Appendix A

HSIP Project Application Process and Worksheets

UPDATED JANUARY 2018
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Application Framework

Changes to HSIP Program for SFY 19:

- All applications are submitted for SFY21 thru SFY22 programs.
- HSIP funding ranking of projects will be based on the B/C ratio analysis.

Introduction:

This appendix contains the instructions for submitting requests for ADOT Highway Safety Improvement Program (HSIP) funds. HSIP funds are eligible for work on any public road or publicly owned bicycle or pedestrian pathway or trail, or on tribal lands for general use of tribal members, that improves the safety for its users. On December 4, 2015, the “Fixing America’s Surface Transportation Act” (FAST) was signed into law. The FAST Act retains the highway program structure enacted in the 2012 Moving Ahead for Progress in the 21st Century (MAP-21) surface transportation law with only a few major additions or changes. Within MAP-21 there were twenty-four project categories identified as eligible as listed under 23 U.S.C § 148 (a)(4)B). The FAST Act added four categories, but limited the categories to the twenty-eight listed. The FAST act also ended the ability of the State to shift funds designated for infrastructure safety projects to behavioral or educational activities. The ADOT HSIP program places additional constraints on the eligibility of individual project categories in order to meet the most critical safety needs on all of Arizona’s public roadways and to help ensure Arizona’s MAP-21 performance targets are met.

This application is to support requests for HSIP eligibility determination for use of State Fiscal Year (SFY) 21 and SFY22 for HSIP funds for transportation safety projects as detailed below. Applicants should submit the application to their respective COG/MPO or District Engineer by the designated deadline. Applications received by ADOT TSS after close of business on the due date of May 4, 2018 will not be accepted. After initial HSIP eligibility has been determined the TSS will notify the applicant by email of the HSIP eligibility determination. The ADOT HSIP Program Manager will rank all potential HSIP projects based on Benefit Cost Ratio (B/C) analysis as outlined in this document and in the HSIP application. A nine member Safety Review Committee, comprised of FHWA, local and ADOT staff will be convened to review and approve the proposed list. The HSIP Program Manager will then submit the prioritized list to the State Engineer’s Office for final ranking and approval. Once the prioritized HSIP eligible list is approved, the HSIP Program Manager will issue the approved HSIP eligibility letter and enter the project in the ADOT Five-Year Transportation Facilities Construction Program.

If the total funding requests for all applications do not exceed the total available HSIP funds for a SFY, a second call for projects may be issued in the Fall after completing the above cycle.

The SFY Application is an excel workbook consisting of 13 tabs plus two tabs of tables. Many of the answer blocks in the application can be filled with the dropdown options. Applicants should make sure to read the entire Application Instructions and review all of the Application Tabs before attempting to prepare and submit the application. Additional guidance and information is included in the tabs. ADOT
TSS is available to answer questions, review draft applications, or assist with additional information until the due date. The application is also available on-line at http://azdot.gov/business/engineering-and-construction/traffic/traffic-safety/arizona-highway-safety-improvement-program.

Application submittals at minimum must include:

1. **Cover/Transmittal Letter**, which must include:
   a. How the safety issue/problem was identified
   b. Amount of HSIP funding eligibility approval requested
   c. Identification of countermeasure(s) being installed/implemented (15% of construction estimate)
   d. How the countermeasure(s) will correct the safety problem
   e. Who is performing the work
   f. If the work is within the agency’s ROW
   g. If utility relocation will be required
   h. The number of fatal and serious injury crashes that can potentially be reduced by implementation of the countermeasure(s)
   i. Identify which SHSP emphasis area the project supports
   j. B/C ratio as calculated in the B/C ratio analysis sheet (≥ 1.5)
   k. Source of other funds if cost of project exceeds HSIP eligibility approval or if work that is not HSIP eligible is included in the project – broken out by HSIP eligible, non-HSIP eligible and other funds (if applicable)
   l. Commitment to maintain countermeasure(s) to standards after installation
   m. Commitment to post-construction annual “before and after” study for 3 years
   n. Understanding that HSIP funds can only be used once to upgrade or install a countermeasure(s) on a facility
   o. Signature of authorized representative

2. **Complete application** – Incomplete applications or an application with errors will be excluded from the review and selection process. ADOT TSS will work with LPAs, COGs/MPOs and State agencies up until the final submittal date to ensure completeness. No revised applications will be considered after the submittal date of **May 4, 2018**.

3. **Cost estimate in ADOT format** – Lump sum cost estimates will not be approved. Cost estimates need to be in enough detail for ADOT review and concurrence by ADOT Project Management Group (PMG). If more than one countermeasure is being installed, the cost of each countermeasure must be broken out. Eligibility is only approved for the total estimated cost (design and construction) of a project.

4. **Crash Data Spreadsheet** – All crashes associated with a given countermeasure must be within the countermeasure’s influence area. Only crashes used to calculate the B/C ratio should be in the spreadsheet.
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5. B/C Ratio calculation sheet – required for both spot and systemic projects

a. Annual average of crashes from 4 above.

b. Must identify 4 or 5 star countermeasure from ADOT’s list (See Appendix B) or FHWA’s Crash Modification Factors Clearinghouse. This list is limited to the Injury Severity of Fatal, Serious and, in some cases, Minor Injury. No Property Damage Only (PDO) crashes or all inclusive crashes (All) are included. If a CMF is not available in the ADOT list, then the applicant has to contact ADOT TSS prior to the application being submitted to determine if the proposed CMF and reference can be used. In no case can crash severity less than serious injury be used in the B/C ratio analysis.

c. Maximum of 3 countermeasures can be used in a combined crash reduction factor (CCRF).

d. If Crash Type, Severity and Area are all the same, then the following formula should be used: \( CCRF = 1 - (1 - CRF\,1) \times (1 - CRF\,2) \times (1 - CRF\,3) \)

e. If Crash Type, Severity or Area are different, then the following formula can be used:

\[
CCRF = (CRF\,1 \times \text{no. of crashes for countermeasure 1})/(\text{total crashes}) \\
+ (CRF\,2 \times \text{no. of crashes for countermeasure 2})/(\text{total crashes}) \\
+ (CRF\,3 \times \text{no. of crashes for countermeasure 3})/(\text{total crashes})
\]

f. All calculations for a CCRF must be submitted with the application.

g. Total countermeasure costs include design, ROW, construction, and post construction costs. For State agencies, ICAP must be included in the estimate.

h. Annual maintenance cost must be included.

i. Project or Service Life can be obtained from Appendix C and must be included.

j. B/C ratio must be \( \geq 1.5 \) (round to nearest tenth).

k. If multiple locations or countermeasures are being combined into one application, each location or countermeasure must have a separate B/C ratio analysis included in the application and each location must have a B/C ratio of \( \geq 1.5 \). For ranking purposed, a B/C ratio must be calculated using the total cost of the project and the 5-year average of all
crashes used in the individual calculations. (The exception to this requirement is if the project is systemic.)

6. Vicinity Map/Location Map – Application reviewers and FHWA must be able to pinpoint the project’s location in the state and the local agency.

7. Project Limits Map – An aerial screen capture with the limits of the project outlined is recommended. These limits must concur with those identified in the Cover/Transmittal letter and the crash locations listed in the crash data spreadsheet.

8. Warrant Studies – Required when the project includes an improvement that requires an engineering study to warrant the installation of certain traffic control devices, e.g., traffic signals, pedestrian signals, etc. When applications include traffic control features like these, it is the applicants’ responsibility to ensure all requirements of the latest MUTCD are met. Failure to include required warrants will result in the application being disqualified.

HSIP Funding Guidelines:

1. All projects submitted by LPAs, COG/MPOs and State agencies will compete on the same level for funding.

2. Minimum project total cost is $250,000.00. Maximum project cost for both spot and systemic projects is $5 million, unless approval is granted in writing BEFORE an application is submitted.

3. HSIP funds used for right-of-way purchases are capped at 10% of the estimated total HSIP countermeasure construction cost.

4. HSIP funds used for utility relocation or construction are capped at 10% of the estimated total HSIP countermeasure construction cost.

5. Cost of countermeasure(s) must represent at least 15% of the total construction cost.

6. If any HSIP eligible project exceeds the original approved amount for HSIP countermeasures, all excess costs will have to be funded through other sources i.e. STP, local, etc. (Although Detailed Engineer’s Estimates are not required, accurate anticipated Cost Estimates are critical.)

7. HSIP funds cannot be used to pay for regular day-to-day staff time or maintenance activities.

8. HSIP funds cannot be used to pay for non-fixed infrastructure items, i.e. portable signs, safety vests, etc. Computers/servers are not HSIP eligible.

9. Systemic projects are based on a systemic planning process that evaluates an entire system using a defined set of criteria that will vary depending on the available data. FHWA provides a detailed “Systemic Safety Project Selection Tool” at
http://safety.fhwa.dot.gov/systemic/fhwasa13019/. Total systemic project funding will be
limited to no more than 20% of the yearly SFY HSIP available funds unless special circumstances dictate otherwise.

General Guidelines:

1. Federal Authorization for design must be obtained within the same SFY as HSIP eligibility determination or the approved HSIP eligibility will expire.

2. Design must begin within 6 months of the date of federal authorization for design.

3. Federal authorization for construction must be obtained within within 30 months of the date of federal authorization for design.

4. If a project is included in the ADOT Five-Year Transportation Facilities Construction Program, then federal authorization for design must be obtained within the first six months of the SFY design is approved for.

5. Projects that miss design or construction milestones will be flagged and ADOT TSS will not accept applications for HSIP funding from agencies with flagged projects.

6. If an agency fails to submit necessary project documentation, such as a project close-out request letter, ADOT TSS will not accept any additional HSIP applications from that agency until such time the project document is received or closed out.

7. For local agencies, if an application is submitted for a project that was not identified in their COG/MPO Strategic Transportation Safety Plan (STSP) project list, then justification must be included explaining why.

8. If a submitting agency delays, postpones or withdraws a project because it cannot be delivered in the programmed SFY due to funding, it can be resubmitted with a revised HSIP application in the next call-for-projects for the next available funding SFY.
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Appendix A | HSIP Project Application Process

Agency: Title of Project:

County: COG/MPO:

District: Date:

Contact: Phone: E-Mail:

Type of Safety Improvement: Spot: □ YES □ NO Systemic: □ YES □ NO

Mark all that apply to your project: □ Design □ Constr. □ Procurement □ Item/Infrastructure

Anticipated Total Cost Estimate: $0.00

Anticipated dollar amount of HSIP Funding: $0.00

Anticipated Dollar amount of Local Match (5.7%) (6.66%): $0.00

Anticipated Dollar amount of Other: $0.00

Funding Source: □ 100% HSIP □ 94.2% HSIP □ 94.34% HSIP Cost Estimate Tab:

Administration of Project: Agency: □ YES □ NO ADOT: □ YES □ NO

Name and Title of COG/MPO Representative:

Basic Project Information

Anticipated Design Year (Construction year cannot be the same): □ FY21

If additional ROW is needed, what FY is purchase anticipated?: □ FY21 □ FY22

Anticipated Construction Year: □ FY22 □ FY23

1. Have lower cost countermeasures been considered or implemented? □ YES □ NO

1a. If "Yes", describe:

If "No", explain why not:

2. Which 23 USC 148 highway safety improvement project category does this project come under?

2a.

3. Describe your safety improvement project in detail: (50 words or less)

3a.

4. Describe the location of this safety project:

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5. What crash data screening method was used to identify this project?

6. What is the safety justification for the proposed project?

7. Will there be ground disturbing activities? [YES/NO]

8. Is project within applicants permanent ROW? [YES/NO]

8a. If NO please explain:

9. Will any temporary right-of-way acquisitions be required? [YES/NO]

10. Will there be any utility relocation needed? [YES/NO]

10a. If YES please explain:

11. Does Section 4(f) apply to any portion of this project? [YES/NO]

11a. If YES please explain:

12. Are there any other issues that may impact or delay development or construction of this project? [YES/NO]
### 2019_HSIP_Application.xlsx

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12a. If YES please explain:

13. Is this project in compliance with revised ADA Standards?  [ ] YES  [ ] NO

13a. If NO please explain:

14. Does the project support Arizona’s Strategic Highway Safety Plan?  [ ] YES  [ ] NO

15. Are there any Studies, RSA’s or Other evaluations that support this project?  [ ] YES  [ ] NO

16. HSIP Roadway Functional Classification:

17. Average Daily Traffic Volume and Year Collected:  ADT:  Year:

18. What is the source of ADT?

19. What is the posted speed limit?

20. Detailed engineer’s cost estimate attached:  [ ] YES  [ ] NO

### "Systemic" Safety Project

21. Completed B/C Ratio Tabulation Sheet Attached (Required):  [ ] YES  [ ] NO

22. Most current 5 Years Crash Data from ADOT ALISS database sorted by year & severity (required):  [ ] YES  [ ] NO

23. What are the inclusive dates of the crash data?

24. Have all crashes that will not be influenced by this countermeasure been deleted from the crash list? (pedestrian, pedalcycle, etc. as applicable)  [ ] YES  [ ] NO

25. If purchasing equipment or materials, who will install?  [ ] Town/City  [ ] County  [ ] Controller  [ ] Tribe

26. Does the project require proprietary items (23CFR 635.411)?:  [ ] YES  [ ] NO

27. Is a list of locations for systemic projects provided on the attached form?  [ ] YES  [ ] NO

28. How are [will] the proposed locations be prioritized for replacement? (explain below)

28a.
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29. Are the supporting structures in good condition, meet local standards and have an anticipated service life longer than the countermeasure being installed?  
   - [ ] YES  
   - [ ] NO  

### "Spot" Improvement Projects Only

30. Completed B/C Ratio Tabulation Sheet Attached (required):  
   - [ ] YES  
   - [ ] NO  

31. Is the most current 5 Years Crash Data from ADOT ALISS database sorted by year & severity attached and in correct format? (required):  
   - [ ] YES  
   - [ ] NO  

32. What are the inclusive dates of the crash data?  

   [ ] YES  
   - [ ] NO  

   Have all crashes that will not be influenced by this countermeasure been deleted from the crash list? (pedestrian, pedalcycle etc. as applicable)  
   - [ ] YES  
   - [ ] NO  

33. Have any infrastructure changes occurred within the work limits of this project during the years the crash data covers?  
   - [ ] YES  
   - [ ] NO  

34. If YES please explain:  

35. Project vicinity map is provided:  
   - [ ] YES  
   - [ ] NO  

36. Project work limits map is provided:  
   - [ ] YES  
   - [ ] NO  

### SHSP - All Projects

37. Which SHSP Emphasis Area (EA) does this project support?:  

37a. Which EA Strategy does it support?:  

37b. Does this project support a second SHSP EA? If so, which EA?:  

37c. Which EA Strategy supports the second EA?  

37d. Does this project support a third SHSP EA? If so, which EA?:  

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Page 4
The Cost Estimate shown on the next page is just one example of several possibilities for HSIP funding depending on HSIP Funding Share, non-HSIP funds, other funds, etc. However, as a minimum all cost estimates have to be submitted in this format. It is recommended that a detailed Engineer Estimate and
cost breakdown also be included since the applicant is responsible for all funds exceeding the original approved HSIP eligibility.