NORTH CAROLINA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2018 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

Table of Contents

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

23 U.S.C. 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 purpose of the North Carolina Highway Safety Improvement Program (HSIP) is to provide a continuous and systematic procedure that identifies, investigates and addresses specific safety concerns throughout the state. The ultimate goal of the HSIP is to reduce the number of traffic crashes, injuries, and fatalities by reducing the potential for and the severity of these incidents of public roadways.

North Carolina recognizes traffic crashes as a significant problem that continues to challenge the state. In 2017, there were over 300,000 reported traffic crashes that resulted in 1,400 persons killed and over 120,000 injuries on our roadways. The socioeconomic impact of these crashes is severe, resulting in a loss of over $26.8 billion to the economy of North Carolina annually. This impact translates to a crash cost to the state of over $3.0 million every hour and approximately $73 million every day and a staggering social impact as well. North Carolina has established a vision to have a multi-disciplinary, multi-agency highway safety approach to research, planning, investigation, design, construction, maintenance, operation and evaluation of transportation systems, which results in reduced fatalities, injuries and economic losses, related to crashes. In addition, there is a coordinated strategic effort to address emerging safety issues. The Executive Committee for Highway Safety established a goal to cut the fatalities and serious injuries in North Carolina in half based on the 2013 figures, reducing the total annual fatalities to 630 fatalities and the total serious injuries to 1,055 serious injuries before 2030.

This “HSIP Report” describes North Carolina DOT’s implementation and effectiveness of its Highway Safety Improvement Program. These reports satisfy the requirements under Title 23 of the Code of Federal Regulations, Part 924 (23 CFR 924). The NCDOT Rail Division is developing the “Railway-Highway Crossing Report” as a separate report submission. North Carolina DOT has opted to use the 2017 Calendar Year as the reporting period for the “HSIP Report”; however, some of our 2018 plans, goals, and methods are included in 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.

Each year the Transportation Mobility and Safety Division (TMSD) conducts network screening to identify potentially hazardous intersections and sections. Crash data and collision diagrams are compiled for the higher ranked locations. These tools are then used to conduct a field investigations of these sites. NCDOT staff also conduct numerous field investigations resulting from specific fatal sites and concerns from law enforcement, municipalities and citizens. Data from the field investigation is used to determine feasible countermeasures. In many cases low-cost countermeasures can be funded by highway maintenance programs. Other improvements are developed into projects that compete for state and federal highway safety program funds. Selection of projects is determined by a statewide data-driven selection process each quarter. The selected projects are approved by the NCDOT Board of Transportation. Project designs are developed and contracts are advertised. Contracts are awarded and projects are constructed, then final field inspections are conducted by division and/or TMSD personnel to make sure that the project is completed according to the approved plans and specifications. All significant safety projects are evaluated individually and once enough projects of a particular countermeasure have been implemented, the effectiveness of the countermeasure is evaluated.

Where is HSIP staff located within the State DOT?

Operations

Enter additional comments here to clarify your response for this question or add supporting information.

NCDOT’s Traffic Safety Unit has approximately 40 positions dedicated to improving safety and mobility. There are also Traffic Engineering staff in the 14 Highway Divisions who are charged with maintaining and improving our transportation network.

How are HSIP funds allocated in a State?

Central Office via Statewide Competitive Application Process

Enter additional comments here to clarify your response for this question or add supporting information.

The HSIP program is funded with 90% federal funds and 10% matching state funds. Competing HSIP candidate projects are submitted and reviewed quarterly by an interdisciplinary Safety Project review team that recommends approval of federally funded safety projects. These projects are prioritized for funding according to a safety benefit-to-cost (B/C) ratio, with the safety benefit being based on crash and injury reductions. Once programmed HSIP (W-Projects) become part of NCDOT's State Transportation Improvement Program (STIP). NCDOT has also funded systemic Vulnerable User, Pedestrian and Bicycle, and Signal System projects.

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

In North Carolina, the local county governments are not responsible for the maintenance of rural highways. The NCDOT highway network covers nearly 80,000 roadway centerline miles which includes rural roadways classified as local; municipal governments maintain some downtown streets, residential streets and subdivision roads.

Several Pilot Communities including several Planning Organization staff have been formally trained in identifying low cost countermeasures with the ultimate goal of reducing fatalities and serious injuries in their cities. Technical training included understanding crash data, identifying potential treatment locations, preparing collision diagrams, selecting countermeasures, and evaluating those countermeasures. Quarterly conference calls are being held to allow city representatives to brainstorm ideas and offer feedback on the program. A process was established to federally fund some of these projects through the Local Programs Management Office (LPMO). By training these municipalities to analyze, identify treatments, and set up and evaluate projects, the municipalities should see reductions in the severity and number of crashes on their roadways.

NCDOT receives crash data from the Department of Motor Vehicles and has the capability to identify potentially hazardous locations on all publicly traveled North Carolina roadways.

We are not aware of any crashes on tribal roads and are not certain if they are required to report crashes. We will make a concerted effort to reach out to tribes to determine the number and severity of crashes on their roadways, as well as identify potentially hazardous locations.

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

Traffic Engineering/Safety
Design
Planning
Operations
Governors Highway Safety Office

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with internal partners.

The design, planning, and operations units within NCDOT play a significant role within the Strategic Highway Safety Plan. These units utilize safety data during their planning phase in many ways. NCDOT's Strategic Prioritization process uses data regarding pavement condition, traffic congestion and road safety, as well as input from local government and NCDOT staff to determine transportation priorities. Many resurfacing projects are utilizing safety edge treatments to reduce the potential for over-correction type crashes. The Governor's Highways Safety Program oversees a variety of important safety campaigns, including "Booze It and Lose It" and "Click It or Ticket It.". The NCDOT Rail Division and GHSP participate on our safety project selection committee. The Transportation Mobility and Safety Division, GHSP, and the State Highway Patrol (external partner) have developed a collaborative program to identify and improve rural highway corridors that have high fatal and serious injury rates.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
Local Government Agency
Other-NC State Highway Patrol

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with external partners.

Planning Organizations utilize traffic safety data to develop and prioritize transportation plans. Members of the NC State Highway Patrol and local government transportation agencies also regularly participate in NCDOT's Road Safety Audit Program. The NC Transportation Secretary chairs the NC Executive Committee for Highway Safety and partner agency representatives are actively involved in the committee. The partner agency representatives currently includes members from the following: NC Conference of District Attorneys, UNC Highway Safety Research Center, City of Greensboro, NC Association of MPOs, FMCSA, NCSHP, Students Against Destructive Decisions (SADD), FHWA, NC Department of Health and Human Services, AARP, AAA Carolinas, NC Department of Insurance and Eastern Carolina Injury Prevention Program.

Have any program administration practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of HSIP Administration on which the State would like to elaborate?

Yes

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

An update of the Strategic Highway Safety Plan (SHSP) for the State of North Carolina was launched in 2014. This SHSP (also referenced herein as the Plan) is an important component of North Carolina's Highway Safety Improvement Program (HSIP). The need for a SHSP was established by the federal transportation funding legislation, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and strengthened by the passage of the Moving Ahead for Progress in the 21st Century Act (MAP-21) in

July 2012. MAP-21 specifies that the SHSP must be developed based on safety data on all public roads, be developed in consultation with stakeholders, employ a multidisciplinary approach, describe a program of safety strategies, and consider other highway safety plans and processes.

This updated SHSP was developed through the collaborative efforts of diverse safety stakeholders representing the users of the North Carolina highway system and encompassing the 4 E's of highway safety—education, enforcement, engineering, and emergency services. These safety stakeholders include State, regional, local, and tribal agencies, as well as other public and private partners. This Plan presents a statewide, comprehensive, and collaborative approach for reducing fatalities and serious injuries on North Carolina's roadways. Serious injuries are those obviously serious enough to prevent the injured person from performing his or her normal activities for at least one day beyond the day of the crash. These are also called Type A injuries (suspected serious injuries).

The North Carolina SHSP was first developed in 2004 by the North Carolina Executive Committee for Highway Safety (ECHS) in support of the American Association of State Highway and Transportation Officials (AASHTO) Strategic Highway Safety Plan. The ECHS adopted AASHTO's goal to reduce the statewide fatality rate to 1.0 fatalities per 100 million vehicle miles traveled (MVMT). The revised plan of 2006 identified 14 emphasis areas. Significant progress was made toward the Plan's overall goal, resulting in a dramatic decrease in the number of fatalities per 100 million vehicle miles traveled (MVMT) over the eight-year period from 2006 to 2013. The 2017 fatality rate is above 1.2 fatalities per 100 MVMT. Nationally, the fatality rate has also declined during the same period, although not as sharply as in North Carolina. Evaluations of North Carolina's engineering safety programs have demonstrated that the collaborative and focused statewide efforts of the SHSP in recent years have contributed to the reductions in fatalities and serious injuries. Many other factors may also have contributed to this decline, such as vehicle enhancements and economic influences.

Although the safety stakeholders implementing the Plan have made significant progress in achieving the statewide goal since 2006, there is still work to be done. In 2017, 1,400 people died on North Carolina's roadways, and another 4,602 people were seriously injured. Additionally, the downward trend in fatalities and serious injuries has flattened over the last few years. The update of the original State SHSP—presents refined goals and objectives, new safety emphasis areas, and additional strategies and actions to build on past success and to continue to reduce fatalities and serious injuries on North Carolina's roadways. This document can be found on the web at http://ncshsp.org/ .

The goals of the Plan will be achieved through the implementation of strategies and actions in nine safety emphasis areas. These emphasis areas represent the greatest opportunity for the safety stakeholders to focus their efforts to achieve the goals of this Plan. The safety stakeholders selected these emphasis areas cooperatively through a data-driven approach, noting that many individual crashes can be attributed to more than one emphasis area. For example, a crash may involve speeding, intersection safety, and occupant protection. Therefore, the following nine emphasis areas provide an opportunity to address crashes from multiple perspectives.

1. Demographic Considerations

2. Driving While Impaired

3. Emerging Issues and Data

4. Intersection Safety

5. Keeping Drivers Alert

6. Lane Departure

7. Occupant Protection/Motorcycles

8. Pedestrians and Bicyclists

9. Speed

To achieve the Plan's goals to reduce fatalities and serious injuries by half and to move North Carolina closer to Vision Zero, significant reductions are needed in each emphasis area. In general, the goal for each emphasis area is to reduce fatalities and injuries by half. Some emphasis areas present a greater opportunity to reduce fatalities and serious injuries than others. Factors such as trends in exposure rates and the availability of effective strategies are different for each emphasis area and affect the opportunity to reduce fatalities and serious injuries. For example, several lane departure strategies are known to be effective at reducing crashes on North Carolina's roads; their increased implementation presents an opportunity to greatly reduce fatalities and serious injuries. Conversely, because motorcycle ridership is increasing in North Carolina, crash reductions from effective strategies must outpace the growth in crashes that is attributed to the increased ridership (e.g., exposure).

Overall, the strategies in the emphasis areas work collectively toward the Plan goal, with some emphasis areas expected to contribute more reductions in fatalities and serious
injuries than others.

In 2016, North Carolina dedicated $50 million to improving highway safety and reducing the number of traffic accidents throughout North Carolina. Improvements supported by the funds included high friction surface treatments, turn lanes, guardrails and traffic signals. The $50 million are state funds advanced to the projects that NCDOT will request reimbursement payments through the federal HSIP.

In the fall of 2015, FHWA conducted a national HSIP scan tour. The tour team visited North Carolina, because the state was identified as a high-performing state. The scan tour report noted several noteworthy practices in North Carolina including:

I-Documentation of HSIP Processes

II-Coordination with Internal and External Partners

III-Understanding the Relationship between the SHSP and HSIP

IV-Making Data-Driven Safety Decisions

V -Addressing Local Road Needs

VI -Considering All "4E's"

VII -Identifying Opportunites to Streamline Project Delivery

IIX-Evaluating the Success of the Program

Program Methodology

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

No

To upload a copy of the State processes, attach files below.

File Name:

Enter additional comments here to clarify your response for this question or add supporting information.

The Traffic Safety Systems Section has began developing an HSIP manual that will detail the multi-step HSIP process by the end of 2019.

The North Carolina DOT maintains several HSIP documents and information on https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-andProjects.aspx. This includes mapped HSIP locations from 2013-2017, HSIP Potentially Hazardous Location Detailed Reports by county, intersection reports, bike/pedestrian reports, the active spot safety project list, all safety project evaluations and the NCDOT Crash Reduction Factor list.

NCDOT also conducted an HSIP assessment in 2017.

Select the programs that are administered under the HSIP.

Intersection
Bicycle Safety
Roadway Departure
Pedestrian Safety

Enter additional comments here to clarify your response for this question or add supporting information.

Program:	Bicycle Safety
Date of Program Methodology:	8/31/2016

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
Other-Bicycle Crashes		

What project identification methodology was used for this program? [Check all that apply]

2018 North Carolina Highway Safety Improvement Program
Crash frequency
Other-Bicycle Crashes

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

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

How are projects under this program advanced for implementation?

Competitive application process
selection committee

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

Rank of Priority Consideration

Ranking based on B/C : 1

Program: Intersection

Date of Program Methodology: 8/31/2016

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway
All crashes		

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Relative severity index
Other-Frontal Impact Crashes
Other-Percent Frontal Impact Crashes
Other-Frequency of Crashes during Dark Conditions

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

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

How are projects under this program advanced for implementation?

Competitive application process
selection committee

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

Rank of Priority Consideration

Ranking based on B/C : 1

Program: Pedestrian Safety

Date of Program Methodology: 8/31/2016

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes	Exposure	Roadway

All crashes
Other-Pedestrian Crashes

What project identification methodology was used for this program? [Check all that apply]

Other-Pedestrian Crashes

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

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

How are projects under this program advanced for implementation?

Competitive application process

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

Rank of Priority Consideration

Ranking based on B/C : 1

Program: Roadway Departure

Date of Program Methodology: 8/31/2016

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes **Exposure** **Roadway**

All crashes
Other-Roadway Departure Crashes

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Other-Percent Roadway Departure Crashes
Other-Percent Night Crashes
Other-Percent Wet Condition Crashes

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

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

How are projects under this program advanced for implementation?

Competitive application process
selection committee

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

Rank of Priority Consideration

Ranking based on B/C : 1

What percentage of HSIP funds address systemic improvements?

9

HSIP funds are used to address which of the following systemic improvements? Please check all that apply.

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

2018 North Carolina Highway Safety Improvement Program
Upgrade Guard Rails
Safety Edge
Install/Improve Lighting
Add/Upgrade/Modify/Remove Traffic Signal

Enter additional comments here to clarify your response for this question or add supporting information.

What process is used to identify potential countermeasures? [Check all that apply]

Engineering Study
Road Safety Assessment

Enter additional comments here to clarify your response for this question or add supporting information.

Our regional traffic engineering staff annually investigate about 250 locations identified by our network screening process but other investigations are initiated by other means. Hundreds of fatal site locations are investigated each year. The Traffic Safety Unit from central headquarters also conducts approximately 7 Road Safety Audits annually utilizing independent, multi-disciplinary teams. Also NCDOT staff conduct numerous field investigations resulting from concerns of law enforcement, local government officials and citizens. NCDOT traffic engineers can also uncover safety issues during their study of traffic operations. Data from the numerous field investigations is used to determine feasible safety countermeasures.

Does the State HSIP consider connected vehicles and ITS technologies?

No

Enter additional comments here to clarify your response for this question or add supporting information.

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.

While NCDOT does not currently use the predictive methodologies discussed in Chapter 4 of the HSM; NCDOT's Roadway Safety Management Process does use many HSM techniques for diagnosis, countermeasure selection, economic appraisal, project prioritization and safety evaluations.

Have any program methodology practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of the HSIP methodology on which the State would like to elaborate?

Yes

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

NCDOT is continuing to develop safety performance functions and will utilize the Interactive Highway Safety Design Model (IHSDM) application on future STIP projects. NCDOT is actively working on new systemic programs to implement wide edge lines, enhanced curve warning signs and safety edge treatments.

Highway Safety Improvement Program (HSIP) provides a continuous and systematic transportation network screening process that identifies, analyzes, investigates, diagnoses and treats specific traffic safety concerns throughout the state. The goal of the federally required HSIP is to reduce the number of traffic crashes, injuries, and fatalities by reducing the potential and the severity of public roadway collisions. The collaboration between HSIP Project Group Analysts and the Regional Traffic Engineers that research, investigate, recommend treatments, and develop realistic cost effective safety projects has yielded highly effective safety performance even during a time of continued growth in North Carolina.

The emphasis of the state-funded Spot Safety and federally-funded Highway Safety Improvement Programs is to identify and treat high crash and/or high severity locations with relatively low cost solutions in order to address safety concerns along NC roadways. These programs are a vital tool in improving safety at intersections and segments of roadway where safety needs have been identified by citizens, government officials, internal staff, or through one of NCDOT's safety initiatives. With these programs, Regional Traffic Engineers collaborate with designers and project managers on project scope and prioritization in order to develop realistic, time-sensitive, and cost effective projects that address safety issues.

The projects developed and constructed under these safety programs are inspected upon completion to ensure the identified safety issues have been mitigated and the project was constructed according to the plans. Management of this program by the State Traffic Engineer and his staff provide statewide consistency in treating areas in a systematic, evidence driven and needs based approach. These vital safety funding program efforts have shown an average return on investment of 14:1.

The Alternative Analysis Initiative quantifies the safety performance of different transportation project alternatives selected for study during the National Environmental Policy Act (NEPA) process. Using Highway Safety Manual (HSM) predictive methodologies, we compare the expected safety performance of different alternatives based on the specific design elements associated with each alternative (curve radius, lane widths, shoulder widths, number of driveways, grades, intersection features, etc.). The predicted crash numbers give some scale of the number of crashes to expect, but the percentages give a really good comparison regarding the effects of the specific design elements on each alternative that are expected to have on safety.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

Enter additional comments here to clarify your response for this question or add supporting information.

Reporting period is SFY 2018 (7/1/17 to 6/30/18.)

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$67,739,918	$84,856,845	125.27%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$162,125	0%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$12,218,432	$12,218,432	100%
Totals	$79,958,350	$97,237,402	121.61%

Enter additional comments here to clarify your response for this question or add supporting information.

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

$0

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

$0

Enter additional comments here to clarify your response for this question or add supporting information.

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

$0

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

$0

Enter additional comments here to clarify your response for this question or add supporting information.

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

Enter additional comments here to clarify your response for this question or add supporting information.

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

NCDOT is responsible for the safety of nearly 80,000 miles of rural and urban highways. Cities, towns, other state agencies and federal agencies are responsible for over 26,000 miles of streets; most of this mileage is downtown and residential streets. While NCDOT administers HSIP funds, most municipalities are hesitant to participate due to the federal guidelines, restrictions and limitations on funding. Local governments are unwilling to administer the competitive bidding process. The complex federal safety program process and lack of flexibility discourages many opportunities to utilize the HSIP for low-cost safety projects. In some cases administrative costs may be higher than the project costs.

Does the State want to elaborate on any other aspects of it's progress in implementing HSIP projects?

Yes

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

NCDOT is utilizing and evaluating a variety of methods to improve project delivery times and reduce the overall cost of delivering HSIP projects. This includes combining multiple safety improvements in a single contract, the use of design-build delivery mechanisms for fast-track project delivery with well-defined scope, and the use of on-call contractors to facilitate immediate delivery of identified projects.

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

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
I-5314	Alignment	Vertical alignment or elevation change	6	Miles	$500	$0	HSIP (23 U.S.C. 148)		51,000		State Highway Agency	Spot	Lane Departure	
SS-PE	Non-infrastructure	Transportation safety planning	225	Locations	$304584	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersection Safety, Lane Departure, Pedestrians and Bicyclists	
U-5925	Pedestrians and bicyclists	Medians and pedestrian refuge areas	0.9	Miles	$1575000	$0	HSIP (23 U.S.C. 148)		8,500		State Highway Agency	Spot	Pedestrians	
W-5106	Roadway delineation	Longitudinal pavement markings - remarking	2.5	Miles	$4664	$0	HSIP (23 U.S.C. 148)		6,800		State Highway Agency	Spot	Lane Departure	
W-5107	Interchange design	Convert at-grade intersection to interchange	4	Intersections	$6477761	$0	HSIP (23 U.S.C. 148)		15,000		State Highway Agency	Spot	Intersections	
W-5114	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$178823	$0	HSIP (23 U.S.C. 148)		16,000		State Highway Agency	Spot	Intersections	
W-5121	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$205596	$0	HSIP (23 U.S.C. 148)		6,800		State Highway Agency	Spot	Intersections	
W-5142	Access management	Median crossover - directional crossover	1	Crossovers	$56780	$0	HSIP (23 U.S.C. 148)		22,000		State Highway Agency	Spot	Intersections	
W-5143	Alignment	Horizontal curve realignment	1	Curves	$292500	$0	HSIP (23 U.S.C. 148)		2,200		State Highway Agency	Spot	Lane Departure	
W-5145	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$61452	$0	HSIP (23 U.S.C. 148)		4,400		State Highway Agency	Spot	Intersections	
W-5202G	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$129443	$0	HSIP (23 U.S.C. 148)		4,350		State Highway Agency	Spot	Intersections	
W-5203O	Intersection geometry	Auxiliary lanes - add right-turn lane (free-flow)	1	Intersections	$15595	$0	HSIP (23 U.S.C. 148)		37,000		State Highway Agency	Spot	Intersections	
W-5203Y	Roadway	Rumble strips - edge or shoulder	1	Miles	$2565000	$0	HSIP (23 U.S.C. 148)		3,600		State Highway Agency	Spot	Lane Departure	
W-5204D	Roadway	Roadway widening - curve	2	Curves	$765000	$0	HSIP (23 U.S.C. 148)		11,000		State Highway Agency	Spot	Lane Departure	
W-5204E	Roadway	Roadway widening - curve	2	Curves	$1214	$0	HSIP (23 U.S.C. 148)		5,900		State Highway Agency	Spot	Lane Departure	
W-5204G	Roadway	Pavement surface - high friction surface	1	Locations	$1260450	$0	HSIP (23 U.S.C. 148)		1,700		State Highway Agency	Spot	Lane Departure	
W-5205Q	Roadway	Pavement surface - high friction surface	1	Locations	$14445	$0	HSIP (23 U.S.C. 148)		41,000		State Highway Agency	Spot	Lane Departure	
W-5206AO/R-5752	Access management	Median crossover - directional crossover	2	Crossovers	$450000	$0	HSIP (23 U.S.C. 148)		11,000		State Highway Agency	Spot	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
W-5206Z	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	3	Intersections	$13927	$0	HSIP (23 U.S.C. 148)		14,000		State Highway Agency	Spot	Intersections	
W-5207E	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Approaches	$51876	$0	HSIP (23 U.S.C. 148)		9,500		State Highway Agency	Spot	Intersections	
W-5208M/MA	Access management	Access management - other	1	Access points	$2250000	$0	HSIP (23 U.S.C. 148)		5,500		State Highway Agency	Spot	Intersections	
W-5210K	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$225000	$0	HSIP (23 U.S.C. 148)		7,600		State Highway Agency	Spot	Intersections	
W-5210L	Access management	Median crossover - directional crossover	1	Crossovers	$39272	$0	HSIP (23 U.S.C. 148)		36,000		State Highway Agency	Spot	Intersections	
W-5211B	Intersection geometry	Intersection geometry - other	1	Intersections	$1895	$0	HRRR Special Rule (23 U.S.C. 148(g)(1))		2,700		State Highway Agency	Spot	Intersections	
W-5212I	Intersection geometry	Intersection geometry - other	1	Intersections	$405000	$0	HSIP (23 U.S.C. 148)		9,100		State Highway Agency	Spot	Intersections	
W-5212L	Intersection geometry	Intersection geometry - other	1	Intersections	$71343	$0	HSIP (23 U.S.C. 148)		11,500		State Highway Agency	Spot	Intersections	
W-5214M	Access management	Raised island - install new	0.25	Miles	$7065	$0	HSIP (23 U.S.C. 148)		24,000		State Highway Agency	Spot	Intersections	
W-5214O	Pedestrians and bicyclists	Install sidewalk	0.19	Miles	$173697	$0	HSIP (23 U.S.C. 148)		700		State Highway Agency	Spot	Pedestrians	
W-5500	Roadway	Roadway widening - curve	3	Curves	$1845000	$0	HSIP (23 U.S.C. 148)		13,000		State Highway Agency	Spot	Lane Departure	
W-5506	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	1	Miles	$1980000	$0	HSIP (23 U.S.C. 148)		13,000		State Highway Agency	Spot	Intersections	
W-5513	Intersection traffic control	Modify control - two-way stop to roundabout	4	Intersections	$432084	$0	HSIP (23 U.S.C. 148)		14,000		State Highway Agency	Spot	Intersections	
W-5517	Non-infrastructure	Transportation safety planning	225	Locations	$9350000	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersection Safety, Lane Departure, Pedestrians and Bicyclists	
W-5521	Alignment	Horizontal curve realignment	1	Curves	$2610000	$0	HSIP (23 U.S.C. 148)		7,600		State Highway Agency	Spot	Lane Departure	
W-5522	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	1	Locations	$4480954	$0	HSIP (23 U.S.C. 148)		9,300		State Highway Agency	Spot	Pedestrians	
W-5601A	Alignment	Horizontal curve realignment	1	Curves	$1813500	$0	HSIP (23 U.S.C. 148)		4,800		State Highway Agency	Spot	Lane Departure	
W-5601AA	Intersection traffic control	Intersection traffic control - other	1	Intersections	$27909	$0	HSIP (23 U.S.C. 148)		11,000		State Highway Agency	Spot	Intersections	
W-5601AD	Intersection geometry	Splitter island - install on one or more approaches	4	Approaches	$45000	$0	HSIP (23 U.S.C. 148)		16,000		State Highway Agency	Spot	Intersections	

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PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
W-5601AN	Intersection traffic control	Intersection traffic control - other	2	Intersections	$7956	$0	HSIP (23 U.S.C. 148)		8,100		State Highway Agency	Spot	Intersections	
W-5601AW	Intersection traffic control	Intersection flashers - add "when flashing" warning sign-mounted	1	Intersections	$5677	$0	HSIP (23 U.S.C. 148)		9,200		State Highway Agency	Spot	Intersections	
W-5601BA	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.38	Miles	$648000	$0	HSIP (23 U.S.C. 148)		14,000		State Highway Agency	Spot	Lane Departure	
W-5601BC	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$500	$0	HSIP (23 U.S.C. 148)		10,000		State Highway Agency	Spot	Intersections	
W-5601BK	Intersection geometry	Intersection geometry - other	1	Intersections	$679500	$0	HSIP (23 U.S.C. 148)		3,900		State Highway Agency	Spot	Intersections	
W-5601BM	Roadway	Superelevation / cross slope	5.84	Miles	$803775	$0	HSIP (23 U.S.C. 148)		16,000		State Highway Agency	Spot	Lane Departure	
W-5601BP	Roadway	Rumble strips - edge or shoulder	18.8	Miles	$29639	$0	HSIP (23 U.S.C. 148)		2,700		State Highway Agency	Spot	Lane Departure	
W-5601BQ	Roadside	Barrier- metal	0.37	Miles	$7461	$0	HSIP (23 U.S.C. 148)		930		State Highway Agency	Spot	Lane Departure	
W-5601BT	Roadside	Barrier- metal	0.42	Miles	$500	$0	HSIP (23 U.S.C. 148)		12,500		State Highway Agency	Spot	Lane Departure	
W-5601BU	Shoulder treatments	Pave existing shoulders	6	Miles	$10706	$0	HSIP (23 U.S.C. 148)		1,000		State Highway Agency	Spot	Lane Departure	
W-5601BV	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$1188000	$0	HSIP (23 U.S.C. 148)		4,100		State Highway Agency	Spot	Intersections	
W-5601BW	Intersection geometry	Auxiliary lanes - add right-turn lane	1	Intersections	$1764	$0	HSIP (23 U.S.C. 148)		13,000		State Highway Agency	Spot	Intersections	
W-5601BY	Roadway	Roadway widening - curve	1	Curves	$8862	$0	HSIP (23 U.S.C. 148)		1,000		State Highway Agency	Spot	Lane Departure	
W-5601BZ	Roadway	Superelevation / cross slope	1	Curves	$225500	$0	HSIP (23 U.S.C. 148)		860		State Highway Agency	Spot	Lane Departure	
W-5601CD	Pedestrians and bicyclists	Medians and pedestrian refuge areas	0.75	Miles	$1426500	$0	HSIP (23 U.S.C. 148)		21,000		State Highway Agency	Spot	Pedestrians	
W-5601CE	Access management	Median crossover - directional crossover	1	Crossovers	$81000	$0	HSIP (23 U.S.C. 148)		23,000		State Highway Agency	Spot	Intersections	
W-5601CK	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	0.26	Miles	$500	$0	HSIP (23 U.S.C. 148)		21,000		State Highway Agency	Spot	Bicyclists	
W-5601DE	Pedestrians and bicyclists	Install new crosswalk	2	Locations	$450000	$0	HSIP (23 U.S.C. 148)		18,000		State Highway Agency	Spot	Pedestrians	
W-5601DK	Intersection geometry	Intersection geometry - other	2	Intersections	$540000	$0	HSIP (23 U.S.C. 148)		11,000		State Highway Agency	Spot	Intersections	
W-5601DL	Roadside	Barrier end treatments (crash cushions, terminals)	500	End units	$6229	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
W-5601DN	Roadway	Superelevation / cross slope	2	Curves	$67500	$0	HSIP (23 U.S.C. 148)		4,750		State Highway Agency	Spot	Lane Departure	
W-5601DO	Intersection traffic control	Modify traffic signal - add closed loop system	7	Intersections	$742500	$0	HSIP (23 U.S.C. 148)		18,900		State Highway Agency	Spot	Intersections	
W-5601DP	Shoulder treatments	Pave existing shoulders	3.7	Miles	$306000	$0	HSIP (23 U.S.C. 148)		3,600		State Highway Agency	Spot	Lane Departure	
W-5601DQ	Access management	Median crossover - directional crossover	2	Crossovers	$54000	$0	HSIP (23 U.S.C. 148)		14,000		State Highway Agency	Spot	Intersections	
W-5601DV	Roadside	Barrier end treatments (crash cushions, terminals)	60	End units	$2446	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
W-5601DY	Intersection geometry	Intersection geometrics - modify skew angle	1	Intersections	$481500	$0	HSIP (23 U.S.C. 148)		3,300		State Highway Agency	Spot	Intersections	
W-5601EB	Access management	Median crossover - directional crossover	1	Crossovers	$180000	$0	HSIP (23 U.S.C. 148)		21,000		State Highway Agency	Spot	Intersections	
W-5601ED	Intersection traffic control	Intersection traffic control - other	1	Intersections	$11034	$0	HSIP (23 U.S.C. 148)		7,000		State Highway Agency	Spot	Intersections	
W-5601EH	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$58500	$0	HSIP (23 U.S.C. 148)		17,000		State Highway Agency	Spot	Intersections	
W-5601EW	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$292500	$0	HSIP (23 U.S.C. 148)		14,500		State Highway Agency	Spot	Intersections	
W-5601EY	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$13500	$0	HSIP (23 U.S.C. 148)		11,000		State Highway Agency	Spot	Intersections	
W-5601FA	Intersection geometry	Intersection geometrics - modify skew angle	1	Intersections	$72	$0	HSIP (23 U.S.C. 148)		4,500		State Highway Agency	Spot	Intersections	
W-5601FH	Roadway	Roadway widening - add lane(s) along segment	0.28	Miles	$173700	$0	HSIP (23 U.S.C. 148)		10,000		State Highway Agency	Spot	Intersections	
W-5601FI	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$50	$0	HSIP (23 U.S.C. 148)		10,000		State Highway Agency	Spot	Intersections	
W-5601FJ	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$90000	$0	HSIP (23 U.S.C. 148)		21,900		State Highway Agency	Spot	Intersections	
W-5601FK	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Intersections	$31500	$0	HSIP (23 U.S.C. 148)		12,000		State Highway Agency	Spot	Intersections	
W-5601FL	Intersection traffic control	Intersection traffic control - other	1	Intersections	$324000	$0	HSIP (23 U.S.C. 148)		10,000		State Highway Agency	Spot	Intersections	
W-5601FN	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$81000	$0	HSIP (23 U.S.C. 148)		13,000		State Highway Agency	Spot	Intersections	
W-5601FO	Intersection traffic control	Modify control - modifications to roundabout	1	Intersections	$324000	$0	HSIP (23 U.S.C. 148)		4,200		State Highway Agency	Spot	Intersections	
W-5601FR	Roadside	Removal of roadside objects (trees, poles, etc.)	1	Locations	$68400	$0	HSIP (23 U.S.C. 148)		2,000		State Highway Agency	Spot	Intersections	
W-5601FV	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$508500	$0	HSIP (23 U.S.C. 148)		6,200		State Highway Agency	Spot	Intersections	

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W-5601FZ	Roadside	Barrier- metal	0.9	Miles	$21531	$0	HSIP (23 U.S.C. 148)		680		State Highway Agency	Spot	Lane Departure	
W-5601GC	Alignment	Vertical alignment or elevation change	0.5	Miles	$24750	$0	HSIP (23 U.S.C. 148)		3,400		State Highway Agency	Spot	Intersections	
W-5601GJ	Roadside	Barrier - other	1.61	Miles	$450000	$0	HSIP (23 U.S.C. 148)		7,500		State Highway Agency	Spot	Lane Departure	
W-5601GP	Roadside	Roadside grading	0.35	Miles	$7901	$0	HSIP (23 U.S.C. 148)		2,400		State Highway Agency	Spot	Lane Departure	
W-5601GQ	Roadway delineation	Longitudinal pavement markings - remarking	35	Miles	$251	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
W-5601GV	Roadside	Barrier end treatments (crash cushions, terminals)	400	End units	$1800000	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
W-5601GW	Roadside	Barrier end treatments (crash cushions, terminals)	46	End units	$652500	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
W-5601HN	Roadside	Barrier- metal	0.5	Miles	$124200	$0	HSIP (23 U.S.C. 148)		32,000		State Highway Agency	Spot	Lane Departure	
W-5601HO	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	0.19	Miles	$47700	$0	HSIP (23 U.S.C. 148)		4,100		State Highway Agency	Spot	Intersections	
W-5601ID	Roadside	Barrier end treatments (crash cushions, terminals)	100	End units	$31462	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
W-5601IK	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$180000	$0	HSIP (23 U.S.C. 148)		35,000		State Highway Agency	Spot	Intersections	
W-5601IN	Access management	Median crossover - directional crossover	1	Crossovers	$900000	$0	HSIP (23 U.S.C. 148)		22,000		State Highway Agency	Spot	Intersections	
W-5601Q	Intersection geometry	Auxiliary lanes - add right-turn lane	2	Intersections	$540000	$0	HSIP (23 U.S.C. 148)		16,000		State Highway Agency	Spot	Intersections	
W-5601W	Intersection geometry	Intersection geometrics - realignment to increase cross street offset	2	Intersections	$159720	$0	HRRR Special Rule (23 U.S.C. 148(g)(1))		3,850		State Highway Agency	Spot	Intersections	
W-5602	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	3	Miles	$654800	$0	HSIP (23 U.S.C. 148)		11,100		State Highway Agency	Spot	Intersections	
W-5700	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	300	Intersections	$1200000	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
W-5701A	Roadside	Barrier end treatments (crash cushions, terminals)	90	End units	$283500	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
W-5702B	Roadside	Barrier- metal	0.14	Miles	$4770	$0	HSIP (23 U.S.C. 148)		4,700		State Highway Agency	Spot	Lane Departure	
W-5702C	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Intersections	$145800	$0	HSIP (23 U.S.C. 148)		1,400		State Highway Agency	Spot	Lane Departure	
W-5702D	Roadside	Barrier- metal	2	Miles	$319671	$0	HSIP (23 U.S.C. 148)		4,000		State Highway Agency	Spot	Lane Departure	

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W-5702E	Intersection traffic control	Intersection flashers - add "when flashing" warning sign-mounted	3	Intersections	$4500	$0	HSIP (23 U.S.C. 148)		28,000		State Highway Agency	Spot	Intersections	
W-5702F	Access management	Median crossover - directional crossover	1	Crossovers	$686610	$0	HSIP (23 U.S.C. 148)		9,500		State Highway Agency	Spot	Intersections	
W-5702H	Access management	Raised island - install new	0.84	Miles	$432000	$0	HSIP (23 U.S.C. 148)		27,000		State Highway Agency	Spot	Intersections	
W-5702I	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$103500	$0	HSIP (23 U.S.C. 148)		9,700		State Highway Agency	Spot	Intersections	
W-5702J	Roadway delineation	Longitudinal pavement markings - new	0.47	Miles	$4500	$0	HSIP (23 U.S.C. 148)		20,000		State Highway Agency	Spot	Roadway Departure	
W-5702K	Intersection traffic control	Intersection flashers - add "when flashing" warning sign-mounted	1	Intersections	$9000	$0	HSIP (23 U.S.C. 148)		16,000		State Highway Agency	Spot	Intersections	
W-5703B	Roadway delineation	Roadway delineation - other	4.56	Miles	$225000	$0	HSIP (23 U.S.C. 148)		16,000		State Highway Agency	Systemic	Lane Departure	
W-5703F	Pedestrians and bicyclists	Install new crosswalk	1	Locations	$69300	$0	HSIP (23 U.S.C. 148)		46,000		State Highway Agency	Spot	Pedestrians	
W-5703H	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Intersections	$316800	$0	HSIP (23 U.S.C. 148)		19,000		State Highway Agency	Spot	Intersections	
W-5703I	Intersection traffic control	Intersection flashers - add "when flashing" warning sign-mounted	1	Intersections	$4500	$0	HSIP (23 U.S.C. 148)		7,900		State Highway Agency	Spot	Intersections	
W-5704A	Access management	Median crossover - close crossover	7	Crossovers	$6809966	$0	HSIP (23 U.S.C. 148)		36,000		State Highway Agency	Spot	Intersections	
W-5704C	Intersection traffic control	Modify traffic signal - add additional signal heads	1	Intersections	$25200	$0	HSIP (23 U.S.C. 148)		10,000		State Highway Agency	Spot	Intersections	
W-5704F	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Intersections	$55800	$0	HSIP (23 U.S.C. 148)		7,900		State Highway Agency	Spot	Intersections	
W-5704G	Intersection traffic control	Modify control - all-way stop to roundabout	1	Intersections	$108000	$0	HSIP (23 U.S.C. 148)		7,033		State Highway Agency	Spot	Intersections	
W-5704H	Intersection traffic control	Modify control - traffic signal to roundabout	1	Intersections	$18000	$0	HSIP (23 U.S.C. 148)		10,000		State Highway Agency	Spot	Intersections	
W-5704I	Roadside	Barrier end treatments (crash cushions, terminals)	8	End units	$18000	$0	HSIP (23 U.S.C. 148)		1,300		State Highway Agency	Spot	Lane Departure	
W-5705B	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	4	Approaches	$25200	$0	HSIP (23 U.S.C. 148)		44,000		State Highway Agency	Spot	Intersections	
W-5705C	Lighting	Intersection lighting	4	Intersections	$337500	$0	HSIP (23 U.S.C. 148)		20,000		State Highway Agency	Spot	Intersections	
W-5705D	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	4	Approaches	$81764	$0	HSIP (23 U.S.C. 148)		19,000		State Highway Agency	Spot	Intersections	
W-5705F	Roadway	Pavement surface - high friction surface	1	Locations	$342000	$0	HSIP (23 U.S.C. 148)		15,000		State Highway Agency	Spot	Lane Departure	

													RELATIONSHIP TO SHSP	
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W-5705H	Alignment	Horizontal curve realignment	1	Curves	$22500	$0	HSIP (23 U.S.C. 148)		2,100		State Highway Agency	Spot	Lane Departure	
W-5705I	Intersection traffic control	Intersection traffic control - other	1	Intersections	$112500	$0	HSIP (23 U.S.C. 148)		20,000		State Highway Agency	Spot	Intersections	
W-5705K	Pedestrians and bicyclists	Pedestrian signal - Pedestrian Hybrid Beacon	2	Locations	$66753	$0	HSIP (23 U.S.C. 148)		12,000		State Highway Agency	Spot	Pedestrians	
W-5705L	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	4	Approaches	$27000	$0	HSIP (23 U.S.C. 148)		17,000		State Highway Agency	Spot	Intersections	
W-5705M	Roadway signs and traffic control	Roadway signs and traffic control - other	2	Signs	$9000	$0	HSIP (23 U.S.C. 148)		154,000		State Highway Agency	Systemic	Lane Departure	
W-5705N	Roadway signs and traffic control	Roadway signs and traffic control - other	16	Signs	$143190	$0	HSIP (23 U.S.C. 148)		50,000		State Highway Agency	Systemic	Intersections	
W-5705O	Intersection traffic control	Intersection traffic control - other	1	Intersections	$4500	$0	HSIP (23 U.S.C. 148)		16,000		State Highway Agency	Spot	Intersections	
W-5705P	Intersection traffic control	Intersection traffic control - other	1	Intersections	$2700	$0	HSIP (23 U.S.C. 148)		25,000		State Highway Agency	Spot	Intersections	
W-5705Q	Access management	Median crossover - directional crossover	1	Crossovers	$40500	$0	HSIP (23 U.S.C. 148)		34,000		State Highway Agency	Spot	Intersections	
W-5705R	Intersection traffic control	Intersection traffic control - other	1	Intersections	$4500	$0	HSIP (23 U.S.C. 148)		18,000		State Highway Agency	Spot	Intersections	
W-5706A	Access management	Raised island - install new	0.91	Miles	$90000	$0	HSIP (23 U.S.C. 148)		38,600		State Highway Agency	Spot	Intersections	
W-5706C	Intersection traffic control	Modify control - modifications to roundabout	1	Intersections	$180000	$0	HSIP (23 U.S.C. 148)		5,000		State Highway Agency	Spot	Intersections	
W-5706E	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$27000	$0	HSIP (23 U.S.C. 148)		7,900		State Highway Agency	Spot	Intersections	
W-5706F	Pedestrians and bicyclists	Install new crosswalk	1	Locations	$207000	$0	HSIP (23 U.S.C. 148)		27,000		State Highway Agency	Spot	Pedestrians	
W-5706G	Access management	Raised island - install new	0.63	Miles	$207000	$0	HSIP (23 U.S.C. 148)		35,000		State Highway Agency	Spot	Intersections	
W-5706H	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$90000	$0	HSIP (23 U.S.C. 148)		3,600		State Highway Agency	Spot	Intersections	
W-5706I	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$135000	$0	HSIP (23 U.S.C. 148)		4,700		State Highway Agency	Spot	Intersections	
W-5706J	Intersection geometry	Intersection geometry - other	3	Intersections	$157500	$0	HSIP (23 U.S.C. 148)		2,800		State Highway Agency	Spot	Intersections	
W-5706K	Pedestrians and bicyclists	Install sidewalk	0.19	Miles	$72000	$0	HSIP (23 U.S.C. 148)		24,000		State Highway Agency	Systemic	Pedestrians	
W-5706L	Intersection traffic control	Modify control - two-way stop to roundabout	3	Intersections	$216000	$0	HSIP (23 U.S.C. 148)		5,200		State Highway Agency	Spot	Intersections	
W-5707B	Intersection traffic control	Intersection traffic control - other	1	Intersections	$63000	$0	HSIP (23 U.S.C. 148)		6,200		State Highway Agency	Spot	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
W-5707C	Roadway delineation	Longitudinal pavement markings - remarking	2.56	Miles	$157500	$0	HSIP (23 U.S.C. 148)		96,000		State Highway Agency	Systemic	Lane Departure	
W-5707D	Roadway	Roadway widening - curve	1	Curves	$220500	$0	HSIP (23 U.S.C. 148)		2,800		State Highway Agency	Spot	Lane Departure	
W-5707F	Intersection traffic control	Modify traffic signal timing - left-turn phasing (permissive to protected/permissive)	1	Approaches	$10800	$0	HSIP (23 U.S.C. 148)		6,500		State Highway Agency	Spot	Intersections	
W-5707G	Intersection traffic control	Intersection traffic control - other	1	Intersections	$9000	$0	HSIP (23 U.S.C. 148)		4,300		State Highway Agency	Spot	Intersections	
W-5707H	Intersection geometry	Intersection geometry - other	1	Intersections	$72000	$0	HSIP (23 U.S.C. 148)		4,100		State Highway Agency	Spot	Intersections	
W-5707I	Roadside	Barrier- metal	1.1	Miles	$9000	$0	HSIP (23 U.S.C. 148)		11,500		State Highway Agency	Systemic	Lane Departure	
W-5707J	Roadside	Barrier- metal	0.95	Miles	$9000	$0	HSIP (23 U.S.C. 148)		15,000		State Highway Agency	Systemic	Lane Departure	
W-5708A	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$90000	$0	HSIP (23 U.S.C. 148)		4,700		State Highway Agency	Spot	Intersections	
W-5708B	Access management	Median crossover - directional crossover	1	Crossovers	$1843300	$0	HSIP (23 U.S.C. 148)		14,000		State Highway Agency	Spot	Intersections	
W-5708C	Alignment	Horizontal curve realignment	1	Curves	$630450	$0	HSIP (23 U.S.C. 148)		1,400		State Highway Agency	Spot	Lane Departure	
W-5708D	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$72000	$0	HSIP (23 U.S.C. 148)		6,700		State Highway Agency	Spot	Intersections	
W-5708E	Intersection traffic control	Intersection traffic control - other	1	Intersections	$5400	$0	HSIP (23 U.S.C. 148)		8,842		State Highway Agency	Spot	Intersections	
W-5708F	Roadside	Barrier- metal	4.5	Miles	$241650	$0	HSIP (23 U.S.C. 148)		17,000		State Highway Agency	Systemic	Lane Departure	
W-5708G	Access management	Median crossover - directional crossover	2	Crossovers	$135000	$0	HSIP (23 U.S.C. 148)		21,000		State Highway Agency	Spot	Intersections	
W-5708H	Roadside	Barrier- metal	3.26	Miles	$652500	$0	HSIP (23 U.S.C. 148)		27,000		State Highway Agency	Systemic	Roadway Departure	
W-5709B	Roadway	Superelevation / cross slope	1	Curves	$103500	$0	HSIP (23 U.S.C. 148)		2,200		State Highway Agency	Spot	Lane Departure	
W-5709C	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$157500	$0	HSIP (23 U.S.C. 148)		8,400		State Highway Agency	Spot	Intersections	
W-5709D	Intersection traffic control	Intersection traffic control - other	1	Intersections	$1143000	$0	HSIP (23 U.S.C. 148)		14,000		State Highway Agency	Spot	Intersections	
W-5709E	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$90000	$0	HSIP (23 U.S.C. 148)		5,800		State Highway Agency	Spot	Intersections	
W-5709F	Intersection geometry	Intersection geometrics - modify skew angle	1	Intersections	$90000	$0	HSIP (23 U.S.C. 148)		4,600		State Highway Agency	Spot	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	**IMPROVEMENT CATEGORY**	**SUBCATEGORY**	**OUTPUTS**	**OUTPUT TYPE**	**HSIP PROJECT COST($)**	**TOTAL PROJECT COST($)**	**FUNDING CATEGORY**	**FUNCTIONAL CLASSIFICATION**	**AADT**	**SPEED**	**OWNERSHIP**	**METHOD FOR SITE SELECTION**	**EMPHASIS AREA**	**STRATEGY**
W-5710A	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$227250	$0	HSIP (23 U.S.C. 148)		12,000		State Highway Agency	Spot	Intersections	
W-5710AA	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$87500	$0	HSIP (23 U.S.C. 148)		16,000		State Highway Agency	Spot	Intersections	
W-5710AB	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$135000	$0	HSIP (23 U.S.C. 148)		1,800		State Highway Agency	Spot	Intersections	
W-5710AC	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$36000	$0	HSIP (23 U.S.C. 148)		8,800		State Highway Agency	Spot	Intersections	
W-5710AD	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$135000	$0	HSIP (23 U.S.C. 148)		1,400		State Highway Agency	Spot	Intersections	
W-5710AE	Roadside	Barrier end treatments (crash cushions, terminals)	400	End units	$4500	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
W-5710C	Access management	Raised island - install new	2.5	Miles	$45000	$0	HSIP (23 U.S.C. 148)		8,900		State Highway Agency	Spot	Intersections	
W-5710D	Access management	Median crossover - directional crossover	1	Crossovers	$553500	$0	HSIP (23 U.S.C. 148)		13,000		State Highway Agency	Spot	Intersections	
W-5710E	Access management	Median crossover - directional crossover	2	Crossovers	$427500	$0	HSIP (23 U.S.C. 148)		17,000		State Highway Agency	Spot	Intersections	
W-5710G (A&B)	Roadway	Rumble strips - edge or shoulder	7.89	Miles	$100800	$0	HSIP (23 U.S.C. 148)		7,500		State Highway Agency	Spot	Lane Departure	
W-5710M	Roadway	Rumble strips - edge or shoulder	2.34	Miles	$121500	$0	HSIP (23 U.S.C. 148)		11,000		State Highway Agency	Systemic	Lane Departure	
W-5710N	Roadway	Rumble strips - edge or shoulder	16.3	Miles	$405000	$0	HSIP (23 U.S.C. 148)		6,700		State Highway Agency	Systemic	Lane Departure	
W-5710P	Access management	Median crossover - directional crossover	1	Crossovers	$22500	$0	HSIP (23 U.S.C. 148)		29,000		State Highway Agency	Spot	Intersections	
W-5710Q	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$135000	$0	HSIP (23 U.S.C. 148)		5,300		State Highway Agency	Spot	Intersections	
W-5710R	Access management	Raised island - install new	1.12	Miles	$360000	$0	HSIP (23 U.S.C. 148)		35,000		State Highway Agency	Spot	Intersections	
W-5710S	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$45000	$0	HSIP (23 U.S.C. 148)		14,000		State Highway Agency	Spot	Intersections	
W-5710T	Pedestrians and bicyclists	Medians and pedestrian refuge areas	0.13	Miles	$4500	$0	HSIP (23 U.S.C. 148)		7,000		State Highway Agency	Systemic	Pedestrians	
W-5710U	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$45000	$0	HSIP (23 U.S.C. 148)		7,300		State Highway Agency	Spot	Intersections	
W-5710V	Intersection traffic control	Modify control - two-way stop to roundabout	2	Intersections	$90000	$0	HSIP (23 U.S.C. 148)		9,900		State Highway Agency	Spot	Intersections	
W-5710W	Roadway	Rumble strips - edge or shoulder	53.72	Miles	$312300	$0	HSIP (23 U.S.C. 148)		17,000		State Highway Agency	Spot	Lane Departure	
W-5710Y	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$135000	$0	HSIP (23 U.S.C. 148)		6,500		State Highway Agency	Spot	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
W-5710Z	Intersection traffic control	Modify control - traffic signal to roundabout	2	Intersections	$157500	$0	HSIP (23 U.S.C. 148)		4,200		State Highway Agency	Spot	Intersections	
W-5711A	Roadside	Barrier- metal	0.59	Miles	$407790	$0	HSIP (23 U.S.C. 148)		3,200		State Highway Agency	Spot	Lane Departure	
W-5712A	Intersection traffic control	Modify control - two-way stop to roundabout	3	Intersections	$720000	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
W-5712H	Intersection traffic control	Intersection traffic control - other	1	Intersections	$4500	$0	HSIP (23 U.S.C. 148)		27,000		State Highway Agency	Spot	Intersections	
W-5712I	Intersection traffic control	Intersection flashers - add advance intersection warning sign-mounted	1	Intersections	$2700	$0	HSIP (23 U.S.C. 148)		12,000		State Highway Agency	Spot	Intersections	
W-5712J	Roadway	Pavement surface - high friction surface	1	Locations	$4500	$0	HSIP (23 U.S.C. 148)		6,300		State Highway Agency	Spot	Lane Departure	
W-5713B	Roadside	Barrier- metal	0.06	Miles	$531	$0	HSIP (23 U.S.C. 148)		7,200		State Highway Agency	Spot	Lane Departure	
W-5713J	Roadway	Rumble strips - unspecified or other	28.28	Miles	$549000	$0	HSIP (23 U.S.C. 148)		4,444		State Highway Agency	Spot	Lane Departure	
W-5713L	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$252000	$0	HSIP (23 U.S.C. 148)		11,000		State Highway Agency	Spot	Intersections	
W-5713M	Roadside	Barrier- metal	1.49	Miles	$441000	$0	HSIP (23 U.S.C. 148)		5,100		State Highway Agency	Spot	Lane Departure	
W-5713N	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$236700	$0	HSIP (23 U.S.C. 148)		9,500		State Highway Agency	Spot	Intersections	
W-5713O	Roadway delineation	Longitudinal pavement markings - remarking	40	Miles	$524700	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Lane Departure	
W-5714B	Intersection traffic control	Intersection traffic control - other	1	Intersections	$117000	$0	HSIP (23 U.S.C. 148)		12,000		State Highway Agency	Spot	Intersections	
W-5714C	Roadside	Barrier- metal	0.57	Miles	$99000	$0	HSIP (23 U.S.C. 148)		785		State Highway Agency	Spot	Lane Departure	
W-5714D	Roadside	Barrier- metal	0.57	Miles	$99000	$0	HSIP (23 U.S.C. 148)		820		State Highway Agency	Spot	Lane Departure	
W-5714E	Alignment	Horizontal curve realignment	1	Curves	$121500	$0	HSIP (23 U.S.C. 148)		2,500		State Highway Agency	Spot	Lane Departure	
W-5714F	Roadway	Superelevation / cross slope	1	Miles	$209700	$0	HSIP (23 U.S.C. 148)		4,050		State Highway Agency	Spot	Lane Departure	
Y-4813B	Railroad grade crossings	Railroad grade crossing gates	1	Locations	$1000	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
Z-5400AF	Railroad grade crossings	Upgrade railroad crossing signal	1	Locations	$45425	$0	HSIP (23 U.S.C. 148)		3,600		State Highway Agency	Spot	Intersections	
Z-5400AL	Railroad grade crossings	Railroad grade crossing gates	1	Locations	$254700	$0	HSIP (23 U.S.C. 148)		111		State Highway Agency	Spot	Intersections	

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
Z-5400FH	Railroad grade crossings	Protective devices	1	Locations	$3510	$0	HRRR Special Rule (23 U.S.C. 148(g)(1))		7,200		State Highway Agency	Spot	Intersections	
Z-5400FT	Railroad grade crossings	Railroad grade crossing gates	1	Locations	$523800	$0	HSIP (23 U.S.C. 148)		15,229		State Highway Agency	Spot	Intersections	
Z-5400FZ	Railroad grade crossings	Railroad grade crossing gates	1	Locations	$361800	$0	HSIP (23 U.S.C. 148)		3,158		State Highway Agency	Spot	Intersections	
Z-5400HE	Railroad grade crossings	Railroad grade crossing gates	1	Locations	$344700	$0	HSIP (23 U.S.C. 148)		742		State Highway Agency	Spot	Intersections	
Z-5400JN	Railroad grade crossings	Railroad grade crossing gates	1	Locations	$320400	$0	HSIP (23 U.S.C. 148)		188		State Highway Agency	Spot	Intersections	
Z-5400LM	Railroad grade crossings	Railroad grade crossing gates	1	Locations	$268200	$0	HSIP (23 U.S.C. 148)		1,910		State Highway Agency	Spot	Intersections	
Z-5700EA	Railroad grade crossings	Railroad grade crossings - other	408	Locations	$297000	$0	HSIP (23 U.S.C. 148)		0		State Highway Agency	Systemic	Intersections	
Z-5700FF	Railroad grade crossings	Upgrade railroad crossing signal	1	Locations	$64800	$0	HSIP (23 U.S.C. 148)		3,569		State Highway Agency	Spot	Intersections	
Z-5700NA	Railroad grade crossings	Protective devices	1	Locations	$36000	$0	HSIP (23 U.S.C. 148)		135		State Highway Agency	Spot	Intersections	

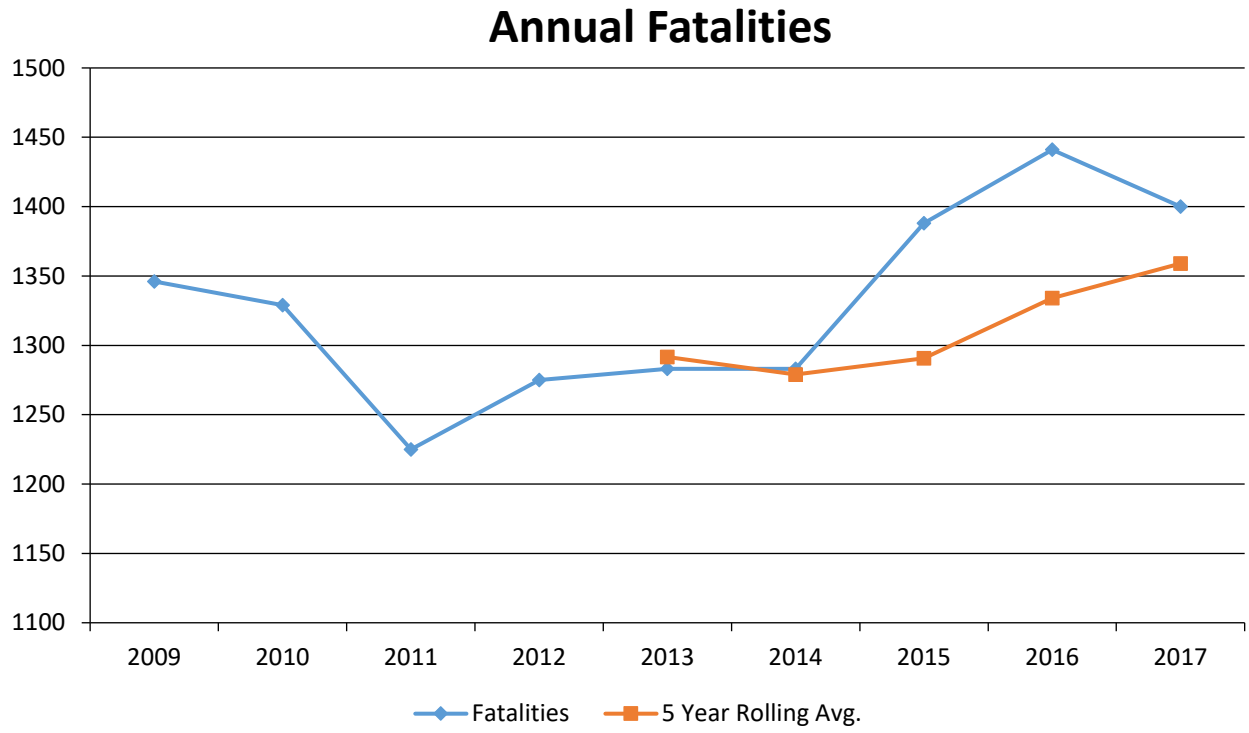
Enter additional comments here to clarify your response for this question or add supporting information.

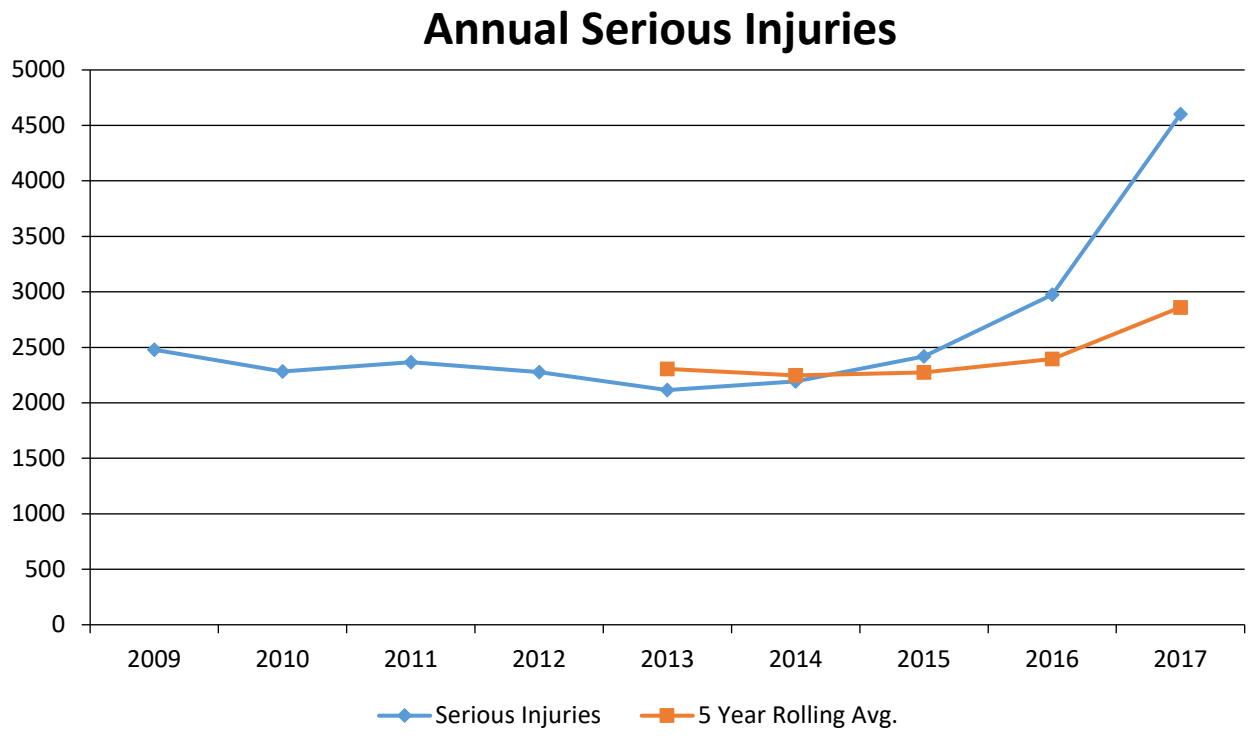
Safety Performance

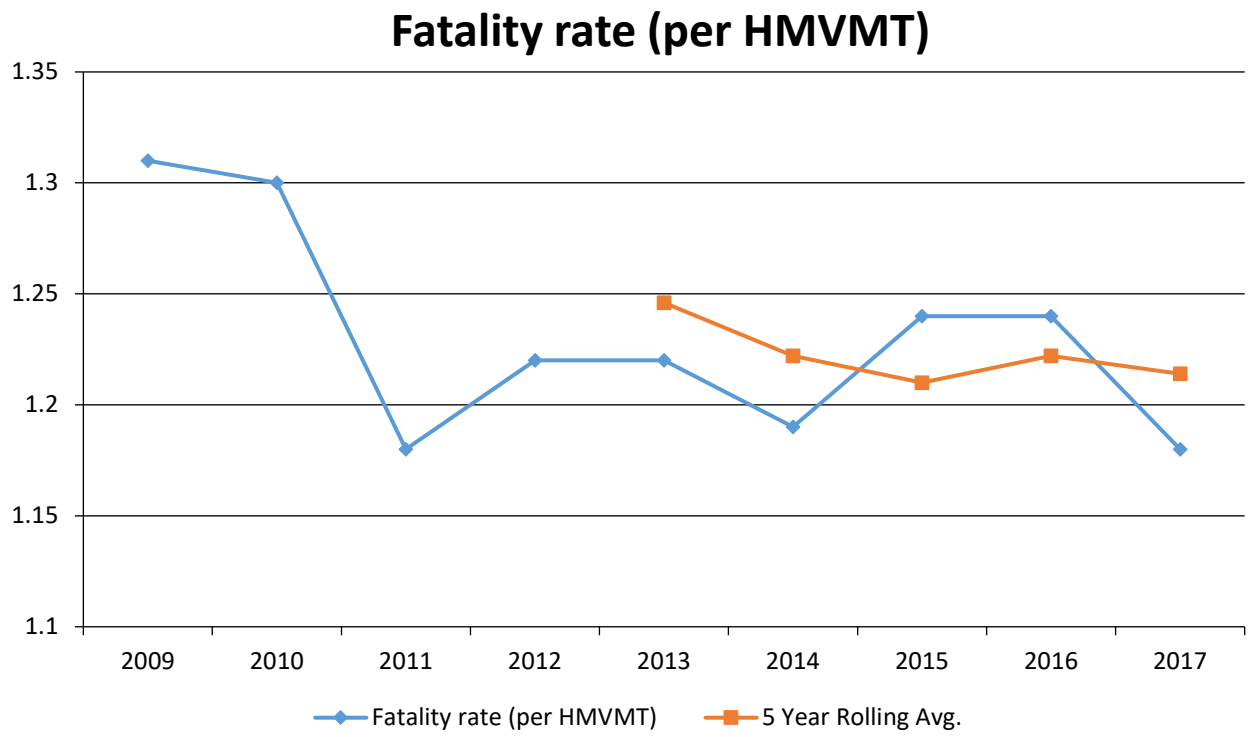
General Highway Safety Trends

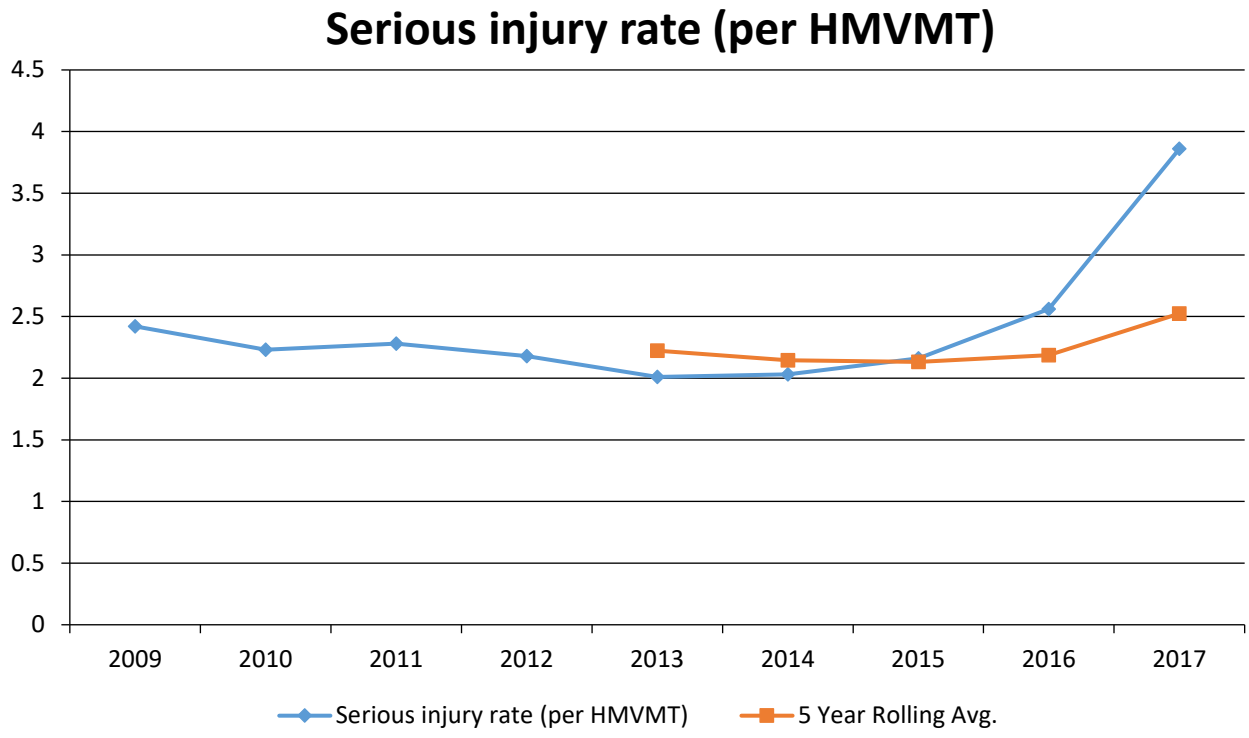
Present data showing the general highway safety trends in the State for the past five years.

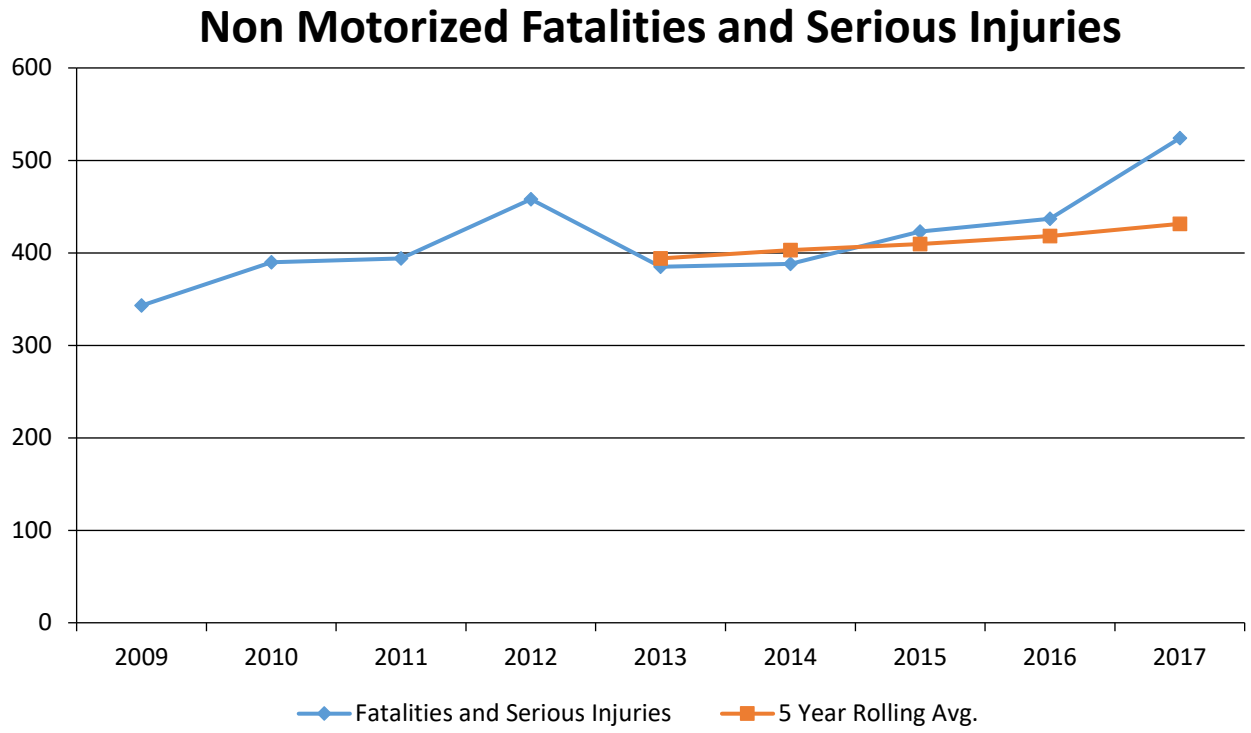
PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fatalities	1,346	1,329	1,225	1,275	1,283	1,283	1,388	1,441	1,400
Serious Injuries	2,480	2,283	2,366	2,278	2,115	2,194	2,417	2,976	4,602
Fatality rate (per HMVMT)	1.310	1.300	1.180	1.220	1.220	1.190	1.240	1.240	1.180
Serious injury rate (per HMVMT)	2.420	2.230	2.280	2.180	2.010	2.030	2.160	2.560	3.860
Number non-motorized fatalities	163	187	183	220	194	189	215	210	218
Number of non-motorized serious injuries	180	203	211	238	191	199	208	227	306


Annual Fatalities
1500
1450
1400
1350
1300
1250
1200
1150
1100
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.35
1.3
1.25
1.2
1.15
1.1
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Enter additional comments here to clarify your response for this question or add supporting information.

The revised national definition for Suspected Serious Injury crashes (Type A) has caused a significant increase in the number of North Carolina crashes reported as Serious Injury.

Describe fatality data source.

State Motor Vehicle Crash Database

Enter additional comments here to clarify your response for this question or add supporting information.

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

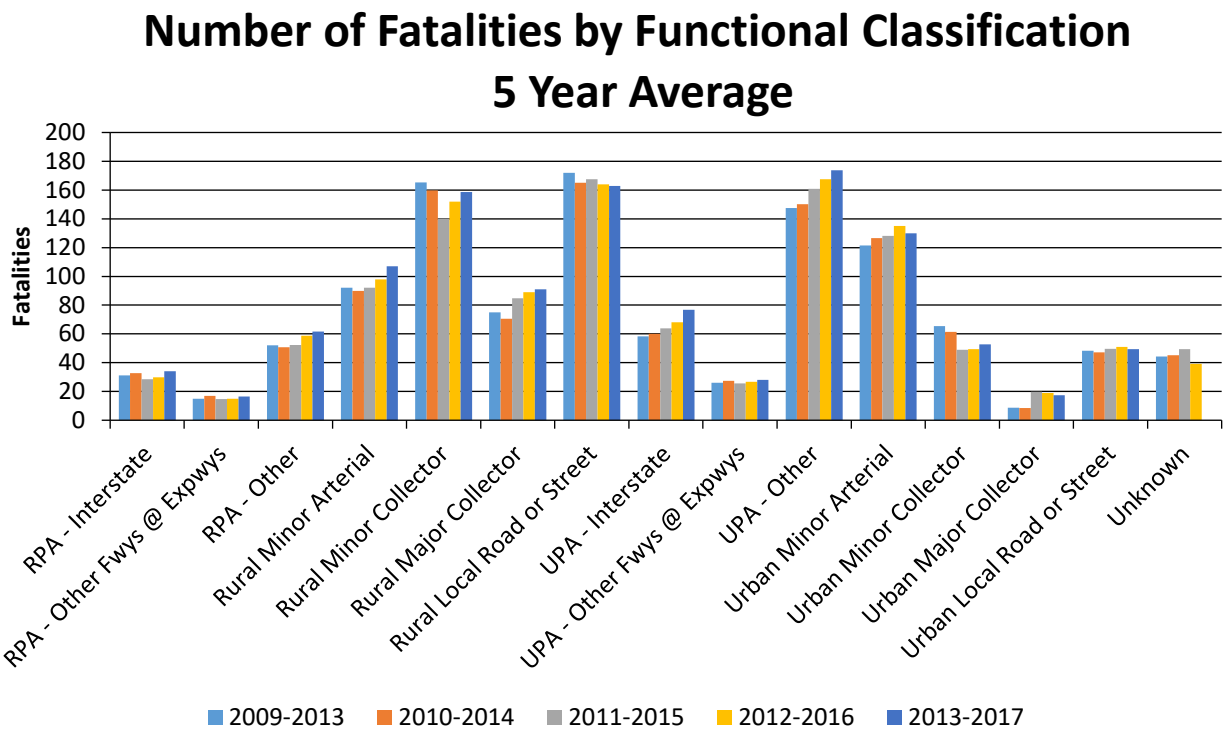
Year 2017

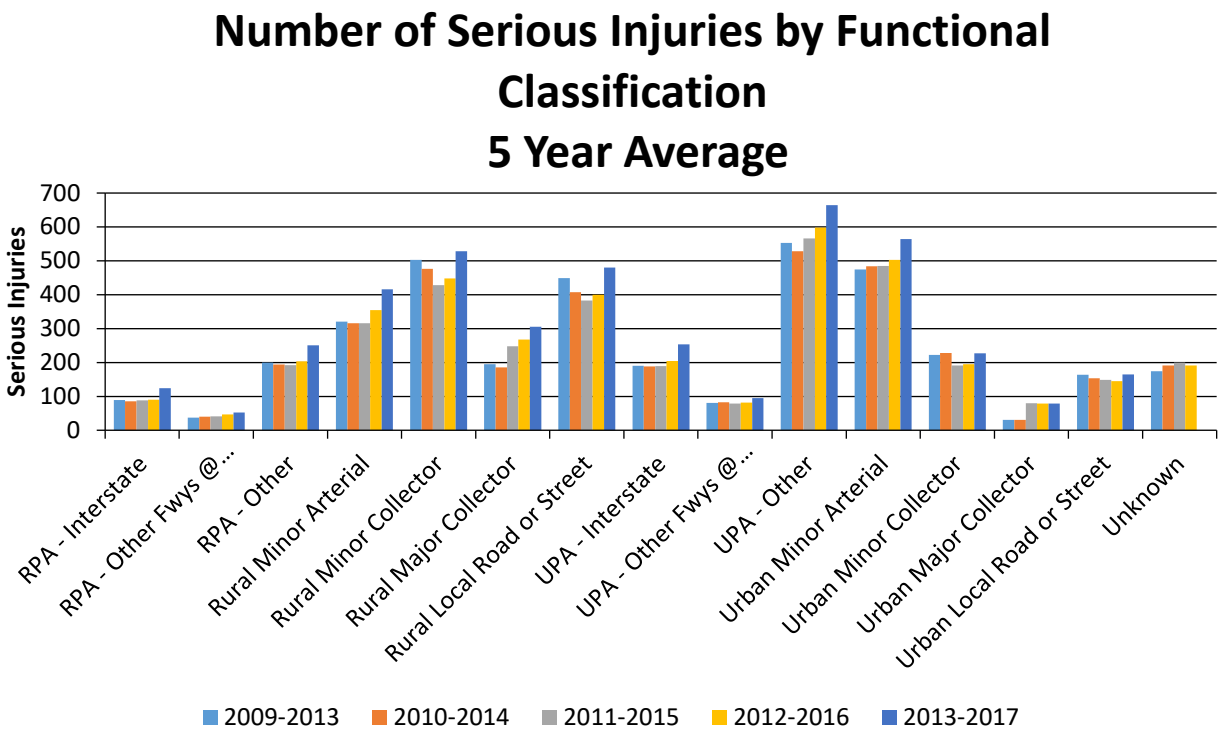
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	34	124.2	0.57	2.06
Rural Principal Arterial (RPA) - Other Freeways and Expressways	16.4	52.6	0.66	2.11
Rural Principal Arterial (RPA) - Other	61.6	250.4	1.01	4.1
Rural Minor Arterial	107	415.6	1.85	7.13

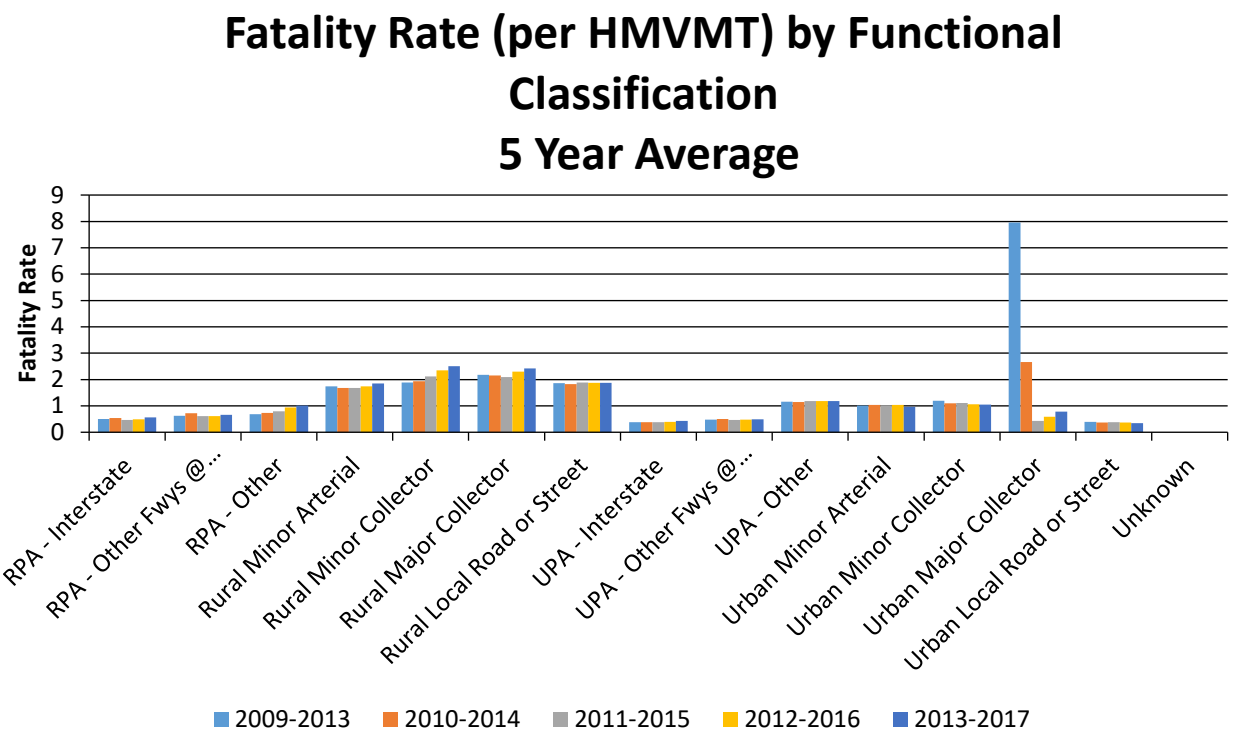
Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Minor Collector	158.6	528	2.51	8.24
Rural Major Collector	91	305	2.42	8.08
Rural Local Road or Street	162.8	480.4	1.88	5.54
Urban Principal Arterial (UPA) - Interstate	76.8	253.6	0.42	1.38
Urban Principal Arterial (UPA) - Other Freeways and Expressways	28	94.4	0.49	1.63
Urban Principal Arterial (UPA) - Other	173.8	664.4	1.18	4.49
Urban Minor Arterial	130	564.4	0.97	4.19
Urban Minor Collector	52.8	227.4	1.05	4.45
Urban Major Collector	17.4	79	0.78	4.2
Urban Local Road or Street	49.4	164.6	0.35	1.15

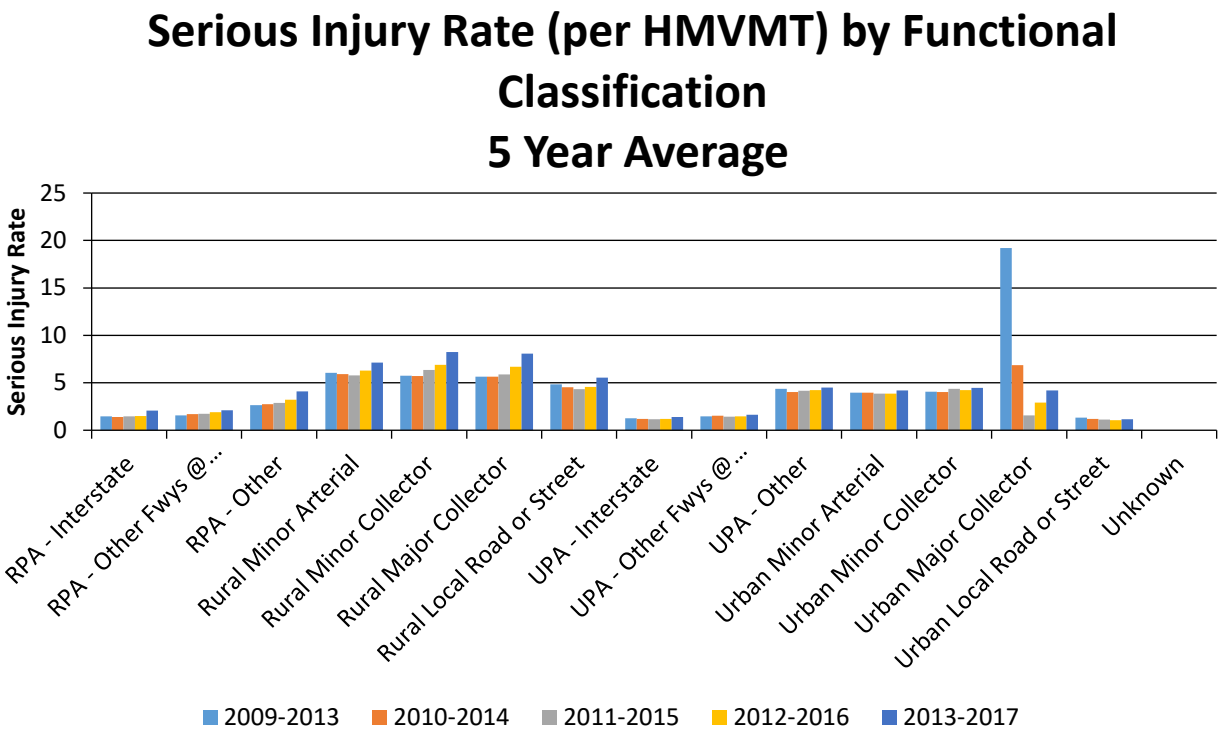
Year 2017

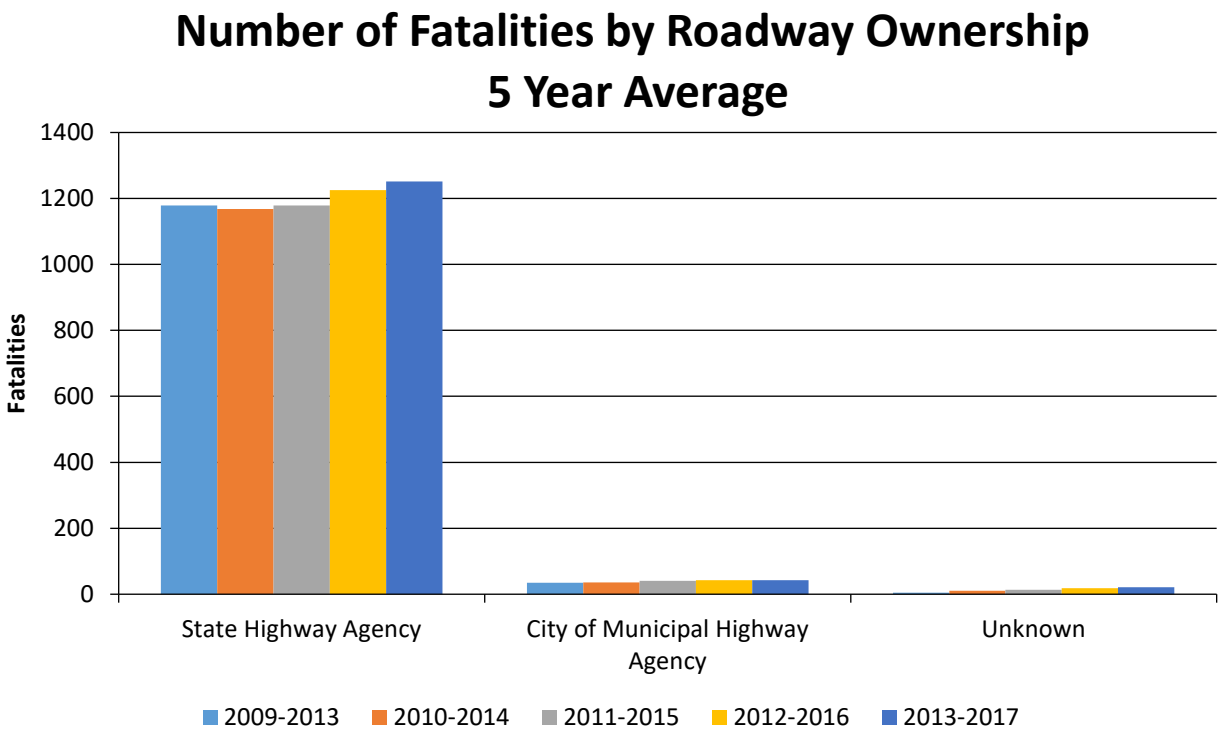
Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	1,251.8	4,667.4	1.24	4.58
County Highway Agency				
Town or Township Highway Agency				
City of Municipal Highway Agency	43	174	0.39	1.55
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				
Unknown	21.2	99.2		

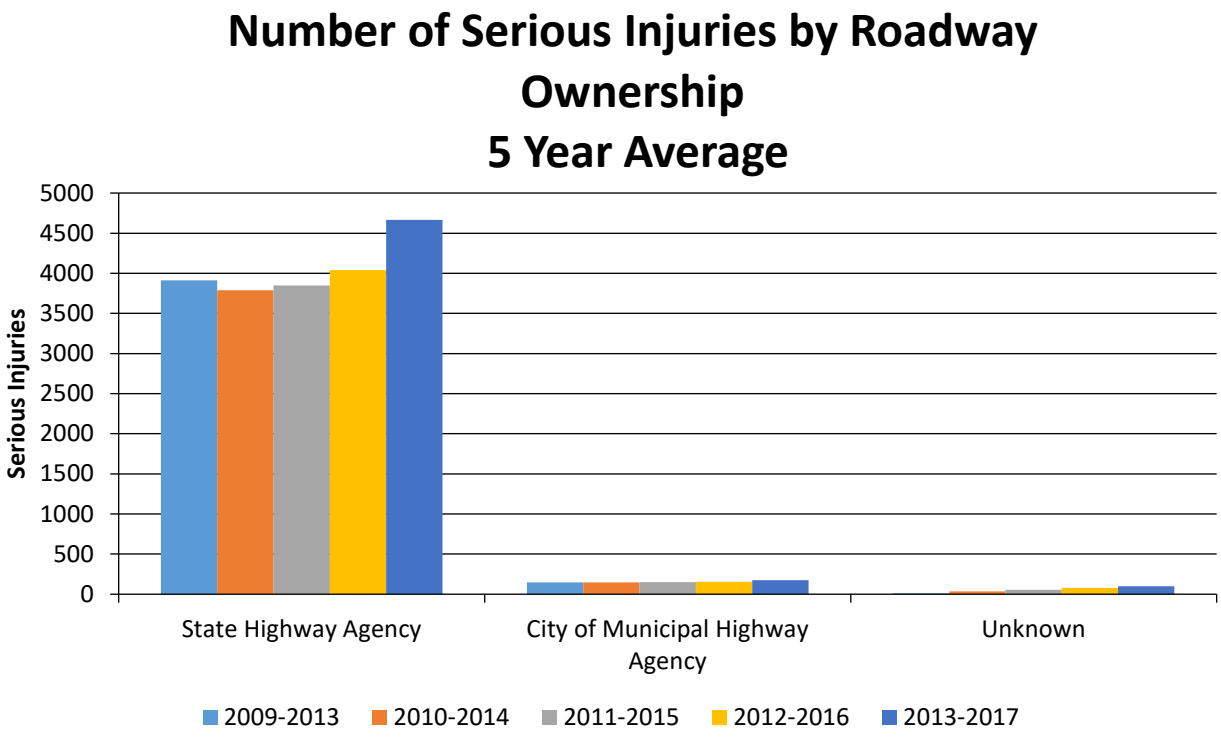

Number of Fatalities by Functional Classification
5 Year Average
Fatalities
200
180
160
140
120
100
80
60
40
20
0
RPA - Interstate
RPA - Other Fwys @ Expwys
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @ Expwys
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
Unknown
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017

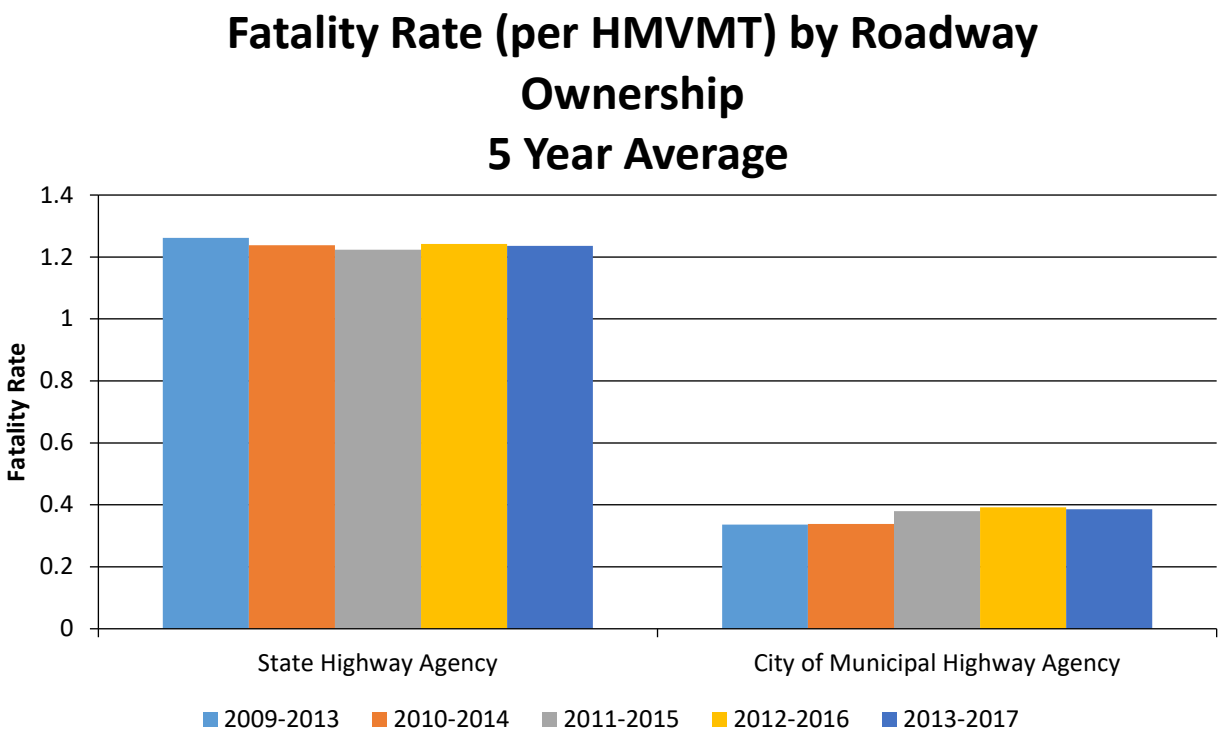

Number of Serious Injuries by Functional Classification
5 Year Average
Serious Injuries
700
600
500
400
300
200
100
0
RPA - Interstate
RPA - Other Fwys @...
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @...
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
Unknown
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017

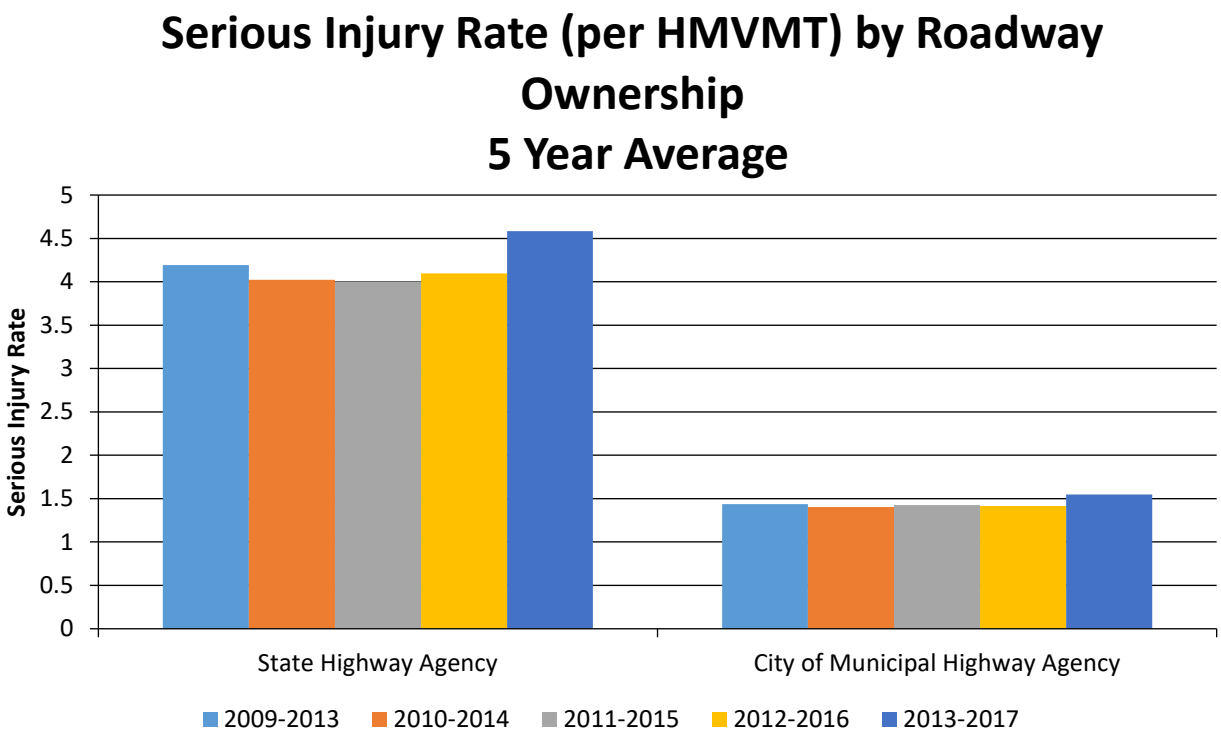

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average
Fatality Rate
9
8
7
6
5
4
3
2
1
0
RPA - Interstate
RPA - Other Fwys @...
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @...
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
Unknown
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Serious Injury Rate (per HMVMT) by Functional Classification
5 Year Average
Serious Injury Rate
25
20
15
10
5
0
RPA - Interstate
RPA - Other Fwys @...
RPA - Other
Rural Minor Arterial
Rural Minor Collector
Rural Major Collector
Rural Local Road or Street
UPA - Interstate
UPA - Other Fwys @...
UPA - Other
Urban Minor Arterial
Urban Minor Collector
Urban Major Collector
Urban Local Road or Street
Unknown
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Fatalities by Roadway Ownership
5 Year Average
Fatalities
1400
1200
1000
800
600
400
200
0
State Highway Agency
City of Municipal Highway Agency
Unknown
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Serious Injuries by Roadway Ownership
5 Year Average
Serious Injuries
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
State Highway Agency
City of Municipal Highway Agency
Unknown
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
Fatality Rate
1.4
1.2
1
0.8
0.6
0.4
0.2
0
State Highway Agency
City of Municipal Highway Agency
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017



Enter additional comments here to clarify your response for this question or add supporting information.

The 2017 North Carolina traffic volume by functional classification was not available by August 22. Thus it was assumed that the traffic volumes across all classifications increased by the same rate from 2016 to 2017.

The revised national definition for Suspected Serious Injury crashes (Type A) has caused a significant increase in the number of North Carolina crashes reported as Serious Injury.

Are there any other aspects of the general highway safety trends on which the State would like to elaborate?

Yes

Provide additional discussion related to general highway safety trends.

The N.C. Department of Transportation is committed to measuring and improving performance. The department's Organizational Performance Dashboard, which is featured on NCDOT's web page, serves as an indicator of how well we are meeting our mission and goals. One major NCDOT goal is "Making our transportation network safer". This is defined as the total number of statewide fatalities on NC roads per 100 million vehicle miles traveled for the calendar year to date. The fatality rate gauge shown on our Performance Dashboard is accompanied by a trend chart of the total number of fatalities, crashes and injuries by year. The Performance Dashboard can be found at https://apps.dot.state.nc.us/dot/dashboard/

Many staff members within NCDOT have a work performance metric for highway safety included in their year-end appraisal.

Safety Performance Targets

Calendar Year 2019 Targets *

Number of Fatalities 1214.7

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

For the 2019 Highway Safety Improvement Plan (HSIP), the goal is to reduce total fatalities by 5.59 percent each year from 1,362.8 (2013-2017 average) to 1,214.7 (2015-2019 average) by December 31, 2019.

Number of Serious Injuries 2490.6

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

For the 2019 Highway Safety Improvement Plan (HSIP), the goal is to reduce total serious injuries by 6.77 percent each year from 2,865.2 (2013-2017 average) to 2,490.6 (2015-2019 average) by December 31, 2019.

Fatality Rate 1.097

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

For the 2019 Highway Safety Improvement Plan (HSIP), the goal is to reduce the fatality rate by 5.02 percent each year from 1.216 (2013-2017 average) to 1.097 (2015-2019 average) by December 31, 2019.

Serious Injury Rate 2.228

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

For the 2019 Highway Safety Improvement Plan (HSIP), the goal is to reduce the serious injury rate by 6.12 percent each year from 2.528 (2013-2017 average) to 2.228 (2015-2019 average) by December 31, 2019.

Total Number of Non-Motorized Fatalities and Serious Injuries 403.7

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

For the 2019 Highway Safety Improvement Plan (HSIP), the goal is to reduce the total non-motorized fatalities and serious injuries by 6.02 percent each year from 457.0 (2013-2017 average) to 403.7 (2015-2019 average) by December 31, 2019.

Enter additional comments here to clarify your response for this question or add supporting information.

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

Through collaboration with the Governor's Highway Safety Program (GHSP), Metropolitan Planning Organizations (MPOs) and the Executive Committee for Highway Safety (ECHS), we continue to work together to establish targets for the five safety performance measures. Initially, the safety performance targets were discussed and a direction was set through our ECHS in September 2016. The ECHS includes partners from top level agency and department heads from various state and local agencies, including the GHSP. These safety champions are key policy and business funding decision makers in the highway safety arena. The direction set by the ECHS follows the goals set through our 2014 State Highway Safety Plan (SHSP) concerning the reduction of fatalities and serious injuries. In addition, we had a Safety Target Setting Coordination Training Workshop in March 2017 with the MPO's where FHWA and NHTSA staff covered FHWA's Safety Performance Management Measures and NHTSA's Safety Performance Measure requirements and provided participants with an understanding of Federal safety performance requirements for carrying out the Highway Safety Improvement Program (HSIP) and the Highway Safety Plan (HSP). During this workshop, the state presented their methodology to the MPO's and discussed a coordination and collaboration process between the State DOT (HSIP and HSP) and MPO's. The numbers and rates for the five safety performance measures/targets are annually gathered and adjusted in accordance with the SHSP goal of a 50% reduction of fatalities and serious injuries by the year 2030. NCDOT continually provides target setting crash data to each of the MPOs so they could establish their 2018 and 2019 safety performance targets.

Does the State want to report additional optional targets?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Applicability of Special Rules

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

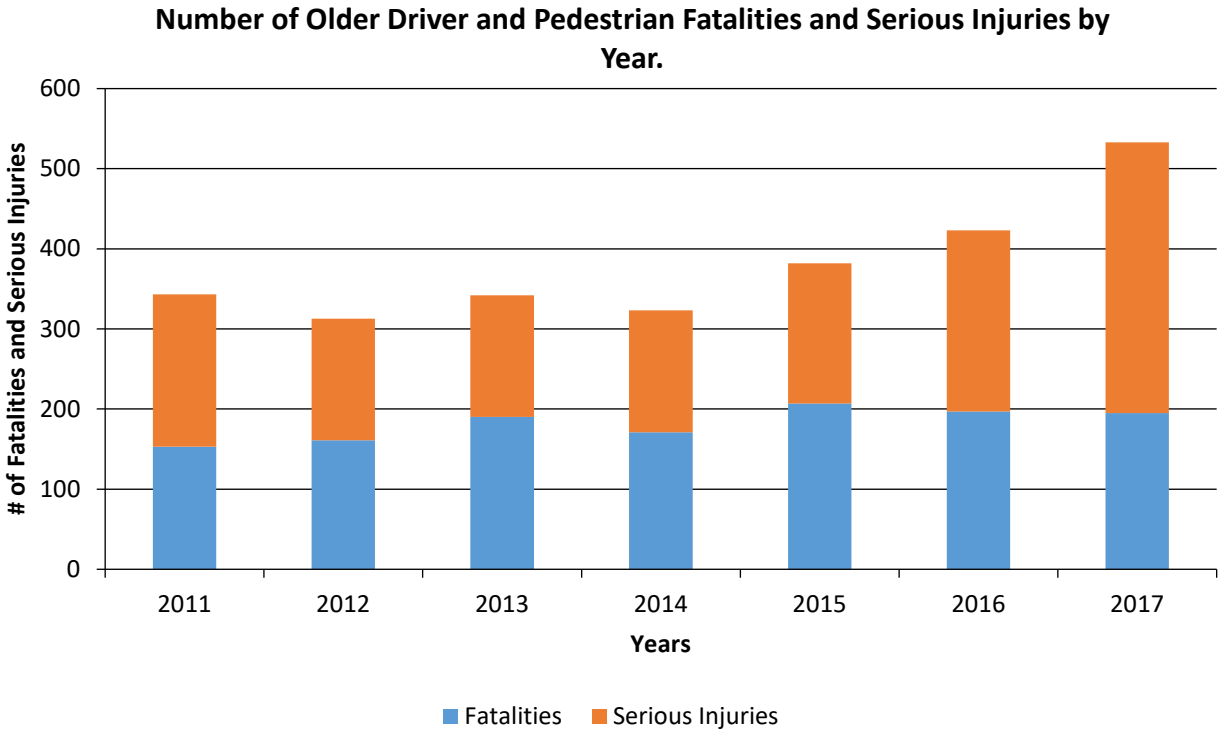
No

Enter additional comments here to clarify your response for this question or add supporting information.

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	2011	2012	2013	2014	2015	2016	2017
Number of Older Driver and Pedestrian Fatalities	153	161	190	171	207	197	195

Number of Older Driver and Pedestrian Serious Injuries	190	152	152	152	175	226	338



Enter additional comments here to clarify your response for this question or add supporting information.

The revised national definition for Suspected Serious Injury crashes (Type A) has caused a significant increase in the number of North Carolina crashes reported as Serious Injury.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Benefit/Cost Ratio

Enter additional comments here to clarify your response for this question or add supporting information.

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

NCDOT has a robust project evaluation program. Every project that is funded through the federal HSIP dollars and the NC spot safety dollars are evaluated from a before and after perspective. These evaluations include project background, before and after summary data tables, and before and after collision diagrams. The main objective of these evaluations is to provide feedback to our field personnel as to whether the project was successful. The evaluations help determine if the targeted crash pattern decreased after the safety countermeasures were installed.

NCDOT also looks at all projects that are completed over a period of time and assesses how many crashes were reduced, with a crash cost attached to those crashes, versus the original project costs. Upon reviewing approximately 600 projects, the benefits of crashes reduced resulted in a 14:1 benefit cost. Our field personnel also have an annual expectation for developing safety projects and getting those projects on the ground.

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

More systemic programs
RSAs completed
Policy change
Increased awareness of safety and data-driven process
Increased focus on local road safety
Other-Reduction in Target Crashes

Enter additional comments here to clarify your response for this question or add supporting information.

NCDOT has initiated a project to study the impacts of wide edge markings on two-lane rural roads. 60% of all highway fatalities in North Carolina are a result of roadway departure crashes.

NCDOT has invested in several systemic programs including upgrading guardrail end units, installing long life pavement markings for positive guidance, and funding of vulnerable user projects.

NCDOT conducted four RSAs in 2017. The NCDOT Road Safety Audit (RSA) Program is designed and managed to reduce crashes and injuries by generating safety projects/actions, assist field staff in addressing persistent safety problem areas, and improve collaboration amongst stakeholders. NCDOT conducts RSAs in an effort to support HSIP project origination and project development. NCDOT RSAs are conducted with Department-wide support to ensure perspectives of trained personnel who understand NCDOT policy and procedures. Local stakeholders can bring RSA requests forward for both State-maintained and non-State maintained roadways and NCDOT will assist in either case. NCDOT conducts RSAs on corridors with multiple HSIP locations, and they also query the Field Engineers and Field Division staff for locations where RSAs could lead to potential HSIP projects. Staff from regions throughout the State participate in the RSAs in other regions, ensuring an outside perspective is obtained in the RSA process.

Safety benefits is now part of the Stragetic Mobility Formula. The Strategic Transportation Investment (STI) established the Strategic Mobility Formula, which allocates available revenues based on data-driven scoring and local input. The STI is used to develop NCDOT's State Transportation Improvement Program, which identifies the transportation projects that will receive funding during a specified 10-year period.

Are there any significant programmatic changes that have occurred since the last reporting period?

No

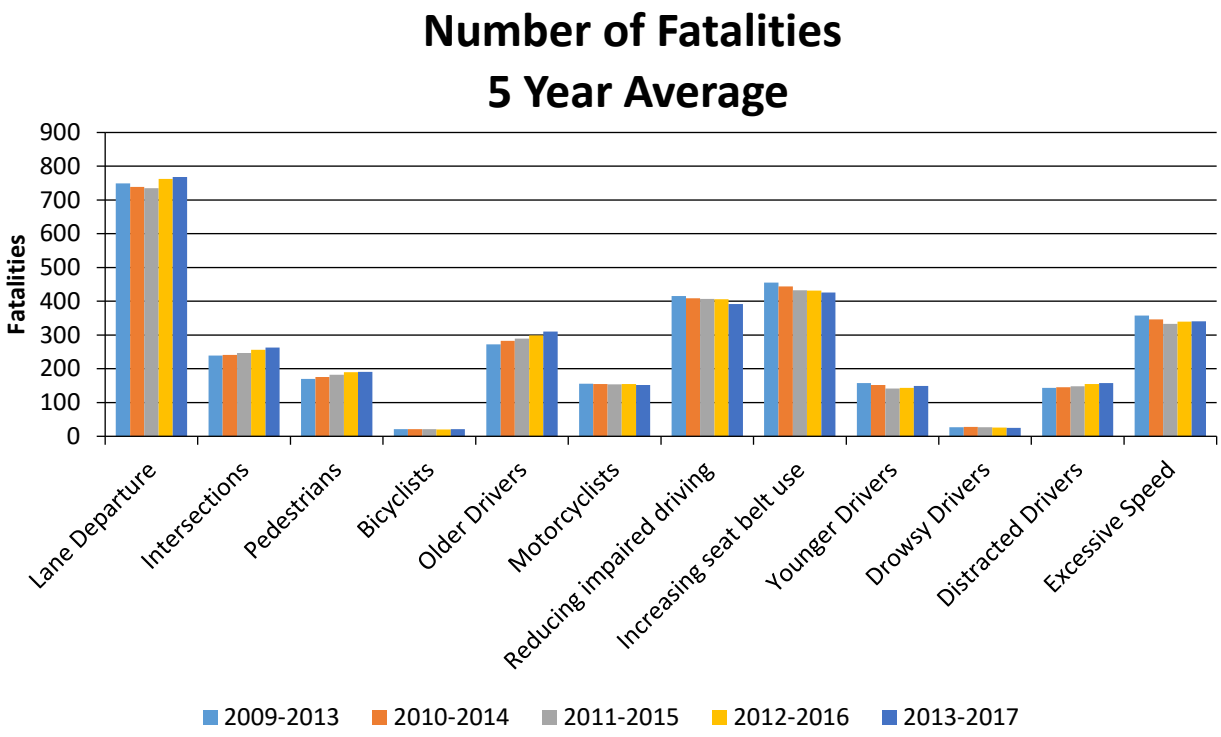
Effectiveness of Groupings or Similar Types of Improvements

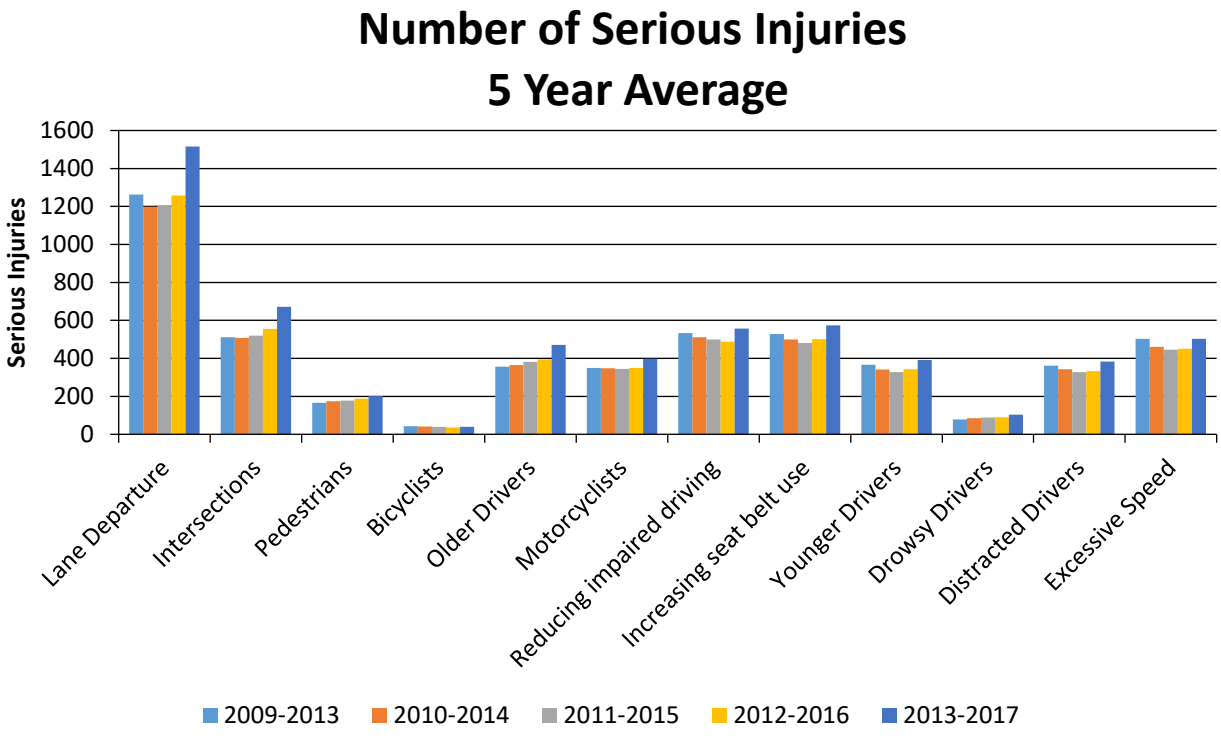
Present and describe trends in SHSP emphasis area performance measures.

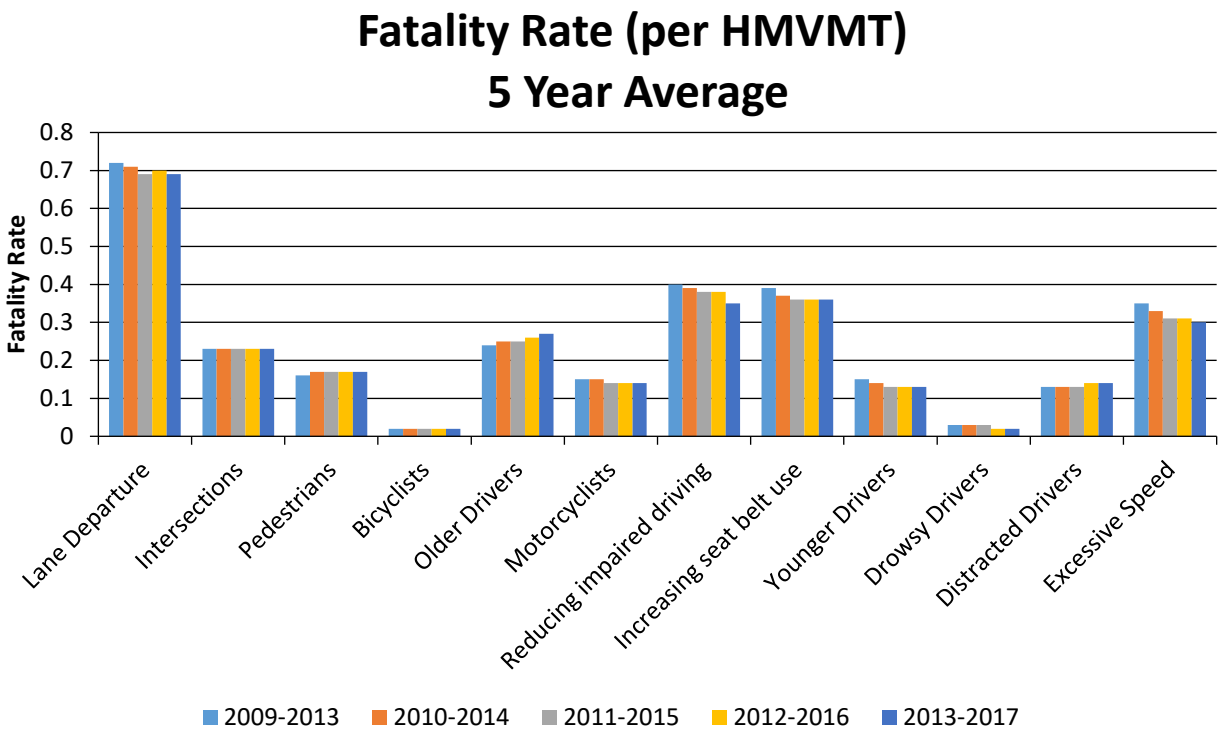
Year 2017

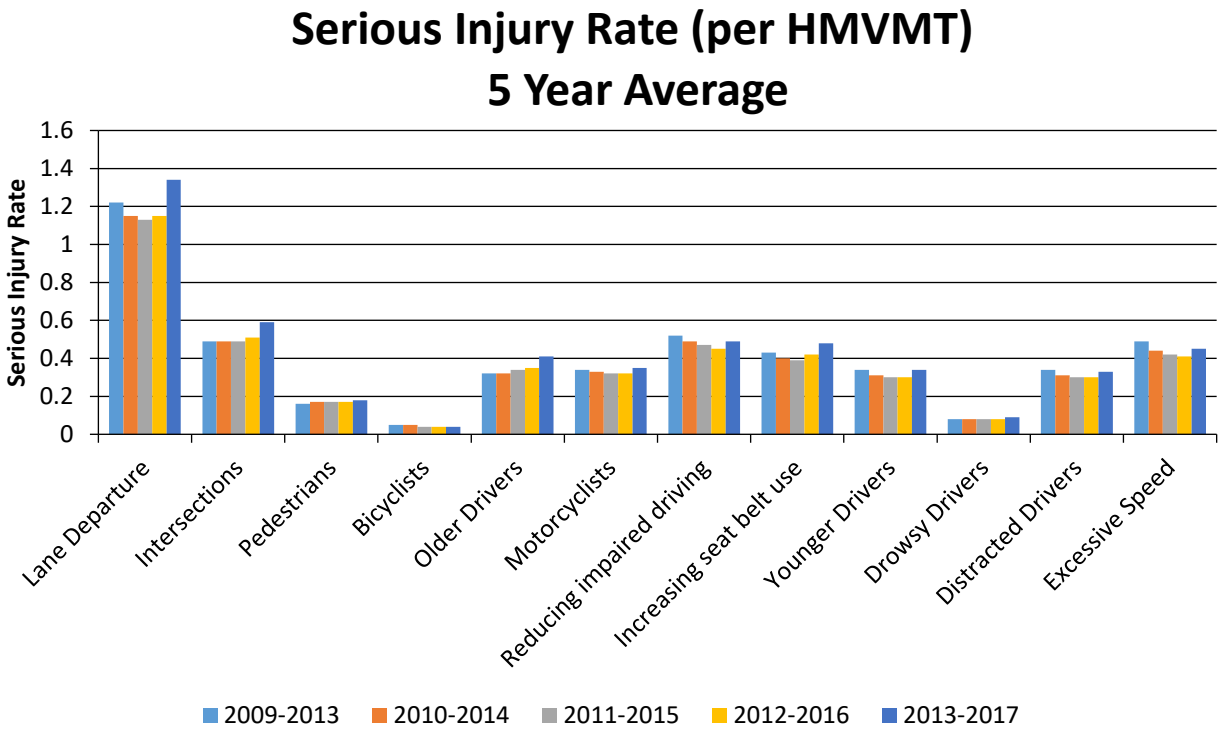
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)	Other 1	Other 2	Other 3
Lane Departure		768	1,515	0.69	1.34	0	0	0
Intersections		262.8	670.8	0.23	0.59	0	0	0
Pedestrians		190.4	200.4	0.17	0.18	0	0	0
Bicyclists		21.6	39.6	0.02	0.04	0	0	0
Older Drivers		310	471	0.27	0.41	0	0	0
Motorcyclists		151.8	398.4	0.14	0.35	0	0	0
Reducing impaired driving		392.2	557.4	0.35	0.49	0	0	0
Increasing seat belt use		426.4	573.8	0.36	0.48	0	0	0

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)	Other 1	Other 2	Other 3
Younger Drivers		149	391.8	0.13	0.34	0	0	0
Drowsy Drivers		25.2	103.4	0.02	0.09	0	0	0
Distracted Drivers		157.2	382.8	0.14	0.33	0	0	0
Excessive Speed		340.4	503.2	0.3	0.45	0	0	0


Number of Fatalities
5 Year Average
Fatalities
900
800
700
600
500
400
300
200
100
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Reducing impaired driving
Increasing seat belt use
Younger Drivers
Drowsy Drivers
Distracted Drivers
Excessive Speed
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017


Number of Serious Injuries
5 Year Average
Serious Injuries
1600
1400
1200
1000
800
600
400
200
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Reducing impaired driving
Increasing seat belt use
Younger Drivers
Drowsy Drivers
Distracted Drivers
Excessive Speed
2009-2013
2010-2014
2011-2015
2012-2016
2013-2017





Enter additional comments here to clarify your response for this question or add supporting information.

The revised national definition for Suspected Serious Injury crashes (Type A) has caused a significant increase in the number of North Carolina crashes reported as Serious Injury.

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

No

Enter additional comments here to clarify your response for this question or add supporting information.

The NCDOT Safety Evaluation Group (SEG) conducts large scale studies using data from locations across the State. As we complete multiple evaluations for a particular type of countermeasure, we are able to provide objective and definite information regarding actual crash reduction factors. Some of the recent topic areas include: All-Way Stops, Roundabouts, Overhead Flashing Beacons, Flashing Yellow Arrow, Vehicle Entering When Flashing Signs, Flashers in School Zones, Speed Enforcement Programs, and Paved Shoulders. The methodologies used in the evaluations offer various philosophies and ideas. When possible and appropriate, we attempt to use statistical analysis to account for potential study biases. Numerous countermeasure-oriented safety studies completed by SEG have been published in peer-reviewed journals.

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)
See Comments Below														

Enter additional comments here to clarify your response for this question or add supporting information.

In an attempt to assess the safety of our roads, the Safety Evaluation Group of the Traffic Safety Systems Management Section has evaluated hundreds of projects. The methodologies used in NCDOT's evaluations offer various philosophies and ideas, in an effort to provide objective countermeasure crash reduction results. This information is gathered so the benefit or lack of benefit for this type of project can be recognized and utilized for future projects. As the Safety Evaluation Group completes additional reviews for various types of countermeasures, we will be able to provide objective and definite information regarding actual crash reduction factors. Completed project evaluations can be found at the link below: https://connect.ncdot.gov/resources/safety/Pages/Safety-Evaluation.aspx

Are there any other aspects of the overall HSIP effectiveness on which the State would like to elaborate?

Yes

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

The North Carolina Highway Safety Improvement Program (HSIP) is an organized and systematic safety process developed to identify, analyze, investigate and improve potentially hazardous locations with concentrations and patterns of correctable crashes. The program is able to determine locations that exceed minimum warranting criteria that are based on multiple factors that, in most cases, include severity, frequency, and crash type. The program is presently structured into six distinct phases:

1. Development of warranting criteria and Identification of potentially hazardous locations meeting minimum warrant criteria
2. Detailed crash analysis of program locations
3. Engineering field investigation of program locations and evaluation of potential recommendations (where appropriate)
4. Project development
5. Implement countermeasures
6. Evaluation of countermeasures implemented with HSIP funds

The warrants developed by the Traffic Safety Systems Section (TSSS) have consistently shown the ability to identify intersections, sections, and bicycle/pedestrian intersections with severe injuries and chronic crash patterns. The Regional Traffic Engineers utilize thorough investigations, traffic operations and safety expertise and proven tools such as signal warrant studies, sight distance measurements, Crash Reduction Factors and Benefit to Cost analysis to ensure that effective projects are developed. Projects are selected through a competitive Benefit to Cost based program. Evaluations completed by the Traffic Safety Systems Section have shown that the average project yields a 14 to one return.

Compliance Assessment

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

04/06/2015

What are the years being covered by the current SHSP?

From: 2014 To: 2018

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

2019

Enter additional comments here to clarify your response for this question or add supporting information.

As required by the Fixing America's Surface Transportation (FAST) Act legislation, the NCDOT is currently in the process of updating our state's 2014 Strategic Highway Safety Plan (SHSP). With the assistance of the consulting team that helped to prepare the 2014 SHSP, local, state, federal, tribal and other public and private safety stakeholders throughout the state will be called upon to help assist in determining the emphasis areas and the overall goal for the updated 2019 SHSP. The work to update 2014 SHSP should begin during the first quarter of 2019 and the signed 2019 SHSP should be completed by the fourth quarter 2019 or first quarter 2020.

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

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)	100	100					100	100	100	100
Route Number (8)	100	100								
Route/Street Name (9)	100	100								
Federal Aid/Route Type (21)	100	100								
Rural/Urban Designation (20)	100	100					100	100		
Surface Type (23)	100	0					100	0		
Begin Point Segment Descriptor (10)	100	100					100	100	100	100
End Point Segment Descriptor (11)	100	100					100	100	100	100
Segment Length (13)	100	100								
Direction of Inventory (18)	100	100								
Functional Class (19)	100	100					100	100	100	100

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)	100	0								
Access Control (22)	100	0								
One/Two Way Operations (91)	100	0								
Number of Through Lanes (31)	100	100					10	10		
Average Annual Daily Traffic (79)	100	100					10	10		
AADT Year (80)	100	100								
Type of Governmental Ownership (4)	100	0					100	0	100	0
INTERSECTION										
Unique Junction Identifier (120)			100	100						
Location Identifier for Road 1 Crossing Point (122)			100	100						
Location Identifier for Road 2 Crossing Point (123)			100	100						
Intersection/Junction Geometry (126)			0	0						
Intersection/Junction Traffic Control (131)			0	0						
AADT for Each Intersecting Road (79)			0	0						
AADT Year (80)			0	0						
Unique Approach Identifier (139)			0	0						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					0	0				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					0	0				
Location Identifier for Roadway at Ending Ramp Terminal (201)					100	100				
Ramp Length (187)					100	100				

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 Type at Beginning of Ramp Terminal (195)					0	0				
Roadway Type at End Ramp Terminal (199)					100	100				
Interchange Type (182)					0	0				
Ramp AADT (191)					100	100				
Year of Ramp AADT (192)					100	100				
Functional Class (19)					100	100				
Type of Governmental Ownership (4)					100	100				
Totals (Average Percent Complete):	**100.00**	**72.22**	**37.50**	**37.50**	**63.64**	**63.64**	**80.00**	**57.78**	**100.00**	**80.00**

*Based on Functional Classification

Enter additional comments here to clarify your response for this question or add supporting information.

For (79) and (80), these fields are not explicitly stored but can be derived.

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.

There are approximately 106,500 miles of public roads in the State of North Carolina. Of those, the NCDOT maintains approximately 79,600, which equates to approximately 75% of all public roadways in the State, (https://connect.ncdot.gov/resources/State-Mapping/Documents/OfficialStateMileage.pdf). It is important to note that for the purposes of this plan, when referencing State and Non-State in terms of what the State collects it refers to ownership/maintenance; when referencing Non-Local and Local in terms of the MIRE FDE, it refers to functional class.

The Transportation Asset Analysis Group is responsible for collecting and maintaining the roadway inventory, and the GIS unit is responsible for the line work. ESRI Roads and Highways is used to publish the characteristics file. Anyone can access the roadway inventory GIS files; they are available on the Connect NCDOT website, (https://connect.ncdot.gov/).

The Division of Highways has the authority/responsibility for determining the improvements needed to achieve compliance with the MIRE FDE requirements. These decisions are made jointly between Safety, GIS, and the Transportation Asset Analysis Group, with safety driving the need for new elements.

NCDOT completed a gap assessment in January 2017 comparing their roadway inventory to the FDE listing. The gap assessments results are summarized in this section.

Non-Local Paved Roads
Segments
NCDOT collects and maintains all of the segment elements on all State-owned Non-Local Paved roads. NCDOT collects and maintains almost all of the segment elements on all Non-State owned, Non-Local Paved roads. The exceptions are Surface Type, Median Type, Access Control, One/Two Way Operations, and Type of Governmental Ownership.

Intersections
The largest gaps in the FDEs for NCDOT are for Intersection data elements. NCDOT does not currently have the majority of the intersection FDEs on Non-Local Paved roads.

Interchange/Ramp
Of the 11 Interchange/Ramp elements on non-local paved roads, NCDOT maintains 7 on both State and Non-State roads. The 4 missing elements are Interchange Identifier, Location Identifier for Beginning Ramp Terminal, Roadway Type at Beginning Ramp Terminal, and Interchange Type.

Local Paved Roads
Of the nine (9) FDEs on Local Paved Roads, all but two (2) (Number of Through Lanes, AADT) are collected on all State Roads; and all but 4 (Surface Type, Number of Through Lanes, AADT, and Type of Governmental Ownership) are collected on all Non-State roads.

Unpaved Roads
NCDOT intends to opt out of collecting FDEs on unpaved roads. NCDOT understands: no HSIP funds can be spent on these roadways; they must consult with affected Indian tribes; and they must notify their FHWA Division Office via letter to the Division Administrator.

For the MIRE FDE currently collected, the elements are updated as new roads are added. The GIS group updates the line work annually based on snapshots provided by the Counties.

There are business edits and data checks built into the system to help ensure the quality of the data, however there are no additional formal QA/QC processes. NCDOT is looking into developing performance measures to help formalize their quality practices.

There are two current pilot projects underway to help NCDOT fill the two biggest data gaps – Intersection elements and AADT. NCDOT conducted a pilot to collect data at 3,000 intersections, with the goal of developing a framework for a larger scale data collection effort. In regard to AADT, NCDOT has contracted with the University of North Carolina Charlotte on a research effort to develop a process for developing AADT on all public roads. The project is set to begin in August 2018 and be completed within two years.

The largest data gaps exist on Non-State roads. NCDOT plans to analyze the mileage and ownership for the roadways with missing FDEs. Once that effort is complete, NCDOT can determine where there are the largest data gaps and what outreach mechanism might be most effective to working with those local agencies. This will help NCDOT determine if they can utilize information already being collected by local agencies, or if a State sponsored data collection effort is needed to obtain the data on these roadways.

The FDE collection priorities are as follows:

- Short-term: Non-Local Paved Roads Segment elements and Intersection elements, as well as AADT on all public roads.
- Mid-term: Non-Local Paved Road Interchange elements, and any other remaining Non-Local paved road elements.
- Long-term: Remaining needed Local Paved Roads elements.

The data will be collected using a variety of tools including deriving elements from existing data, collecting from video logs, utilizing current pavement collection efforts to determine what else might be able to be collected at the same time, and utilizing data already being collected from local agencies. This includes exploring what additional information might be collected when the annual linework is collected from the Counties and what additional mechanisms might need to be put in place to be able to obtain these data. NCDOT is also exploring if the E911 effort might be able to be utilized to obtain additional data. NCDOT will also explore utilizing the available FHWA technical assistance programs, primarily the Roadway Data Extraction Technical Assistance Program (RDETAP), to help fill in data gaps.

The Safety Group will be responsible for the data collection effort, with support from the Transportation Asset Analysis Group. The data will be integrated into the existing GIS system and be made available through the same portal as other roadway inventory data. The update cycle will vary based on element.

NCDOT has not yet developed cost estimates but recognizes this is one of the next steps needed to be conducted. NCDOT will review the FHWA MIRE Fundamental Data Elements Cost-Benefit Estimation report as a starting point, https://safety.fhwa.dot.gov/rsdp/downloads/fhwasa16035_051916v10.pdf .

As mentioned above, NCDOT will also explore utilizing the available FHWA technical assistance programs, namely the RDETAP, to help fill in data gaps, as well as utilizing available TRCC funds for data collection efforts.

Provide the suspected serious injury identifier, definition and attributes used by the State for both the crash report form and the crash database using the table below. Please also indicate whether or not these elements are compliant with the MMUCC 4th edition criteria for data element P5. Injury Status, suspected serious injury.

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
Crash Report Form	Suspected Serious Injury (A)	Yes	N/A	Yes	N/A	Yes
Crash Report Form Instruction Manual	Suspected Serious Injury (A)	Yes	A suspected serious injury is any injury other than fatal which results in one or more of the following:	Yes	* Severe laceration resulting in exposure of underlying tissues/ muscle/ organs or resulting in significant loss of blood. * Broken or distorted extremity (arm or leg) * Crush injuries * Suspected skull, chest or abdominal injury other than bruises or minor lacerations * Significant burns (second and third degree burns over 10% or more of the body) * Unconsciousness when taken from the crash scene * Paralysis	Yes
Crash Database	Suspected Serious Injury (A)	Yes	N/A	Yes	N/A	Yes
Crash Database Data Dictionary	Suspected Serious Injury (A)	Yes	A suspected serious injury is any injury other than fatal which results in one or more of the following:	Yes	* Severe laceration resulting in exposure of underlying tissues/ muscle/ organs or resulting in significant loss of blood. * Broken or distorted extremity (arm or leg) * Crush injuries * Suspected skull, chest or abdominal injury other than bruises or minor lacerations * Significant burns (second and third degree burns over 10% or more of the body) * Unconsciousness when taken from the crash scene * Paralysis	Yes

Enter additional comments here to clarify your response for this question or add supporting information.

Did the State conduct an HSIP program assessment during the reporting period?
No

When does the State plan to complete it’s next HSIP program assessment.

2022

Enter additional comments here to clarify your response for this question or add supporting information.

North Carolina completed an HSIP Program Assessment in 2017. There are no specific plans for the next assessment that will be due by 2022.

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.