HIGHWAY SAFETY IMPROVEMENT PROGRAM

Division of Transportation Investment Management
Bureau of State Highway Programs

HSIP General Information
SFY2021-2024 Program Cycle

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The Basics of HSIP

Program Areas, Funding, Typical Projects
HSIP Program Areas

- Highway Safety Improvement Program (HSIP)
- Railway-Highway Crossings: Warning Devices
- Railway-Highway Crossings: Elimination of Hazards
Highway Safety Improvement Program

- Projects that reduce the number and severity of crashes on all public roads.
- Focused on infrastructure improvements identified and selected through a data-driven approach.
- Lower-cost treatments should be given first consideration.
- Includes the **High Risk Rural Roads subprogram**, which funds projects for construction and operational improvements on county rural major and minor collector roads.
Program Funding

❖ A federal reimbursement program and NOT a federal grant program
❖ 90% federal HSIP funds available for most projects
❖ 10% match required
  ➢ State pays match for STH projects
  ➢ Locals pay match for non-STH projects (local streets and highways)
Program Cycle & Application Deadlines

- Four-year program\(^1\) of projects
- Program on an annual cycle
- Current program is SFY2021-2024
- Next application cycle deadline for SFY2021-2024 is August 15\(^{th}\), 2020

\(^1\) Projects with longer, more complicated delivery schedules (at least 4 years) will be considered for approval in Years 5 and 6; but will be given lower priority than projects that can be delivered quickly.
Typical Eligible Spot Projects

- Intersection safety improvements (including installing/modifying traffic signals, roundabouts and channelization/turning radii improvements)
- Straightening isolated curves or hills
- Improving sight distance
- Access modifications
- Constructing turning, bypass or other auxiliary lanes
- Eliminating a roadside obstacle
- Installing guardrails, barriers and crash attenuators
- Installing signs, pavement markings, and delineators
Typical Corridor-Level Projects

- Corridor signal upgrades
- Stand-alone beam guard installations and end treatments
- Larger or additional signing
- Chevrons
- Pavement marking
- Rumble strips
- Eliminating clear zone encroachments
- Pedestrian countdown timers
High Risk Rural Road Subprogram

- Focus is on:
  - Local rural minor and major collector corridors
  - Run-off-the-road crashes
  - Fatal and serious injury crashes
  - Low complexity, low cost treatments that can be implemented in < 3 years

- Program development starts with annual review of crash data statewide by WisDOT and UW-Madison TOPS Lab.

- After initial screening and more detailed review of crash information by WisDOT safety engineers, approximately 10 corridors are selected for further review and analysis.
High Risk Rural Road Subprogram

- With local involvement, WisDOT consultant reviews each corridor and develops a Corridor Safety Evaluation (CSE)

- CSE includes:
  - Summary of locations in the corridor with safety issues.
  - List of safety treatments within the corridor eligible for HRRRP funding.
  - Cost estimates for design and construction of eligible treatments.

- Local entity has the option of using the CSE to develop an application for HRRRP funding.

- A project that requires real estate acquisition is not eligible in the HRRRP.
High Risk Rural Road Treatments

- Edgeline and/or centerline pavement markings
- Shoulder rumble strips
- Centerline rumble stripes
- Spot shoulder widening
- Chevrons and/or night arrows
- Post-mounted delineation
- Guide signs and/or advanced warning signs
- Obstacle removal for adequate clear zone

Larger, more complex projects may be submitted separately through the "standard" HSIP program.
The HSIP Process

Applications, Approval, and Programming Details
Application Requirements

- Completed HSIP Project Application Form
- General sketch of project proposal
- Collision diagrams
- Crash history (most current consecutive 5 yrs.) and appropriate crash analysis
- Site photos
- Itemized cost estimate
- Project Evaluation Factor (PEF) analysis worksheets
The HSIP Application Form

Form is available at the Programs for Local Gov’t. website and from Regional HSIP Coordinators and Safety Engineers.
Other Application Materials

Site Photos

Sketch of Project Proposal
Other Application Materials

Collision Diagram(s)  Itemized Cost Estimate
Spot Project Analysis

- WisDOT region staff calculates a Project Evaluation Factor (PEF) for each HSIP project submittal.

- PEF is used to evaluate and compare proposed projects.

- PEF estimates crash reduction potential of proposed improvements and compares them to project costs.

- PEF calculation includes:
  - Estimated costs of proposed project.
  - Crash history in the project location.
  - Identification of crashes and/or severity that the proposed project would have reduced.
  - Estimated crash reduction potential of proposed improvements, based on established research and studies.
**Corridor Project Analysis**

- Individual PEFs must be calculated for each location in the corridor where a safety improvement is proposed.

- A cumulated PEF must be calculated covering all proposed safety improvement in the corridor.

- The cumulative PEF for all locations in the corridor must be greater than or equal to 1.0 for the project to be considered.

- At least 2/3 of the locations proposed must have a PEF greater than or equal to 1.0 for the project to be considered.

- Any individual locations in the corridor with a PEF of less than 1.0 will be evaluated and a determination will be made whether the locations should be approved.
Tips for Successful HSIP Application

- Follow general instructions on HSIP application
- Projects rooted in documented crash problems (crash report)
- Be as specific as possible in “Proposed Improvements” box
- Be realistic with the outlined SFY timeframe
  - Generally, design, R/E, and construction not be scheduled in same FY
Project Funding Caps

CAP BASICS …

- Applies to all HSIP-funded projects
- State Projects - overages charged to Region’s allocation
- Local Projects - overages charged to Locals
- Any funding cap increase must be approved by the Statewide HSIP Coordinator
- Any project scope change would require application resubmittal with an updated PEF (using the original submittal’s crash history)

THE BENEFITS …

- Encourages better project scoping
- Promotes more accurate initial cost estimates
- Helps limit impacts on program of cost increases on large projects
Co-Pay Requirement

- Projects over $1,900,000 trigger a co-pay requirement
  - First $1,900,000 → HSIP Program Funds (90% Fed)
  - Second $1,900,000 → Non-HSIP Funds
  - Balance of Project → Costs shared equally between HSIP & Non-HSIP funding sources
Sunset Provision

THE PROVISION …

- Annual program review to check on status of previously approved projects
- A project may be removed from the program IF:
  - There is no design action within 2 years\(^1\) of program approval, OR,
  - It is not let to contract within 3 years\(^1\) of program approval (4 years\(^1\) if right of way is needed)
- Local officials will be notified by letter before a project is removed.

THE BENEFITS …

- Ensures safety resources are only reserved for viable projects
- Enables adding projects to the Program to replace non-viable ones

\(^1\) One year can be added to these timeframes for projects approved in Year 5 and two years added for projects approved in Year 6.
For More Information

- **WisDOT Programs for Local Government**
  - HSIP application materials available for download at this site

- **WisDOT HSIP Staff**
  - **WisDOT Regional HSIP Coordinators and Safety Engineers**
    - General program information
    - Questions about specific potential projects and applications
  - **Statewide HSIP Coordinator**
    - General program information
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Railway-Highway Crossings Program

Warning Devices & Elimination of Hazards Programs
**HSIP Program Areas**

- **Highway Safety Improvement Program (HSIP)**

- **Railway-Highway Crossings: Warning Devices**
  - Projects that primarily involve electronic signal installations and upgrades

- **Railway-Highway Crossings: Elimination of Hazards**
  - Projects that improve crossing geometrics or eliminate at-grade crossings with a separation structure
TYPICAL ELIGIBLE PROJECTS…

- Flashing lights
- Flashing lights and gates
- Enhanced flashing lights & gates
  - Examples: with barrier curb, 4-quad gates
- Adding cantilevered lights, gates
- Circuitry adjustments/improvements (such as constant warning time)
TYPICAL ELIGIBLE PROJECTS …

- Geometric improvements (grades and horizontal alignments)
- Modular crossings
- Grade separations*
- Crossing consolidations
- Crossing closures
- Incentive payments to encourage closures

*Limited to partial funding because of high cost of structures.
OCR FUNDING OPTION …

- Locals or railroads can petition OCR for improvements
- OCR may furnish match to federal funds
  - If OCR provides match, there is no cost to locals or railroads
- Annual Program Target Level = $4.4 million
  - $2.7 M in Federal Funds
  - $1.7 M in State Funds

The Office of the Commissioner of Railroads is the state agency with primary responsibility for making determinations of the adequacy of warning devices at railroad crossings, along with other railroad related regulations.
WisDOT FUNDING OPTION …

- Funding available for both Warning Devices and Elimination of Hazards

- Generally a 10% local match is required
  - Railroad will pay match in certain situations

- Annual Program Target Level = $650,000
APPLICATION MATERIALS …

❖ A package for each project must include - preferably in electronic form:

1. Completed Concept Definition Report
2. Rail Crossing Report (Form DT1589)
3. Map showing the rail-highway crossing – and at least 1 alternative crossing, if possible
4. Any engineering diagrams needed to describe the proposed improvement
5. Digital photos of the crossing – from the standard WisDOT designated locations – as specified in WisDOT document: Digital Photographic Standards for Public Railroad Crossings
Program Cycle & Application Deadlines

- Four-year program of projects
- Program on an annual cycle
- Current program is SFY2021-2024
- Next program is SFY2022-2025 (starts July 1, 2021)

Rail Project applications may be submitted at any time.
THE PROCESS …

• Rail Projects Review Committee evaluates proposed projects – reviews benefit-cost analysis and engineering assessment

• Crossing Evaluation Procedure used to rank relative merits for the following types of projects:
  – Flashing lights
  – Flashing lights & gates
  – Enhanced flashing lights & gates
  – Grade Separations
  – Crossing closures

• The Committee applies collective assessment and judgment to evaluate all other projects such as the addition of cantilevers or constant warning time circuitry
Crossing Evaluation Procedure

BENEFIT COST-ANALYSIS …

• Assesses economic viability of projects by comparing safety benefits to life-cycle project costs

• Calculates net benefit (benefits – costs) and B/C ratio

• Benefits calculated:
  – Reductions in the economic costs of crashes
  – Reductions in vehicle delay and operating cost (separations only)

• Costs taken into account:
  – Initial construction
  – Expected annual maintenance and operating costs
  – Crossing surface replacement – when grade separation is an alternative
  – Miscellaneous costs (e.g. R/W)
### Railroad Coordinators

#### Central Office

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