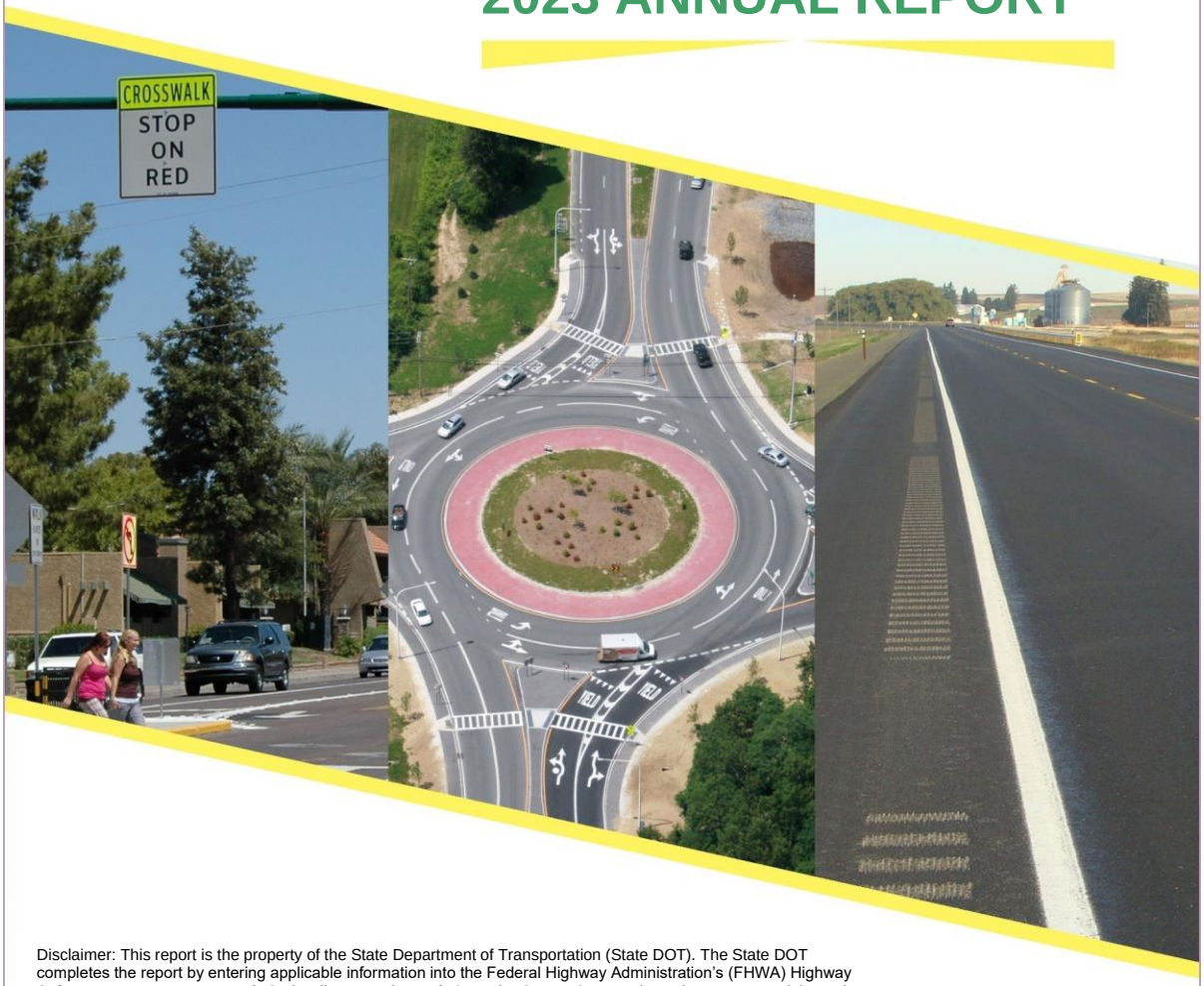
NORTH CAROLINA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2023 ANNUAL REPORT



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Protection of Data from Discovery Admission into Evidence

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

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

Executive Summary

The 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 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 2022, there were almost 300,000 reported traffic crashes that resulted in 1,786 persons killed and over 110,000 injuries on our roadways. The socioeconomic impact of these crashes is severe, resulting in a loss of over $37 billion to the economy of North Carolina annually. This impact translates to a crash cost to the state of over $4.2 million every hour and approximately $102 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 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 moved 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 2022 Calendar Year as the reporting period for the “HSIP Report”; however, some of our 2023 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 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. In addition, TMSD has developed systemic countermeasure programs which address crash types with are overrepresented in statewide fatal and serious injury crashes.

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 the 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 over 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

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.

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

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 include 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 coordination with external partners.

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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 through the web address below. 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.

https://spatial.vhb.com/ncdotshsp/

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
    - 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 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 2019-2023, 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 last conducted an HSIP assessment in 2017. Also further details can be found in the 2022 North Carolina HSIP Implementation Plan that was completed in August 2022.

Select the programs that are administered under the HSIP.

- Bicycle Safety
- HRRR
- 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?

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: HRRR

Date of Program Methodology:8/31/2021

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes

- All crashes
- Other-Lane Departure Crashes

Exposure

Roadway

- Functional classification
- Other-Speed Limit

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Level of service of safety (LOSS)

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?

- 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:100

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

- All crashes

Exposure

- Volume

Roadway

- 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 • 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

- All crashes

Exposure

Roadway

- Other-Access Control
- Other-Route Classification

What project identification methodology was used for this program?

- Crash frequency
- 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?

35.4

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

- Add/Upgrade/Modify/Remove Traffic Signal
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Rumble Strips
- Traffic Control Device Rehabilitation
- Upgrade Guard Rails
- Wrong way driving treatments

What process is used to identify potential countermeasures?

- Crash data analysis
- Engineering Study

Our regional traffic engineering staff annually investigate about 600 locations identified by our network screening process, but other investigations are initiated by other means. Hundreds of fatal site locations are investigated each year. 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 program methodology practices that have changed since the last reporting period.

Systemic Programs in North Carolina

In NC, the HSIP has been traditionally focused on identifying locations with a history of injury crashes and treatable crash patterns that can be corrected by engineering countermeasures. The responsive process is crash data driven and crash pattern focused and includes but is not limited to citizen and safety partner

participation. The systemic process includes the analysis of crash data and roadway characteristics that identify economically effective countermeasures for a broad network application.

Highway Sections

NCDOT has established a process for identifying curves and segments for updated signing, chevrons, and rumble strips along two-lane rural roads. In 2020, a pilot project in one county identified sections for updated signing and chevrons. This same process was used in two NCDOT Divisions in 2021 and two more NCDOT Divisions in 2022.

In 2022, NCDOT established a process to identify lane departure corridors for rural, two-lane roadways. These corridors are being reviewed for potential lane departure treatments such as edge line and centerline rumble strips, long life pavement markings and curve/corridor signing needs.

Intersections

In 2021, NCDOT utilized an all-way stop warrant, which considers entering traffic volumes, to examine 250 two-way stop-controlled intersections for conversion to all-way stop control. In 2022, the Traffic Safety Unit began examining 200 additional intersections for all-way stop conversion.

NCDOT is also establishing a process to modify two-way stop-controlled intersections to signal controlled, roundabouts or reduced conflict applications. Additionally, the Traffic Safety Unit is developing basic intersection warning sign set templates for locations that do not warrant modification of intersection control.

NCDOT has developed a new intersection database to further develop the systemic identification program.

Vulnerable Users

As part of NCDOT's Pedestrian Safety Improvement Program (PSIP), a corridor program has been established to identify corridors based on risk factors. The PSIP will also be used to identify municipalities that are overrepresented in pedestrian crashes. The PSIP will work with local governments to establish processes and plans to improve safety for vulnerable users.

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 Highway Safety Manual predictive methodologies. NCDOT is actively working on new systemic programs to implement wide edge lines, enhanced curve warning signs and safety edge treatments.

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

The emphasis of the state-funded Spot Safety and federally-funded Highway Safety Improvement Programs is to identify and treat high crash and/or high severity locations with relatively low-cost solutions in order to address safety concerns along NC roadways. These programs are a vital tool in improving safety at intersections and segments of roadway where safety needs have been identified by citizens, government

officials, internal staff, or through one of NCDOT's safety initiatives. With these programs, Regional Traffic Engineers collaborate with designers and project managers on project scope and prioritization in order to develop realistic, time-sensitive, and cost-effective projects that address safety issues.

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

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

See the North Carolina 2022 HSIP implementation Plan for additional information and details.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

(7/1/2022 - 6/30/2023)

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$55,938,500	$143,312,623	256.2%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$2,970,000	$4,903,902	165.11%
VRU Safety Special Rule (23 U.S.C. 148(g)(3))	$8,950,000	$3,670,412	41.01%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$0	$42,074	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	$11,440,000	$11,440,000	100%
Totals	$79,298,500	$163,369,011	206.02%

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 over 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
HS-2001F	Access management	Raised island - install new	0.36	Miles	$162000	$180000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	16,000	45	State Highway Agency	Spot	Intersections	
W-5706G	Access management	Raised island - install new	0.629	Miles	$145800	$162000	HSIP (23 U.S.C. 148)			35,000		State Highway Agency	Spot	Intersections	
W-5706A	Access management	Raised island - install new	0.66	Miles	$119624	$132915	HSIP (23 U.S.C. 148)			38,600		State Highway Agency	Spot	Intersections	
W-5702R	Access management	Raised island - install new	0.72	Miles	$2300400	$2556000	HSIP (23 U.S.C. 148)			13,000		State Highway Agency	Spot	Intersections	
W-5710C	Access management	Raised island - install new	3.11	Miles	$162000	$180000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			8,900		State Highway Agency	Spot	Intersections	
W-5710C	Access management	Raised island - install new	3.11	Miles	$30556	$33951	HSIP (23 U.S.C. 148)			8,900		State Highway Agency	Spot	Intersections	
HS-2002J	Access management	Raised island - install new	400	Feet	$97200	$108000	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	7,900	35	State Highway Agency	Spot	Intersections	
W-5702G	Access management	Raised island - install new	4000	Feet	$2342520	$2602800	HSIP (23 U.S.C. 148)			12,000		State Highway Agency	Spot	Intersections	
W-5710R/ U-6086	Access management	Raised island - install new	1	Locations	$1476000	$1640000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			35,000		State Highway Agency	Spot	Pedestrians	
W-5710R/ U-6086	Access management	Raised island - install new	1	Locations	$4131000	$4590000	HSIP (23 U.S.C. 148)			35,000		State Highway Agency	Spot	Pedestrians	
W-5708B	Access management	Median crossover - directional crossover	0.26	Miles	$121500	$135000	HSIP (23 U.S.C. 148)			14,000		State Highway Agency	Spot	Intersections	
W-5710AK	Access management	Median crossover - directional crossover	0.937	Miles	$1085400	$1206000	HSIP (23 U.S.C. 148)			20,000		State Highway Agency	Spot	Intersections	

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
HS-2002D	Access management	Median crossover - directional crossover	1	Intersections	$81000	$90000	HSIP (23 U.S.C. 148)			20,000		State Highway Agency	Spot	Intersections	
HS-2005H	Access management	Median crossover - directional crossover	1	Intersections	$810	$900	HSIP (23 U.S.C. 148)	Urban	Minor Collector	14,000	35	State Highway Agency	Spot	Intersections	
HS-2010F	Access management	Median crossover - directional crossover	1	Intersections	$121500	$135000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	22,000	55	State Highway Agency	Spot	Intersections	
HS-2010H	Access management	Median crossover - directional crossover	1	Intersections	$162000	$180000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	20,500	55	State Highway Agency	Spot	Intersections	
W-5601EV	Access management	Median crossover - directional crossover	1	Miles	$36000	$40000	HSIP (23 U.S.C. 148)			13,000		State Highway Agency	Spot	Intersections	
W-5601GA	Access management	Median crossover - directional crossover	1	Intersections	$1676731	$1863034	HSIP (23 U.S.C. 148)			19,000		State Highway Agency	Spot	Intersections	
W-5705AE	Access management	Median crossover - directional crossover	1	Intersections	$13967	$15519	HSIP (23 U.S.C. 148)			70,215		State Highway Agency	Spot	Intersections	
W-5710AJ	Access management	Median crossover - directional crossover	1	Intersections	$868285	$964761	HSIP (23 U.S.C. 148)			17,000		State Highway Agency	Spot	Intersections	
W-5804A	Access management	Median crossover - directional crossover	1	Intersections	$1957163	$2174626	HSIP (23 U.S.C. 148)			9,700		State Highway Agency	Spot	Intersections	
W-5805G	Access management	Median crossover - directional crossover	1	Intersections	$105300	$117000	HSIP (23 U.S.C. 148)			8,400		State Highway Agency	Spot	Intersections	
HS-2003W	Access management	Median crossover - directional crossover	2	Access points	$1539000	$1710000	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	35,000		State Highway Agency	Spot	Intersections	
HS-2004W	Access management	Median crossover - directional crossover	2	Intersections	$81000	$90000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	25,000	55	State Highway Agency	Spot	Intersections	
W-5601DQ	Access management	Median crossover - directional crossover	2	Crossovers	$5670	$6300	HSIP (23 U.S.C. 148)			14,000		State Highway Agency	Spot	Intersections	
W-5708G	Access management	Median crossover - directional crossover	2	Intersections	$942297	$1046997	HSIP (23 U.S.C. 148)			21,000		State Highway Agency	Spot	Intersections	

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W-5709H	Access management	Median crossover - directional crossover	2	Intersections	$8100	$9000	HSIP (23 U.S.C. 148)			34,000		State Highway Agency	Spot	Intersections	
HS-2002K	Access management	Median crossover - directional crossover	3	Crossovers	$874800	$972000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	12,500	60	State Highway Agency	Spot	Intersections	
U-6229	Access management	Median crossover - directional crossover	3	Crossovers	$1620000	$1800000	HSIP (23 U.S.C. 148)			27,000		State Highway Agency	Spot	Intersections	
W-5701B	Access management	Median crossover - directional crossover	6	Intersections	$5232600	$5814000	HSIP (23 U.S.C. 148)			4,700		State Highway Agency	Spot	Intersections	
HS-2002E	Access management	Median crossover - relocate/close crossover	1	Intersections	$592920	$658800	HSIP (23 U.S.C. 148)			28,000		State Highway Agency	Spot	Intersections	
W-5704A	Access management	Median crossover - relocate/close crossover	3	Crossovers	$16955	$18839	HSIP (23 U.S.C. 148)			36,000		State Highway Agency	Spot	Intersections	
W-5601DG	Access management	Median crossover - relocate/close crossover	15	Crossovers	$15448	$17165	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2010A	Access management	Change in access - close or restrict existing access	1	Intersections	$1680750	$1867500	HSIP (23 U.S.C. 148)			26,000		State Highway Agency	Spot	Intersections	
W-5702S	Access management	Change in access - close or restrict existing access	1	Intersections	$882900	$981000	HSIP (23 U.S.C. 148)			23,000		State Highway Agency	Spot	Intersections	
HS-2006C	Access management	Access management - other	3	Intersections	$12150	$13500	HSIP (23 U.S.C. 148)			11,500		State Highway Agency	Spot	Pedestrians	
W-5601GC	Alignment	Vertical alignment or elevation change	1	Intersections	$1032750	$1147500	HSIP (23 U.S.C. 148)			3,400		State Highway Agency	Spot	Intersections	
HS-2004L	Alignment	Horizontal curve realignment	0.23	Miles	$669870	$744300	HSIP (23 U.S.C. 148)			3,500		State Highway Agency	Spot	Lane Departure	
W-5804B	Alignment	Horizontal curve realignment	1	Intersections	$596160	$662400	HSIP (23 U.S.C. 148)			2,500		State Highway Agency	Spot	Lane Departure	
W-5601R	Alignment	Horizontal curve realignment	1.372	Miles	$28350	$31500	HSIP (23 U.S.C. 148)			3,000		State Highway Agency	Spot	Lane Departure	

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W-5705H	Alignment	Horizontal curve realignment	980	Feet	$817290	$908100	HSIP (23 U.S.C. 148)			2,100		State Highway Agency	Spot	Lane Departure	
HS-2014G	Alignment	Horizontal and vertical alignment	1	Curves	$60750	$67500	HSIP (23 U.S.C. 148)	Rural	Major Collector	775	30	State Highway Agency	Spot	Lane Departure	
HS-2009B	Interchange design	Interchange design - other	4	Intersections	$2065500	$2295000	HSIP (23 U.S.C. 148)			14,500		State Highway Agency	Spot	Intersections	
W-5600	Interchange design	Convert at-grade intersection to interchange	3	Intersections	$1722223	$1913581	HSIP (23 U.S.C. 148)			26,000		State Highway Agency	Spot	Intersections	
HS-2006N	Intersection geometry	Modify lane assignment	1.153	Miles	$8100	$9000	HSIP (23 U.S.C. 148)	Urban	Local Road or Street	15,000	35	State Highway Agency	Spot	Intersections	
HS-2006G	Intersection geometry	Intersection realignment	0.19	Miles	$328050	$364500	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	3,500	45	State Highway Agency	Spot	Intersections	
HS-2007I	Intersection geometry	Intersection realignment	1	Intersections	$76140	$84600	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	13,000	45	State Highway Agency	Spot	Intersections	
HS-2009I	Intersection geometry	Intersection realignment	1	Intersections	$42930	$47700	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	8,800	55	State Highway Agency	Spot	Intersections	
HS-2005O	Intersection geometry	Intersection geometry - other	1	Intersections	$121500	$135000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	5,300	55	State Highway Agency	Spot	Intersections	
HS-2009H	Intersection geometry	Intersection geometry - other	2	Intersections	$162000	$180000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	26,000	45	State Highway Agency	Spot	Intersections	
HS-2009D	Intersection geometry	Intersection geometry - other	1	Lanes	$421200	$468000	HSIP (23 U.S.C. 148)			14,500		State Highway Agency	Spot	Intersections	
HS-2012C	Intersection geometry	Intersection geometry - other	1	Intersections	$145800	$162000	HSIP (23 U.S.C. 148)			8,500		State Highway Agency	Spot	Intersections	
W-5212J	Intersection geometry	Intersection geometry - other	1	Intersections	$114	$127	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
HS-2006D	Intersection geometry	Intersection geometry - other	2	Intersections	$12150	$13500	HSIP (23 U.S.C. 148)			3,400		State Highway Agency	Spot	Intersections	

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W-5703Q	Intersection geometry	Intersection geometry - other	2	Intersections	$4231	$4701	HSIP (23 U.S.C. 148)			4,350		State Highway Agency	Spot	Intersections	
W-5707H	Intersection geometry	Intersection geometry - other	2	Intersections	$8100	$9000	HSIP (23 U.S.C. 148)			4,100		State Highway Agency	Spot	Intersections	
W-5701H	Intersection geometry	Intersection realignment	1	Intersections	$579150	$643500	HSIP (23 U.S.C. 148)			4,100		State Highway Agency	Spot	Intersections	
W-5601HP	Intersection geometry	Intersection realignment	2	Intersections	$202047	$224497	HSIP (23 U.S.C. 148)			6,500		State Highway Agency	Spot	Intersections	
W-5701E	Intersection geometry	Intersection realignment	1	Intersections	$176580	$196200	HSIP (23 U.S.C. 148)			3,000		State Highway Agency	Spot	Intersections	
W-5706AA	Intersection geometry	Intersection realignment	1	Intersections	$290445	$322717	HSIP (23 U.S.C. 148)			6,200		State Highway Agency	Spot	Intersections	
W-5601BS	Intersection geometry	Intersection realignment	1	Intersections	$17010	$18900	HSIP (23 U.S.C. 148)			4,300		State Highway Agency	Spot	Lane Departure	
W-5704L	Intersection geometry	Intersection realignment	1	Intersections	$11380	$12644	HSIP (23 U.S.C. 148)			13,500		State Highway Agency	Spot	Intersections	
W-5703H	Intersection geometry	Intersection realignment	1	Intersections	$290722	$323024	HSIP (23 U.S.C. 148)			19,000		State Highway Agency	Spot	Intersections	
HS-2008E	Intersection geometry	Innovative Intersection (e.g. MUT, RCUT, QR)	1	Intersections	$24057	$26730	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other Freeways & Expressways	20,000	45	State Highway Agency	Spot	Intersections	
W-5703R	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$807570	$897300	HSIP (23 U.S.C. 148)			36,000		State Highway Agency	Spot	Intersections	
W-5712V	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$48600	$54000	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
W-5601HO	Intersection geometry	Add/modify auxiliary lanes	0.19	Miles	$1623485	$1803872	HSIP (23 U.S.C. 148)			4,100		State Highway Agency	Spot	Intersections	
W-5601EX	Intersection geometry	Add/modify auxiliary lanes	800	Feet	$722172	$802413	HSIP (23 U.S.C. 148)			11,000		State Highway Agency	Spot	Intersections	

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W-5708D	Intersection geometry	Add/modify auxiliary lanes	0.1	Miles	$437400	$486000	HSIP (23 U.S.C. 148)			6,700		State Highway Agency	Spot	Intersections	
HS-2004B	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$4860	$5400	HSIP (23 U.S.C. 148)			6,500		State Highway Agency	Spot	Intersections	
W-5203U	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$1746360	$1940400	HSIP (23 U.S.C. 148)			27,500		State Highway Agency	Spot	Intersections	
W-5601EW	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$14482	$16091	HSIP (23 U.S.C. 148)			14,500		State Highway Agency	Spot	Intersections	
W-5601EY	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$8910	$9900	HSIP (23 U.S.C. 148)			11,000		State Highway Agency	Spot	Intersections	
W-5705AI	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$980100	$1089000	HSIP (23 U.S.C. 148)			14,000		State Highway Agency	Spot	Intersections	
W-5705AK	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$102060	$113400	HSIP (23 U.S.C. 148)			9,200		State Highway Agency	Spot	Intersections	
W-5706H	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$89100	$99000	HSIP (23 U.S.C. 148)			3,600		State Highway Agency	Spot	Intersections	
W-5709C	Intersection geometry	Add/modify auxiliary lanes	1	Lanes	$35190	$39100	HSIP (23 U.S.C. 148)			8,400		State Highway Agency	Spot	Intersections	
W-5710AC	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$180086	$200096	HSIP (23 U.S.C. 148)			8,800		State Highway Agency	Spot	Intersections	
W-5710AN	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$368550	$409500	HSIP (23 U.S.C. 148)			16,000		State Highway Agency	Spot	Intersections	
W-5710S	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$664242	$738047	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
W-5713L	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$82946	$92162	HSIP (23 U.S.C. 148)			11,000		State Highway Agency	Spot	Intersections	
W-5713N	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$144584	$160649	HSIP (23 U.S.C. 148)			9,500		State Highway Agency	Spot	Intersections	

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W-5814A	Intersection geometry	Add/modify auxiliary lanes	1	Lanes	$20940	$23267	HSIP (23 U.S.C. 148)			5,700		State Highway Agency	Spot	Intersections	
W-5704F	Intersection geometry	Add/modify auxiliary lanes	2	Intersections	$1007011	$1118901	HSIP (23 U.S.C. 148)			7,900		State Highway Agency	Spot	Intersections	
W-5705Y	Intersection geometry	Add/modify auxiliary lanes	500	Feet	$364500	$405000	HSIP (23 U.S.C. 148)			32,000		State Highway Agency	Spot	Intersections	
HS-2005I	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$40500	$45000	HSIP (23 U.S.C. 148)	Urban	Local Road or Street	13,000	35	State Highway Agency	Spot	Intersections	
HS-2005N	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$174150	$193500	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	21,500	45	State Highway Agency	Spot	Intersections	
HS-2007H	Intersection geometry	Add/modify auxiliary lanes	1	Lanes	$32400	$36000	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	5,500	45	State Highway Agency	Spot	Intersections	
HS-2013P	Intersection geometry	Add/modify auxiliary lanes	1	Lanes	$52650	$58500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Major Collector	8,350	35	State Highway Agency	Spot	Intersections	
HS-2002L	Intersection geometry	Add/modify auxiliary lanes	2	Intersections	$348300	$387000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	31,000	45	State Highway Agency	Spot	Intersections	
HS-2002P	Intersection geometry	Add/modify auxiliary lanes	2	Intersections	$40500	$45000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	7,100	55	State Highway Agency	Spot	Intersections	
HS-2003I	Intersection traffic control	Systemic improvements – stop-controlled	1	Intersections	$31590	$35100	HSIP (23 U.S.C. 148)			2,400		State Highway Agency	Spot	Intersections	
W-5601GI	Intersection traffic control	Systemic improvements – signal-controlled	1	Intersections	$9720	$10800	HSIP (23 U.S.C. 148)			20,178		State Highway Agency	Spot	Intersections	
W-5715	Intersection traffic control	Modify traffic signal timing – general retiming		Intersections	$5785796	$6428662	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Intersections	
W-5803E	Intersection traffic control	Modify traffic signal timing – adjust clearance interval (yellow change and/or all-red)	1	Intersections	$20250	$22500	HSIP (23 U.S.C. 148)			26,000		State Highway Agency	Spot	Intersections	

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HS-2002N	Intersection traffic control	Modify traffic signal –other	1	Intersections	$55080	$61200	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	8,100	55	State Highway Agency	Spot	Intersections	
HS-2002O	Intersection traffic control	Modify traffic signal –other	2	Approaches	$23490	$26100	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	14,000	55	State Highway Agency	Spot	Intersections	
HS-2007D	Intersection traffic control	Modify traffic signal –other	4	Intersections	$405000	$450000	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	30,000	55	State Highway Agency	Spot	Intersections	
HS-2014N	Intersection traffic control	Modify traffic signal –other	1	Intersections	$231660	$257400	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	16,900	20	State Highway Agency	Systemic	Pedestrians	
HS-2003AA	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$4050	$4500	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	12,500		State Highway Agency	Spot	Intersections	
W-5705AG	Intersection traffic control	Modify traffic signal –other	1	Intersections	$8910	$9900	HSIP (23 U.S.C. 148)			15,000		State Highway Agency	Spot	Intersections	
HS-2003AD	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$4860	$5400	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	55,000		State Highway Agency	Spot	Intersections	
HS-2003G	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$5670	$6300	HSIP (23 U.S.C. 148)	Urban	Major Collector	9,100		State Highway Agency	Spot	Intersections	
HS-2003J	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$11340	$12600	HSIP (23 U.S.C. 148)			29,000		State Highway Agency	Spot	Intersections	
HS-2004N	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$23490	$26100	HSIP (23 U.S.C. 148)	Rural	Minor Collector	4,500	55	State Highway Agency	Spot	Intersections	
HS-2006L	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$2430	$2700	HSIP (23 U.S.C. 148)			14,500		State Highway Agency	Spot	Intersections	
W-5703N	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$1450	$1611	HSIP (23 U.S.C. 148)			17,000		State Highway Agency	Spot	Intersections	
W-5703O	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$75524	$83915	HSIP (23 U.S.C. 148)			56,000		State Highway Agency	Spot	Intersections	
W-5705AA	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$8822	$9802	HSIP (23 U.S.C. 148)			23,000		State Highway Agency	Spot	Intersections	

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W-5705AB	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$19808	$22009	HSIP (23 U.S.C. 148)			20,000		State Highway Agency	Spot	Intersections	
W-5705AC	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$2012	$2235	HSIP (23 U.S.C. 148)			29,000		State Highway Agency	Spot	Intersections	
W-5705AD	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$4645	$5161	HSIP (23 U.S.C. 148)			11,000		State Highway Agency	Spot	Intersections	
W-5705AF	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$6393	$7103	HSIP (23 U.S.C. 148)			5,750		State Highway Agency	Spot	Intersections	
W-5705AH	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Intersections	$11218	$12465	HSIP (23 U.S.C. 148)			15,000		State Highway Agency	Spot	Intersections	
HS-2002M	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	2	Intersections	$54270	$60300	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	17,500	35	State Highway Agency	Spot	Intersections	
W-5805H	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	3	Intersections	$1782	$1980	HSIP (23 U.S.C. 148)			13,000		State Highway Agency	Spot	Intersections	
W-5601DO	Intersection traffic control	Modify traffic signal –other	10	Intersections	$203913	$226570	HSIP (23 U.S.C. 148)			18,900		State Highway Agency	Spot	Intersections	
W-5803C	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	1	Intersections	$2430	$2700	HSIP (23 U.S.C. 148)			31,000		State Highway Agency	Spot	Intersections	
HS-2003K	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	1	Intersections	$3240	$3600	HSIP (23 U.S.C. 148)			18,300		State Highway Agency	Spot	Intersections	
W-5703L	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	1	Intersections	$1620	$1800	HSIP (23 U.S.C. 148)			44,000		State Highway Agency	Spot	Intersections	
W-5703P	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	1	Intersections	$1620	$1800	HSIP (23 U.S.C. 148)			45,000		State Highway Agency	Spot	Intersections	
HS-2003E	Intersection traffic control	Modify traffic signal – add additional signal heads	1	Intersections	$4050	$4500	HSIP (23 U.S.C. 148)	Rural	Major Collector	8,500		State Highway Agency	Spot	Intersections	
HS-2003F	Intersection traffic control	Modify traffic signal – add additional signal heads	1	Intersections	$12150	$13500	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	40,000		State Highway Agency	Spot	Intersections	

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HS-2003L	Intersection traffic control	Modify traffic signal – add additional signal heads	1	Intersections	$4860	$5400	HSIP (23 U.S.C. 148)			36,750		State Highway Agency	Spot	Intersections	
HS-2003M	Intersection traffic control	Modify traffic signal – add additional signal heads	1	Intersections	$8910	$9900	HSIP (23 U.S.C. 148)			10,000		State Highway Agency	Spot	Intersections	
HS-2003Q	Intersection traffic control	Modify traffic signal – add additional signal heads	1	Intersections	$4050	$4500	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	17,000		State Highway Agency	Spot	Intersections	
HS-2003T	Intersection traffic control	Modify traffic signal – add additional signal heads	1	Intersections	$4860	$5400	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	36,500		State Highway Agency	Spot	Intersections	
W-5703K	Intersection traffic control	Modify traffic signal – add additional signal heads	1	Intersections	$10340	$11489	HSIP (23 U.S.C. 148)			39,000		State Highway Agency	Spot	Intersections	
HS-2003P	Intersection traffic control	Modify traffic signal – add additional signal heads	1	Intersections	$55080	$61200	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	26,000		State Highway Agency	Spot	Pedestrians	
HS-2003P	Intersection traffic control	Modify traffic signal – add additional signal heads	1	Intersections	$8100	$9000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	26,000		State Highway Agency	Spot	Pedestrians	
HS-2005A	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$10166	$11295	HSIP (23 U.S.C. 148)			3,400		State Highway Agency	Spot	Intersections	
HS-2006I	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$324000	$360000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	6,200	55	State Highway Agency	Spot	Intersections	
W-5601AC	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$290326	$322584	HSIP (23 U.S.C. 148)			3,500		State Highway Agency	Spot	Intersections	
W-5702I	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$3333960	$3704400	HSIP (23 U.S.C. 148)			9,700		State Highway Agency	Spot	Intersections	
W-5702M	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$2611350	$2901500	HSIP (23 U.S.C. 148)			7,800		State Highway Agency	Spot	Intersections	
W-5702V	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$283500	$315000	HSIP (23 U.S.C. 148)			1,400		State Highway Agency	Spot	Intersections	

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W-5704S	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$3154950	$3505500	HSIP (23 U.S.C. 148)			6,000		State Highway Agency	Spot	Intersections	
W-5706O	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$2127870	$2364300	HSIP (23 U.S.C. 148)			6,400		State Highway Agency	Spot	Intersections	
W-5706W	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$1458000	$1620000	HSIP (23 U.S.C. 148)			5,200		State Highway Agency	Spot	Intersections	
W-5708A	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$2542375	$2824861	HSIP (23 U.S.C. 148)			4,700		State Highway Agency	Spot	Intersections	
W-5709E	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$510300	$567000	HSIP (23 U.S.C. 148)			5,800		State Highway Agency	Spot	Intersections	
W-5710AA	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$1087020	$1207800	HSIP (23 U.S.C. 148)			16,000		State Highway Agency	Spot	Intersections	
W-5710AB	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$590393	$655992	HSIP (23 U.S.C. 148)			1,800		State Highway Agency	Spot	Intersections	
W-5710AG	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$706388	$784875	HSIP (23 U.S.C. 148)			1,800		State Highway Agency	Spot	Intersections	
W-5710AI	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$42930	$47700	HSIP (23 U.S.C. 148)			7,900		State Highway Agency	Spot	Intersections	
W-5710AL	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$6661	$7401	HSIP (23 U.S.C. 148)			3,400		State Highway Agency	Spot	Intersections	
W-5710AR	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$1225530	$1361700	HSIP (23 U.S.C. 148)			9,200		State Highway Agency	Spot	Intersections	
W-5710AS/SM-5710N	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$1498500	$1665000	HSIP (23 U.S.C. 148)			14,000		State Highway Agency	Spot	Intersections	
W-5710J	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$617220	$685800	HSIP (23 U.S.C. 148)			10,000		State Highway Agency	Spot	Intersections	
W-5710U	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$540270	$600300	HSIP (23 U.S.C. 148)			7,300		State Highway Agency	Spot	Intersections	

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W-5710Y	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$413029	$458921	HSIP (23 U.S.C. 148)			6,500		State Highway Agency	Spot	Intersections	
W-5805E	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$113400	$126000	HSIP (23 U.S.C. 148)			7,800		State Highway Agency	Spot	Intersections	
HS-2004M	Intersection traffic control	Modify control – Modern Roundabout	2	Intersections	$510300	$567000	HSIP (23 U.S.C. 148)			11,000		State Highway Agency	Spot	Intersections	
W-5710AH	Intersection traffic control	Modify control – Modern Roundabout	2	Intersections	$259200	$288000	HSIP (23 U.S.C. 148)			3,500		State Highway Agency	Spot	Intersections	
W-5710X	Intersection traffic control	Modify control – Modern Roundabout	2	Intersections	$67838	$75375	HSIP (23 U.S.C. 148)			9,400		State Highway Agency	Spot	Intersections	
W-5806C	Intersection traffic control	Modify control – Modern Roundabout	2	Intersections	$1660500	$1845000	HSIP (23 U.S.C. 148)			12,000		State Highway Agency	Spot	Intersections	
W-5706L	Intersection traffic control	Modify control – Modern Roundabout	3	Intersections	$1024650	$1138500	HSIP (23 U.S.C. 148)			5,200		State Highway Agency	Spot	Intersections	
W-5712A	Intersection traffic control	Modify control – Modern Roundabout	3	Intersections	$89910	$99900	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
HS-2002F	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$29700	$33000	HSIP (23 U.S.C. 148)			1,950		State Highway Agency	Spot	Intersections	
HS-2003C	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$6480	$7200	HSIP (23 U.S.C. 148)			500		State Highway Agency	Spot	Intersections	
HS-2004C	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$34933	$38814	HSIP (23 U.S.C. 148)			1,550		State Highway Agency	Spot	Intersections	
HS-2004D	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$33040	$36711	HSIP (23 U.S.C. 148)			3,200		State Highway Agency	Spot	Intersections	
HS-2004E	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$84646	$94051	HSIP (23 U.S.C. 148)			4,000		State Highway Agency	Spot	Intersections	
HS-2004F	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$22169	$24632	HSIP (23 U.S.C. 148)			2,400		State Highway Agency	Spot	Intersections	

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HS-2004G	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$26570	$29522	HSIP (23 U.S.C. 148)			3,000		State Highway Agency	Spot	Intersections	
HS-2004H	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$20074	$22305	HSIP (23 U.S.C. 148)			2,200		State Highway Agency	Spot	Intersections	
HS-2004I	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$30046	$33385	HSIP (23 U.S.C. 148)			2,150		State Highway Agency	Spot	Intersections	
HS-2012F	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$4050	$4500	HSIP (23 U.S.C. 148)			2,100		State Highway Agency	Spot	Intersections	
W-5704H	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$4050	$4500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			10,000		State Highway Agency	Spot	Intersections	
W-5704H	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$358209	$398010	HSIP (23 U.S.C. 148)			10,000		State Highway Agency	Spot	Intersections	
W-5706N	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$405000	$450000	HSIP (23 U.S.C. 148)			5,700		State Highway Agency	Spot	Intersections	
W-5710I	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$2115720	$2350800	HSIP (23 U.S.C. 148)			4,900		State Highway Agency	Spot	Intersections	
W-5710Z	Intersection traffic control	Modify control – Modern Roundabout	2	Intersections	$227074	$252304	HSIP (23 U.S.C. 148)			4,200		State Highway Agency	Spot	Intersections	
HS-2002R	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$417150	$463500	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	19,000	35	State Highway Agency	Spot	Intersections	
HS-2003AC	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$4860	$5400	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	9,000		State Highway Agency	Spot	Intersections	
HS-2004S	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$81450	$90500	HSIP (23 U.S.C. 148)	Multiple/Varies	Local Road or Street	5,400	45	State Highway Agency	Spot	Intersections	
HS-2005L	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$4050	$4500	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	10,500	35	State Highway Agency	Spot	Intersections	

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HS-2005P	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$4050	$4500	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	16,000	55	State Highway Agency	Spot	Intersections	
HS-2014O	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$56700	$63000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	6,600	45	State Highway Agency	Systemic	Intersections	
HS-2003O	Intersection traffic control	Modify control – new traffic signal	2	Intersections	$12150	$13500	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other Freeways & Expressways	28,000		State Highway Agency	Spot	Intersections	
HS-2004O	Intersection traffic control	Modify control – new traffic signal	2	Intersections	$8100	$9000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	23,000	45	State Highway Agency	Spot	Intersections	
HS-2010E	Intersection traffic control	Modify control – new traffic signal	2	Crossovers	$63180	$70200	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	39,500	45	State Highway Agency	Spot	Intersections	
W-5706C	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$211802	$235336	HSIP (23 U.S.C. 148)			5,000		State Highway Agency	Spot	Intersections	
W-5706X	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$40500	$45000	HSIP (23 U.S.C. 148)			5,800		State Highway Agency	Spot	Intersections	
HS-2011G	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$81000	$90000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,900	55	State Highway Agency	Spot	Intersections	
W-5704G	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$1162350	$1291500	HSIP (23 U.S.C. 148)			7,033		State Highway Agency	Spot	Intersections	
W-5710AM	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$56449	$62721	HSIP (23 U.S.C. 148)			2,200		State Highway Agency	Spot	Intersections	
HS-2003D	Intersection traffic control	Intersection traffic control - other	1	Intersections	$16200	$18000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	28,500		State Highway Agency	Spot	Intersections	
W-5601FC	Intersection traffic control	Intersection traffic control - other	1	Intersections	$40500	$45000	HSIP (23 U.S.C. 148)			18,000		State Highway Agency	Spot	Intersections	
W-5703A	Intersection traffic control	Intersection traffic control - other	1	Intersections	$19185	$21317	HSIP (23 U.S.C. 148)			38,000		State Highway Agency	Spot	Intersections	
W-5705I	Intersection traffic control	Intersection traffic control - other	1	Intersections	$293684	$326315	HSIP (23 U.S.C. 148)			20,000		State Highway Agency	Spot	Intersections	

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W-5705O	Intersection traffic control	Intersection traffic control - other	1	Intersections	$191618	$212909	HSIP (23 U.S.C. 148)			16,000		State Highway Agency	Spot	Intersections	
W-5705P	Intersection traffic control	Intersection traffic control - other	1	Intersections	$62656	$69618	HSIP (23 U.S.C. 148)			25,000		State Highway Agency	Spot	Intersections	
W-5712H	Intersection traffic control	Intersection traffic control - other	1	Intersections	$4050	$4500	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
W-5712X	Intersection traffic control	Intersection traffic control - other	1	Intersections	$72900	$81000	HSIP (23 U.S.C. 148)			5,200		State Highway Agency	Spot	Intersections	
W-5807A	Intersection traffic control	Intersection traffic control - other	1	Intersections	$16200	$18000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			23,000		State Highway Agency	Spot	Intersections	
W-5806D	Intersection traffic control	Intersection traffic control - other	3	Intersections	$471420	$523800	HSIP (23 U.S.C. 148)			6,600		State Highway Agency	Spot	Intersections	
W-5714J	Intersection traffic control	Intersection flashers –sign-mounted or overhead	1	Signs	$1458	$1620	HSIP (23 U.S.C. 148)			9,100		State Highway Agency	Spot	Intersections	
W-5717	Miscellaneous	Miscellaneous - other		Data Collection	$1741500	$1935000	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
W-5517	Miscellaneous	Miscellaneous - other		PE & Management	$3997105	$4441228	HSIP (23 U.S.C. 148)			0		State Highway Agency		PE & Program Management	
W-5716	Miscellaneous	Miscellaneous - other		PE & Management	$4455000	$4950000	HSIP (23 U.S.C. 148)			0		State Highway Agency		PE & Program Management	
HS-2002U	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	1	Intersections	$1620	$1800	HSIP (23 U.S.C. 148)	Urban	Local Road or Street	2,500	35	State Highway Agency	Spot	Pedestrians	
HS-2002U	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	1	Intersections	$20250	$22500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Local Road or Street	2,500	35	State Highway Agency	Spot	Pedestrians	
HS-2002X	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	1	Crosswalks	$29160	$32400	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Major Collector	10,000	50	State Highway Agency	Spot	Pedestrians	

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HS-2014V	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	4	Crosswalks	$6480	$7200	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Local Road or Street	1,700	25	State Highway Agency	Spot	Pedestrians	
HS-2003R	Pedestrians and bicyclists	Pedestrians and bicyclists – other	1	Intersections	$4860	$5400	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	26,000		State Highway Agency	Spot	Pedestrians	
HS-2013O	Pedestrians and bicyclists	Pedestrians and bicyclists – other	300	Feet	$40500	$45000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Rural	Local Road or Street	1,400	35	State Highway Agency	Spot	Pedestrians	
HS-2003H	Pedestrians and bicyclists	Pedestrian signal - other	1	Signal heads	$12960	$14400	HSIP (23 U.S.C. 148)			51,400		State Highway Agency	Spot	Pedestrians	
HS-2011B	Pedestrians and bicyclists	Pedestrian signal	3	Intersections	$34830	$38700	HSIP (23 U.S.C. 148)			44,000		State Highway Agency	Spot	Intersections	
W-5704O	Pedestrians and bicyclists	Pedestrian signal	1	Intersections	$36467	$40519	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			31,000		State Highway Agency	Spot	Pedestrians	
W-5714M	Pedestrians and bicyclists	Pedestrian signal	1	Intersections	$8100	$9000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			12,500		State Highway Agency	Spot	Pedestrians	
W-5714M	Pedestrians and bicyclists	Pedestrian signal	1	Intersections	$44550	$49500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			12,500		State Highway Agency	Spot	Pedestrians	
W-5806E	Pedestrians and bicyclists	Pedestrian signal	1	Intersections	$162000	$180000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			14,000		State Highway Agency	Spot	Pedestrians	
W-5813A	Pedestrians and bicyclists	Pedestrian signal	1	Crosswalks	$7629	$8477	HSIP (23 U.S.C. 148)			19,000		State Highway Agency	Spot	Pedestrians	
W-5813C	Pedestrians and bicyclists	Pedestrian signal	1	Crosswalks	$113400	$126000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			6,100		State Highway Agency	Spot	Pedestrians	
W-5813E	Pedestrians and bicyclists	Pedestrian signal	1	Crosswalks	$117450	$130500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			25,000		State Highway Agency	Spot	Pedestrians	

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W-5813F	Pedestrians and bicyclists	Pedestrian signal	1	Crosswalks	$48600	$54000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			21,000		State Highway Agency	Spot	Pedestrians	
HS-2005K	Pedestrians and bicyclists	Pedestrian signal	2	Intersections	$810	$900	HSIP (23 U.S.C. 148)			29,000		State Highway Agency	Spot	Pedestrians	
HS-2014H	Pedestrians and bicyclists	Pedestrian signal	2	Crosswalks	$82620	$91800	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Minor Arterial	0	20	State Highway Agency	Spot	Pedestrians	
W-5705J	Pedestrians and bicyclists	Pedestrian signal	2	Intersections	$22501	$25001	HSIP (23 U.S.C. 148)			35,000		State Highway Agency	Spot	Pedestrians	
HS-2006A	Pedestrians and bicyclists	Pedestrian signal	3	Intersections	$267300	$297000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			23,000		State Highway Agency	Spot	Pedestrians	
W-5803D	Pedestrians and bicyclists	Pedestrian signal - other	1	Intersections	$1716	$1907	HSIP (23 U.S.C. 148)			32,000		State Highway Agency	Spot	Pedestrians	
W-5803A	Pedestrians and bicyclists	Pedestrian signal - other	2	Intersections	$137700	$153000	HSIP (23 U.S.C. 148)			42,000		State Highway Agency	Spot	Pedestrians	
W-5803A	Pedestrians and bicyclists	Pedestrian signal - other	2	Intersections	$12150	$13500	HSIP (23 U.S.C. 148)			42,000		State Highway Agency	Spot	Pedestrians	
W-5807B	Pedestrians and bicyclists	Pedestrian signal - other	2	Intersections	$10692	$11880	HSIP (23 U.S.C. 148)			8,500		State Highway Agency	Spot	Pedestrians	
W-5707A	Pedestrians and bicyclists	Pedestrian signal - other	4	Intersections	$260	$289	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Pedestrians	
HS-2005M	Pedestrians and bicyclists	Pedestrian signal	1	Intersections	$24332	$27035	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Minor Arterial	11,000	35	State Highway Agency	Spot	Intersections	
HS-2004Z	Pedestrians and bicyclists	Pedestrian signal	1	Crosswalks	$4050	$4500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Multiple/Varies	Principal Arterial-Other	23,500	55	State Highway Agency	Spot	Pedestrians	

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HS-2005Q	Pedestrians and bicyclists	Pedestrian signal	1	Intersections	$4050	$4500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Multiple/Varies	Local Road or Street	5,300	45	State Highway Agency	Spot	Pedestrians	
HS-2007F	Pedestrians and bicyclists	Pedestrian signal	1	Crosswalks	$8100	$9000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	30,000	35	State Highway Agency	Spot	Pedestrians	
HS-2009G	Pedestrians and bicyclists	Pedestrian signal	1	Intersections	$32400	$36000	HSIP (23 U.S.C. 148)	Urban	Major Collector	18,000	45	State Highway Agency	Spot	Pedestrians	
HS-2010G	Pedestrians and bicyclists	Pedestrian signal	1	Crosswalks	$36450	$40500	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	20,500		State Highway Agency	Spot	Pedestrians	
HS-2010K	Pedestrians and bicyclists	Pedestrian signal	1	Signal heads	$16200	$18000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	25,500	45	State Highway Agency	Spot	Pedestrians	
HS-2014M	Pedestrians and bicyclists	Pedestrian signal	1	Crosswalks	$60750	$67500	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	22,500	45	State Highway Agency	Spot	Pedestrians	
HS-2005G	Pedestrians and bicyclists	Pedestrian signal	2	Intersections	$119070	$132300	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	16,500	45	State Highway Agency	Spot	Pedestrians	
HS-2006O	Pedestrians and bicyclists	Pedestrian signal	2	Crosswalks	$32400	$36000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Local Road or Street	15,000	35	State Highway Agency	Spot	Pedestrians	
HS-2006X	Pedestrians and bicyclists	Pedestrian signal	2	Intersections	$40500	$45000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	48,500	45	State Highway Agency	Spot	Pedestrians	
W-5705AM	Pedestrians and bicyclists	Pedestrian signal	5	Intersections	$34020	$37800	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Pedestrians	
HS-2014L	Pedestrians and bicyclists	Pedestrian signal	7	Crosswalks	$554850	$616500	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	36,388	45	State Highway Agency	Systemic	Pedestrians	
HS-2014K	Pedestrians and bicyclists	Pedestrian hybrid beacon	2	Intersections	$89100	$99000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Multiple/Varies	Principal Arterial-Other	14,000	50	State Highway Agency	Spot	Pedestrians	

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HS-2002V	Pedestrians and bicyclists	Modify existing crosswalk	1	Crosswalks	$3240	$3600	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	12,500	35	State Highway Agency	Spot	Pedestrians	
HS-2002W	Pedestrians and bicyclists	Modify existing crosswalk	1	Crosswalks	$3240	$3600	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	17,250	45	State Highway Agency	Spot	Pedestrians	
HS-2003Z	Pedestrians and bicyclists	Modify existing crosswalk	1	Intersections	$4860	$5400	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	18,500		State Highway Agency	Spot	Pedestrians	
HS-2005J	Pedestrians and bicyclists	Modify existing crosswalk	1	Crosswalks	$20250	$22500	HSIP (23 U.S.C. 148)	Multiple/Varies	Major Collector	8,300	45	State Highway Agency	Spot	Pedestrians	
W-5705U	Pedestrians and bicyclists	Modify existing crosswalk	1	Crosswalks	$16122	$17913	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			5,600		State Highway Agency	Spot	Pedestrians	
HS-2002H	Pedestrians and bicyclists	Modify existing crosswalk	2	Signal heads	$21510	$23900	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	10,000	35	State Highway Agency	Spot	Pedestrians	
HS-2003Y	Pedestrians and bicyclists	Modify existing crosswalk	2	Crosswalks	$4050	$4500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	41,000		State Highway Agency	Spot	Pedestrians	
HS-2003V	Pedestrians and bicyclists	Modify existing crosswalk	3	Crosswalks	$4860	$5400	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	27,500		State Highway Agency	Spot	Pedestrians	
W-5522	Pedestrians and bicyclists	Pedestrians and bicyclists – other	1	Intersections	$41699	$46332	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			9,300		State Highway Agency	Spot	Pedestrians	
W-5813D	Pedestrians and bicyclists	Pedestrians and bicyclists – other	1	Crosswalks	$22113	$24570	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Pedestrians	
W-5813G	Pedestrians and bicyclists	Pedestrians and bicyclists – other	3	Intersections	$247860	$275400	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			0		State Highway Agency	Spot	Pedestrians	
W-5813G	Pedestrians and bicyclists	Pedestrians and bicyclists – other	3	Intersections	$16200	$18000	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Pedestrians	

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HS-2004AA	Pedestrians and bicyclists	Medians and pedestrian refuge areas	1	Crosswalks	$4050	$4500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	13,500	35	State Highway Agency	Spot	Pedestrians	
W-5805C	Pedestrians and bicyclists	Medians and pedestrian refuge areas	1	Intersections	$136231	$151368	HSIP (23 U.S.C. 148)			16,000		State Highway Agency	Spot	Pedestrians	
HS-2003AF	Pedestrians and bicyclists	Leading pedestrian interval	1	Intersections	$4860	$5400	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	20,500		State Highway Agency	Spot	Pedestrians	
HS-2003AG	Pedestrians and bicyclists	Leading pedestrian interval	1	Intersections	$4860	$5400	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	20,500		State Highway Agency	Spot	Pedestrians	
HS-2014Q	Pedestrians and bicyclists	Leading pedestrian interval	33	Intersections	$89100	$99000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	12,250	20	State Highway Agency	Systemic	Pedestrians	
HS-2014Q	Pedestrians and bicyclists	Leading pedestrian interval	33	Intersections	$202500	$225000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	12,250	20	State Highway Agency	Systemic	Pedestrians	
BL-0005	Pedestrians and bicyclists	Install sidewalk	0.16	Miles	$36450	$40500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			10,700		State Highway Agency	Spot	Pedestrians	
W-5713X/BL-0005	Pedestrians and bicyclists	Install sidewalk	0.16	Miles	$11912	$13236	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			10,700		State Highway Agency	Spot	Pedestrians	
W-5703C	Pedestrians and bicyclists	Install sidewalk	0.76	Miles	$486000	$540000	HSIP (23 U.S.C. 148)			29,000		State Highway Agency	Spot	Pedestrians	
HS-2003AE	Pedestrians and bicyclists	Install new crosswalk	1	Intersections	$4050	$4500	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	46,000		State Highway Agency	Spot	Pedestrians	
HS-2005R	Pedestrians and bicyclists	Install new crosswalk	1	Intersections	$4050	$4500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Multiple/Varies	Major Collector	8,200	45	State Highway Agency	Spot	Pedestrians	
HS-2006AA	Pedestrians and bicyclists	Install new crosswalk	1	Intersections	$56700	$63000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Major Collector	14,000	35	State Highway Agency	Spot	Pedestrians	

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HS-2006Z	Pedestrians and bicyclists	Install new crosswalk	1	Intersections	$32400	$36000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Minor Arterial	8,100	35	State Highway Agency	Spot	Pedestrians	
W-5601DH	Pedestrians and bicyclists	Install new crosswalk	1	Intersections	$601656	$668507	HSIP (23 U.S.C. 148)			15,000		State Highway Agency	Spot	Pedestrians	
W-5712S	Pedestrians and bicyclists	Install new crosswalk	1	Intersections	$7884	$8760	HSIP (23 U.S.C. 148)			19,000		State Highway Agency	Spot	Pedestrians	
W-5712T	Pedestrians and bicyclists	Install new crosswalk	1	Intersections	$19845	$22050	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			20,000		State Highway Agency	Spot	Pedestrians	
HS-2003X	Pedestrians and bicyclists	Install new crosswalk	2	Crosswalks	$4860	$5400	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	32,000		State Highway Agency	Spot	Pedestrians	
HS-2004P	Pedestrians and bicyclists	Install new crosswalk	2	Crosswalks	$56700	$63000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	17,000	35	State Highway Agency	Spot	Pedestrians	
HS-2004P	Pedestrians and bicyclists	Install new crosswalk	2	Crosswalks	$4050	$4500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Minor Arterial	17,000	35	State Highway Agency	Spot	Pedestrians	
HS-2006V	Pedestrians and bicyclists	Install new crosswalk	2	Crosswalks	$16200	$18000	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Minor Arterial	15,000	40	State Highway Agency	Spot	Pedestrians	
HS-2003S	Pedestrians and bicyclists	Install new crosswalk	3	Crosswalks	$2835	$3150	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Urban	Principal Arterial-Other	35,000		State Highway Agency	Spot	Pedestrians	
W-5805D	Roadside	Barrier- metal	0.15	Miles	$86980	$96645	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Lane Departure	
W-5705AJ	Roadside	Barrier- metal	0.2	Miles	$2142	$2380	HSIP (23 U.S.C. 148)			9,300		State Highway Agency	Spot	Lane Departure	
HS-2006P	Roadside	Barrier- metal	1	Locations	$64800	$72000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	17,000	35	State Highway Agency	Spot	Lane Departure	

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HS-2008A	Roadside	Barrier- metal	4.34	Miles	$243	$270	HSIP (23 U.S.C. 148)			20,000		State Highway Agency	Systemic	Lane Departure	
HS-2011E	Roadside	Barrier- metal	88	Locations	$1154250	$1282500	HSIP (23 U.S.C. 148)	Rural	Minor Collector	3,000	55	State Highway Agency	Spot	Lane Departure	
HS-2014F	Roadside	Barrier- metal	150	Feet	$279450	$310500	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,600	25	State Highway Agency	Spot	Lane Departure	
W-5601GV	Roadside	Barrier- metal	170	Locations	$4050	$4500	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5714C	Roadside	Barrier- metal	3000	Feet	$1721	$1912	HSIP (23 U.S.C. 148)			785		State Highway Agency	Systemic	Lane Departure	
W-5711A	Roadside	Barrier- metal	3100	Feet	$102870	$114300	HSIP (23 U.S.C. 148)			3,200		State Highway Agency	Spot	Lane Departure	
HS-2013K	Roadside	Barrier- metal	5500	Feet	$16200	$18000	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,650	55	State Highway Agency	Spot	Lane Departure	
HS-2005B	Roadside	Barrier- metal	6100	Feet	$10382	$11535	HSIP (23 U.S.C. 148)			2,800		State Highway Agency	Spot	Lane Departure	
W-5813I	Roadside	Barrier- metal	7200	Feet	$272539	$302821	HSIP (23 U.S.C. 148)			2,100		State Highway Agency	Spot	Lane Departure	
HS-2013G	Roadside	Barrier- metal	7600	Feet	$422415	$469350	HSIP (23 U.S.C. 148)			4,125		State Highway Agency	Spot	Lane Departure	
HS-2013I	Roadside	Barrier- metal	13000	Feet	$24300	$27000	HSIP (23 U.S.C. 148)			750		State Highway Agency	Systemic	Lane Departure	
HS-2013N	Roadside	Barrier- metal	13595	Feet	$34020	$37800	HSIP (23 U.S.C. 148)	Rural	Minor Collector	1,600	55	State Highway Agency	Spot	Lane Departure	
HS-2013M	Roadside	Barrier- metal	16000	Feet	$25920	$28800	HSIP (23 U.S.C. 148)	Rural	Minor Collector	2,200	45	State Highway Agency	Spot	Lane Departure	
HS-2013L	Roadside	Barrier- metal	19000	Feet	$33210	$36900	HSIP (23 U.S.C. 148)	Rural	Major Collector	6,000	55	State Highway Agency	Spot	Lane Departure	

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HS-2013J	Roadside	Barrier- metal	19450	Feet	$24300	$27000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,600	55	State Highway Agency	Spot	Lane Departure	
HS-2008B	Roadside	Barrier end treatments (crash cushions, terminals)	74	Locations	$1620	$1800	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Roadway Departure	
W-5702T	Roadside	Barrier end treatments (crash cushions, terminals)	2	Locations	$32411	$36012	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Lane Departure	
W-5704T	Roadside	Barrier end treatments (crash cushions, terminals)	8.115	Miles	$23017	$25574	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5704U	Roadside	Barrier end treatments (crash cushions, terminals)	10	Miles	$143595	$159550	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5704V	Roadside	Barrier end treatments (crash cushions, terminals)	11.373	Miles	$177121	$196801	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2013C	Roadside	Barrier end treatments (crash cushions, terminals)	38	Locations	$42300	$47000	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5601GW	Roadside	Barrier end treatments (crash cushions, terminals)	46	Locations	$389022	$432247	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2013B	Roadside	Barrier end treatments (crash cushions, terminals)	57	Locations	$101250	$112500	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2013F	Roadside	Barrier end treatments (crash cushions, terminals)	66	Locations	$121500	$135000	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5704P	Roadside	Barrier end treatments (crash cushions, terminals)	71	Locations	$56455	$62728	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2013E	Roadside	Barrier end treatments (crash cushions, terminals)	72	Locations	$101250	$112500	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2006R	Roadside	Barrier – cable	1	Locations	$4050	$4500	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	40,000	70	State Highway Agency	Spot	Lane Departure	
HS-2010L	Roadside	Barrier – cable	1	Locations	$785700	$873000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	30,500	55	State Highway Agency	Systemic	Lane Departure	

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W-5601DN	Roadway	Superelevation / cross slope	0.5	Miles	$1462050	$1624500	HSIP (23 U.S.C. 148)			4,750		State Highway Agency	Spot	Lane Departure	
W-5706Z	Roadway	Superelevation / cross slope	0.5	Miles	$516524	$573916	HSIP (23 U.S.C. 148)			2,000		State Highway Agency	Spot	Lane Departure	
HS-2006J	Roadway	Superelevation / cross slope	1	Locations	$40500	$45000	HSIP (23 U.S.C. 148)			4,300		State Highway Agency	Spot	Lane Departure	
HS-2006K	Roadway	Superelevation / cross slope	1	Locations	$60750	$67500	HSIP (23 U.S.C. 148)			3,000		State Highway Agency	Spot	Lane Departure	
W-5704K	Roadway	Superelevation / cross slope	1	Curves	$16200	$18000	HSIP (23 U.S.C. 148)			5,300		State Highway Agency	Spot	Lane Departure	
W-5706Y	Roadway	Superelevation / cross slope	1	Locations	$480330	$533700	HSIP (23 U.S.C. 148)			4,700		State Highway Agency	Spot	Lane Departure	
W-5601AF	Roadway	Superelevation / cross slope	2	Intersections	$39811	$44234	HSIP (23 U.S.C. 148)			3,100		State Highway Agency	Spot	Lane Departure	
W-5705W	Roadway	Superelevation / cross slope	450	Feet	$212742	$236380	HSIP (23 U.S.C. 148)			9,800		State Highway Agency	Spot	Lane Departure	
HS-2006Y	Roadway	Rumble strips –other	1	Locations	$20250	$22500	HSIP (23 U.S.C. 148)	Rural	Minor Collector	9,100	55	State Highway Agency	Systemic	Lane Departure	
HS-2006W	Roadway	Rumble strips –other	3	Locations	$20250	$22500	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	8,800	55	State Highway Agency	Systemic	Lane Departure	
HS-2009F	Roadway	Rumble strips –other	8.5	Miles	$457650	$508500	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	11,000	45	State Highway Agency	Systemic	Lane Departure	
W-5809A	Roadway	Rumble strips –other	45.06	Miles	$50	$56	HSIP (23 U.S.C. 148)			11,000		State Highway Agency	Systemic	Lane Departure	
HS-2014T	Roadway	Rumble strips – edge or shoulder	5.18	Miles	$4050	$4500	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,250	45	State Highway Agency	Systemic	Lane Departure	
HS-2006S	Roadway	Rumble strips – edge or shoulder	5.4	Miles	$182250	$202500	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,200	55	State Highway Agency	Systemic	Lane Departure	

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HS-2004T	Roadway	Rumble strips – edge or shoulder	9.231	Miles	$190350	$211500	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,500	55	State Highway Agency	Systemic	Lane Departure	
HS-2006F	Roadway	Rumble strips – edge or shoulder	9.485	Miles	$464940	$516600	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,800	55	State Highway Agency	Spot	Lane Departure	
HS-2011F	Roadway	Rumble strips – edge or shoulder	13.343	Miles	$810	$900	HSIP (23 U.S.C. 148)	Rural	Major Collector	8,600	55	State Highway Agency	Systemic	Lane Departure	
HS-2006U	Roadway	Rumble strips – edge or shoulder	14.42	Miles	$403380	$448200	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,500	55	State Highway Agency	Systemic	Lane Departure	
HS-2002Q	Roadway	Rumble strips – edge or shoulder	19.374	Miles	$368550	$409500	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	8,100	55	State Highway Agency	Systemic	Lane Departure	
HS-2004U	Roadway	Rumble strips – edge or shoulder	22.889	Miles	$4050	$4500	HSIP (23 U.S.C. 148)	Rural	Major Collector	8,300	55	State Highway Agency	Systemic	Lane Departure	
W-5806B	Roadway	Rumble strips – edge or shoulder	10.616	Miles	$3320	$3689	HSIP (23 U.S.C. 148)			9,800		State Highway Agency	Spot	Lane Departure	
W-5706Q	Roadway	Rumble strips – edge or shoulder	16.594	Miles	$933	$1037	HSIP (23 U.S.C. 148)			6,700		State Highway Agency	Spot	Lane Departure	
W-5803B	Roadway	Rumble strips – edge or shoulder	26.35	Miles	$384750	$427500	HSIP (23 U.S.C. 148)			30,000		State Highway Agency	Systemic	Lane Departure	
HS-2010C	Roadway	Rumble strips – edge or shoulder	27.24	Miles	$445090	$494544	HSIP (23 U.S.C. 148)			22,500		State Highway Agency	Spot	Lane Departure	
HS-2014U	Roadway	Rumble strips – center	2.62	Miles	$4050	$4500	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,350	45	State Highway Agency	Systemic	Lane Departure	
HS-2001I	Roadway	Rumble strips – center	4.73	Miles	$810	$900	HSIP (23 U.S.C. 148)	Rural	Major Collector	6,000	55	State Highway Agency	Spot	Lane Departure	
HS-2001H	Roadway	Rumble strips – center	7.166	Miles	$810	$900	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,000	55	State Highway Agency	Spot	Lane Departure	
HS-2006T	Roadway	Rumble strips – center	11.839	Miles	$339390	$377100	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,500	55	State Highway Agency	Systemic	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
HS-2004X	Roadway	Rumble strips – center	13.528	Miles	$293220	$325800	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,600	55	State Highway Agency	Spot	Lane Departure	
HS-2002T	Roadway	Rumble strips – center	14.942	Miles	$310230	$344700	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	11,000	55	State Highway Agency	Systemic	Lane Departure	
W-5701F (new)	Roadway	Rumble strips – center	27.3	Miles	$52	$58	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,500	55	State Highway Agency	Spot	Lane Departure	
HS-2001G	Roadway	Rumble strips – center	30.202	Miles	$4050	$4500	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	5,000	55	State Highway Agency	Systemic	Lane Departure	
HS-2004R	Roadway	Rumble strips – center	31.528	Miles	$632610	$702900	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	7,800	55	State Highway Agency	Spot	Lane Departure	
HS-2002S	Roadway	Rumble strips – center	34.037	Miles	$810	$900	HSIP (23 U.S.C. 148)	Rural	Major Collector	5,000	55	State Highway Agency	Systemic	Lane Departure	
HS-2004V	Roadway	Rumble strips – center	61.871	Miles	$810	$900	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,200	55	State Highway Agency	Systemic	Lane Departure	
HS-2014I	Roadway	Rumble strips – center	4.311	Miles	$121500	$135000	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	23,500	45	State Highway Agency	Spot	Lane Departure	
W-5813J	Roadway	Rumble strips – center	18.797	Miles	$4860	$5400	HSIP (23 U.S.C. 148)			6,500		State Highway Agency	Systemic	Lane Departure	
HS-2006M	Roadway	Roadway widening - curve	4	Curves	$8100	$9000	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	1,000	55	State Highway Agency	Spot	Lane Departure	
W-5707D	Roadway	Roadway widening - curve	0.25	Miles	$14580	$16200	HSIP (23 U.S.C. 148)			2,800		State Highway Agency	Spot	Lane Departure	
W-5500	Roadway	Roadway widening - curve	1	Locations	$267009	$296677	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Lane Departure	
W-5708L	Roadway	Roadway widening - add lane(s) along segment	0.37	Miles	$19710	$21900	HSIP (23 U.S.C. 148)			15,000		State Highway Agency	Spot	Intersections	
W-5704E	Roadway	Roadway widening - add lane(s) along segment	0.95	Miles	$1054346	$1171495	HSIP (23 U.S.C. 148)			8,400		State Highway Agency	Spot	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5602	Roadway	Roadway widening - add lane(s) along segment	3.42	Miles	$182724	$203027	HSIP (23 U.S.C. 148)			11,100		State Highway Agency	Spot	Lane Departure	
HS-2006Q	Roadway	Roadway - other	0.1	Miles	$230400	$256000	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	700	55	State Highway Agency	Spot	Lane Departure	
HS-2008F	Roadway	Roadway - other	750	Feet	$40095	$44550	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	18,500	45	State Highway Agency	Spot	Pedestrians	
HS-2013H	Roadway	Pavement surface - other	5.214	Miles	$447930	$497700	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	16,000	55	State Highway Agency	Spot	Lane Departure	
HS-2014E	Roadway	Pavement surface - other	11.73	Miles	$789750	$877500	HSIP (23 U.S.C. 148)			31,200		State Highway Agency	Spot	Lane Departure	
HS-2004Q	Roadway	Pavement surface – high friction surface	0.12	Miles	$619650	$688500	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other Freeways & Expressways	24,000	70	State Highway Agency	Spot	Lane Departure	
W-5714N	Roadway	Pavement surface – high friction surface	2.154	Miles	$1559250	$1732500	HSIP (23 U.S.C. 148)			14,000		State Highway Agency	Spot	Lane Departure	
W-5714I	Roadway	Pavement surface – high friction surface	2800	Feet	$244906	$272118	HSIP (23 U.S.C. 148)			22,000		State Highway Agency	Spot	Lane Departure	
HS-2003U	Roadway delineation	Wider Edge Lines (6 inch markings)	0.79	Miles	$30780	$34200	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,500		State Highway Agency	Spot	Lane Departure	
HS-2003AB	Roadway delineation	Wider Edge Lines (6 inch markings)	3.265	Miles	$810	$900	HSIP (23 U.S.C. 148)	Rural	Minor Collector	3,700		State Highway Agency	Spot	Lane Departure	
HS-2004Y	Roadway delineation	Roadway delineation - other	194	Ramps	$81000	$90000	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	0		State Highway Agency	Systemic	Intersections	
HS-2009J	Roadway delineation	Roadway delineation - other	108	Ramps	$8100	$9000	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Wrong Way Drivers	
HS-2009E	Roadway delineation	Roadway delineation - other	10.94	Miles	$344250	$382500	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	8,100	55	State Highway Agency	Spot	Lane Departure	
HS-2006AB	Roadway delineation	Roadway delineation - other	20	Intersections	$8100	$9000	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other Freeways & Expressways	0		State Highway Agency	Systemic	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
HS-2007E	Roadway delineation	Roadway delineation - other	21.28	Miles	$677880	$753200	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,800	55	State Highway Agency	Systemic	Lane Departure	
HS-2014S	Roadway delineation	Longitudinal pavement markings - remarking	3.58	Miles	$4050	$4500	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	6,350	50	State Highway Agency	Systemic	Lane Departure	
HS-2001C	Roadway delineation	Longitudinal pavement markings - remarking	4.417	Miles	$33210	$36900	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	1,200	45	State Highway Agency	Spot	Lane Departure	
W-5802E	Roadway delineation	Longitudinal pavement markings - remarking	47.722	Miles	$287144	$319049	HSIP (23 U.S.C. 148)			30,000		State Highway Agency	Systemic	Lane Departure	
HS-2012E	Roadway delineation	Longitudinal pavement markings - remarking	59	Locations	$1762560	$1958400	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2012D	Roadway delineation	Longitudinal pavement markings - remarking	65	Locations	$2356290	$2618100	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2013Q	Roadway delineation	Longitudinal pavement markings - remarking	74	Locations	$12150	$13500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			0		State Highway Agency	Systemic	Lane Departure	
HS-2013S	Roadway delineation	Longitudinal pavement markings - remarking	107	Miles	$10530	$11700	VRU Safety Special Rule (23 U.S.C. 148(g)(3))			0		State Highway Agency	Systemic	Lane Departure	
HS-2013R	Roadway delineation	Longitudinal pavement markings - remarking	123.47	Miles	$12150	$13500	VRU Safety Special Rule (23 U.S.C. 148(g)(3))	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
HS-2014J	Roadway delineation	Longitudinal pavement markings - remarking	160.3	Miles	$2097900	$2331000	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5714L	Roadway delineation	Longitudinal pavement markings - remarking	163.5	Miles	$1071128	$1190142	HRRR Special Rule (23 U.S.C. 148(g)(1))			0		State Highway Agency	Systemic	Lane Departure	
HS-2014R	Roadway delineation	Longitudinal pavement markings - remarking	173	Miles	$1008450	$1120500	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2014P	Roadway delineation	Longitudinal pavement markings - remarking	186	Miles	$12150	$13500	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
HS-2014P	Roadway delineation	Longitudinal pavement markings - remarking	186	Miles	$2393550	$2659500	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	
W-5704Z	Roadway delineation	Longitudinal pavement markings - remarking	337.34	Miles	$22158	$24620	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2008C	Roadway delineation	Longitudinal pavement markings - remarking	350	Miles	$649622	$721802	HRRR Special Rule (23 U.S.C. 148(g)(1))			0		State Highway Agency	Systemic	Lane Departure	
HS-2008C	Roadway delineation	Longitudinal pavement markings - remarking	350	Miles	$42074	$46749	Penalty Funds (23 U.S.C. 164)			0		State Highway Agency	Systemic	Lane Departure	
HS-2006E	Roadway delineation	Longitudinal pavement markings - remarking	363.591	Miles	$3258630	$3620700	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	0	55	State Highway Agency	Systemic	Lane Departure	
HS-2004J	Roadway delineation	Longitudinal pavement markings - remarking	366.384	Miles	$789602	$877336	HRRR Special Rule (23 U.S.C. 148(g)(1))			0		State Highway Agency	Systemic	Lane Departure	
HS-2004J	Roadway delineation	Longitudinal pavement markings - remarking	366.384	Miles	$737689	$819654	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5805F	Roadway delineation	Longitudinal pavement markings - remarking	568	Miles	$769299	$854777	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5704D	Roadway delineation	Longitudinal pavement markings – new	14.7	Miles	$109424	$121582	HSIP (23 U.S.C. 148)			2,300		State Highway Agency	Systemic	Lane Departure	
W-5712O	Roadway delineation	Longitudinal pavement markings – new	19.055	Miles	$66126	$73473	HSIP (23 U.S.C. 148)			3,100		State Highway Agency	Systemic	Lane Departure	
HS-2003B	Roadway delineation	Longitudinal pavement markings – new	144.43	Miles	$2907566	$3230629	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
HS-2011D	Roadway delineation	Improve retroreflectivity	28	Locations	$126360	$140400	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5706P	Roadway delineation	Improve retroreflectivity	51	Locations	$1388805	$1543117	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5706M	Roadway delineation	Improve retroreflectivity	75	Locations	$210795	$234217	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	
W-5705N	Roadway signs and traffic control	Roadway signs and traffic control - other	4	Ramps	$30126	$33473	HSIP (23 U.S.C. 148)			50,000		State Highway Agency	Spot	Intersections	
HS-2008D	Roadway signs and traffic control	Roadway signs and traffic control - other	9.975	Miles	$20250	$22500	HSIP (23 U.S.C. 148)			19,000		State Highway Agency	Systemic	Emergency Response	
W-5705M	Roadway signs and traffic control	Roadway signs and traffic control - other	1500	Feet	$4860	$5400	HSIP (23 U.S.C. 148)			154,000		State Highway Agency	Systemic	Lane Departure	
HS-2001E	Roadway signs and traffic control	Curve-related warning signs and flashers	39.8	Miles	$10530	$11700	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,900	55	State Highway Agency	Systemic	Lane Departure	
HS-2001D	Roadway signs and traffic control	Curve-related warning signs and flashers	54.55	Miles	$34020	$37800	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,400	55	State Highway Agency	Systemic	Lane Departure	
HS-2001B	Roadway signs and traffic control	Curve-related warning signs and flashers	57.72	Miles	$29160	$32400	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,600	55	State Highway Agency	Systemic	Lane Departure	
HS-2001A	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Intersections	$36450	$40500	HSIP (23 U.S.C. 148)			8,500		State Highway Agency	Spot	Intersections	
U-5112	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$51750	$57500	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
W-5311	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$9347	$10386	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot	Intersections	
W-5519	Access management	Median crossover - directional crossover	1	Locations	$89100	$99000	HSIP (23 U.S.C. 148)			26,000		State Highway Agency	Spot	Intersections	
Y-4805F	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$399	$443	HSIP (23 U.S.C. 148)			7,300		State Highway Agency	Spot	Intersections	
W-5601Q	Intersection geometry	Add/modify auxiliary lanes	2	Intersections	$431978	$479975	HSIP (23 U.S.C. 148)			16,000		State Highway Agency	Spot	Intersections	
W-5204C	Intersection geometry	Add/modify auxiliary lanes	0.99	Miles	$834300	$927000	HSIP (23 U.S.C. 148)			6,600		State Highway Agency	Spot	Lane Departure	

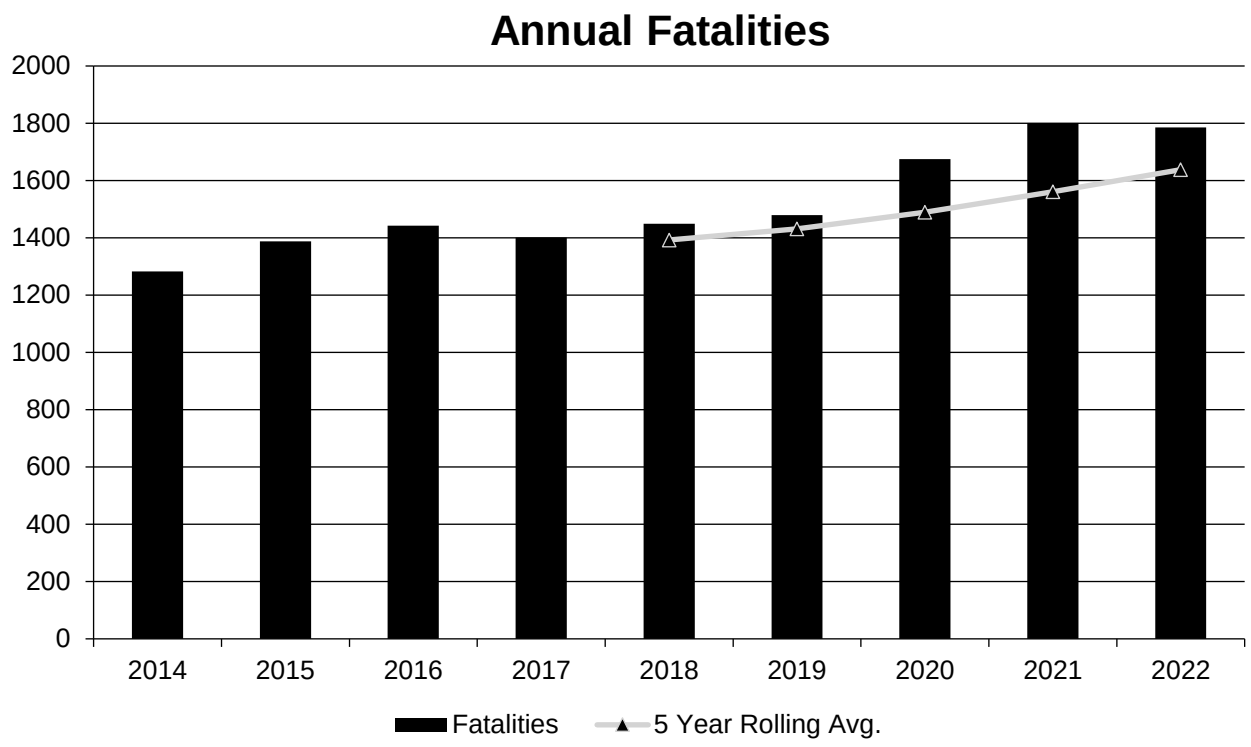
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
W-5203Y	Roadway	Rumble strips – edge or shoulder	1	Locations	$433569	$481743	HSIP (23 U.S.C. 148)			3,600		State Highway Agency	Spot	Lane Departure	
W-5212N	Intersection geometry	Add/modify auxiliary lanes	1	Locations	$1626371	$1807079	HSIP (23 U.S.C. 148)			12,000		State Highway Agency	Spot	Lane Departure	
W-5521	Roadway	Rumble strips – edge or shoulder	1	Locations	$369770	$410856	HSIP (23 U.S.C. 148)			7,600		State Highway Agency	Spot	Lane Departure	
W-5204D	Roadway	Pavement surface - other	1.41	Miles	$660672	$734080	HSIP (23 U.S.C. 148)			11,000		State Highway Agency	Spot	Lane Departure	

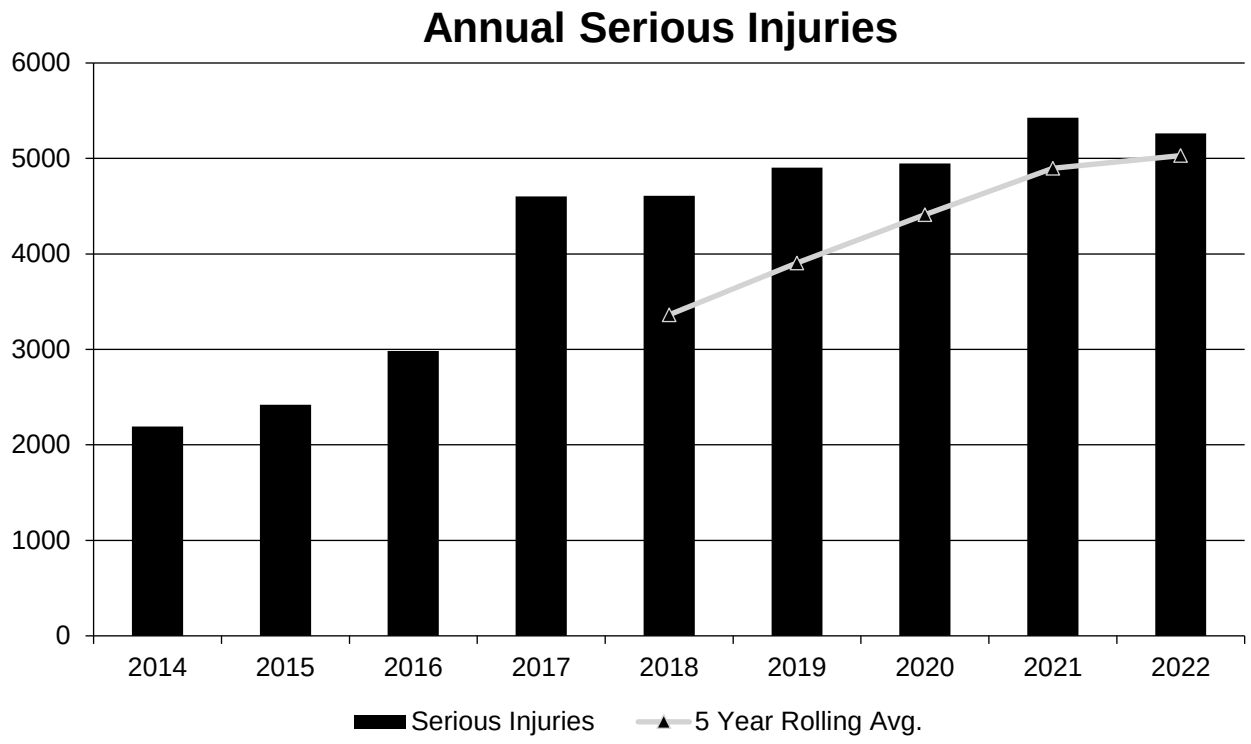
Safety Performance

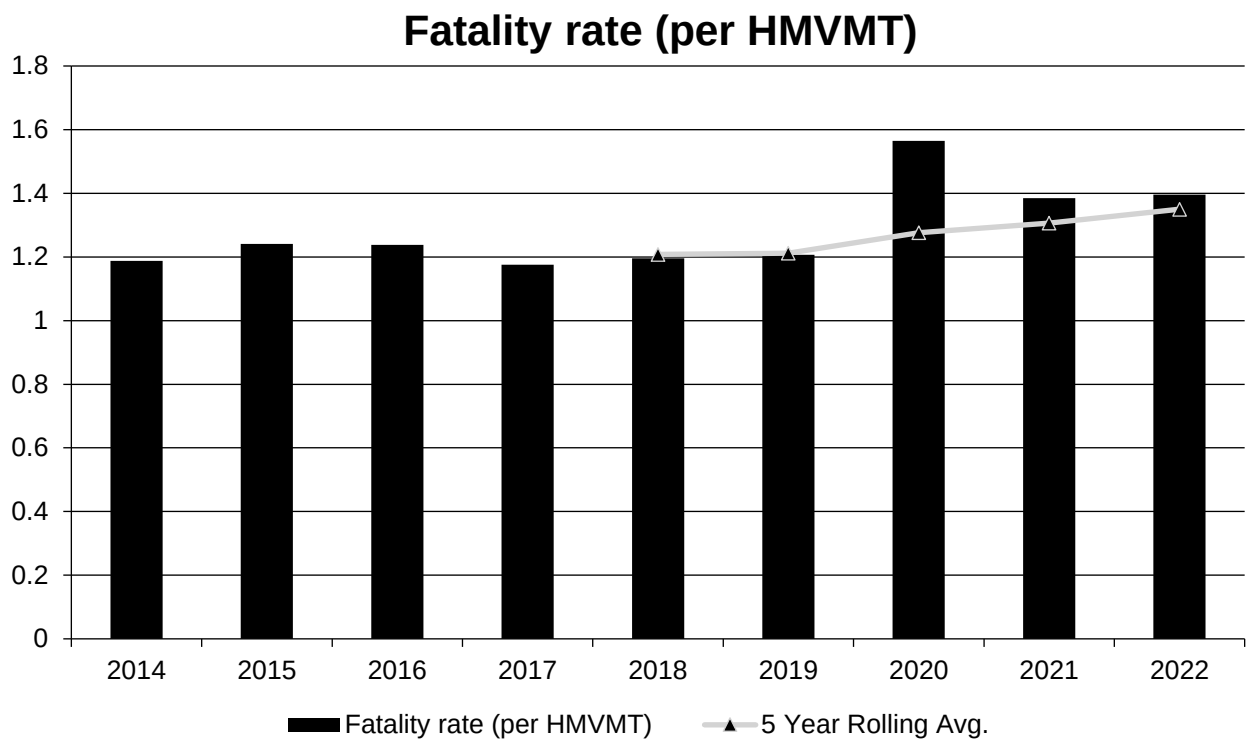
General Highway Safety Trends

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

PERFORMANCE MEASURES	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fatalities	1,283	1,388	1,442	1,401	1,449	1,479	1,675	1,801	1,786
Serious Injuries	2,192	2,421	2,985	4,604	4,610	4,905	4,947	5,426	5,262
Fatality rate (per HMVMT)	1.188	1.241	1.238	1.176	1.196	1.207	1.565	1.385	1.396
Serious injury rate (per HMVMT)	2.029	2.164	2.564	3.866	3.806	4.004	4.670	4.607	4.428
Number non-motorized fatalities	193	222	222	232	250	254	281	290	292
Number of non-motorized serious injuries	219	214	246	329	349	400	396	394	456


Annual Fatalities
2000
1800
1600
1400
1200
1000
800
600
400
200
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
6000
5000
4000
3000
2000
1000
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
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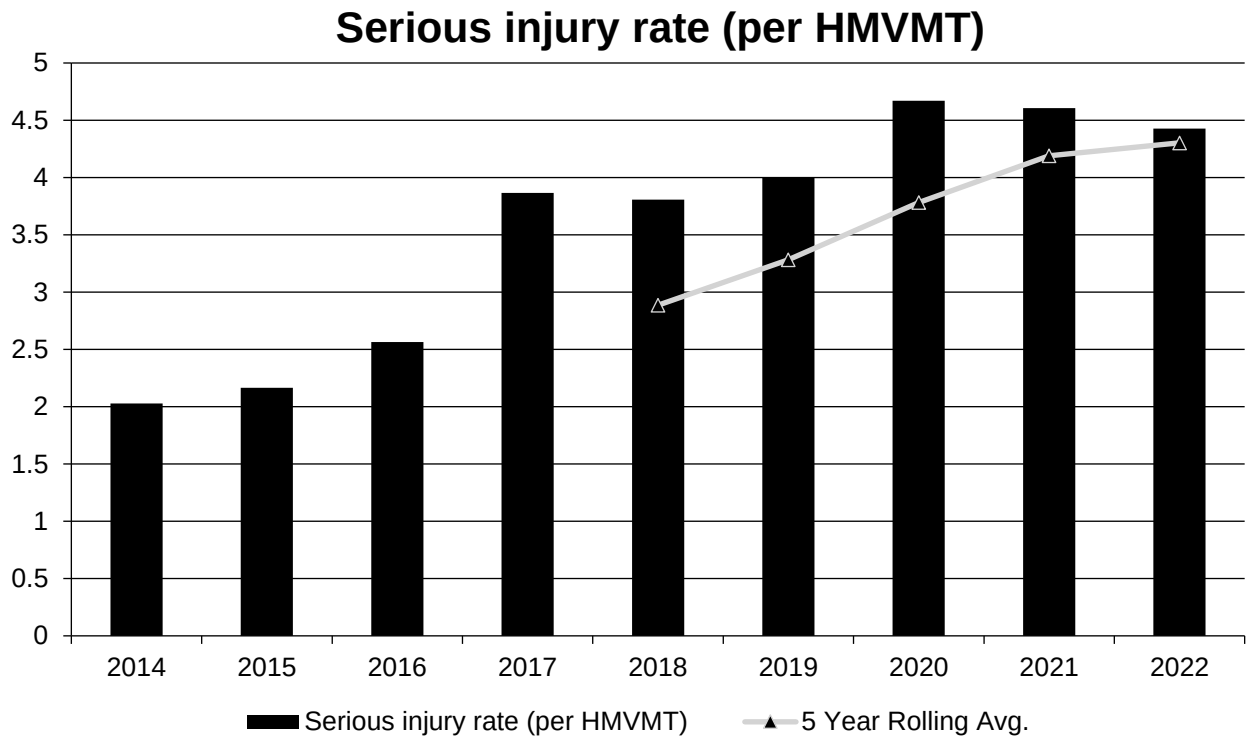
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
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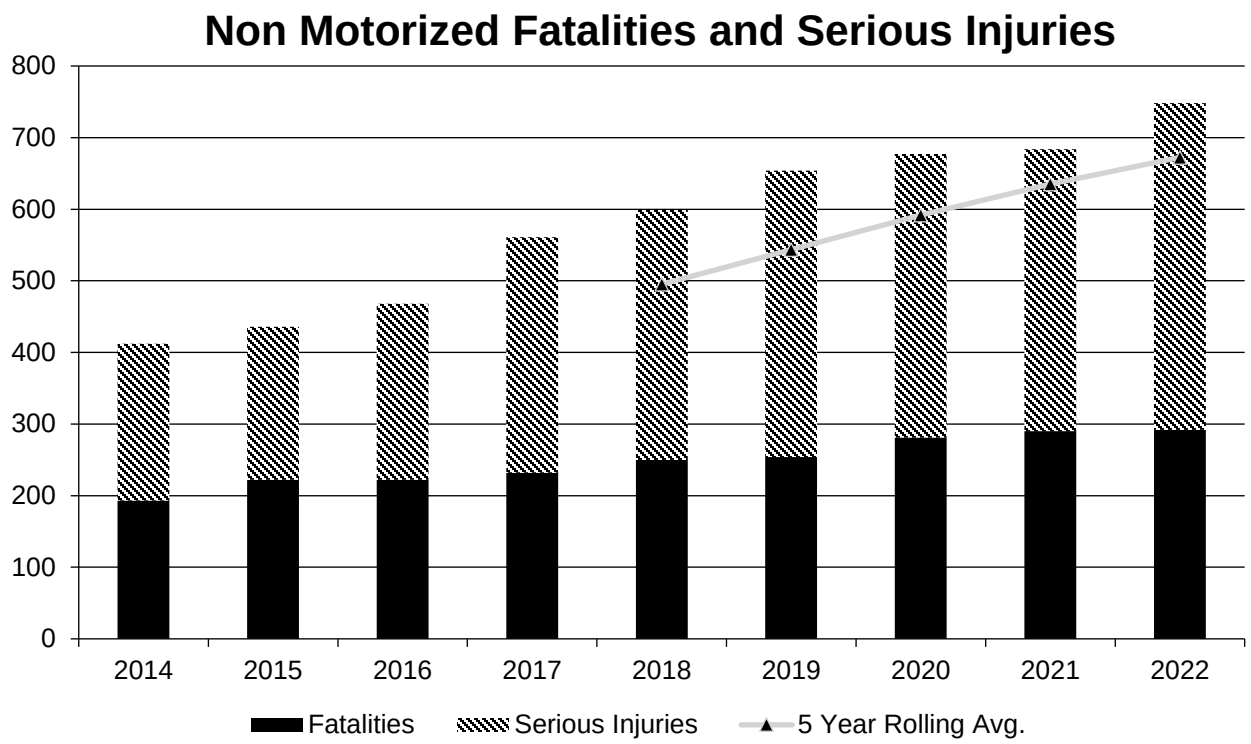
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Based on state-maintained data.

Describe fatality data source.

State Motor Vehicle Crash Database

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

Year 2022

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	38	204.6	0.57	3.11
Rural Principal Arterial (RPA) - Other Freeways and Expressways	22.4	79	0.84	2.94
Rural Principal Arterial (RPA) - Other	80.6	435	1.32	7.06
Rural Minor Arterial	134.4	657	2.24	10.93
Rural Minor Collector	91.6	424.4	3.19	14.74
Rural Major Collector	193.4	896.2	2.73	12.6

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	164.4	772.4	1.9	8.92
Urban Principal Arterial (UPA) - Interstate	98.6	501.4	0.5	2.52
Urban Principal Arterial (UPA) - Other Freeways and Expressways	33.2	124.2	0.59	2.21
Urban Principal Arterial (UPA) - Other	214.2	984.6	1.4	6.45
Urban Minor Arterial	164.6	895	1.22	6.63
Urban Minor Collector	9.6	40	1.52	6.23
Urban Major Collector	77.2	432.6	1.1	6.15
Urban Local Road or Street	58.8	230	0.39	1.86

Year 2022

Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	1,502.6	7,452.4	1.46	7.25
County Highway Agency				
Town or Township Highway Agency				
City or Municipal Highway Agency	66.8	292.6	0.54	2.3
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				

As expressed earlier, the local county governments are not responsible for the maintenance of rural highways in NC. 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.

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://www.ncdot.gov/about-us/our-mission/Performance/Pages/default.aspx

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 2024 Targets *

Number of Fatalities:1151.7

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

For the 2024 Highway Safety Improvement Plan (HSIP), the goal is to reduce total fatalities by 25.73 percent from 1,550.6 (2018-2022 average) to 1,151.7 (2020-2024 average) by December 31, 2024.

Number of Serious Injuries:3312.1

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

For the 2024 Highway Safety Improvement Plan (HSIP), the goal is to reduce total serious injuries by 34.27 percent from 5,038.6 (2018-2022 average) to 3,312.1 (2020-2024 average) by December 31, 2024.

Fatality Rate:0.967

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

For the 2024 Highway Safety Improvement Plan (HSIP), the goal is to reduce the fatality rate by 27.11 percent from 1.327 (2018-2022 average) to 0.967 (2020-2024 average) by December 31, 2024.

Serious Injury Rate:2.767

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

For the 2024 Highway Safety Improvement Plan (HSIP), the goal is to reduce the serious injury rate by 35.80 percent from 4.311 (2018-2022 average) to 2.767 (2020-2024 average) by December 31, 2024.

Total Number of Non-Motorized Fatalities and Serious Injuries:451.1

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

For the 2024 Highway Safety Improvement Plan (HSIP), the goal is to reduce the total non-motorized fatalities and serious injuries by 33.27 percent from 676.0 (2018-2022 average) to 451.1 (2020-2024 average) by December 31, 2024.

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 2019 State Highway Safety Plan (SHSP) concerning the reduction of fatalities and serious injuries. The numbers and rates for the five safety performance measures/targets are set in accordance with the 2019 SHSP goal of reducing fatalities and serious injuries by half by 2035, moving towards zero by 2050. NCDOT also continues to provide target setting crash data to each of the MPOs so they can establish their safety performance targets.

Does the State want to report additional optional targets?

No

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

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	1254.9	1638.0
Number of Serious Injuries	3537.6	5030.0
Fatality Rate	1.057	1.350
Serious Injury Rate	2.962	4.303
Non-Motorized Fatalities and Serious Injuries	486.0	672.4

Our state was determined to have not met or made significant progress toward the CY 2022 targets. In order to align with the goals of the 2019 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 2035. Because the safety targets are set based on the aspirational 2019 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.

Applicability of Special Rules

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

Yes

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

Yes

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

PERFORMANCE MEASURES	2016	2017	2018	2019	2020	2021	2022
Number of Older Driver and Pedestrian Fatalities	194	192	219	238	203	263	283
Number of Older Driver and Pedestrian Serious Injuries	223	338	371	396	324	445	464

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?

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

Describe significant program changes that have occurred since the last reporting period.

Funding Allocation Model

The 2020 HSIP Implementation Plan included an adjusted funding model that North Carolina began moving forward with in late 2020. This funding model was established after the data review within the 2020 document. The breakdown of this funding model is show below:

· ROADWAY DEPARTURE - 50%

o Systemic - 80%

o Responsive - 20%

· INTERSECTION - 35%

o Systemic - 40%

o Responsive - 60%

· PEDESTRIAN & BIKE - 15%

o Systemic - 40%

o Responsive - 60%

This allocation will continue to be applied to the anticipated HSIP construction funds of approximately $45 million. The funding allocations above are soft targets with flexibility. Projects will be considered within the context of the funding allocation – systemic versus responsive and emphasis area. The project selection committee will continue to favor low cost, high need and high return projects.

Program Plan

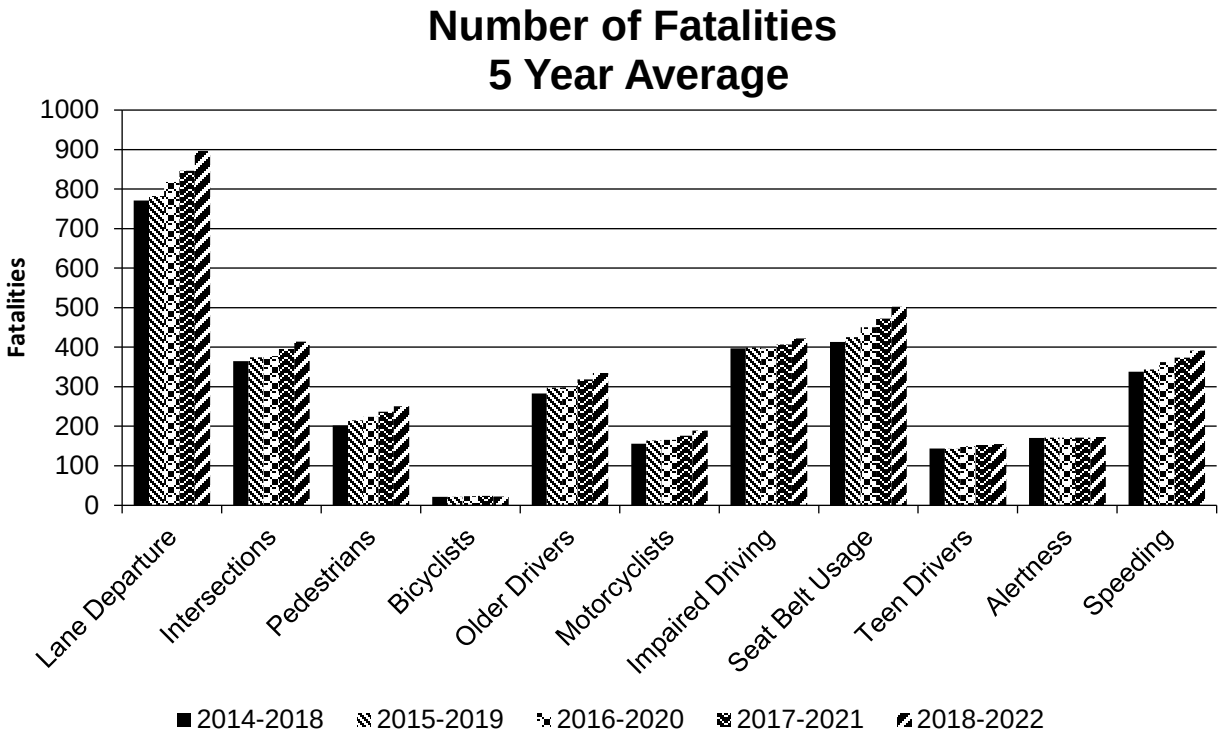
The systemic projects within the roadway departure category will focus on long life markings, rumbles, curve signing and guardrail. The systemic projects within the intersection category will focus on rural, all-way stop control. The systemic projects within the pedestrian category will focus on large city zones and smaller cities where corridors of need can be assessed through risk factors.

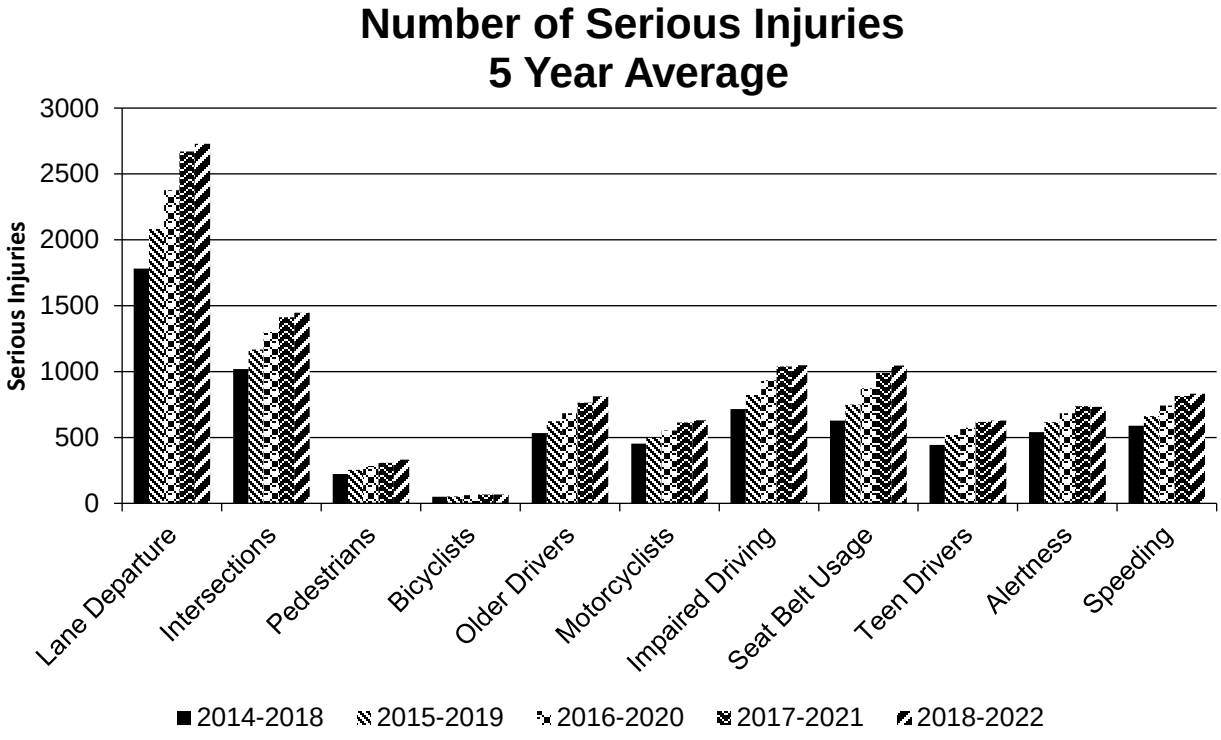
Effectiveness of Groupings or Similar Types of Improvements

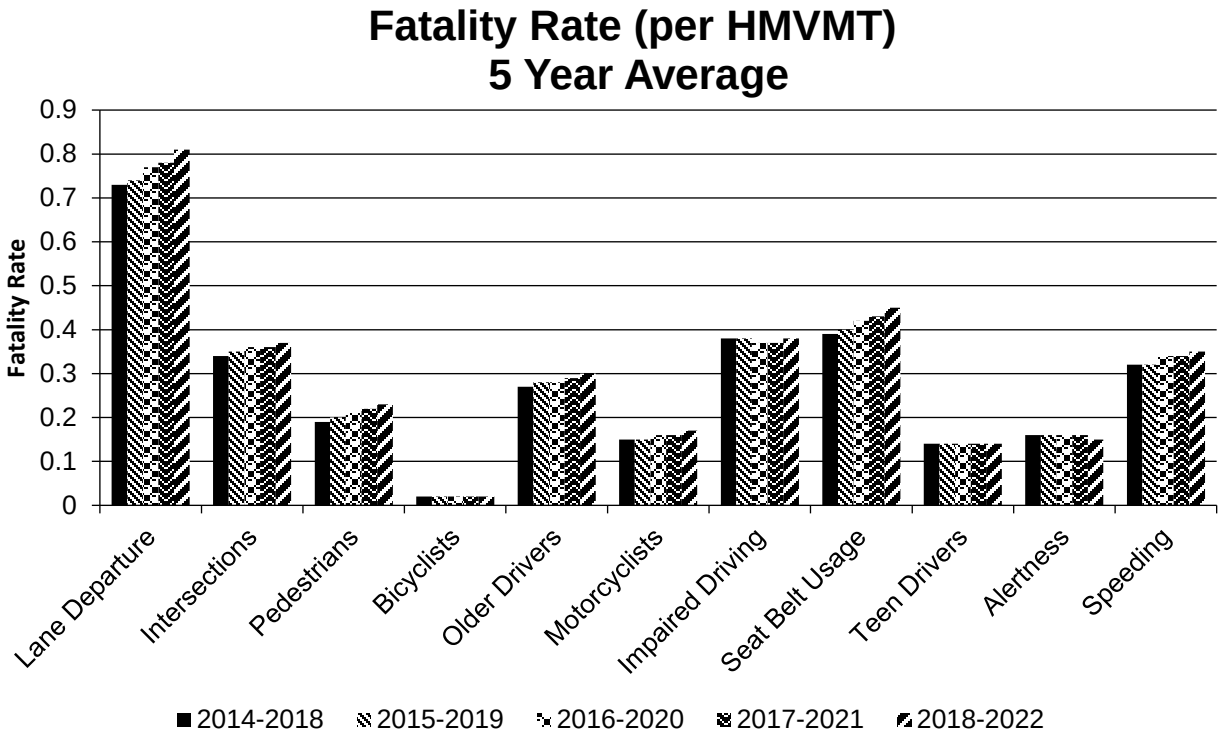
Present and describe trends in SHSP emphasis area performance measures.

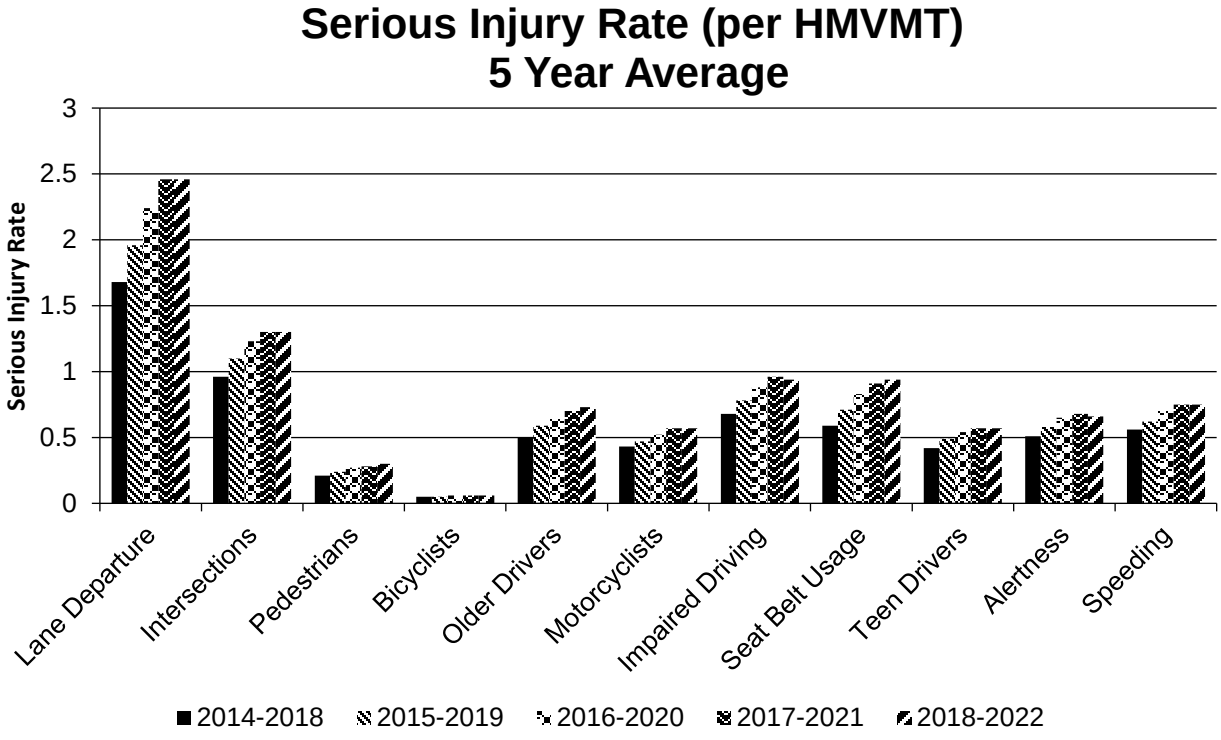
Year 2022

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Lane Departure		896.6	2,729.2	0.81	2.46
Intersections		414.2	1,445.6	0.37	1.3
Pedestrians		250.6	332.8	0.23	0.3
Bicyclists		22	66.8	0.02	0.06
Older Drivers		334.6	811.4	0.3	0.73
Motorcyclists		189.2	631	0.17	0.57
Impaired Driving		422.6	1,047	0.38	0.94
Seat Belt Usage		502.2	1,045.6	0.45	0.94
Teen Drivers		155	629	0.14	0.57
Alertness		173.2	731.8	0.15	0.66
Speeding		391.8	832.2	0.35	0.75


Number of Fatalities
5 Year Average
Fatalities
1000
900
800
700
600
500
400
300
200
100
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Impaired Driving
Seat Belt Usage
Teen Drivers
Alertness
Speeding
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Number of Serious Injuries
5 Year Average
Serious Injuries
3000
2500
2000
1500
1000
500
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcyclists
Impaired Driving
Seat Belt Usage
Teen Drivers
Alertness
Speeding
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022





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:	Dual Left Turn Lanes
Description:	Evaluation of Dual Left Turn Lane Installations in North Carolina
Target Crash Type:	Other (define)
Number of Installations:	36
Number of Installations:	36
Miles Treated:	
Years Before:	
Years After:	
Methodology:	Before/after using empirical Bayes or Full Bayes
Results:	The results from the EB evaluation methodology indicate that a DLTL installation will result in a 16% reduction in fatal-and injury crashes, a 17% reduction in frontal impact crashes, and a 24% increase in sideswipe crashes; all of which are statistically significant at the 95% confidence level. Overall, this research team recommends that baseline CMFs of 0.844 for fatal-and-injury crashes and 1.010 for PDO crashes be used by transportation officials when planning future DLTL projects.

File Name: Dual Left Turn Lane_NC.pdf

CounterMeasures:	Intersection Conflict Warning Systems
Description:	Updated Evaluation of “Vehicle Entering When Flashing” signing in NC
Target Crash Type:	Other (define)
Number of Installations:	59
Number of Installations:	59
Miles Treated:	
Years Before:	
Years After:	
Methodology:	Before/after using empirical Bayes or Full Bayes
Results:	10% reduction in Total Crashes. For locations with sight distance constraints or skew and does not apply to upgrading/enhancing existing VEWF systems.

File Name: Vehicle Entering When Flashing Update_NC.pdf

CounterMeasures:	All Way Stop Control
Description:	Evaluation of All Way Stop Control in NC
Target Crash Type:	Other (define)
Number of Installations:	348

Number of Installations:	348
Miles Treated:	
Years Before:	
Years After:	
Methodology:	Simple before/after
Results:	55% reduction in Total Crashes. 65% reduction in Frontal Impact Crashes 92% reduction in Fatal and Severe Injury Crashes 72% reduction in B and C Injury Crashes

File Name: All Way Stop_NC.pdf

CounterMeasures:	Rest in Red
Description:	Evaluation of Rest in Red implementation at traffic signals in NC
Target Crash Type:	Other (define)
Number of Installations:	5
Number of Installations:	5
Miles Treated:	
Years Before:	
Years After:	
Methodology:	Simple before/after
Results:	51% reduction in Frontal Impact Crashes

File Name: Rest in Red_NC.pdf

Project Effectiveness

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

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 web page 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					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	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	100								
	One/Two Way Operations (91) [93]	100	100								
	Number of Through Lanes (31) [32]	100	100					94	94		
	Average Annual Daily Traffic (79) [81]	100	100					100	100		
	AADT Year (80) [82]	100	100								
	Type of Governmental Ownership (4) [4]	100	100					100	100	100	100
INTERSECTION	Unique Junction Identifier (120) [110]			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]			100	100						
	Intersection/Junction Traffic Control (131) [131]			100	100						
	AADT for Each Intersecting Road (79) [81]			100	100						
	AADT Year (80) [82]			100	100						
	Unique Approach Identifier (139) [129]			100	100						
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					100	100				
	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]					100	100				
	Roadway Type at End Ramp Terminal (199) [189]					100	100				
	Interchange Type (182) [172]					100	100				
	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**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**99.33**	**99.33**	**100.00**	**100.00**

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

Model Inventory of Roadway Elements Fundamental Data Elements (MIRE FDE) Data Collection Plan

This section provides an overview of North Carolina's strategy for meeting the Model Inventory of Roadway Elements Fundamental Data Elements (MIRE FDE) data requirements in accordance with 23 CFR, Part 924.11.

Current Status of the MIRE FDE Collection

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 regularly assesses their roadway inventory to determine their status of compliance with the FDE requirements. The current FDE compliance and gaps are summarized in this section.

Non-Local Paved Roads

Segments

NCDOT collects and maintains all of the FDE segment elements on all State-owned Non-Local Paved roads. For some elements, a small percentage of mileage (around 1%) is not yet coded, likely due to data lag in entering new roadways into the system.

Intersections

With the completion of their first traffic safety intersection inventory in 2023, NCDOT has collected all of the FDE intersection elements on all State-owned Non-Local Paved roads.

Interchange/Ramp

With the completion of their first traffic safety interchange inventory in 2021, NCDOT has collected all of the FDE interchange elements on all State-owned Non-Local Paved roads. For a minor portion of interchange ramps, the AADT is unknown. NCDOT is continuing to work on identifying and completing ramp AADT values.

Local Paved Roads

Of the nine (9) FDEs on Local Paved Roads, all elements have been collected on all State-owned (system) and Non-State-owned (non system) roads. Approximately 6% of the mileage (3,200 miles) do not have a value for 31 – Number of Through Lanes. These roads lacking full coverage of number of through lanes are all Non-State roads. NCDOT is pursuing funding for additional work to infill the gaps in this element.

There are 15,000 miles of local roads for which surface type is unknown and 6,500 miles for which ownership (public vs. private) is unknown. NCDOT is pursuing funding for additional work to determine surface type and ownership, and therefore level of MIRE FDE compliance needs, for these 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.

In the past couple years, NCDOT has made great strides in collecting and assembling data to fill the FDE requirement needs. These efforts are described in the following sections.

· *Completion of a statewide intersection inventory*

o NCDOT contracted VHB to develop a GIS-based inventory of all public road intersections in the state. This effort concluded in 2023 and produced an inventory of intersection features, represented as both points and polygons, and intersection approach legs, represented as line features. Basic attributes were attached to intersections and approach legs, such as traffic control and traffic volume. The inventory was developed to expand the capabilities of traffic safety analysis and to fulfill the requirements of FDE elements.

· *Completion of a statewide interchange inventory*

o NCDOT Traffic Safety Unit collaborated with the NCDOT GIS Unit to develop an inventory of all interchanges in the state. This effort concluded in 2021 and produced an inventory of interchange features, represented as geospatial polygon feature encompassing the entire interchange area. Each interchange was categorized by type, such as diamond, partial cloverleaf, or trumpet. The inventory was developed to expand the capabilities of traffic safety analysis and to fulfill the requirements of FDE elements.

· *Completion of statewide traffic volume assembly*

o Through a subscription contract with StreetLight, NCDOT acquired data on AADT for all public roads in the state for the year 2021. This served to fill many gaps in traffic volume and complete the requirements of MIRE FDE.

NCDOT continued to participate in the Applications of Enterprise GIS for Transportation, Guidance for a National Transportation Framework (AEGIST) pooled fund study. 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. NCDOT has worked with AEGIST to establish best practices for data governance.

Coordination with Other Agencies

Some data gaps exist on Non-State roads, particularly those where surface type or ownership is unknown. NCDOT plans to analyze the mileage and ownership for these roadways and determine what outreach mechanism might be most effective to working with local agencies to obtain data. This will help NCDOT determine if they can utilize information already being collected by local agencies, or if further State sponsored data collection efforts are needed to obtain the data on these roadways.

Prioritization Criteria for Collection MIRE FDE on All Public Roads

The FDE collection priorities are:

· Short-term: Determine extent of data gaps for roads where surface type or ownership is unknown.

· Mid-term: Any remaining 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 submitted a grant funding request to the Traffic Records Coordinating Committee to fund work in establishing the surface type and ownership for non-system roads where those gaps still remain. NCDOT has not yet developed cost estimates for any work beyond that, including filling gaps in FDE coverage where required. NCDOT will review the FHWA*MIRE Fundamental Data Elements Cost-Benefit Estimation* report as a starting point,

https://safety.fhwa.dot.gov/rsdp/downloads/fhwasa16035_051916v10.pdf.

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

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.

Model Inventory of Roadway Elements Fundamental Data Elements (MIRE FDE) Data Collection Plan

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NCDOT regularly assesses their roadway inventory to determine their status of compliance with the FDE requirements. The current FDE compliance and gaps are summarized in this section.

Non-Local Paved Roads

Segments

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Intersections

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Interchange/Ramp

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There are 15,000 miles of local roads for which surface type is unknown and 6,500 miles for which ownership (public vs. private) is unknown. NCDOT is pursuing funding for additional work to determine surface type and ownership, and therefore level of MIRE FDE compliance needs, for these 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.

In the past couple years, NCDOT has made great strides in collecting and assembling data to fill the FDE requirement needs. These efforts are described in the following sections.

· *Completion of a statewide intersection inventory*

o NCDOT contracted VHB to develop a GIS-based inventory of all public road intersections in the state. This effort concluded in 2023 and produced an inventory of intersection features, represented as both points and polygons, and intersection approach legs, represented as line features. Basic attributes were attached to intersections and approach legs, such as traffic control and traffic volume. The inventory was developed to expand the capabilities of traffic safety analysis and to fulfill the requirements of FDE elements.

· *Completion of a statewide interchange inventory*

o NCDOT Traffic Safety Unit collaborated with the NCDOT GIS Unit to develop an inventory of all interchanges in the state. This effort concluded in 2021 and produced an inventory of interchange features, represented as geospatial polygon feature encompassing the entire interchange area. Each interchange was categorized by type, such as diamond, partial cloverleaf, or trumpet. The inventory was developed to expand the capabilities of traffic safety analysis and to fulfill the requirements of FDE elements.

· *Completion of statewide traffic volume assembly*

o Through a subscription contract with StreetLight, NCDOT acquired data on AADT for all public roads in the state for the year 2021. This served to fill many gaps in traffic volume and complete the requirements of MIRE FDE.

NCDOT continued to participate in the Applications of Enterprise GIS for Transportation, Guidance for a National Transportation Framework (AEGIST) pooled fund study. 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. NCDOT has worked with AEGIST to establish best practices for data governance.

Coordination with Other Agencies

Some data gaps exist on Non-State roads, particularly those where surface type or ownership is unknown. NCDOT plans to analyze the mileage and ownership for these roadways and determine what outreach mechanism might be most effective to working with local agencies to obtain data. This will help NCDOT determine if they can utilize information already being collected by local agencies, or if further State sponsored data collection efforts are needed to obtain the data on these roadways.

Prioritization Criteria for Collection MIRE FDE on All Public Roads

The FDE collection priorities are:

· Short-term: Determine extent of data gaps for roads where surface type or ownership is unknown.

· Mid-term: Any remaining 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 submitted a grant funding request to the Traffic Records Coordinating Committee to fund work in establishing the surface type and ownership for non-system roads where those gaps still remain. NCDOT has not yet developed cost estimates for any work beyond that, including filling gaps in FDE coverage where required. NCDOT will review the FHWA*MIRE Fundamental Data Elements Cost-Benefit Estimation* report as a starting point,

https://safety.fhwa.dot.gov/rsdp/downloads/fhwasa16035_051916v10.pdf.

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

Optional Attachments

Program Structure:

Project Implementation:

Safety Performance:

Evaluation:

Dual Left Turn Lane_NC.pdf
Vehicle Entering When Flashing Update_NC.pdf
All Way Stop_NC.pdf
Rest in Red_NC.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.