HSIP Analyzer Manual

(for Funding Set-aside Applications)

The use of the HSIP Analyzer is required for all applications for Highway Safety Improvement Program (HSIP) Cycle 11 Call for Projects. The completed HSIP Analyzer is one of the required attachments to the HSIP Application Form.

There are two HSIP application categories: Benefit Cost Ratio (BCR) and Funding Set-asides. **This manual provides instructions for using the HSIP Analyzer to prepare a Funding Set-aside application. Please use the other manual for BCR Applications.**

HSIP Analyzer (for Funding Set-aside applications) is a PDF form for entering project general information, providing project schedule and estimating the construction cost and overall project cost. Please review these instructions thoroughly before you start to prepare a Funding Set-aside application.

For more information regarding the HSIP program, please review the HSIP Guidelines, Local Roadway Safety Manual for California Local Road Owners and other related information at https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program.

Table of Contents

This manual is for Funding Set-aside applications only. It consists of the below sections:

- **Section I: General Information**

  This section is for proving general information and an estimated implementation schedule for the project.

- **Section II: Construction Cost Estimate and Cost Breakdown**

  This section is for providing an estimate for construction items and determining the project's maximum Funding Reimbursement Ratio (FRR).

- **Section III: Project Cost Estimate**

  This section is for providing the cost estimate for the entire project, including all phases (Preliminary Engineering, Right-of-Way, Construction and Construction Engineering).

- **Section IV: Summary**

  This section provides a summary of data that are to be transferred to the application form.

Section I: General Information

1. Application ID, Project Location and Project Description

Application ID:

Enter the exact Application ID from the Application Form, e.g. 03-Sacramento-1.

Save the completed HSIP Analyzer as file name "HA" + Application ID before you attach it to the last page of the Application Form (e.g. "HA03-Sacramento-1.pdf").

Project Location:

Enter (copy & paste) the exact Project Location from the Application Form.

Project Description:

Enter (copy & paste) the exact Project Description from the Application Form.

2. Type of funding set-aside, number of intersections and Miles of Roadways

Check the funding set-asides for this application:

(a) Guardrail Upgrades;
(b) Pedestrian Crossing Enhancements;
(c) Installing Edgelines;
(d) Bike Safety Improvements; and
(e) Set-aside for Tribes.

For more information regarding the eligible work under each of the funding set-asides, please refer to the Application Form Instructions.

Number of Intersections:
Enter number of intersections included in this project.

Miles of Roadways:
Enter miles of roadways included in this project. Do not include the length of the intersections that have been accounted for in the above "Number of Intersections" field.

3. Other Project information

Most of the information requested in this section is required for Caltrans to meet its annual safety program reporting requirements to the FHWA. Responses to these questions will NOT be used in the project selection process. The responses will be incorporated into statewide and national safety program assessments and used to determine the health of the overall program and potential areas of focus for future program improvements.

Some questions are self-explanatory so not all questions are explained here.

Functional Classification (FC):
Visit https://dot.ca.gov/programs/research-innovation-system-information/office-of-highway-system-information-performance, click "California Road System (CRS) maps" in the middle of the webpage, and determine the

Functional Classification (FC) of the road(s) where most of the work will be constructed. If the amounts of work are equal among multiple FCs, use the highest FC. Select the FC from the drop-down list.

Urban/Rural Area:

Select "Urban" or "Rural" from the drop-down list when most of the proposed work is in urban or rural area.

What is the approximate total cost percentage that is HR3 eligible?

Work in **rural** area and associated with roads functionally classified as "**Major Collector**", "**Minor Collector**" and/or "**Local**", is High-Risk-Rural-Roads (HR3) eligible. HR3 eligible projects, when selected for funding, will be tracked separately due to the FHWA's special requirements. Provide an approximate total cost percentage that is HR3 eligible (rounded to the nearest ten percent).

Annual Average Daily Traffic and Year Collected:

Indicate the existing (and most current) Annual Average Daily Traffic (AADT) volume at the project location and the year the data were collected.

- If the proposed improvement is on a road segment, the AADT is the number of vehicles that use that section of roadway, in both directions, on an average day. You may enter the same number for the Major Road and Minor Road.
- If the proposed improvement is at an intersection, separate the AADT volumes approaching the intersection into Major Road and Minor Road.
- If the proposed improvements span a large distance and/or are spread out over several routes/locations, provide the range of AADT volumes with the high-end input in the "Major Road" field and the low-end input in the "Minor Road" field.

Posted Speed Limit (mph):

Input the highest posted speed within the project limits.

SHSP Challenge Areas:

The goal of this question is to tie the improvements to California's Strategy Highway Safety Plan (SHSP). Multiple Challenge Areas may be checked. For example, if this project is for pedestrian safety at intersections, both "Intersections" and "Pedestrians" should be checked. Visit https://dot.ca.gov/programs/safety-programs/shsp for more details on the California SHSP Challenge Areas.

Is the project focused primarily on "spot location(s)" or "systemic" improvements?

The Local Roadway Safety Manual includes a detailed description of these two approaches. When more than one type of systemic improvements are proposed in one application, applicants need to select a single "primary type".

Approximate percentage of project cost going to improvements related to motorized travel:

HSIP projects benefit a mix of roadway users and modes of travel. For statewide tracking purposes, Caltrans needs to approximate the percent of the overall project costs going to improvements for motorized vs. non-motorized roadway users. Please make the best approximation of the percentage related to motorized travel based on the estimated project cost and the primary objectives of the project.

State Senate District(s) and State Assembly District(s):

Based on project location(s), provide State Senate District(s) and State Assembly District(s) that will benefit from this project. Use commas to separate if there are multiple districts.

4. Project Schedule

The local agency is expected to deliver the project per the HSIP Program Delivery requirements. The delivery requirements for HSIP Cycle 12 projects are: (1) Preliminary Engineering (PE) Authorization by 9/30/2025; and (2) Construction (CON) Authorization by 12/31/2027.

The exceptions are:

- The milestone of PE authorization does not apply if the project will not use the HSIP funds for PE;
- For a project that a consultant is used for the PE work, an additional time of 6 months is allowed for meeting the CON Authorization milestone. The additional time is for the agency to advertise and select the consultant for the work of the PE phase.

Please answer the below two questions:

- Will this project use HSIP funds for Preliminary Engineering (PE) Phase?
- Will an external consultant be hired to do the PE work?

Then specific delivery requirements for your proposed project, if selected for funding, will be displayed.

Please provide your best estimated dates for the following implementation milestones (leave blank if not applicable). Please make sure the proposed schedule will meet the above delivery requirements; if not, please explain in answer to question no. 3 in the application form.

- PE Authorization Date;
- Environmental Clearance Date;
- Right of Way Clearance Date;
- Final PS&E Date;
- CON Authorization Date;
- Construction Contract Award Date;
- Construction Completion Date; and
- Project Close-Out Date.

Section II: Construction Cost Estimate and Cost Breakdown

This section serves two purposes:

1. Provide a detailed engineer's estimate for construction items. The costs for other phases i.e. Preliminary Engineering (PE), Right of Way (ROW), and Construction Engineering (CE) will be accounted for in Section II.

And

2. separate the cost percentages for 'Set-aside (SA)', 'Other Safety(OS)' and 'Non-Safety(NS)' components and determine the project's maximum Funding Reimbursement Ratio (FRR).

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II.1 Detailed Engineer's Estimate for Construction Items

- **Table for Detailed Engineer's Estimate:**

  The gray fields in this table are calculated and thus locked and read-only.

  - In each line of the table, enter the construction item description, unit, quantity, unit cost, and the cost percentage for the set-aside (SA %) and other safety (OS %). The non-safety cost percentage (NS %) is calculated (100% - SA % - OS %).

    If an item is a general one (such as traffic control, mobilization, etc.), check the "General item" box and no SA % and OS% are needed. A general item will NOT be used in determining the project's overall SA %, OS% and NS %.

  - At the bottom of the table, overall cost percentages will be calculated for SA, OS and NS, respectively.

- **Contingencies**:

  In general, not all project construction costs are well defined at the time when the HSIP application is being prepared. For this reason, applicants are allowed to include Construction Item Contingencies as a percentage of the known construction costs. This is the only project contingencies allowed in an HSIP application. When applicants calculate their Preliminary Engineering (PE) and Construction Engineering (CE) costs as a percentage of the Total Construction Cost, contingencies should be built within the PE and CE costs.

- **Total Construction Cost**:

  The total construction cost is the sum of the construction item costs and the contingencies, rounded up to the nearest hundreds.

II.2 Project's maximum Funding Reimbursement Ratio (FRR)

The project's maximum Funding Reimbursement Ratio (FRR) is calculated the smaller of 90% and (100%-NS %). For example, if the non-safety cost percentage is 0%, the project's maximum FRR is 90%; if the non-safety cost percentage is 35%, then the project's maximum FRR is then 100% - 35% = 65%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

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After the completion of the construction cost estimate, the following data will be transferred to Section III (Project Cost Estimate) automatically:

- Total Construction Cost;
- Maximum FRR, .i.e. Maximum "HSIP/Total" percentage allowed in Section III.

Section III: Project Cost Estimate

Section II of the application form is used for the overall project cost estimate including all applicable phases, i.e. Preliminary Engineering (PE), Right of Way (ROW), Construction (CON), and Construction Engineering (CE). All project costs (all phases and funding sources) must be accounted for in this section.

The following data are transferred to this section from Section II:
- *Total Construction Cost;*
- *Maximum Funding Reimbursement Ratio (FRR), i.e. Maximum "HSIP/Total" percentage allowed for this project.*

All the grey fields contain formulas and are read-only.

For each line in the table, enter the total cost (rounded up to the nearest hundred dollars) and the desired HSIP/Total Cost ratio. The desired HSIP/Total ratio cannot be more than the project's maximum FRR. You may click the "Set" button on top of the table to set all "HSIP/Total" percentages to the project's max FRR. The amounts of HSIP Funds and Local/Other Funds will be calculated by the form.

Check Box indicating Agency does NOT request HSIP funds for PE Phase:

If no HSIP funds for the PE Phase are requested, this Check Box will be checked automatically. This information will only be used for project delivery tracking. It will not affect the ranking or selection of applications for funding.

Automatic Data Validation:

Once all costs and ratios are entered, a message will appear if errors are detected, based on the below criteria. Please fix the errors unless justification for exceptions is provided in Question #5 in Section II of the Application Form.

1) The "HSIP Funds" for Construction Items may not be zero.
2) "HSIP Funds" for Preliminary Engineering may not exceed 25% of the HSIP Construction Cost.
3) "HSIP Funds" for Right of Way may not exceed 10% of the HSIP Construction Cost.
4) "HSIP Funds" for Construction Engineering may not exceed 15% of the HSIP Construction Cost.
5) "HSIP Funds" may not exceed the maximum amount for the particular set-aside ($1,000,000 for guardrail upgrades; $350,000 for the other four set-asides).
6) To maintain efficiencies in the overall Program and Project Management, the "Total HSIP Funds" must be $100,000 or more.

Any exception to the above criteria must be explained in answer to Question No. 3 in the HSIP Application Form.

After the completion of the project cost estimate, "Total Project Cost" and "HSIP Funds Requested" will be automatically transferred to Section IV (Summary).

Section IV: Summary

This section is generated automatically once the data entry and calculation have been completed. Transfer the below data to Page 2 of the HSIP Application Form:

- Total Project Cost; and
- HSIP Funds Requested.