ILLINOIS DEPARTMENT OF TRANSPORTATION – HIGHWAY SAFETY IMPROVEMENT PROGRAM GUIDELINES

HIGHWAY SAFETY

IMPROVEMENT PROGRAM GUIDELINES

Illinois Department of Transportation

Highway Safety Improvement Program (HSIP)
Guidelines

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Introduction

The 2021 federal bill reauthorizing surface transportation funding, titled “Infrastructure Investment and Jobs Act (IIJA) continues to support the core federal-aid funding program entitled “Highway Safety Improvement Program” (HSIP) with the purpose of achieving a significant reduction in traffic fatalities and serious injuries for all roadway users on all public roads. (References: IIJA Section 11111 and 23 U.S.C. Sections: 148 and 130).

In accordance with HSIP Policy X, this document outlines Departmental roles within the Illinois Department of Transportation (IDOT)’s, IDOT’s Bureau of Safety Programs and Engineering (BSPE), responsibilities and activities necessary to implement the HSIP to meet the requirements and intent of the legislation.

This document was last updated on April 25, 2025.

Document Control and Revision History

The Highway Safety Improvement Program (HSIP) Guidelines is reviewed during use or adequacy and updated by the Office of Highway Project Implementation/Bureau of Safety Programs and Engineering as necessary to reflect current policy. The approval process for changes to this manual is conducted in accordance with the document control standards outlined in Departmental Order 01-01: Policy Administration Program and in this manual.

This manual is intended to be used electronically as it includes hyperlinks within and resources external to the document. Portable Document Format (PDF) has been selected as the primary distribution format, and the official version of the manual is available on the PowerDMS Policy Center.

The information contained in this manual is current as the date of issuance. Employees are responsible for ensuring use of the most current version of any document. All current policy documents are available on the PowerDMS Policy Center.

Date	Description	Approval
4/24/25	Updated outdated Guidelines from all chapters	Seck-Birhame

Chapter 1: Overview

Illinois' HSIP is intended to be consistent with Federal Highway Administration's (FHWA) regulatory safety requirements. Those requirements are to produce a measurable and significant reduction in fatalities and serious injuries resulting from crashes on the highway system in Illinois. The highway system includes all roadways regardless of jurisdiction or ownership. Illinois' HSIP Guidelines shall be updated as needed to remain current with federal and state legislation. If no legislation has been passed within five years of the last update, the HSIP Guidelines shall be reviewed and updated.

Current legislation requires each State to develop, implement, and update a State Strategic Highway Safety Plan (SHSP) in order to obligate funds for 23 U.S.C. 148 eligible activities. The SHSP is a statewide, coordinated, integrated safety plan that provides a comprehensive framework (4E's: Engineering, Enforcement, Education, and Emergency Medical Services) for reducing highway fatalities and serious injuries and establishes statewide goals, objectives, and key emphasis areas. Illinois updated its SHSP (Illinois SHSP, https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/transportation-system/manuals-guides-and-handbooks/safety/strategic-highway-safety-plan-2022.pdf) in 2022. The 2022 Illinois SHSP continues Illinois' commitment to eliminating fatalities and serious injuries for all roadway users—including vulnerable roadway users (VRUs) in Illinois. The Illinois SHSP includes specific emphasis areas based on a statewide evaluation of highway safety problems and suggests strategies considered appropriate for Illinois to address these problems.

The 2022 Illinois SHSP also embraces the Safe System Approach (SSA) to aid Illinois in achieving its goal of zero fatalities and serious injuries. The SSA recognizes that humans make mistakes, but dying or suffering serious injuries as a result of those mistakes is unacceptable. Furthermore, safety is proactive, and responsibility is shared among roadway users, roadway owners, government at all levels, industry, as well as others. SSA focuses on infrastructure, human behavior, vehicle design, roadway speeds, and emergency response care.

The Illinois SHSP will be re-evaluated and updated every five years as required by federal legislation to reflect advances in knowledge, progress toward accomplishing individual emphasis area objectives, and to address emerging safety concerns within Illinois. The Illinois SHSP should therefore be used as a guide in the development of each District's and local agency's safety program and the overall state safety program. IDOT encourages and will provide assistance to counties, municipal and local agencies in developing county and municipalities safety action plans. The development process for local agencies' safety action plans should include data analysis and safety workshops to involve the local safety partners in the challenge of reducing highway-related fatalities and serious injuries.

The Illinois Department of Transportation inherently has a safety focus. IDOT's policies and standards reflect best practices regarding safety. Examples include incorporation of guardrail in a design, intersection channelization, signing and pavement markings or other similar elements. Complying with policies and standards which are in place for new construction, reconstruction or maintenance is not an acceptable use of HSIP funds. Appropriate use of HSIP funds is only for locations or corridors where a known, 'substantive safety' solution exists outside normal design standards or funding policy. Substantive Safety is a specific project action that, can with confidence, produce a measurable and significant reduction in fatalities or serious injuries. To achieve the maximum benefit, the focus of the HSIP program is on cost effective use of the funds allocated for safety improvements. Priority is typically given to projects having higher total number of fatalities and serious injuries affected. Systemic projects with low or no fatalities and serious injuries are still eligible for HSIP funding if they are incorporating a systemic approach to safety by addressing locations with identified features known to result in fatal and serious injury crashes with the appropriate countermeasure which targets those features.

Allocation of Federal HSIP Funds

Appendix A illustrates the typical funding allocation process for the Federal HSIP program. Federal HSIP funds are apportioned to the State of Illinois with a set-aside for the Railway-Highway Grade Crossing Program (RHCP). This fund is distributed into components for the State and Local programs. HSIP funds remaining after the set-aside will be distributed between State and Local roads for highway safety improvements.

IIJA requires states to set targets for the number and rate of serious injuries and fatalities and the number per vehicle mile of travel. If a state fails to make progress toward its safety targets, it will have to devote a certain portion of its formula obligation limitation to the safety program and submit an annual implementation plan on how the state will make progress to meet performance targets.

States are also required to incorporate strategies focused on older drivers and pedestrians over the age of 65, high-risk rural roads, and vulnerable roadway users.

Railway-Highway Grade Crossing Fund

This program is a set-aside of the federal HSIP funds to reduce the number of fatalities and serious injuries at public railway-highway grade crossings through the elimination of hazards and/or the installation/upgrade of protective devices at crossings.

Illinois is required to conduct and systematically maintain an inventory of all railway-highway grade crossings that may require separation, relocation, or protective devices, and to establish and implement a schedule of projects for this purpose. At a minimum, this schedule is to provide signs for all railway-highway grade crossings. (Reference: 23 U.S.C. 130 (d))

Railway-Highway Grade Crossing funds can be used for the elimination of hazards, the installation of protective devices at railway-highway grade crossings, the replacement of functionally obsolete warning devices, projects to reduce pedestrian fatalities and injuries from trespassing at grade crossings, and incentive payments for at-grade crossing closures. In addition, up to eight percent of the funds apportioned may be used for compilation and analysis of data for the required annual report to the U. S. Secretary of Transportation on the progress being made to implement the HSIP – Railway-Highway Grade Crossing Program. A railroad participating in an HSIP – Railway-Highway Grade Crossing project is responsible for compensating the Department for the net benefit to the railroad of the project. The net benefit to the railroad is determined by the U.S. Secretary of Transportation and may not exceed 10 percent of the project cost.

The Department currently allocates 40 percent of the HSIP – Railway-Highway Grade Crossing funds to projects on the State system and 60 percent to projects on the Local system. This allocation is subject to change based on system needs. The Federal share for this program is up to 100 percent. (23 USC Section 130).

Prioritized HSIP – Railway-Highway Grade Crossing project candidates shall be submitted annually to BSPE on/before the date set by the Highway – Railway Safety Engineer.

High-Risk Rural Roads (HRRR) Penalty

Although MAP-21 eliminated the requirement for every state to set aside funds for High-Risk Rural Roads, current legislation continues to require states to obligate HSIP funds for this purpose if the fatality rate on such roads increases over the most recent 2-year period for which data are available (Reference 23 USC 148 (g)(1)). High risk rural roads are defined as roadways functionally classified as rural major or minor collectors or rural local roads with a fatal or serious/A-injury crash rate above the statewide average for those functional classes of roadways; or likely to experience an increase in traffic volume that leads to a crash rate exceeding

the statewide average rate. Illinois shall comply with the required obligation of funds to the HRRR program as instructed. (Reference 23 U.S.C. 148(g)(1)).

Vulnerable Roadway Users (VRU) Penalty

IIJA introduced a new Special Rule for Vulnerable Roadway Users (VRUs). VRUs are defined as "a nonmotorist—'(A) with a fatality analysis reporting system person attribute code that is included in the definition of the term 'number of non-motorized fatalities' in section 490.205 of title 23, Code of Federal Regulations (or successor regulations); or '(B) described in the term 'number of non-motorized serious injuries' in that section." (Reference 23 U.S.C. 148(a)(15)). The Special Rule states if VRUs account for 15 percent or more of a State's total annual fatalities, then the State shall obligate no less than 15 percent of their HSIP funding the following fiscal year. (Reference 23 U.S.C. 148 (g)(3)).

To further address VRU safety, IDOT has completed its VRU Assessment and a VRU Dashboard which can be viewed online.

VRU Assessment: Illinois Vulnerable Road User Assessment 2023

VRU Dashboard: Illinois Vulnerable Road Users

VRU projects should have the VRU costs broken out unless the entire project is VRU focused.

HSIP Road Fund

The Department has determined that the total HSIP – Road apportionment to Illinois shall be split 70 percent to the HSIP – State Road Program and 30 percent to the HSIP – Local Road Program. However, a review of the fatalities and serious injuries will be routinely performed to determine the most beneficial and fiscally responsible split of the funding. Flexibility should be invoked to appropriately proportion the funding and to account for systemic improvements. A systemic approach is the most effective approach to drive local fatalities down.

Road funds for the HSIP – State Road Program will have a portion allocated as statewide line items for BSPE led initiative projects, project-related engineering, construction and operational safety improvements to be administered by the BSPE. The remaining State funds will be allocated to each District using a 5-year average of fatal crashes on the State system as the basis for proportioning.

Road funds for the HSIP – Local Road Program will be administered by the Bureau of Local Roads and Streets (BLRS) in conjunction with the BSPE.

Chapter 2: Data Management

Implementation of Illinois' SHSP and HSIP requires the assembly, review and use of data describing the safety performance of the highway system in the state. Data from various sources have to be compiled and linked to identify high severity crash locations or corridors of interest in order to develop projects that will be addressed by the HSIP. At least five years of historic crash data should be used to identify crash patterns and safety project locations.

IDOT's Office of Planning and Programming (OPP) maintains the Illinois Roadway Inventory System (IRIS) database, which provides detailed roadway information on all roadway segments, spot locations, and railway-highway grade crossings. OPP also collects, maintains, and distributes crash data that is compiled from crash reports on a continuous basis in the Bureau of Data Collection. The Crash Information System (CIS) contains crash data from 2004 to present. The crash database in conjunction with the IRIS data is the underlying information used to identify projects for the HSIP. CIS and IRIS are pulled together through Safety Portal to provide users preformatted reports and the ability to perform ad-hoc reporting. Crash data is also available to view and query in GIS.

In addition to the previously mentioned resources, BSPE is also open to new tools and resources to improve network screening, project selection, site evaluation and overall performance of the HSIP program that might not be mentioned here.

Developing an effective statewide program will be a collaborative and integrated effort. The BSPE is responsible for developing, implementing, and maintaining the Illinois SHSP, guiding the efforts of the Illinois SHSP into the HSIP. The HSIP will rely on the SHSP for guidance as new strategies and/or emphasis areas are identified or updated. Both at the State and Local level, the engineering communities are also encouraged to work with their law enforcement partners to identify locations and contributing factors of severe crashes.

Data Types

To assist with safety needs identification, the following resources are available. A full list of the resources mentioned in this document can be found in Appendix D.

- Safety Tiers: Safety Tiers: The 2024 Safety Tiers classified locations as either High, Medium, or Low based on their crash data and potential for safety improvement. The Safety Tiers are available for both segments and intersections on the State and Local roadway system.

- Crash Characteristics Overrepresentation Flags (CCOF) are included in the Safety Tiers. CCOF flags indicate if a crash type or crash characteristic is overrepresented for a location. A location is flagged if the proportion of that crash characteristic is higher than the average proportion of that crash characteristic for the peer group and that difference is statically significant at 85% confidence. Flags are provided over 5-year crash intervals so repeating patterns could be observed as well. For example, an intersection might have a Low Safety Tier, but be flagged as having angle and turning crashes overrepresented implying it might be a matter of when a severe crash occurs and not if one will occur, if countermeasures are not implemented. BSPE has used CCOF for this purpose as part of its Intersection Initiative which identified intersections throughout the state with a high number of overrepresented angle and turning crashes and expects to continue similar initiatives in the future.

- Emphasis Area Tables: Emphasis Area Tables provide a comparison of state system versus local system crash frequency in one particular county. These tables also allow the comparison of Illinois crash frequency to county frequency on both state and local systems. Behavioral and infrastructural categories may show overrepresentation on a particular system.

- GIS: Geographic Information System software is a versatile tool that allows countless crash data display possibilities for a more in-depth crash analysis. Crash data layers can be queried and arranged in many ways to show crash types, crash severities, and crash locations. Crash analysis can be highlighted to show contributing factors such as vehicle one and vehicle two maneuvers, direction, roadway conditions, and lighting and time of day. Causation of crashes may be analyzed in depth that Crash Modification Factors (CMF) statistics lack. IDOT has layers for crash data and Safety Tiers as well as support for ArcGIS Online for IDOT staff.

- Run Off the Road Initiative (RORI) Tool: The RORI tool was developed to aid local agencies in identifying rural two-lane roads in need of safety improvements for run off the road crashes. Selected safety treatments included centerline/shoulder rumble strips, pavement markings, raised reflective centerline pavement markings, add paved should, curve delineation, high friction surface treatment, installing lighting and overhead beacons. Roadway segments were classified as Very High, High, Medium, and Low based on their crash data. Local agencies and/or consultants working on behalf of local agencies may contact BSPE for a link or access the link via Safety Portal.

- Top Curves with Safety Improvement Potential Report: Design speeds for different radii of curves and road geometry, along with other factors such as adverse weather, surface conditions, and lighting may disrupt the driver's expectancy and comfort level. Considering the need to focus on critical curves in terms of preventive countermeasures to reduce the frequency of serious injury crashes, particularly fatal (K), incapacitating injury (A-Injury), and non-incapacitating injury (B-Injury), curves were investigated with KAB injury crashes from the detailed crash reports submitted to IDOT by law enforcement.

  The report identified 100 curves in each of IDOT's nine districts on both state and local routes to help safety professionals prioritize the curves by determining which have the greatest safety improvement potential. There are many low-cost safety improvements to consider for implementation. Implementation of proven countermeasures such as chevrons, advance signing, lighting, paved shoulders and rumble strips can be considered to help road users negotiate curves and to reduce the frequency and severity of crashes on curves in Illinois which could be applied systemically. Options for spot treatment include, but are not limited to widening the shoulder, installing shoulder and centerline rumble strips, and improving pavement friction.

- Intersection Initiative: In 2023, BSPE implemented its Intersection Initiative based on the Safety Tiers in which all nine IDOT districts were given a list of identified rural minor stop-controlled and urban signalized intersections which had left-turn crashes overrepresented as a crash type. Each district was notified they would receive additional funding to address the locations. Local intersections were identified in a separate analysis. While those locations are not guaranteed funding, applications submitted for those locations can include the initiative identification in the narrative portion for the HSIP Committee.

- Crash Data: All nine IDOT Districts should have access to their own crash data. Local agencies, or consultants working on behalf of local agencies, can request access to crash data through the Safety Portal. Local agencies may also work with their local law enforcement to obtain and compile crash information, identify systematic problems or locations of severe crashes, determine contributing factors to the severe crash locations or system, and identify integrated strategies to address fatal and severe injury crashes that occur on the local roadway system. Only crash data which matches IDOT crash data for a location shall be included in HSIP benefit/cost tool. Additional, non- IDOT crash data may be included in the project narrative portion of the HSIP application.

Districts have access to these resources through the shared District Data folder. Access to the folder is available upon request to DOT.SHSP@Illinois.gov.

Local agencies and consultants working on behalf of local agencies can access through the Safety Portal. Access can be requested here: https://webapps1.dot.illinois.gov/SafetyPortal/.

IDOT does have some GIS crash data available to the public: https://gis-idot.opendata.arcgis.com/search?groupIds=6d2862031a6d47c7a8c211e38e423e05.

If additional data is needed, the Bureau of Data Collection can be contacted at DOT.DTS.DataRequests@illinois.gov. Requests should be as specific as possible including date range, location, and what the data will be used for.

This is not an exhaustive list of all the resources BSPE currently has or will have in the future. District staff can access the tools and resources either on Safety Portal, or in the BSPE shared district folder. If they need access to the folder, they can contact DOT.SHSP@Illinois.gov for assistance. Local agencies or consultants working on behalf of local agencies can access the Safety Portal or contact DOT.SHSP@illinois.gov for assistance.

HSIP Site

The IDOT Bureau of Information Processing (BIP) oversees the HSIP Site to which all HSIP applications must be submitted to in order to be considered for approval. Access to the site is restricted but will be provided to HSIP Committee members to review projects and select District staff to submit projects. Requests to the site can be emailed to the current BSPE Safety Policies and Initiatives Engineer, the current BSPE Safety Design Unit Chief, or DOT.SHSP@illinois.gov. Submitted requests will then be reviewed and if the requestor is deemed eligible to access the HSIP Site, permission will be granted.

Additionally, IDOT has an external HSIP webpage which houses guidance and tools for local agencies: https://idot.illinois.gov/transportation-system/local-transportation-partners/county-engineers-and-local-public-agencies/funding-programs/hsip.html. This is where the HSIP application form, BSPE-HS1, can be viewed at https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/idot-forms/bse/bspe-hs1.pdf. The instructions for the BSPE-HS1 can be found on IDOT's Highway Safety Improvement Program webpage as well.

The current HSIP Site was launched in July 2024. HSIP applications submitted prior to that date can be viewed on an archived site available upon request.

Chapter 3: Selection of HSIP Candidate Projects

In order to achieve the requirements, set forth by current legislation and the Illinois SHSP, opportunities to produce a measurable and significant reduction in fatalities and serious injuries resulting from crashes on the highway system need to be incorporated into the program planning process. The Safety Tiers, Emphasis Area Tables, Top 100 Curves, GIS, RORI Tool and Intersection Initiative will assist in this effort.

The BSPE will assist the districts in identifying problem areas and developing cost-effective strategies for implementation. Such assistance will include but are not limited to, development and distribution of the Safety Tiers, Emphasis Area Tables and Intersection Initiative. The BSPE will also provide lists and summaries of effective engineering countermeasures and methods for evaluating the cost-effectiveness of countermeasures. In addition, the BSPE will also provide assistance in interpretation of data and information in the district's efforts.

Districts may request a Road Safety Assessment (RSA) or Road Safety Review (RSR) for assistance with. BSPE will review requests and make recommendations based on pertinent data. Districts are responsible for development of their recommended projects eligible for HSIP funding according to these guidelines. The BSPE will also identify system-wide safety improvements for certain Illinois SHSP emphasis areas to be implemented by Districts for State highways.

District Submittal Process

Each District shall establish and maintain a District Safety Committee consisting of a minimum of 4 District personnel which meet a minimum of twice a year. The District Safety Committee members may include by are not limited to staff from Operations, Geometrics, Programming and Planning, and/or Studies and Plans such as the Programming Engineer, Studies and Plans Engineer, Geometrics Engineer, Operations Design Engineer, and Traffic Engineer. Each District shall provide an updated list of their current HSIP Committee members and meeting dates to BSPE annually.

The District Safety Committee is encouraged to coordinate with the law enforcement community (state and local) on a regular basis to identify severe crash locations, behavioral and engineering related contributing factors, and opportunities to provide integrated solutions to address the severe crash location. A part of the Safety Committee duties is to evaluate and screen BSPE produced guidance and tools such as the Safety Tiers, and Top 100 Curves list and document their recommendations short and long term with the BSPE. These locations have the greatest potential of meeting HSIP goals and should be evaluated first prior to submittal of HSIP applications of less crash severity history. Additionally, the BSPE may provide other lists as part of initiatives (such as the Intersection Initiative) for the districts to evaluate and provide responses to.

Selected candidate projects shall be data driven and developed from:

- Materials (maps, crash data, screening lists) provided by the BSPE
- District documentation of existing high severity crash conditions, and Corridor/system wide crash trends
- Documentation provided by BSPE to assist in identifying project location and/or scope (RSA/RSR results, Initiative list, etc.)

Districts should contact the BSPE to ensure they are utilizing all of the available data and pertinent information as they initiate project selection. Districts are encouraged to supplement their submittals with additional safety related data and information. Districts shall maintain a focus on addressing fatal and serious injury crashes in the use of all supplementary data or information.

Districts will analyze candidate HSIP projects to determine the appropriateness of an engineering solution. Site-specific knowledge of conditions and engineering feasibility are critical elements of this analysis. Fatalities and serious injuries are infrequent compared to all other crashes; therefore, five years of the most current and finalized crash data should be used for the analysis in order to better understand the crash trends and assure that selected sites are truly significant risk locations. Previous years of crash data should not be included in the analysis but can be included in the narrative of the HSIP project if the data demonstrates a pattern of crashes relevant to the proposed countermeasure.

The Highway Safety Manual (HSM) is another tool that can assist with evaluating safety projects. The HSM emphasizes the use of analytical methods to quantify the safety effects of decisions in planning, design, operations, and maintenance. The HSM provides a method to quantify changes in crash frequency (predictive methods). These predictive methods rely on Safety Performance Functions (SPFs) to predict crashes. IDOT has developed state specific SPF's for Illinois which are applied in IDOT's HSM Crash Prediction Tool. This expected change in crash frequency of different design alternatives can be compared. The HSM also has a catalog of crash modification factors (CMFs) for a variety of geometric and operational treatment types, backed by robust scientific evidence which can be found in IDOT's Excel Benefit/Cost Tool. The CMFs in the HSM have been star rated (1-5) to indicate the quality of the research results. The rating evaluates Design methodology, sample size, standard error, potential bias, and data source. Only studies rated 3 or higher are considered in the Benefit-to-Cost (B/C) IDOT Tool analysis, available as an Excel spreadsheet.

Once the District Safety Committee has selected a candidate project, the IDOT B/C Tool shall be completed and be submitted with a completed HSIP Application on the HSIP Site.

Local Agency Submittal Process

Projects to be considered for funding under the Local Road Program component of HSIP – Road funds will be submitted through a solicitation of candidate projects by the BLRS and the BSPE. This submittal process is typically available annually. Projects should be supported by the local agency's county SHSP, if one is available. Local agencies are also eligible for BSPE assistance in identifying problem areas and developing cost-effective strategies to be implemented. Such assistance will include but are not limited to, development and distribution of the Safety Tiers, Emphasis Area Tables, RORI, and Intersection list for locals. The BSPE will also provide lists and summaries of effective engineering countermeasures and methods for evaluating the cost-effectiveness of countermeasures.

Local agencies should use a process similar to that used by the districts. Information (maps, data, etc.) will be made available by the BSPE for use by local agencies The local agencies will be responsible for supplementing the information with their own data or field studies to provide the necessary knowledge base to perform all needed studies. The Safety Portal is also accessible to local agencies along with their BLRS District contact.

While local agencies are not required to have a Comprehensive Safety Action Plan to submit an application, they are encouraged as they are a data driven means to identify HSIP candidate projects.

Local agencies shall submit a completed IDOT B/C spreadsheet, IDOT form BSPE-HS1 (see Appendix D, Listed Reference Sheet for exact location) and supplemental documentation outlined in the annual call for projects to their IDOT District Local Roads contact, who will then submit it to the HSIP Site. Additional guidance on local submittals can be found under the Local HSIP section of IDOT's HSIP web page:

https://idot.illinois.gov/transportation-system/local-transportation-partners/county-engineers-and-local-public-agencies/funding-programs/hsip.html

RSA/RSR Requests

Districts may request a Road Safety Assessment (RSA) or Road Safety Review (RSR) for assistance with. BSPE will review requests and make recommendations based on pertinent data. Districts are responsible for development of their recommended projects eligible for HSIP funding according to these guidelines. Local agencies may also be included in BSPE-identified system-wide safety improvements for certain Illinois SHSP emphasis areas. While an RSA/RSR could assist in location and countermeasure selection, it is not required or recommended as a necessity for an HSIP application. All HSIP projects are reviewed equally.

Chapter 4: Approval Process

Appendix B describes the project selection process to be used by both Districts and local agencies. Each District and local agency submitting projects for HSIP funding, will establish priorities for HSIP project selection based on optimizing the reduction in fatal and serious injury crashes and the potential to reduce crash severity and/or frequency of severe crashes.

Non-Systemic Improvements

Non-systemic improvements may be proposed. Non-systemic safety planning is the process of evaluating specific locations for treatment through site analysis. Projects can be identified via network screening, through the BSPE initiatives, or using any of the numerous documents and safety tools the BSPE has provided as mentioned in the Data Types portion of these guidelines. To qualify as a non-systemic improvement, Districts and local agencies must:

- Employ a data-driven project selection process that focuses on traffic related fatalities and serious injuries
- Analyze the selected location(s) geometric and crash data for problem identification and contributing factors with a focus on fatal and severe injury crashes
- Apply a full range of countermeasures proven effective in reducing crashes and targeting a location(s)'s fatal and severe injury crashes contributing factors
- Focus on lower cost solutions that will enable more sites and/or mileage to be treated with the available funds
- Preferably have a benefit/cost value greater than 1 in the IDOT B/C Tool

Systemic Improvements

Systemic improvements may be proposed. Systemic safety planning is the process of evaluating an entire system using a defined set of criteria to identify candidate locations for safety investments to reduce the occurrence of and the potential for severe crashes. The systemic approach to safety is a complementary analytical technique intended to supplement the traditional site analysis approach.

The systemic approach to safety:

- Identifies an emphasis area based on systemwide data, such as rural lane departure crashes, urban pedestrian crashes, or rural unsignalized intersection crashes. These crashes are often spread across the network with few or no locations experiencing a "cluster" of crashes during a typical 3- to 5-year analysis period.
- Looks for roadway characteristics (e.g., geometry, volume, or location) frequently present in severe crashes. These characteristics, also known as risk factors, can be used to identify and prioritize locations with few or no crashes that could be potential candidates for safety investments.
- Focuses on deploying one or more low-cost countermeasures to address the underlying circumstances contributing to crashes on a majority of roads. Addressing crash types experiencing low densities (crashes per intersection or mile) but high aggregate numbers steers the decision toward low-cost solutions widely deployed across the system in order to affect a large number of locations.
- Does not require a benefit/cost value greater than 1 in the IDOT B/C Tool or a significant fatal and severe injury crash history

Additional information about systemic safety can be found in the IDOT guide, "Systemic Safety Improvements: Analysis, Guidelines, and Procedures".

Eligible HSIP Projects

HSIP candidate projects should include known countermeasures proven to reduce fatal and severe injury crashes on a roadway. Illinois' SHSP can be consulted for a list of strategies along with 23 U.S.C. Section: 148 (B). Funds can be used for Phase I, Phase II, and/or Phase III as well as for work orders pertaining to safety projects. Funds cannot be used to pay for work completed prior to submittal and approval of an HSIP application.

FHWA's Proven Safety Countermeasures (PSC) may be consulted for effective safety countermeasures: Proven Safety Countermeasures | FHWA.

Ineligible HSIP Projects

HSIP candidate projects which include countermeasures that are part of IDOT standards and/or policies are not eligible for HSIP funding unless there are extenuating circumstances. Such projects will be reviewed on a case-by-case basis in which the roadway owner must provide additional documentation to justify the project's eligibility. BSPE may encourage projects to implement new policies or options within policies, in which case the projects would be eligible for funding. In these instances, the application should include documentation from BSPE allowing for the exception.

State Projects

State HSIP project candidates may be submitted continually to BSPE. They will be reviewed monthly—typically the first Thursday of the month—by the HSIP Committee. The HSIP Committee as overseen by the BSPE, will be comprised of representatives from state and federal agencies including but not limited to the BSPE, the BDE, Bureau of Operations, and FHWA. Should a HSIP Committee member fail to attend six more meetings in a year, they shall be removed from the Committee.

Local Projects

Local HSIP project candidates are submitted annually. This program is administered by the BLRS. Typically, the Local HSIP Circular call for projects is released in spring, with award announcements released in the fall. The candidates are reviewed by the HSIP Committee as overseen by the BSPE, will be comprised of representatives from state and federal agencies including but not limited to the BSPE, the BDE, Bureau of Operations, and FHWA, along with representatives from BLRS.

Documenting and Reporting

The primary method for determining cost-effective site selection and treatment will be a benefit-to-cost estimation procedure. Applications for funding under the HSIP program must include a complete benefit-to-cost calculation according to the methodology described by the BSPE in IDOT's Excel-based B/C Tool. This methodology includes recording of site-specific crash information, fatality and injury data, application of countermeasure effectiveness, and countermeasure service life and unit cost.

All candidate project submittals and the appropriate documentation should be on the attached HSIP Candidate form BSPE-HS1 and uploaded to the HSIP site. Required documentation includes:

- Location Map of sites or sites
- Cost Estimate of work using HSIP funds
- B/C Summary using the IDOT B/C Tool

Additional appropriate documentation Includes:

- Pictures that display the crashes contributing factors that the proposed CMF will address, such as edge drop off, lack of sight distance, roadside hazards, operational deficiencies, etc.
- Excel table crash data that can be organized and filtered for specific crash analysis for the supporting CMF along with a crash analysis demonstrating how the proposed countermeasure will address the fatal and severe injury crashes.

- Documentation provided by BSPE to assist in project identification and/or proposed countermeasure (RSA/RSR results, Initiative list, etc.)
- Documentation identifying extenuating circumstances related to the crashes.
- Documentation to support a User-Defined CMF in the IDOT B/C Tool when used as opposed to CMFs provided by the tool. A CMF is a statistical study that may generalize “all crashes” within a specific sample size that may not correlate well for usage in Illinois. A thorough understanding of the crash issue and the appropriate selection of a CMF that addresses the issue should be submitted. For example, an issue that is resulting in left turn crashes should utilize a CMF that addresses left turn crashes and not all crashes.
- Should an application include fatal crashes in the analysis and the crash is not reflected in IDOT’s crash data, then the SR 1050 Crash Report shall be included in the application.
- A local agency’s Comprehensive Safety Action Plan should be included if the application be a result of the plan.

Project Approval

To meet the requirements set forth by the Illinois SHSP and current legislation, HSIP funds need to be directed to locations and improvements that can achieve the greatest impact towards reducing severe crashes. It is anticipated that applications from districts and local agencies with supporting B/C calculations will exceed available funds. Approval of projects and their inclusion in the Illinois HSIP will be on the basis of those projects which suggest improvements and countermeasures which target the location(s) fatal and severe injury crashes. Projects with a B/C ratio greater than 1 are preferred due to the crash data required for a high B/C ratio but are not required for approval. Projects may have B/C ratios less than 1 and be approved such as systemic projects which may not have substantial crash data available.

- Projects may be denied for the following reasons by the HSIP Committee and are not limited to:
- The suggested improvements do not properly address the location(s) fatal and severe injury crashes.
- The suggested improvements should be paid for by other funding sources such as operational or maintenance.
- The suggested improvements are considered ineligible due to being covered by IDOT policies and/or standards.
- The submitted CMF(s) are not applicable to the location, its crashes, and/or suggested improvement.
- Lower-cost countermeasures have not been implemented and the district/local agency road owner cannot provide sufficient justification as to why high-cost countermeasures are preferred.
- Incorrect and/or outdated data such as crash history, CMF selection, or cost were used in the IDOT B/C Tool analysis.
- The district/local agency has a history of approved projects which have not been constructed, and a surplus of funding waiting to be spent.
- In the case of projects submitted by local agencies, the proposed improvements include right-of-way of state roadways and should be submitted for State HSIP funds by the appropriate District.
- There is not sufficient funding available to approve the project.

Should a district/local agency disagree with the HSIP Committee’s decision—most likely the result of a denial—they may request a meeting with the HSIP Committee to inquire as to why the decision was made and clarify information presented in their application for reconsideration. Districts should contact the BSPE directly whereas local agencies should contact the BLRS.

Notification

All applicants will be notified by either an email or written correspondence of project approval or denial and will be kept as part of the submitted application. Applicants of projects that are denied will be provided an explanation for their exclusion from the program. This explanation may include a lack of sufficient information was provided, or a note that other projects were considered more effective in reducing fatalities and serious

injuries (per their B/C calculation) that utilized the fiscal year's HSIP allocation. Projects denied in one fiscal year may be re-submitted in subsequent years, but with the understanding that data and analyses should be updated. Notification of District approved projects will be sent to the Bureau of Programming to be included in the annual and/or Multi-Year program. Local projects will be added to the annual program when the project advances on a letting.

Projects may not necessarily be approved or denied but be returned with a request for additional information. Once the requested additional information is provided the HSIP Committee may then decide to approve or deny the project.

Copies of the approval/denial HSIP email will be sent and stored in the IDOT BSPE-maintained email: DOT.SHSP@illinois.gov for record purposes.

Chapter 5: Project Submittal

Projects may be resubmitted for approval either as completely new HSIP applications or as updates to an already approved application as denoted by a '— X' behind the project ID. Previously denied projects can only be resubmitted as new projects. All resubmittals must include updated crash data.

Reasons for project resubmittal include but are not limited to:

- Estimated project cost is higher than initially expected. Low increases such as 5% might be able to be automatically approved and not require a resubmittal, but BSPE should be consulted for a final decision.
- The project scope changes, and original scope is no longer relevant or accurate for the project.

Inquiries for local agency resubmittals should be sent to the BLRS.

Funding Extensions

Approved local projects should be obligated within two years of the award year, or funds are subject to rescission. Under certain circumstances local projects may receive a time extension, which must be approved by BLRS.

Chapter 6: Program Evaluation

HSIP project evaluation will be performed according to the requirements outlined in the Code of Federal Regulations, Title 23, Volume 1, Section 924.13. The BSPE will coordinate with each District Safety Committee to track project locations, safety improvements performed, and level of effectiveness of the improvement with respect to reducing fatalities and severe injuries. Districts and Local agencies will inform BSPE of HSIP project completions to assist in tracking their effectiveness.

Chapter 7: Reporting to FHWA

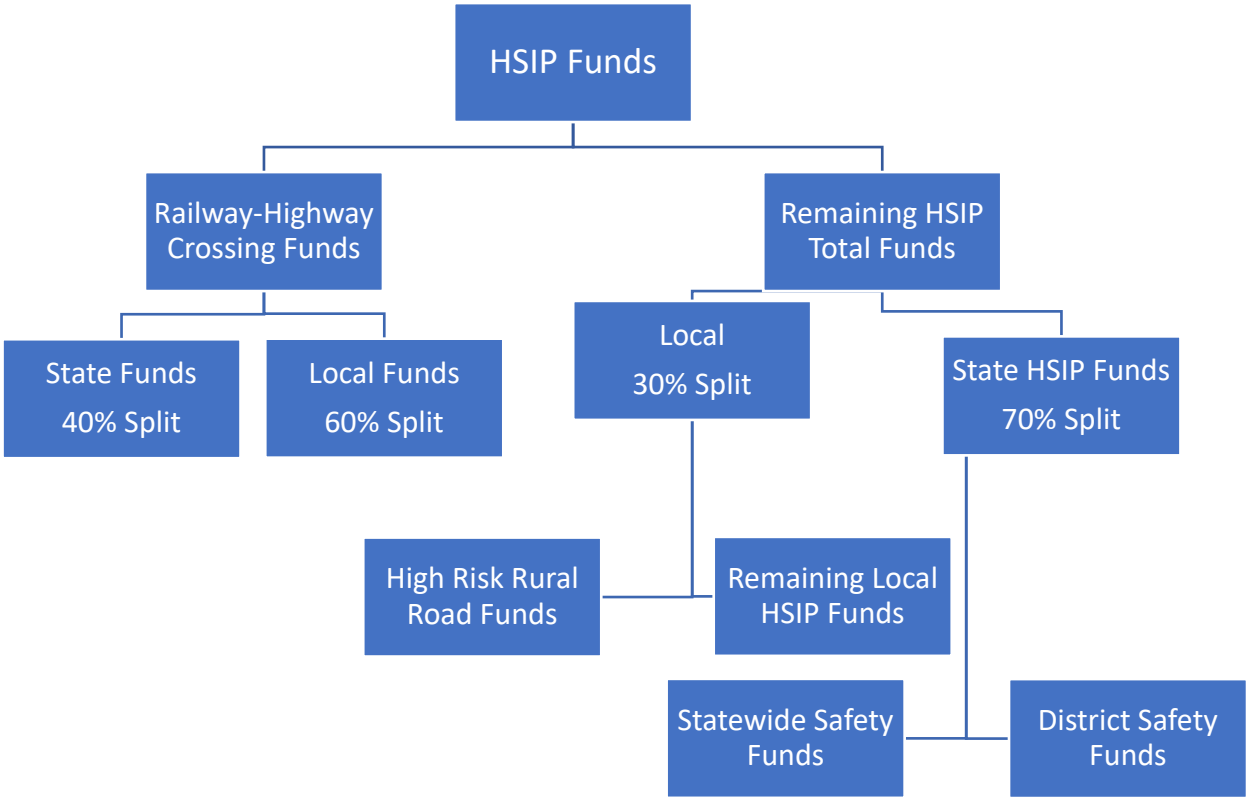
Federal laws require annual evaluation reporting to the USDOT Secretary of Transportation through the FHWA Division Office. The purpose of this reporting is to demonstrate the effectiveness of the Illinois HSIP in meeting the federal requirements – the reduction in fatalities and serious injuries. Funds designated for use under the HSIP are intended solely for the use of addressing known safety problems contributing to fatalities and severe injuries (severe crashes).

The HSIP Online Report is an annual report covering the HSIP during the previous federal fiscal year which shall be submitted to the Illinois FHWA Division Administrator no later than August 31 each year. The annual report includes the progress made in implementing the HSIP – Road program and the HSIP – Railway-Highway Grade Crossing program, evaluates the effectiveness of completed highway safety improvement projects in these programs, and reports on progress made towards state targets on the number and rate of serious injuries and fatalities. This report shall describe the extent to which the improvements funded under this program contribute to the goals of reducing the number of roadway-related injuries and fatalities and the occurrences of roadway-related crashes, mitigating the consequences of roadway-related crashes, and reducing the occurrences of crashes at railway-highway grade crossings. This report is currently submitted through FHWA's online tool by the HSIP Super Reporter.

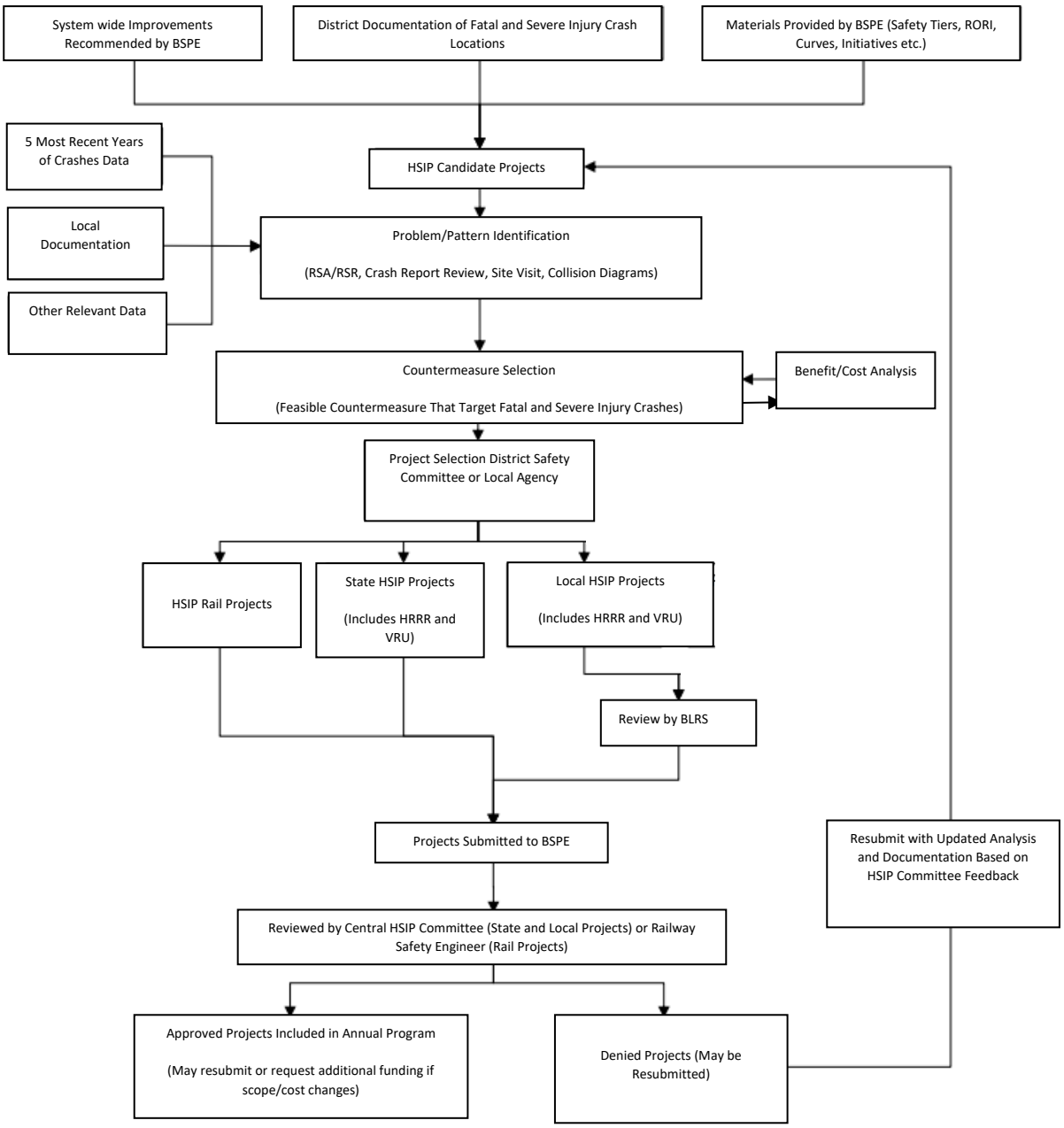
Appendix

A. Funding Allocation Process – Federal HSIP Funding Flow Chart
B. HSIP Project Selection Process
C. Glossary
D. Listed Reference Sheet
E. Service Life of Safety Improvements (in Years)

Appendix A: Funding Allocation Process (HSIP)



Appendix B: HSIP Project Selection Process



Appendix C: Glossary

4 E's: Engineering, Enforcement, Education, and Emergency Medical Services. Used as a comprehensive framework in the SHSP.

B/C: Benefit to Cost. Usually in reference to IDOT's Excel-based B/C Tool which calculates an HSIP project's benefit divided by the estimated cost of the project. The calculation is based on a location's crash history, CMF value for the proposed countermeasure, and estimated cost and service life of the countermeasure.

BIP: Bureau of Information Processing. Oversees HSIP Site to which all HSIP applications are submitted.

BLRS: Bureau of Local Roads and Streets. Administers the Local HSIP projects.

BSPE: Bureau of Safety Programs and Engineering. Oversees Illinois' HSIP and this document.

CCOF: Crash Characteristic Overrepresentation Flags. Included in the Safety Tiers to identify locations for further analysis.

CIS: Crash Information System. Maintained by the Bureau of Data Collection and contains Illinois' reportable crashes based on the SR 1050 Crash Report.

CMF: Crash Modification Factor. Value used to compute the expected number of crashes after countermeasure implementation in the B/C analysis. Can be found on the CMF Clearinghouse.

FHWA: Federal Highway Administration. Ensures Illinois' HSIP is meeting its federal requirements.

GIS: Geographic Information System. Software that allows for crashes to be viewed and queried.

HRRR: High Risk Rural Road. A rural major or minor collector, or a rural local road, with significant safety risks. Road classification related to the HRRR Penalty.

HSIP: Highway Safety Improvement Program. Program aimed at achieving a significant reduction in traffic fatalities and serious injuries for all roadway users on all public roads.

HSM: Highway Safety Manual. Guidance document for evaluating traffic safety performance on roadways.

IDOT: Illinois Department of Transportation. Illinois state agency in charge of state-maintained public roadways in Illinois and administrator of Illinois' HSIP.

IIJA: Infrastructure Investment and Jobs Act. 2021 federal bill which reauthorized transportation funding and currently governs Illinois' HSIP.

IRIS: Illinois Roadway Inventory System. Database of information for all roadway segments, spot locations, and railway-highway grade crossings.

OPP: Office of Planning and Programming. Maintains IRIS database.

PSC: Proven Safety Countermeasures. Identified list of effective countermeasures in reducing roadway fatalities and serious injuries from the FHWA.

RSA/RSR: Road Safety Assessment/Road Safety Review. Resource BSPE offers to IDOT districts and local agencies to identify appropriate countermeasures to address safety concerns at a location.

SHSP: Strategic Highway Safety Plan. Statewide plan to reduce highway fatalities and serious injuries on Illinois' roadways.

SSA: Safe System Approach. The FHWA guiding paradigm to address roadway safety.

USC: United States Code. The official codification of the general and permanent federal statutes of the United States, including the HSIP.

USDOT: United States Department of Transportation. To whom FHWA reports to.

VRU: Vulnerable Roadway User. A nonmotorist such as a pedestrian or pedalcyclist involved in a vehicle collision.

Appendix D: Listed References Sheet

B/C Tool:
https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/transportation-system/memos---letters/safety/HSIP%20Benefit%20to%20Cost%20Tool.zip

BSPE-HS1 Form (HSIP Application): https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/idot-forms/bse/bspe-hs1.pdf

Crash Analysis Tool:
https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/transportation-system/memos---letters/safety/Crash-Analysis-Tool_v1.3.3.zip

Crash Characteristics Overrepresentation Flags (CCOF): Available as fields in Safety Tiers.

Crash Data: IDOT districts should have access to their data. Can also be obtained on Safety Portal. IDOT public-facing GIS crash data available: https://gis-idot.opendata.arcgis.com/search?groupIds=6d2862031a6d47c7a8c211e38e423e05. Emails for crash data should be sent to DOT.SHSP@illinois.gov.

Crash Modification Factor (CMF) Clearinghouse: https://cmfclearinghouse.fhwa.dot.gov/

Shared District Data folder: Available to IDOT staff upon request to DOT.SHSP@illinois.gov

Emphasis Area Tables: Available to IDOT districts and on Safety Portal.

Highway Safety Improvement Program (HSIP) Site: Access to the site is restricted to select IDOT staff and individuals working on their behalf. Access request can be emailed to DOT.SHSP@illinois.gov.

IDOT's external HSIP Webpage: https://idot.illinois.gov/transportation-system/local-transportation-partners/county-engineers-and-local-public-agencies/funding-programs/hsip.html

Highway Safety Manual (HSM): https://www.highwaysafetymanual.org/Pages/default.aspx

IDOT's HSIP Web Site: https://idot.illinois.gov/transportation-system/local-transportation-partners/county-engineers-and-local-public-agencies/funding-programs/hsip.html

Intersection Initiative: Available to IDOT districts and on Safety Portal.

Proven Safety Countermeasures (PSC): https://highways.dot.gov/safety/proven-safety-countermeasures

Road Safety Assessment/Road Safety Review (RSA/RSR): Requests can be emailed to DOT.SHSP@illinois.gov.

Run Off the Roadway Inventory (RORI) Tool: Available to IDOT districts, on Safety Portal, and via request by local agencies/consultants working on behalf of local agencies. Requests can be emailed to DOT.SHSP@illinois.gov.

Safety Portal: Requests can be made by IDOT staff, local agencies/consultants working on behalf of local agencies. https://webapps1.dot.illinois.gov/SafetyPortal/

Safe System Approach: https://www.transportation.gov/safe-system-approach

Safety Tiers: Available to IDOT districts and on Safety Portal.

Strategic Highway Safety Plan (SHSP):
https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/transportation-system/manuals-guides-and-handbooks/safety/strategic-highway-safety-plan-2022.pdf

Top Curves with Safety Improvement Potential Report: Available to IDOT districts and on Safety Portal.

Vulnerable Roadway User (VRU) Assessment:
https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/transportation-system/manuals-guides-and-handbooks/safety/il-dot-vru-2023-11142023-final-spreads.pdf

Vulnerable Roadway User (VRU) Dashboard:
https://experience.arcgis.com/experience/aae015c0f183478b86bd2522b767ddb4

Appendix E: Service Life of Safety Improvements (in Years)

01 General
AA – Improvement (15)
AB – Realignment (15)
AC – Reconstruction (15)

02 Pavement
BA – Widen/Resurface (15)
BB – Widening (15)
BC – Resurfacing (10)
BD – Skid Proofing (5)
BE – Grooving (7)
BF – Rumble Stripping (10)
BG – Seal Coating (3)

03 Channelization
CA – Raised Curb Median (15)
CB – Raised Reflector Median (5)
CC – Rumble Strip Median (10)
CD – Thermo-Plastic Tape (3)
CE – Paint (1)
CF – Lane Transition (15)
CG – Lane Addition (15)
CH – Left turn Lane/Throat Widening (15)
CI – Right Turn Lane (15)
CJ – Left Turn Lane (15)
CK – Bi-Directional Turn Lane (15)
CL – Left Turn Acceleration (15)
CM – Right Turn Acceleration Lane (15)
CN – Deceleration Lane (15)
CO – One-Way Couple (15)

04 Signing
DA – Modernization (5)
DB – Installation (5)
DC – Speed (5)
DD – Advanced Warning (5)
DE – Street Name (5)
DF – Four-Way Stop (5)
DG – Minor Leg Stop (5)
DH – Yield (5)
DI – Changeable Message (6)
DJ – No-Turn-On-Red (5)
DK – Delineators (4)
DL – Flexible Post (4)
DM – Overhead Truss (15)

05 Signalization
EA – Modernization (10)
EB – Installation (15)
EC – Relocation (15)
ED – Warning Flasher (5)
EF – Red Flashing Beacon (5)
EG – Left Turn with Lane (10)
EH – Left Turn without Lane (15)
EI – Phase Adjustment (10)
EJ – Twelve Inch Lens (10)
EK – Traffic Actuated (10)
EL – Time Lane Control (10)
EM – Optical Programmed (10)
EN – Pedestrian Control (10)
EO – Mast Arming (15)
EP – Safety Lighting (15)

NON-INTERSECTION SERVICE LIFE

06 Pavement Treatments
FA – Widen/Resurface (15)
FB – Widening (15)
FC – Resurfacing (10)
FD – Skid Proofing (5)
FE – Grooving (7)
FF – Rumble Stripping (10)
FG – Seal Coating (3)

07 Pavement Marking
GA – General Pavement Marking (1)
GB – Center Line (1)
GC – Edge Line (1)
GD – Raised Reflector (5)
GE – No-Pass Stripping (1)
GF – Thermo-Plastic Tape (3)
GG – Paint (1)

08 Railroad Crossing
HA – Modification (15)
HB –Gates (15)
HC – Crossbucks (15)
HD – Flashing Lights (15)
HE – Flashing Beacons (15)
JH – Warning Bells (15)
HG – Pavement Markings (2)
HH – Warning Signs-Standard (5)
HI – Warning Signs-Special (5)
HJ – Delineators (4)
HK – Safety Lighting (15)

08 Railroad Crossing Continued
HL – Resurfacing (10)
HM – Grade Separation (20)
HN – Removal (20)

09 Bridge
IA – General Repair (10)
IB – Widen/Resurface (15)
IC – Widening (15)
ID – Resurfacing (10)
IE – Skid Proofing (5)
IF – Grooving (7)
IG – Frost/Ice Detectors –Sign (10)
IH – Frost/Ice Detectors-Radio (10)
II – Guardrail (10)
IJ – Pedestrian Handrail (15)
IK – Safety Lighting (15)
IL – Delineators (4)
IM – Impact Attenuators (3)
IN – Reconstruction (20)
IO – Removal (20)

10 Curve
JA – Realignment (15)
JB – Reconstruction (15)
JC – Superelevation (15)
JD – Daylighting (15)
JE – Widen/Resurface (15)
JF – Widening (15)
JG – Resurfacing (10)
JH – Skid Proofing (5)
JI – Grooving (7)
JJ – Guardrail (10)
JK – Advance Warning Sign (5)
JL – Warning Flasher (5)
JM – Delineators (4)
JN – Relocation (15)

11 Roadside Safety
KA – General Obstacle Removal (20)
KB – Fixed Object Removal (20)
KC – Fringe Parking Removal (20)
KD – Bike Path Removal (20)
KE – Guardrail Installation (10)
KF – Utility Adjustment (15)
KG – Drainage Improvement (10)
KH – Shoulder Repair (5)
KI – Slope Stabilization (10)
KJ – Impact Attenuators (3)
KK – Glare Shields (5)
KL – Fencing (10)
KM – Access Control (20)

12 Other
OA – Turnabout (15)
OB – Ramp Improvement (15)
OC – Right of Way (20)