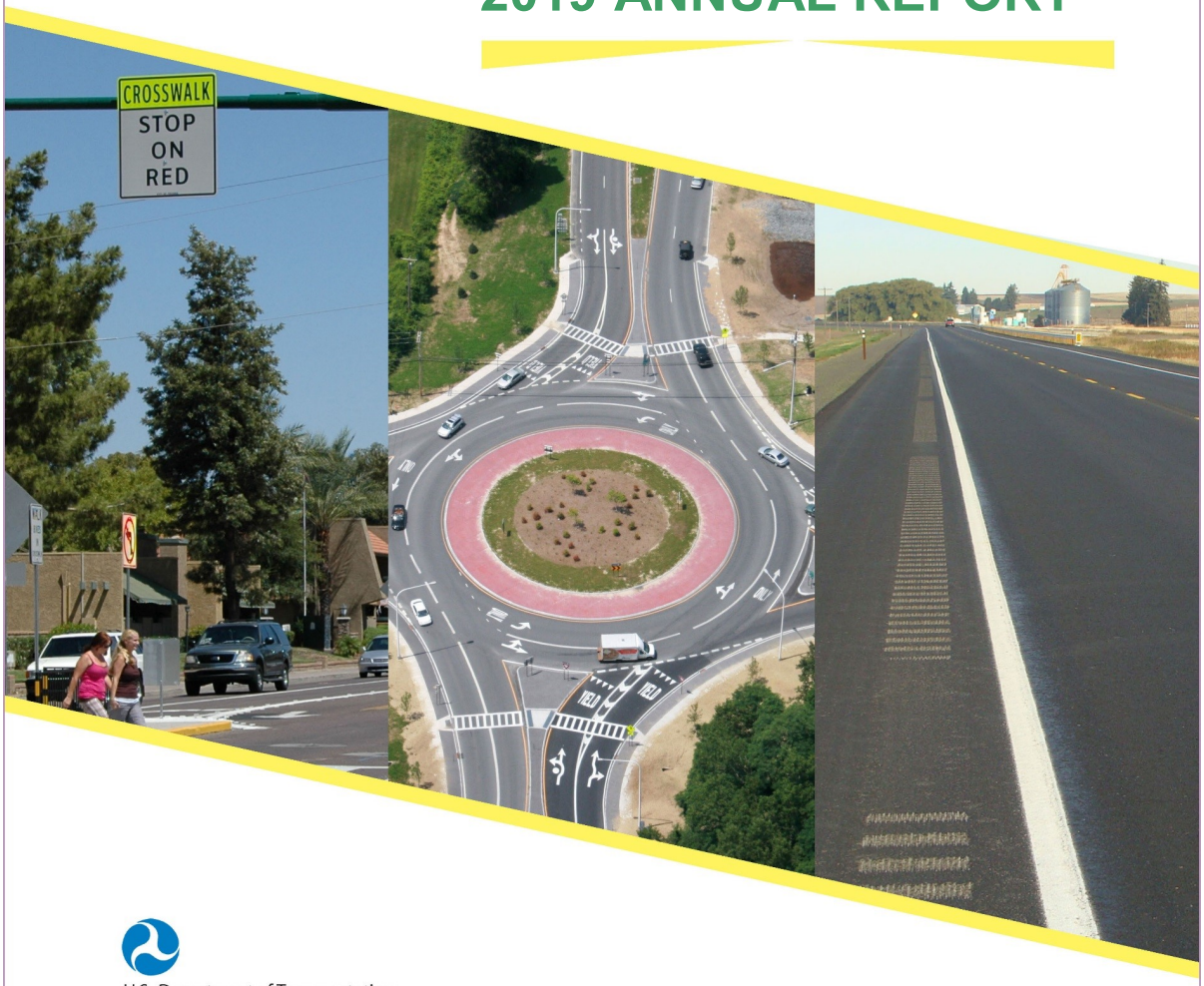
OHIO

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2019 ANNUAL REPORT



U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

Table of Contents

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

Executive Summary

Traffic deaths and crashes across Ohio have been rising as the statewide economy continues to improve. However, in 2018, Ohio had 1,068 traffic deaths and 7,627 serious injuries, representing a 9% decrease in fatalities and a 13.0% decrease in serious injuries compared to 2017.

Ohio's safest year in history was 2013 when the state dropped below 1,000 traffic deaths for the first time since it began collecting records in 1935. However, traffic deaths rose 2% in 2014, 10% in 2015, 2% in 2016, 4% in 2017, but saw a 9% decrease in 2018. Although the top common factors in these crashes have long been roadway departure, speed, alcohol, seatbelts and young drivers, over the past four years the state has seen a rise in the number of deaths involving pedestrians, older and distracted drivers.

To respond to these trends, Ohio's Strategic Highway Safety Plan Steering Committee has moved from quarterly to bi-monthly meetings, and now communicates via email on a bi-weekly basis to share crash trend information and discuss strategies and investments. The committee includes members from 15 key safety organizations operating at the local, state and federal level including: Ohio County Engineers Association; Ohio Association of Regional Councils; Ohio Department of Public Safety; Federal Highway Administration; Ohio State Highway Patrol; Federal Motor Carrier Administration; and AAA. These organizations then feed the information to a network of hundreds of other stakeholders who are getting more actively involved in the SHSP.

Below is a summary of the state's enhanced and coordinated efforts to address the increase in crashes statewide.

Ohio Launches Action Teams and New Programs to Address Emerging Crash Trends

Active Transportation Team
Ohio's Active Transportation Plan is in its fifth year of implementation. As a result, ODOT has increased its investments in data collection projects to quantify the amount of bicycle and pedestrian travel across the state. This data will help ODOT and its partners better pinpoint where travel is occurring so we can collectively target our pedestrian and bicycle infrastructure investments.

In 2017, ODOT and the Ohio Department of Health launched the state's first Active Transportation educational program. "Your Move Ohio" is a statewide campaign to educate the public on the rules of the road and encourage more Ohioans to walk, bike and bus safely. ODOT continued the campaign in 2018, but with a focus on pedestrian safety. In 2019, the focus is on bundling these messages and campaign materials into one website that can be marketed to our safety partners across the state for use in their communities.

In fall 2019, ODOT will be launching its Pedestrian Safety Improvement Program using up to $10M in HSIP funds. This program will provide municipalities within the state assistance and funding to systematically implement low-to-medium cost proven pedestrian safety countermeasures along high-risk facilities such as collectors and arterials. Countermeasures will include Rectangular Rapid Flashing Beacons, Pedestrian Hybrid Beacons, Refugee Islands, Curb bump outs, high-visibility crosswalk markings, among others. This program will be utilizing a combination of project bundling and consultant support to accelerate delivery across the state and streamline the delivery process of these proven, lifesaving countermeasures.

Older Road User Action Team
Ohio's Older Road User Action Team is in its 4th year of action plan development and implementation. The team is continuing to work on implementation of several critical strategies including: increasing the knowledge of medical providers, law enforcement and licensing personnel on the recognition, assessment, and reporting of older at-risk drivers. The team is working hard to engage the Ohio BMV on this issue.

In 2018, the team successfully launched a statewide education campaign to raise awareness for how aging can affect our ability to drive. The goal is to educate older Ohioans, families, friends and caregivers about the signs of declining safe driving skills — either due to normal aging or a medical condition; resources available to evaluate safe driving skills; and how to plan for retirement from driving. In 2019, ODOT has been working with AAA, AARP, Safe Communities and Ohio Occupational Therapists to promote the campaign through CarFit Events around the state.

Distracted Driver Task Force

In April 2019, the Governor of Ohio declared distracted driving a major initiative of his administration based on recommendations from the Ohio Distracted Driving Task Force, which was launched through the state's SHSP in the summer of 2018.

It included 30 people representing a broad range of interests including: law enforcement, victims, highway safety advocates, engineers and educators. This group was tasked with making recommendations to reduce the growing number of traffic deaths, injuries and crashes caused by distracted driving in Ohio. They made recommendations by reviewing data and research, what other states are doing and recommended strategies.

The Governor has endorsed all of the recommendations, which can be found at the following link:
https://governor.ohio.gov/wps/portal/gov/governor/media/news-and-media/042519

The Task Force Report can be found here:
https://content.govdelivery.com/attachments/OHOOD/2019/04/24/file_attachments/1198896/Ohio%20Distracted%20Driving%20Task%20Force%20Report%20FINAL.pdf

Driver Education SHSP Committee

In 2018, ODOT and its partners created a Strategic Highway Safety Plan Education Committee to review traffic safety education in the state, including driver education curriculum and public outreach. The committee developed a variety of fact sheets and videos that can be used by Ohio's Driving Instructors to teach novice drivers. All the materials will be available on a public web site sometime during the fall of 2019. In the meantime, here is a link to the new materials:
http://www.dot.state.oh.us/Divisions/Planning/ProgramManagement/HighwaySafety/SHSP/DriverEdCommittee/Forms/AllItems.aspx?RootFolder=%2FDivisions%2FPlanning%2FProgramManagement%2FHighwaySafety%2FSHSP%2FDriverEdCommittee%2FFinal%20Materials%20for%20Drivers%20Ed&FolderCTID=0x012000F5A5719227003B4783212C315AE1D31A&View={9B16357B-B193-4D2B-BCA8-CA6121AD6CF8}

Increased Public and Stakeholder Engagement

Freeway and Portable Message Signs
Since 2015, Ohio has been using its Freeway and Portable Message Signs to post safety messages and the number of traffic deaths on Ohio roads. The state leverages the message boards with a bi-weekly email to SHSP stakeholders that encourages organizations to use and share the same coordinated message.

ODOT posts messages every other week, and the messages are synced to the communication calendar published by the National Highway Traffic Safety Administration. Messages are selected, and sometimes developed, by a committee from ODOT, the Ohio Department of Public Safety, Federal Highway Administration and Ohio State Highway Patrol.

In September 2017, Ohio launched a website to support this effort, which allows the public to develop and submit safety messages that support SHSP emphasis areas. The winners are selected by the statewide committee and publicized to further incentivize the effort and spread information. ODOT routinely works with the Public Information Office to promote the web site and solicit new ideas.

Increased Local Government Engagement

In late 2018, ODOT hired a full-time coordinator and kicked off a Local Safety Assistance Program. This program provides local governments and metropolitan planning organizations in the state the technical assistance and consultant support necessary for the development of County and Regional Safety Plans. These plans are helping local agencies identify and understand the safety issues occurring within their communities. They are helping identify priority safety locations to target investments. And they are outlining robust multi-disciplinary action plans aimed at addressing severe crashes and reducing fatalities.

So far, Ohio has initiated 20 safety studies or RSAs, 9 regional or county safety plans, and 2 systemic safety improvement analyses for local governments.

Once a plan is completed, project sponsors can submit abbreviated or formal safety applications for HSIP funds. Abbreviated safety applications can be submitted year-round for non-complex safety improvements that are $500,000 or less. Formal safety applications for higher dollar, more complex improvements can be submitted in April and September each year. Funding is available for all phases of project development. So far, Ohio has funded 4 projects from the effort.

Lastly, ODOT has received additional State Safety funds for State Fiscal Years 2020 and 2021. These additional funds will be used along with the Federal HSIP funds to help advance more Safety programs and projects on Ohio's roadways.

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.

ODOT has established the Highway Safety Improvement Program to create a process which emphasizes safety of the traveling public by analyzing the crash statistics on Ohio's state and local highway system. The Department utilizes AASHTOWare Safety Analyst to identify intersections and highway sections with the potential for safety improvement. Each of the 12 District Safety Review Teams (DSRT) reviews these prioritized locations as part of a Safety Annual Work Plan (SAWP) and accepts the plan. In addition, the Districts perform safety studies to determine the causes of crashes at locations. The DSRT strives to identify crash patterns and recommend countermeasures to reduce the severity and long-term average frequency of crashes.

Safety projects are not limited to the state highway system. Proposed local projects on public roads are also evaluated and prioritized to improve safety as outlined in the application and selection process. These projects are reviewed and approved by the DSRT.

Upon recommendation from the District Safety Review Teams, eligible projects are submitted to ODOT Central Office for funding consideration, and evaluated and prioritized based on uniform and objective criteria. Projects which contribute most to improving safety and reducing the severity and long-term average frequency of crashes are considered for funding and further development. Twice a year, a listing of all newly approved safety projects is produced.

The Highway Safety Improvement Program historically receives approximately $100 million annually of combined Federal and State funding. The actual level of funding designated for the program is determined by the Funds Management Committee and the Director, and is contingent on available state and federal revenues. The funding is used to implement countermeasures at identified crash locations on Ohio's roadways to ensure safety is the primary consideration in the design, development, and operation of this program.

Where is HSIP staff located within the State DOT?

Planning

How are HSIP funds allocated in a State?

- Central Office via Statewide Competitive Application Process
- Other-Direct Sub-Allocation to CEAO

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

Local governments can qualify for funding and technical assistance to address SHSP emphasis areas and prioritized safety locations through the HSIP programs administered by ODOT ($100M annually), the County Engineers Association ($12M annually) and Local Technical Assistance Program ($2M).

Local Road Safety Initiative
To encourage local governments to apply for these funds and overcome capacity constraints at the local level, in 2018 ODOT's Highway Safety Program launched its Local Safety Assistance program. This program provides local governments and metropolitan planning organizations in the state the technical assistance and consultant support necessary for developing County and Regional Safety Plans, conducting safety studies/road safety audits, and developing systemic safety improvement projects

- County & Regional Safety Plans are helping local agencies identify and understand the safety issues occurring within their communities. They are helping identify priority safety locations to target investments. And they are outlining robust multi-disciplinary action plans aimed at addressing severe crashes and reducing fatalities and identify available resources for implementation.
- Safety Studies and Road Safety Audits are almost always required to apply for HSIP within Ohio. Through ODOT's Local Safety Assistance program, local agencies are provided with the technical assistance to complete the studies necessary to apply for HSIP funds at no cost to them.
- Systemic Safety Project Development can be a challenge at the local level, whether that's conducting a systemic analysis to managing the construction process. ODOT's Highway Safety Program provides technical assistance on the development of these projects and is working to streamline the project delivery process.

CEAO Safety Program
ODOT also works with the Ohio County Engineers Association to administer a separate safety program ($12 million of HSIP funds) dedicated to making improvements on county-maintained roads. This funding can be used to make spot and systemic improvements tied to the SHSP. Applications are accepted once a year by CEAO and scored using criteria developed in conjunction with ODOT.

CEAO subdivides the $12 million in to several smaller funding categories. Each county is permitted to program eligible construction projects up to $5 million overall for spot safety improvements. In addition to spot safety improvements, CEAO provides up to $300,000 per county for each guardrail project, $150,000 per county for each pavement marking project, $75,000 per county for each raised pavement marker project, and $15,000 per county for curve signage upgrade projects.

Township Sign Grants
ODOT also sets aside $2M annually to upgrade safety-related signs on township roads. The grants are administered by LTAP.

This program was developed to address intersection and curve systematic signage upgrades for townships with a high number of severe crashes. The top 100 townships (for severe crashes) are invited to apply each year. Funding is capped at $50,000 for any one township. Funding is provided at 100% so no local matching funds are required. Township or county forces install the signs at their own cost.

There are 1,308 townships in Ohio and 226 of these have participated and completed signage installations since 2015.

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

- Design
- Districts/Regions
- Local Aid Programs Office/Division
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety
- Other-Local Technical Assistance Program (LTAP)

Describe coordination with internal partners.

ODOT's Office of Program Management accepts applications – accompanied by safety studies – from ODOT District Offices and local governments twice a year. Applications must be submitted through the District Offices, which have a multi-disciplinary committee that reviews and approves them for Central Office consideration. Projects are then reviewed and selected for funding by the Safety Review Committee in Central Office, which includes expertise in safety, planning, geometric design, and traffic operations.

Priority is given to any project that improves safety at a roadway location with high frequency, severity and rate of crashes. Projects are scored based on:

- Expected Crash Frequency
- Ratio of Observed Fatal and Serious Injuries to Observed Total Crashes
- Relative Severity Index
- Equivalent Property Damage Only Index
- Volume to Capacity Ratio
- Benefit-Cost Ratio (anticipated savings in crash costs, property damage, injuries and fatalities relative to the cost of the improvement plus cost of maintenance for the life of the project).
- Highway Safety Improvement Program Funding Percentage

Funding awarded through the program is used to make traditional safety improvements at spot locations, such as intersections, and along sections or corridors throughout the state. Consideration is also given to lower-volume, lower-crash local roads with identified needs and cost-effective countermeasures.

Identify which external partners are involved with HSIP planning.

- FHWA
- Governors Highway Safety Office
- Law Enforcement Agency
- Local Government Agency
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)

Describe coordination with external partners.

SHSP Steering Committee
Ohio's SHSP Steering Committee represents the state's largest coordination effort with external partners. The committee includes members from 15 key safety organizations operating at the local, state and federal level including: Ohio County Engineers Association; Local Transportation Assistance Program, Ohio Association of

Regional Councils (MPOs and RTPOs); Ohio Department of Public Safety; Ohio State Highway Patrol; Federal Highway Administration; Ohio State Highway Patrol; Federal Motor Carrier Administration; and Ohio Department of Health. These organizations then feed the information to a network of hundreds of other stakeholders who are getting more actively involved in the SHSP and helping to guide ODOT's HSIP efforts. In 2018, Ohio also added AAA to this committee's membership.

MPO/RTPO Pilot Project
Ohio is piloting a program with the state's MPOs and RTPOs to get more local governments involved in the HSIP. In 2017, Ohio formed a working group tasked with developing a process to provide more safety analysis assistance to local governments. Many MPOs and RTPOs publish prioritize safety lists, however, too few local governments use this analysis to conduct reviews, make recommendations and apply for HSIP funding. This collaborative project seeks to close that gap. In August 2018, the working group started the process of assigning consultants to MPOs and RTPOs to assist in this process.

SHSP Task Forces and Committees
ODOT is currently managing three special task forces or committees that are reviewing, making recommendations and implementing strategies associated with preventing Pedestrian, Older Driver and Distracted Driving deaths. A fourth committee to review driver education curriculum and provide updated videos and training materials completed its work in February 2019. More detail can be found in the executive summary.

Local Safety Assistance Program

In late 2018, the Ohio Department of Transportation's Highway Safety Program kicked off its Local Safety Assistance program. This program provides local governments and metropolitan planning organizations in the state the technical assistance and consultant support around transportation safety issues and helps educate local governments on available HSIP resources and the SHSP. For more information on the Local Safety Assistance Program, see question 6.

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

Ohio uses a focused approach to safety that targets resources based on the greatest need and greatest opportunity for improvements. We also promote the use of proven, cost-effective, systemic and systematic safety solutions that target critical, severe-crash types such roadway departure and intersections crashes. These focus areas are embodied in both the HSIP and the state's Strategic Highway Safety Plan.

We advanced the HSIP through the balanced deployment and implementation of a host of traditional spot safety investments and a host of systemic and systematic safety investments.

ODOT's Highway Safety Improvement Program and Safety Analyst Implementation

Each year, ODOT staff reviews the top safety locations in Ohio. Ohio is one of the first states in the country to fully implement AASHTOWare Safety Analyst and use it to prioritize safety locations across Ohio. Safety Analyst uses state-of-the-art statistical methodologies to identify roadway locations and safety improvements with the highest potential for reducing crashes. The software systems flag spot locations and road segments that have higher-than-predicted crash frequencies. It also flags locations for review based on crash severity. This methodology is more efficient and cost effective and will allow the department to study fewer locations yet address more crashes each year.

ODOT has developed eight priority lists based on rural and urban roadway types. The urban system covers all streets, roads, and highways located within incorporated areas with populations greater than 5,000. The

suburban system is the network outside the incorporated area but still within the urban boundaries designated by the U.S. Census Bureau. The Bureau defines two types of urban areas based on population. Small urban areas are urban places with a population or 5,000 or more and not located within any urbanized area. An urbanized area is an area with a population of 50,000 or more. As might be expected, the rural functional classification system covers all other streets, roads, and highways that are not located within the boundaries of small urban and urbanized areas.

The priority lists are:

1. Rural Intersection Peak Searching Excess Locations: These locations were selected because they have a higher-than-predicted crash frequency for each intersection. Approximately, the Top 25 locations will be studied.
2. Rural Non-Freeway Peak Searching Excess Segment Locations: These locations were selected because they have a higher-than-predicted crash frequency for this roadway type. Approximately, the Top 25 locations will be studied. Only crashes indicated on the OH-1 crash report form as being non-intersection crashes were included in this analysis.
3. Rural Freeway Peak Searching Excess Locations: These locations were selected because they have a higher-than-predicted crash frequency for this roadway type or interchange location. Approximately, the Top 25 locations will be studied.
4. Urban Intersection Peak Searching Excess Locations: These locations were selected because they have a higher-than-predicted fatal and injury crash frequency for each intersection. Approximately, the Top 25 locations will be studied.
5. Urban Non-Freeway Peak Searching Excess Segment Locations: These locations were selected because they have a higher-than-predicted fatal and injury crash frequency for this roadway type. Approximately, the Top 25 locations will be studied. Only crashes indicated on the OH-1 crash report form as being non-intersection crashes were included in this analysis.
6. Urban Freeway Peak Searching Excess Locations: These locations were selected because they have a higher-than-predicted fatal and injury crash frequency for this roadway type or interchange location. Approximately, the Top 25 locations will be studied.
7. Suburban Intersection Peak Searching Excess Locations: These locations were selected because they have a higher-than-predicted fatal and injury crash frequency for each intersection. Approximately, the Top 25 locations will be studied.
8. Suburban Non-Freeway Peak Searching Excess Segment Locations: These locations were selected because they have a higher-than-predicted fatal and injury crash frequency for this roadway type. Approximately, the Top 25 locations will be studied. Only crashes indicated on the OH-1 crash report form as being non-intersection crashes were included in this analysis.

Highway Safety Improvement Program Abbreviated Application

In 2018, ODOT continued a process that was initialized in 2016 to implement low cost safety improvements faster. These requests are less than $500,000 that are either standalone projects or existing projects located on a priority location. This is part of an initiative to make safety improvements on all programmed projects.

Systemic and Systematic Safety Program
The Ohio Department of Transportation spends approximately $15 million annually of the $102 million program on systemic and systematic safety improvements. These are safety improvements that can be installed across hundreds of road miles for a relatively small public investment. Systematic safety improvements are low cost improvements that are complete at similar locations to address a specific type of crash pattern. Systemic safety improvements are those improvements that are constructed system-wide to reduce the likelihood of a crash of occurring based on roadway features, traffic volumes or other features such as speed limit or land use type.

Examples of systemic and systematic project types are Curve Signing Upgrade, Edge Line Rumble Stripes, Cable Barrier, Signal Upgrade, Intersection Signing Upgrade, Wider Pavement Markings, and Guardrail End Treatment Upgrade Projects.

Safe Routes to School Program
ODOT uses $4 million from the Transportation Alternatives Program to fund Ohio's Safe Routes to School Program. Again, this is separate and in addition to the $102 million ODOT HSIP program. Funds can be used on any public roadway if the school has completed a School Travel Plan. The School Travel Plan outlines where investments should be made for a specific school district.

Other Programs
Small portions of ODOT's state funding are used for work zone enforcement, OVI checkpoints, and other educational opportunities (Federal HSIP funding is no longer available for education or enforcement activities). Although money is not specifically set aside for the High-Risk Rural Roads Program in Ohio at this time, we still encourage agencies to apply for funding through our traditional application process. Any projects that are prioritized based on the HRRR Program are funded through the ODOT's HSIP Program ($102 million).

ODOT also combines HSIP funding with other funding sources (such as MPO and ORDC) to make safety improvements.

Program Methodology

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

Yes
FileName:
Safety_Analysis_Guidelines.pdf
Highway Safety Improvement Program Guidance.pdf

Select the programs that are administered under the HSIP.

- Other-State HSIP Program
- Other-CEAO HSIP Program
- Other-State High Risk Rural Road
- Other-State Abbreviated HSIP Application

Program: Other-State HSIP Program

Date of Program Methodology:3/1/2016

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 Traffic
Fatal and serious injury crashes only	Volume

What project identification methodology was used for this program?

- EPDO crash frequency with EB adjustment
- Excess expected crash frequency with the EB adjustment
- Expected crash frequency with EB adjustment
- Other-(Total Fatal and Serious Inuries) / Total Crashes
- Other-Volume to Capacity Ratio
- 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
Available funding:3
Cost Effectiveness:2

Program: Other-CEAO HSIP Program

Date of Program Methodology:7/1/2011

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
All crashes Fatal and serious injury crashes only	Traffic	Other-Rural County Highway System

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Equivalent property damage only (EPDO Crash frequency)
- Other-Amount of Funding Requested
- 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
Available funding:3
Cost Effectiveness:2

Program: Other-State High Risk Rural Road

Date of Program Methodology:6/1/2008

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
Other-Fatal and All Injury Crashes Only	Volume	Functional classification

What project identification methodology was used for this program?

- EPDO crash frequency with EB adjustment
- Excess expected crash frequency with the EB adjustment
- Expected crash frequency with EB adjustment
- Other-(Fatal and Serious Injuries) / Total 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?

- 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
Available funding:3
Cost Effectiveness:2

Program: Other-State Abbreviated HSIP Application

Date of Program Methodology:5/1/2016

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 Fatal and serious injury crashes only	Volume	

What project identification methodology was used for this program?

- Crash frequency
- Expected crash frequency with EB adjustment

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:1
Available funding:3
Cost Effectiveness:2

What percentage of HSIP funds address systemic improvements?

10

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

- 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

- Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)
- Engineering Study
- Road Safety Assessment
- SHSP/Local road safety plan

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

Describe how the State HSIP considers connected vehicles and ITS technologies.

ODOT safety staff participate in bi monthly meetings with the Autonomous Vehicle, Connected Vehicle and Transportation Systems Management & Operations (AV/CV TSMO) Group. Additionally, the Ohio HSIP Program has been supportive in ITS technologies and AV/CV will be included in the SHSP update in 2020. Example projects include the following: Freeway queue warning system with driver messages, freeway camera monitoring equipment, and ramp wrong way driver alert systems.

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.

Ohio uses AASHTOWare Safety Analyst (Safety Analyst) to prioritize the roadway network within the state. Safety Analyst faithfully implements Part B of the Highway Safety Manual (HSM).

All projects submitting for State HSIP Program funds are required to complete a Part C analysis included in the HSM. Additionally, ODOT has developed policy guidance to implement HSM for all projects. The level of analysis varies depending on the complexity of the project. For smaller projects, basic crash analysis is required. This includes identifying if the location is a priority location and reviewing general observed crash trends. For larger projects, Part C analysis is added as a requirement to understand the change in long term crash frequency.

Describe program methodology practices that have changed since the last reporting period.

Yes. Please reference ODOT's Highway Safety Improvement Program and Safety Analyst Implementation section in question #12 for details. Previously there were six priority list classifications, but we have since transitioned to eight priority lists.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$126,360,467	$67,715,150	53.59%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$29,072,814	$29,072,814	100%
Penalty Funds (23 U.S.C. 164)	$27,075,969	$27,075,969	100%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$143,154,064	$109,958,779	76.81%
State and Local Funds	$67,094,085	$62,106,329	92.57%
Totals	$392,757,399	$295,929,041	75.35%

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

21%

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

21%

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

$1,958,628

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

$1,840,430

For the Programmed projects:

Safety Program Training – We hired a consultant to review existing safety training courses and recommend/develop updated materials. $70,975

Crash Data Logging - Project includes logging and processing crash data for use in statewide crash data systems. $16,718

Regional County Safety Plans – We funded several county safety plans to provide a framework for identifying, analyzing, and prioritizing roadway safety improvements on all public roads. The process results in a prioritized list of issues, factors, actions, and improvements that can be used to reduce fatalities and serious injuries across a region's roadway network. $424,857

Streetlight Data – We invested in the data to get better ADT/Volume information on local roads within Ohio. It also gives us the ability to identify safety issues on these facilities and better allocate safety project funding. The pedestrian and bicycle volume metrics included within the system supports improved identification of high-risk facilities/locations base on exposure and advanced understand of crash risk for non-motorized users. $1M

Ped/Bike Design Guidance – Hiring a consultant to complete a statewide pedestrian & bicycle design guidance best practices review. $29,940

US Bike Route Workshops – We held the workshops to explain the US Bike Route System and the steps necessary to designate it within each community. $36,615

County Active Transportation Plans – Developing county-wide plans that focus on critical bicycle and pedestrian connections and gaps. Information used to guide safety infrastructure investments. $96,579

Statewide AT Policy Review - The project will begin with a national scan of bicycle and pedestrian laws. The scan will identify best practices and states that Ohio may look to for guidance if it undertakes changes to the ORC's bicycle and pedestrian regulations. $63,290

D08 Pedestrian Systemic Analysis - Pedestrian systemic safety analysis with D8. $219,654

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

0%

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

0%

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

In FFY 2018, Ohio obligated 100% of its HSIP funds (2018 Apportionment). For FFY 2019, Ohio has obligated approximately 14%. The obligation rate is low in part due to Ohio's use of Advance Construction (AC) financing method, as this type of authorization is not counted as obligation of Federal funds until the AC funds are converted.

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

Ohio has had several instances over the past year where we had to use state funds to support enforcement and education programs that are no longer eligible for HSIP funding. All the projects are tied to the state's SHSP and emphasis areas that FHWA has encouraged us to address holistically using engaging engineering,

enforcement, education, and emergency response (4 E's). Yet, we can’t use federal funds to supplement the associated costs.

General Listing of Projects

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

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
104166 - D06 GR End Treat FY18	Roadside	Barrier end treatments (crash cushions, terminals)	35	Locations	$114760.67	$176769.67	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	Installing guardrail end treatments to address issue of roadway departure crashes
102061 - HAM-VAR Signal Upgrades	Advanced technology and ITS	Congestion detection / traffic monitoring system	51	Intersections	$1355847.74	$1506497.5	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	25,000	0	State Highway Agency	Systemic	Intersections	Improving signal operation and visibility to reduce intersection related crashes
76938 - FAI US 33 05.60(Carrol l Area)	Interchange design	Convert at-grade intersection to interchange	1	Interchanges	$6395969.28	$40054927.08	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural	Principal Arterial-Other Freeways & Expressways	44,554	60	County Highway Agency	Spot	Intersections	Replacement of signalized intersection with grade separated intersection to reduce congestion and queue related crashes
102380 - D08 GR FY2018	Roadside	Barrier end treatments (crash cushions, terminals)	600	Locations	$1038424.27	$1972693.32	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	Installing guardrail end treatments to address issue of roadway departure crashes
103543 - HOC US 33 11.700 Ramp Clear	Intersection traffic control	Modify control - no control to roundabout	1	Intersections	$1165346.1	$1554111.6	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	2,782	70	State Highway Agency	Spot	Intersections	Constructing a roundabout to reduce angle and rear end crashes

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
103736 - D01 GR FY2018	Roadside	Barrier end treatments (crash cushions, terminals)	87	Locations	$197914.34	$762133.35	Other Federal-aid Funds (i.e. STBG, NHPP)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	Installing guardrail end treatments to address issue of roadway departure crashes
95716 - HEN/LUC US 24 0.00/11.53 Resurf	Roadway	Pavement surface - miscellaneous	5.91	Miles	$199739.69	$2443661.87	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural	Principal Arterial-Other Freeways & Expressways	19,866	65	State Highway Agency	Spot	Roadway Departure	Install pavement treatments to reduce roadway departure crashes
98689 - HAM CR 672.19 Duck Creek Rd Ext	Intersection geometry	Auxiliary lanes - miscellaneous/other/unspecified	1	Interchanges	$2500000	$7876096.78	Other Federal-aid Funds (i.e. STBG, NHPP)	Urban	Principal Arterial-Other	38,232	45	County Highway Agency	Spot	Intersections	Realign intersection to reduce angle and rear end crashes
92900 - BRO SR 41 1.93 Safety	Alignment	Horizontal curve realignment	1	Locations	$2588596.56	$3857835.1	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,644	55	State Highway Agency	Spot	Roadway Departure	Realign intersection to reduce angle and rear end crashes
107508 - D09 TSG FY2019	Advanced technology and ITS	Advanced technology and ITS - other	9	Intersections	$83193.6	$88773.6	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	9,100	0	State Highway Agency	Spot	Intersections	Improving signal operation and visibility to reduce intersection related crashes
101301 - GRE CR 172.23	Interchange design	Installation of new lane on ramp	2	Lanes	$539999.92	$1370693.1	State and Local Funds	Urban	Minor Arterial	23,436	35	State Highway Agency	Spot	Intersections	Constructing through traveled lanes to reduce congestion and queue related crashes
104003 - LOR SR 0010C 00.50	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Lanes	$414000	$561552.6	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	31,140	65	State Highway Agency	Spot	Intersections	Constructing turn lanes to reduce rear end crashes

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
105882 - ATH US 50 8.640	Intersection geometry	Auxiliary lanes - add right-turn lane (free-flow)	1	Approaches	$234000	$281286	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	13,029	60	State Highway Agency	Spot	Intersections	Constructing turn lanes to reduce rear end and left turn crashes
104407 - CLE IR 275 9.50	Interchange design	Installation of new lane on ramp	1	Lanes	$1311379.34	$2063480.16	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	83,283	65	State Highway Agency	Spot	Intersections	Extending ramp lengths to reduce the number of rear end crashes
101212 - GRE US 68 9.43	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	0.57	Miles	$1374156.6	$1526840.68	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	5,852	35	City or Municipal Highway Agency	Spot	Bicyclists	Installation of bicycle and pedestrian facilities
94632 - CLA SR 235 0.23	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	1	Signal heads	$2665040.31	$3461312.21	HSIP (23 U.S.C. 148)	Urban	Major Collector	12,128	45	State Highway Agency	Spot	Pedestrians	Installation of pedestrian signal equipment
101977 - POR SR 0014 18.06	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Lanes	$1112945.39	$1335598.78	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	12,045	45	State Highway Agency	Spot	Intersections	Constructing turn lanes to reduce rear end crashes
103505 - HAM SR 126 19.40	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$2159432.44	$2399369.36	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	53,636	55	State Highway Agency	Spot	Intersections	Improving signal operation and visibility to reduce intersection related crashes
94494 - WAR SR 48 8.80 Mason Morrow Mill	Intersection geometry	Auxiliary lanes - add left-turn lane	3	Lanes	$391931.78	$2691003.89	Other Federal-aid Funds (i.e. STBG, NHPP)	Urban	Principal Arterial-Other	16,866	50	State Highway Agency	Spot	Intersections	Constructing turn lanes to reduce rear end crashes
102062 - HAM VAR HFST Locations	Roadway	Pavement surface - high friction surface	3	Curves	$284053.66	$315615.17	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	21,000	0	City or Municipal Highway Agency	Spot	Roadway Departure	Install pavement treatments to reduce roadway departure crashes
102183 - SUM SR 0091 09.59	Intersection geometry	Auxiliary lanes - modify free-flow turn lane	1	Lanes	$693000	$838653	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	18,078	35	State Highway Agency	Spot	Intersections	Constructing turn lanes to

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															reduce rear end crashes
103594 - CLE CR 98 0.11	Pedestrians and bicyclists	Pedestrian beacons	2	Signal heads	$49727.25	$55252.5	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	11,337	25	County Highway Agency	Spot	Pedestrians	Installation of pedestrian signal equipment
88665 - CUY IR 090 03.56 Interchange	Interchange design	Interchange design - other	1	Interchanges	$2359999.1	$3943557.05	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	85,142	60	State Highway Agency	Spot	Intersections	Constructing through traveled lanes to reduce congestion and queue related crashes
76282 - FRA US 40 4.69	Roadway	Roadway widening - travel lanes	1.57	Miles	$3870000	$18651815.77	Other Federal-aid Funds (i.e. STBG, NHPP)	Urban	Principal Arterial-Other	12,924	45	City or Municipal Highway Agency	Spot	Intersections	Constructing through traveled lanes to reduce congestion and queue related crashes
25594 - FRA IR 70 3.41	Roadway	Roadway widening - add lane(s) along segment	4.22	Miles	$1132171.69	$57307774.32	State and Local Funds	Urban	Principal Arterial-Interstate	67,700	65	State Highway Agency	Spot	Roadway Departure	Constructing through traveled lanes to reduce congestion and queue related crashes
100995 - LUC US 24 15.78 Turn Lanes	Intersection geometry	Auxiliary lanes - add right-turn lane	2	Lanes	$396628.6	$670298.56	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	24,590	50	State Highway Agency	Spot	Intersections	Constructing turn lanes to reduce rear end crashes
89122 - HAM CR 90 0.60 Pippin Rd Phase 1	Intersection geometry	Auxiliary lanes - add two-way left-turn lane	1.24	Miles	$2499999.99	$6449646.00	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	10,678	35	County Highway Agency	Spot	Intersections	Constructing a Two Way Left Turn Lane to reduce the number of head-on, sideswipe meeting, rear end and turning-

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															related crashes
103373 - D02 GR NHS	Roadside	Barrier end treatments (crash cushions, terminals)	96	Locations	$792637.26	$792637.26	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	Installing guardrail end treatments to address issue of roadway departure crashes
99489 - GRE SR 4 1.54	Intersection geometry	Auxiliary lanes - add right-turn lane	1	Approaches	$75158.82	$1848362.05	Other Federal-aid Funds (i.e. STBG, NHPP)	Urban	Principal Arterial-Other	25,653	60	State Highway Agency	Spot	Intersections	Constructing turn lanes to reduce rear end and left turn crashes
102149 - SCI SR 73 19.63	Roadway signs and traffic control	Curve-related warning signs and flashers	2	Curves	$149377.03	$1043198.25	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural	Major Collector	2,296	45	State Highway Agency	Spot	Roadway Departure	Installation of curve signage to reduce roadway departure crashes
101251 - GRE Central State FY18	Pedestrians and bicyclists	Install new crosswalk	1	Crosswalks	$36054.21	$578165.44	State and Local Funds	Urban	Major Collector	2,855	25	State Highway Agency	Spot	Pedestrians	Installation of pedestrian signal equipment
80963 - GEA US 422 13.04 Intersection	Intersection geometry	Auxiliary lanes - add left-turn lane	2	Lanes	$571104.12	$994724.28	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	15,216	45	County Highway Agency	Spot	Intersections	Constructing turn lanes to reduce rear end crashes
104752 - WOO SR 64 0.89 PHB	Pedestrians and bicyclists	Pedestrian signal - Pedestrian Hybrid Beacon	1	Signal heads	$281451.91	$409746.56	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	17,952	40	State Highway Agency	Spot	Pedestrians	Installation of pedestrian signal equipment
101003 - WOO SR 199 29.10 Carronade Rdabt	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$768531.38	$970161.95	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	5,433	45	State Highway Agency	Spot	Intersections	Constructing a roundabout to reduce angle and rear end crashes
103744 - WOO US 20 8.87 Turn Lane Sfty	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$333131.63	$389936.51	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	13,213	45	State Highway Agency	Spot	Intersections	Constructing turn lanes to reduce rear end and left turn crashes

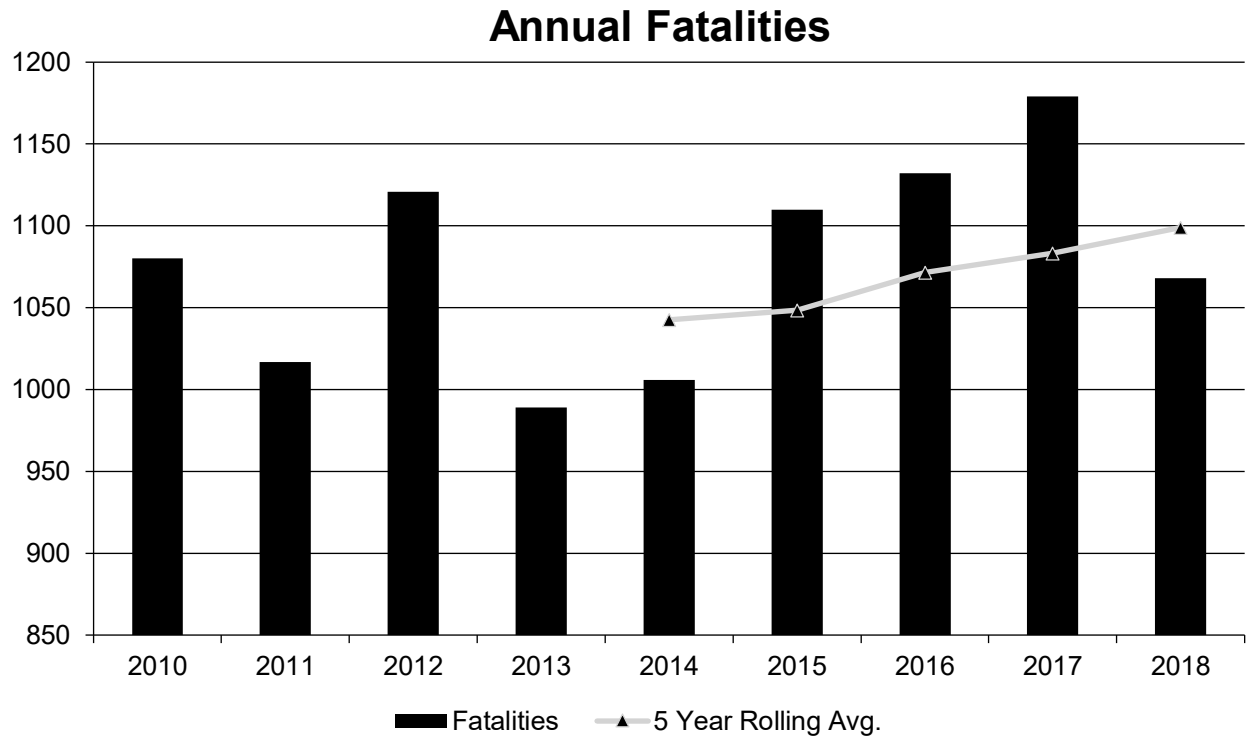
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
97680 - SCI US 23 10.57	Roadway	Pavement surface - miscellaneous	0.91	Miles	$27039.88	$2996232.69	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural	Principal Arterial-Other	19,501	35	State Highway Agency	Spot	Roadway Departure	Install pavement treatments to reduce roadway departure crashes
98551 - SHE SR 47 14.51	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$191174.13	$249996.83	HSIP (23 U.S.C. 148)	Urban	Minor Collector	19,416	45	State Highway Agency	Spot	Intersections	Improving signal operation and visibility to reduce intersection related crashes
102035 - SAN SR53 6.02 sgnl Sfty	Intersection traffic control	Modify traffic signal - modify signal mounting (spanwire to mast arm)	1	Intersections	$217711.44	$241901.57	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	11,398	35	State Highway Agency	Spot	Intersections	Improving signal operation and visibility to reduce intersection related crashes
103706 - LAW-52-15.03 AND VARIOUS	Intersection traffic control	Modify traffic signal - modernization/replacement	6	Intersections	$1064372.25	$1248948.23	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	26,055	55	State Highway Agency	Spot	Intersections	Improving signal operation and visibility to reduce intersection related crashes

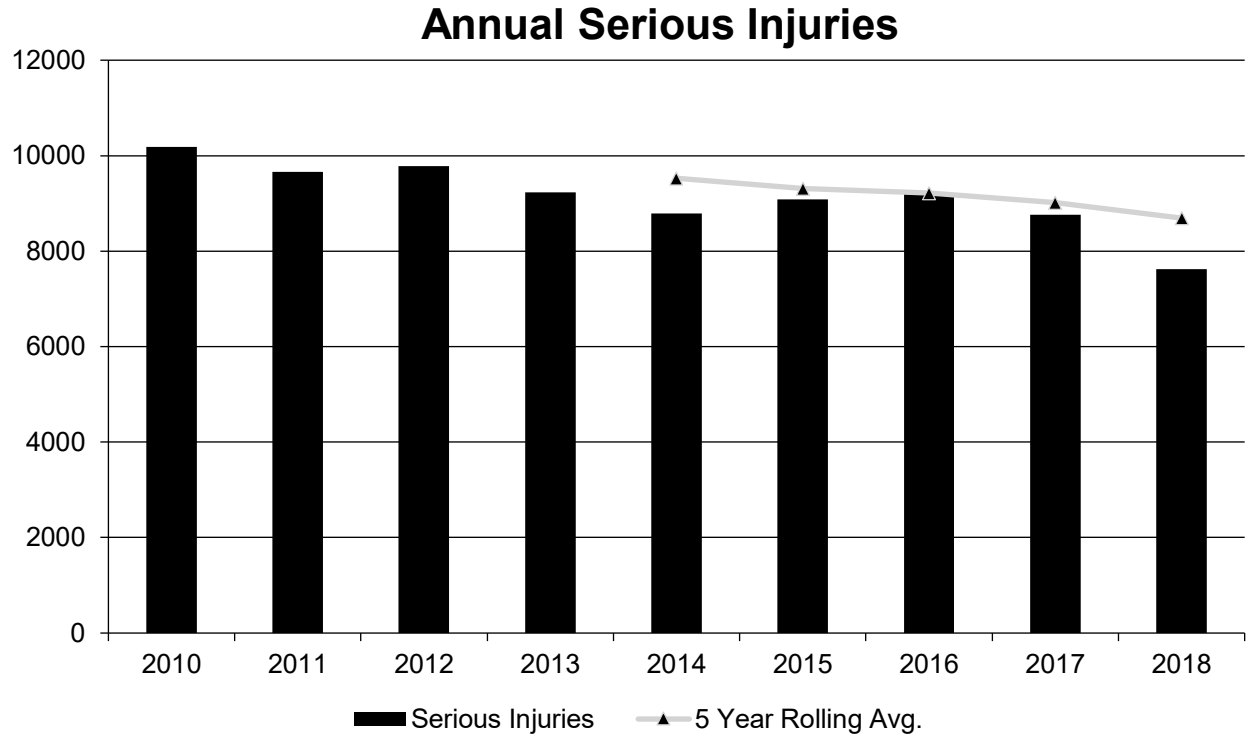
Safety Performance

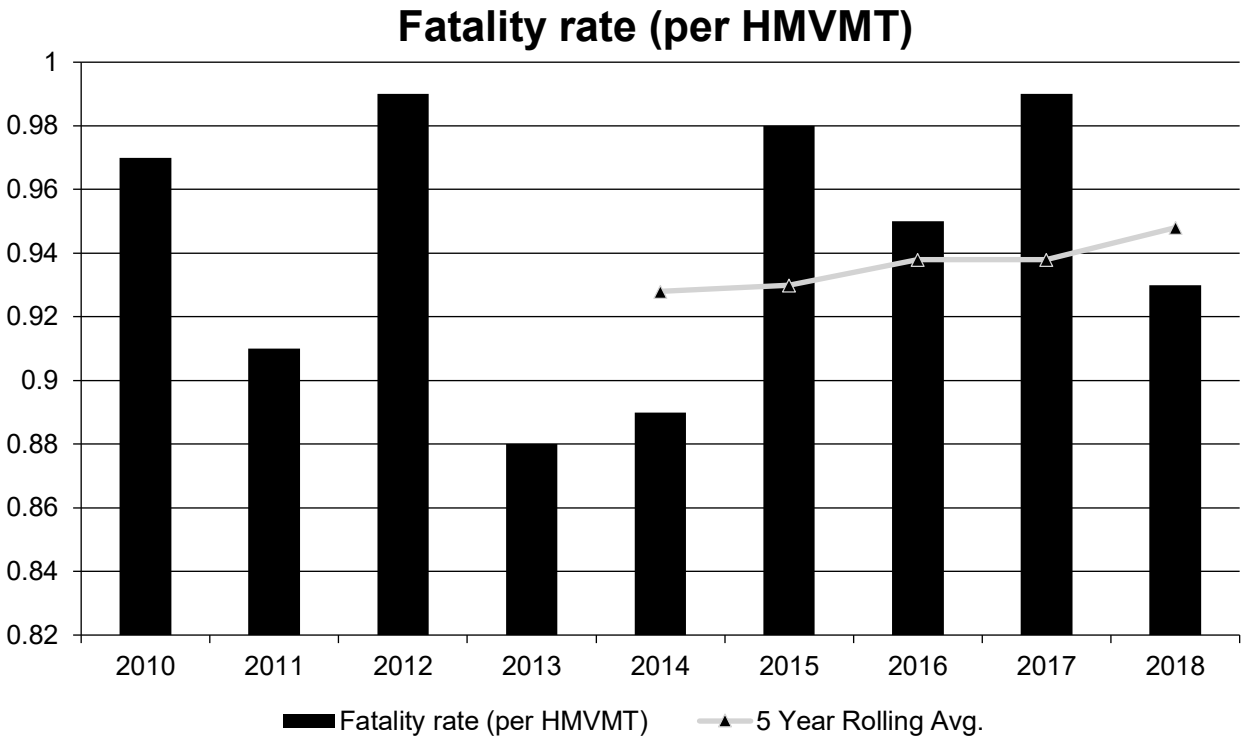
General Highway Safety Trends

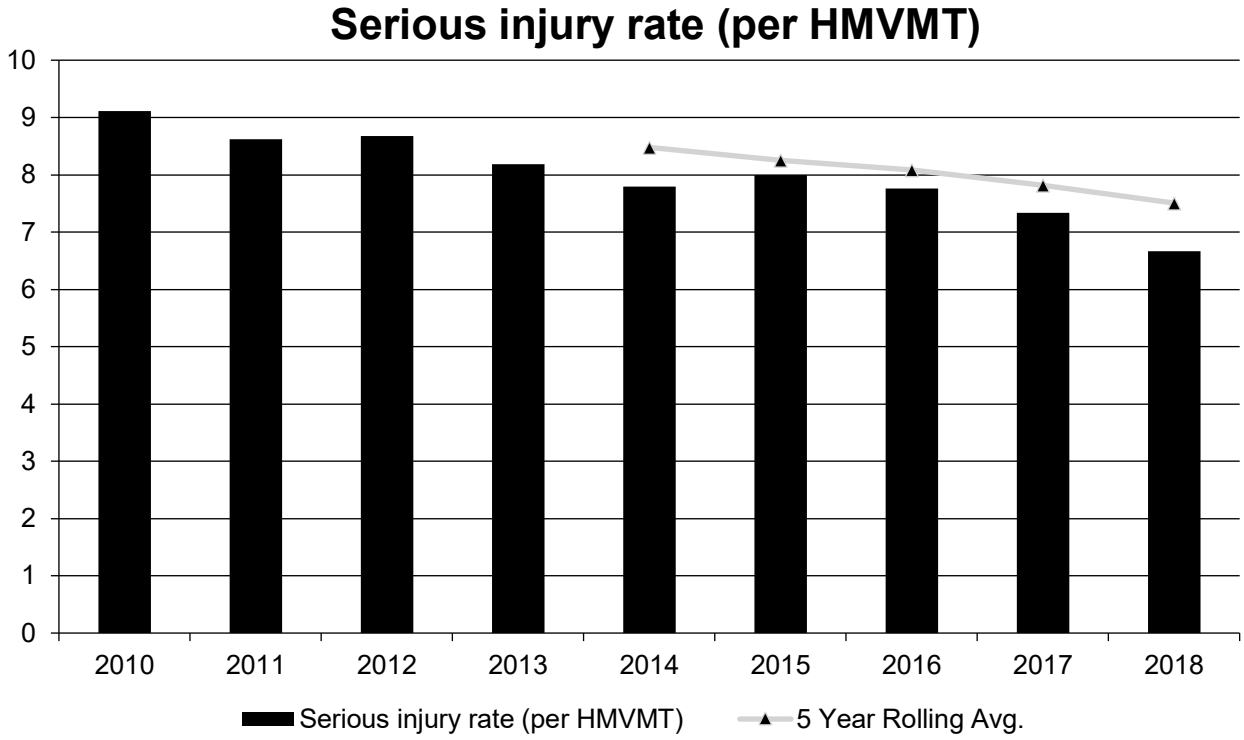
Present data showing the general highway safety trends in the State for the past five years.

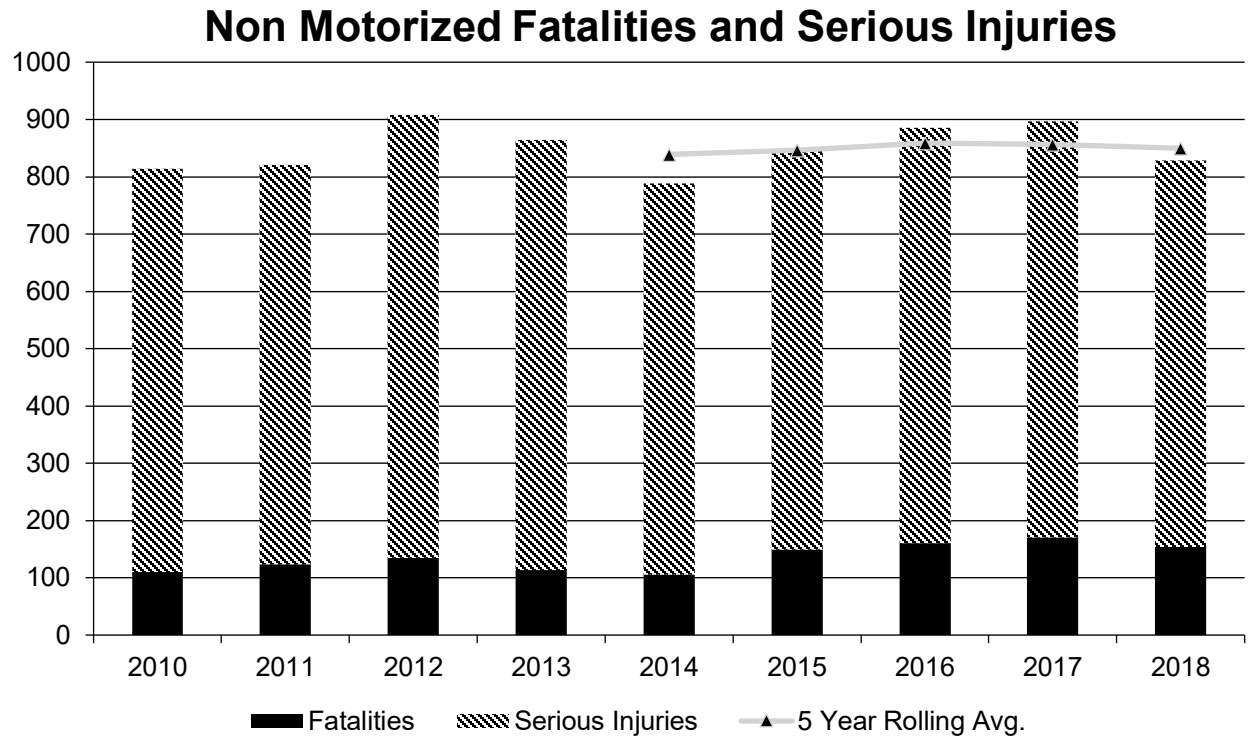
PERFORMANCE MEASURES	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fatalities	1,080	1,017	1,121	989	1,006	1,110	1,132	1,179	1,068
Serious Injuries	10,186	9,654	9,780	9,231	8,785	9,079	9,207	8,762	7,627
Fatality rate (per HMVMT)	0.970	0.910	0.990	0.880	0.890	0.980	0.950	0.990	0.930
Serious injury rate (per HMVMT)	9.110	8.620	8.680	8.190	7.790	7.990	7.760	7.330	6.660
Number non-motorized fatalities	110	124	135	113	106	149	160	171	154
Number of non-motorized serious injuries	704	697	773	751	682	700	725	726	675


Annual Fatalities
1200
1150
1100
1050
1000
950
900
850
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
12000
10000
8000
6000
4000
2000
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1
0.98
0.96
0.94
0.92
0.9
0.88
0.86
0.84
0.82
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
10
9
8
7
6
5
4
3
2
1
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

FARS

FARS was used for the number of fatalities and State data was used for the fatality rate and number of non-motorized fatalities.

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

Year 2018

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	31	183	0.34	2.03
Rural Principal Arterial (RPA) - Other Freeways and Expressways	7	41	0.33	2.04
Rural Principal Arterial (RPA) - Other	64	346	1.41	7.62
Rural Minor Arterial	78	455	1.82	10.71
Rural Minor Collector	45	253	2.78	15.88
Rural Major Collector	181	1,052	2.3	13.43

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	95	634	1.74	11.66
Urban Principal Arterial (UPA) - Interstate	83	700	0.32	2.74
Urban Principal Arterial (UPA) - Other Freeways and Expressways	30	201	0.45	3.09
Urban Principal Arterial (UPA) - Other	146	1,474	1.06	10.69
Urban Minor Arterial	148	1,479	1.08	10.78
Urban Minor Collector	5	45	0.88	8.97
Urban Major Collector	104	885	1.07	8.79
Urban Local Road or Street	64	634	0.62	6.26

Year 2018

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	401	2,550	0	0
County Highway Agency	120	791	0	0
Town or Township Highway Agency	48	309	0	0
City or Municipal Highway Agency	512	4,822	0	0
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	10	55	0	0
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				
Unknown	11	168	0	0

Safety Performance Targets

Safety Performance Targets

Calendar Year 2020 Targets *

Number of Fatalities:1055.0

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

2019 Ohio Highway Safety Improvement Program
See additional comments.

Number of Serious Injuries:8348.0

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

See additional comments.

Fatality Rate:0.910

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

See additional comments.

Serious Injury Rate:7.210

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

See additional comments.

Total Number of Non-Motorized Fatalities and Serious Injuries:816.0

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

See additional comments.

In 2018, Ohio saw its first decrease in traffic fatalities since 2013 after experiencing four consecutive years of rising deaths. Although this is a great shift, the five year rolling average for most of the state's targets has grown over the past few years due to the increases.

After reviewing historical crash trends, external factors and through consultation with ODOT's partners, the Strategic Highway Safety Plan Steering Committee recommended that Ohio move to a 2 percent annual reduction target across all five categories.

Although the 2% annual target will be difficult to achieve across all five categories, the SHSP Steering Committee feels it's an aspirational target, but achievable. Therefore, the target that Ohio has set forth for each of the performance measures is a 2% reduction from the 2014-2018 baseline.

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

ODOT has established a replicable annual process to review the previous year’s targets and establish new targets. This process is outlined in an annual letter to our partners, which includes the SHSP Steering Committee, The Ohio Department of Public Safety (HSP), MPOs and RTPOs. We also conduct meetings and discussions with various partners to set both state and regional targets for the year. ODOT has developed an automated spreadsheet tool that allows MPO’s and RTPO’s to analyze regional crash data and explore their own performance targets.

Does the State want to report additional optional targets?

No

Describe progress toward meeting the State's 2018 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.

Goals and Targets below are based on the five-year rolling average.

Number of Fatalities
2018 Target: 1,051
2018 Actual: 1,099

State did not meet target. This is a result of fatalities increasing from 2014-2017. 2018 was the first year of decline in fatalities since 2013. However, Ohio did make significant progress in 2018 having fewer fatalities than 2017.

Number of Serious Injuries
2018 Target: 9,033
2018 Actual: 8,692

State met target.

Fatality Rate
2018 Target: 0.91
2018 Actual: 0.95

State did not meet target. This is due to the increase in fatalities and although VMT has increased, the rates at which they have increased has been less than the fatalities.

Serious Injury Rate
2018 Target: 8.01
2018 Actual: 7.51

State met target.

Number of non-motorized fatalities and serious injuries

2018 Target: 840
2018 Actual: 858

State did not meet target. This is a large part due to the four consecutive years of rising pedestrian fatalities. 2018 was the first year of decline for pedestrian fatalities since 2013.

Applicability of Special Rules

Does the HRRR special rule apply to the State for this reporting period?
No

Ohio's fatality rate on the three functional classifications of rural roads decreased from 2.3 to 2.1, therefore the Special Rule does not apply. This information was released in the December 18, 2018 memo from FHWA.

2011-2015 five year average fatality rate = 2.3
2013-2017 five year average fatality rate = 2.1

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	2012	2013	2014	2015	2016	2017	2018
Number of Older Driver and Pedestrian Fatalities	166	123	154	177	166	178	166
Number of Older Driver and Pedestrian Serious Injuries	741	763	796	790	861	821	774

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Benefit/Cost Ratio
- Change in fatalities and serious injuries

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

Ohio routinely evaluates crash trends, quarterly and annually, to determine the effectiveness of its Highway Safety Improvement Program. In 2018, Ohio had 1,068 traffic deaths, representing a 9.4% decrease and 7,627 serious injuries, representing a 13% decrease respectively compared to 2017. 2018 represented the first year of declining fatalities in since 2013 when Ohio had its lowest number of fatalities. This was also reflected in the trend for pedestrian fatalities. Ohio saw its first year of declining pedestrian fatalities since 2013.

The safety benefits are calculated by using the total number of crashes by year and severity. Crash costs were calculated for 2017 and 2018 based on the Highway Safety Manual methodologies. For each year, the crash severity was multiplied by its associated cost and then summed for all severity levels. The difference between these two values equates to the safety benefits between the two years and is equal to a decrease of $259 million. ODOT receives a total of $77 million in Federal HSIP dollars annually on safety projects. The ratio of the safety benefits and program cost equates to a benefit-cost ratio of 3.38.

We also track our statewide progress in implementing systematic safety treatments that target serious crash types and roadway features that can potentially increase the likelihood of crashes. This program element has been successful in reducing crashes based on the naïve before-and-after results for the different systematic treatments. In addition, we have increased our efforts to complete systematic projects on locally maintained roads by working with MPOs, County Engineers and LTAP to provide technical assistance and funding for local road safety improvements.

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

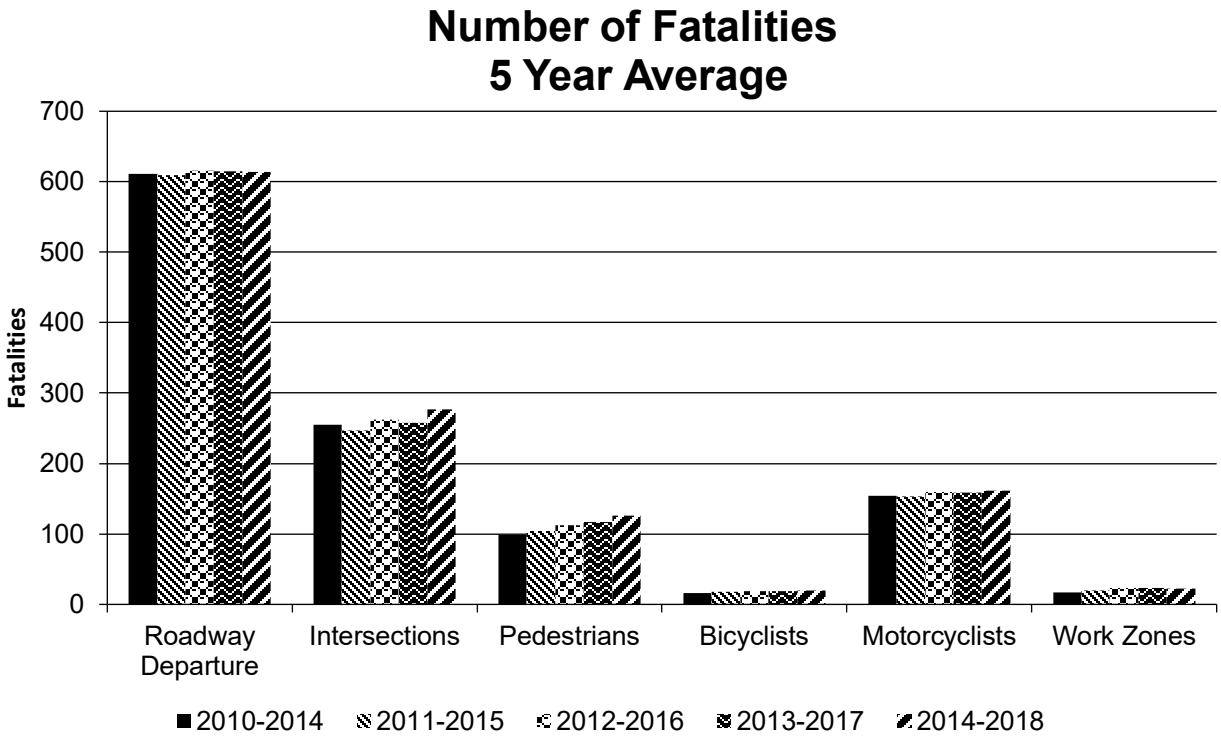
- # RSAs completed
- Increased awareness of safety and data-driven process
- Increased focus on local road safety

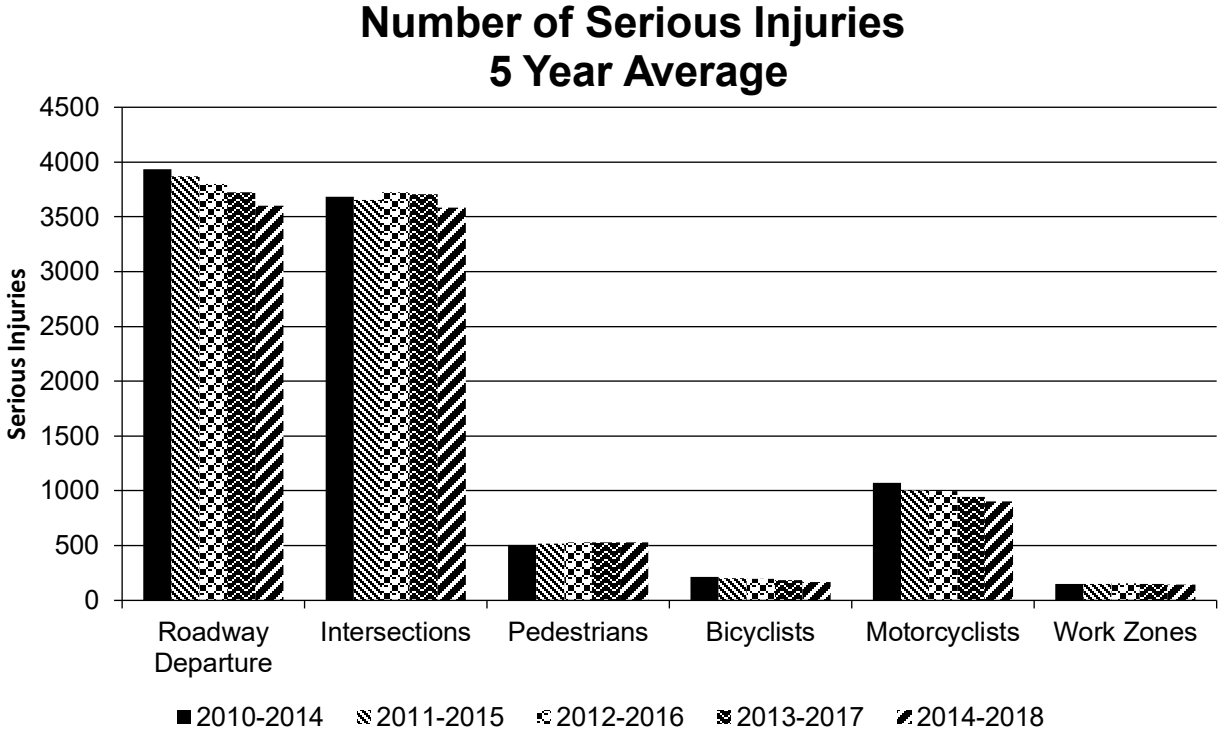
Effectiveness of Groupings or Similar Types of Improvements

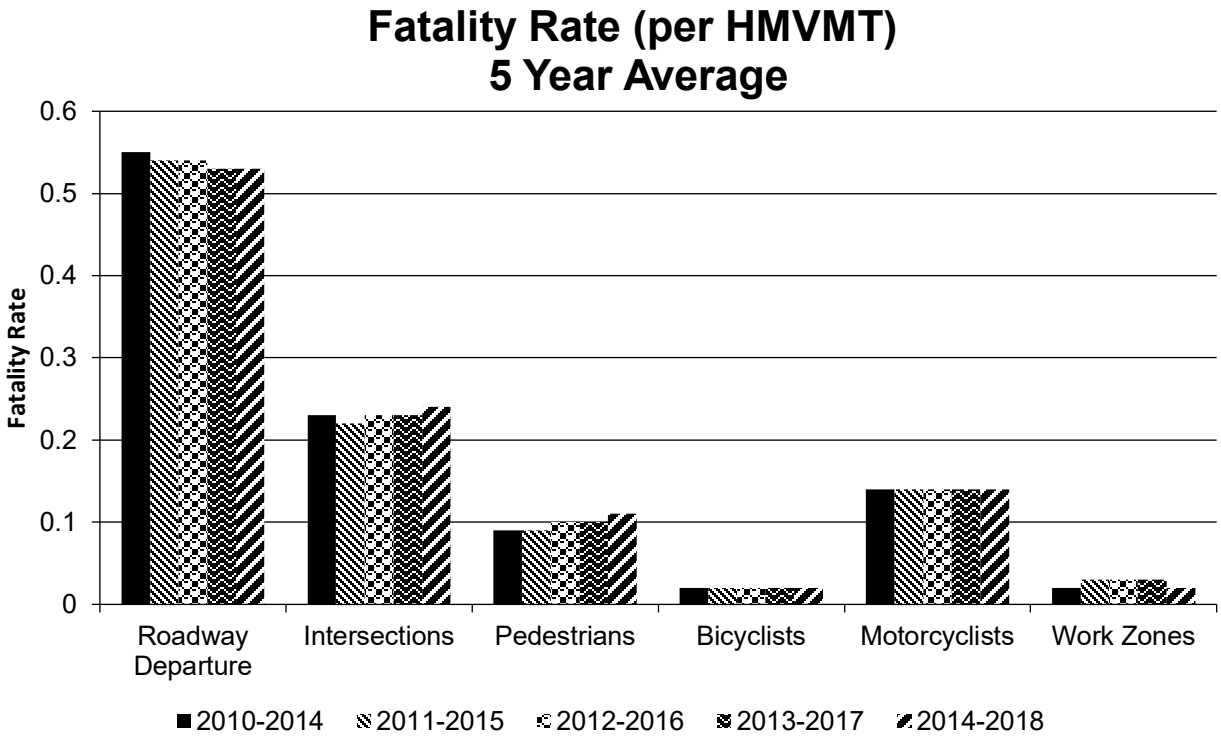
Present and describe trends in SHSP emphasis area performance measures.

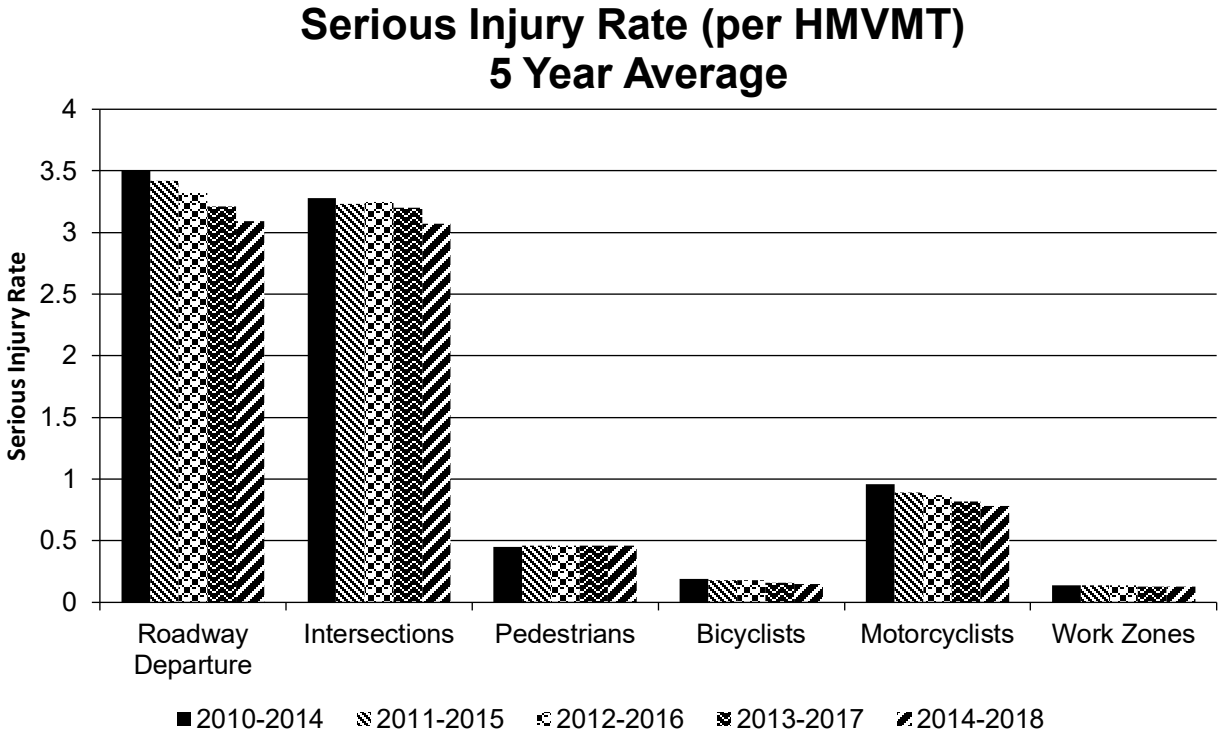
Year 2018

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)
Roadway Departure	Roadway Departure	614	3,601	0.53	3.09
Intersections	Intersections	277	3,583	0.24	3.07
Pedestrians	Vehicle/pedestrian	126	532	0.11	0.46
Bicyclists	Vehicle/bicycle	20	165	0.02	0.15
Motorcyclists	Motorcycle Involved	161	903	0.14	0.78
Work Zones	Work Zone Related	22	147	0.02	0.13


Number of Fatalities
5 Year Average
Fatalities
700
600
500
400
300
200
100
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Motorcyclists
Work Zones
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018


Number of Serious Injuries
5 Year Average
Serious Injuries
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Motorcyclists
Work Zones
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018





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

No

2019 Ohio Highway Safety Improvement Program

In 2018, ODOT selected a contractor to identify, develop, and implement an appropriate approach to before-after safety project evaluation that can be applied to ODOT's Highway Safety Improvement Program (HSIP) projects or any other completed project(s) of interest to ODOT. The evaluation approach will quantify project effectiveness in terms of crash frequency reduction and percentage crash frequency reduction overall, by crash severity level, and by crash type. The recommended project evaluation approach will be:

- Scientifically sound
- Applicable to evaluation of individual projects and to crash modification factor (CMF) development
- Consistent with HSM guidance, FHWA HSIP requirements, and ODOT needs and preferences

The project has completed a literature review and surveyed other states for best practices. Results have been posted here:

http://www.dot.state.oh.us/Divisions/Planning/ProgramManagement/HighwaySafety/HSIP/Pages/HSIPEval.aspx

Four (4) projects were piloted with the following methods to determine project safety performance:

- Simple Before-and-After Method
- Before-and-After Study with Traffic Volume Correction
- Empirical Bayes Method
    - AASHTOWare Safety Analyst
    - Ohio's Economic Crash Analysis Tool (ECAT)
    - IHSDM

The project team is currently reviewing the results of the pilot projects to identify the method best suited for Ohio in the future.

Project Effectiveness

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

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
None														

Compliance Assessment

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

11/04/2015

What are the years being covered by the current SHSP?

From: 2014 To: 2019

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

2020

The next SHSP Update must be completed by November 2020.

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

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	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
ROADWAY SEGMENT	Segment Identifier (12)	100	95					100	95	100	95
	Route Number (8)	100	95								
	Route/Street Name (9)	100	95								
	Federal Aid/Route Type (21)	100	95								
	Rural/Urban Designation (20)	100	95					100	95		
	Surface Type (23)	100	95					100	95		
	Begin Point Segment Descriptor (10)	100	95					100	95	100	95
	End Point Segment Descriptor (11)	100	95					100	95	100	95
	Segment Length (13)	100	95								
	Direction of Inventory (18)	100	95								
	Functional Class (19)	100	95					100	95	100	95
	Median Type (54)	100	95								
	Access Control (22)	100	95								

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	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	One/Two Way Operations (91)	100	95								
	Number of Through Lanes (31)	100	95					100	95		
	Average Annual Daily Traffic (79)	100	95					100	95		
	AADT Year (80)	100	95								
	Type of Governmental Ownership (4)	100	95					100	95	100	95
INTERSECTION	Unique Junction Identifier (120)			100	95						
	Location Identifier for Road 1 Crossing Point (122)			100	95						
	Location Identifier for Road 2 Crossing Point (123)			100	95						
	Intersection/Junction Geometry (126)			100	95						
	Intersection/Junction Traffic Control (131)			100	95						
	AADT for Each Intersecting Road (79)			100	95						
	AADT Year (80)			100	95						
	Unique Approach Identifier (139)			100	95						
INTERCHANGE/RAMP	Unique Interchange Identifier (178)					100	100				
	Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
	Location Identifier for Roadway at Ending Ramp Terminal (201)					100	100				
	Ramp Length (187)					100	100				

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	Roadway Type at Beginning of Ramp Terminal (195)					100	100				
	Roadway Type at End Ramp Terminal (199)					100	100				
	Interchange Type (182)					100	100				
	Ramp AADT (191)					100	100				
	Year of Ramp AADT (192)					100	100				
	Functional Class (19)					100	100				
	Type of Governmental Ownership (4)					100	100				
Totals (Average Percent Complete):		**100.00**	**95.00**	**100.00**	**95.00**	**100.00**	**100.00**	**100.00**	**95.00**	**100.00**	**95.00**

*Based on Functional Classification

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

The Location Based Response System (LBRS) is an initiative of the Geographically Referenced Information Program (OGRIP). The LBRS establishes partnerships between State and County government for the creation of spatially accurate street centerlines with address ranges and field verified site specific address locations.

A project is underway to collect missing LBRS data, verify/update current LBRS datasets and incorporate LBRS data into the official ODOT Road Inventory (RIMS).

With the ultimate goal of reducing fatalities, injuries and traffic crashes statewide, the LBRS projects' accurate, timely, reliable road inventory data as well as seamless integration among all highway safety stakeholders will make traffic crash analysis and emergency response more effective and efficient.

The project is currently in the collection phase.

Did the State conduct an HSIP program assessment during the reporting period?

No

HSIP program assessments were completed in both 2017 and 2018. No formal assessment is planned for 2020. The next HSIP program assessment is anticipated in 2021, after the SHSP update is completed in 2020.

When does the State plan to complete its next HSIP program assessment.

2021

Optional Attachments

Program Structure:

Safety_Analysis_Guidelines.pdf
Highway Safety Improvement Program Guidance.pdf
Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

Glossary

5 year rolling average: means the average of five individuals, consecutive annual points of data (e.g. annual fatality rate).

Emphasis area: means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

Highway safety improvement project: means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.

HMVMT: means hundred million vehicle miles traveled.

Non-infrastructure projects: are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.

Older driver special rule: applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.

Performance measure: means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

Programmed funds: mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.

Roadway Functional Classification: means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

Strategic Highway Safety Plan (SHSP): means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Systematic: refers to an approach where an agency deploys countermeasures at all locations across a system.

Systemic safety improvement: means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.

Transfer: means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.