

DATE: September 19, 2023

SUBJECT: Engineering District 8-0 Development Process for Highway Safety Improvement

TO: District 8-0 Planning Partners

FROM: Christopher C. Flad, P.E., District Traffic Engineer *Chris C. Flad*
Nathan T. Reis, District Highway Safety Engineer *Nathan T. Reis*
Kenana Zejcirovic, District Planner *Kenana Zejcirovic*

This memo provides guidance on the multifaceted bi-annual process for the development of Highway Safety Improvement Program (HSIP) project candidates and applications. These applications will be used for the allocation of funds on regional Transportation Improvement Programs (TIPs).

HSIP application development involves a comprehensive and data-driven approach that integrates stakeholder engagement, safety analysis, countermeasure selection, and benefit-cost analysis. The purpose and goal of this systematic process ensures that HSIP applications are well documented, data based, and aligned with the goal of enhancing traffic safety across the District's Transportation Network.

Initiation and Candidate Identification:

Based on the crash data and stakeholder input, potential safety projects are identified in this step of the HSIP application development process. These potential projects may range from relatively simple safety improvements to more complex engineering solutions. The identified projects shall aim to mitigate identified safety concerns and enhance overall traffic safety.

1. District Traffic Safety Management and Planning and Programming Units shall provide the Planning Regions with the most recent version of the Network Screening Data, when completed by PennDOT's Central Office. This data is provided to the Planning Regions to aid in the identification and development of HSIP candidates.
2. **On Even Years by July**, the District Traffic Safety Management Section shall create a minimum of two HSM-Based Project Profiles for each Planning Region. These project profiles shall identify candidate locations and concepts for consideration.
 - a. HSM-Based Project Profiles will be shared with both the District Planning and Programming Unit and Planning Partners.
 - b. HSM-Based Project Profiles will be used to review/discuss priorities and determine next steps for the planning of candidate HSIP projects.

3. **On Even Years by September**, the Planning and Programming Unit will communicate findings from above with the respective Planning Partners. All information will be used by the District and Planning Region to prioritize and select candidate locations, concepts, and estimates.
 - a. Candidate locations shall be coordinated and prioritized with the District Planning and Programming Unit and Planning Partners.
 - b. Planning Regions may choose to analyze additional candidate locations to determine HSIP eligibility. An independent HSM analysis must be completed for candidate location(s) for the use of Federal HSIP funding. These efforts should be coordinated with the District Planning and Programming Unit to ensure there is no overlap in evaluations.

Safety Analysis and Prioritization:

Each proposed safety project selected for HSIP application development shall undergo a benefit-cost analysis. This analysis considers the potential reduction in crashes, injuries, and fatalities resulting from the proposed safety measures compared to the costs associated with design, construction, and implementation. Benefit-cost (B/C) ratios are developed to prioritize projects with the greatest potential for safety improvement in relation to their anticipated costs.

4. **On Odd Years by June**, the lead entity developing the HSIP application shall complete the following and provide a summary of their findings, including concepts and estimates, to the Planning Partner:
 - a. Develop cost estimates for each of the proposed concepts. These estimates shall include cost of engineering/design, right-of-way acquisition, utility relocation, construction, and construction inspection.
 - b. Develop life-cycle cost estimates for each of the proposed concepts. The life-cycle cost estimate shall include annual or cyclical maintenance costs, operation costs (such as electricity for traffic signals), and replacement costs for improvements should the total life cycle be less than 20 years.
 - c. Develop B/C ratio for each of the proposed concepts using the FHWA Highway Safety BCA Tool or the Pennsylvania HSM Tools & Data (as applicable).

Funding Allocation and TIP Integration:

The final step for developing HSIP applications involves documenting all the information gathered throughout the process. The application includes detailed descriptions of the identified safety concerns, proposed projects, countermeasures, cost estimates, and expected safety benefits. Supporting data, analysis reports, and stakeholder feedback are compiled to strengthen the application. The completed application is then submitted to PennDOT Central Office for review and consideration.

5. **On Odd Years by September**, applications shall be submitted by the lead entity developing the HSIP application for the candidate location (this can either be the District Planning and Programming Unit or the Planning Partner). Data gathered at all stages of analysis shall be submitted with the HSIP application, this includes but is not limited to the following:
 - a. HSM Project Analysis and Network Screening Data
 - b. Location Information and Traffic Data:
 - i. AADT/Truck ADT
 - ii. Location and Roadway Type
 - iii. Existing Traffic Control Features
 - iv. KABCO Crash Data/Crash Summary/Crash Resumes
 - c. Benefit-Cost Evaluations

6. During TIP update and adoption, the programming of candidate locations for HSIP funding will be at the discretion of the Planning Partner.

Funding Allocation, Project Implementation, and Follow-up Evaluations:

Following the HSIP application submission, PennDOT reviews and evaluates the submitted application based on predetermined criteria. The review process involves assessing the technical soundness of the proposals, alignment with program goals, feasibility, and potential for reducing crashes and improving safety. Projects are prioritized and selected based on their potential impact, cost-effectiveness, and alignment with statewide transportation goals.

The selected projects move into the implementation phase, where detailed engineering plans are developed, permits/clearances are obtained, and construction is initiated. PennDOT oversees the project's execution, ensuring adherence to specifications, quality standards, and timelines.

After project completion, ongoing monitoring and evaluations are conducted to assess the effectiveness of the implemented safety countermeasures. Crash data, traffic volumes, and other performance indicators are analyzed to gauge the impact of the safety improvement project. This information will be used to determine the success of implemented projects and guide the decision-making processes for future safety improvement projects.

Should you have any questions or require clarification on the development process for HSIP applications and projects, please contact either Nathan Reis, at 717-783-4826 or Kenana Zejcirovic, at 717-772-5119.

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