

Appendix A

**HSIP Project
Application Process
and Worksheets**

October 2023

Disclaimer

This report is subject to provisions of 23 USC § 407. Any intentional or inadvertent release of this material, or any data derived from its use does not constitute a waiver of privilege pursuant to 23 USC § 407.

23 USC § 407 - Discovery and admission as evidence of certain reports and surveys

Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

Application Framework

Changes to HSIP Program for the 2024 Call for Projects:

- All applications are submitted for SFY27 and SFY28 programs.
- FHWA project naming convention added (Appendix E)
- All potential applications will be reviewed by ADOT consultant and the consultant's fee has been added to the cost estimate
- ADOT will set-aside HSIP funds to cover potential construction cost increases on local 100% HSIP projects
- Design consultant's cost must be at least \$150,000 and the above the line construction phase must be at least \$500,000
- Arizona Tribal Safety Infrastructure Program (ATSIP) has been added

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. The Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58, also known as the "Bipartisan Infrastructure Law") was signed into law on November 15, 2021 and again amended 23 U.S.C.148. Section 11111, Highway Safety Improvement Program, added paragraph (11), SPECIFIED SAFETY PROJECT, which added back in non-infrastructure projects which promote public awareness regarding highway safety matters, facilitates enforcement of traffic safety laws and provides infrastructure and infrastructure related equipment to support emergency services among other projects. BIL continued two existing special rules and established a new one. The three Special Rules in section 148(g) of title 23 of the United States Code (U.S.C.) as part of the HSIP:

- HRRR Special Rule (23 U.S.C. 148(g)(1));
- Older Drivers and Pedestrians Special Rule (23 U.S.C. 148(g)(2)); and
- VRU Safety Special Rule (23 U.S.C. 148(g)(3)).

This application is to support requests for HSIP eligibility determination for use of State Fiscal Year (SFY) 27 & 28 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. In this call-for-projects in order for a completed application to be accepted, a draft copy of the application must be submitted to ADOT TSS for eligibility review and cost estimate review prior to **May 3, 2024**. TSS will review the draft applications and rank them based on the draft B/C ratio. Those applications determined to be potentially HSIP eligible and ranked above the ADOT HSIP obligation authority (OA) line (applies if draft application funding requests exceed the available OA) and approved by the State Transportation Board (STB) will be provided to an ADOT consultant for scoping review by August 19, 2024. The consultant will review the application, meet with the submitting agency, produce a preliminary design up to 30% (ADOT IDO Stage II Deliverables), report results back to TSS and upon approval present the results to the submitting agency. Final applications must be submitted by **December 18, 2024**. Applications received by ADOT TSS after close of business on the due date of will

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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. The HSIP Program Manager will then submit the prioritized list to the TSM&O Director for final ranking and approval. A Safety Review Committee, comprised of FHWA, local, tribal and ADOT staff will be convened to review and approve the proposed list by February 16, 2025. The final list will then be sent to PRB, PPAC (State Agency projects only) and STB for final approval by April 18, 2025. Once the prioritized HSIP eligible list is approved by STB, the HSIP Program Manager will issue the approved HSIP eligibility letters and the projects will be entered in the ADOT Five-Year Transportation Facilities Construction Program. COG/MPO's are responsible to enter the eligible local agency projects in their TIPs and obtain local approval for the FY(s) specified in the eligibility letters. Local agencies or tribes not a member of a COG/MPO must follow established procedures to enter the project in ADOT's ESTIP.

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

Arizona did not meet or make significant progress toward meeting its Safety Performance targets in 2020, Arizona must comply with the provisions set forth in 23 USC 148(i) for the subsequent fiscal year. Arizona is required to:

- 1) Use obligation authority equal to the HSIP apportionment for the year prior to the target year, only for HSIP projects.
- 2) Submit an HSIP Implementation Plan that describes actions the State will take to meet or make significant progress toward meeting its targets. The HSIP Implementation Plan should guide the State's project decisions so that the combined 148(i) provisions lead to the State meeting or making significant progress toward meeting its safety performance targets in subsequent years.

Depending on the outcome of the FHWA approved Arizona HSIP Implementation Plan required above, adjustments may have to be made to the final HSIP eligible project list starting in FY 23 and beyond.

ADOT is normally notified by FHWA if the State met its targets in March of each year.

SFY Application is an excel workbook consisting of 10 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 or assist with additional information until the due date.

All potential applications and back-up documents, minus the signed cover letter, must be submitted to TSS in order for TSS to distribute the appropriate documents and cost estimates to other ADOT Groups for review and comment. The ADOT consultant will compile all comments into one document and return the comments to the submitting agency prior to the final submittal date. The agency has the option to include the comments/recommendations into their final application or not.

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The application is also available on-line at <https://azdot.gov/business/transportation-systems-management-and-operations/operational-traffic-safety/arizona-highway>

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 total project cost)
 - d. How the countermeasure(s) will correct the safety problem
 - e. Who will be 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 suspected serious injury crashes that can potentially be reduced by implementation of the countermeasure(s)
 - i. Identify which SHSP emphasis area and strategy the project supports
 - j. B/C ratio as calculated in the B/C ratio analysis sheet (≥ 2.5)
 - 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 **December 18, 2024**.
3. Cost estimate in ADOT format:
 - a. Lump sum cost estimates will not be approved.
 - b. 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 and a B/C ratio calculated for each countermeasure. Eligibility is only approved for the total estimated cost (design and construction) of a project.
 - c. Agencies should use the ADOT project resources available to them to obtain the latest unit costs and historical bid pricing. The ADOT Project Resource Webpage is located at:

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<https://adotnet.az.gov/our-agency/intermodal-transportation/project-resource-office-pro>

The ADOT Project Estimating tool (E2C2) web address is:

<https://apps.azdot.gov/websignon/logon.asp>

- d. For projects that have multiple countermeasures some of which are 94.3% HSIP eligible and some are 100% HSIP eligible, for design and below the line breakout costs will be based on the anticipated construction cost 94.3% and 100% ratio.
- e. Once HSIP eligibility is granted, requests for additional HSIP funds will not be entertained. Additional funding is the responsibility of the owning agency.
- f. The design consultant cost must be at least \$150,000 and the above the line construction phase must be at least \$500,000.
- g. The Cost Estimating worksheets contain an inflation factor that is obtained from the ADOT approved Construction Cost Index (CCI) projections. The projections for FY23 – FY42 are shown below:

Fiscal Year	% CHG	Fiscal Year	% CHG
2023	15%	2027	3.04%
2024	3.96%	2028	3.06%
2025	3.16%	2029	3.10%
2026	3.06%		

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.
 - a. Most recent five (5) years of data from the ADOT crash database and must include “condition influencing driver/pedestrian/bicyclist”. All LPAs applying for HSIP funds must use the same database to obtain crash data.
 - b. Only fatal and suspected serious injury crashes can be used for B/C ratio analysis or the crash data spreadsheet.
 - c. Only crashes that the proposed countermeasure will correct can be used for B/C ratio analysis or the crash data spreadsheet.
 - d. Severity of each crash must be indicated.
 - e. Manner of the collision must be indicated.

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- f. Driver behavior of Unit 1 from the ADOT Crash Form or Standard Crash Data Report Form must be indicated.
 - g. Other relevant attributes may be indicated.
 - h. Do not include crashes unreported by law enforcement unless supporting documentation, i.e. crash reports, is provided.
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 FHWA’s Crash Modification Factors Clearinghouse if available. If a 4 or 5 star countermeasure is not available, 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 shall a 3 star or less CMF be approved to be used if a 4 or 5 star CMF is available. Only fatal and suspected serious injury crashes can be used in the B/C ratio analysis.
 - c. Maximum of 3 countermeasures can be used in a combined crash reduction factor (CCRF). Each countermeasure must make up at least 15% of the construction cost for their CRF to be used in the below formulas.
 - 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 B and must be included. If the service lives for multiple countermeasures are different, then the shortest service life must be used in the B/C ratio calculation.
 - j. B/C ratio must be ≥ 2.5 (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 or countermeasure must have a B/C ratio of ≥ 2.5 . For ranking purposes, 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.)
 - l. In order to use a CRF for the B/C ratio analysis, the CMF/CRF Category and details outlined in the FHWA CMF Clearinghouse for the specific CMF must match the countermeasure being constructed.

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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. Specifically, if a pedestrian count is required a physical count must be made. Failure to include required warrants will result in the application being disqualified.
9. Pedestrian Countermeasures - Safe Transportation for Every Pedestrian (STEP) is a recognized DOT program, having produced valuable resources and providing technical assistance on proven countermeasures for pedestrian safety. The Federal Highway Administration (FHWA) published an updated “Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations” to help agencies choose countermeasures based on roadway characteristics and pedestrian safety issues. ADOT has created an Arizona-specific guide so that local engineers can find examples and drawings and specs for these countermeasures. Included in the ADOT guide is a “Field Review Form” which must be completed and submitted with all pedestrian countermeasures. ADOT’s AZ STEP Guide’s website is here: <https://azdot.gov/business/tsmo/operational-and-traffic-safety/az-step>
10. Project Initiation Time Line – The HSIP project request needs to be initiated by the local agency far enough in advance that the JPA can be completed PRIOR to July 1st of the SFY that the agency has eligibility for design.
11. Multi Agency Projects – If an HSIP project is approved for a project that involves more than one agency, the lead agency must complete a MOU with the other agencies before the project initiation and a JPA with ADOT can be requested. This MOU allows ADOT, as the administrator, to access local Right-of-Ways for necessary inspections and administrative requirements.

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 \$500,000 for the construction phase and the consultant’s design cost must be at least \$150,000, not including Scoping Consultant and ADOT Admin Fees, except for:
 - a. those IT systems/equipment projects used for AzTraCS where the minimum cost is \$5,000.00 (See Appendix D).

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- b. Non-infrastructure projects which is \$100,000.00.
3. Maximum project cost for both spot and systemic projects is \$5 million, unless approval is granted in writing BEFORE an application is submitted.
4. HSIP funds used for right-of-way purchases are capped at 10% of the estimated total HSIP countermeasure construction cost.
5. HSIP funds used for utility relocation or construction are capped at 10% of the estimated total HSIP countermeasure construction cost.
6. HSIP funds for non-infrastructure projects are capped at 10% of the HSIP obligation authority amount for the SFY.
7. Cost of countermeasure(s) must represent at least 15% of the total construction cost.
8. For 100% HSIP eligible projects, ADOT will set-aside \$1.5m in each SF 27 and SF 28 to cover potential construction cost increases (HSIP Contingency).
 - a. Set-aside funds are limited and will be distributed in the order in which they come to TSS, first-come first-served.
 - b. The set-aside HSIP funds will apply only for the construction phase (After bid advertisement) of local HSIP projects funded with 100% federal share, ADOT will cover cost increases after bid advertisement up to 20% over the fully loaded cost estimate (Engineering estimate and below the line) amount not to exceed \$100,000.
 - c. Local Agency will be responsible for any amount above the 20% or the \$100,000.
 - d. The ADOT project manager will notify the HSIP team to determine if set-aside funds are available in the amount needed.
9. If any local 94.3% 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.)
10. Below the line construction "Contingencies" has been increased to 40% of the anticipated construction cost.
11. HSIP funds cannot be used to pay for regular day-to-day staff time or maintenance activities including staff time to implement AzTraCS. Yearly licensing fees associated with statewide crash data software can be funded with HSIP funds.
12. HSIP funds can be used to fund certain non-infrastructure programs and non-fixed physical infrastructure items. See Appendix C and Appendix D.

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13. 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.
14. Total project funding for non-infrastructure projects, i.e. Strategic Transportation Safety Plans, RSAs, safety data software, etc. are capped 5% of the yearly SFY HSIP obligation authority.
15. Total project funding for non-infrastructure programs and equipment not included in paragraph 11 are capped at 10% of yearly SFY HSIP obligation authority.
16. Shoulder widening projects are limited to 5 feet for HSIP eligibility. Shoulders less than 5 feet are not eligible and any shoulder width exceeding 5 feet has to be funded with other sources.
17. Maximum project cost for both spot and systemic projects is \$5 million, unless approval is granted in writing BEFORE an application is submitted.
18. If a countermeasure that is 100% HSIP eligible is being installed as a result of a 94.3% HSIP eligible countermeasure, then the 100% HSIP eligible countermeasure is going to be 94.3% HSIP eligible (i.e. installing shoulders (94.3%) and installing new signs (100%). Signs are now 94.3% eligible.)

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. 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 quarter of the SFY in which the design is approved and currently programmed.
3. 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.
4. 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.
5. ADOT LPA Project Initiation Packets must be submitted to ADOT far enough in advance to insure all documentation and JPAs are completed PRIOR to July of the SFY the design phase of the eligible project is approved for.
6. A submitting agency may defer a “draft” project if:

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- a. The project meets all milestones for project initiation, IGA execution and design authorization in order to be considered for the one time deferral.
- b. Due to the challenges with local project delivery, two policies are being proposed to assist local agencies and to protect the State from losing federal aid which may not be useable on ADOT projects:
 - i. One-time project deferrals
 - ii. Request should be received no later than July 1st of SFY in which the project phase is currently programmed.
 - iii. Request is subject to PRB, PPAC and Board approval
 - iv. Request is subject to funding availability.
7. If a submitting agency delays, postpones or withdraws a project because design or construction cannot be delivered in the programmed SFY, as stated in the project's eligibility letter, due to funding or because of other delays, ADOT TSS must be notified in writing and it can be resubmitted with a revised HSIP application in the next call-for-projects for the next available funding SFY.
8. The state of Arizona and the Arizona Department of Transportation (ADOT) will make available funds to federally recognized tribal governments for safety improvement projects on tribal roadway infrastructure through the Arizona Tribal Safety Infrastructure Program (ATSIP). **Applications for ATSIP funding will not require the use of crash data or the calculation of a benefit-cost ratio for the proposed improvements.** The eligibility of these projects will be determined by an ATSIP selection committee. HSIP funds in the amount of \$1.5m will be made available in SFY27 and \$2.0m in each of SFY28 and SFY29.

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