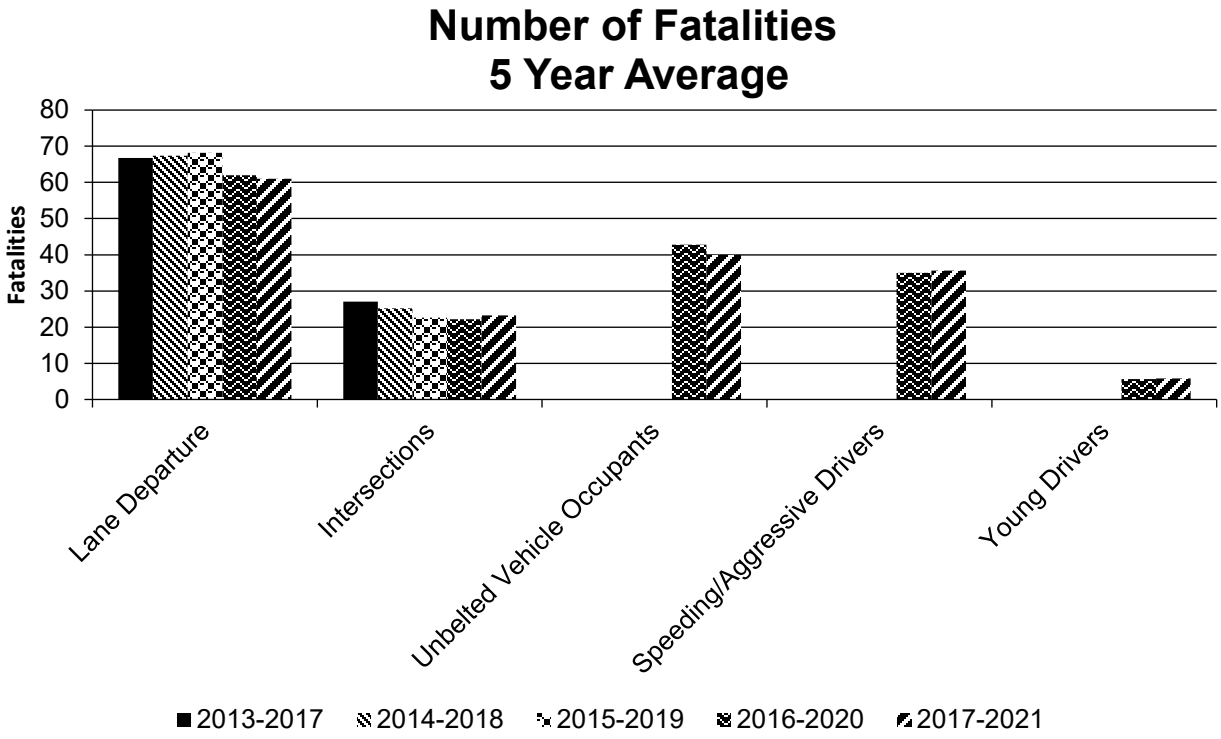
- # miles improved by HSIP
- Increased awareness of safety and data-driven process
- Increased focus on local road safety
- More systemic programs

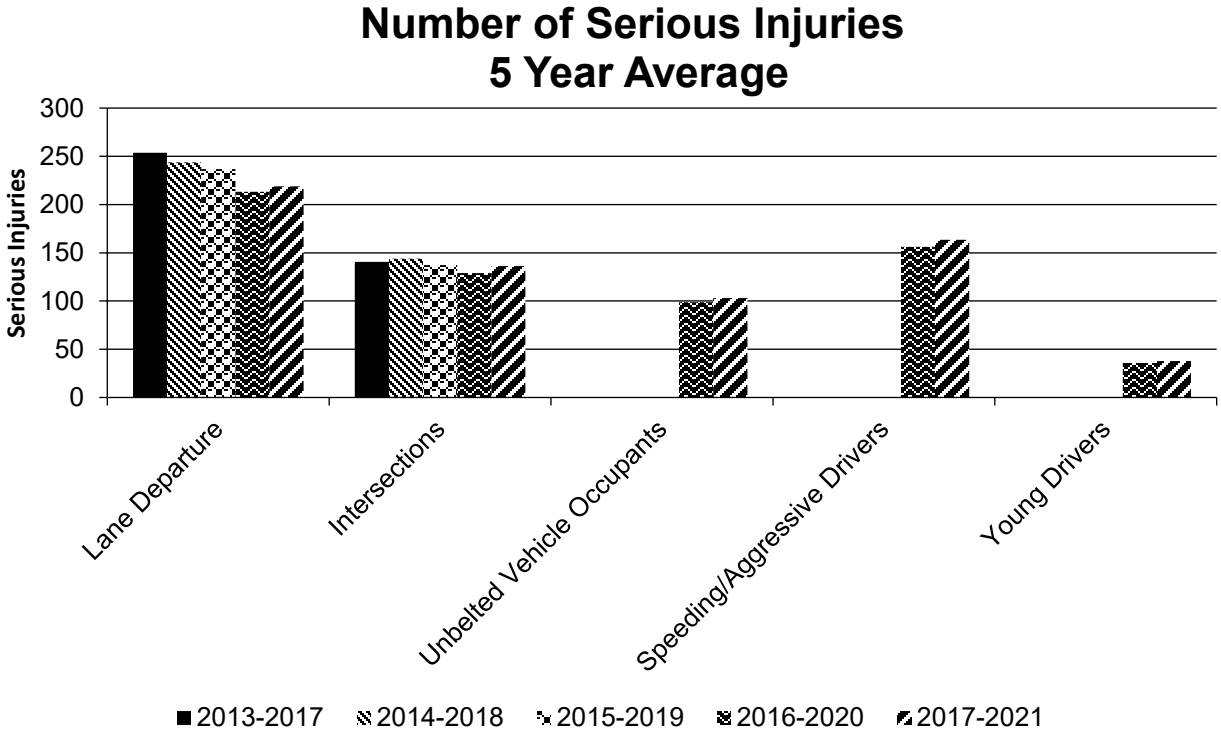
Effectiveness of Groupings or Similar Types of Improvements

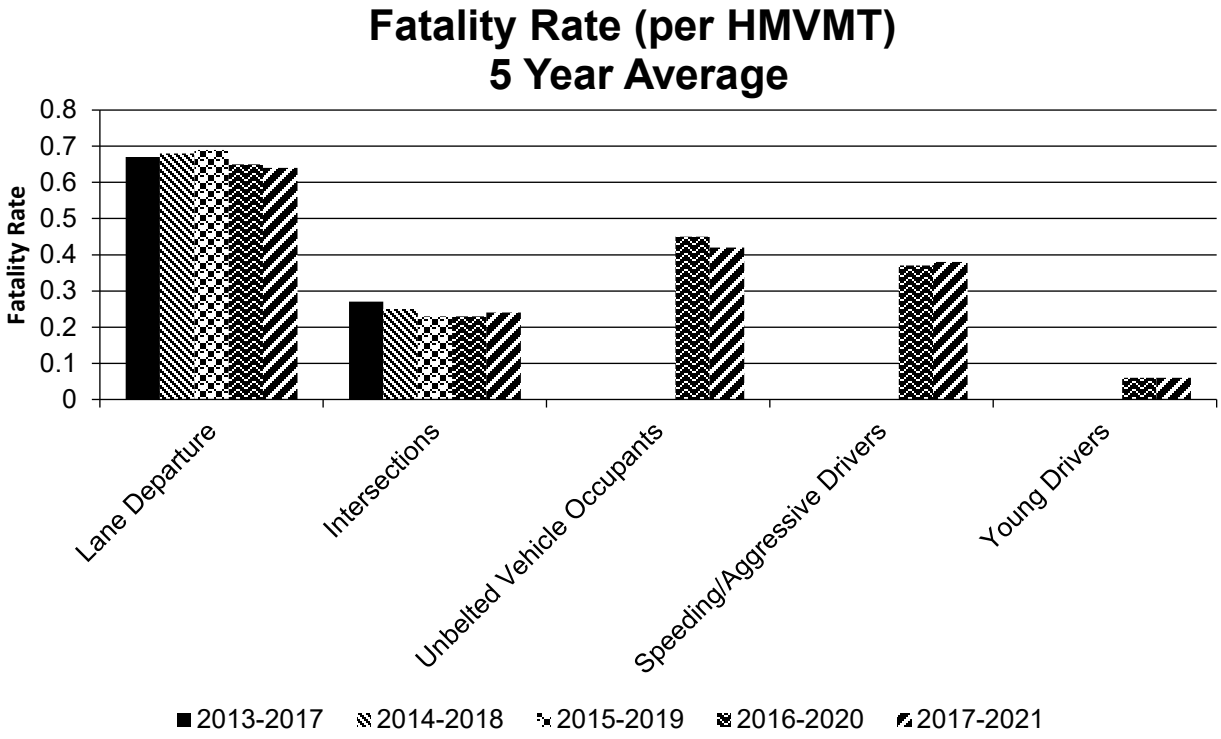
Present and describe trends in SHSP emphasis area performance measures.

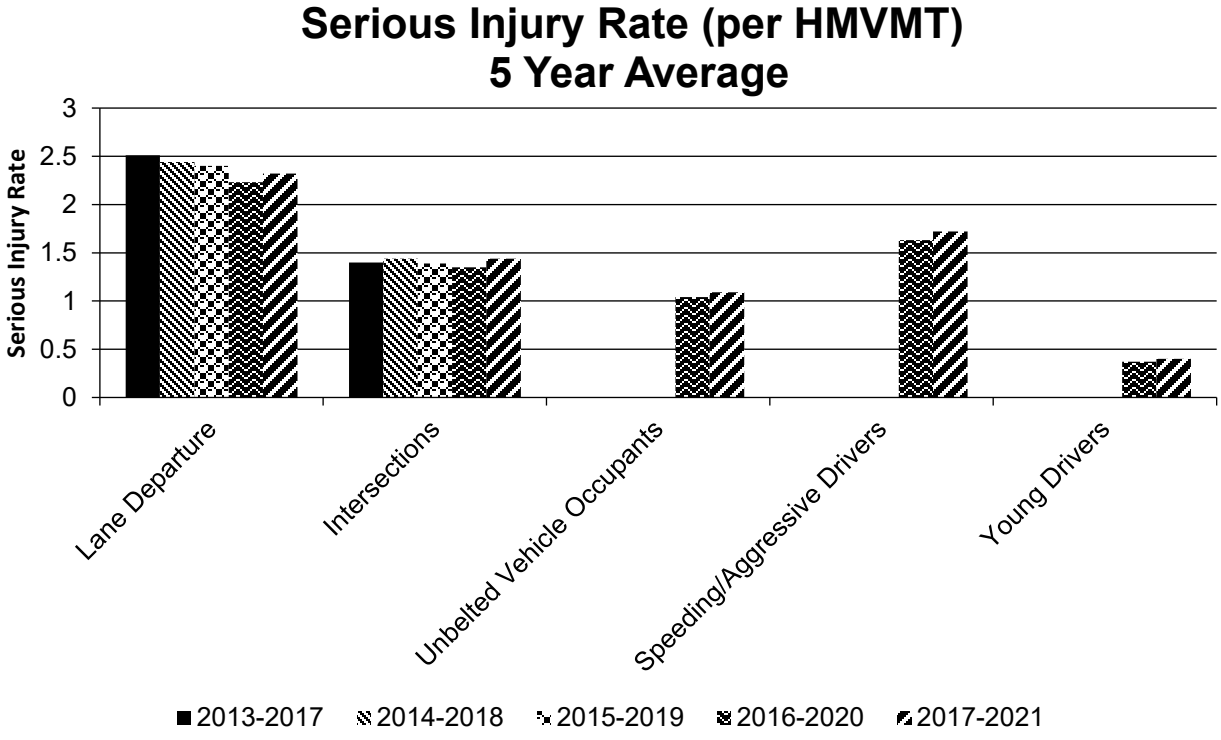
Year 2021

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Lane Departure	All	61	219	0.64	2.32
Intersections	All	23.2	136.2	0.24	1.44
Unbelted Vehicle Occupants	All	40	103	0.42	1.09
Speeding/Aggressive Drivers	All	35.6	163.4	0.38	1.72
Young Drivers	All	5.8	37.8	0.06	0.4


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
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021


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
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Lane Departure
Intersections
Unbelted Vehicle Occupants
Speeding/Aggressive Drivers
Young Drivers
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
3
2.5
2
1.5
1
0.5
0
Lane Departure
Intersections
Unbelted Vehicle Occupants
Speeding/Aggressive Drivers
Young Drivers
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021

Project Effectiveness

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

Compliance Assessment

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

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

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								
	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]	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				
	Location Identifier for Roadway at					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
	Beginning of Ramp Terminal (197) [187]										
	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 two FDE: “Median Type (54)” and “Intersection/Junction Traffic Control (131)” need to be updated.
- Develop a robust/integrated data warehouse to connect all geodatabased items with each other
- More efficiently and effectively extract information from the database:
  - Querying will be the initial capability of data warehouse
  - Develop a framework that allows tools and models to be shared by NDDOT
  - Application of AI/ML-based techniques over the data warehouse
- The data warehouse will be an efficient framework for data governance in NDDOT
  - Other geo-databases (safety, construction, maintenance, etc.) could be integrated into the data warehouse

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.