# NORTH CAROLINA

# HIGHWAY SAFETY IMPROVEMENT PROGRAM

## 2024 ANNUAL REPORT


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# Disclaimer

## *Protection of Data from Discovery Admission into Evidence*

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

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

# Executive Summary

The 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 2023, there were over 308,000 reported traffic crashes that resulted in 1,685 fatalities, 5,480 severe injuries, 295 non-motorized fatalities, and 456 non-motorized severe injuries on our roadways. The socioeconomic impact of these crashes is significant, resulting in a loss of over $39 billion to the economy of North Carolina annually. This impact translates to a crash cost to the state of over $4.5 million every hour and approximately $108 million every day and a staggering social impact as well. In 2023, North Carolina had a population of over 10.8 million, and an estimated average annual vehicle miles traveled of 1212.29 (100 MVMT).

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 2024, North Carolina updated the 2019 Strategic Highway Safety Plan (SHSP) in coordination through the Executive Committee for Highway Safety. The goals established in the SHSP are to reduce fatalities and serious injuries by half by 2035 and move towards zero by 2050.

This “HSIP Report” describes North Carolina DOT’s implementation and effectiveness of its Highway Safety Improvement Program. These reports satisfy the requirements under Title 23 of the Code of Federal Regulations, Part 924 (23 CFR 924). The NCDOT Rail Division is developing the “Railway-Highway Crossing Report” as a separate report submission. North Carolina DOT has opted to use the 2023 Calendar Year as the reporting period for the “HSIP Report”; however, some of our 2024 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 that 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.

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

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

## Describe coordination with internal partners.

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

## Identify which external partners are involved with HSIP planning.

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

## Describe coordination with external partners.

Planning Organizations utilize traffic safety data to develop and prioritize transportation plans. Members of the NC State Highway Patrol and local government transportation agencies also regularly participate in NCDOT's Road Safety Audit Program. The NC Transportation Secretary chairs the NC Executive Committee for Highway Safety and partner agency representatives are actively involved in the committee. The partner agency representatives currently include members from the following: NC Conference of District Attorneys, UNC Highway Safety Research Center, City of Greensboro, NC Association of MPOs, FMCSA, NCSHP, N.C. Governor's Highway Safety Program, NCDMV, Transformative Ideas Calculated Success (TRANCAS), NCSU Institute for Transportation Research and Education, FHWA, AARP NC, NC Department of Insurance and Eastern Carolina Injury Prevention Program.

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

The North Carolina Strategic Highway Safety Plan (SHSP) (herein referred to as the Plan) is essential to addressing highway safety in our State. The Plan is a key component of North Carolina’s Highway Safety Improvement Program, a core-Federal-aid program directed at reducing fatalities and serious injuries on all public roads. North Carolina’s Executive Committee for Highway Safety first developed the SHSP in 2004. Updates in 2006 and 2014 were implementation focused, identifying significant contributing factors in crashes and implementation strategies with the most potential to address those crashes. 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 2024 Plan is an update to the 2019 Plan and the fifth iteration of the Plan since 2004.

The NC SHSP was updated in 2024. This data-driven plan serves as a roadmap for Federal, State, local, and other agencies who strive to reduce all crashes, serious injuries, and fatalities on our roadways. As a Vision Zero State, we used a 4E—Engineering, Education, Enforcement, and Emergency Services—approach to develop strategies and supporting actions, as well as incorporating the ideas established in the Safe System Approach. The 2024 SHSP is the culmination of the work of more than 75 safety partners from 50 agencies and groups all over the State. Working together, the safety partners identified the 9 most significant contributing factors to fatalities and serious injuries and developed Emphasis Area Action Plans for each. In North Carolina, both the SHSP and the HSIP focus on the emphasis areas of lane departure, frontal impact, and pedestrian and bicycle crashes. The 2024 SHSP plan retains the previous goal set in the 2019 SHSP Plan, including the target years and fatality and severe injury number goals established in 2019. The 2024 NC SHSP Plan documentation can be found at the following link

https://www.ncdot.gov/initiatives-policies/safety/traffic-safety/Pages/strategic-highway-safety-plan.aspx

As part of refining and updating the Plan to better position the state to reach its goal and eliminate severe crashes, the 2024 narrowed its focus and explored policies and partnerships to leverage change. Notably, safety partners reduced the number of emphasis areas from 11 in 2019 to 9 in 2024. Other changes include updated speed-related and occupant protection-related emphasis areas to better reflect the intended goals and visions of the strategies and supporting actions. The 2024 emphasis areas include:

- Intersections
- Lane Departure
- Pedestrians, Bicyclists, and Personal Mobility
- Seat Belts and Car Seats
- Substance Impaired Driving
- Safer Speeds
- Older Drivers

- Motorcyclists
- Younger Drivers

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 2020-2024, 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 2024 North Carolina HSIP Implementation Plan that was completed in August 2024.

### Select the programs that are administered under the HSIP.

- Bicycle Safety
- HRRR
- Intersection
- Pedestrian Safety
- Roadway Departure

## Program: Bicycle Safety

### *Date of Program Methodology:4/30/2019*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Funding set-aside

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • Other-Vulnerable User Crashes | • Traffic<br>• Volume | • Other-Vehicle Speeds<br>• Other-Crossing Distance<br>• Other-Proximity, connectivity, and school preference |

### *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).*

**Relative Weight in Scoring**

Other-Vulnerable User Index Scoring:100
Total Relative Weight:100

## 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:4/30/2019*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Funding set-aside

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • Other-Vulnerable User Crashes | • Traffic<br>• Volume | • Other-Vehicle Speeds<br>• Other-Crossing Distance<br>• Other-Proximity, connectivity, school preference |

### *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).*

**Relative Weight in Scoring**

Other-Vulnerable User Index Score:100
Total Relative Weight:100

## Program: Roadway Departure

### *Date of Program Methodology:8/31/2016*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Competes with all projects

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes | | • Other-Access Control<br>• 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?

36.5

### 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. Nearly 700 locations were investigated through systemic programs. 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 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, rumble strips, 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 Engineers 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 as outlined in the project scope. 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 2024 HSIP implementation Plan for additional information and details.

# Project Implementation

## *Funds Programmed*

### Reporting period for HSIP funding.

State Fiscal Year

(7/1/2023 - 6/30/2024)

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

| FUNDING CATEGORY | PROGRAMMED | OBLIGATED | % OBLIGATED/PROGRAMMED |
|---|---|---|---|
| **HSIP (23 U.S.C. 148)** | $67,826,435 | $67,845,939 | 100.03% |
| **HRRR Special Rule (23 U.S.C. 148(g)(1))** | $5,010,000 | $4,826,978 | 96.35% |
| **VRU Safety Special Rule (23 U.S.C. 148(g)(3))** | $23,443,800 | $19,514,906 | 83.24% |
| **Penalty Funds (23 U.S.C. 154)** | $0 | $0 | 0% |
| **Penalty Funds (23 U.S.C. 164)** | $0 | $0 | 0% |
| **RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))** | $0 | $0 | 0% |
| **Other Federal-aid Funds (i.e. STBG, NHPP)** | $0 | $0 | 0% |
| **State and Local Funds** | $16,224,330 | $16,224,330 | 100% |
| **Totals** | $112,504,565 | $108,412,153 | 96.36% |

### 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?

$18,000,000

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

$18,110,000

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

$40,433,043

## 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

$40,433,043 in CMAQ and Carbon Reduction funds was transferred into HSIP.

## 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 OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2003AB | Roadway delineation | Wider Edge Lines (6 inch markings) | 3.265 | Miles | $47700 | $53000 | HSIP (23 U.S.C. 148) | Rural | Minor Collector | 3,700 | | State Highway Agency | Spot | Lane Departure | |
| HS-2010M | Roadway delineation | Roadway delineation - other | 6 | Ramps | $705600 | $784000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Interstate | 0 | 65 | State Highway Agency | Systemic | Data | |
| HS-2004Y | Roadway delineation | Roadway delineation - other | 194 | Ramps | $585000 | $650000 | 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 | $450000 | $500000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 0 | | State Highway Agency | Systemic | Data | |
| HS-2006AB | Roadway delineation | Roadway delineation - other | 20 | Intersections | $153900 | $171000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Principal Arterial-Other Freeways & Expressways | 0 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2009A | Roadway delineation | Longitudinal pavement markings - remarking | 479 | Miles | $480 | $533 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 0 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2014S | Roadway delineation | Longitudinal pavement markings - remarking | 3.58 | Miles | $236700 | $263000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 6,350 | 50 | State Highway Agency | Systemic | Lane Departure | |
| HS-2012D | Roadway delineation | Longitudinal pavement markings - remarking | 65 | Locations | $1701914 | $1891016 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Rural | Multiple/Varies | 0 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2013Q | Roadway delineation | Longitudinal pavement markings - remarking | 181 | Miles | $13500 | $15000 | HSIP (23 U.S.C. 148) | Urban | Multiple/Varies | 0 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2013R | Roadway delineation | Longitudinal pavement markings - remarking | 123.47 | Miles | $2682000 | $2980000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 0 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2004J | Roadway delineation | Longitudinal pavement markings - remarking | 366.384 | Miles | $3125064 | $3472293 | HRRR Special Rule (23 U.S.C. 148(g)(1)) | Rural | Multiple/Varies | 0 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2405F | Roadway delineation | Longitudinal pavement markings - remarking | 1069157 | Feet | $1665000 | $1850000 | 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 OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2010R | Roadway | Superelevation / cross slope | 1 | Miles | $90000 | $100000 | HSIP (23 U.S.C. 148) | Rural | Local Road or Street | 6,500 | 45 | State Highway Agency | Spot | Lane Departure | |
| W-5704K | Roadway | Superelevation / cross slope | 1 | Curves | $807300 | $897000 | HSIP (23 U.S.C. 148) | Rural | Local Road or Street | 5,300 | | State Highway Agency | Spot | Lane Departure | |
| W-5706Y | Roadway | Superelevation / cross slope | 1 | Locations | $203400 | $226000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 4,700 | | State Highway Agency | Spot | Lane Departure | |
| HS-2012K | Roadway | Rumble strips –other | 0.5 | Miles | $24300 | $27000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 5,400 | 45 | State Highway Agency | Spot | Lane Departure | |
| HS-2006Y | Roadway | Rumble strips –other | 1 | Locations | $211500 | $235000 | HSIP (23 U.S.C. 148) | Rural | Minor Collector | 9,100 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2006AC | Roadway | Rumble strips –other | 2 | Locations | $1062000 | $1180000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 11,500 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2006AD | Roadway | Rumble strips –other | 2 | Locations | $297000 | $330000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 5,900 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2006W | Roadway | Rumble strips –other | 3 | Locations | $877500 | $975000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 8,800 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2012I | Roadway | Rumble strips –other | 3.069 | Miles | $108000 | $120000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 10,000 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2012J | Roadway | Rumble strips –other | 4.565 | Miles | $157500 | $175000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 12,100 | 45 | State Highway Agency | Systemic | Lane Departure | |
| HS-2012L | Roadway | Rumble strips –other | 5.118 | Miles | $169200 | $188000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 8,300 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2012G | Roadway | Rumble strips –other | 5.965 | Miles | $205200 | $228000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 7,300 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2012H | Roadway | Rumble strips –other | 7.248 | Miles | $234900 | $261000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 4,400 | 50 | 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 OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2012M | Roadway | Rumble strips –other | 13.206 | Miles | $380700 | $423000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 7,500 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2006H | Roadway | Rumble strips –other | 28.961 | Miles | $958500 | $1065000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 5,500 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2010O | Roadway | Rumble strips – edge or shoulder | 1 | Miles | $1327500 | $1475000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 0 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2010N | Roadway | Rumble strips – edge or shoulder | 2 | Miles | $994500 | $1105000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 0 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2010P | Roadway | Rumble strips – edge or shoulder | 3 | Miles | $831500 | $923889 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 0 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2014T | Roadway | Rumble strips – edge or shoulder | 5.18 | Miles | $327600 | $364000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 4,250 | 45 | State Highway Agency | Systemic | Lane Departure | |
| HS-2004AC | Roadway | Rumble strips – edge or shoulder | 7.331 | Miles | $189263 | $210292 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 6,400 | 55 | State Highway Agency | Spot | Lane Departure | |
| HS-2002AD | Roadway | Rumble strips – edge or shoulder | 11.702 | Miles | $900 | $1000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 4,800 | 55 | State Highway Agency | Spot | Lane Departure | |
| HS-2011F | Roadway | Rumble strips – edge or shoulder | 13.343 | Miles | $355500 | $395000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 8,600 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2004AD | Roadway | Rumble strips – edge or shoulder | 18.55 | Miles | $441263 | $490292 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 5,200 | 55 | State Highway Agency | Spot | Lane Departure | |
| HS-2004U | Roadway | Rumble strips – edge or shoulder | 22.889 | Miles | $621000 | $690000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 8,300 | 55 | State Highway Agency | Systemic | Lane Departure | |
| W-5803B | Roadway | Rumble strips – edge or shoulder | 26.35 | Miles | $812 | $902 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 30,000 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2014U | Roadway | Rumble strips – center | 2.62 | Miles | $63000 | $70000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 4,350 | 45 | State Highway Agency | Systemic | Lane Departure | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2001H | Roadway | Rumble strips – center | 7.166 | Miles | $369000 | $410000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 7,000 | 55 | State Highway Agency | Spot | Lane Departure | |
| HS-2001G | Roadway | Rumble strips – center | 30.202 | Miles | $805500 | $895000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 5,000 | 55 | State Highway Agency | Systemic | Lane Departure | |
| HS-2002S | Roadway | Rumble strips – center | 34.037 | Miles | $684000 | $760000 | 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 | $1944900 | $2161000 | 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 | $188100 | $209000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Minor Arterial | 23,500 | 45 | State Highway Agency | Spot | Lane Departure | |
| HS-2014A | Roadway | Rumble strips – center | 5.77 | Miles | $10145 | $11272 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 8,575 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2006M | Roadway | Roadway widening - curve | 4 | Curves | $156600 | $174000 | HSIP (23 U.S.C. 148) | Rural | Local Road or Street | 1,000 | 55 | State Highway Agency | Spot | Lane Departure | |
| HS-2006Q | Roadway | Roadway - other | 0.1 | Miles | $63000 | $70000 | HSIP (23 U.S.C. 148) | Rural | Local Road or Street | 700 | 55 | State Highway Agency | Spot | Lane Departure | |
| HS-2009L | Roadway | Roadway - other | 1 | Intersections | $36000 | $40000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 8,500 | 45 | State Highway Agency | Spot | Lane Departure | |
| HS-2008F | Roadway | Roadway - other | 750 | Feet | $15450 | $17167 | HSIP (23 U.S.C. 148) | Multiple/Varies | Minor Arterial | 18,500 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2014AA | Roadway | Restripe roadway to revise separation between opposing lanes and/or shoulder widths | 300 | Feet | $50400 | $56000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Minor Arterial | 9,000 | 50 | State Highway Agency | Spot | Lane Departure | |
| HS-2004Q | Roadway | Pavement surface – high friction surface | 0.12 | Miles | $140989 | $156654 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other Freeways & Expressways | 24,000 | 70 | State Highway Agency | Spot | Lane Departure | |
| W-5705AJ | Roadside | Barrier- metal | 0.2 | Miles | $31122 | $34580 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 9,300 | | State Highway Agency | Spot | Lane Departure | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2006P | Roadside | Barrier- metal | 1 | Locations | $225000 | $250000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 17,000 | 35 | State Highway Agency | Spot | Lane Departure | |
| HS-2008A | Roadside | Barrier- metal | 4.34 | Miles | $611 | $679 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other Freeways & Expressways | 20,000 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2011E | Roadside | Barrier- metal | 88 | Locations | $135000 | $150000 | HSIP (23 U.S.C. 148) | Rural | Minor Collector | 3,000 | 55 | State Highway Agency | Spot | Lane Departure | |
| HS-2011C | Roadside | Barrier- metal | 264 | Feet | $2250 | $2500 | HSIP (23 U.S.C. 148) | Rural | Local Road or Street | 220 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2007K | Roadside | Barrier- metal | 2000 | Feet | $40500 | $45000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Interstate | 90,000 | 65 | State Highway Agency | Systemic | Lane Departure | |
| W-5714H | Roadside | Barrier- metal | 2800 | Feet | $9569 | $10632 | HSIP (23 U.S.C. 148) | Rural | Local Road or Street | 410 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2013K | Roadside | Barrier- metal | 5500 | Feet | $396000 | $440000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 3,650 | 55 | State Highway Agency | Spot | Lane Departure | |
| HS-2013I | Roadside | Barrier- metal | 13000 | Feet | $459000 | $510000 | HSIP (23 U.S.C. 148) | Rural | Minor Collector | 750 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2013N | Roadside | Barrier- metal | 13595 | Feet | $787500 | $875000 | 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 | $801000 | $890000 | 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 | $531000 | $590000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 6,000 | 55 | State Highway Agency | Spot | Lane Departure | |
| HS-2013J | Roadside | Barrier- metal | 19450 | Feet | $931500 | $1035000 | 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 | $2384 | $2649 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 0 | | State Highway Agency | Systemic | Data | |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2401B | Roadside | Barrier end treatments (crash cushions, terminals) | 83 | Locations | $441900 | $491000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 0 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2006R | Roadside | Barrier – cable | 1 | Locations | $733500 | $815000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Interstate | 40,000 | 70 | State Highway Agency | Spot | Lane Departure | |
| HS-2003AH | Roadside | Barrier – cable | 5.308 | Miles | $45900 | $51000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 8,900 | | State Highway Agency | Systemic | Lane Departure | |
| HS-2002AA | Pedestrians and bicyclists | Rapid Rectangular Flashing Beacons (RRFB) | 1 | Crosswalks | $900 | $1000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Minor Arterial | 11,000 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2002AA | Pedestrians and bicyclists | Rapid Rectangular Flashing Beacons (RRFB) | 1 | Crosswalks | $28800 | $32000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Multiple/Varies | Minor Arterial | 11,000 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2006AE | Pedestrians and bicyclists | Rapid Rectangular Flashing Beacons (RRFB) | 1 | Locations | $248000 | $275556 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Local Road or Street | 4,800 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2014Z | Pedestrians and bicyclists | Rapid Rectangular Flashing Beacons (RRFB) | 1 | Crosswalks | $63900 | $71000 | HSIP (23 U.S.C. 148) | Rural | Local Road or Street | 1,100 | 25 | State Highway Agency | Spot | Pedestrians | |
| HS-2014Z | Pedestrians and bicyclists | Rapid Rectangular Flashing Beacons (RRFB) | 1 | Crosswalks | $4500 | $5000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Rural | Local Road or Street | 1,100 | 25 | State Highway Agency | Spot | Pedestrians | |
| HS-2002Z | Pedestrians and bicyclists | Rapid Rectangular Flashing Beacons (RRFB) | 2 | Crosswalks | $900 | $1000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Local Road or Street | 6,600 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2002Z | Pedestrians and bicyclists | Rapid Rectangular Flashing Beacons (RRFB) | 2 | Crosswalks | $49500 | $55000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Multiple/Varies | Local Road or Street | 6,600 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2014V | Pedestrians and bicyclists | Rapid Rectangular Flashing Beacons (RRFB) | 4 | Crosswalks | $99000 | $110000 | 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 | $7650 | $8500 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 26,000 | | State Highway Agency | Spot | Pedestrians | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2003AI | Pedestrians and bicyclists | Pedestrian signal - other | 1 | Intersections | $39870 | $44300 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 22,500 | | State Highway Agency | Spot | Pedestrians | |
| W-5813C | Pedestrians and bicyclists | Pedestrian signal | 1 | Crosswalks | $2439 | $2710 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 6,100 | | State Highway Agency | Spot | Pedestrians | |
| W-5813C | Pedestrians and bicyclists | Pedestrian signal | 1 | Crosswalks | $13500 | $15000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Major Collector | 6,100 | | State Highway Agency | Spot | Pedestrians | |
| W-5813E | Pedestrians and bicyclists | Pedestrian signal | 1 | Crosswalks | $6042 | $6713 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 25,000 | | State Highway Agency | Spot | Pedestrians | |
| W-5813E | Pedestrians and bicyclists | Pedestrian signal | 1 | Crosswalks | $69300 | $77000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 25,000 | | State Highway Agency | Spot | Pedestrians | |
| W-5813F | Pedestrians and bicyclists | Pedestrian signal | 1 | Crosswalks | $43200 | $48000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 21,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2005K | Pedestrians and bicyclists | Pedestrian signal | 2 | Intersections | $230230 | $255811 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 29,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2006A | Pedestrians and bicyclists | Pedestrian signal | 3 | Intersections | $103500 | $115000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 23,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2005M | Pedestrians and bicyclists | Pedestrian signal | 1 | Intersections | $20250 | $22500 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Minor Arterial | 11,000 | 35 | State Highway Agency | Spot | Intersections | |
| HS-2002Y | Pedestrians and bicyclists | Pedestrian signal | 1 | Intersections | $3600 | $4000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 18,000 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2002Y | Pedestrians and bicyclists | Pedestrian signal | 1 | Intersections | $73800 | $82000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 18,000 | 35 | State Highway Agency | Spot | Pedestrians | |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2004AB | Pedestrians and bicyclists | Pedestrian signal | 1 | Intersections | $9000 | $10000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 11,000 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2005Q | Pedestrians and bicyclists | Pedestrian signal | 1 | Intersections | $221794 | $246438 | 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-2010G | Pedestrians and bicyclists | Pedestrian signal | 1 | Crosswalks | $63000 | $70000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 20,500 | | State Highway Agency | Spot | Pedestrians | |
| HS-2014M | Pedestrians and bicyclists | Pedestrian signal | 1 | Crosswalks | $202500 | $225000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 22,500 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2002AB | Pedestrians and bicyclists | Pedestrian signal | 2 | Crosswalks | $7200 | $8000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Principal Arterial-Other | 10,500 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2002AB | Pedestrians and bicyclists | Pedestrian signal | 2 | Crosswalks | $49500 | $55000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Multiple/Varies | Principal Arterial-Other | 10,500 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2005G | Pedestrians and bicyclists | Pedestrian signal | 2 | Intersections | $76500 | $85000 | 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 | $225000 | $250000 | 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 | $796500 | $885000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 48,500 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2014AB | Pedestrians and bicyclists | Pedestrian signal | 4 | Crosswalks | $7200 | $8000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Major Collector | 7,500 | 25 | State Highway Agency | Spot | Pedestrians | |
| HS-2014L | Pedestrians and bicyclists | Pedestrian signal | 7 | Crosswalks | $513000 | $570000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Multiple/Varies | Principal Arterial-Other | 36,388 | 45 | State Highway Agency | Systemic | Pedestrians | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2014K | Pedestrians and bicyclists | Pedestrian hybrid beacon | 2 | Intersections | $2880 | $3200 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Multiple/Varies | Principal Arterial-Other | 14,000 | 50 | State Highway Agency | Spot | Pedestrians | |
| HS-2002V | Pedestrians and bicyclists | Modify existing crosswalk | 1 | Crosswalks | $16200 | $18000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 12,500 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2002W | Pedestrians and bicyclists | Modify existing crosswalk | 1 | Crosswalks | $16216 | $18018 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 17,250 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2003AQ | Pedestrians and bicyclists | Modify existing crosswalk | 1 | Intersections | $25650 | $28500 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 14,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2003Z | Pedestrians and bicyclists | Modify existing crosswalk | 1 | Intersections | $10800 | $12000 | 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 | $27000 | $30000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Multiple/Varies | Major Collector | 8,300 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2003Y | Pedestrians and bicyclists | Modify existing crosswalk | 2 | Crosswalks | $11700 | $13000 | 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 | $19350 | $21500 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 27,500 | | State Highway Agency | Spot | Pedestrians | |
| W-5813G | Pedestrians and bicyclists | Pedestrians and bicyclists – other | 3 | Intersections | $27000 | $30000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 0 | | State Highway Agency | Spot | Pedestrians | |
| HS-2005C | Pedestrians and bicyclists | Medians and pedestrian refuge areas | 1 | Intersections | $4950 | $5500 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 29,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2003AG | Pedestrians and bicyclists | Leading pedestrian interval | 1 | Intersections | $4500 | $5000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 20,500 | | State Highway Agency | Spot | Pedestrians | |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2003AJ | Pedestrians and bicyclists | Leading pedestrian interval | 1 | Intersections | $22320 | $24800 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 27,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2014Q | Pedestrians and bicyclists | Leading pedestrian interval | 33 | Intersections | $103500 | $115000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 12,250 | 20 | State Highway Agency | Systemic | Pedestrians | |
| HS-2002AH | Pedestrians and bicyclists | Install sidewalk | 0.415 | Miles | $297000 | $330000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 33,000 | 45 | State Highway Agency | Spot | Pedestrians | |
| W-5703C | Pedestrians and bicyclists | Install sidewalk | 0.76 | Miles | $716400 | $796000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 29,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2014AD | Pedestrians and bicyclists | Install sidewalk | 550 | Feet | $9000 | $10000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Local Road or Street | 1,300 | 25 | State Highway Agency | Spot | Pedestrians | |
| W-5703F | Pedestrians and bicyclists | Install new crosswalk | 1 | Intersections | $45000 | $50000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 46,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2002I | Pedestrians and bicyclists | Install new crosswalk | 1 | Crosswalks | $75500 | $83889 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Minor Arterial | 10,000 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2003AE | Pedestrians and bicyclists | Install new crosswalk | 1 | Intersections | $4500 | $5000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 46,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2003AE | Pedestrians and bicyclists | Install new crosswalk | 1 | Intersections | $103500 | $115000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 46,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2003AM | Pedestrians and bicyclists | Install new crosswalk | 1 | Intersections | $111600 | $124000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Minor Arterial | 40,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2003AT | Pedestrians and bicyclists | Install new crosswalk | 1 | Intersections | $42570 | $47300 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 26,500 | | State Highway Agency | Spot | Pedestrians | |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2006AA | Pedestrians and bicyclists | Install new crosswalk | 1 | Intersections | $639000 | $710000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Major Collector | 14,000 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2006Z | Pedestrians and bicyclists | Install new crosswalk | 1 | Intersections | $351000 | $390000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Minor Arterial | 8,100 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2007J | Pedestrians and bicyclists | Install new crosswalk | 1 | Crosswalks | $48600 | $54000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 23,000 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2007J | Pedestrians and bicyclists | Install new crosswalk | 1 | Crosswalks | $6300 | $7000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 23,000 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2010J | Pedestrians and bicyclists | Install new crosswalk | 1 | Crosswalks | $630000 | $700000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Minor Collector | 25,000 | 45 | State Highway Agency | Spot | Pedestrians | |
| HS-2003X | Pedestrians and bicyclists | Install new crosswalk | 2 | Crosswalks | $20700 | $23000 | 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 | $63900 | $71000 | 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 | $177750 | $197500 | 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 | $25200 | $28000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 35,000 | | State Highway Agency | Spot | Pedestrians | |
| HS-2003AN | Pedestrians and bicyclists | Install new crosswalk | 4 | Intersections | $33300 | $37000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 18,500 | | State Highway Agency | Spot | Pedestrians | |
| W-5717 | Miscellaneous | Miscellaneous - other | 1 | Data Collection | $2250000 | $2500000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 0 | | 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 OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W-5716 | Miscellaneous | Miscellaneous - other | 1 | Program Management | $8100000 | $9000000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 0 | | State Highway Agency | Spot | Investigations | |
| HS-2003I | Intersection traffic control | Systemic improvements – stop-controlled | 1 | Intersections | $63000 | $70000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 2,400 | | State Highway Agency | Spot | Intersections | |
| HS-2002AI | Intersection traffic control | Modify traffic signal timing – left-turn phasing | 1 | Intersections | $54000 | $60000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 8,300 | 55 | State Highway Agency | Spot | Intersections | |
| W-5715 | Intersection traffic control | Modify traffic signal timing – general retiming | 99 | Intersections | $295200 | $328000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 0 | | State Highway Agency | Systemic | Intersections | |
| HS-2002O | Intersection traffic control | Modify traffic signal –other | 2 | Approaches | $16693 | $18548 | HSIP (23 U.S.C. 148) | Multiple/Varies | Principal Arterial-Other | 14,000 | 55 | State Highway Agency | Spot | Intersections | |
| HS-2003AA | Intersection traffic control | Modify traffic signal – modernization/replacement | 1 | Intersections | $22500 | $25000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 12,500 | | State Highway Agency | Spot | Intersections | |
| HS-2002AC | Intersection traffic control | Modify traffic signal – add flashing yellow arrow | 1 | Intersections | $27000 | $30000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 8,600 | 45 | State Highway Agency | Spot | Intersections | |
| HS-2003AD | Intersection traffic control | Modify traffic signal – add flashing yellow arrow | 1 | Intersections | $110700 | $123000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 55,000 | | State Highway Agency | Spot | Intersections | |
| HS-2003AK | Intersection traffic control | Modify traffic signal – add flashing yellow arrow | 1 | Intersections | $13500 | $15000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 8,900 | | State Highway Agency | Spot | Intersections | |
| HS-2003AK | Intersection traffic control | Modify traffic signal – add flashing yellow arrow | 1 | Intersections | $9900 | $11000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Major Collector | 8,900 | | State Highway Agency | Spot | Intersections | |
| HS-2003AP | Intersection traffic control | Modify traffic signal – add flashing yellow arrow | 1 | Intersections | $180900 | $201000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Minor Arterial | 18,000 | | State Highway Agency | Spot | Intersections | |
| HS-2003G | Intersection traffic control | Modify traffic signal – add flashing yellow arrow | 1 | Intersections | $90900 | $101000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 9,100 | | State Highway Agency | Spot | Intersections | |
| HS-2004N | Intersection traffic control | Modify traffic signal – add flashing yellow arrow | 1 | Intersections | $32869 | $36521 | HSIP (23 U.S.C. 148) | Rural | Minor Collector | 4,500 | 55 | State Highway Agency | Spot | Intersections | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2006L | Intersection traffic control | Modify traffic signal – add flashing yellow arrow | 1 | Intersections | $108900 | $121000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 14,500 | | State Highway Agency | Spot | Intersections | |
| HS-2002M | Intersection traffic control | Modify traffic signal – add flashing yellow arrow | 2 | Intersections | $2042 | $2269 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 17,500 | 35 | State Highway Agency | Spot | Intersections | |
| W-5601DO | Intersection traffic control | Modify traffic signal timing – signal coordination | 10 | Intersections | $90000 | $100000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 18,900 | | State Highway Agency | Spot | Intersections | |
| HS-2003AL | Intersection traffic control | Modify traffic signal – add backplates with retroreflective borders | 1 | Intersections | $13500 | $15000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Minor Arterial | 9,300 | | State Highway Agency | Spot | Intersections | |
| W-5712L | Intersection traffic control | Modify traffic signal – add backplates with retroreflective borders | 1 | Intersections | $22500 | $25000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 20,000 | | State Highway Agency | Spot | Intersections | |
| W-5803C | Intersection traffic control | Modify traffic signal – add backplates with retroreflective borders | 1 | Intersections | $12115 | $13461 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 31,000 | | State Highway Agency | Spot | Intersections | |
| HS-2003A | 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 | 14,000 | | State Highway Agency | Spot | Intersections | |
| HS-2003AO | Intersection traffic control | Modify traffic signal – add additional signal heads | 1 | Intersections | $36000 | $40000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 11,500 | | State Highway Agency | Spot | Intersections | |
| HS-2003E | Intersection traffic control | Modify traffic signal – add additional signal heads | 1 | Intersections | $18000 | $20000 | 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 | $243900 | $271000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 40,000 | | State Highway Agency | Spot | Intersections | |
| HS-2003L | Intersection traffic control | Modify traffic signal – add additional signal heads | 1 | Intersections | $19350 | $21500 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 36,750 | | State Highway Agency | Spot | Intersections | |
| HS-2003M | Intersection traffic control | Modify traffic signal – add additional signal heads | 1 | Intersections | $9000 | $10000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 10,000 | | State Highway Agency | Spot | Intersections | |
| HS-2003N | Intersection traffic control | Modify traffic signal – add additional signal heads | 1 | Intersections | $226800 | $252000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 9,700 | | State Highway Agency | Spot | Intersections | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2003Q | Intersection traffic control | Modify traffic signal – add additional signal heads | 1 | Intersections | $22500 | $25000 | 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 | $6300 | $7000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 36,500 | | State Highway Agency | Spot | Intersections | |
| HS-2003P | Intersection traffic control | Modify traffic signal – add additional signal heads | 1 | Intersections | $277 | $308 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 26,000 | | State Highway Agency | Spot | Pedestrians | |
| W-5208M/MA | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $19023 | $21137 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 5,500 | | State Highway Agency | Spot | Intersections | |
| W-5710AD | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $60966 | $67740 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 1,400 | | State Highway Agency | Spot | Intersections | |
| HS-2006I | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $72000 | $80000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 6,200 | 55 | State Highway Agency | Spot | Intersections | |
| W-5702M | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $100000 | $111111 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 7,800 | | State Highway Agency | Spot | Intersections | |
| W-5708A | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $45000 | $50000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 4,700 | | State Highway Agency | Spot | Intersections | |
| W-5709E | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $45000 | $50000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 5,800 | | State Highway Agency | Spot | Intersections | |
| W-5710AI | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $335160 | $372400 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 7,900 | | State Highway Agency | Spot | Intersections | |
| W-5710AR | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $406800 | $452000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 9,200 | | State Highway Agency | Spot | Intersections | |
| W-5710AS/SM-5710N | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $328500 | $365000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 14,000 | | State Highway Agency | Spot | Intersections | |
| W-5710J | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $11443 | $12714 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 10,000 | | State Highway Agency | Spot | Intersections | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W-5710U | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $685 | $761 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 7,300 | | State Highway Agency | Spot | Intersections | |
| W-5710AH | Intersection traffic control | Modify control – Modern Roundabout | 2 | Intersections | $2205000 | $2450000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 3,500 | | State Highway Agency | Spot | Intersections | |
| W-5806C | Intersection traffic control | Modify control – Modern Roundabout | 2 | Intersections | $1219500 | $1355000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 12,000 | | State Highway Agency | Spot | Intersections | |
| W-5706L | Intersection traffic control | Modify control – Modern Roundabout | 3 | Intersections | $2835000 | $3150000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 5,200 | | State Highway Agency | Spot | Intersections | |
| HS-2003C | Intersection traffic control | Modify control – two-way stop to all-way stop | 1 | Intersections | $18000 | $20000 | HSIP (23 U.S.C. 148) | Rural | Minor Collector | 500 | | State Highway Agency | Spot | Intersections | |
| HS-2012F | Intersection traffic control | Modify control – two-way stop to all-way stop | 1 | Intersections | $22500 | $25000 | HSIP (23 U.S.C. 148) | Rural | Local Road or Street | 2,100 | | State Highway Agency | Spot | Intersections | |
| W-5704H | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $382500 | $425000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 10,000 | | State Highway Agency | Spot | Intersections | |
| W-5706N | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $2212200 | $2458000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 5,700 | | State Highway Agency | Spot | Intersections | |
| HS-2002R | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $58500 | $65000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Minor Arterial | 19,000 | 35 | State Highway Agency | Spot | Intersections | |
| HS-2003AC | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $315000 | $350000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 9,000 | | State Highway Agency | Spot | Intersections | |
| HS-2003AR | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $29070 | $32300 | HSIP (23 U.S.C. 148) | Multiple/Varies | Major Collector | 10,000 | | State Highway Agency | Spot | Intersections | |
| HS-2003AS | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $29070 | $32300 | HSIP (23 U.S.C. 148) | Multiple/Varies | Principal Arterial-Other Freeways & Expressways | 9,400 | | State Highway Agency | Spot | Intersections | |
| HS-2004S | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $107703 | $119670 | HSIP (23 U.S.C. 148) | Multiple/Varies | Local Road or Street | 5,400 | 45 | State Highway Agency | Spot | Intersections | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2005L | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $29700 | $33000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 10,500 | 35 | State Highway Agency | Spot | Intersections | |
| HS-2014O | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $18000 | $20000 | 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 | $55800 | $62000 | 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 | $512778 | $569753 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 23,000 | 45 | State Highway Agency | Spot | Intersections | |
| HS-2014AC | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $18000 | $20000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 6,900 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2014AC | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $9000 | $10000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 6,900 | 35 | State Highway Agency | Spot | Pedestrians | |
| HS-2014Y | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $18000 | $20000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Multiple/Varies | Principal Arterial-Other | 15,500 | 45 | State Highway Agency | Spot | Pedestrians | |
| W-5710AO | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $1350000 | $1500000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 10,500 | | State Highway Agency | Spot | Intersections | |
| W-5704G | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $207000 | $230000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 7,033 | | State Highway Agency | Spot | Intersections | |
| HS-2005D | Intersection traffic control | Intersection traffic control - other | 1 | Intersections | $141300 | $157000 | HSIP (23 U.S.C. 148) | Urban | Local Road or Street | 5,400 | | State Highway Agency | Spot | Intersections | |
| W-5712H | Intersection traffic control | Intersection traffic control - other | 1 | Intersections | $22500 | $25000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 0 | | State Highway Agency | Spot | Intersections | |
| W-5807A | Intersection traffic control | Intersection traffic control - other | 1 | Intersections | $283500 | $315000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 23,000 | | State Highway Agency | Spot | Intersections | |
| W-5807A | Intersection traffic control | Intersection traffic control - other | 1 | Intersections | $121500 | $135000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 23,000 | | State Highway Agency | Spot | Intersections | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2006N | Intersection geometry | Modify lane assignment | 1.153 | Miles | $72900 | $81000 | HSIP (23 U.S.C. 148) | Urban | Local Road or Street | 15,000 | 35 | State Highway Agency | Spot | Intersections | |
| HS-2009K | Intersection geometry | Modify lane assignment | 2 | Lanes | $54000 | $60000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 7,200 | 55 | State Highway Agency | Spot | Intersections | |
| HS-2009I | Intersection geometry | Intersection realignment | 1 | Intersections | $18000 | $20000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 8,800 | 55 | State Highway Agency | Spot | Intersections | |
| HS-2012C | Intersection geometry | Intersection geometry - other | 1 | Intersections | $22500 | $25000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 8,500 | | State Highway Agency | Spot | Intersections | |
| HS-2006D | Intersection geometry | Intersection geometry - other | 2 | Intersections | $661500 | $735000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 3,400 | | State Highway Agency | Spot | Intersections | |
| W-5712R | Intersection geometry | Intersection realignment | 2 | Intersections | $127800 | $142000 | HSIP (23 U.S.C. 148) | Rural | Minor Collector | 3,000 | | State Highway Agency | Spot | Intersections | |
| W-5601HP | Intersection geometry | Intersection realignment | 2 | Intersections | $31500 | $35000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 6,500 | | State Highway Agency | Spot | Intersections | |
| W-5701E | Intersection geometry | Intersection geometry - other | 1 | Intersections | $225000 | $250000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 3,000 | | State Highway Agency | Spot | Intersections | |
| W-5706AA | Intersection geometry | Intersection geometry - other | 1 | Intersections | $270000 | $300000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 6,200 | | State Highway Agency | Spot | Intersections | |
| W-5703H | Intersection geometry | Intersection geometry - other | 1 | Intersections | $360000 | $400000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 19,000 | | State Highway Agency | Spot | Intersections | |
| HS-2002AG | Intersection geometry | Innovative Intersection (e.g. MUT, RCUT, QR) | 1 | Intersections | $94500 | $105000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 15,000 | 60 | State Highway Agency | Spot | Intersections | |
| HS-2008E | Intersection geometry | Innovative Intersection (e.g. MUT, RCUT, QR) | 1 | Intersections | $53970 | $59967 | HSIP (23 U.S.C. 148) | Multiple/Varies | Principal Arterial-Other Freeways & Expressways | 20,000 | 45 | State Highway Agency | Spot | Intersections | |
| HS-2002AF | Intersection geometry | Innovative Intersection (e.g. MUT, RCUT, QR) | 5 | Crossovers | $54000 | $60000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 31,000 | 45 | 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 OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W-5703G | Intersection geometry | Modify lane assignment | 1 | Intersections | $207000 | $230000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 37,000 | | State Highway Agency | Spot | Intersections | |
| W-5708D | Intersection geometry | Add/modify auxiliary lanes | 0.1 | Miles | $2253 | $2503 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 6,700 | | State Highway Agency | Spot | Intersections | |
| W-5203U | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $274500 | $305000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 27,500 | | State Highway Agency | Spot | Intersections | |
| W-5705AI | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $285000 | $316667 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 14,000 | | State Highway Agency | Spot | Intersections | |
| W-5710AN | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $771420 | $857133 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 16,000 | | State Highway Agency | Spot | Intersections | |
| W-5704F | Intersection geometry | Add/modify auxiliary lanes | 2 | Intersections | $45000 | $50000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 7,900 | | State Highway Agency | Spot | Intersections | |
| W-5712K | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $18721 | $20801 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Interstate | 20,000 | | State Highway Agency | Spot | Intersections | |
| HS-2005N | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $135000 | $150000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 21,500 | 45 | State Highway Agency | Spot | Intersections | |
| HS-2013P | Intersection geometry | Add/modify auxiliary lanes | 1 | Lanes | $58500 | $65000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 8,350 | 35 | State Highway Agency | Spot | Intersections | |
| HS-2002P | Intersection geometry | Add/modify auxiliary lanes | 2 | Intersections | $746100 | $829000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 7,100 | 55 | State Highway Agency | Spot | Intersections | |
| W-5601GC | Alignment | Vertical alignment or elevation change | 1 | Intersections | $4500 | $5000 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 3,400 | | State Highway Agency | Spot | Intersections | |
| HS-2004L | Alignment | Horizontal curve realignment | 0.23 | Miles | $117000 | $130000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 3,500 | | State Highway Agency | Spot | Lane Departure | |
| W-5714E | Alignment | Horizontal curve realignment | 0.68 | Miles | $1271961 | $1413290 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 2,500 | | 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 OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W-5701C | Alignment | Horizontal curve realignment | 0.8 | Miles | $144000 | $160000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 2,000 | | State Highway Agency | Spot | Lane Departure | |
| W-5804B | Alignment | Horizontal curve realignment | 1 | Intersections | $216900 | $241000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 2,500 | | State Highway Agency | Spot | Lane Departure | |
| W-5601R | Alignment | Horizontal curve realignment | 1.372 | Miles | $81000 | $90000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Interstate | 3,000 | | State Highway Agency | Spot | Lane Departure | |
| W-5706G | Access management | Raised island - install new | 0.629 | Miles | $90000 | $100000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 35,000 | | State Highway Agency | Spot | Intersections | |
| W-5706A | Access management | Raised island - install new | 0.66 | Miles | $236085 | $262317 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Minor Arterial | 38,600 | | State Highway Agency | Spot | Intersections | |
| W-5702R | Access management | Raised island - install new | 0.72 | Miles | $63000 | $70000 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 13,000 | | State Highway Agency | Spot | Intersections | |
| W-5710C | Access management | Raised island - install new | 3.11 | Miles | $342000 | $380000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Minor Arterial | 8,900 | | State Highway Agency | Spot | Intersections | |
| HS-2007G | Access management | Median crossover - directional crossover | 1 | Intersections | $369000 | $410000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other Freeways & Expressways | 41,000 | | State Highway Agency | Spot | Intersections | |
| W-5808B | Access management | Median crossover - directional crossover | 1 | Intersections | $112500 | $125000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 13,000 | | State Highway Agency | Spot | Intersections | |
| HS-2002D | Access management | Median crossover - directional crossover | 1 | Intersections | $45000 | $50000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 20,000 | | State Highway Agency | Spot | Intersections | |
| HS-2005H | Access management | Median crossover - directional crossover | 1 | Intersections | $18000 | $20000 | HSIP (23 U.S.C. 148) | Urban | Minor Collector | 14,000 | 35 | State Highway Agency | Spot | Intersections | |
| HS-2010D | Access management | Median crossover - directional crossover | 1 | Intersections | $804300 | $893667 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 23,000 | | State Highway Agency | Spot | Intersections | |
| HS-2010F | Access management | Median crossover - directional crossover | 1 | Intersections | $1264500 | $1405000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 22,000 | 55 | 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 OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2010H | Access management | Median crossover - directional crossover | 1 | Intersections | $189000 | $210000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 20,500 | 55 | State Highway Agency | Spot | Intersections | |
| HS-2010Q | Access management | Median crossover - directional crossover | 1 | Crossovers | $135000 | $150000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 16,000 | 55 | State Highway Agency | Spot | Intersections | |
| HS-2014W | Access management | Median crossover - directional crossover | 1 | Intersections | $67500 | $75000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 7,500 | 55 | State Highway Agency | Spot | Intersections | |
| HS-2014X | Access management | Median crossover - directional crossover | 1 | Intersections | $67500 | $75000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 16,250 | 55 | State Highway Agency | Spot | Intersections | |
| HS-2004W | Access management | Median crossover - directional crossover | 2 | Intersections | $720000 | $800000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 25,000 | 55 | State Highway Agency | Spot | Intersections | |
| HS-2002K | Access management | Median crossover - directional crossover | 3 | Crossovers | $90000 | $100000 | 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 | $757224 | $841360 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 27,000 | | State Highway Agency | Spot | Intersections | |
| U-6229 | Access management | Median crossover - directional crossover | 3 | Crossovers | $575000 | $638889 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 27,000 | | State Highway Agency | Spot | Intersections | |
| W-5701B | Access management | Median crossover - directional crossover | 6 | Intersections | $32670 | $36300 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 4,700 | | State Highway Agency | Spot | Intersections | |
| HS-2002E | Access management | Median crossover - relocate/close crossover | 1 | Intersections | $161245 | $179161 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 28,000 | | State Highway Agency | Spot | Intersections | |
| HS-2002AE | Access management | Change in access - close or restrict existing access | 1 | Crossovers | $185400 | $206000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 39,000 | 45 | State Highway Agency | Spot | Intersections | |
| HS-2010A | Access management | Change in access - close or restrict existing access | 1 | Intersections | $1804 | $2004 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 26,000 | | State Highway Agency | Spot | Intersections | |
| W-5702S | Access management | Change in access - close or restrict existing access | 1 | Intersections | $1776 | $1973 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 23,000 | | State Highway Agency | Spot | Intersections | |

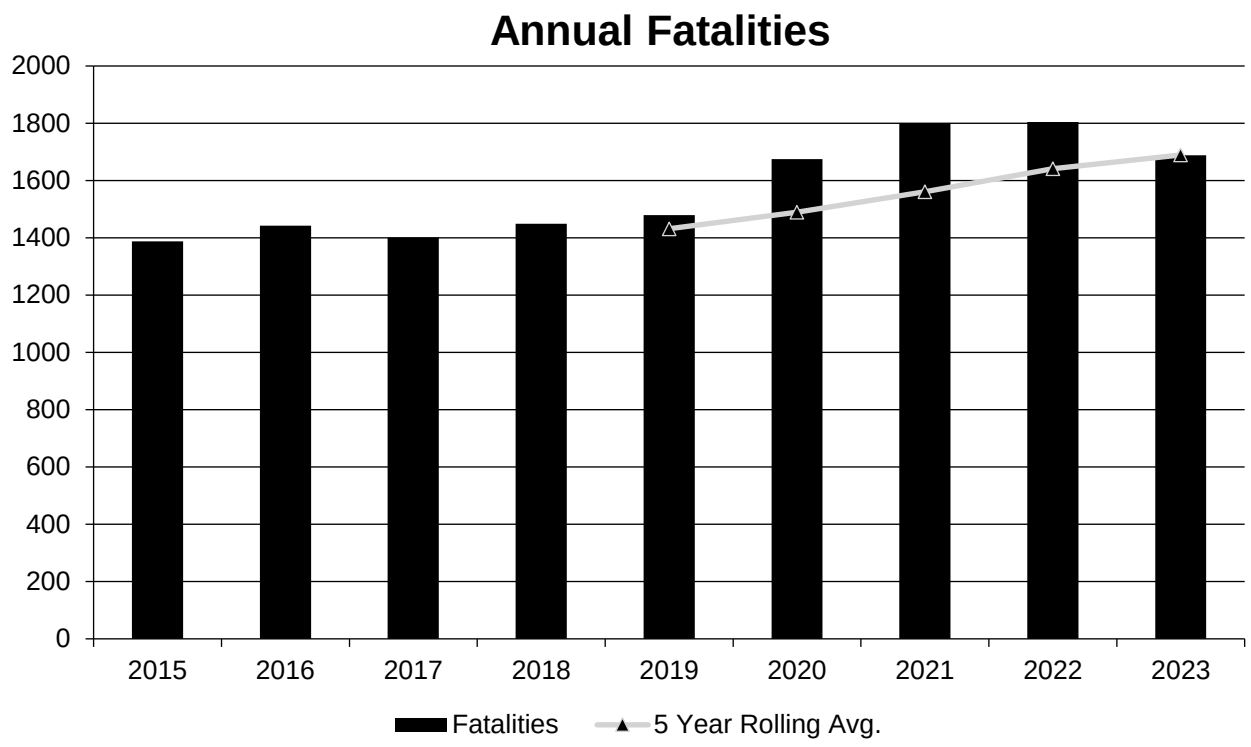
| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HS-2006C | Access management | Access management - other | 3 | Intersections | $175500 | $195000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 11,500 | | State Highway Agency | Spot | Pedestrians | |
| HS-2006C | Access management | Access management - other | 3 | Intersections | $1536300 | $1707000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Major Collector | 11,500 | | State Highway Agency | Spot | Pedestrians | |
| BO-2419 | Pedestrians and bicyclists | Pedestrians and bicyclists – other | 15 | Municipalities | $928535 | $1031706 | HSIP (23 U.S.C. 148) | Urban | Multiple/Varies | 0 | | State Highway Agency | Spot | Pedestrians | |
| BO-2419 | Pedestrians and bicyclists | Pedestrians and bicyclists – other | 15 | Municipalities | $340464 | $378293 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Multiple/Varies | 0 | | State Highway Agency | Spot | Pedestrians | |
| HO-0014 | Pedestrians and bicyclists | Pedestrians and bicyclists – other | 2.1 | Miles | $1282000 | $1424444 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Principal Arterial-Other | 0 | | State Highway Agency | Spot | Pedestrians | |
| HS-2015 | Pedestrians and bicyclists | Pedestrians and bicyclists – other | 1 | Program Management | $7785000 | $8650000 | VRU Safety Special Rule (23 U.S.C. 148(g)(3)) | Urban | Multiple/Varies | 0 | | State Highway Agency | Systemic | Pedestrians | |
| U-5112 | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $882500 | $980556 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 0 | | State Highway Agency | Spot | Intersections | |
| W-5601U | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $26384 | $29316 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 15,000 | | State Highway Agency | Spot | Intersections | |
| W-5601Q | Intersection geometry | Add/modify auxiliary lanes | 2 | Intersections | $351000 | $390000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 16,000 | | State Highway Agency | Spot | Intersections | |
| W-5204E | Alignment | Horizontal curve realignment | 1 | Intersections | $921950 | $1024389 | HSIP (23 U.S.C. 148) | Urban | Local Road or Street | 5,900 | | State Highway Agency | Spot | Lane Departure | |
| W-5212N | Intersection geometry | Add/modify auxiliary lanes | 1 | Locations | $135000 | $150000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 12,000 | | State Highway Agency | Spot | Lane Departure | |

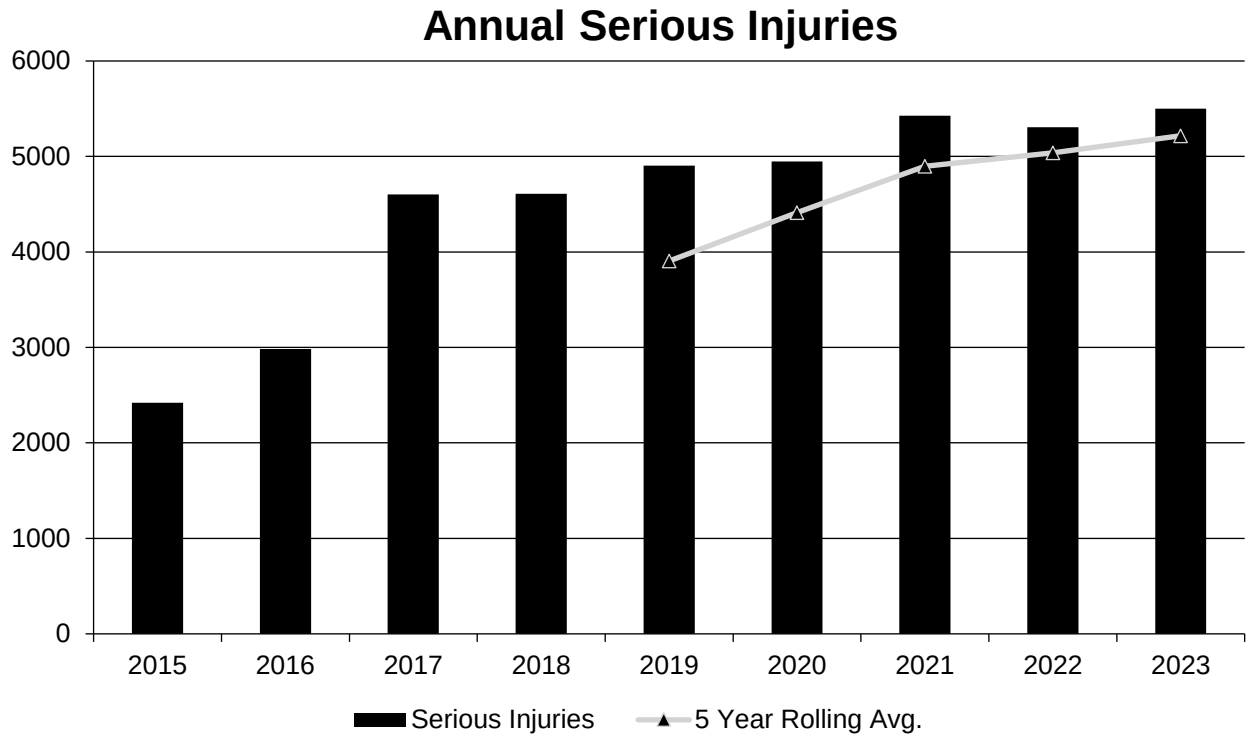
# Safety Performance

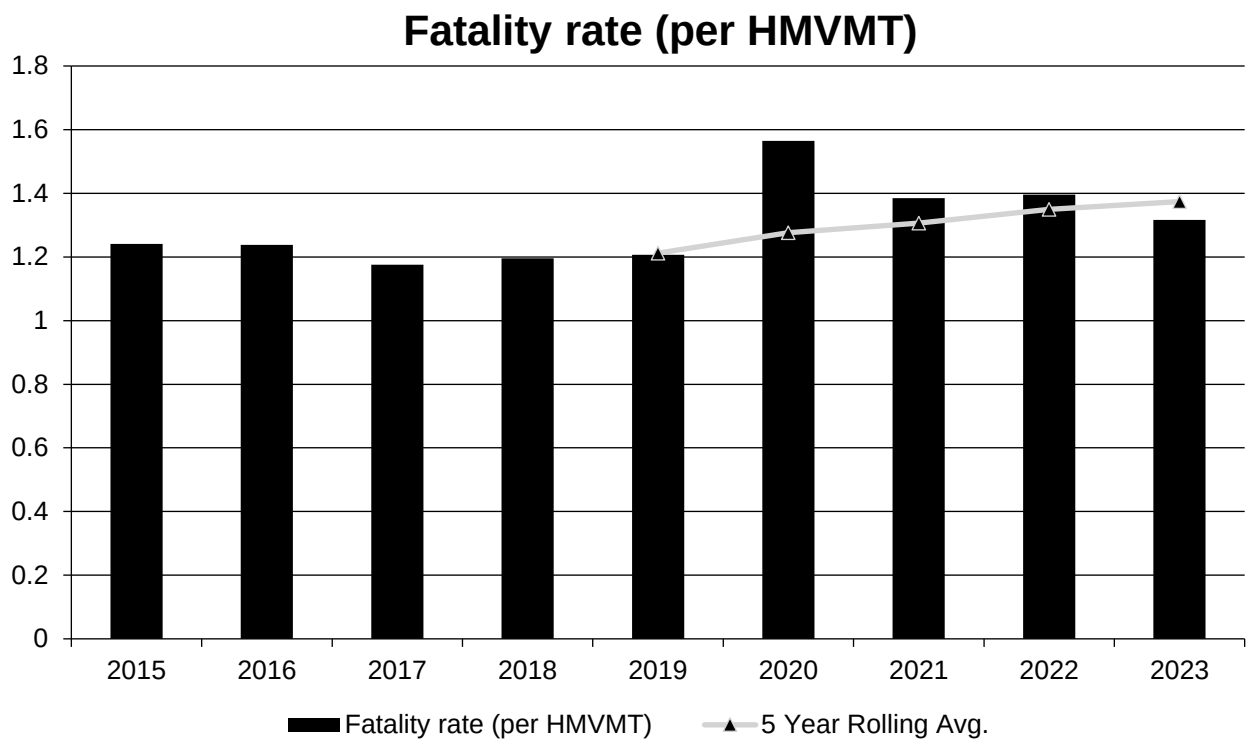
## *General Highway Safety Trends*

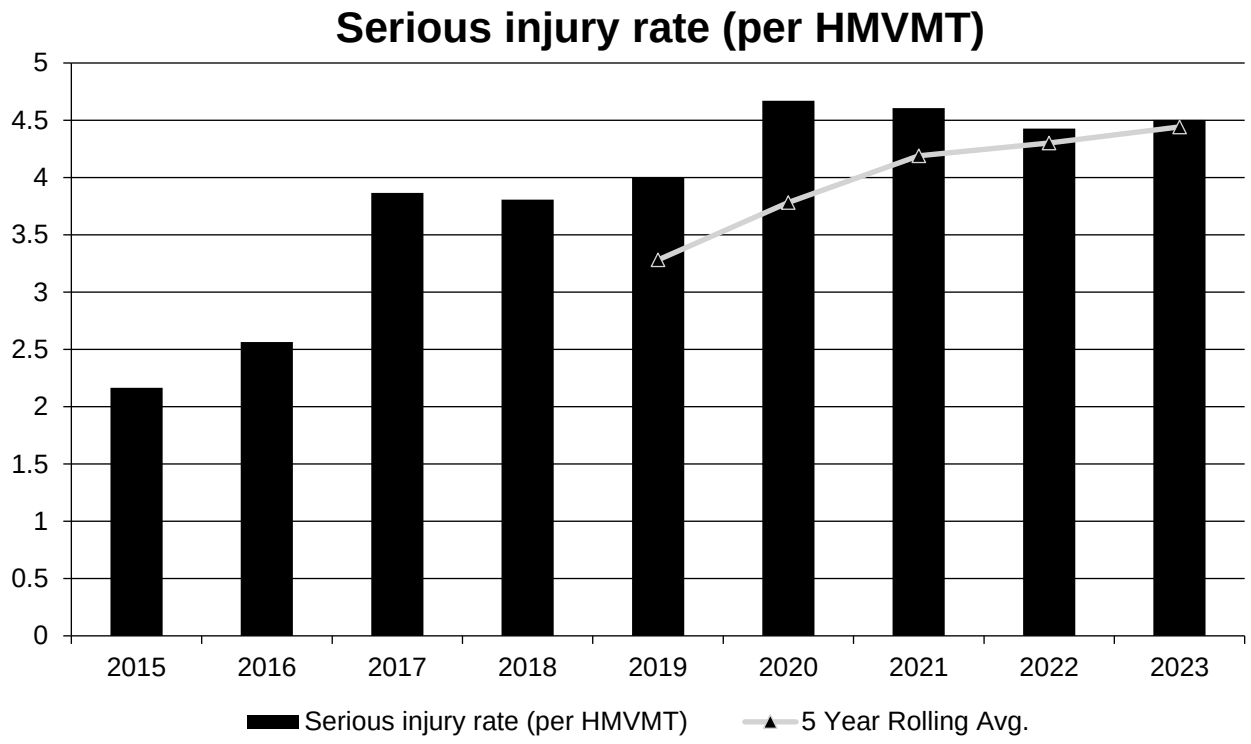
### Present data showing the general highway safety trends in the State for the past five years.

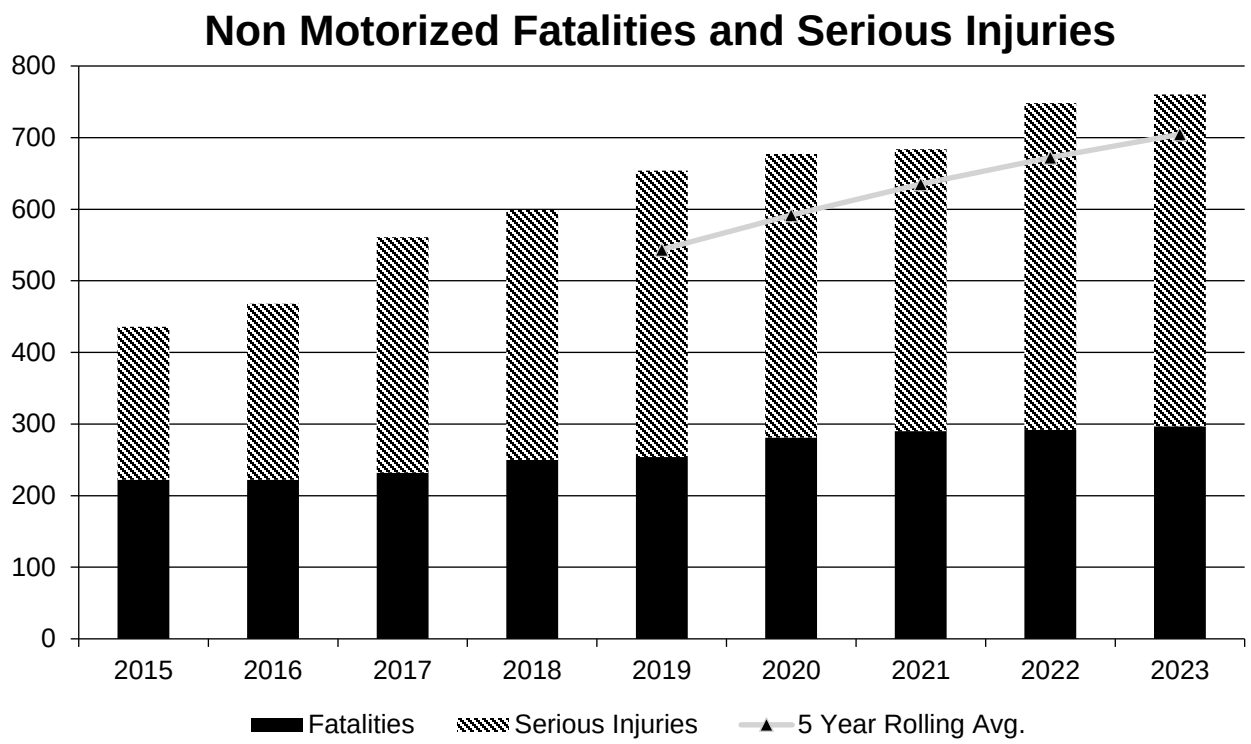
| PERFORMANCE MEASURES | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|
| Fatalities | 1,388 | 1,442 | 1,401 | 1,449 | 1,479 | 1,675 | 1,801 | 1,804 | 1,688 |
| Serious Injuries | 2,421 | 2,985 | 4,604 | 4,610 | 4,905 | 4,947 | 5,426 | 5,307 | 5,500 |
| Fatality rate (per HMVMT) | 1.241 | 1.238 | 1.176 | 1.196 | 1.207 | 1.565 | 1.385 | 1.396 | 1.316 |
| Serious injury rate (per HMVMT) | 2.164 | 2.564 | 3.866 | 3.806 | 4.004 | 4.670 | 4.607 | 4.428 | 4.502 |
| Number non-motorized fatalities | 222 | 222 | 232 | 250 | 254 | 281 | 290 | 292 | 297 |
| Number of non-motorized serious injuries | 214 | 246 | 329 | 349 | 400 | 396 | 394 | 456 | 463 |


Annual Fatalities
2000
1800
1600
1400
1200
1000
800
600
400
200
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
6000
5000
4000
3000
2000
1000
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Serious injury rate (per HMVMT)
5 Year Rolling Avg.




## Describe fatality data source.

State Motor Vehicle Crash Database

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

**Year 2023**

| 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 | 40.6 | 205.2 | 0.57 | 2.99 |
| Rural Principal Arterial (RPA) - Other Freeways and Expressways | 21 | 73.4 | 0.75 | 2.6 |
| Rural Principal Arterial (RPA) - Other | 85.6 | 436 | 1.28 | 6.52 |
| Rural Minor Arterial | 138 | 656.2 | 2.22 | 10.57 |
| Rural Minor Collector | 92.8 | 444 | 3.28 | 15.69 |
| Rural Major Collector | 198.2 | 920.2 | 2.83 | 13.12 |

| 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 | 165 | 769.2 | 1.94 | 9.05 |
| Urban Principal Arterial (UPA) - Interstate | 101 | 527.8 | 0.52 | 2.69 |
| Urban Principal Arterial (UPA) - Other Freeways and Expressways | 33.8 | 129.2 | 0.66 | 2.5 |
| Urban Principal Arterial (UPA) - Other | 222.4 | 1,015 | 1.55 | 7.11 |
| Urban Minor Arterial | 160 | 917.6 | 1.22 | 7.01 |
| Urban Minor Collector | 10.2 | 47.4 | 1.51 | 6.65 |
| Urban Major Collector | 81.8 | 456.4 | 1.15 | 6.36 |
| Urban Local Road or Street | 58.4 | 223.6 | 0.39 | 1.8 |

**Year 2023**

| 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 | 1,544 | 7,635.6 | 1.49 | 7.41 |
| County Highway Agency | | | | |
| Town or Township Highway Agency | | | | |
| City or Municipal Highway Agency | 71 | 311.2 | 0.57 | 2.45 |
| State Park, Forest, or Reservation Agency | | | | |
| Local Park, Forest or Reservation Agency | | | | |
| Other State Agency | | | | |
| Other Local Agency | | | | |
| Private (Other than Railroad) | | | | |
| Railroad | | | | |
| State Toll Authority | | | | |
| Local Toll Authority | | | | |
| Other Public Instrumentality (e.g. Airport, School, University) | | | | |
| Indian Tribe Nation | | | | |

## Provide additional discussion related to general highway safety trends.

The N.C. Department of Transportation is committed to measuring and improving performance. The department's Organizational Performance Dashboard, which is featured on NCDOT's web page, serves as an indicator of how well we are meeting our mission and goals. One major NCDOT goal is "Making our transportation network safer". This is defined as the total number of statewide fatalities on NC roads per 100 million vehicle miles traveled for the calendar year to date. The fatality rate gauge shown on our Performance Dashboard is accompanied by a trend chart of the total number of fatalities, crashes and injuries by year. The Performance Dashboard can be found at https://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 2025 Targets *

### *Number of Fatalities:1103.3*

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

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 initially set in 2019 State Highway Safety Plan (SHSP) and maintained through our updated 2024 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 2024 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.

### *Number of Serious Injuries:3204.8*

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

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 initially set in 2019 State Highway Safety Plan (SHSP) and maintained through our updated 2024 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 2024 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.

### *Fatality Rate:0.925*

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

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 initially set in 2019 State Highway Safety Plan (SHSP) and maintained through our updated 2024 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 2024 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.

### *Serious Injury Rate:2.675*

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

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 initially set in 2019 State Highway Safety Plan (SHSP) and maintained through our updated 2024 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 2024 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.

### *Total Number of Non-Motorized Fatalities and Serious Injuries:434.6*

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

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 initially set in 2019 State Highway Safety Plan (SHSP) and maintained through our updated 2024 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 2024 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.

## 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 2024 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 2024 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 2023 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** | 1202.2 | 1689.4 |
| **Number of Serious Injuries** | 3423.0 | 5217.0 |
| **Fatality Rate** | 1.011 | 1.374 |
| **Serious Injury Rate** | 2.863 | 4.442 |
| **Non-Motorized Fatalities and Serious Injuries** | 468.2 | 704.6 |

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 2024 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 2024 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 HRRR special rule apply to the State for this reporting period?

Yes

### Does the VRU Safety 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 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|
| Number of Older Driver and Pedestrian Fatalities | 192 | 219 | 238 | 203 | 263 | 283 | 233 |
| Number of Older Driver and Pedestrian Serious Injuries | 338 | 371 | 396 | 324 | 445 | 464 | 473 |

# 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, and before and after summary data tables. 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?

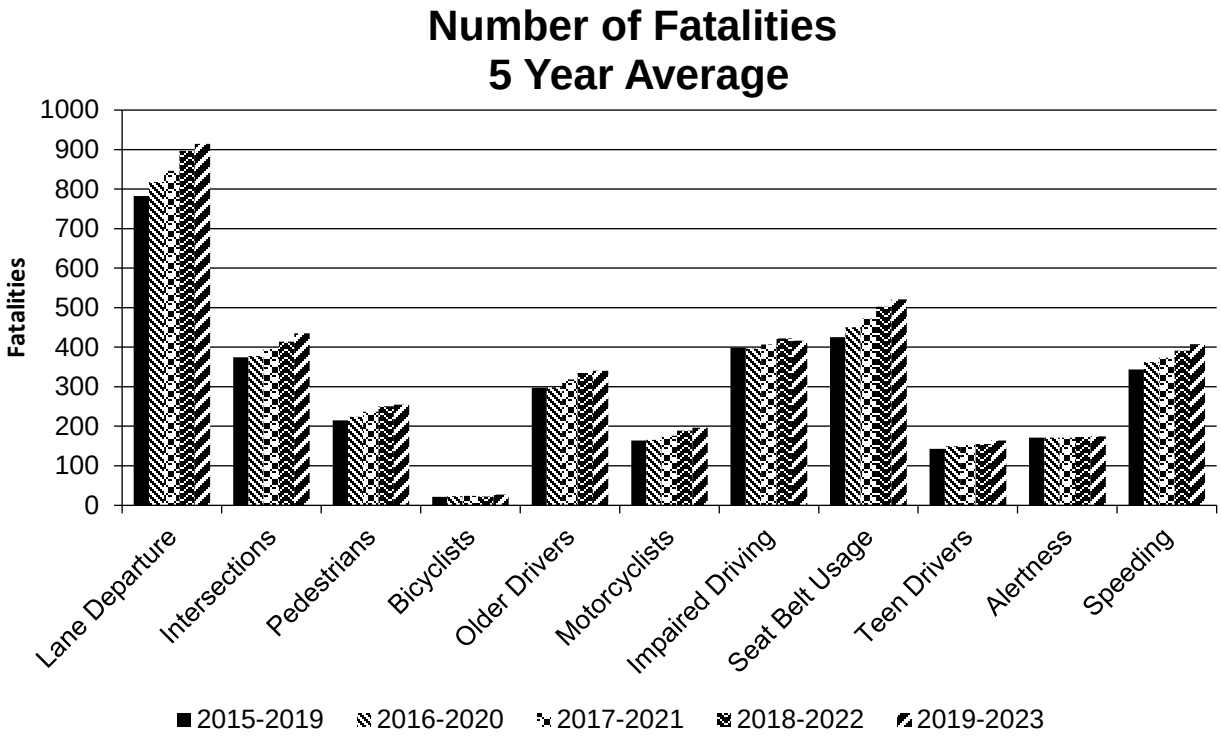
- Increased awareness of safety and data-driven process
- Increased focus on local road safety
- More systemic programs
- Policy change
- Other-Reduction in Target Crashes

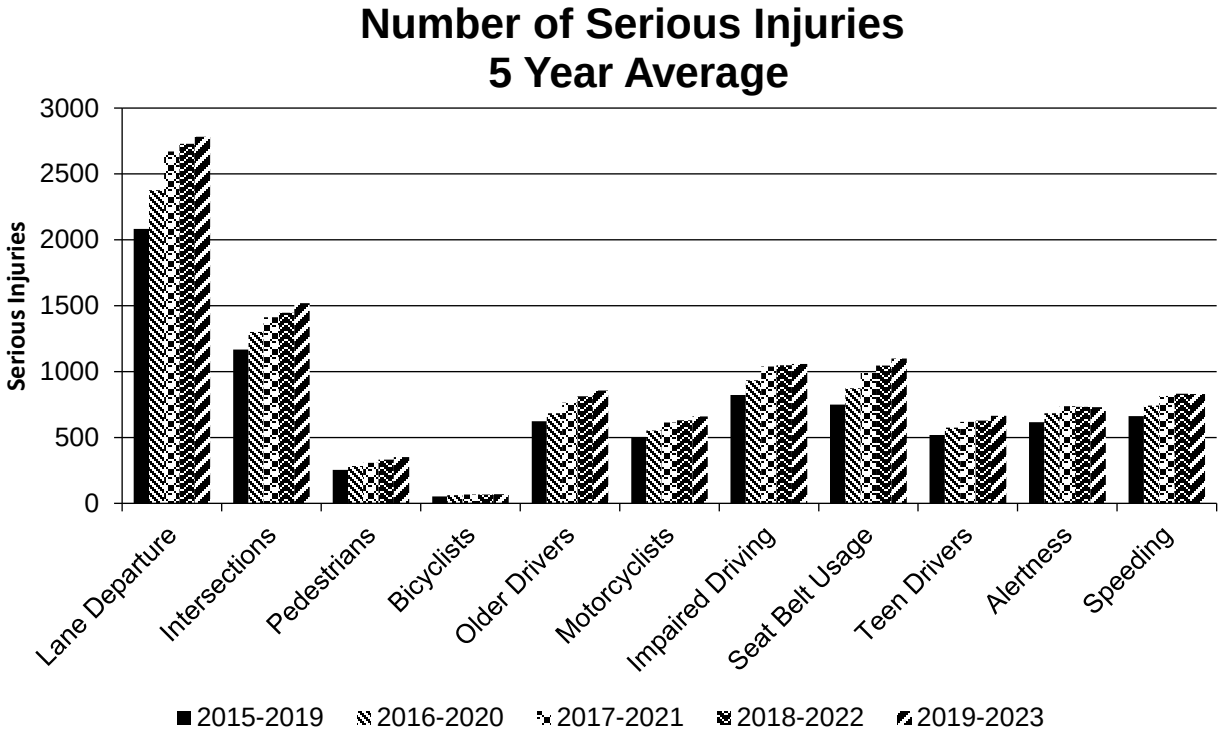
## *Effectiveness of Groupings or Similar Types of Improvements*

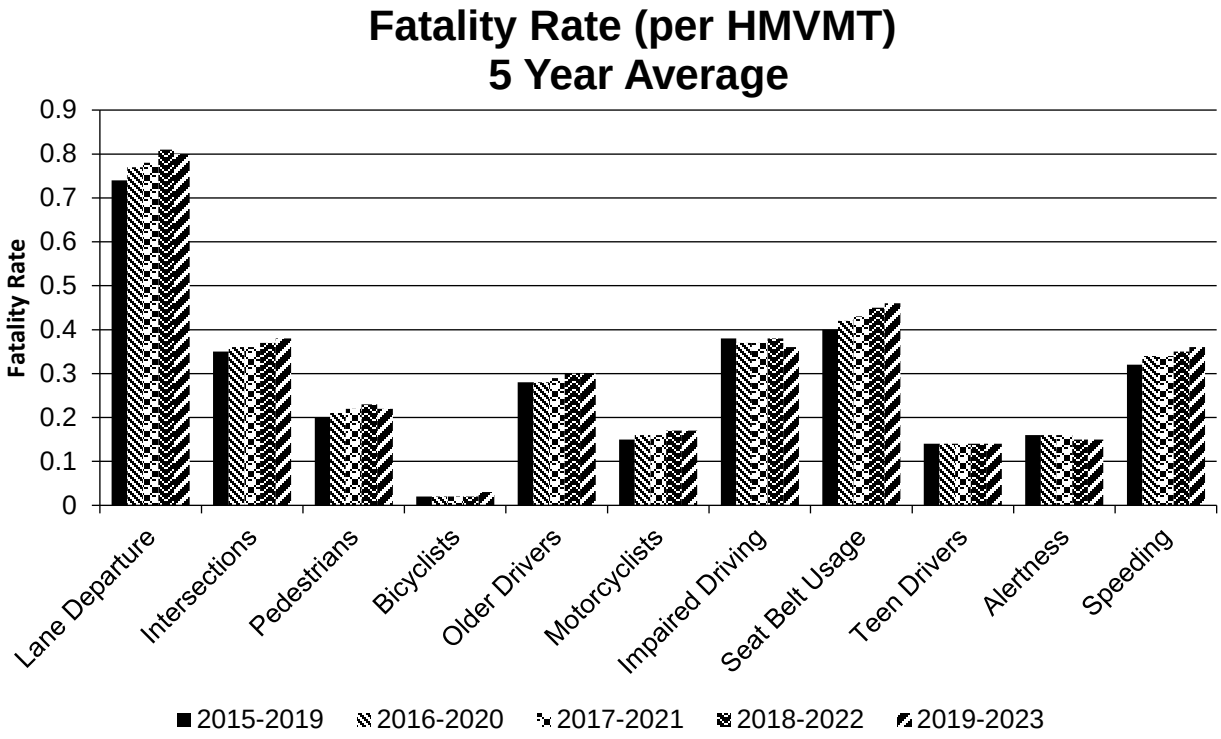
### Present and describe trends in SHSP emphasis area performance measures.

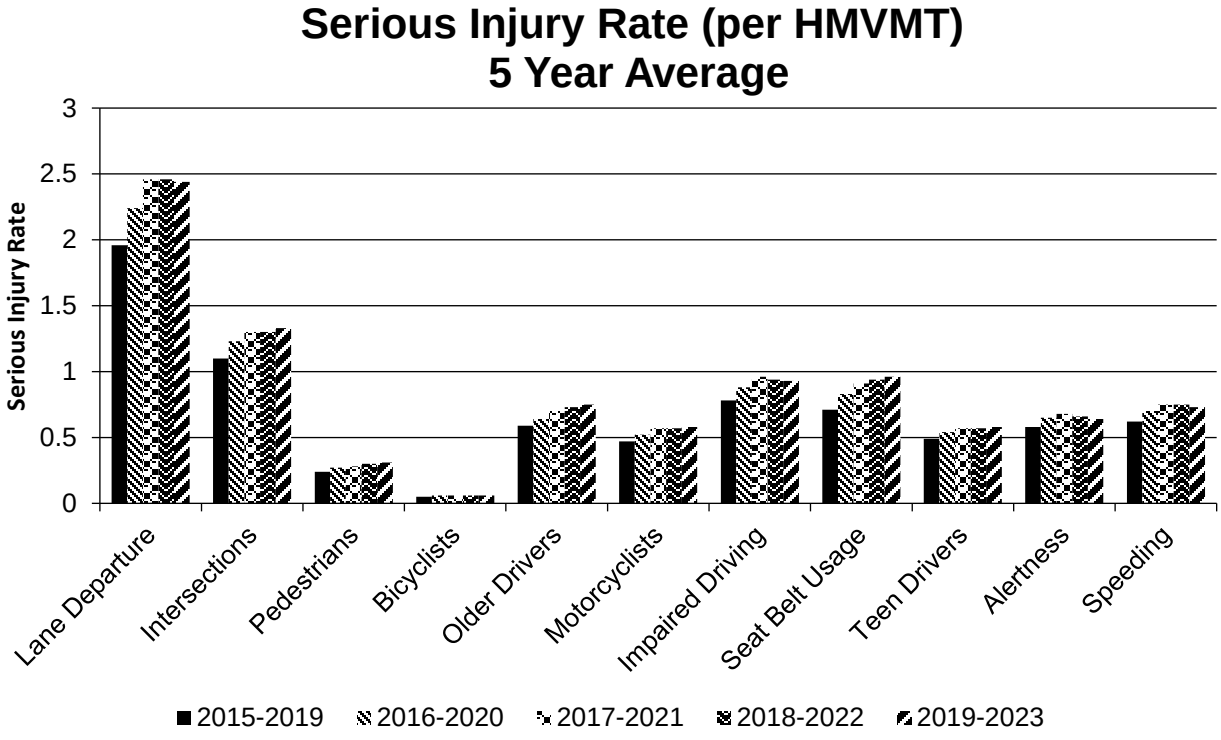
**Year 2023**

| 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 | | 914.4 | 2,782 | 0.8 | 2.44 |
| Intersections | | 434.8 | 1,519.6 | 0.38 | 1.33 |
| Pedestrians | | 254.6 | 351.4 | 0.22 | 0.31 |
| Bicyclists | | 27 | 69.8 | 0.03 | 0.06 |
| Older Drivers | | 340.8 | 855.4 | 0.3 | 0.75 |
| Motorcyclists | | 196.4 | 659.8 | 0.17 | 0.58 |
| Impaired Driving | | 416.2 | 1,056.6 | 0.36 | 0.93 |
| Seat Belt Usage | | 521 | 1,098.2 | 0.46 | 0.96 |
| Teen Drivers | | 163.8 | 664 | 0.14 | 0.58 |
| Alertness | | 174.8 | 731 | 0.15 | 0.64 |
| Speeding | | 407.6 | 829 | 0.36 | 0.73 |


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
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023


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
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023




The emphasis areas were revised in the 2024 SHSP. NCDOT will be reporting new performance measures in next year's report.

## 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:** | Statutory Speed Limit Review |
| **Description:** | Preliminary Evaluation of the Statutory Speed Limit Review in North Carolina |
| **Target Crash Type:** | Other (define) |
| **Number of Installations:** | |
| **Number of Installations:** | |
| **Miles Treated:** | 4783 |
| **Years Before:** | |
| **Years After:** | |
| **Methodology:** | Other (define) |
| **Results:** | Sites reduced from 55 to 45 mph: 19% reduction. Sites kept at 55 mph with new signs: 19% reduction. Control Group: 9% reduction |

File Name: SRSP Presentation_Traffic Safety EXPO_20240418.pdf

| | |
|---|---|
| **CounterMeasures:** | Unsignalized Reduced Conflict Intersections |
| **Description:** | Updated Evaluation of Reduced Conflict Intersections (RCI) in North Carolina |
| **Target Crash Type:** | Other (define) |
| **Number of Installations:** | 31 |
| **Number of Installations:** | 31 |
| **Miles Treated:** | |
| **Years Before:** | |
| **Years After:** | |
| **Methodology:** | Before/after using empirical Bayes or Full Bayes |
| **Results:** | Total Crashes: 50% reduction Frontal Impact Crashes: 80% reduction |

File Name: One Pager_RCIs.pdf

| | |
|---|---|
| **CounterMeasures:** | 3-Leg Roundabouts |
| **Description:** | Evaluation of 3-Leg Roundabouts in North Carolina |
| **Target Crash Type:** | Other (define) |
| **Number of Installations:** | 27 |
| **Number of Installations:** | 27 |
| **Miles Treated:** | |
| **Years Before:** | |
| **Years After:** | |

| | |
|---|---|
| **Methodology:** | Before/after using empirical Bayes or Full Bayes |
| **Results:** | Total Crashes: 42% Injury Crashes: 61% Frontal Impact Crashes: 61% |

File Name: 3-Leg RAB and AWS_2024-05-29.pdf

## *Project Effectiveness*

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

### 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?**

05/10/2024

**What are the years being covered by the current SHSP?**

From: 2024 To: 2029

**When does the State anticipate completing its next SHSP update?**

2029

NCDOT has completed the 2024 SHSP.

**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 |

| ROAD TYPE | *MIRE NAME (MIRE NO.) | NON LOCAL PAVED ROADS - SEGMENT | | NON LOCAL PAVED ROADS - INTERSECTION | | NON LOCAL PAVED ROADS - RAMPS | | LOCAL PAVED ROADS | | UNPAVED ROADS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE | STATE | NON-STATE |
| | Median Type (54) [55] | 100 | 100 | | | | | | | | |
| | 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 | | | | | 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 |
| | Beginning of Ramp Terminal (197) [187] | | | | | | | | | | |
| | 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]

## 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.

**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 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 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 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 has secured funding and has begun a project 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 has secured funding and has begun a project 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*

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

o 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 plans to repeat the process and acquire a similar statewide AADT dataset for 2023.

o

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: Fill 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**

As mentioned above, NCDOT will 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:

SRSP Presentation_Traffic Safety EXPO_20240418.pdf
One Pager_RCIs.pdf
3-Leg RAB and AWS_2024-05-29.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.