

Cycle 8 HSIP Application – Engineer's Checklist

This application checklist is to be used by the engineer in “responsible charge” of the preparation of this HSIP application to ensure all of the primary elements of the application are included and the application is free of errors in the calculation of the Benefit/Cost Ratio (BCR); allowing the application to be accurately ranked in the statewide selection process. Applications with errors in the supporting data for the BCR calculation will not be considered in the application process.

Special Considerations for Engineers before they Sign and Stamp this document attesting to the accuracy of the application:

Chapter 7; Article 3; Section 6735 of the Professional Engineer's Act of the State of California requires engineering calculation(s) or report(s) be either prepared by or under the responsible charge of a licensed civil engineer. Since the corresponding HSIP application defines the scope of work of a future civil construction project and requires complex engineering principles and calculations which are based on the best data available at the time of the application, the application must be signed and stamped by a licensed civil engineer. By signing and stamping this document, the engineer is attesting to this application's technical information and engineering data upon which local agency's recommendations, conclusions, and decisions are made. This action is governed by the Professional Engineer's Act and the corresponding Code of Professional Conduct, under Sections 6775 and 6735.

The following checklist is to be completed by the engineer in “responsible charge” based on the final application and application attachments – as submitted to Caltrans. The engineer's initials and stamp should not be placed until the application is complete and in final form.

1. **Vicinity map /Location map** **Engineer's Initials:** _____
 - a. The project limits must be clearly depicted in relationship to the overall agency boundary
2. **Project layout-plan** showing existing and proposed conditions must: **Engineer's Initials:** _____
 - a. Be to a scale which allows the visual verification of the overall project limits and the “construction” limits of each safety countermeasure included in the application's BCR
 - b. Show the full scope of the proposed project, including any non-safety construction items
 - c. Show the “Influence Area” for each safety countermeasure (CM) included in the application's BCR
 - d. Show all changes to existing lane and shoulder widths. Label the proposed widths
 - e. Show limits of all roadway excavation/demolition
 - f. Show agency's right of way (ROW) lines. (Also show Caltrans', Railroad, and all other government agencies)
3. **Project cross-section** showing existing and proposed conditions. **Engineer's Initials:** _____
(Only required for projects with roadway excavation, cut/fill slopes, and changes to lane widths)
 - a. Show and dimension: changes, ROW lines, safety countermeasures, etc.
4. **Countermeasure Selection** (used throughout the application): **Engineer's Initials:** _____
 - a. The CMs used are appropriate and reasonable based specifically on the guidance in the HSIP call-for-projects guidelines and application instructions, including Appendix B of the Local Roadway Safety Manual.
5. **Crash Data** used in the BCR calculations must be: * **Engineer's Initials:** _____
 - a. From a reliable and well documented source
 - b. Within influence area of CM and applied to CMs using generally accepted traffic engineering principles
(Example: If the CM only addresses the northbound lanes of a divided roadway, then southbound crashes should be excluded.)
 - c. Accurately shown in collision diagram(s) and collision lists(s) attached to this application.
 - d. Crashes are presented in terms of the number of crashes (**not** the number of injuries and fatalities)
 - e. The most recent crash data available and a minimum 3 years and maximum 5 years of data

6. **Collision Diagram(s)** (Shown separately or combined) * **Engineer's Initials:** _____
- Should be to scale with crash locations accurately plotted
 - Reveals collision pattern(s) necessary to justify CM(s)
 - The influence area for each CM is shown separately on the diagrams (unless the areas are identical)
 - All crashes, included in the BCR Calculation, must be clearly shown within the influence area of that CM
 - Totals for each Location and/or CM are shown with crashes segregated based on Crash Severity
 - The totals shown match the totals shown in the Collision List and Collision Summary
7. **Collision List(s)** (Shown separately or combined) * **Engineer's Initials:** _____
- Totals for each Location and/or CM are shown with crashes segregated based on Crash Severity
 - If the List(s) includes crashes that were not appropriate to include in the project BCR calculations, these crashes must be crossed through or removed and not included in the totals
 - The totals shown match the totals shown in the Collision Diagram and Collision Summary
 - Each crash is only counted as one, even if there were multiple victims and/or vehicles involved
8. **Collision Data Summary/Summaries (HSIP Form in Excel)** * **Engineer's Initials:** _____
- Totals for each Location are shown with crashes segregated based on Crash Severity
 - The totals for each Location/ match the totals shown in the Collision Diagram and Collision List
 - One Collision Data Summary is needed for each benefit calculation run. The totals at the bottom of the form match the totals in the Crash Data Table in the benefit calculation run.
9. **Detailed Engineer's Estimate (HSIP Form in Excel)** **Engineer's Initials:** _____
- All likely construction costs associated with the project are identified and included in the estimate
 - Each of the main project elements are broken out into separate construction items. The costs for each item are based on calculated quantities and appropriate corresponding unit costs
 - Costs for each item are distributed between CMs using a logical method to fairly calculate each CM's cost
 - Each CM included in the BCR calculation must represent a minimum of 15% of the construction costs *
 - "Other Safety" and "Non-Safety" construction items/costs are identified and properly accounted for
 - The total construction cost in the estimate must match the "Construction" cost in Section III of the application
10. **Benefit Results and Benefit Summary (Excel Benefit Calculator)** * **Engineer's Initials:** _____
- Project locations are grouped appropriately per Appendix A of the application form instructions
 - For each of the benefit calculation run, the CMs and crash data shown match the totals shown in the corresponding Collision Data Summary
 - The calculation sheets from all benefit calculation runs must be signed by the Engineer in Responsible Charge and attached to the application
 - When multiple benefit calculation runs are utilized in a project, the results of all runs are summarized in the Benefit Summary sheet which is also attached to the application
11. **Benefit/Cost Ratio (BCR) Calculation (Section IV of the application form)** * **Engineer's Initials:** _____
- The CMs, the crash data period and the benefits by CM shown match the output of the Excel Benefit Calculator / Benefit Summary sheet
 - The total project cost in the BCR calculation must match the total project cost in Section III of the application
12. **Warrant studies/guidance (Check if not applicable)** **Engineer's Initials:** _____
- N/A
- Traffic Signal Warrants – Warrant 4, 5 or 7 met (CA MUTCD): Signal warrants must be documented as having been met based on the CA MUTCD.

13. Additional narration, documentation, letters of support:

Engineer’s Initials: _____

- a. The text in the “Narrative Questions” in the application is consistent with and supports the engineering logic and calculations used in the development of the application’s BCR
- b. When needed, clarify non-standard application of countermeasures, crashes and/or costs; appropriate documentation is attached to the application to document the engineering decisions and calculations

** Not required if the project is applying for set-aside funds.*

Licensed Engineer:

Name:

Title:

Engineer License Number

Signature: _____

Date:

Email:

Phone:

Engineer's Stamp:

To ensure the application's quality and the agency's commitment to deliver the safety project in an expedited manner, the application must be signed by the Agency's Transportation/Traffic Engineering Manager.

By signing this application, the manager is attesting to:

1. All data in the application is accurate and represents the total scope of the planned project;
2. The agency understands the Project Delivery Requirements for the HSIP Program and is prepared to deliver the project per these requirements; and
3. The agency understands if Caltrans staff determine that any of the above requirements are not met, or data is inaccurate, or the application fails to meet the program guidelines and application instructions, the application will be rejected and will not be eligible to receive federal safety funding. Due to time constraints in the evaluation process, applicants will not be notified until after the selection process is complete. Refer to Application Form Instructions for more information.

Transportation Manager:

Name:

Title:

Signature: _____

Date: