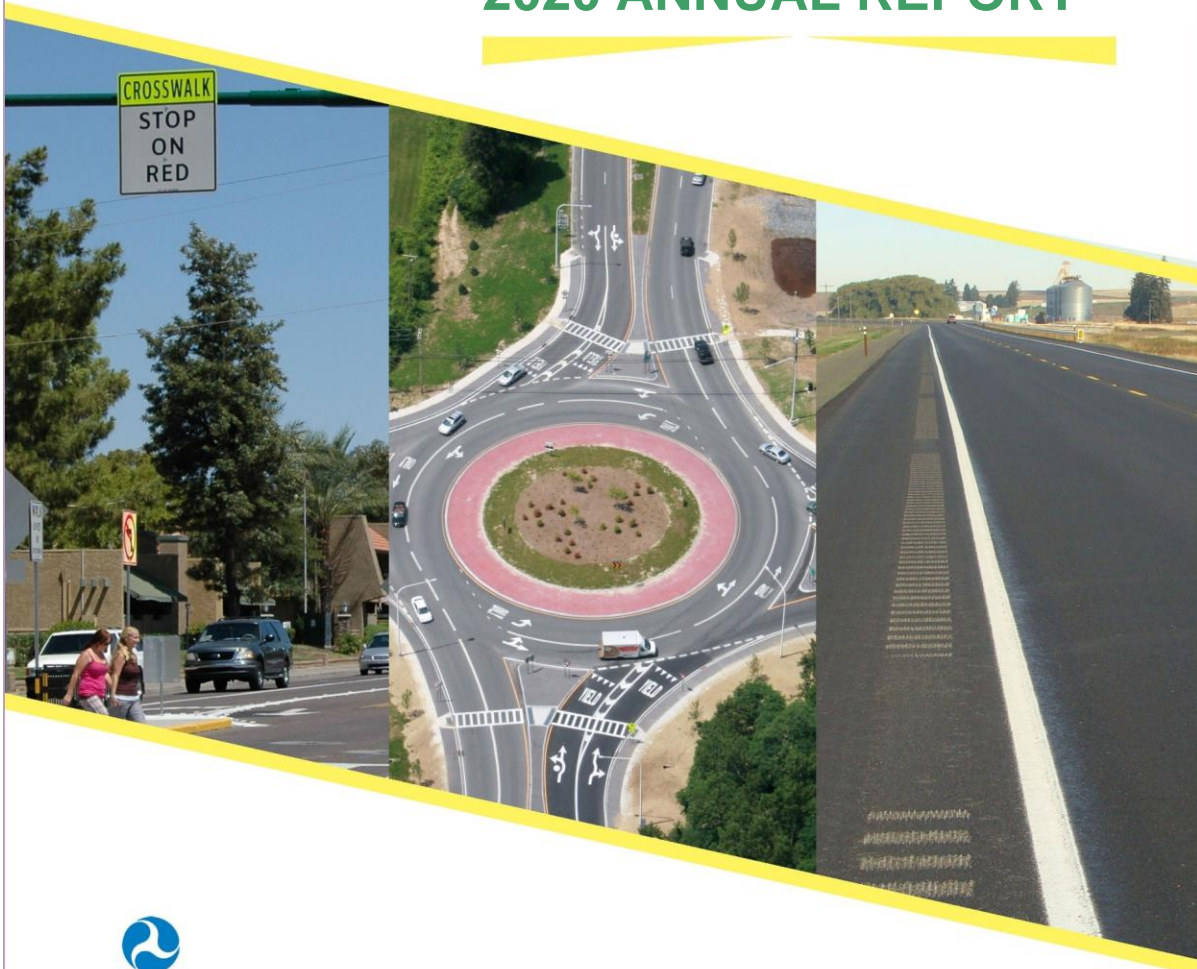




NORTH CAROLINA

HIGHWAY SAFETY IMPROVEMENT PROGRAM 2020 ANNUAL REPORT



U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

Table of Contents

Disclaimer	3
Protection of Data from Discovery Admission into Evidence	3
Executive Summary	4
Introduction	5
Program Structure.....	5
Program Administration	5
Program Methodology	8
Project Implementation	15
Funds Programmed.....	15
General Listing of Projects	17
Safety Performance	33
General Highway Safety Trends.....	33
Safety Performance Targets.....	39
Applicability of Special Rules.....	40
Evaluation	42
Program Effectiveness	42
Effectiveness of Groupings or Similar Types of Improvements	42
Project Effectiveness	47
Compliance Assessment.....	48
Optional Attachments.....	53
Glossary	54

Disclaimer

Protection of Data from Discovery Admission into Evidence

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

23 U.S.C. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section[HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data. 23 U.S.C. 409 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

The 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 2019, there were over 310,000 reported traffic crashes that resulted in 1,474 persons killed and over 120,000 injuries on our roadways. The socioeconomic impact of these crashes is severe, resulting in a loss of over \$30.5 billion to the economy of North Carolina annually. This impact translates to a crash cost to the state of over \$3.4 million every hour and approximately \$83 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. In 2019, North Carolina updated the 2014 Strategic Highway Safety Plan (SHSP) in coordination through the NC Executive Committee for Highway Safety. The goals established in the 2019 SHSP are to reduce fatalities and serious injuries by half by 2035 based on 2018 data and move towards zero by 2050.

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 2019 Calendar Year as the reporting period for the “HSIP Report”; however, some of our 2020 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

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

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 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.

- Design
- Governors Highway Safety Office
- Operations
- Planning
- Traffic Engineering/Safety

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.

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

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.

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

The North Carolina Strategic Highway Safety Plan (SHSP) (herein referred to as the Plan) is essential to addressing highway safety in our State. The Plan is a key component of North Carolina's Highway Safety Improvement Program, a core-Federal-aid program directed at reducing fatalities and serious injuries on all public roads. North Carolina's Executive Committee for Highway Safety first developed the SHSP in 2004. Updates in 2006 and 2014 were implementation focused, identifying significant contributing factors in crashes and implementation strategies with the most potential to address those crashes. Information about the previous Plan, developed in 2014, can be found here . In 2015, the Federally funded legislation Fixing America's Surface Transportation Act continued the requirements that States develop an SHSP that is data- and multidisciplinary stakeholder-driven and that analyzes highway safety concerns and identifies opportunities to improve safety on all public roads. The 2019 Plan is an update to the 2014 Plan and the fourth iteration of the Plan since 2004, and the first 5-year update under recent Federal regulations.

The North Carolina Department of Transportation updated the SHSP in 2019 through the collaborative efforts of diverse safety stakeholders representing the users of State's 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.

The Plan is organized by Focus Areas, which group Emphasis Areas addressing similar crash types, road users, or other characteristics. This framework supports the importance of overlaps and provides a roadmap for implementation. Safety partners representing the Emphasis Areas will work together under the umbrella of the Focus Area to prioritize and implement the actions in each Emphasis Area Action Plan. The following briefly introduces the Focus Areas and corresponding Emphasis Areas.

- Roadway Infrastructure
 - Intersections
 - Lane Departure
- Human Behavior
 - Alertness
 - Occupant Protection
 - Substance Impaired Driving
 - Speed
- All Users
 - Younger Drivers
 - Older Drivers
 - Motorcyclists
 - Pedestrians, Bicyclists, and Personal Mobility
- Data and Evaluation

2020 North Carolina Highway Safety Improvement Program

- Emerging Issues and Data
- Safety Culture
 - All Emphasis Areas

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.

Program Methodology

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

No

The Traffic Safety Systems Section has begun developing an HSIP manual that will detail the multi-step HSIP process by the end of 2020.

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 2015-2019, 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.

- Bicycle Safety
- Intersection
- Pedestrian Safety
- Roadway Departure

Program: Bicycle Safety

Date of Program Methodology: 8/31/2016

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

2020 North Carolina Highway Safety Improvement Program

Competes with all projects

What data types were used in the program methodology?

Crashes

Exposure

Roadway

- Other-Bicycle Crashes

What project identification methodology was used for this 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

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:5/31/2019

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes

Exposure

Roadway

2020 North Carolina Highway Safety Improvement Program

- All crashes
- Other-Urban/Rural Location

What project identification methodology was used for this program?

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

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

Yes

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

Yes

How are projects under this program advanced for implementation?

- Competitive application process
- selection committee

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

Rank of Priority Consideration

Ranking based on B/C:1

Program: Pedestrian Safety

Date of Program Methodology:8/31/2016

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes

Exposure

Roadway

- All crashes

2020 North Carolina Highway Safety Improvement Program

- Other-Pedestrian Crashes

What project identification methodology was used for this program?

- 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

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?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes

Exposure

Roadway

- All crashes

- Other-Access Control
- Other-Route Classification

What project identification methodology was used for this program?

- Crash frequency

2020 North Carolina Highway Safety Improvement Program

- Other-Percent Night Crashes
- Other-Percent Roadway Departure 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

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?

17

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

- Add/Upgrade/Modify/Remove Traffic Signal
- Install/Improve Lighting
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Safety Edge
- Upgrade Guard Rails

What process is used to identify potential countermeasures?

- Crash data analysis
- Engineering Study
- Road Safety Assessment

Our regional traffic engineering staff annually investigate about 350 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 8 Road

2020 North Carolina Highway Safety Improvement Program

Safety Audits annually utilizing independent, multi-disciplinary teams (currently, the RSR Program has been paused due to COVID-19 safety measures). 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

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.

NCDOT's Roadway Safety Management Process uses many HSM techniques for diagnosis, countermeasure selection, economic appraisal, project prioritization and safety evaluations. TSU's Alternative Analysis Initiative utilizes Highway Safety Manual (HSM) predictive methodologies to compare the expected safety performance of different project alternatives based on specific roadway design elements.

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

2020 North Carolina Highway Safety Improvement Program

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

Reporting period is SFY 2020 (7/1/2019 to 6/30/2020)

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	\$30,222,000	\$38,170,342	126.3%
HRRR Special Rule (23 U.S.C. 148(g)(1))	\$0	\$135,000	0%
Penalty Funds (23 U.S.C. 154)	\$0	\$89,647	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	\$11,500,300	\$11,500,330	100%
Totals	\$41,722,300	\$49,895,319	119.59%

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

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

\$0

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

\$0

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

\$0

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

\$0

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

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.

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.

General Listing of Projects

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

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
I-5314	Roadway	Superelevation / cross slope	7.35	Miles	\$459162	\$510180	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
SF-5112A	Intersection geometry	Auxiliary lanes - add left-turn lane	0.5	Miles	\$30308	\$33675.5555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
SS-PE	Non-infrastructure	Road safety audits	155	Locations	\$478193	\$531325.555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Data	
U-6065/W-5203T	Access management	Median crossover - directional crossover	2	Intersections	\$128516	\$142795.555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5143	Alignment	Horizontal curve realignment	0.25	Miles	\$405543	\$450603.333333333	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5202K	Intersection geometry	Auxiliary lanes - add left-turn lane	21	Lanes	\$7952	\$8835.5555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5203AA	Pedestrians and bicyclists	Modify existing crosswalk	1	Crosswalks	\$58311	\$64790	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5203D	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Approaches	\$4024	\$4471.11111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5203J	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$493289	\$548098.888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5203Q	Access management	Median crossover - directional crossover	2	Intersections	\$3369	\$3743.33333333333	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5203W	Access management	Median crossover - directional crossover	2	Intersections	\$217475	\$241638.888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5203X	Access management	Median crossover - directional crossover	2	Intersections	\$101877	\$113196.666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5203Y	Roadway	Rumble strips - edge or shoulder	6.35	Miles	\$80158	\$89064.4444444444	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5204C	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified	0.99	Miles	\$855000	\$950000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5204E	Roadway	Superelevation / cross slope	0.6	Miles	\$11700	\$13000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5204G	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified	4.3	Miles	\$982	\$1091.11111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5205S	Shoulder treatments	Widen shoulder - paved or other	4.3	Miles	\$60000	\$66666.6666666666	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5206AA	Access management	Raised island - install new	1.1	Miles	\$43110	\$47900	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5206AC	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$2223	\$2470	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5206AH	Access management	Raised island - install new	0.8	Miles	\$146340	\$162600	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5206AJ	Intersection geometry	Auxiliary lanes - add left-turn lane	0.27	Miles	\$132673	\$147414.444444444	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5206D	Shoulder treatments	Widen shoulder - paved or other	1.5	Miles	\$89641	\$99601.1111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5206I	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$61749	\$68610	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5206Q	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	0.65	Miles	\$258204	\$286893.333333333	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5207I	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	0.48	Miles	\$263853	\$293170	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5208M/M A	Intersection traffic control	Modify control - all-way stop to roundabout	1	Intersections	\$41711	\$46345.55555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5210K	Intersection traffic control	Modify control - all-way stop to roundabout	1	Intersections	\$6030	\$6700	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5212G	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Approaches	\$287280	\$319200	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5212J	Intersection geometry	Intersection geometry - other	1	Intersections	\$135000	\$150000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5212M	Intersection geometry	Auxiliary lanes - add left-turn lane	0.16	Miles	\$2435	\$2705.555555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5300	Intersection traffic control	Modify traffic signal timing - general retiming	99	Intersections	\$153794	\$170882.2222222222	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5313	Shoulder treatments	Widen shoulder - paved or other	7.4	Miles	\$526968	\$585520	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5315	Roadside	Barrier- metal	4.5	Miles	\$12240	\$13600	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5316	Intersection geometry	Auxiliary lanes - add left-turn lane	0.16	Miles	\$335218	\$372464.4444444444	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5319	Intersection traffic control	Intersection traffic control - other	2.71	Miles	\$26259	\$29176.666666666666	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5329	Intersection geometry	Auxiliary lanes - add left-turn lane	0.6	Miles	\$46094	\$51215.555555555555	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5335	Pedestrians and bicyclists	Medians and pedestrian refuge areas	0.76	Miles	\$660769	\$734187.7777777777	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5500	Roadway	Roadway widening - curve	2.5	Miles	\$1785993	\$1984436.6666666666	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5503	Roadway delineation	Longitudinal pavement markings - remarking	9	Miles	\$500	\$555.555555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5506	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	0.9	Miles	\$1081913	\$1202125.55555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5508	Non-infrastructure	Data/traffic records	99	Locations	\$2567763	\$2853070	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5510	Access management	Raised island - install new	0.31	Miles	\$1238559	\$1376176.66666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5512	Alignment	Horizontal curve realignment	1	Curves	\$335480	\$372755.555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5514	Access management	Raised island - install new	2.2	Miles	\$1658412	\$1842680	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5515	Shoulder treatments	Widen shoulder - paved or other	4.8	Miles	\$26141	\$29045.5555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5516	Alignment	Horizontal and vertical alignment	2.95	Miles	\$195779	\$217532.222222222	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5517	Non-infrastructure	Transportation safety planning	99	Locations	\$4950000	\$5500000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5518	Interchange design	Convert at-grade intersection to interchange	1	Interchanges	\$1476171	\$1640190	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5519	Access management	Median crossover - directional crossover	0.9	Miles	\$313164	\$347960	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5520	Access management	Median crossover - directional crossover	0.9	Miles	\$364500	\$405000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5521	Alignment	Horizontal curve realignment	0.25	Miles	\$360000	\$400000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5601A	Alignment	Horizontal curve realignment	0.26	Miles	\$170350	\$189277.777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5601AF	Roadway	Superelevation / cross slope	0.4	Miles	\$21384	\$23760	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5601AG	Pedestrians and bicyclists	Medians and pedestrian refuge areas	1	Miles	\$34637	\$38485.5555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5601AO	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Approaches	\$12816	\$14240	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601AQ	Pedestrians and bicyclists	Install new crosswalk	1	Crosswalks	\$96931	\$107701.111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5601AR	Roadway	Superelevation / cross slope	1	Curves	\$12387	\$13763.3333333333	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5601AV	Pedestrians and bicyclists	Pedestrian signal - install new at intersection	1	Intersections	\$8392	\$9324.4444444444	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5601AX	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$7695	\$8550	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601B	Access management	Median crossover - directional crossover	2	Intersections	\$57246	\$63606.6666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601BA	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.382	Miles	\$500	\$555.555555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5601BH	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$25828	\$28697.7777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601BX	Intersection geometry	Intersection geometrics - modify skew angle	2	Intersections	\$38652	\$42946.6666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601BZ	Roadway	Superelevation / cross slope	1	Curves	\$26497	\$29441.1111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5601CC	Roadway	Superelevation / cross slope	1	Curves	\$6210	\$6900	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5601CK	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	0.26	Miles	\$116863	\$129847.777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Bicyclists	
W-5601CL	Access management	Median crossover - directional crossover	1	Intersections	\$29203	\$32447.777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601CR	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Approaches	\$28969	\$32187.777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601CW	Access management	Median crossover - directional crossover	1	Intersections	\$42552	\$47280	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601DA	Access management	Median crossover - directional crossover	1	Intersections	\$28807	\$32007.777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601DC	Intersection traffic control	Modify control - modifications to roundabout	1	Intersections	\$231855	\$257616.666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601DF	Shoulder treatments	Widen shoulder - paved or other	4.12	Miles	\$6647	\$7385.5555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5601DH	Pedestrians and bicyclists	Install new crosswalk	1	Crosswalks	\$146106	\$162340	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5601DK	Intersection geometry	Intersection geometry - other	2	Intersections	\$215748	\$239720	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601DM	Intersection geometry	Intersection geometry - other	1	Intersections	\$418410	\$464900	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601DR	Intersection geometry	Auxiliary lanes - add left-turn lane	0.26	Miles	\$2598	\$2886.6666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601EB	Access management	Median crossover - directional crossover	1	Intersections	\$94634	\$105148.888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5601EE	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Approaches	\$108673	\$120747.777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601EH	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	\$4095	\$4550	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601EJ	Access management	Median crossover - directional crossover	0.28	Miles	\$8778	\$9753.3333333333	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601EM	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	2	Intersections	\$12600	\$14000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601EX	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	0.15	Miles	\$207000	\$230000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601EY	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Approaches	\$37647	\$41830	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601EZ	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$59662	\$66291.1111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601FE	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$10222	\$11357.7777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601FH	Roadway	Roadway widening - add lane(s) along segment	0.28	Miles	\$111394	\$123771.111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601FI	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Approaches	\$9855	\$10950	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601FK	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Intersections	\$156862	\$174291.111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601FL	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$46372	\$51524.4444444444	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601FW	Access management	Raised island - install new	0.21	Miles	\$8760	\$9733.3333333333	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5601G	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Approaches	\$431216	\$479128.888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601GD	Intersection traffic control	Modify traffic signal - add additional signal heads	1	Intersections	\$1638	\$1820	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601HD	Intersection traffic control	Pavement markings - miscellaneous/other/unspecified	1	Locations	\$175	\$194.444444444444	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5601HO	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	0.19	Miles	\$1035000	\$1150000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601HV	Alignment	Horizontal curve realignment	0.15	Miles	\$181598	\$201775.555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5601HX	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	1	Intersections	\$10476	\$11640	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601HZ	Roadside	Barrier end treatments (crash cushions, terminals)	9	Guardrail End Terminals	\$5372	\$5968.88888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5601IK	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Approaches	\$65	\$72.2222222222222	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601IN	Access management	Median crossover - directional crossover	1	Intersections	\$83295	\$92550	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601O	Access management	Median crossover - directional crossover	1	Intersections	\$3329	\$3698.88888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5601Z	Access management	Median crossover - directional crossover	1	Intersections	\$44393	\$49325.5555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5602	Roadway	Roadway widening - add lane(s) along segment	0.9	Miles	\$909092	\$1010102.22222222	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5700	Intersection traffic control	Modify traffic signal timing - general retiming	99	Intersections	\$1919383	\$2132647.77777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5701E	Intersection geometry	Intersection geometrics - modify skew angle	1	Intersections	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5701I	Roadway signs and traffic control	Roadway signs (including post) - new or updated	550	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5702O	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	3	Signal heads	\$27000	\$30000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5702Q	Intersection traffic control	Intersection signing - add enhanced regulatory sign (double-up and/or oversize)	1	Approaches	\$9000	\$10000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5702S	Access management	Change in access - close or restrict existing access	1	Locations	\$90900	\$101000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5702U	Intersection traffic control	Modify traffic signal - modernization/replacement	2	Intersections	\$67500	\$75000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5702V	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$270000	\$300000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5702W	Pedestrians and bicyclists	Pedestrian beacons	1	Locations	\$20250	\$22500	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5702X	Pedestrians and bicyclists	Pedestrian beacons	1	Locations	\$18000	\$20000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5702Y	Pedestrians and bicyclists	Pedestrian beacons	1	Locations	\$29250	\$32500	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5702Z	Roadway signs and traffic control	Roadway signs (including post) - new or updated	650	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5703N	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	1	Approaches	\$26100	\$29000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5703O	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	1	Approaches	\$20700	\$23000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5703P	Intersection traffic control	Modify traffic signal - add backplates	1	Approaches	\$7470	\$8300	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5703S	Roadway signs and traffic control	Roadway signs (including post) - new or updated	650	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5704AA	Roadside	Barrier end treatments (crash cushions, terminals)	185	Guardrail End Terminals	\$391500	\$435000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5704AB	Roadway signs and traffic control	Roadway signs (including post) - new or updated	615	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5704C	Intersection traffic control	Modify traffic signal - add additional signal heads	1	Intersections	\$26059	\$28954.4444444444	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5704G	Intersection traffic control	Modify control - all-way stop to roundabout	1	Intersections	\$99000	\$110000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5704K	Roadway	Superelevation / cross slope	1	Curves	\$102600	\$114000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5704M	Intersection traffic control	Modify control - two-way stop to all-way stop	1	Intersections	\$9453	\$10503.3333333333	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5704O	Pedestrians and bicyclists	Pedestrian signal - install new at intersection	1	Intersections	\$85500	\$95000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5704W	Roadway	Pavement surface - high friction surface	1.4	Miles	\$422100	\$469000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5705AJ	Roadside	Barrier- metal	0.2	Miles	\$145611	\$161790	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5705AK	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Approaches	\$72000	\$80000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5705AL	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$4500	\$5000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5705AM	Pedestrians and bicyclists	Pedestrian signal	5	Intersections	\$16200	\$18000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5705AN	Roadway signs and traffic control	Roadway signs (including post) - new or updated	515	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5705B	Intersection traffic control	Modify traffic signal - add flashing yellow arrow	1	Intersections	\$1391	\$1545.55555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5705C	Lighting	Intersection lighting	4	Intersections	\$1748	\$1942.22222222222	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5705H	Alignment	Horizontal curve realignment	0.19	Miles	\$130500	\$145000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5705K	Pedestrians and bicyclists	Pedestrian signal - Pedestrian Hybrid Beacon	2	Locations	\$3246	\$3606.66666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5705R	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$468	\$520	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5705U	Pedestrians and bicyclists	Modify existing crosswalk	1	Crosswalks	\$16000	\$17777.7777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5706AA	Intersection geometry	Intersection geometrics - modify skew angle	1	Intersections	\$81000	\$90000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5706AB	Roadway signs and traffic control	Roadway signs (including post) - new or updated	595	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5706G	Access management	Raised island - install new	0.63	Miles	\$225000	\$250000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5706H	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	\$181350	\$201500	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5706J	Intersection geometry	Intersection geometry - other	3	Intersections	\$49500	\$55000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5706S	Access management	Median crossover - directional crossover	2.1	Miles	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5706U	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	Intersections	\$22500	\$25000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5706V	Intersection traffic control	Intersection flashers - add "when flashing" warning sign-mounted	2	Intersections	\$138600	\$154000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5706W	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$270000	\$300000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5706X	Intersection traffic control	Modify control - modifications to roundabout	1	Intersections	\$315000	\$350000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5706Y	Roadway	Superelevation / cross slope	0.9	Miles	\$9000	\$10000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5706Z	Roadway	Superelevation / cross slope	1	Curves	\$63000	\$70000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5707A	Pedestrians and bicyclists	Pedestrian signal - audible device	4	Intersections	\$125	\$138.888888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5707B	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$356	\$395.555555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5707E	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$22996	\$25551.1111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5707H	Intersection geometry	Intersection geometry - other	2	Intersections	\$108000	\$120000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5707M	Roadway signs and traffic control	Roadway signs (including post) - new or updated	540	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5708A	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$392517	\$436130	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5708C	Alignment	Horizontal curve realignment	0.15	Miles	\$72669	\$80743.3333333333	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5708E	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$6480	\$7200	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5708M	Roadway signs and traffic control	Roadway signs (including post) - new or updated	555	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5709B	Roadway	Superelevation / cross slope	1	Curves	\$82976	\$92195.5555555555	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5709D	Intersection traffic control	Intersection traffic control - other	1	Locations	\$504	\$560	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5709J	Roadway signs and traffic control	Roadway signs (including post) - new or updated	525	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710AB	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$67500	\$75000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710AC	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	\$9000	\$10000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710AG	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710AM	Intersection traffic control	Modify control - all-way stop to roundabout	1	Crossovers	\$261000	\$290000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710AP	Roadway delineation	Longitudinal pavement markings - new	9	Miles	\$4500	\$5000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5710AQ	Roadway delineation	Longitudinal pavement markings - remarking	9	Miles	\$4500	\$5000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5710AR	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$72000	\$80000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5710AS	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$157500	\$175000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710AT	Roadway signs and traffic control	Roadway signs (including post) - new or updated	555	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710B	Access management	Median crossover - directional crossover	3	Intersections	\$46881	\$52090	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710E	Access management	Median crossover - directional crossover	2	Intersections	\$2624	\$2915.55555555556	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710F	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$384	\$426.666666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710I	Intersection traffic control	Modify control - traffic signal to roundabout	1	Intersections	\$67500	\$75000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710J	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$118800	\$132000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710K	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$248582	\$276202.222222222	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710L	Intersection traffic control	Intersection traffic control - other	1	Intersections	\$450000	\$500000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710Q	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	\$565020	\$627800	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5710W	Roadway	Rumble strips - edge or shoulder	20	Miles	\$53467	\$59407.7777777778	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5711C	Roadway signs and traffic control	Roadway signs (including post) - new or updated	705	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5712W	Roadside	Barrier- metal	44	Guardrail End Terminals	\$23838	\$26486.6666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5712Y	Roadway signs and traffic control	Roadway signs (including post) - new or updated	505	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5713B	Roadside	Barrier- metal	0.06	Miles	\$3663	\$4070	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713D	Roadside	Barrier end treatments (crash cushions, terminals)	55	Guardrail End Terminals	\$55890	\$62100	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713F	Roadside	Barrier end treatments (crash cushions, terminals)	59	Guardrail End Terminals	\$20445	\$22716.6666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713J	Roadway	Rumble strips - unspecified or other	28.28	Miles	\$259703	\$288558.888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713P	Roadside	Barrier- metal	0.68	Miles	\$1018	\$1131.11111111111	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713Q	Roadside	Barrier- metal	0.37	Miles	\$8498	\$9442.2222222222	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713T	Roadway delineation	Longitudinal pavement markings - remarking	55.8	Miles	\$9000	\$10000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713U	Roadway delineation	Longitudinal pavement markings - remarking	65.1	Miles	\$9000	\$10000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713V	Roadway delineation	Longitudinal pavement markings - remarking	49	Miles	\$9000	\$10000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713W	Roadside	Barrier- metal	0.76	Miles	\$324000	\$360000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5713X	Pedestrians and bicyclists	Install sidewalk	0.16	Miles	\$4500	\$5000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5713Y	Roadway signs and traffic control	Roadway signs (including post) - new or updated	665	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

2020 North Carolina Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5714C	Roadside	Barrier- metal	0.57	Miles	\$528	\$586.666666666667	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5714E	Alignment	Horizontal curve realignment	1	Curves	\$125	\$138.888888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Lane Departure	
W-5714J	Intersection traffic control	Intersection flashers - add stop sign-mounted	1	Signs	\$1800	\$2000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5714M	Pedestrians and bicyclists	Pedestrian signal - install new at intersection	1	Intersections	\$49500	\$55000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Pedestrians	
W-5714O	Roadway signs and traffic control	Roadway signs (including post) - new or updated	685	Signs	\$45000	\$50000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
W-5804A	Access management	Median crossover - directional crossover	1	Intersections	\$180000	\$200000	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
Y-4805K	Railroad grade crossings	Protective devices	2	Locations	\$2979	\$3310	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	
Z-5700NA	Railroad grade crossings	Protective devices	1	Locations	\$21284	\$23648.8888888889	HSIP (23 U.S.C. 148)			0		State Highway Agency		Intersections	

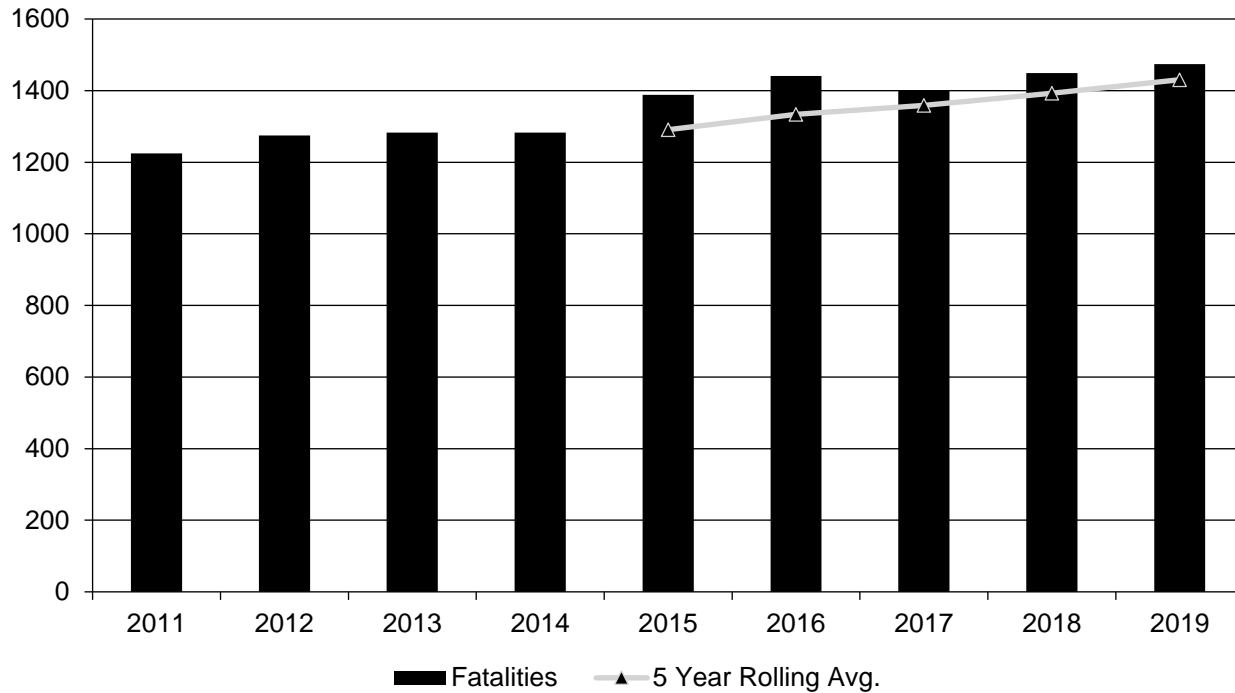
Safety Performance

General Highway Safety Trends

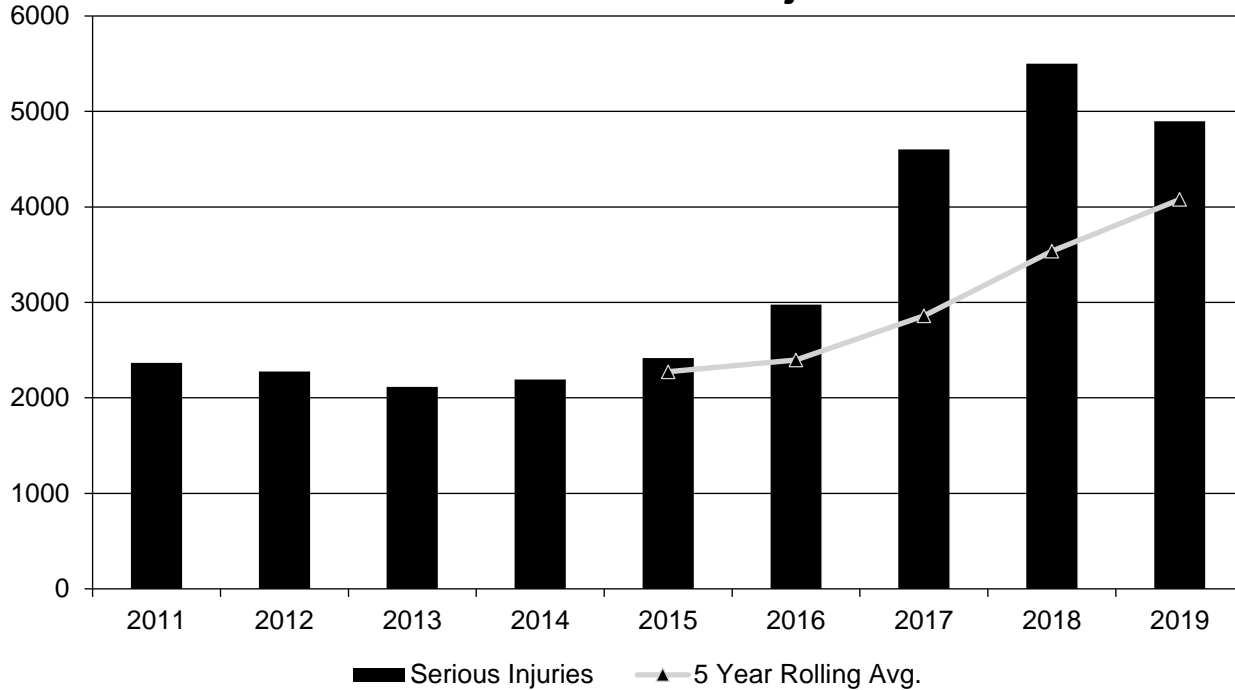
Present data showing the general highway safety trends in the State for the past five years.

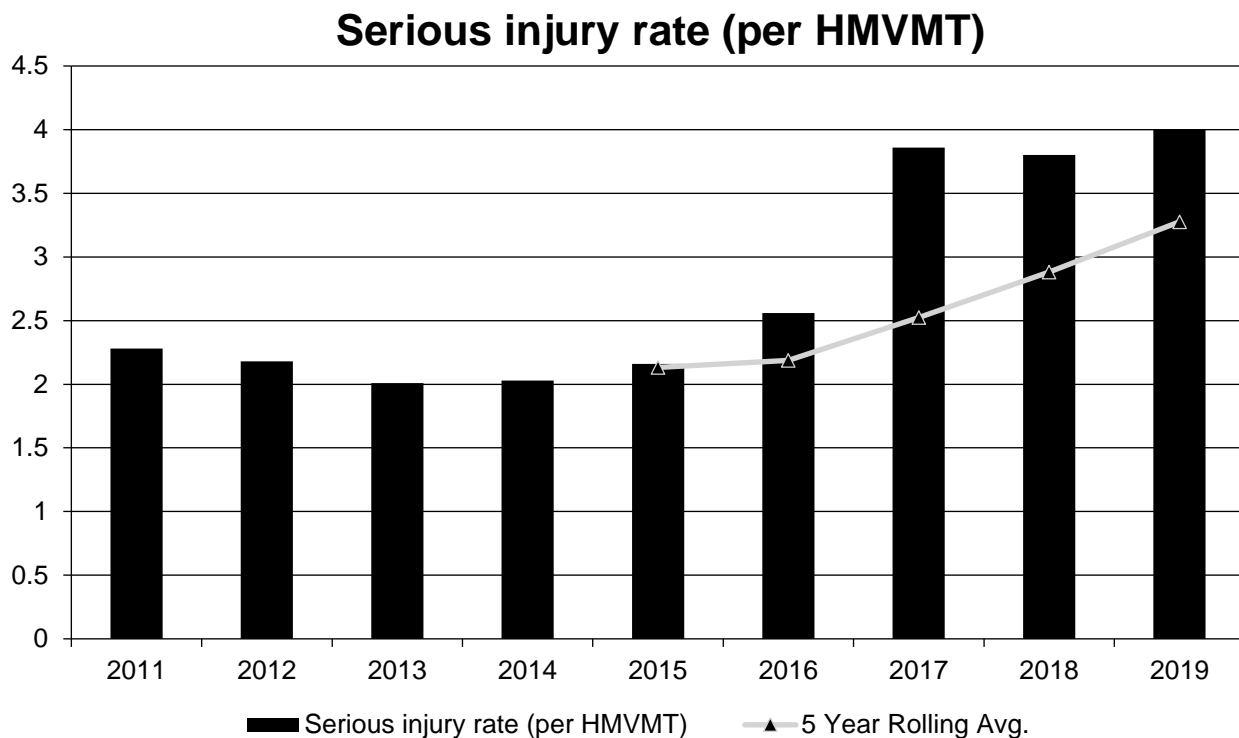
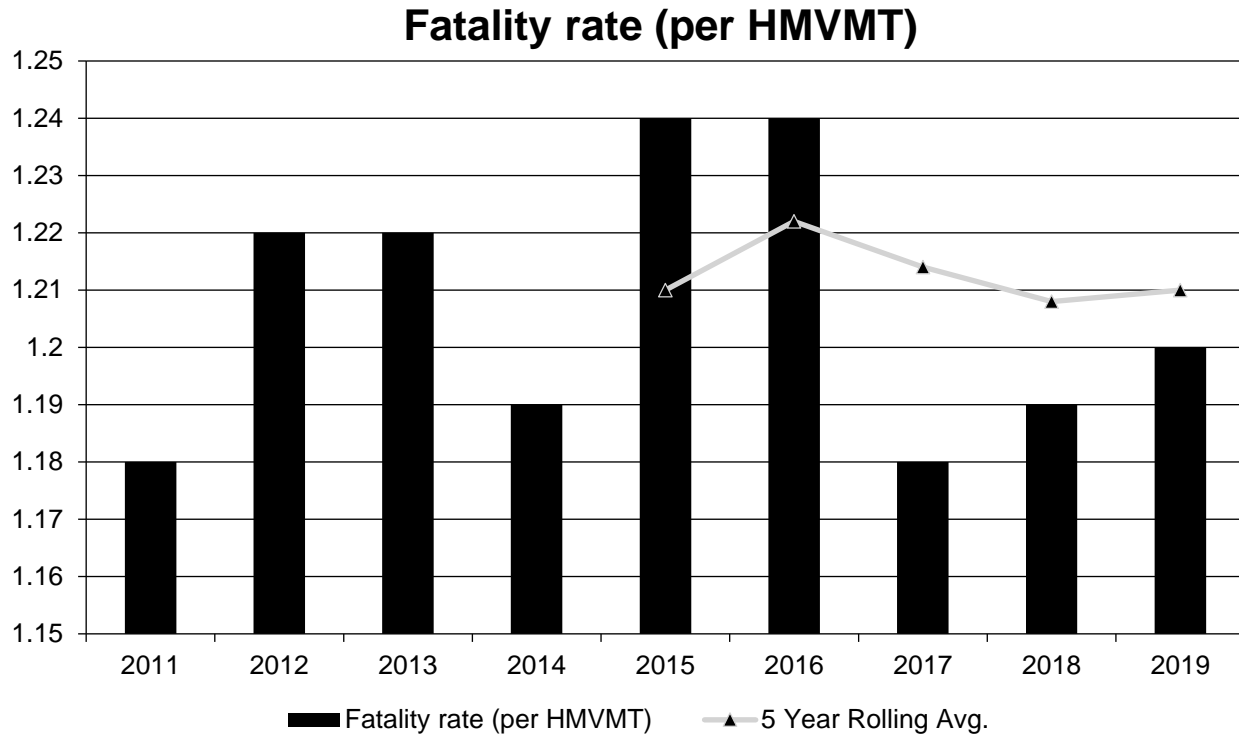
PERFORMANCE MEASURES	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fatalities	1,225	1,275	1,283	1,283	1,388	1,441	1,400	1,449	1,474
Serious Injuries	2,366	2,278	2,115	2,194	2,417	2,976	4,602	5,499	4,898
Fatality rate (per HMVMT)	1.180	1.220	1.220	1.190	1.240	1.240	1.180	1.190	1.200
Serious injury rate (per HMVMT)	2.280	2.180	2.010	2.030	2.160	2.560	3.860	3.800	4.000
Number non-motorized fatalities	183	220	194	189	215	210	218	241	249
Number of non-motorized serious injuries	211	238	191	199	208	227	306	329	372

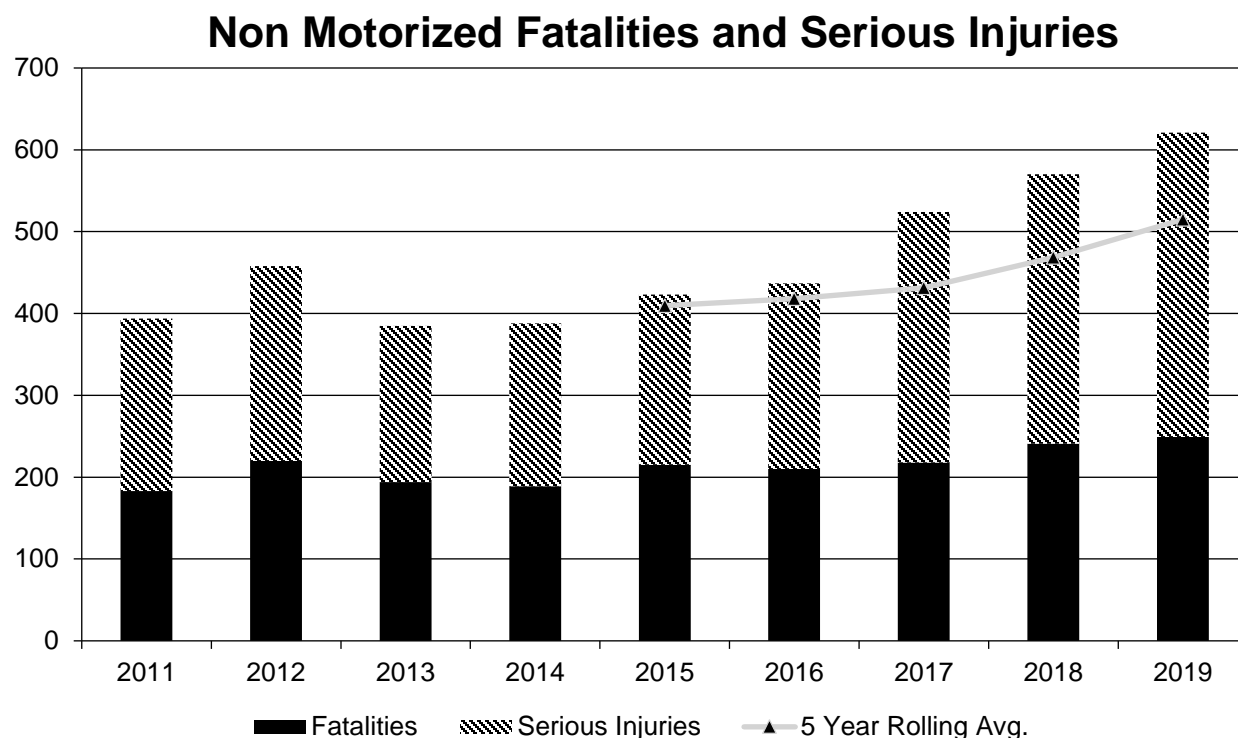
Annual Fatalities



Annual Serious Injuries







Describe fatality data source.

State Motor Vehicle Crash Database

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

Year 2019

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	36.2	163	0.57	2.56
Rural Principal Arterial (RPA) - Other Freeways and Expressways	18.6	70.4	0.7	2.64
Rural Principal Arterial (RPA) - Other	67	358	1.1	5.82
Rural Minor Arterial	118.4	543.8	1.95	8.91
Rural Minor Collector	164.8	693.6	2.63	10.6
Rural Major Collector	94.8	384.4	2.56	10.76

2020 North Carolina Highway Safety Improvement Program

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Local Road or Street	167.2	647	1.91	7.34
Urban Principal Arterial (UPA) - Interstate	86	399.2	0.44	2.01
Urban Principal Arterial (UPA) - Other Freeways and Expressways	30.8	120.8	0.52	2.03
Urban Principal Arterial (UPA) - Other	181	847.2	1.16	5.42
Urban Minor Arterial	143.6	713.8	1.02	5.06
Urban Minor Collector	57.2	307.4	1.04	5.25
Urban Major Collector	17.6	81.6	1.01	5.55
Urban Local Road or Street	49.8	171	0.33	1.44

2020 North Carolina Highway Safety Improvement Program

Year 2019

Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	1,329.8	6,120.4	1.28	5.89
County Highway Agency				
Town or Township Highway Agency				
City or Municipal Highway Agency	45.8	223.6	0.35	1.67
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				

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

Safety Performance Targets

Calendar Year 2021 Targets *

Number of Fatalities:1309.9

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

For the 2021 Highway Safety Improvement Plan (HSIP), the goal is to reduce total fatalities by 4.20 percent each year from 1,427.2 (2015-2019 average) to 1,309.9 (2017-2021 average) by December 31, 2021.

Number of Serious Injuries:3656.1

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

For the 2021 Highway Safety Improvement Plan (HSIP), the goal is to reduce total serious injuries by 3.24 percent each year from 3,905.0 (2015-2019 average) to 3,656.1 (2017-2021 average) by December 31, 2021.

Fatality Rate:1.105

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

For the 2021 Highway Safety Improvement Plan (HSIP), the goal is to reduce the fatality rate by 4.35 percent each year from 1.208 (2015-2019 average) to 1.105 (2017-2021 average) by December 31, 2021.

Serious Injury Rate:3.065

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

For the 2020 Highway Safety Improvement Plan (HSIP), the goal is to reduce the serious injury rate by 3.35 percent each year from 3.281 (2015-2019 average) to 3.065 (2017-2021 average) by December 31, 2021.

Total Number of Non-Motorized Fatalities and Serious Injuries:504.4

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

For the 2021 Highway Safety Improvement Plan (HSIP), the goal is to reduce the total non-motorized fatalities and serious injuries by 3.65 percent each year from 543.4 (2015-2019 average) to 504.4 (2017-2021 average) by December 31, 2021.

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. Historically, the numbers and rates for the five safety performance measures/targets were annually gathered and adjusted in accordance with the 2014 SHSP goal of a 50% reduction of fatalities and serious injuries by the year 2030. NCDOT continually provides target

2020 North Carolina Highway Safety Improvement Program

setting crash data to each of the MPOs so they could establish their 2018, 2019 and upcoming 2020 safety performance targets. Our state has completed our 2019 SHSP update and the goal has been adjusted in hopes of providing a better opportunity for our state to make significant progress towards meeting our future safety performance targets. The goals established in the 2019 SHSP are to reduce fatalities and serious injuries by half by 2035 based on 2018 data and move towards zero by 2050.

Does the State want to report additional optional targets?

No

Describe progress toward meeting the State's 2019 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	1214.7	1430.4
Number of Serious Injuries	2490.6	4078.4
Fatality Rate	1.097	1.210
Serious Injury Rate	2.228	3.276
Non-Motorized Fatalities and Serious Injuries	403.7	515.0

Based on our data as of 6/25/2020, our state was determined to have not met or made significant progress toward the CY 2020 targets. In order to align with the goals of the 2014 North Carolina Strategic Highway Safety Plan (SHSP), our state's Executive Committee for Highway Safety (ECHS) agreed to set our safety targets for each of the five safety performance measures so that they will support the reduction of our statewide fatalities and serious injuries by half before 2030. Because the safety targets are set based on the aspirational 2014 SHSP goal, it will be difficult to make significant progress towards meeting the fatalities, fatality rate, and non-motorized fatalities and serious injuries safety performance targets based on the currently increasing trends in our statewide fatalities and serious injuries. Additionally, due to the substantial increases in historical serious injury trends in September 2016 caused by the national definition change for "Suspected Serious Injury (A)", it will also be difficult to make significant progress towards meeting the serious injuries and serious injury rate safety performance targets.

Applicability of Special Rules

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

No

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

PERFORMANCE MEASURES	2013	2014	2015	2016	2017	2018	2019
Number of Older Driver and Pedestrian Fatalities	190	171	207	197	194	219	241

2020 North Carolina Highway Safety Improvement Program

PERFORMANCE MEASURES	2013	2014	2015	2016	2017	2018	2019
Number of Older Driver and Pedestrian Serious Injuries	151	152	174	225	339	374	397

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Benefit/Cost Ratio

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 main thing measured is if the pattern of crashes the safety countermeasure was installed for actually reduced in the after period.

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?

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

Effectiveness of Groupings or Similar Types of Improvements

Present and describe trends in SHSP emphasis area performance measures.

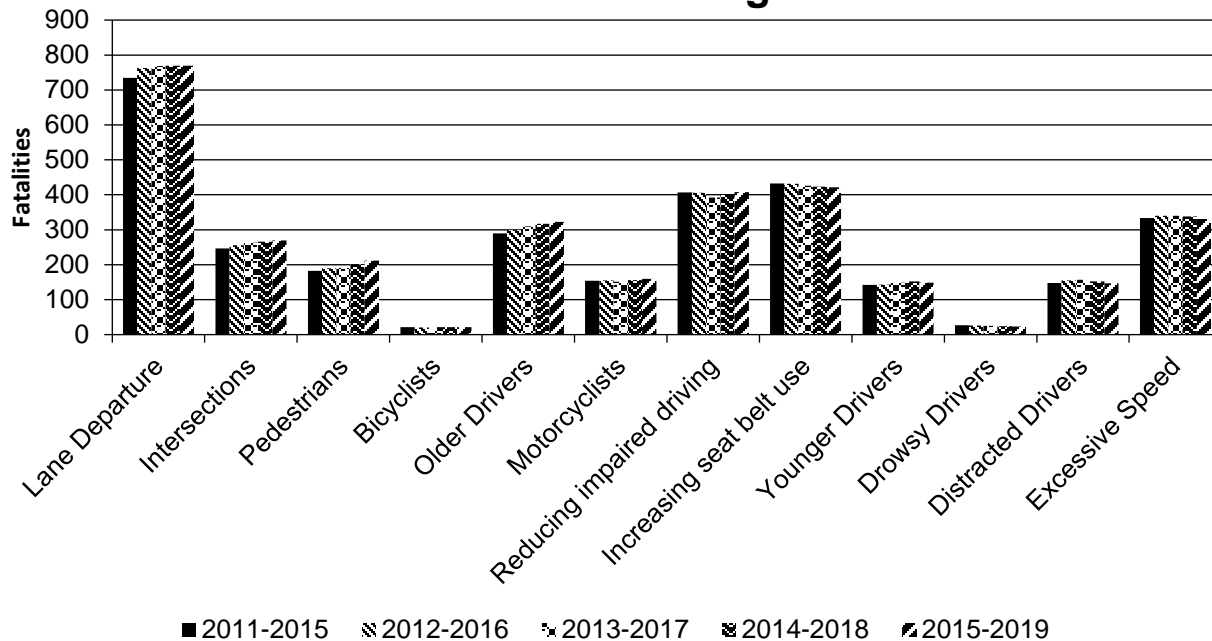
Year 2019

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Lane Departure		769.8	2,058.2	0.65	1.73
Intersections		269.2	885.2	0.23	0.74
Pedestrians		212.2	243.6	0.18	0.21
Bicyclists		21.2	54.8	0.02	0.05

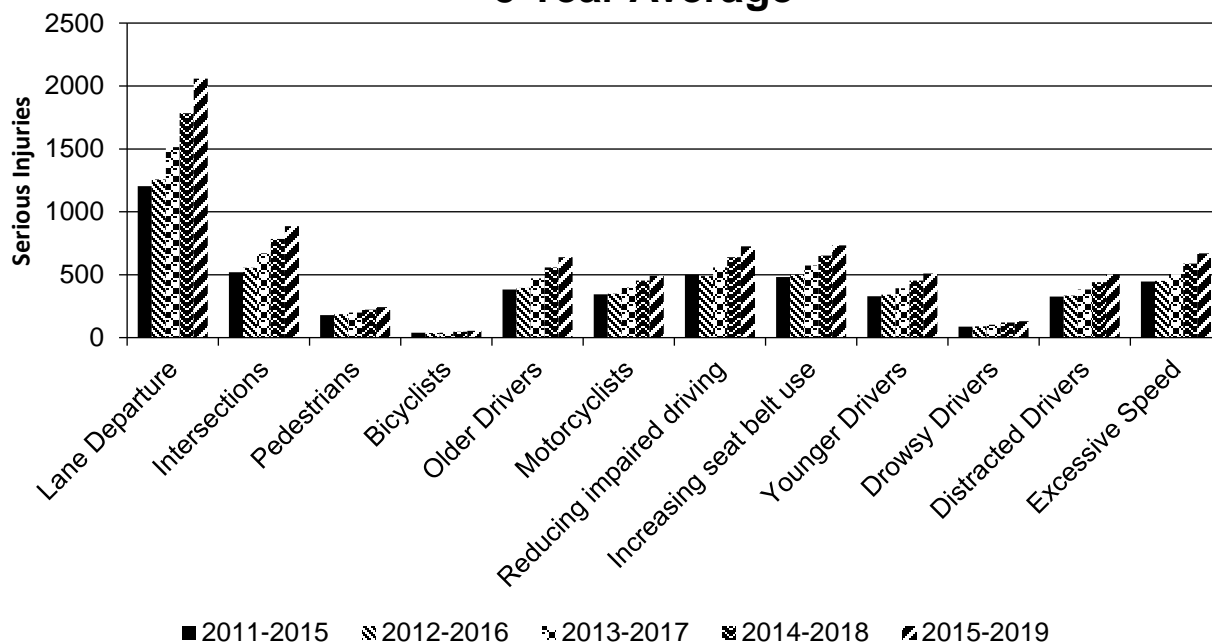
2020 North Carolina Highway Safety Improvement Program

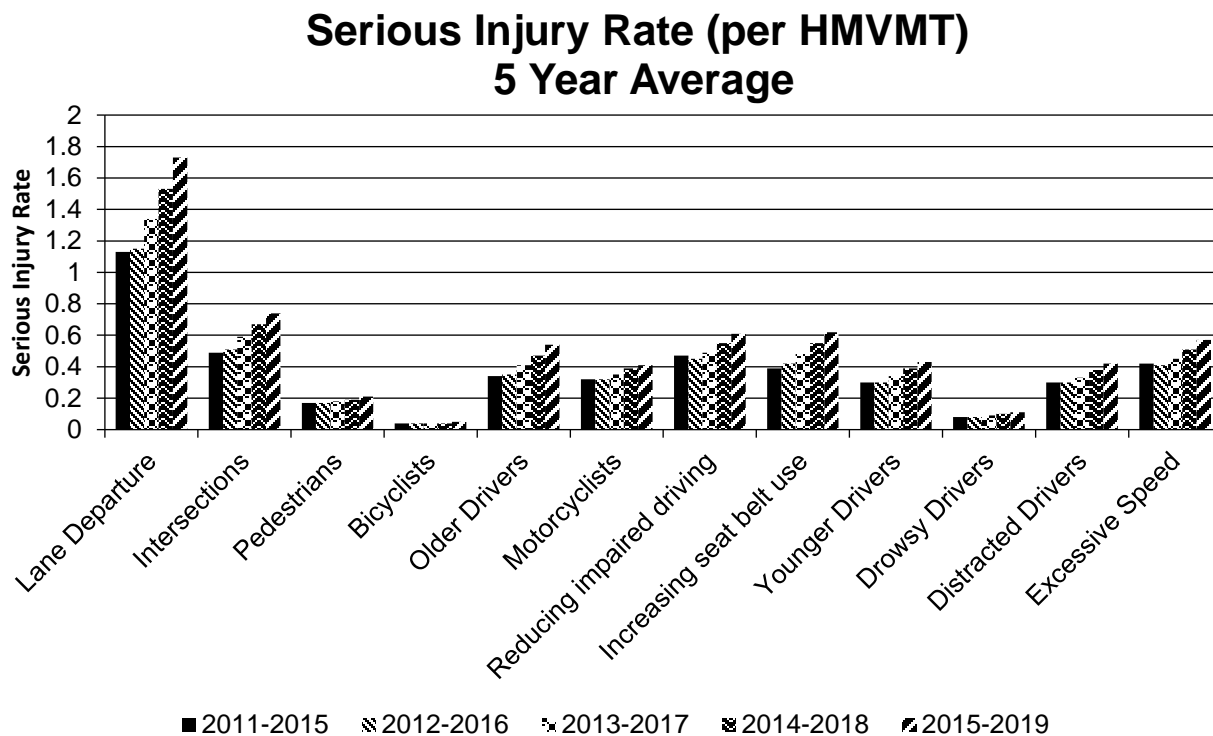
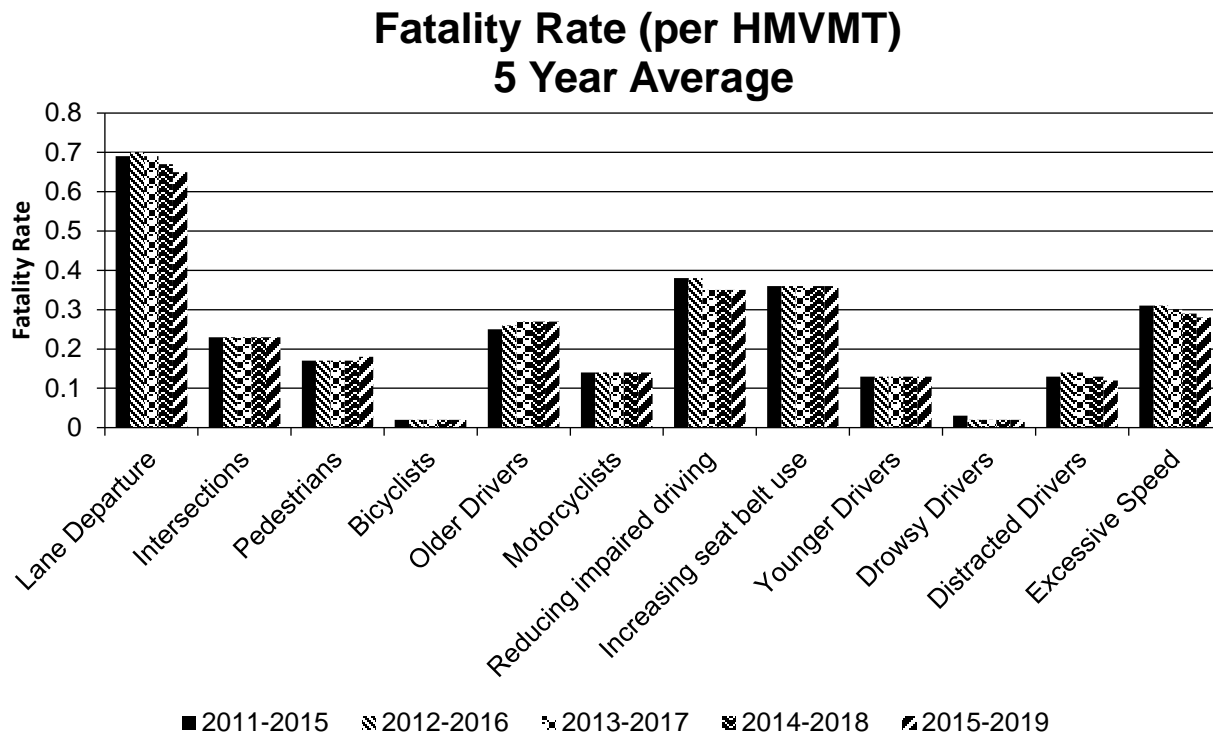
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Older Drivers		323	638.6	0.27	0.54
Motorcyclists		160	491.2	0.14	0.41
Reducing impaired driving		408	725.4	0.35	0.61
Increasing seat belt use		421.6	732.4	0.36	0.62
Younger Drivers		148.4	509.6	0.13	0.43
Drowsy Drivers		22.8	130.6	0.02	0.11
Distracted Drivers		146.4	500.8	0.12	0.42
Excessive Speed		330.4	670.2	0.28	0.57

Number of Fatalities 5 Year Average



Number of Serious Injuries 5 Year Average





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

Yes

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

CounterMeasures: High Speed Roundabouts

Description:

Target Crash Type: Other (define)

Number of Installations: 13

Number of Miles Treated:

Years Before: 3

Years After: 3

Methodology: Before/after using empirical Bayes or Full Bayes

Results: 62% Reduction in Frontal Impact Crashes
<https://connect.ncdot.gov/resources/safety/Safety%20Evaluation%20Completed%20Projects/High%20Speed%20Roundabouts%20EB%20Method%20Nov%202019.pdf>

File Name: One Pager_Highspeed Roundabouts.pdf

Project Effectiveness

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

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
See comments below.														

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>

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:

- Development of warranting criteria and Identification of potentially hazardous locations meeting minimum warrant criteria
- Detailed crash analysis of program locations
- Engineering field investigation of program locations and evaluation of potential recommendations (where appropriate)
- Project development
- Implement countermeasures
- 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?

02/05/2020

What are the years being covered by the current SHSP?

From: 2019 To: 2023

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

2024

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

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

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT	Segment Identifier (12) [12]	100	100					100	100	100	100
	Route Number (8) [8]	100	100								
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]	100	100								
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100						100			
	Begin Point Segment Descriptor (10) [10]	100	100					100	100	100	100
	End Point Segment Descriptor (11) [11]	100	100					100	100	100	100
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]	100	100								
	Functional Class (19) [19]	100	100					100	100	100	100
	Median Type (54) [55]	100									

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Access Control (22) [23]	100									
	One/Two Way Operations (91) [93]	100									
	Number of Through Lanes (31) [32]	100	100					10	10		
	Average Annual Daily Traffic (79) [81]	100	100					10	10		
	AADT Year (80) [82]	100	100								
	Type of Governmental Ownership (4) [4]	100						100		100	
INTERSECTION	Unique Junction Identifier (120) [110]			100	100						
	Location Identifier for Road 1 Crossing Point (122) [112]			100	100						
	Location Identifier for Road 2 Crossing Point (123) [113]			100	100						
	Intersection/Junction Geometry (126) [116]										
	Intersection/Junction Traffic Control (131) [131]										
	AADT for Each Intersecting Road (79) [81]										
	AADT Year (80) [82]										
	Unique Approach Identifier (139) [129]										
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]										
	Location Identifier for Roadway at Beginning of Ramp Terminal (197) [187]					100	100				

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					100	100				
	Ramp Length (187) [177]					100	100				
	Roadway Type at Beginning of Ramp Terminal (195) [185]										
	Roadway Type at End Ramp Terminal (199) [189]					100	100				
	Interchange Type (182) [172]										
	Ramp AADT (191) [181]					100	100				
	Year of Ramp AADT (192) [182]					100	100				
	Functional Class (19) [19]					100	100				
	Type of Governmental Ownership (4) [4]					100	100				
Totals (Average Percent Complete):		100.00	72.22	37.50	37.50	72.73	72.73	80.00	57.78	100.00	80.00

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

Describe actions the State will take moving forward to meet the requirement to have complete access to the MIRE fundamental data elements on all public roads by September 30, 2026.

There are approximately 107,000 miles of public roads in the State of North Carolina. Of those, the NCDOT maintains approximately 80,000, which equates to approximately 75% of all public roadways in the State. 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 Operations Program Management Unit 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 maintain the LRS and many roadway inventory elements. A roadway characteristics file is published every quarter. Anyone can access the roadway inventory GIS files; they are available on the Connect NCDOT website, (<https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx>).

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 Operations Program Management Unit, 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

2020 North Carolina Highway Safety Improvement Program

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 one (1) (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.

Appropriate Data Collection Methodology

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. With 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 scheduled for completion in calendar year 2020.

NCDOT is currently working on an interchange inventory that will satisfy MIRE requirements for interchanges. It is anticipated that this work will be completed within calendar year 2020. NCDOT has also begun work on developing an intersection inventory. It is anticipated that the identification of intersections will be complete within calendar year 2020. Once the identification is complete, the work to begin attributing the intersections will begin.

NCDOT also became a member of the Applications of Enterprise GIS for Transportation, Guidance for a National Transportation Framework (AEGIST) pooled fund study in 2020. This pooled fund study will develop standards for a national transportation dataset as well as document best practices for linear referencing systems to maximize data quality and interoperability. One of the initial focuses of the group will be to evaluate preferred methods for managing intersection data in a linear referencing system. MIRE accommodations are a large part of this effort.

Coordination with Other Agencies

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.

Prioritization Criteria for Collection MIRE FDE on All Public Roads

The FDE collection priorities are as follows:

2020 North Carolina Highway Safety Improvement Program

- Short-term: Interchange elements and Non-Local Paved Roads Segment elements, as well as AADT on all public roads.
- Mid-term: Intersection 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 Operations Program Management Unit. 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.

Costs and Resources for Data Collection

NCDOT has not yet developed any cost estimates, but recognizes that this is one of the next steps needed to be conducted. NCDOT will review the FHWAMIRE *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.

Optional Attachments

Program Structure:

Project Implementation:

Safety Performance:

Evaluation:

One Pager_Highspeed Roundabouts.pdf

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.