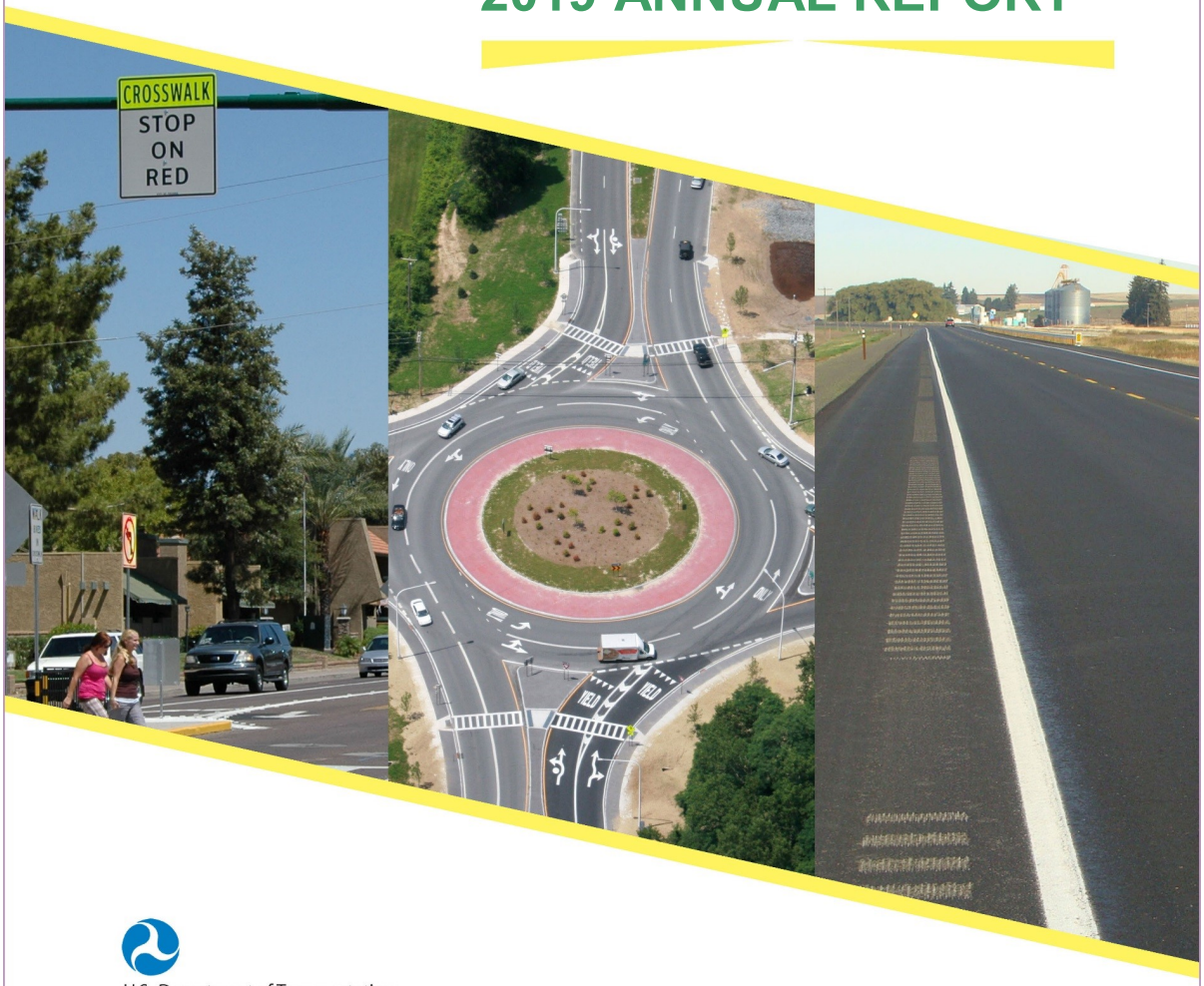
INDIANA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2019 ANNUAL REPORT



U.S. Department of Transportation
Federal Highway Administration

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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. 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

As required under 23 U.S.C. § 148(h), the following is the annual report to the Federal Highway Administration (FHWA) from the Indiana Department of Transportation (INDOT) for federal fiscal year (FFY) 2019. The content of this report combines information regarding the implementation status of the Highway Safety Improvement Program (HSIP) and associated sub-programs including the High Risk Rural Roads Program (HRRRP). This HSIP report, does not include the annual rail-highway crossing safety report as required under 23 U.S.C. § 130(g). The current ORT system requires that the report of the Rail/Highway Crossing Safety Program be submitted as a separate report.

The format of the annual HSIP report is in accordance with the FHWA online reporting tool. The focus of the report centers on development and implementation of the core federal aid safety program and associated safety spending in Indiana for FFY 2019, beginning October 1, 2018 and ending on September 30, 2019. In addition to the core safety programs, this report discusses the ongoing evolution of the INDOT asset management program mechanism for setting spending priorities for all projects under INDOT jurisdiction.

Performance:

The number of reported motor vehicle crash fatalities dropped from 914 in calendar year 2017 to 880 in 2018, which represents a decrease of 3.72%. The early estimate for 2018 vehicle miles of travel indicates an increase of 1.1% from 2017 to 2018. As a result the estimated rate of fatalities per one hundred million vehicle miles of travel (HMVMT) was also reduced by 4.8 % from 1.118 in 2017 to an estimated 1.064 in 2018.

The incidence of suspected serious injuries in 2017 was 3,388 compared to 3,210 in 2018. This represents a 5.25% decrease in calendar year 2018 compared to 2017. The estimated rate of suspected serious injury (class ‘A’ injury) outcomes per HMVMT decreased by 7.7%, from 4.145 suspected serious injuries in 2017 to 3.827 suspected serious injuries in 2018.

This shift in crash severity is difficult to explain on the basis of employment rate which continues to be low. Employment rate has been found to be a major factor influencing serious crash outcomes over the last several years.

Weather conditions in the late winter and spring are believed to have had an influence in 2017. A mild spring with relatively warm dry weather may be a factor in a spike of motorcycle related fatalities that occurred in 2017. The weather in the same time period of 2018 was more typical with wet days compared to 2017 possibly resulting in a regression to the mean.

While recent decreases in serious injuries and fatalities are encouraging, INDOT seeks to continue the downward trend by increasing the number and variety of systemic safety programs applicable to both state and local roads.

Suspected Serious Injury Method:

In Late 2014 a new uniform method was deployed for declaring an injury to be “Incapacitating”; when a crash participant is transported from the scene by first responder for treatment at an emergency room or trauma center. This definition was previously acceptable under the MMUUCC Third Edition and was previously used by Indiana to classify injury severity for crash events and casualties. The revised method used to classify incapacitating injures was deployed in response to agreement among members of the Indiana Traffic Records Coordinating Committee (TRCC); that the use of officer’s judgment in regard to determination of incapacitating injuries in past years had been inconsistently applied. Inconsistency in classifying serious injuries was noticed both between officers, and regionally, among certain police agencies that were either instructing officers or developing informal approaches to marking injury severity that varies significantly from peer agencies.

Indiana's electronic reporting tool currently classifies a crash participant as having an incapacitating injury if that person has been transported from the scene for medical treatment at an emergency room or trauma center.

The Indiana State Police Agency is currently deploying a new officer's electronic reporting tool that is intended to address the change in definition of Class "A" injuries as published in the MMUCC 4th Edition. The goal is to transition Indiana's crash records system toward reporting suspected serious injuries in compliance with the current safety reporting regulations promulgated in 2016 to support the federal administration of transportation funding. The regulation included a requirement that states report Suspected Serious Injuries using the criteria established in the fourth edition of the "Model Minimum Uniform Crash Criteria" (MMUCC). This linkage to a federal regulation of what had historically been an advisory document's definition put Indiana's current definition of incapacitating injury out of compliance. The current MMUCC based regulation for establishing and reporting traffic safety performance measures necessitate that for the time being Indiana approximate a level of injuries (Suspected Serious Injuries in MMUCC 4th Edition) so that current Indiana crash records may be used to calculate historic and projected traffic safety performance counts of probable Class "A" Injuries on the KABCO scale.

In establishing a proxy for missing data regarding Class "A" injuries, Indiana analyzed a statewide incapacitating injury count that remained reasonably consistent across the 10 years prior to the previously noted reclassification. Statewide counts of incapacitating injuries for the years 2004 to 2013 were analyzed as a percentage of total numbers of non-fatal injuries. The number of reported probable KABCO class "A" injuries (formerly "Incapacitating injuries") were evaluated to establish the percentage of non-fatal injuries that contributed to total injury counts. The annual average percent contribution of "A" injuries prior to the 2014 definition change was found to be 7.1%. Weighting this value to account for an increases in injury counts in the most recent three years of the 10 year analysis period (2011 to 2013), the value was adjusted to 7.2% of all injuries. Indiana continues to use this percentage of non-fatal injuries for each year to represent the number of "Suspected Serious Injuries." Until such time that actual counts of Class 'A' injuries may be collated from the Indiana crash records system.

Note that the 7.2% share of injuries is valid only when examining statewide crashes on all public roads in Indiana. A value for any subset of the data requires its own historic analysis using the same methodology to establish the percentage contribution of "Suspected Serious Injuries" to all non-fatal injuries in that subset.

In the case of statewide percent of Non-Motorist "A" Injuries of All Non-Motorist Non-Fatal Injuries a similar analysis was conducted for the same time period (2004–2013). A resulting average of 13.0% of all injuries is the current suspected serious injury percentage used in this report. Note that the percentage of Non-Motorist fatalities for the same time period was found to average 10.5% of all fatalities. The 2018 count of 140 non-motorized fatalities indicates a disturbing growth to 15.9% of all fatalities.

We ask that FHWA consider the Indiana's described reporting methodology as part of any review of Indiana Crash data and Performance Target setting. The projections produced by this methodology represent a mathematical baseline before further adjustments to reflect consideration of non-highway influences that affect highway travel and traveler risk-taking. These influences would include, but are not limited to, economic change, technology proliferation, and weather.

In federal fiscal year (FFY) 2019, the total expected obligation of federal program funds for safety infrastructure improvements, from all programs (excluding the annual rail-highway crossing safety program) is expected to be about $68.16 million dollars. The planned federal obligation total exceeds the 2019 apportionment of HSIP funds at $55.02 million for 2019. Prior to obligation of HSIP funds Indiana is under a Section 164-HE transfer that in 2019 requires an obligation $17.79 million dollars. INDOT is currently increasing efforts to obligate all available federal safety dollars.

All projects approved for funding in HSIP, HRRRP and the Section 164-HE programs are required to address at least one of the emphasis areas defined in the Indiana Strategic Highway Safety Plan (SHSP).

HSIP Project Selection/Prioritization:

The selection and prioritization of all safety projects on roads under INDOT jurisdiction, including those funded with HSIP and HRRRP funds utilize the INDOT Asset Management Process. The submission of the documents that describe INDOT's countermeasure selection methodology originally took place in September of 2008 with the submission of the FFY 2008 HSIP/HRRRP report. While numerous refinements to the asset management program have taken place the underlying methodology has not changed. For roads under INDOT jurisdiction, regardless of funding program, the established selection process for safety projects prioritizes locations of highest need in terms of reducing the severity and frequency of crashes. The goal for all safety projects is to select the most appropriate and cost effective countermeasures available. The INDOT Office of Traffic Safety (OTS) ensures that each candidate safety project has a cost effective choice of proposed solution(s), the eligibility for federal safety program funding is determined and the relative priority of the candidate project's needs is established. All safety program projects address one or more of the emphasis areas enumerated in the Indiana SHSP.

Guiding the selection of projects on local jurisdiction roads, the document titled "Highway Safety Improvement Program Local Project Selection Guidance," issued on December 1, 2010 and "Special Rules for Eligibility of Highway Safety Improvement Projects," issued August 1, 2013, described the selection methodology for local HSIP projects. In FFY 2016 INDOT has revised the Indiana's SHSP and will subsequently revise the HSIP Local Project Selection Guidance.

INDOT fiscal policy is to make one-third of its total FHWA apportionment from HSIP available to local public agencies for safety projects on local system roads. In FFY 2019 the set aside for locally sponsored safety projects was approximately $18.7 million. Individual Metropolitan Planning Organizations (MPO), receive annual apportionments of obligation authority and a predetermined amount of obligation authority is also set-aside for the use of rural public highway agencies. The "Highway Safety Improvement Program Local Project Selection Guidance," provides local agencies guidance on the structure and content of applications for HSIP and HRRRP project funding. INDOT maintains a web-based information source on the various state and local safety programs, which is accessible at, http://www.in.gov/indot/2357.htm .

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.

The HSIP in Indiana provides for infrastructure safety improvements on both state system roads and local roads. Each year, one third of HSIP funding is allocated for use on the local road network. However, the local HSIP program has a somewhat different structure from the state system program.

State System program:
The INDOT Office of Traffic Safety (OTS) leads INDOT's coordinated efforts to identify locations with safety needs, plan improvements, prioritize and program traffic safety improvement projects on the Indiana State system of highways. OTS works with each of INDOT's district offices, as well as the divisions of Design, Planning, Traffic Engineering, Local Public Agency & Grant Administration, Capital Asset Management and Project Finance.

In order to identify potential safety improvement projects, OTS conducts an annual network wide screening process to identify possible locations that appear to experience higher than nominal safety risk. OTS also gathers input from various internal and external groups regarding any locations of concern. The principal internal partners that provide key input in the conduct of road safety assessments are the Maintenance and Technical Services Divisions including the Traffic Engineering offices in each district. After refinement of data records, analysis of target locations leads to identification of candidate locations for safety interventions that include both spot and systemic safety improvements.

In the areas of finance, budget and project prioritization/programming, the Manager of the OTS acts as the chair to the INDOT Traffic Safety Asset Management Team to prioritize all proposed safety projects located on the INDOT system of highways. The six INDOT district traffic engineering offices act as voting members of the team and the INDOT Office of Capital Project Funds Management provides coordination with INDOT's other asset teams and executive management. The Traffic Safety Asset Management Team acts to deliberate the relative need and priority of proposed traffic safety projects on INDOT managed roadways. The overall budgeting of obligation authority for safety projects on both the state and local road systems is coordinated with the Division of Budget and Project Accounting.

Project design is conducted by the INDOT's Highway Design Division and each project is managed by an assigned project manager utilizing the Scheduling Project Mangement System.

Final evaluation of project safety performance is conducted by OTS in the fourth year following project construction.

Local Safety Program:
In the State of Indiana, Local Public Agencies (LPAs) operate and maintain all local public roads. At the inception of the INDOT safety program under SAFTEA-LU a policy was determined by the Finance business unit to make one third of INDOT's its total annual apportionment of HSIP funding available to local public agencies for safety projects on local system roads. An annual apportionment of obligation authority is assigned to each Metropolitan Planning Organization (MPO) serving Group 1 and Group 2 urban areas. A standardized population formula is used to determine the assigned funding made available to individual MPOs. For public agencies in rural (non MPO areas) a predetermined amount of HSIP funds are made available for funding eligible projects. The aforementioned population formula is also used to determine the total amount of the HSIP funding allotted for projects located in rural areas. Rules have been established allowing LPAs to apply to INDOT for determination of project eligibility to utilize HSIP funds.

Guidance and outreach efforts are routinely made by INDOT and the Local Technical Assistance Program (LTAP), in regard to selection of HSIP projects. INDOT's guidance to LPAs advocates the value of low cost systemic safety improvements to proactively address the risk of severe crashes on their entire roadway system, along with the treatment of locations with high risk of frequent severe crashes.

INDOT sponsors an ongoing program with LTAP called the Hazard Elimination Project for Local Roads and Streets (HELPERS) Program. The HELPERS Program coordinates with rural planning organizations (RPOs) as well as rural counties, cities and towns to assist them in identifying, analyzing and prioritizing their safety improvement needs. The HELPERS Program advises LPAs regarding management of safety risks and assists rural area LPAs in submitting project level funding proposals to INDOT for determination of HSIP project eligibility.

The INDOT Office of Traffic Safety makes determination of eligibility for all applications to utilize HSIP funding. OTS reviews all safety improvement project proposals for compliance with HSIP eligibility requirements as defined in Indiana's Strategic Highway Safety Plan. Eligible local projects are recommended to the INDOT Division of LPA & Grant Administration for programming approval and inclusion in the STIP and relevant TIP document. The LPA & Grants Division develops an interagency agreement with the relevant LPA to guide each projects development. The relevant INDOT district then assigns a project manager to coordinate development of the project design.

Regarding internal coordination of local safety project design and contract preparation, technical review of local agency design plans is conducted by the Highway Design Division, while contract letting is conducted by the INDOT Construction Management Division.

In addition, OTS consults with Design and Maintenance Divisions regarding new safety improvement design practices and the Office of Traffic Administration, regarding new Standards and Specifications. OTS also coordinates with the Research Division regarding the approval of safety related research efforts under the Joint Transportation Research Project (JTRP) and to plan implementation of successful research products.

Where is HSIP staff located within the State DOT?

Planning

The INDOT Office of Traffic Safety is located within the Traffic Engineering Divison and is in turn part of the Capitol Program Mangement Business Unit. The primary functions of the Office of Traffic Safety is planning, prioritization and analysis in support of the HSIP in the state of Indiana.

How are HSIP funds allocated in a State?

- Central Office via Statewide Competitive Application Process
- Formula via MPOs

HSIP Funds for use on state system roads are allocated statewide via INDOT's Asset Management Process as described in the response under Question 3.

Local HSIP Funds are allocated regionally to MPOs via a population formula and to rural areas by an LTAP managed assistance program.

Analysis of crash data related to SHSP Emphasis Areas informs selection and programming of various systemic safety improvement projects.

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

In the State of Indiana, Local Public Agencies (LPAs) operate and maintain all local public roads. There are no designated tribal roads in the state. INDOT policy is to make one third of its total annual apportionment of HSIP funding available to local public agencies for safety projects on local public roads. An annual apportionment of obligation authority is assigned to each Metropolitan Planning Organization (MPO) serving Group 1 and Group 2 urban areas. A standardized population formula is used to determine allocation of all federal aid funding made available to individual MPOs. For public agencies in rural (non MPO areas) Group 3 (incorporated cities and towns) and rural Group 4 (counties and un-incorporated towns), a predetermined amount of HSIP funds are made available for funding eligible projects. The aforementioned population formula is also used to determine the total amount of the HSIP allotted for projects located in rural areas.

Rules have been established allowing LPAs to apply to INDOT for determination of project eligibility to utilize HSIP funds. These rules are contained in the INDOT guidance document titled, Highway Safety Improvement Program Local Project Selection Guidance . The latest INDOT version of this guidance document was approved by INDOT’s Highway Safety Advisory Committee on December 10, 2010. In 2014 a supplement document titled FY 2014 Special Rules for HSIP Eligibility was published, principally to expand the choices of Systemic Safety improvement types available to local agencies. Both documents are on file at the FHWA Indiana Division Office. In addition, an expanded list of systemic safety project work types was published on December 12 2016. These documents are also posted on the INDOT web site at: http://www.in.gov/indot/2357.htm

Guidance and outreach efforts are routinely made by INDOT and the Local Technical Assistance Program (LTAP), in regard to selection of HSIP and HRRRP projects. INDOT’s guidance to LPAs advocates the value of low cost systemic safety improvements to proactively address the risk of severe crashes on their entire roadway system, along with the treatment of locations with high risk of frequent severe crashes involving fatality or incapacitating (Class A) injury. Systemic projects are gaining increasing acceptance by LPAs. Notably, many applications have been submitted by LPAs to assist them in funding systemic projects to upgrade the retro-reflectivity of local regulatory and warning signs.

In urban areas, the MPOs that serve Group 1 and 2 urban areas are tasked to perform initial screening of proposed safety improvements and select candidate projects subject to INDOT determination of HSIP eligibility. To provide a similar level of planning support to rural public agencies, INDOT has collaborated with the Indiana Local Technical Assistance Program (LTAP). INDOT sponsors an ongoing program with LTAP called the Hazard Elimination Project for Local Roads and Streets (HELPERS). The HELPERS Program coordinates with rural planning organizations (RPOs) as well as rural counties, cities and towns to assist them in identifying, analyzing and prioritizing their safety improvement needs in regard to reducing the occurrence and risk of severe crashes on public roadways.

The HELPERS Program advises LPAs regarding management of safety risks and assists rural area LPAs in submitting project level funding proposals to INDOT for determination of HSIP project eligibility. The INDOT Office of Traffic Safety makes a determination of eligibility for all applications to utilize HSIP or HRRRP funding.

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
- Operations
- Planning
- Traffic Engineering/Safety
- Other-Capital Asset Management
- Other-Research Division
- Other-Budget & Project Accounting Division

Describe coordination with internal partners.

The INDOT Office of Traffic Safety (OTS) leads INDOT's coordinated efforts to identify locations with safety needs, plan improvements, prioritize and program traffic safety improvement projects on the Indiana State system of highways. OTS works with each of INDOT's district offices, as well as the divisions of Design, Planning, Traffic Engineering, LPA & Grant Administration, Capital Asset Management Office and Budget Divisions.

In order to identify potential safety improvement projects, OTS gathers input from various internal and external groups. The principal internal partners are District Maintenance and Technical Services Divisions and Traffic Engineering Offices that provide key input in the conduct of road safety assessments.

In the areas of finance, budget and project prioritization/programming, the Manager of the OTS acts as the chair to the INDOT Traffic Safety Asset Management Team to prioritize all proposed safety projects located on the INDOT system of highways. The six INDOT district traffic engineering offices act as voting members of the team and the INDOT Office of Capital Project Funds Management provides coordination with INDOTs other asset teams and upper management. The Traffic Safety Asset Management Team acts to deliberate the relative need and priority of proposed traffic safety projects on INDOT managed roadways. The overall budgeting of obligation authority for safety projects on both the state and local road systems is coordinated with the Division of Budget and Project Accounting.

For approved safety projects on the state highway system, the relevant INDOT district office is responsible for project programming and entry of the project into the State Transportation Improvement Plan (STIP) and any relevant local Transportation Improvement Plan (TIP). They also manage design and construction projects in coordination with INDOT Design and Construction Divisions, via a project manager assigned to the project to coordinate all project development tasks.

Regarding internal coordination of local safety projects, the OTS performs review of all proposed projects for compliance with eligibility requirements as defined in Indiana's Strategic Highway Safety Plan. Eligible projects are recommended to the INDOT Division of LPA & Grant Administration for funding approval and inclusion in the STIP and relevant TIP document. The LPA & Grants Division also develops an interagency agreement with the LPA to guide project development. The relevant INDOT district then assigns a project manager to coordinate development of the construction project.

In addition, OTS consults with Design and Maintenance Divisions regarding new safety improvement design practices and the Office of Traffic Administration, regarding new Standards and Specifications. OTS also coordinates with the Research Division regarding the approval of safety related research efforts under the Joint Transportation Research Project (JTRP) and to plan implementation of successful research products.

Identify which external partners are involved with HSIP planning.

- Academia/University
- Governors Highway Safety Office
- Local Technical Assistance Program
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)

INDOT Office of Traffic Safety (OTS) coordinates the SHSP with numerous state and local agencies. Two primary SHSP partners are the Indiana Criminal Justice Institute which houses the Indiana SHSO and the Indiana State Police which manages the state's crash database as well as FARS office.

OTS also partners with the Indiana Joint Transportation Research Program (JTRP) in the development of safety planning analysis tools for INDOT and its local partners.

Regarding planning of local safety programs and performance target setting INDOT OTS primarily coordinates with MPOs and the LTAP Hazard Elimination Project for Local Roads and Streets (HELPERS). The HELPERS Program in turn coordinates with rural planning organizations (RPOs) and rural local agencies to help guide them toward developing HSIP eligible safety projects.

Describe coordination with external partners.

INDOT Office of Traffic Safety (OTS) coordinates implementation of the Indiana Strategic Highway Safety Plan (SHSP) with state and local agencies as well as the FHWA Division Office. Two principal SHSP partners are the Indiana Criminal Justice Institute which houses the Indiana State Highway Safety Office and the Indiana State Police which houses Indiana's Electronic Vehicle Crash Records System and administers the state's Fatality Analysis Reporting System office.

Regarding planning of local safety programs and performance target setting INDOT OTS coordinates with Indiana's 14 Metropolitan Planning Organizations through the MPO Council. To assist in coordination with rural planning organizations (RPOs) and rural local agencies, INDOT has established the Hazard Elimination Project for Local Roads and Streets (HELPERS) within the Indiana Local Technical Assistance Program (LTAP). The HELPERS program helps guide small agencies in developing HSIP eligible safety projects.

A joint effort with LTAP and FHWA was started in FY 2019 to encourage counties to prepare Local Road Safety Plans (LRSPs). Currently one county has a plan essentially complete with 5 other counties and one MPO engaged in actively preparing LRSP documents.

OTS also partners with the Indiana Joint Transportation Research Program (JTRP) in the development of Indiana-specific safety planning analysis tools for INDOT and its local partners.

INDOT OTS also provides information to local agency staff and consultants regarding new technical tools and changing methodologies through presentations made at various conferences during the year such as the annual Purdue University Road School and their annual Civil Engineering Professional Development Seminar as well as other organized events.

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

In response to the increased HSIP apportionments under MAP-21 and FAST Act, INDOT has engaged in new strategies to increase the obligation of funds to construct worthy safety improvement projects. The number of systemic improvement types has been expanded along with expanded selection of hot spot safety improvement projects. One third of the total percentage of HSIP funds is made available to local agencies, resulting in more opportunity to combat severe crash risk in both urban and rural areas.

Regarding the process used by INDOT to conduct HSIP eligibility review for proposed local safety projects; urban LPAs must first submit to their local Metropolitan Planning Organizations (MPOs) for preliminary project selection and funding prioritization. Rural group 3 and group 4 LPAs first submit their proposed projects to the LTAP HELPERS Program for compliance review, prior to INDOT determination of eligibility for HSIP or HRRRP funding.

INDOT determines eligibility in accordance with the Indiana Strategic Highway Safety Plan's delineated Safety Emphasis Areas and project work types defined in the HSIP Local Project Selection Guidance documents. If a proposed local project is found to be eligible for HSIP or HRRRP funding, the Division of LPA and Grant Administration provides oversight of project agreements between INDOT and the LPA to govern project development. The LPA and Grant Administration Division also supports the programming of safety projects by administering inclusion of projects on Local and State Transportation Improvement Plans and authorizing funding obligation fiscal year, scheduling of plan development and construction contract letting. Once a project is programmed in Active status on the INDOT Scheduling Project Management System, the INDOT district office assigns a project manager to coordinate the design and environmental documentation with the project sponsor agency, designer, and various INDOT Divisions and offices as well as monitor progress in order to bring the project to a scheduled construction contract letting. All project plans, construction documents and estimates are reviewed by the INDOT Highway Design & Technical Support Division.

Program Methodology

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

No

At present INDOT does not have a combined HSIP manual, although there are INDOT published documents on file with the FHWA Indiana Division Office that provide policies and guidance to staff and partner agencies including:

- Business Rules governing the conduct of the Traffic Safety Asset Management process for state system safety improvement project selection and methodology for scoring and prioritization of candidate projects including HSIP assets.
- Guidance to local public agencies regarding safety program planning and management of local safety project selection, listing of approved systemic safety improvement work types and process to apply for candidate project HSIP eligibility determination are posted on the INDOT website for public access.
- Local Technical Assistance Program (LTAP) management guidance document for the Indiana HSIP funded Hazard Elimination Program for Existing Roads and Streets (HELPERS).

Select the programs that are administered under the HSIP.

- Bicycle Safety

- Horizontal Curve
- HRRR
- Intersection
- Local Safety
- Median Barrier
- Pedestrian Safety
- Roadway Departure
- Sign Replacement And Improvement
- Other-Centerline and Edgeline Rumble Stripes
- Other-Traffic Signal Visibility Improvement

Various sub-program are aligned to address SHSP emphasis areas but may overlap regarding target crash types that are addressed. For example the Intersection safety subprogram encompasses all forms of intersection crash types for signalized, stop controlled and alternative design intersections.

INDOT also has separate program requirements for the selection and prioritization of safety projects on the state highway system and for local agency sponsored projects on local system roads.

Program: Bicycle Safety

Date of Program Methodology:7/29/2015

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
Fatal and serious injury crashes only	Traffic Volume	Other-Roadway and/or shoulder Width potental for Road Diet

What project identification methodology was used for this program?

- Crash frequency
- Probability of specific crash types

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:50
Available funding:50

Program: Horizontal Curve

Date of Program Methodology:7/29/2015

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
Fatal and serious injury crashes only	Traffic Volume	Other-Roadway and/or shoulder Width potental for Road Diet

What project identification methodology was used for this program?

- Crash frequency
- Probability of specific crash types

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:50
Available funding:50

Program: HRRR

Date of Program Methodology:10/1/2012

What is the justification for this program?

- Other-FHWA Set-Aside

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	Functional classification

What project identification methodology was used for this program?

- Crash frequency
- 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

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:40
Available funding:60

Program: Intersection

Date of Program Methodology:10/1/2010

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	Other-roadway conditions and sight distance

What project identification methodology was used for this program?

- Crash frequency
- Excess proportions of specific crash types
- Probability of specific crash types
- 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).

Relative Weight in Scoring

Cost Effectiveness:50
Other-Weighted factors addressing safety need, intersection geometry and cost effectivness:50
Total Relative Weight:100

Program: Local Safety

Date of Program Methodology:10/1/2010

What is the justification for this program?

- Other-Designated split of HSIP Apportionment

What is the funding approach for this program?

Other-Competes with other local projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes Fatal and serious injury crashes only	Volume	Horizontal curvature Roadside features Other-Geometric Features, marking and signs

What project identification methodology was used for this program?

- Crash frequency
- Excess proportions of specific crash types
- Probability of specific crash types
- 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?

No

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

State Roads are not addressed in this SubProgram

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

Cost Effectiveness:50
Other-Weighted scoring based on safety need and cost effectivness:50
Total Relative Weight:100

Program: Median Barrier

Date of Program Methodology:10/1/2010

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
Fatal and serious injury crashes only	Volume	Median width Functional classification

What project identification methodology was used for this program?

- Crash frequency
- Excess proportions of specific crash types
- Probability of specific crash types
- Relative severity index

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

No

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

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).

Relative Weight in Scoring

Cost Effectiveness:50
Other-Weighted ranking factors including safety need, roadway geometry and cost effectivness:50
Total Relative Weight:100

Program: Pedestrian Safety

Date of Program Methodology:10/1/2010

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	Traffic Volume	Median width Roadside features Other-Geometrics features and land use

What project identification methodology was used for this program?

- Crash frequency
- Excess proportions of specific crash types
- Probability of specific crash types
- 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).

Relative Weight in Scoring

Cost Effectiveness:50
Other-Weighted factors using safety need and cost effectivness:50
Total Relative Weight:100

Program: Roadway Departure

Date of Program Methodology:10/1/2010

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	Horizontal curvature Roadside features

What project identification methodology was used for this program?

- Crash frequency
- Excess proportions of specific crash types
- Probability of specific crash types
- 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).

Relative Weight in Scoring

Cost Effectiveness:50
Other-Weighted factors based on safety need and cost effectivness:50
Total Relative Weight:100

Program: Sign Replacement And Improvement

Date of Program Methodology:10/1/2010

What is the justification for this program?

- Other-Targeted to improve local road safety

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	Lane miles	Horizontal curvature Roadside features Other-Geometric Features

What project identification methodology was used for this program?

- Crash frequency
- Other-Retroreflectivity of Existing Signs
- 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?

No

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

State INDOT network highways are addressed under the INDOT maintenance program and are not under the safety program

How are projects under this program advanced for implementation?

- Competitive application process
- selection committee

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

Relative Weight in Scoring

Cost Effectiveness:100
Total Relative Weight:100

Program: Other-Centerline and Edgeline Rumble Stripes

Date of Program Methodology:10/1/2012

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	Traffic	Median width Other-Paved Shoulder Width

What project identification methodology was used for this program?

- Crash frequency
- Excess proportions of specific crash types
- 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).

Relative Weight in Scoring

Cost Effectiveness:50
Other-Weighted factors using safety need and cost effectivness:50
Total Relative Weight:100

Program: Other-Traffic Signal Visibility Improvement

Date of Program Methodology:10/1/2012

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	Traffic	Other-Signalized Intersections

What project identification methodology was used for this program?

- Crash frequency
- Excess proportions of specific crash types
- 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

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

Cost Effectiveness:50
Other-Weighted factors using safety need and cost effectivness:50
Total Relative Weight:100

Case 1-Mostly Local : Most bike safety (or Pedestrian Safety) projects are identified and proposed for HSIP funding by local agencies as part of their non-motorized program planning due to exposure probability of bike involved crashes and are most often prioritized by MPOs. Projects proposed by rural local agencies or by INDOT are prioritized by the Office of Traffic Safety and the relevant INDOT district office. Typically bike lanes are installed as part of road diets or elimination of on-street parking – For Pedestrian projects: Typically curb ramps, refuge areas or hybrid beacons are installed as the primary countermeasures.

Case 2-Shared : Curve Safety / Roadway Departure projects on the State Highway network are identified by annual network safety screening and are proposed to the Traffic Safety Asset Team for prioritizations by the relevant INDOT district office according to relative risk for future lane departure crashes.

High Risk Rural Road projects may consist of either safety spot improvements or systemic improvements and are identified on the State Highway network by annual network safety screening. State network projects are proposed to the Traffic Safety Asset Team for prioritization by OTS and the relevant INDOT district office according to relative future crash risk.

Most local agencies are unaware of roadway functional class therefore all identification HSIP eligible projects for potential HRRR program funding is performed by INDOT OTS.

Traffic signal and non-signalized intersection visibility systemic improvement projects are a subset of the Intersection Safety program.

Local agencies may identify local road curves as part of a proposed systemic curve safety project. Rural public agency projects are prioritized by INDOT while MPOs prioritize proposed projects within their planning areas. Typically enhanced warning devices are installed while High Friction Surface Treatment's may also be called for where existing friction is lower than acceptable.

Intersection Safety Improvement projects may consist of either safety spot improvements or systemic improvements and are identified on the State Highway network by annual network safety screening. State network projects are proposed to the Traffic Safety Asset Team for prioritization by OTS and the relevant INDOT district office according to relative future crash risk.

Local agencies typically identify intersection safety improvements for spot improvement countermeasures with some utilization of the intersection safety systemic countermeasures. Rural public agency projects are prioritized by INDOT while MPOs prioritize proposed projects within their planning areas.

Local Safety : All local sponsored projects are identified and proposed for HSIP funding by local agencies. The majority of local project proposals are in urban areas and are therefore most often prioritized by MPOs. Projects proposed by rural local agencies are prioritized by the Office of Traffic Safety and the relevant INDOT district office.

Sign Replacement and Improvement projects are exclusively local agency sponsored safety improvements as state network roadways are part of the INDOT Maintenance program. Proposed projects are typically identified

by local agencies due to deteriorated condition or lack of retroreflectivity of their regulatory and warning signs. Rural public agency projects are prioritized by INDOT while MPOs prioritize proposed projects within their planning areas. Each local agency is required to conduct a geocoded inventory of their existing signs and commit to ongoing maintenance of the replaced signs.

Case 3 – Mostly State: Median Barrier / Rumble Stripe projects are conducted on State network roadways and consist of the systemic application of median barrier to mitigate / reduce cross median crash severity. Project identification and prioritization are conducted by INDOT OTS and district staff. Local agencies may apply for HSIP project eligibility for median barrier / rumble stripe systemic projects, but to date this has not happened.

What percentage of HSIP funds address systemic improvements?

31.7

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
- Other-Pedestrian Safety
- Rumble Strips
- Traffic Control Device Rehabilitation
- Upgrade Guard Rails

The Total Planned Systemic Project Obligation for FFY 2019 is $20,924,093.65

The program goal for the INDOT safety program by 2021 is to obligate approximately 50% of available HSIP funds on systemic improvement work types on a per year basis. Actual obligations for systemic projects may vary year to year due to project production factors and diversion of projects for obligation under the Section 164-HE Penalty Transfer.

Note: Safety Edge has been an INDOT paving standard since 2012 but doesn't contribute to HSIP spending.

What process is used to identify potential countermeasures?

- Crash data analysis
- Engineering Study
- Road Safety Assessment
- Stakeholder input

Does the State HSIP consider connected vehicles and ITS technologies?

No

At this time INDOT does not consider connected vehicle and ITS technologies in evaluation of potential HSIP project selection and eligibility. INDOT is presently partnering with Purdue University and the Joint Transportation Research Project to evaluate connected vehicle-related communications and autonomous technologies and will conduct research studies of their potential effectiveness, and interactions with infrastructure, however the project utilizes funding other than the HSIP. INDOT considers various ITS technologies as a means to achieve higher mobility and safety performance, though funding for installations is not currently made through the HSIP.

Does the State use the Highway Safety Manual to support HSIP efforts?
No

INDOT has developed data driven analysis tools similar/equivalent to HSM that support HSIP efforts. The CMF Clearinghouse is used for all CMFs not currently calibrated for Indiana roadways.

INDOT uses IHSDM for safety analysis of selected major projects and for analysis of design exceptions when appropriate.

Calibration of SPFs for IHSDM and INDOT Safety analysis tools is an ongoing research project.

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

INDOT seeks to achieve a balance between obligations of HSIP funds towards implementation of systemic improvements and supporting safety improvements at individual locations with high incidence or risk of severe crash outcomes. Project identification methods include conducting annual system wide analysis to identify both individual locations with high potential for severe crashes or need for deployment of a systemic improvement. Locations of concern may also be identified, analyzed and programmed for safety improvement by other means such as public complaints filtered through the INDOT's Customer Service system.

Candidate locations on roads under INDOT jurisdiction are subject to an initial engineering review process analogous to a road safety assessment (RSA) in order to identify safety needs and appropriate cost effective countermeasures. The INDOT Office of Traffic Safety (OTS) conducts these reviews with support of the INDOT district offices.

The Asset Management process that is used to program traffic safety projects on INDOT system roads requires selection and prioritization of a fiscally constrained program of projects for each state fiscal year. The Traffic Safety Asset Management (TSAM) Team chaired by the OTS manager and consisting of representatives of OTS and the six INDOT District Traffic Engineers meet and deliberate candidate projects including both spot and systemic safety improvements to produce cost constrained lists of safety improvement projects that are programmed for construction in each future fiscal year over a 5 year window.

A uniform scoring/prioritization procedure is utilized to provide proposed projects with weighted scores that consider history of crashes and their severity, traffic volume, road inventory data as well as consideration of cost effectiveness of the proposed solution. Since no uniform set of criteria can fully assess the relative intensity of safety needs in every case, the candidate project prioritization process also considers un-scored factors that may influence future crash risk by way of safety asset committee deliberation.

The TSAM team reviews and deliberates the relative merits of each proposed project and assigns a priority grade for a targeted fiscal year of construction. A resulting suite of proposed projects is then forwarded to an executive finance team called the Program Management Group that considers the requested funding level in context of other asset team proposals and projected revenue level for the target year. The Program Management Group then allocates an available obligation limitation level for the overall INDOT safety program for the target construction year. A Change Management process is available for project and program managers' use throughout each project's design/development phase to provide consideration of any proposed changes to individual project intent, budget or scheduled construction fiscal year as needed. Beginning in FFY 2018, the OTS manager also has a voting membership on the Change Control Board that acts as the approval authority in regard to all submitted Change Management Requests.

In regard to candidate projects on the local road system, individual LPAs may propose future projects for HSIP funding through two methods dependent on the type of regional planning area. Proposed projects located in areas within a metropolitan planning organization (MPO) must first be selected and prioritized by the relevant MPO prior to eligibility review by INDOT. Rural LPAs are asked to first work with the Indiana LTAP HELPERS Program that acts to advise the LPA and regional RPO and can pre-screen applications for compliance with federal and state regulations. The HELPERS Program also provides out-reach with valuable advice to the LPAs regarding best practices for traffic safety and facilitates the conduct of appropriate RSA procedures.

The INDOT OTS makes all eligibility determinations for HSIP and HRRRP funding. The necessary information is provided by local public agencies via RSA reports and is used by OTS to determine eligibility for HSIP/HRRRP funding. A typical application for spot improvement proposals consists of a Road Safety Assessment (RSA) report, cost effectiveness analysis and a commitment to the project submitted by the relevant local officials. An exception to the full application package is the submission of eligibility information for a predetermined list of systemic safety project types that may be submitted via an INDOT developed form.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

Federal 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)	$45,614,938	$45,703,027	100.19%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$1,184,569	$1,184,569	100%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$19,056,145	$19,056,145	100%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$2,215,424	$2,215,424	100%
State and Local Funds	$5,068,388	$4,491,223	88.61%
Totals	$73,139,464	$72,650,388	99.33%

The obligated program totals in the table includes planned transfers from Advance Construction (AC) to the HSIP, HRRRP and 164-HE programs. Amounts listed in the question 23 table reflect planned obligated funds totals at the time of reporting August 30, 2019. If transfers of project obligations from AC to HSIP do not occur before October 1, 2019 the funds may continue to appear as unobligated until FFY 2020. Changes in the final obligation totals may result due to the timing of transfers that occurred after the October 1 date.

Due to the Section 164 Penalty Fund requirement in FFY 2019 the current year planned obligation of HSIP eligible funds (absent the HRRRP Special Rule) is $45,703,027 or 100.2% of the total amount programmed for HSIP project obligation.

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

$18,707,030

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

$14,336,511

INDOT Allocates 33% of the annual HSIP apportionment to fund local agency sponsored HSIP eligible projects. The planned HSIP allocation to local agencies for FFY 2019 is $18,707,030

In FFY 2019 the projected total obligation of funds to construct local safety projects is expected to be $14,336,511 or 86.4% of total apportionment.

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

$251,000

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

$624,296

Des 1383183 HSIP is used to fund the operations of the Hazard Elimination Program for Exiting Roads and Streets (HELPERS) Program managed by the Indiana Local Technical Assistance Program. The funding for HELPERS is programmed at $251,000 for FFY 2019. Activities conducted by the HELPERS program include local safety planning support, data collection and systemic analysis and technical assistance including facilitating Road Safety Assessment (RSA) teams.

In addition, MPOs may utilize up to 15% of allocated HSIP funds for safety program planning activities. In FFY 2019 MPO obligation or HSIP funds for safety planning obligations totaled $373,296.

The total obligation of non-infrastructure funds was 1.13% of the FFY 2019 apportionment.

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%

Due to the Section 164 Penalty Fund requirement, in past years INDOT has typically transferred 50% of HSIP funds to other programs resulting in an apparent backlog of unobligated funds. The transfers were performed to balance INDOT's asset management policy. In FFY 2019 a no transfer of funds from HSIP took place.

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

MAP-21 and the FAST Act make it clear that cost effectiveness and severe crash risk are to be considered in project selection decisions; however, guidance is currently unclear as to how the risk of future crashes for several systemic improvement types can be accommodated under current cost effectiveness methodologies. The determination of project eligibility to utilize HSIP funds in a cost effective manner is typically based on past history of crashes. However, under changing traffic demand and operational conditions crash history is not always the most suitable indicator of future crash risk. In addition, the predictive functions contained in the Highway Safety Manual while helpful in this regard, are still limited in the range of specific situations that may be predicted. As a result proposed safety improvement projects that are seemingly promising candidates for HSIP funding are sometimes rejected due to an inability to meet cost effectiveness criteria. The lack of

guidance regarding the application of risk factors relative to cost effectiveness has also had the effect of stifling innovation in regard to trying new types of crash countermeasures. Improved guidance by FHWA in regard to assessment of future traffic safety risk would be a welcome feature in assessing changing conditions such as land use, emergency response and travel demand.

Under the current Indiana Crash Database the definition of an “incapacitating injury” as any injury that requires immediate transport from the scene for medical treatment reduce time on the scene for reporting officers, and allowed their focus to be on protecting and clearing the crash scene. It also provided a non-subjective “yes or no” condition to indicate the seriousness of injury rather than a subjective evaluation of injury. However, this definition is no longer compliant with the MMUCC 4th Edition.

The new MMUCC guidelines will require the term “suspected serious injury” equivalent to the “A” injury classification under the KABCO scale. The revised classification rule starting April 15, 2019 was too short a time for the TRCC to adjust the data elements that are available in the state’s electronic vehicle crash data base therefore for FFY 2019 Indiana is out of compliance. The new guidelines will also require officers untrained in emergency medicine to determine a level of trauma to the victim from a list of possible injuries. Not only is this a difficult task for most officers who are not medically trained but injury assessment is not an officers primary duty at a crash scene. Good communication between emergency medical technicians and reporting officers will be more time consuming and is inherently inconsistent from one officer to the next, and even from one injury to the next by the same officer.

In 2016, the Indiana State Police (ISP) and members of the TRCC began working on a new version of the Electronic Indiana Crash Reporting Tool for Officers. The new officer reporting tool titled ARIES 6.0 has passed beta testing and is currently undergoing a year-long deployment phase. Retraining for all officers that will use the new reporting tool is required.

The Indiana TRCC Working Group will continue to meet and discuss methods of complying with the MMUCC guidelines while maintaining the overall goal of making the officers’ job at a crash scene as rapid, accurate and consistent as possible. In the meantime, INDOT has proposed a method to estimate annual suspected serious injury counts from the crash database.

The rural fatal crash rate rule governing the High Risk Rural Roads Program should end. The HRRR Program has proven ineffective as a means of addressing rural road safety primarily due to constraint on functional class. Rural LPAs are far more likely to apply for HSIP funds to make safety improvements on rural local roads with higher average daily traffic that may be classified as arterial. The requirement that ties safety improvement funds to roadway functional class is not an element that rural LPAs typically consider when developing or prioritizing proposed safety improvements; therefore projects submitted for eligibility by LPAs often do not qualify for HRRRP eligibility due to significant involvement of arterial roads in the project applications. Moreover, multiyear analysis of severe crash trends on rural roads has not indicated a difference that can be directly attributed to functional class. In addition, many local roads lack adequate volume or inventory data, making an accurate comparison of crash rate averages a difficult task. The current best practice of comparing substantive to nominal crash risk has proven to be a better predictor of crash risk. Improved response to risk factors for severe crashes on rural local roads could be achieved by encouraging states to dedicate a percentage of their HSIP apportionments to the construction of safety improvements on rural medium to low volume roads found to have a higher than nominal severe crash frequency or rate regardless of their functional class.

If the HRRR Program special rule is to continue, at a minimum state DOT’s should be permitted to conduct the calculation of all current special rule requirements under processes approved by FHWA. State DOTs are more familiar with current status of roadway conditions, function and changing urban/rural boundaries. The current calculation conducted by NHTSA is dependent on data from the FARS system that has an inherent time lag while Fast FARS lacks adequate accuracy for timely calculations. Also, NHTSAs functional class definitions do not match FHWA potentially adding misperception of actual conditions.

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

In March of 2016 the Governor of Indiana signed a revised Strategic Highway Safety Plan for Indiana. This new SHSP assists efforts to implement the HSIP over the next 5 years. During the development of the revised SHSP, extensive discussions were held with partnering federal and state agencies. In the revised SHSP reliance on language calling for specific countermeasures is generally avoided, in favor of broad national "Toward Zero Deaths" strategies. Indiana feels that making the SHSP as flexible as possible will provide an advantage in terms of addressing emerging issues such as technologies, countermeasures and methodologies in the coming years.

INDOT administers an Asset Management program to budget and program all of INDOT's highway infrastructure capital investments. The Asset Management system provides a means to budget for needed safety improvement actions and to prioritize potential safety improvement projects and actions that improves INDOTs ability to select and produce high value safety projects. Candidate safety projects undergo weighted scoring that emphasizes the need to address high severity crash locations with the construction of cost effective crash countermeasures. Spot improvement projects are prioritized and programmed from 18 months prior to construction year for certain systemic improvements to 5 years in the future for projects requiring more involved development process.

Annual reservations of a budget allocation for systemic safety improvements to be constructed in the same future years are prioritized. The safety needs analysis conducted by the Traffic Safety Asset Management Team for both spot and systemic safety project proposals serves to validate increased awareness of and priority for increased investment in traffic safety .

The primary program goal for the Traffic Safety Asset Class is the reduction in the frequency of crashes with fatal and/or suspected serious injury outcomes either by reducing the occurrence of these crashes or their relative severity. Current available analysis tools are designed to consider all incapacitating injury crashes to be serious so fatal and suspected serious injury crashes are primarily targeted as well as site specific data for countermeasure decision making. For most road safety assessment studies conducted at specific locations (sites) property damage data is also used to reveal a complete picture of prevailing crash patterns. For sites on the INDOT system and in most local urban areas, traffic volume data is available to establish nominal and substantive crash rates that aid in prioritizing project proposals.

Most rural local roads lack accurate recent volume data so a crash loss index was developed under a joint transportation research project with Purdue University. Socioeconomic data and road characteristics are used to develop a local expected road crash loss and crash loss density that is compared to existing crash history to prioritize relative safety need at a site or road segment. Prior to project programming a site investigation is performed for all crash studies using Road Safety Assessment (RSA) principles to determine if or how the road's design and maintenance characteristics influence crashes. The RSA also acts as an effective means to guide the selection of appropriate and effective crash countermeasures.

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
1601162	Roadway delineation	Roadway delineation - other	654	Stop and Yield Lines	$23326.93	$25918.82	HRRR Special Rule (23 U.S.C. 148(g)(1))	Urban	Major Collector	7,000	35	Town or Township Highway Agency	Systemic	Intersections	Remark pavement markings
1601849	Pedestrians and bicyclists	Modify existing crosswalk	27	Ramps	$221319.36	$252481.97	HRRR Special Rule (23 U.S.C. 148(g)(1))	Urban	Major Collector	5,500	35	Town or Township Highway Agency	Systemic	Pedestrians	ADA Ramps
1602161	Roadway signs and traffic control	Curve-related warning signs and flashers	2239	Signs	$327011.06	$327011.06	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Principal Arterial-Other	10,000	55	State Highway Agency	Systemic	Roadway Departure	Sign Visibility
1801628	Pedestrians and bicyclists	Modify existing crosswalk	29	Ramps	$394831.8	$466801.82	HRRR Special Rule (23 U.S.C. 148(g)(1))	Urban	Major Collector	5,500	35	Town or Township Highway Agency	Systemic	Pedestrians	ADA Ramps
1401648	Intersection traffic control	Modify control - traffic signal to roundabout	1	Intersections	$1316439.5	$1462710.56	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	9,100	45	Town or Township Highway Agency	Spot	Intersections	Roundabout
1500337	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$357739.74	$397488.6	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	12,500	40	Town or Township Highway Agency	Spot	Intersections	Traffic Signal Modernization
1500422	Pedestrians and bicyclists	Modify existing crosswalk	9	Ramps	$273567.22	$303963.57	HSIP (23 U.S.C. 148)	Urban	Major Collector	27,500	30	City or Municipal Highway Agency	Systemic	Pedestrians	ADA Ramps
1500431	Roadside	Barrier end treatments (crash cushions, terminals)	0.08	Miles	$72000	$335378.31	HSIP (23 U.S.C. 148)	Urban	Local Road or Street	150	35	City or Municipal Highway Agency	Spot	Roadway Departure	Guardrail End Treatments
1500432	Pedestrians and bicyclists	Modify existing crosswalk	24	Ramps	$254897.19	$283219.11	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	5,500	35	City or Municipal Highway Agency	Spot	Pedestrians	ADA Ramps
1500434	Pedestrians and bicyclists	Modify existing crosswalk	68	Ramps	$463633.43	$528155.25	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	6,000	35	City or Municipal Highway Agency	Spot	Pedestrians	ADA Ramps
1500438	Pedestrians and bicyclists	Modify existing crosswalk	73	Ramps	$669591.38	$743990.43	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	5,000	35	City or Municipal	Spot	Pedestrians	ADA Ramps

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
												Highway Agency			
1592300	Pedestrians and bicyclists	Modify existing crosswalk	10	Ramps	$282557.38	$1003861.89	HSIP (23 U.S.C. 148)	Urban	Minor Collector	3,000	25	City or Municipal Highway Agency	Spot	Pedestrians	ADA Ramps
1600885	Intersection traffic control	Modify control - traffic signal to roundabout	1	Intersections	$1317761.36	$1464179.29	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	10,000	35	City or Municipal Highway Agency	Spot	Intersections	Construct a roundabout
1601727	Pedestrians and bicyclists	Install new crosswalk	1	Locations	$18361.09	$19290.1	Penalty Funds (23 U.S.C. 164)	Urban	Major Collector	8,820	30	Town or Township Highway Agency	Spot	Pedestrians	Ped Crossing with Flasher
1601824	Intersection traffic control	Systemic improvements - stop-controlled	1632	Signs	$698538.93	$706687.93	HSIP (23 U.S.C. 148)	Urban	Major Collector	5,000	40	City or Municipal Highway Agency	Systemic	Intersections	Sign Visibility
1601851	Intersection traffic control	Systemic improvements - signal-controlled	2	Intersections	$977251	$1705794.44	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	17,200	30	City or Municipal Highway Agency	Spot	Intersections	Systemic Improvements
1801599	Intersection traffic control	Systemic improvements - signal-controlled	8	Intersections	$67579.2	$75088	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	15,000	50	City or Municipal Highway Agency	Spot	Intersections	Systemic Improvements
1006121	Intersection geometry	Intersection geometry - other	0.51	Miles	$2587214.43	$2675739.38	Penalty Funds (23 U.S.C. 164)	Rural	Major Collector	7,250	45	State Highway Agency	Spot	Intersections	Intersection Improvements
1006612	Intersection geometry	Auxiliary lanes - add right-turn lane	1	Intersections	$687319.29	$845311.67	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	29,380	55	State Highway Agency	Spot	Intersections	Added Capacity
1006622	Intersection geometry	Auxiliary lanes - add right-turn lane	1	Intersections	$1605996.84	$1607822.06	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	8,309	50	State Highway Agency	Spot	Intersections	Added Capacity
1172176	Intersection traffic control	Modify traffic signal - modernization/replacement	7	Intersections	$964170.93	$964170.93	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	18,000	35	State Highway Agency	Spot	Intersections	Traffic Signal Modernization
1172299	Intersection geometry	Intersection geometry - other	1	Widened to provide additional through lanes	$2621315.52	$2892611.56	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	22,257	35	State Highway Agency	Spot	Intersections	Added Capacity

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1400001	Intersection geometry	Intersection geometrics - modify intersection corner radius	1	Intersections	$675145.55	$1360624.5	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	10,369	40	State Highway Agency	Spot	Intersections	Improved Corner Radii
1400002	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$687624	$762860.01	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	13,000	55	State Highway Agency	Spot	Intersections	Left Turn Safety
1401030	Intersection geometry	Auxiliary lanes - add right-turn lane	1	Intersections	$2072482.68	$2276581	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	9,600	45	State Highway Agency	Spot	Intersections	Added Capacity
1401282	Intersection geometry	Auxiliary lanes - add left-turn lane	1	Intersections	$1126990.65	$1232760.17	HSIP (23 U.S.C. 148)	Rural	Major Collector	6,500	40	County Highway Agency	Spot	Intersections	Added Capacity
1401827	Roadside	Removal of roadside objects (trees, poles, etc.)	1	Intersections	$26169.47	$103589.47	Penalty Funds (23 U.S.C. 164)	Rural	Minor Arterial	3,277	50	State Highway Agency	Spot	Intersections	Improve Sight Distance
1401849	Intersection geometry	Intersection geometry - other	1	Change to J-Turn Intersection	$1259811.68	$1621536.78	Penalty Funds (23 U.S.C. 154)	Rural	Principal Arterial-Other	9,900	60	State Highway Agency	Spot	Intersections	Reduce Right Angle Crashes
1500277	Intersection geometry	Intersection geometrics - modify skew angle	1	Intersections	$1147126.92	$1147126.92	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	18,000	45	State Highway Agency	Spot	Intersections	Intersection Improvements
1592152	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$1918183	$2131314.44	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	20,717	45	City or Municipal Highway Agency	Spot	Intersections	Roundabout
1592420	Intersection traffic control	Modify traffic signal - add emergency vehicle preemption	90	Intersections	$3470040	$3820463	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	30,000	45	City or Municipal Highway Agency	Systemic	Intersections	Emergency Pre-Emption
1592630	Roadside	Barrier- metal	0.1	Miles	$307688.23	$463447.84	Penalty Funds (23 U.S.C. 164)	Rural	Minor Arterial	5,570	45	State Highway Agency	Spot	Roadway Departure	Install Guardrail
1600212	Pedestrians and bicyclists	Modify existing crosswalk	52	Ramps	$2150013.13	$2411903.48	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	23,328	40	State Highway Agency	Spot	Pedestrians	ADA Ramps
1600699	Intersection traffic control	Intersection flashers - add overhead (continuous)	1	Intersections	$36399.14	$53899.14	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,500	55	State Highway Agency	Spot	Intersections	Install Flashing Beacon
1601159	Roadway	Rumble strips - edge or shoulder	0.98	Miles	$661748.1	$726479	HSIP (23 U.S.C. 148)	Urban	Major Collector	7,000	30	City or Municipal Highway Agency	Spot	Roadway Departure	Install Rumble Stripes

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1601726	Pedestrians and bicyclists	Pedestrian signal - Pedestrian Hybrid Beacon	1	Intersections	$59510.84	$66123.16	HSIP (23 U.S.C. 148)	Urban	Major Collector	8,820	30	City or Municipal Highway Agency	Spot	Intersections	Install HAWK Flasher
1601728	Roadway signs and traffic control	Roadway signs and traffic control - other	1	School Speed Zone Signs	$10721.66	$11246.29	Penalty Funds (23 U.S.C. 164)	Urban	Minor Arterial	14,660	40	City or Municipal Highway Agency	Spot	School Zone Speed Limit Reduction	Install sign with Flashers
1601774	Pedestrians and bicyclists	Modify existing crosswalk	50	Ramps	$700067.87	$723019.86	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	5,500	35	City or Municipal Highway Agency	Spot	Pedestrians	ADA Ramps
1601834	Intersection traffic control	Systemic improvements - signal-controlled	5	Intersections	$245524.01	$246024.01	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	30,150	50	State Highway Agency	Systemic	Intersections	Signal Visibility
1601835	Intersection traffic control	Systemic improvements - signal-controlled	9	Intersections	$387967.13	$387967.13	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	44,915	50	State Highway Agency	Systemic	Intersections	Signal Visibility
1602160	Roadway delineation	Raised pavement markers	24516	Numbers	$244961.9	$244961.9	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	10,000	55	State Highway Agency	Systemic	Lane Departure	Refurbish RPMs
1700142	Intersection traffic control	Intersection traffic control - other	2	Install new traffic signal	$328645.16	$328645.16	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	27,500	55	State Highway Agency	Spot	Intersections	Install signals
1700143	Intersection traffic control	Modify traffic signal - modernization/replacement	4	Intersections	$943766.88	$985016.88	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	25,000	50	State Highway Agency	Spot	Intersections	Modernize traffic signals
1700234	Roadway delineation	Raised pavement markers	28377	Numbers	$352524.61	$352524.61	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	10,000	55	State Highway Agency	Systemic	Lane Departure	Refurbish RPMs
1700235	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$608907.82	$608907.82	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	25,000	55	State Highway Agency	Spot	Intersections	Modernize traffic signals
1700237	Roadway	Rumble strips - edge or shoulder	52.09	Miles	$710808.91	$710808.91	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	15,000	55	State Highway Agency	Systemic	Lane Departure	Install Rumble Stripes
1700316	Intersection traffic control	Modify traffic signal - modernization/replacement	9	Intersections	$1104041.41	$1351556.41	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	20,000	50	State Highway Agency	Spot	Intersections	Modernize traffic signals
1700318	Intersection traffic control	Systemic improvements - signal-controlled	41	Intersections	$662180.45	$662180.45	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	18,000	55	State Highway Agency	Systemic	Intersections	Signal Visibility

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
1700726	Intersection geometry	Auxiliary lanes - add left-turn lane	0.04	Miles	$90000	$100000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	20,487	40	City or Municipal Highway Agency	Spot	Intersections	Added Capacity
1700979	Intersection traffic control	Modify traffic signal - modernization/replacement	5	Intersections	$113920.72	$126578.58	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	15,000	35	Town or Township Highway Agency	Spot	Intersections	Modernize traffic signals
1701063	Pedestrians and bicyclists	Pedestrian beacons	4	Crosswalks	$298204.72	$324649.13	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	25,428	30	City or Municipal Highway Agency	Spot	Pedestrians	Install Pedestrian Flashing Beacons
1701173	Roadway	Roadway - restripe to revise separation between opposing lanes and/or shoulder widths	5.9	Miles	$400522.72	$402180.8	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	12,500	40	State Highway Agency	Spot	Lane Departure	Restripe existing pavement
1701585	Pedestrians and bicyclists	Modify existing crosswalk	13	Ramps	$231757.13	$232136.03	Penalty Funds (23 U.S.C. 164)	Urban	Major Collector	15,000	35	City or Municipal Highway Agency	Spot	Pedestrians	ADA Ramps
1702082	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$49171.19	$49171.19	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	15,000	55	State Highway Agency	Spot	Intersections	Modernize traffic signals
1702083	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$92227.46	$92227.46	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	9,000	55	State Highway Agency	Spot	Intersections	Modernize traffic signals
1602159	Intersection traffic control	Modify traffic signal - modernization/replacement	2	Intersections	$191836.02	$192056.02	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	18,940	35	State Highway Agency	Spot	Intersections	Modernize traffic signals
1702325	Intersection traffic control	Modify traffic signal - modernization/replacement	2	Intersections	$176031.61	$176251.61	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	18,500	40	State Highway Agency	Spot	Intersections	Modernize traffic signals
1800876	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$63874.03	$296763.56	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	15,500	55	State Highway Agency	Spot	Intersections	Modernize traffic signals
1800877	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$157227.16	$157227.16	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	15,600	55	State Highway Agency	Spot	Intersections	Modernize traffic signals
1800879	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$161957.85	$161957.85	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	16,000	55	State Highway Agency	Spot	Intersections	Modernize traffic signals
1800880	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$133970.68	$133970.68	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	15,250	55	State Highway Agency	Spot	Intersections	Modernize traffic signals

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1801234	Pedestrians and bicyclists	Modify existing crosswalk	68	Ramps	$501566.48	$760029.43	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	7,100	35	State Highway Agency	Systemic	Pedestrians	ADA Ramps
1801270	Pedestrians and bicyclists	Modify existing crosswalk	85	Ramps	$419292.46	$641380.51	HSIP (23 U.S.C. 148)	Urban	Major Collector	4,500	35	State Highway Agency	Systemic	Pedestrians	ADA Ramps
1801583	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$442508	$487502.09	HSIP (23 U.S.C. 148)	Urban	Major Collector	11,000	35	City or Municipal Highway Agency	Spot	Intersections	Modernize traffic signals
1801600	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$268400	$352427.01	Penalty Funds (23 U.S.C. 164)	Urban	Major Collector	10,500	35	City or Municipal Highway Agency	Spot	Intersections	Modernize traffic signals
1801832	Roadside	Barrier- metal	0.8	Miles	$99689.13	$133989.13	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	5,500	55	State Highway Agency	Spot	Roadway Departure	Install Guardrail
1801835	Intersection traffic control	Systemic improvements - signal-controlled	17	Intersections	$106452.75	$106452.75	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	8,500	55	State Highway Agency	Systemic	Intersections	Battery Backup
1801937	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$146101.35	$146101.35	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	34,913	55	State Highway Agency	Spot	Intersections	Modernize traffic signals
1801954	Roadway	Rumble strips - edge or shoulder	4.2	Miles	$76315.88	$76631.81	Penalty Funds (23 U.S.C. 164)	Rural	Minor Arterial	5,420	55	State Highway Agency	Systemic	Lane Departure	Install Rumble Stripes
1801979	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$154955.26	$155175.26	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	18,562	55	State Highway Agency	Spot	Intersections	Modernize traffic signals
1802786	Intersection traffic control	Systemic improvements - signal-controlled	26	Intersections	$498727.78	$498727.78	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	15,500	55	State Highway Agency	Systemic	Intersections	Signal Visibility
1601812	Intersection traffic control	Modify traffic signal - modernization/replacement	1	Intersections	$179054.75	$179054.75	Penalty Funds (23 U.S.C. 164)	Rural	Minor Arterial	11,500	50	State Highway Agency	Spot	Intersections	Modernize traffic signals
1601827	Alignment	Vertical alignment or elevation change	1	Interchanges	$2951551.11	$2951551.11	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	21,500	35	City or Municipal Highway Agency	Spot	Intersections	Bridge Construction
1592345	Interchange design	Convert at-grade intersection to interchange	1	Interchanges	$19026746.1	$19026746.1	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	21,500	35	City or Municipal Highway Agency	Spot	Intersections	Construct a grade separated interchange

2019 Indiana Highway Safety Improvement Program

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
1700313	Roadway delineation	Raised pavement markers	19563	Numbers	$218079.83	$218079.83	Penalty Funds (23 U.S.C. 164)	Rural	Principal Arterial-Other	5,500	55	State Highway Agency	Systemic	Lane Departure	Refurbish RPMs
1702224	Intersection traffic control	Modify traffic signal - modernization/replacement	17	Intersections	$592123.77	$592123.77	Penalty Funds (23 U.S.C. 164)	Urban	Principal Arterial-Other	15,000	55	State Highway Agency	Spot	Intersections	Signal Visibility

Some of the listed projects are currently in Advance Construction (AC) and are identified for transfer to HSIP status on or before October 1, 2019.

HSIP is also used for non-infrastructure safety planning to fund the operations of the Hazard Elimination Program for Exiting Roads and Streets (HELPERS) Program managed by the Indiana Local Technical Assistance Program.

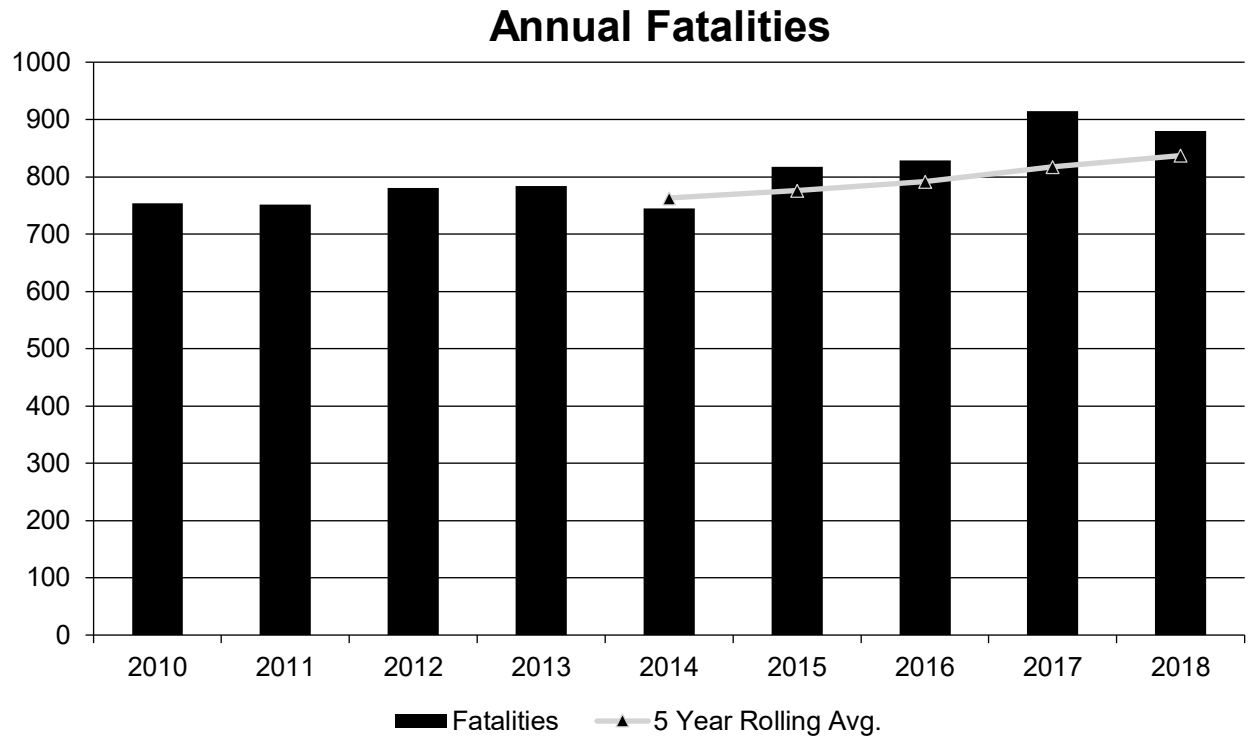
Projects with the Improvement Category of Non-infrastructure consist of improvements to traffic safety data systems or traffic safety planning efforts undertaken by metropolitan planning organizations as part of their annual Unified Planning Work Programs.

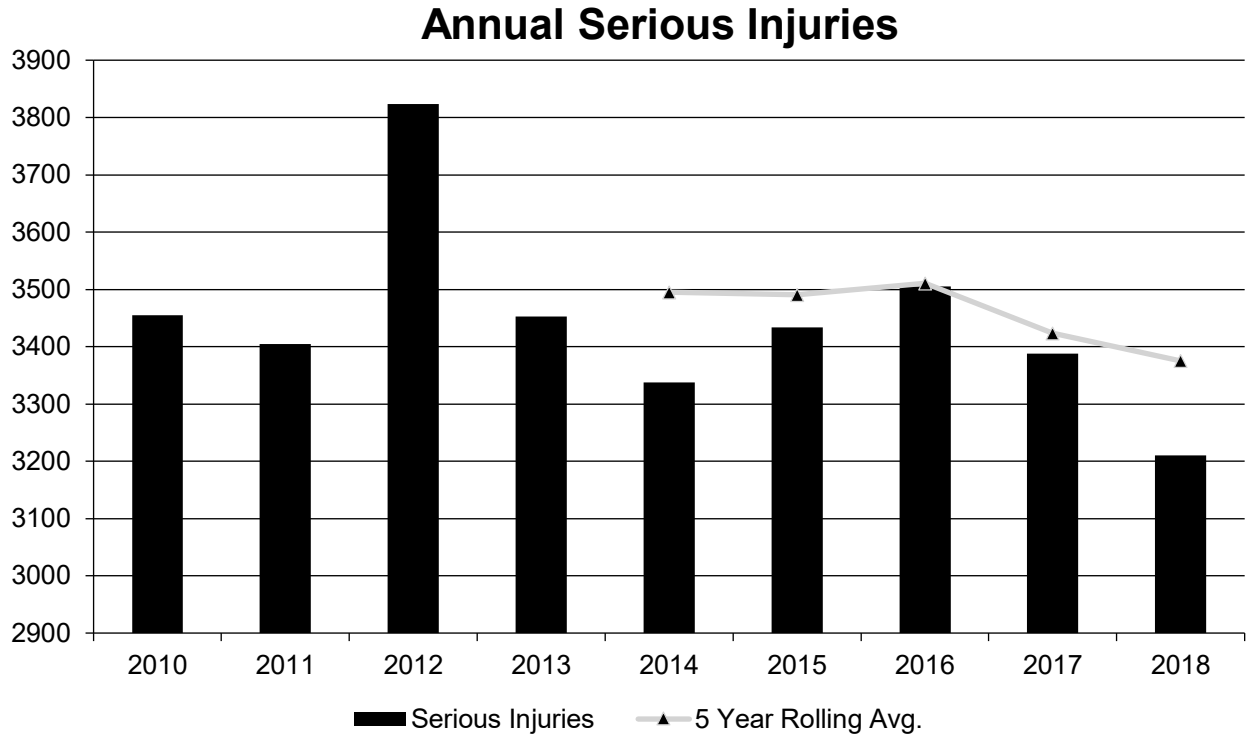
Safety Performance

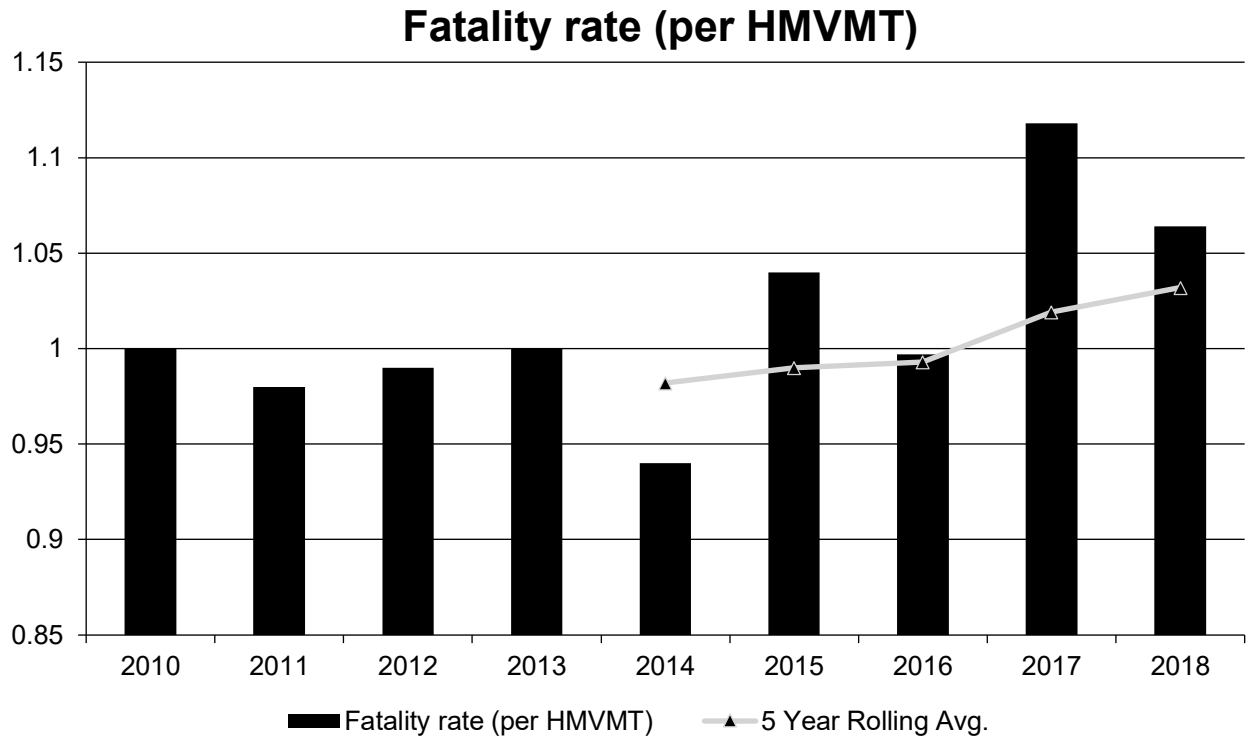
General Highway Safety Trends

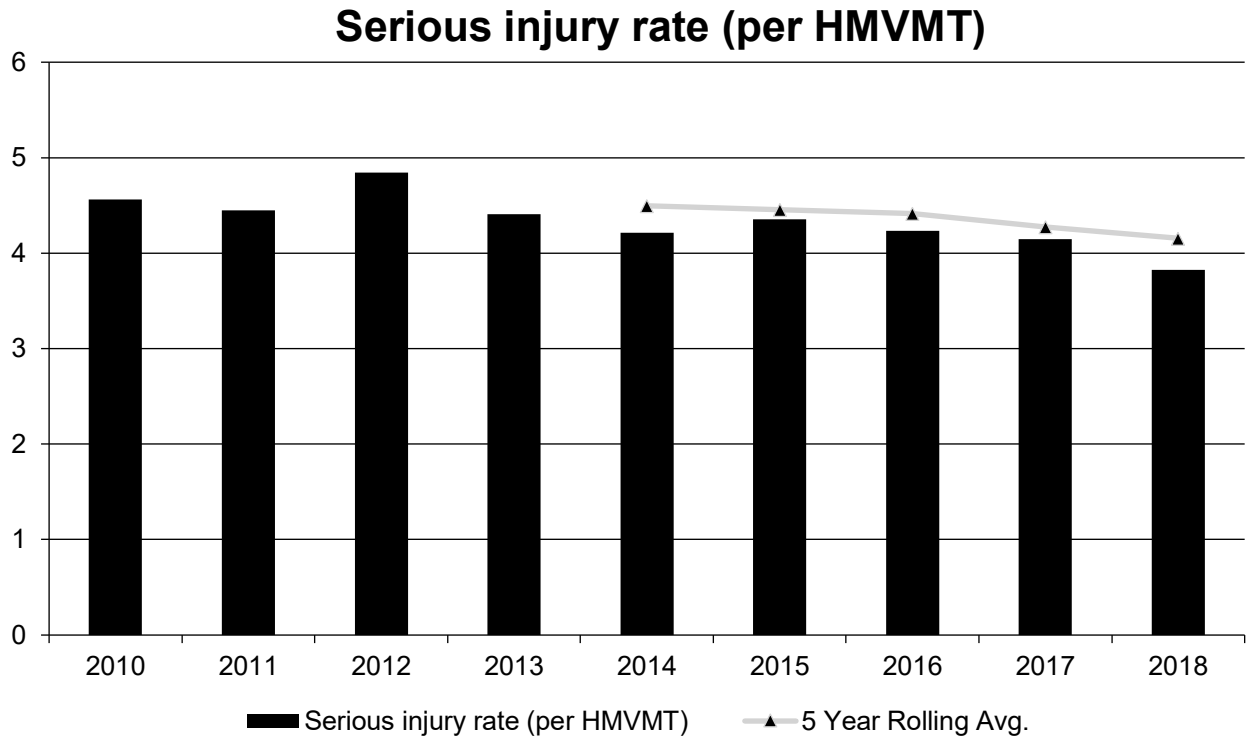
Present data showing the general highway safety trends in the State for the past five years.

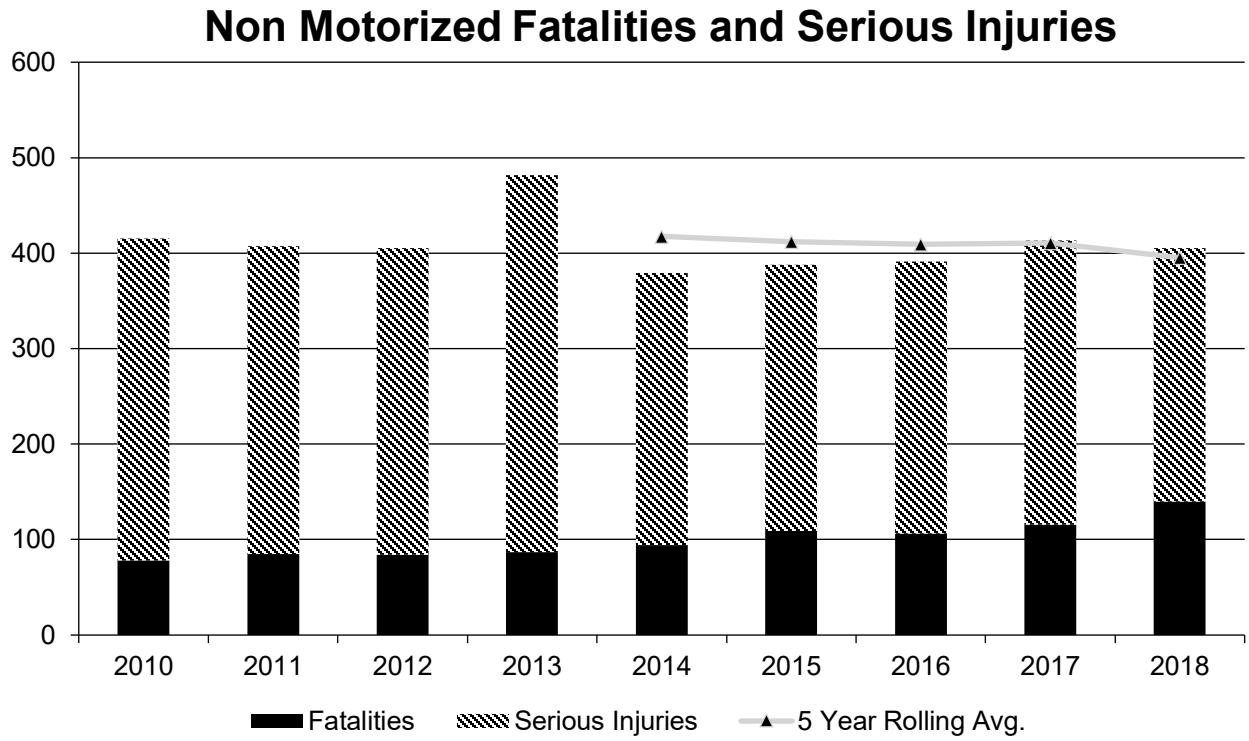
PERFORMANCE MEASURES	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fatalities	754	751	781	784	745	817	829	914	880
Serious Injuries	3,455	3,404	3,823	3,453	3,338	3,434	3,505	3,388	3,210
Fatality rate (per HMVMT)	1.000	0.980	0.990	1.000	0.940	1.040	0.997	1.118	1.064
Serious injury rate (per HMVMT)	4.560	4.451	4.844	4.409	4.215	4.357	4.234	4.145	3.827
Number non-motorized fatalities	78	85	84	87	94	109	106	116	140
Number of non-motorized serious injuries	337	322	321	395	285	279	285	297	265


Annual Fatalities
1000
900
800
700
600
500
400
300
200
100
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.15
1.1
1.05
1
0.95
0.9
0.85
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
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.



In June 2014, INDOT submitted comments on the proposed National Highway Traffic Safety Performance Measures Rulemaking (NPRM) including a comment regarding the expected transition to the MMUCC 4th Edition as it relates to definition of Suspected Serious Injury. INDOT's comments included the objection that an 18-month implementation period is unreasonably short of the time necessary to engage all partners to enable changes in the Indiana crash database to comply with the new definition of Suspected Serious Injury. Prior to this proposed rulemaking, incapacitating injury (victim transported from the scene) was deemed an acceptable measure in prior editions of the MMUCC.

Federal regulations promulgated in 2016 by Federal Highway Administration to support the administration of transportation funding included a requirement that states must report Suspected Serious Injuries using the criteria established in the MMUCC 4th Edition. This linkage of a federal regulation to an advisory document's recommended definition put Indiana's current designation of incapacitating injury out of compliance. The new regulation for setting and reporting traffic safety performance measures compels Indiana to determine a method to approximate counting of Suspected Serious Injuries so that current Indiana crash records can be used to calculate historic and projected traffic safety performance counts in accord with "A" injuries on the KABCO scale.

In establishing a proxy for missing data regarding Suspected Serious Injuries, Indiana analyzed statewide incapacitating injury counts across the 10 years prior to the Indiana TRCC reclassification that began in November 2014. Crash data records for the years 2004 to 2013 were analyzed to determine a percentage of the total number of non-fatal incapacitating injuries recorded each of these years. The incapacitating injury counts from these years are assumed to equate to the current definition of suspected serious injuries and were evaluated to establish the average percentage of non-fatal suspected serious injuries that contribute to total injury counts. The annual average percent contribution of suspected serious injuries prior to the 2014 Indiana TRCC definition change was found to be 7.1%. Weighting this value to account for an increases in suspected serious injury counts in the most recent three years of the 10 year period (2011, 2012 and 2013), the resulting value is adjusted to 7.2% of all injuries. Indiana intends to use the 7.2% estimate of non-fatal injuries for each

year to represent the number of statewide “Suspected Serious Injuries” until such time as a specific count of MMUCC 4th Edition compliant data can be incorporated into the Indiana Crash Database.

Note that the 7.2% share of injuries is considered to be valid only when examining statewide crashes on all roads in Indiana. A separate percentage value of Suspected Serious Injuries for any subset of the data requires its own historic analysis using the same methodology to establish an estimated percentage contribution in that subset.

INDOT asks that FHWA accept Indiana’s described reporting methodology as part of any review of Indiana Crash data and Performance Target Setting methodology.

Describe fatality data source.

FARS

Data from the Fatal Accident Reporting System was utilized according to the most complete dataset for the given year as follows:

FARS Final Report File for the preceding years through 2016
FARS Annual Report File for the year 2017
Indiana State Police ARIES Crash reporting system for the year 2018

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	59	86	0.71	1.03
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	87	172	1.8	3.54
Rural Minor Arterial	80	195	2.25	5.42
Rural Minor Collector	27	117	1.32	5.81
Rural Major Collector	105	375	1.89	6.74
Rural Local Road or Street	130	238	2.51	4.6
Urban Principal Arterial (UPA) - Interstate	37	194	0.32	1.67

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)**
Urban Principal Arterial (UPA) - Other Freeways and Expressways	14	42	0.97	2.9
Urban Principal Arterial (UPA) - Other	81	793	0.74	7.21
Urban Minor Arterial	63	613	0.72	6.91
Urban Minor Collector				
Urban Major Collector	26	264	0.52	5.28
Urban Local Road or Street	112	244	0.8	1.75

Year 2017

Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	431.82	1,422.33	1.04	3.43
County Highway Agency	181.42	803.85	1	4.45
Town or Township Highway Agency				
City or Municipal Highway Agency	173.91	1,093	0.82	5.17
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				

Data Tables for 5 year averages from 2014 through 2018 have been adjusted for final approved VMT data and changes in the classification of Suspected Serious Injuries per the methodology described under Question 30 - Additional Information.

Federal regulations promulgated in 2016 by Federal Highway Administration to support the administration of transportation funding included a requirement that states report Suspected Serious Injuries using the criteria established in the MMUCC 4th Edition. This linkage to a federal regulation to what had historically been an advisory document's recommended definition put Indiana's current designation of incapacitating injury out of compliance. The new regulation for establishing and reporting traffic safety performance measures necessitate that Indiana determine a method to approximate counting of Suspected Serious Injuries (per the MMUCC 4th Edition) so that current Indiana crash records could be used to calculate historic and projected traffic safety performance counts in accord with "A" injuries on the KABCO scale.

In establishing a proxy for missing data regarding Suspected Serious Injuries, Indiana analyzed statewide incapacitating injury counts that remained reasonably stable across the 10 years prior to the Indiana TRCC reclassification that began in November 2014. Crash data records for the years 2004 to 2013 were analyzed to determine a percentage of the total number of non-fatal incapacitating injuries recorded each of these years. The incapacitating injury counts from these years are assumed to equate to the current definition of suspected serious injuries and were evaluated to establish the average percentage of non-fatal suspected serious injuries that contribute to total injury counts. The annual average percent contribution of suspected serious injuries prior to the 2014 Indiana TRCC definition change was found to be 7.1%. Weighting this value to account for an increases in suspected serious injury counts in the most recent three years of the 10 year period (2011, 2012 and 2013), the resulting value is adjusted to 7.2% of all injuries. Indiana intends to use the 7.2% estimate of non-fatal injuries for each year to represent the number of statewide “Suspected Serious Injuries” until such time as a specific count of MMUCC 4th Edition compliant data can be incorporated into the Indiana Crash Database.

Note that the 7.2% share of injuries is considered to be valid only when examining statewide crashes on all roads in Indiana. A separate percentage value pf Suspected Serious Injuries for any subset of the data requires its own historic analysis using the same methodology to establish an estimated percentage contribution to the total of all non-fatal injuries in that subset.

Provide additional discussion related to general highway safety trends.

In 2019, the early estimate of vehicle miles of travel increased by 0.50% above 2018 indicating a slowing in VMT growth. The number of police reported fatalities decreased by 3.72%. Suspected serious injuries decreased by 5.25%.

Statewide 2018 crash data shows that Indiana is experiencing conditions somewhat similar to surrounding states in regard to changes in the 5 year rolling averages of Fatalities, Suspected Serious Injuries, Fatality Rate and Suspected Serious Injury Rate. In 2018, Indiana was part of a national trend indicating a small decrease in the number of serious crash events resulting in suspected serious and fatal injuries.

Lane departure crash events continue to be the most numerous harmful events in 2018. The continued risk of roadway departure events has resulted in the development of several systemic improvement types aimed at reducing the incidence of lane departure crashes. Widespread deployment of multiple countermeasures has resulted in small decreases in crashes resulting from vehicle departure from the travel lanes (including roadway departure, head-on and opposite direction sideswipe). The 5 year average of fatalities resulting from single vehicle lane departures in 2018 accounted for 40.67% of all Indiana motor vehicle fatalities, compared to the 5 year average of 42.7% in 2017, and 44.8% calculated in 2016.

Serious Crashes as a result of intersection crashes continues to make up the second worst type of harmful event and is on a slight upward trend. In 2018 the 5 year average of intersection fatalities contributed 33.4% of total traffic fatalities, similar to the 33.0% average calculated in 2017 and 32.7% in 2016. INDOT is using HSIP funds to advance systemic improvements to increase the visibility of both signalized and un-signalized intersections along with a program to modernize traffic signal control equipment. INDOT is engaged in a program to “change-out” older 5 section heads used to control “permitted/protected” left turn traffic signal phasing for the MUTCD approved 4-section heads using a flashing yellow arrow for permissive left turns. INDOT also is promoting the use of its Intersection Control Evaluation (ICE) policy to increasing the construction of innovative intersection design to reduce traffic conflicts such as Roundabouts, R-Cut/J-Turns and other Median U-Turn designs. In 2014, INDOT produced its ICE guideline document to assist traffic designers in the task of making preliminary determination of feasibility of various alternative intersection types on the basis of location and traffic data for site conditions. Many of the resulting designs are now moving into the construction phase.

Indiana is also concerned with the incidence of fatalities involving vulnerable road users such as pedestrians, bicycle and motorcycle riders, and is working with our local partners on education efforts as well as the deployment of countermeasures such as enhanced crosswalks, mid-block and intersection beacons and road diets.

In 2018 the 5 year rolling average rate of pedestrian involved serious crashes made up 5.3% of all serious crashes compared to 5.8% in 2017, and 6.3% calculated in 2016. While this trend is encouraging, the number of fatal pedestrian injuries has increased by 41.2% over the last 10 years. The 5 year average fatality count in 2018 is 95 compared the 5 year count in 2008 of 67.

The construction of bike friendly facilities has led to higher numbers of bike users and pedestrians. When combined with growing VMT these conditions have led to many more conflicts between these modes of road users. Despite higher levels of exposure the 5 year average percentage of serious crashes in 2018 was 1.8% compared to 2.0% in 2017.

The 5 year average percentage of motorcycle and moped crashes has been on a general downward trend since 2016 when it accounted for 13.2 % of all serious crash outcomes. A one year spike in motorcycle crashes occurred in 2017. In 2018 the percentage of serious crash outcomes averaged over 5 years was at 9.1%, down from 11.2% calculated in 2017.

Safety Performance Targets

Safety Performance Targets

Calendar Year 2020 Targets *

Number of Fatalities:907.7

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

For the purpose of comparison to the SHSO annual report, the 5 year average performance target listed above is based on a projected calendar 2020 value of (965) as described in the following methodology. Baseline projections are calculated using fatality counts and applying an equation to generate predictive values for 2019-2020. This was accomplished by the software built into Microsoft Excel for applying a logarithmic trend line with a forward forecast of two years. The equation is of the form [y = A*ln(x) + B]. The resulting equation is then adjusted to more closely fit recent peak years by shifting the value of B to produce a matching value for the recorded peak. INDOT estimates seven fatalities annually may be influenced by every .1% change in annual unemployment. Recent economic forecasts indicate an additional decrease in annual unemployment of .2% during the 2018-2020 period can be reasonably anticipated in Indiana. Consequently, the fatality count projections include an additional seven fatalities each year in anticipation of an improving economic climate influencing greater risk-taking and unfortunately increased severe crash outcomes.

Number of Serious Injuries:3467.4

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

Data Source: Automated Reporting Information Exchange System (ARIES) 2009- 2013 the “As reported” count of “Incapacitating Injuries” 2014-2017 an estimated count amounting to 7.2% of all non-fatal injuries For the purpose of comparison to the SHSO annual report, the 5 year average performance target listed above is based on a projected calendar 2020 value of (3,628) as described

in the following methodology. Baseline projections are calculated using incapacitating injury counts (or estimations) and applying an equation to generate predictive values for 2014-2018. This was accomplished by the software built into Microsoft Excel for applying a logarithmic trend line with a forward forecast of four years. The equation is of the form [y = A*ln(x) + B]. The resulting equation is then adjusted to more closely fit recent peak years by shifting the value of B to produce a matching value for the recorded peak.

Fatality Rate:1.100

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

Data Source: Fatality Analysis Reporting System The NHTSA calculated and reported values through 2016. For the purpose of comparison to the SHSO annual report, the 5 year average performance target listed above is based on a projected calendar 2020 value of (1.154) as described in the following methodology. Estimated/Predicted values for 2018-2020: The FHWA approved VMT for 2017 was significantly lower than the INDOT reported value there for an adjustment was made to the projection of annual Vehicle Miles Traveled (VMT) growth rate estimates. For 2018 a growth of 1.2% was used as in past years however for each of the next two years growth is estimated to be 1.05% to account for the effect on projections due to the last FHWA approved (2017) VMT of 817.52 hundred million VMT. INDOT's Technical Planning Support & Programming Division estimates VMT by averaging the last 5 years of Annual Growth Rates for each of five factor groups and then averaging them. The Office of Traffic Safety uses those predicted annual estimates along with estimated fatalities then evaluated with the projected VMTs for their respective future years to produce predicted fatality rates per 100-million VMT.

Serious Injury Rate:4.178

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

Data Source: Automated Reporting Information Exchange System (ARIES) The INDOT calculated and reported values through 2013. Using estimated incapacitating injuries and the FHWA VMT values for 2014-2018. The 5 year average performance target listed above is based on a projected calendar 2020 value of (4.342) as described in the following methodology. Estimated/Predicted values for 2017-2020: The FHWA approved VMT for 2017 was significantly lower than the INDOT reported value there for an adjustment was made to the projection of annual Vehicle Miles Traveled (VMT) growth rate estimates. For 2018 a growth of 1.2% was used as in past years however for each of the next two years growth is estimated to be 1.05% to account for the effect on projections due to the last FHWA approved (2017) VMT of 817.52 hundred million VMT. INDOT's Technical Planning Support & Programming Division estimates VMT by averaging the last 5 years of Annual Growth Rates for each of five factor groups and then averaging them. The Office of Traffic Safety uses those predicted annual estimates for incapacitating injuries along with the projected VMTs for their respective future years to produce predicted fatality rates per 100-million VMT.

Total Number of Non-Motorized Fatalities and Serious Injuries:405.9

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

Data Source: Fatality Analysis Reporting System (Non-motorist persons) 2009-2014 FARS Final File Count 2016-2017 FARS Annual Report File 2018 Indiana State Police FARS Report Data Source: Automated Reporting Information Exchange System (ARIES) (Non-motorist persons)* 2009-2013 the

“As reported” count of “Incapacitating Injuries” 2014-2018 an estimated count amounting to 13% of all non-fatal injuries “The 5 year average performance target listed above is based on a projected calendar 2019 value of (420) as described in the following methodology.” Baseline projections of Non-Motorist Fatalities are calculated using FARS Fatality counts and applying an equation to generate predictive values for 2018-2020. This was accomplished by the software built into Microsoft Excel for applying a logarithmic trend line with a forward forecast of two years. The equation is of the form [y = A*ln(x) + B]. The resulting equation is then adjusted to more closely fit recent peak years by shifting the value of B to produce a matching value for the recorded peak. Non-Motorist incapacitating injuries are projected logarithmically as above for 2019-2020 with non-motorist incapacitating injuries projected as 13% of projected all non-motorist non-fatal injuries. *In addition to persons classified as pedestrians or pedal-cyclists, persons classified as animal drawn vehicle operators are included in the calculation. This is due to the significant number of crashes involving these vehicles across Indiana.

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

Added Information: Following the promulgation of the new rule, in the fourth quarter of 2016 INDOT Office of Traffic Safety solicited a partnership group of Contributing/Consulting/Advisory Agencies and Organizations to coordinate setting the 5 safety performance targets. The Traffic Safety Performance Target Setting Team held seven meetings from July of 2016 through June of 2017 in-order to establish a procedure for calculation of the required annual safety performance targets. The traffic safety Performance Target Setting Team deliberated and ultimately agree upon both the methodology that was used to establish the traffic safety performance targets and the calendar 2018 targets.

Using the same procedures INDOT has calculated safety performance targets for calendar 2019 and 2020. A final agreement on each target that was set for calendar year 2020 was reached on May 23, 2019 between INDOT and the other members of the Traffic Safety Performance Target Setting Team including Indiana’s State Highway Safety Office (housed in the Indiana Criminal Justice Institute) on May 23, 2019.

The Indiana Traffic Safety Performance Target Setting Team consists of the following organizations:

Indiana Department of Transportation, Office of Traffic Safety

Indiana Criminal Justice Institute, Traffic Safety and Research Divisions (SHSO)

Indiana Metropolitan Planning Organization Council – Executive Director Task group

Federal Highway Administration, Indiana Division

Local Technical Assistance Program – HELPERS Program

The task group completed their deliberations in time to allow the Indiana Criminal Justice Institute (SHSO) to report the three overlapping performance targets in their 2020 Highway safety Plan Report to NHTSA before the July 1, 2019 deadline.

Does the State want to report additional optional targets?

No

Indiana does not choose to report on additional optional targets at this time.

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.

2018 Safety Performance Targets:

Fatalities - 814.9
Serious Injuries – 3479.8
Fatalities Rate - 1.036
Serious Injuries Rate - 4.347
Non-Motorized Fatalities and Serious Injuries – 417.0

The 2018 five year average number of fatal injuries is calculated to be 837.0. The stated 2018 target of 814.9 fatalities will not be met due to unpredictable weather conditions combined with continued growth in employment that combined led to a higher number of 914 fatalities in 2017 FARS data compared to recorded fatalities in 2016 of 829 and 880 recorded in 2018 from Indiana's crash record system. The reduction in fatal injury count that occurred in 2018 did not result in a large enough drop to accommodate the recorded increase.

In 2017 an early mild spring and good summer weather may have contributed to an increase in the number of motorcycle/moped related fatal injuries. The number of motorcycle/moped related fatalities was 96 in 2016 followed by 144 in 2017 a 50% increase. In 2018 recorded motorcycle/moped fatalities regressed to 84.

Analysis of unemployment data for the last 10 year time period indicates a linkage of job growth to VMT may be a factor influencing fatal injury counts in the time period after 2009. The results of a recent comparative analysis indicates that in the years 2010 through 2018, Indiana has experienced a general upward trend in VMT as well as a rise in the number of fatal injuries. Job growth data appears to track rather closely together with fatal injury counts. Therefore it's logical to postulate that job growth may be a key factor influencing the higher than expected growth in fatal injuries.

The 2018 expected five year average fatalities rate is 1.032. This result is slightly below the 2018 target value of 1.036 fatalities per one hundred million vehicle miles of travel. The final result is dependent on the VMT values that FHWA applies in their calculation to be performed in 2020, but the expectation is that the target for fatality rate may be met.

The 2018 expected five year average of suspected serious injuries is 3375.3. The 2018 target for serious injuries is 3479.8. The result is 3% lower than the target. The expectation is that the performance target for serious injuries will be met. All classes of non-fatal injuries in Indiana have been on a gradual multiyear downward trend starting in 2004 and excepting short term spikes has continued through 2018. This is reflected in recent years by the reported number of suspected serious injuries dropping from 3,505 in 2016 to 3,210 in 2018.

The 2018 expected five year average rate of suspected serious injuries is 4.157. The 2018 target rate for serious injuries is 4.347. The result is 4.6% lower that the target. The final result is dependent on the VMT values that FHWA applies in their calculation to be performed in 2020. The expectation is that the performance target for serious injury rate per one hundred million vehicle miles of travel will be met.

The 2018 resulting five year average number of non-motorized fatalities and serious injuries is 381.51. The 2018 target rate for non-motorized fatalities and serious injuries is 417.0. The result is 9.3% lower that the target. The expectation is that the performance target for serious injuries will be met.

Applicability of Special Rules

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

Regarding the HRRR Special Rule requirement for Indiana, in FFY 2019 INDOT does not fall under the HRRR Special Rule.

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

PERFORMANCE MEASURES	2011	2012	2013	2014	2015	2016	2017
Number of Older Driver and Pedestrian Fatalities	100	106	103	99	109	116	117
Number of Older Driver and Pedestrian Serious Injuries	267	257	252	255	275	308	285

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Change in fatalities and serious injuries
- Economic Effectiveness (cost per crash reduced)

Per commitment under Indiana's Strategic Highway Safety Plan to move Towards Zero Deaths, INDOT's goal and primary measure of effectiveness is the reduction of fatalities and serious injuries on all state and local public roadways in the state. In this regard, INDOT monitors the number and rate of fatal and serious injury crash events and casualties in determining progress Toward Zero Deaths.

INDOT's additional goal during fiscal year 2019 was to maintain integrity of a planned $50.7 million investment in the 2019 traffic safety capital program, toward achieving an expected reduction of at least 5,914 severe crashes on INDOT jurisdictional roads through the projects' design lives. Essentially the goal over time to be maintained is the overall cost-effectiveness (C-E) of the program; that is, the relationship of dollars invested to crashes reduced, or $24,400 per severe crash as the baseline ratio at the start of the fiscal year.

This is a summary of results relative to the federal fiscal year 2019 goal. The safety program affected a slightly positive change in C-E, down to about $24,000 from $24,200 the prior year. Overall, the fiscal year 2019 performance expectation was achieved.

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

Change in fatalities and serious injuries:

The number of reported motor vehicle crash fatalities dropped from 914 in calendar year 2017 to 880 in 2018, which represents a decrease of 3.72%. The early estimate for 2018 vehicle miles of travel indicates an increase of 1.1% from 2017 to 2018. As a result the estimated rate of fatalities per one hundred million vehicle miles of travel (HMVMT) was also reduced by 4.8 % from 1.118 in 2017 to an estimated 1.064 in 2018.

The incidence of suspected serious injuries in 2017 was 3,388 in 2017 compared to 3,210 in 2018. This represents a 5.25% decrease in calendar year 2018 compared to 2017. The estimated rate of probable class 'A' injury outcomes decreased by 7.7%, from 4.145 in 2017 to 3.827 in 2018.

Economic Effectiveness (cost per crash reduced):

INDOT's measure of effectiveness applies to a goal for safety improvement project cost per severe crash; those crash events resulting in at least one fatal or serious injury. This measure is intended to assure the integrity of the planned 2019 $50.7 million investment in the 2019 traffic safety capital program, toward achieving an expected reduction of at least 5,914 severe crashes on INDOT jurisdictional roads through the projects' design lives. The goal over time is to maintain the overall cost-effectiveness of the program; that is, the relationship of dollars invested to crashes reduced, or $24,000 per severe crash as the baseline ratio at the start of the fiscal year.

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

- # RSAs completed
- HSIP Obligations
- More systemic programs
- Other-Total Federal Safety Obligations

58 RSA reports were completed in 2019 for State and US highways. Three of the RSA reports addressed of larger scale corridor safety evaluations. Many of the RSA's will likely result in construction projects that use HSIP funds. LTAP and local public agencies also conduct numerous RSA's prior to submitting proposed projects to Office of Traffic Safety for HSIP eligibility determination.

85.2 % of the apportioned HSIP funds are scheduled to be obligated in 2019.
INDOT maintains 25 individual work types eligible for HSIP funding split among our listed safety sub-programs.

In FFY 2019 INDOT obligated 100% of the infrastructure share of Indiana's allocated Section 164-HE Penalty Transfer.

At the start of calendar 2019 INDOT approved Intersection Conflict Warning Systems as an eligible systemic safety project work type in our Intersection safety sub-program. Construction of ICW system installations are programmed to commence in 2020.

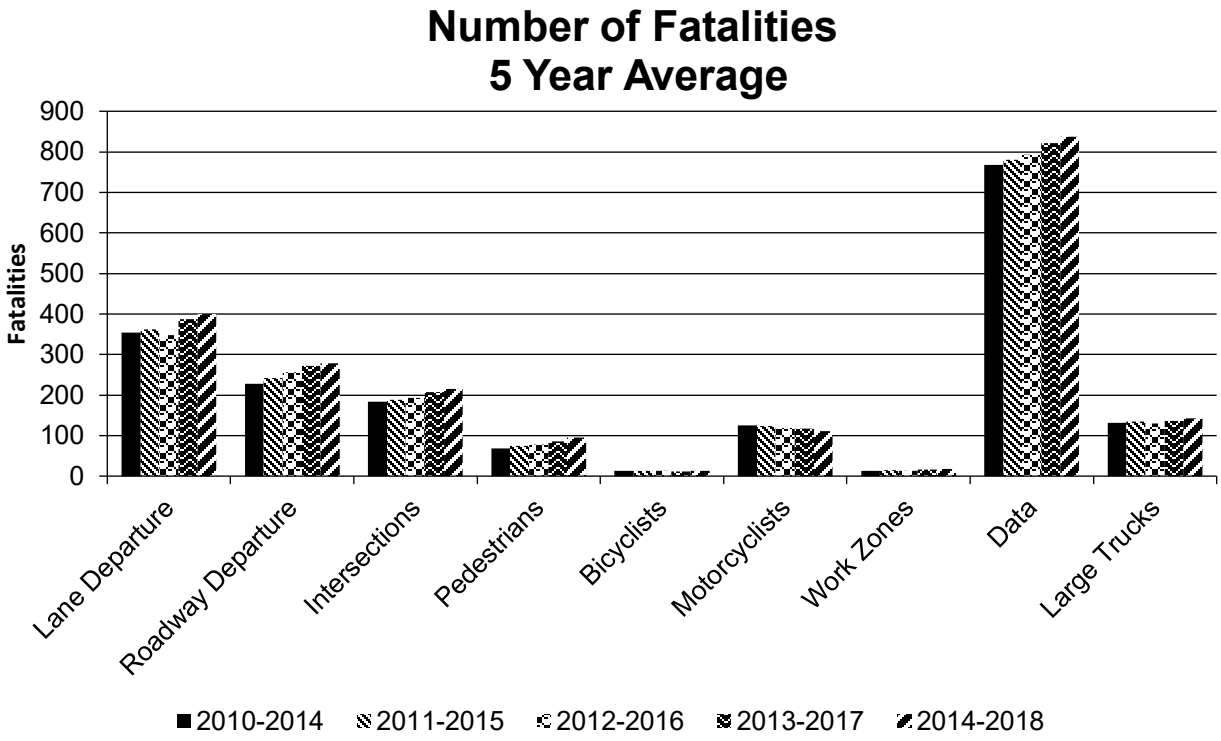
In FFY 2019 INDOT has over $72.6 million in federal aid highway safety funds including HSIP and Section 164-HE funds programmed for obligation prior to the end of the federal fiscal year.

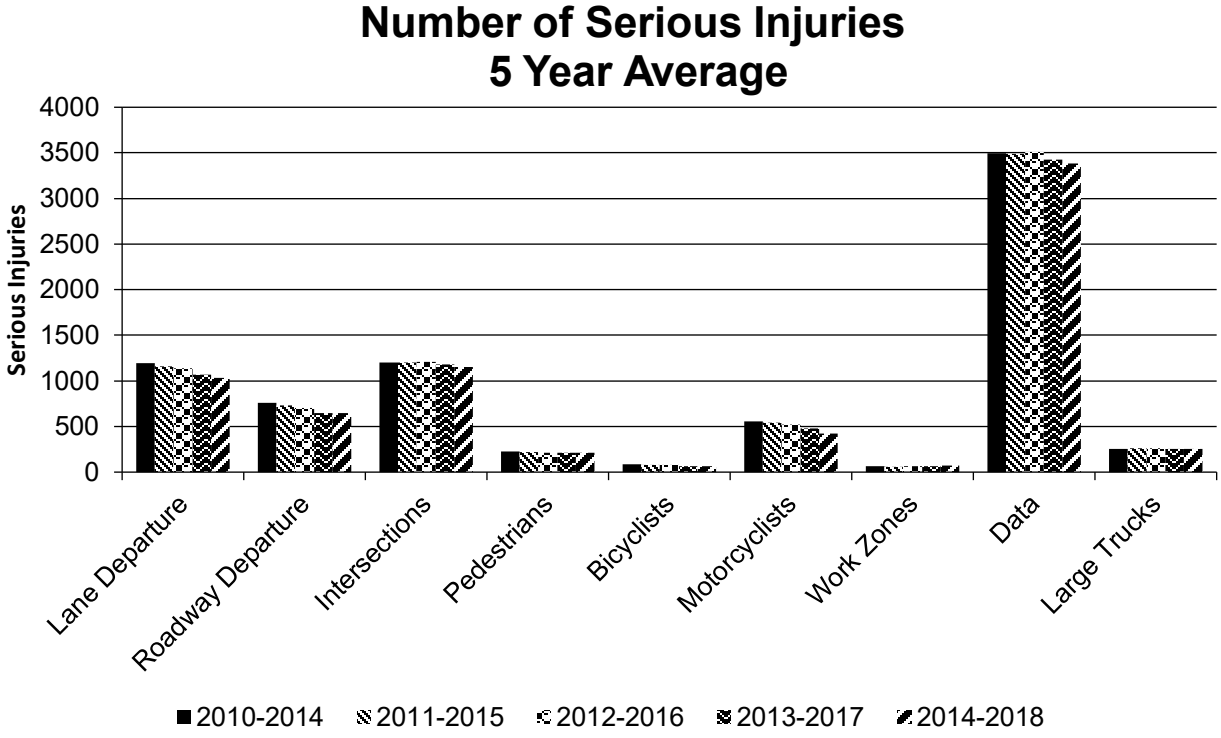
Effectiveness of Groupings or Similar Types of Improvements

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)
Lane Departure		400.4	1,032.56	0.49	1.27
Roadway Departure		277.8	647.75	0.34	0.8
Intersections		215.2	1,154.83	0.27	1.43
Pedestrians		95.6	214.65	0.12	0.26
Bicyclists		13.6	63.07	0.02	0.08
Motorcyclists		111	425.54	0.14	0.53
Work Zones		18.4	69.63	0.02	0.09
Data		836.6	3,383.28	1.03	4.18
Large Trucks		142.4	254.01	0.18	0.31


Number of Fatalities
5 Year Average
Fatalities
900
800
700
600
500
400
300
200
100
0
Lane Departure
Roadway Departure
Intersections
Pedestrians
Bicyclists
Motorcyclists
Work Zones
Data
Large Trucks
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018


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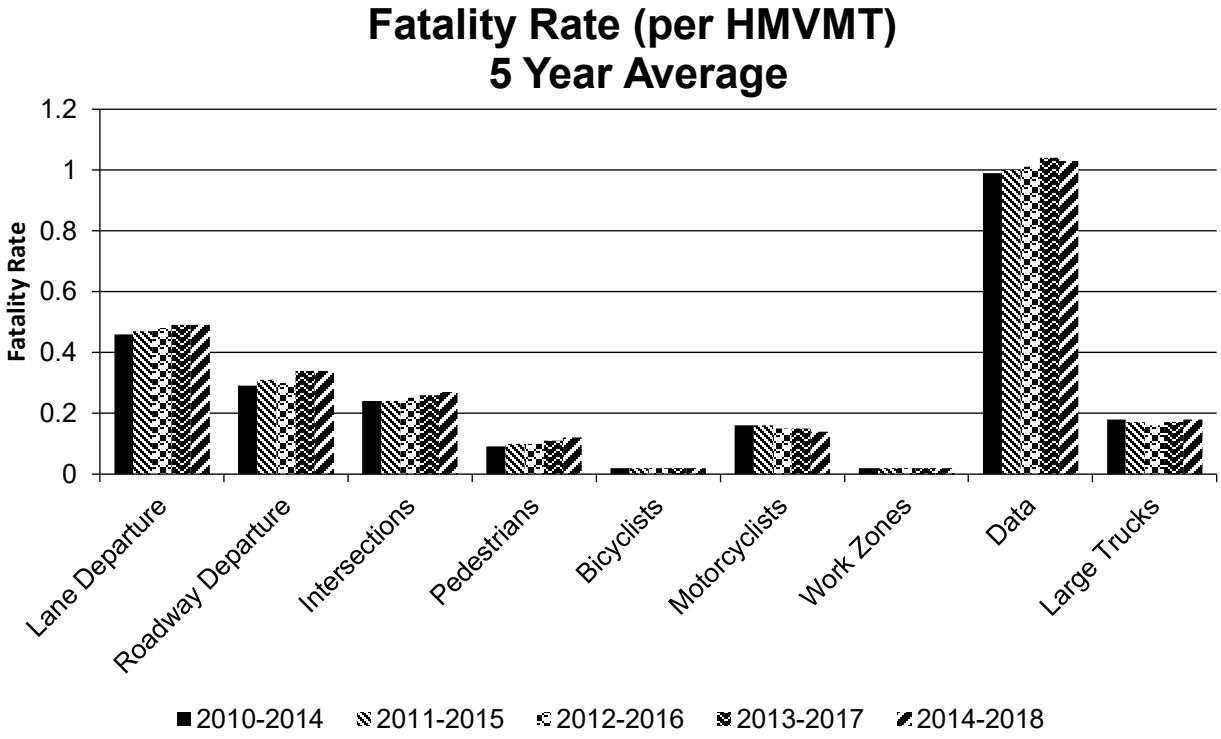
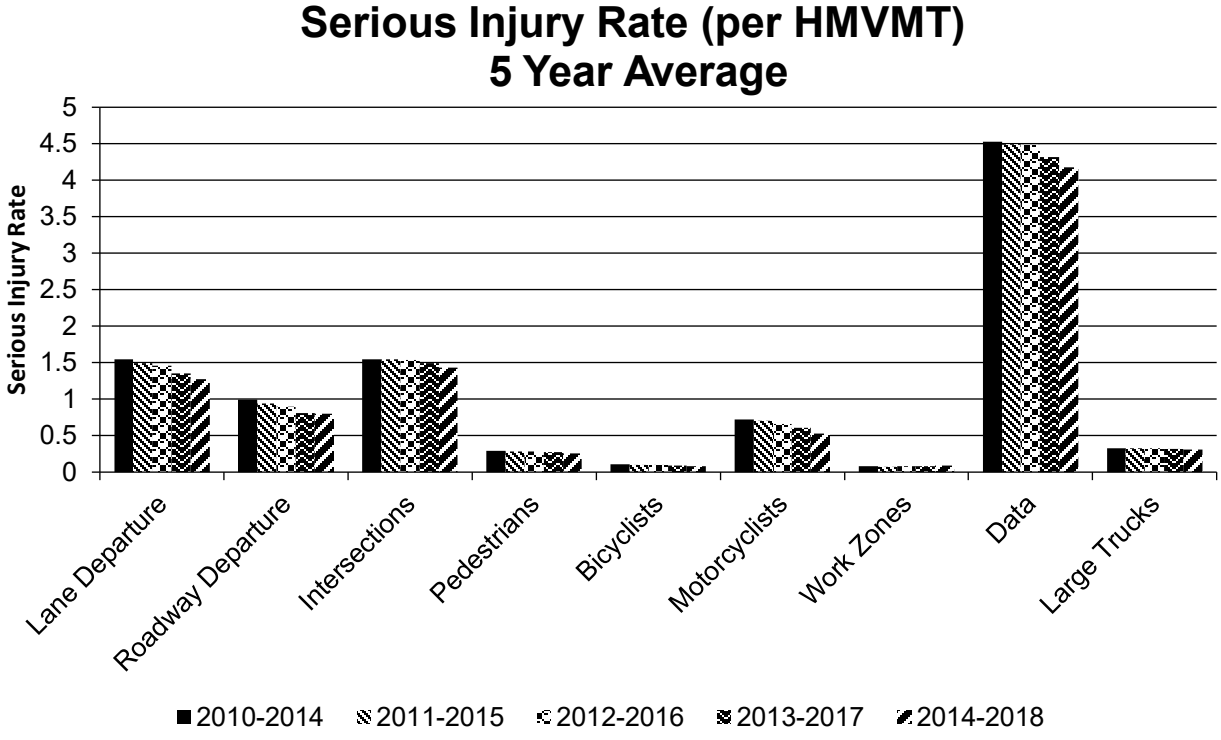
2012-2016
2013-2017
2014-2018





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

No

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)
0810159	Rural Principal Arterial (RPA) - Other	Roadway	Pavement surface - miscellaneous	308.00	237.00	2.00		8.00	23.00	49.00	19.00	367.00	279.00	0.789473684210526
1400212	Rural Local Road or Street	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	432.00	407.00	4.00	5.00	15.00	54.00	127.00	50.00	578.00	516.00	1.14774494556765
1401308	Rural Major Collector	Roadway	Pavement surface - miscellaneous	49.00	52.00	1.00		2.00	7.00	16.00	4.00	68.00	63.00	0.672413793103448
0100445	Urban Principal Arterial (UPA) - Other	Intersection geometry	Auxiliary lanes - add right-turn lane	57.00	56.00					16.00	11.00	73.00	67.00	1.25
0810118	Rural Principal Arterial (RPA) - Other	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	461.00	408.00	1.00	1.00	10.00	41.00	80.00	45.00	552.00	495.00	0.527498323272971
0901702	Rural Major Collector	Roadway	Pavement surface - miscellaneous	37.00	56.00	3.00				3.00	4.00	43.00	60.00	4.4
1006118	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Systemic improvements - signal-controlled	31.00	106.00		1.00	7.00	21.00	11.00	15.00	49.00	143.00	0.433962264150943
1173409	Urban Major Collector	Intersection traffic control	Systemic improvements - signal-controlled	13.00	20.00				1.00	2.00		15.00	21.00	0.760869565217391
1173410	Urban Principal Arterial (UPA) - Other	Roadway	Pavement surface - miscellaneous	205.00	196.00	1.00	3.00	5.00	31.00	37.00	35.00	248.00	265.00	0.358680260549419
1173414	Rural Major Collector	Roadway	Pavement surface - miscellaneous	86.00	108.00				6.00	14.00	5.00	100.00	119.00	0.202236266407389
1173439	Urban Principal Arterial (UPA) - Other	Roadway	Pavement surface - miscellaneous	148.00	135.00	1.00		6.00	17.00	37.00	15.00	192.00	167.00	0.67627580833658
1173673	Rural Principal Arterial (RPA) - Other	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	120.00	123.00	3.00		11.00	50.00	79.00	43.00	213.00	216.00	0.511476264997392
1296260	Rural Major Collector	Intersection traffic control	Systemic improvements - signal-controlled	344.00	371.00	5.00	6.00	3.00	40.00	98.00	62.00	450.00	479.00	0.85079575596817

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)
1296268	Urban Major Collector	Intersection traffic control	Systemic improvements - signal-controlled	36.00	30.00	1.00			5.00	10.00	1.00	47.00	36.00	0.87030303030303
1296877	Rural Major Collector	Intersection traffic control	Systemic improvements - signal-controlled	193.00	362.00			11.00	51.00	52.00	29.00	256.00	442.00	0.387416398315581
1296336	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Modify traffic signal - modernization/replacement	1086.00	852.00	1.00	4.00	12.00	75.00	218.00	132.00	1317.00	1063.00	0.675765306122449
1400582	Rural Principal Arterial (RPA) - Other	Roadway	Pavement surface - miscellaneous	128.00	106.00	2.00		5.00	13.00	20.00	17.00	155.00	136.00	0.726668880770508
1296297	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Systemic improvements - signal-controlled	79.00	162.00	2.00	2.00	1.00	28.00	30.00	22.00	112.00	214.00	0.363364743737072
1401659	Rural Minor Arterial	Roadway	Roadway widening - curve	8.00	19.00			2.00	3.00	8.00	2.00	18.00	24.00	0.8915313225058
1296337	Rural Major Collector	Intersection traffic control	Modify traffic signal - modernization/replacement	20.00	16.00				3.00	3.00	4.00	23.00	23.00	0.306545690213869
1296296	Urban Major Collector	Intersection traffic control	Systemic improvements - signal-controlled	1781.00	1470.00	3.00	7.00	21.00	169.00	514.00	266.00	2319.00	1912.00	1.0168
1383068	Rural Local Road or Street	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	450.00	634.00	2.00	3.00	6.00	21.00	204.00	206.00	662.00	864.00	0.740784780023781
1383253	Urban Minor Arterial	Roadway	Roadway - other	101.00	160.00			5.00	30.00	28.00	11.00	134.00	201.00	0.344503710575139
1296912	Rural Minor Arterial	Roadway	Roadway - other	514.00	621.00	16.00	12.00	49.00	184.00	205.00	95.00	784.00	912.00	0.415940033654582
1296921	Rural Major Collector	Roadway	Rumble strips - edge or shoulder	65.00	74.00			5.00	7.00	30.00	32.00	100.00	113.00	0.846130221130221
1296934	Rural Major Collector	Roadway	Rumble strips - edge or shoulder	70.00	69.00	3.00	1.00	3.00	15.00	31.00	6.00	107.00	91.00	0.590068525298038
1382687	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Systemic improvements - signal-controlled	20.00	38.00				12.00	3.00	3.00	23.00	53.00	0.225806451612903
1296334	Rural Minor Arterial	Roadway	Rumble strips - edge or shoulder	10.00	6.00			1.00	2.00	5.00	1.00	16.00	9.00	0.861127956337174
1382688	Urban Principal	Intersection traffic control	Systemic improvements - signal-controlled	106.00	85.00		1.00		8.00	21.00	8.00	127.00	102.00	0.981753674607197

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)
	Arterial (UPA) - Other													
1382689	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Systemic improvements - signal-controlled	45.00	60.00	1.00		6.00	9.00	6.00	7.00	58.00	76.00	0.858695652173913
1382690	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Systemic improvements - signal-controlled	36.00	40.00			5.00	16.00	8.00	2.00	49.00	58.00	0.721033210332103
1382691	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Systemic improvements - signal-controlled	19.00	37.00			1.00	6.00	9.00	9.00	29.00	52.00	0.742092457420925
1383101	Urban Local Road or Street	Railroad grade crossings	Railroad grade crossing gates											1
1382692	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Systemic improvements - signal-controlled	19.00	32.00			2.00	10.00	4.00	9.00	25.00	51.00	0.45299727520436
1382693	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Systemic improvements - signal-controlled	30.00	27.00			5.00	7.00	2.00	1.00	37.00	35.00	0.990496304118268
1383254	Urban Local Road or Street	Roadside	Barrier- metal	10.00	7.00					3.00	1.00	13.00	8.00	1.69230769230769
1401012	Rural Principal Arterial (RPA) - Interstate	Roadway	Pavement surface - miscellaneous	975.00	928.00	8.00	8.00	14.00	3.00	127.00	40.00	1124.00	979.00	1.82974594213126
1401166	Urban Minor Arterial	Roadway	Pavement surface - miscellaneous	37.00	46.00			2.00	8.00	12.00	5.00	51.00	59.00	0.610586011342155
1401172	Urban Principal Arterial (UPA) - Interstate	Roadway signs and traffic control	Roadway signs and traffic control - other	1507.00	1932.00	6.00	6.00	24.00	139.00	253.00	117.00	1790.00	2194.00	0.445702465842905
1401174	Rural Major Collector	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	13.00	15.00					1.00		14.00	15.00	1.29807692307692
1173396	Urban Local Road or Street	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	250.00	234.00	2.00		2.00	24.00	32.00	7.00	286.00	265.00	0.437508866505887

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)
1173467	Urban Minor Collector	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	103.00	130.00	1.00	1.00	6.00	21.00	69.00	10.00	179.00	162.00	0.660776160776161
1382938	Urban Local Road or Street	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	1850.00	2509.00	6.00	4.00	42.00	134.00	288.00	256.00	2186.00	2903.00	0.613512006772522
1383061	Urban Local Road or Street	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	999.00	1406.00	4.00	4.00	40.00	142.00	196.00	152.00	1239.00	1704.00	0.422344842460952
1383188	Urban Local Road or Street	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	8920.00	11098.00	11.00	21.00	154.00	43.00	1248.00	742.00	10333.00	11904.00	1.410980136232
1400869	Urban Local Road or Street	Roadway signs and traffic control	Roadway signs and traffic control - other	250.00	323.00	2.00	3.00	11.00	27.00	27.00	7.00	290.00	360.00	0.573244895386942
1400970	Urban Local Road or Street	Pedestrians and bicyclists	Pedestrian signal - modify existing	28.00	56.00	15.00	13.00	58.00	137.00	183.00	79.00	284.00	285.00	0.589702296569322
1296267	Urban Local Road or Street	Intersection traffic control	Systemic improvements - signal-controlled	230.00	168.00	1.00	1.00	10.00	3.00	68.00	58.00	309.00	230.00	1.54195323246217
1172182	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Systemic improvements - signal-controlled	227.00	247.00		1.00	5.00	3.00	55.00	70.00	287.00	321.00	0.964912280701754

In general the implementation of projects result in a reduced risk for fatalities and in most cases serious injuries as well. This isn't always apparent in the naïve cost effectiveness analysis of serious injury counts due to the reclassification of incapacitating injuries that took place in 2014. Due to the need to use incapacitating injuries in the cost effectiveness MOE results tend to be skewed toward lower post construction cost savings. This issue will resolve as data from the new ARIES 6.0 officer reporting software replaces incapacitating injuries with type "A" serious injury crash data.

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

The combined efforts of Indiana's engineering, education, law enforcement, and emergency medical communities all contribute to the goal of overall decline in serious crash outcomes. However, in recent years, national and regional trends of larger total crash counts have occurred. High employment rates have remained strong over the last several years and has been a major factor influencing fatal and serious injury crash occurrence in that time frame.

The extent of contribution by HSIP projects to overall statewide traffic safety outcomes is difficult to quantify with available data sources and analysis capabilities, but it's likely that safety programs are a factor influencing the frequency of severe crash outcomes. Fatal and injury crash trends experienced a somewhat consistent downward trend between the start of SAFETEA-LU in 2005 and continuing through 2008 before experiencing a large drop in 2009 at the same time as VMT estimates declined. From year 2010 through 2014, the downward trend resumed until strong growth in estimated VMT and serious crashes occurred in 2015 through the first half of 2018. After that time the growth rate of serious outcome crashes slowed along with growth in VMT.

The number of reported motor vehicle crash fatalities spiked to 914 in calendar year 2017 but then declined to 880 in 2018, which represents a decrease of 3.72%. The incidence of suspected serious injuries in most of the monitored emphasis areas decreased by 5.25% in calendar year 2018 compared to 2017, however, the early estimate for 2018 vehicle miles of travel shows an increase of 1.1% from 2017 to 2018. This shift in crash severity is difficult to explain on the basis of employment rate which remains strong.

Note that part of the 2017 spike in fatalities is attributable motorcycle riders. The weather conditions in winter/spring of 2018 experienced more wet days compared to 2017 making travel by motorcycle less attractive.

The resulting rate of crashes with fatality per million vehicle miles of travel decreased by 4.8%. Due to the estimated VMT, the rate of serious crashes involving probable class A injury outcomes decreased by 7.7%. While recent decreases in serious injuries and fatalities are encouraging, INDOT seeks to continue the downward trend by increasing the number and variety of systemic safety programs applicable to both state and local roads.

Compliance Assessment

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

03/01/2016

What are the years being covered by the current SHSP?

From: 2016 To: 2020

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

2021

Due to different fiscal year end dates, the current SHSP applies to state fiscal years 2017 through 2021.

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							100		100
	Route Number (8)	100									
	Route/Street Name (9)	100									
	Federal Aid/Route Type (21)	100									
	Rural/Urban Designation (20)	100							100		
	Surface Type (23)	100							20		
	Begin Point Segment Descriptor (10)	100							100		100
	End Point Segment Descriptor (11)	100							100		100
	Segment Length (13)	100									
	Direction of Inventory (18)	100									
	Functional Class (19)	100							100		100
	Median Type (54)	100									
	Access Control (22)	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	
	One/Two Way Operations (91)	100									
	Number of Through Lanes (31)	100							20		
	Average Annual Daily Traffic (79)	100							50		
	AADT Year (80)	100									
	Type of Governmental Ownership (4)	100							100		100
INTERSECTION	Unique Junction Identifier (120)			100							
	Location Identifier for Road 1 Crossing Point (122)			100							
	Location Identifier for Road 2 Crossing Point (123)			100							
	Intersection/Junction Geometry (126)			100							
	Intersection/Junction Traffic Control (131)										
	AADT for Each Intersecting Road (79)			100							
	AADT Year (80)			100							
	Unique Approach Identifier (139)			100							
INTERCHANGE/RAMP	Unique Interchange Identifier (178)					100					
	Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100					
	Location Identifier for Roadway at Ending Ramp Terminal (201)					100					
	Ramp Length (187)					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					
	Roadway Type at End Ramp Terminal (199)					100					
	Interchange Type (182)					100					
	Ramp AADT (191)					100					
	Year of Ramp AADT (192)					100					
	Functional Class (19)					100					
	Type of Governmental Ownership (4)					100					
Totals (Average Percent Complete):		**100.00**	**0.00**	**87.50**	**0.00**	**100.00**	**0.00**	**0.00**	**76.67**	**0.00**	**100.00**

*Based on Functional Classification

No change in data collection strategy or percentages have been reported by the INDOT Planning Inventory Office in FFY 2019.

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.

For the Non-Local Paved road requirements, INDOT currently maintains all MIRE Required Elements as part of the annual HPMS report.

For the Local Paved Roads requirements, INDOT has full coverage of most required elements with the exception of Surface Type and in some cases Lane Count. A new funding program created through Indiana House Bill 1002 that has recently been passed that allocates funding utilized by Local Technical Assistance Program (LTAP) to create and maintain road data for Local Government Agencies. The plan is to leverage this effort to fill in gaps in coverage on local roads for any fully or partially missing elements.

Unpaved Roads are currently not identified in INDOT’s inventory data system. However, route information such as Route Identifier, Beginning Measure, End Measure, Functional Class and Type of Government Ownership are present and accounted for in the current data system. Once Surface Type data form local agencies is incorporated, as described above, unpaved roads will be identified in the inventory system.

INDOT currently has the data to support the creation of data elements for the Intersections of

Non-Local Paved Roads. The Road Inventory Office is currently acquiring spatial analysis software that will automate the creating and management of Intersection Geometries and supporting data.

INDOT has data to support the creation of data elements for the Interchanges\Ramps on Non-Local Paved Roads. Information can be created using the same planned software tools acquisition to be used for managing intersections and Interchanges/Ramps. Other data requirements will need to be determined once the spatial analysis tool is operational. If there is a need for additional data that can’t be extracted using those tools, new geoprocessing tools will have to be created by INDOT to meet the requirements.

An official representative\authority to manage all MIRE FDE requirements has not yet been named, however an ad-hoc committee containing representatives from the Technical Services Division, Road Inventory Office, Management Information Systems Division, Traffic Engineering Division - Office of Traffic Safety, will deliberate the necessary lines of authority.

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

No

The last HSIP program assessment took place in FY 2017, The event took place in December of 2016 as a peer-program assessment of Indiana's HSIP conducted with FHWA engineers from the Headquarters' Office of Safety and three peer states. The peer team reviewed Indiana's guiding HSIP documents. The FHWA Peer-Program Review Team visited Indianapolis to interview the numerous offices that contribute to the highway safety program in Indiana. Details of the program assessment are contained in the Indian HSIP Peer-Program Review document dated February 10, 2017.

The purpose of the review was to allow an outside look of Indiana's HSIP and determine:

1) Noteworthy Practices, and

2) Opportunities for Improvements.

As with most any review activity, the intent of the review was to not only fulfill the requirement of a law, regulation, or oversight document, in this case FHWA's National Program Stewardship and Oversight Plan, but, more importantly, to provide the State DOT with an objective appraisal of its HSIP and identify strengths and areas for improvement.

During the peer-program review, the team identified several practices and procedures in which INDOT exceled. These areas include:

Development of timely crash data and statistically-based data analysis tools.

Communication and coordination with safety partners (e.g. LTAP, ICJI, MPOs, Districts)

Consistent, up-to-date crash facts published weekly via the Crash Snapshot

Emphasis on systemic projects types

Development of a 5-year program of projects

The program assessment team also noted some areas in which further development could improve the effectiveness of the HSIP in Indiana. These areas can be summarized into the following:

Documentation – Develop a combined HSIP Manual and Procedures document

Data – Continue to upgrade crash reporting tools, quality assurance and MIRE FDE data

Local Road Safety – Improve call procedures and administration of local projects

Funding – Strategies to address rising balances of apportioned safety funds

Safety Performance Targets – Methodology to set Safety Performance Targets.
(Task Completed before July 1, 2017)

Details of these findings can be seen in the sections titled Noteworthy Practices and Opportunities for Improvement.

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

2021

Optional Attachments

Program Structure:

Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

Glossary

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

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

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

HMVMT: means hundred million vehicle miles traveled.

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

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

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

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

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

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

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

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

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