U.S. Department of Transportation
Federal Highway Administration

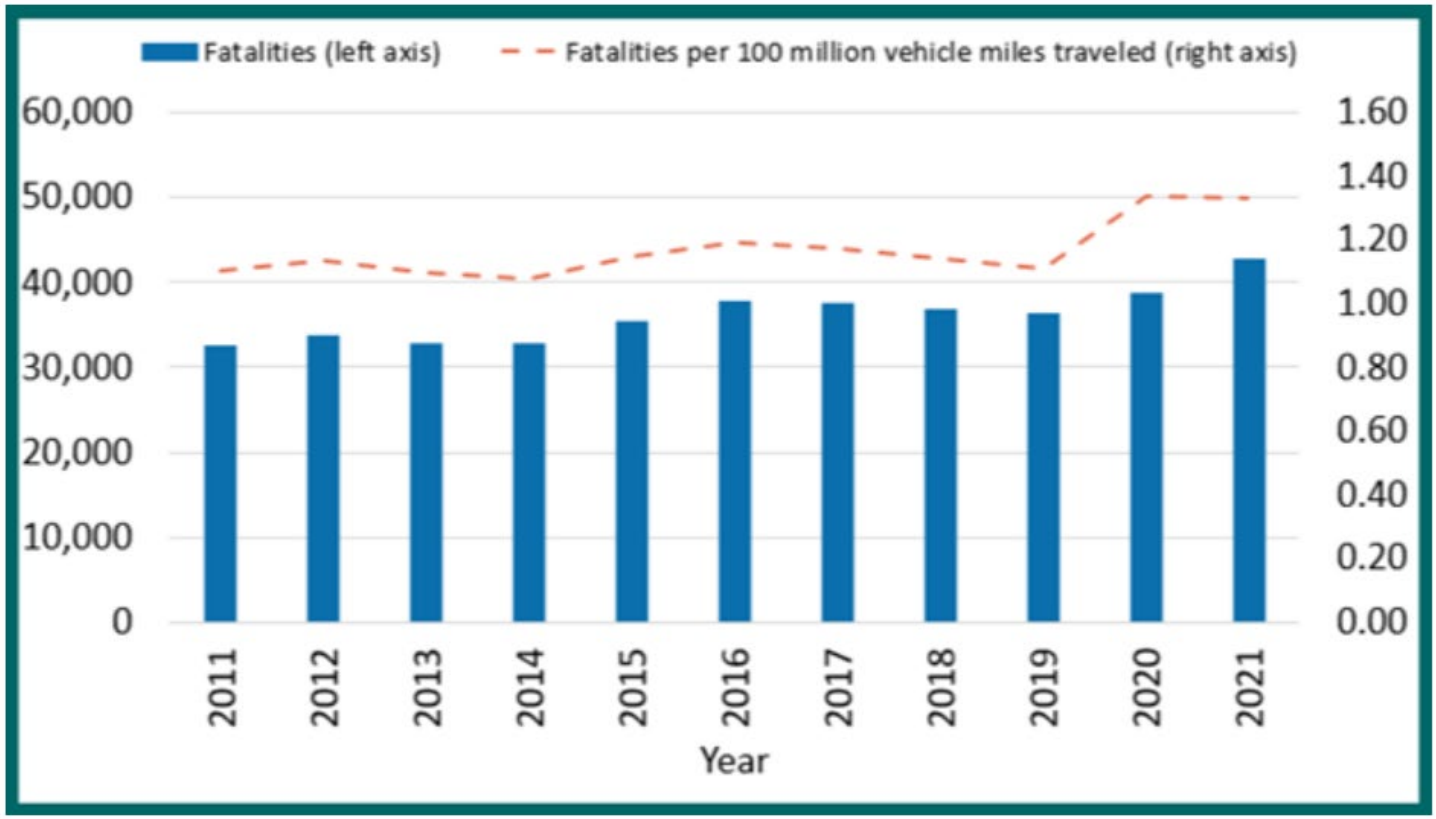
Highway Safety Improvement Program Cycle 12 Call-for-Projects

Federal Highway Administration Remarks

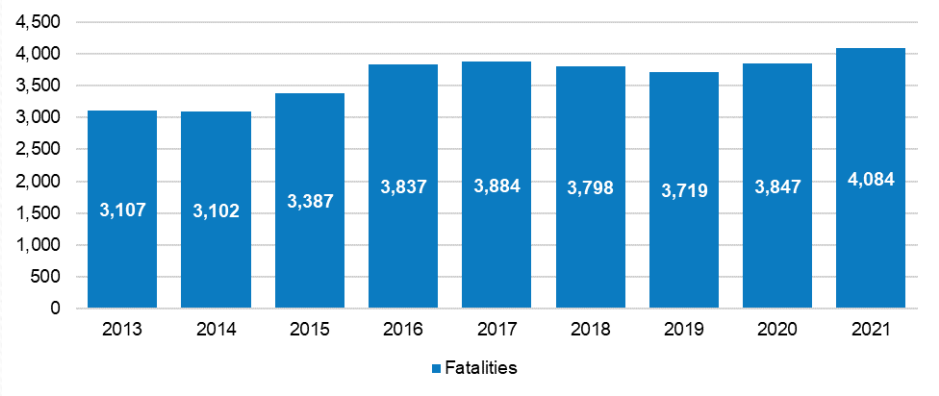
Maria Bhatti
Safety Program Manager
FHWA California Division

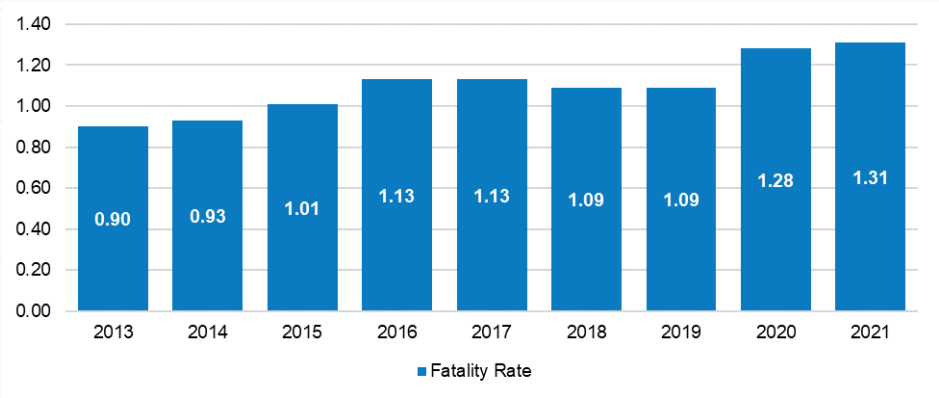
May 21, 2024

National Fatalities

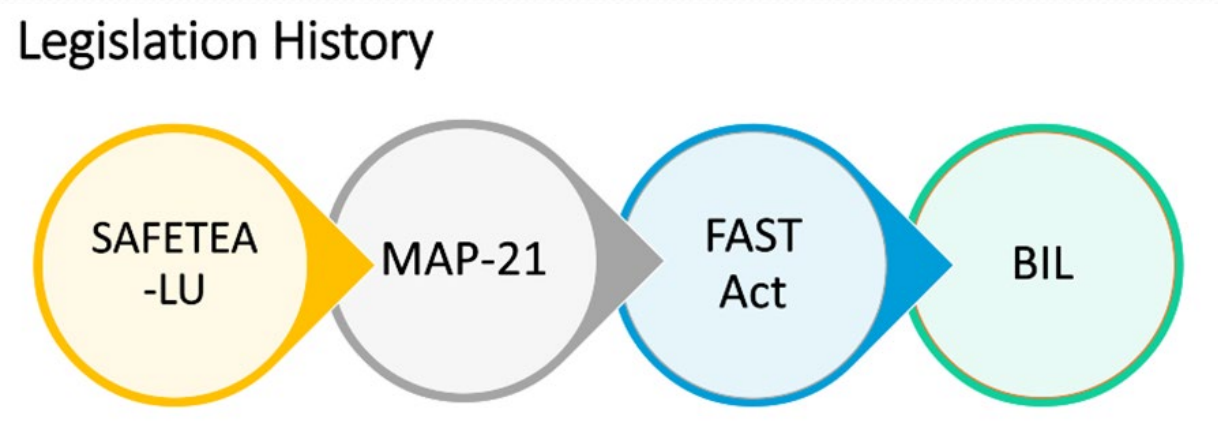


California Fatalities





Highway Safety Improvement Program (HSIP)



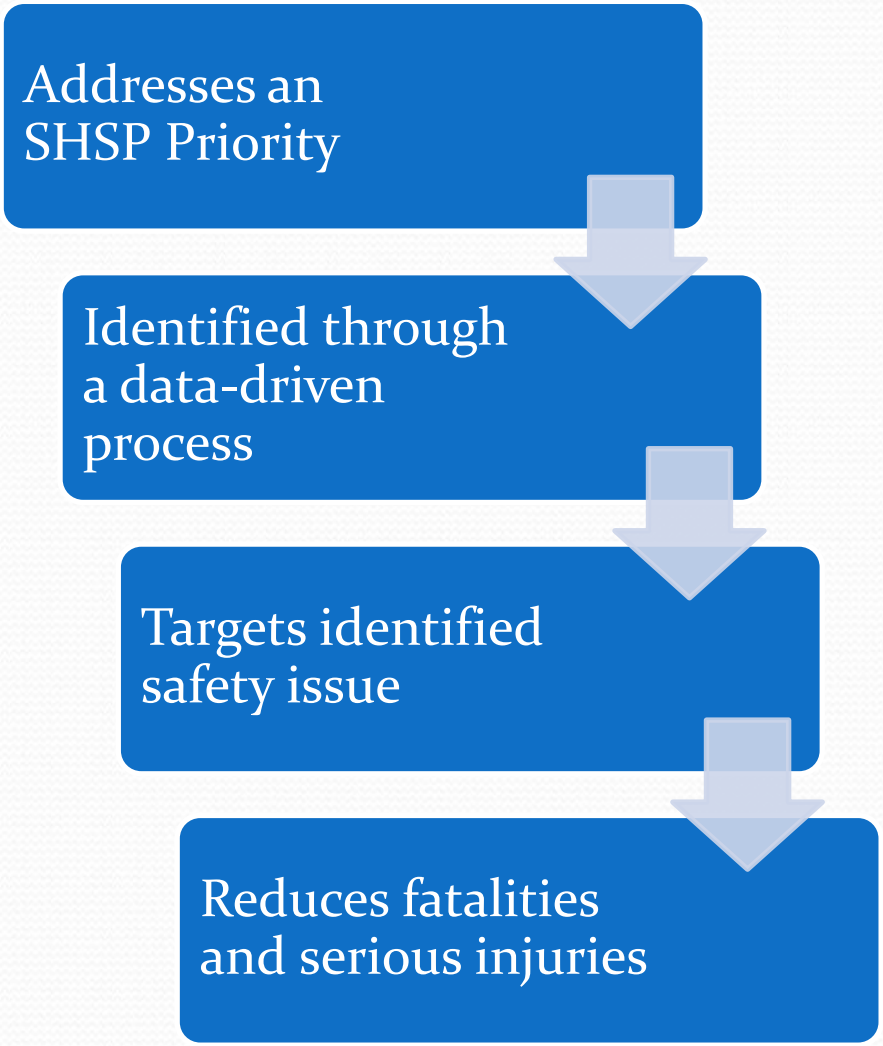
Highway Safety Improvement Program (HSIP)

Purpose:

Reduce fatalities and serious injuries on ALL public roads

- Strategic safety planning
- Data-driven roadway safety management process
- Highway safety improvement projects
- Federally-funded, state administered

HSIP Project Eligibility

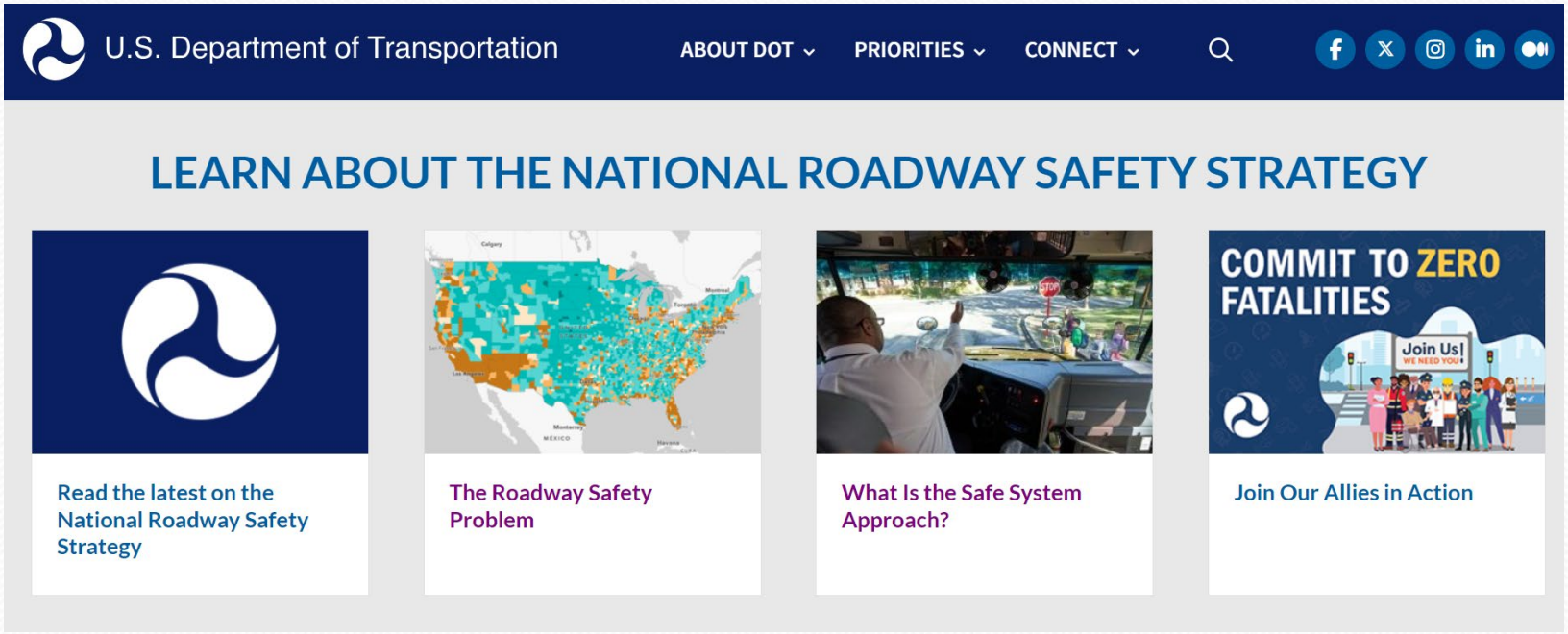


Additional Considerations to HSIP under the Bipartisan Infrastructure Law (BIL)

- Vulnerable Road Users
- High Risk Rural Roads
- Automated Traffic Enforcement Systems
- Projects to Maintain minimum levels of Retroreflectivity

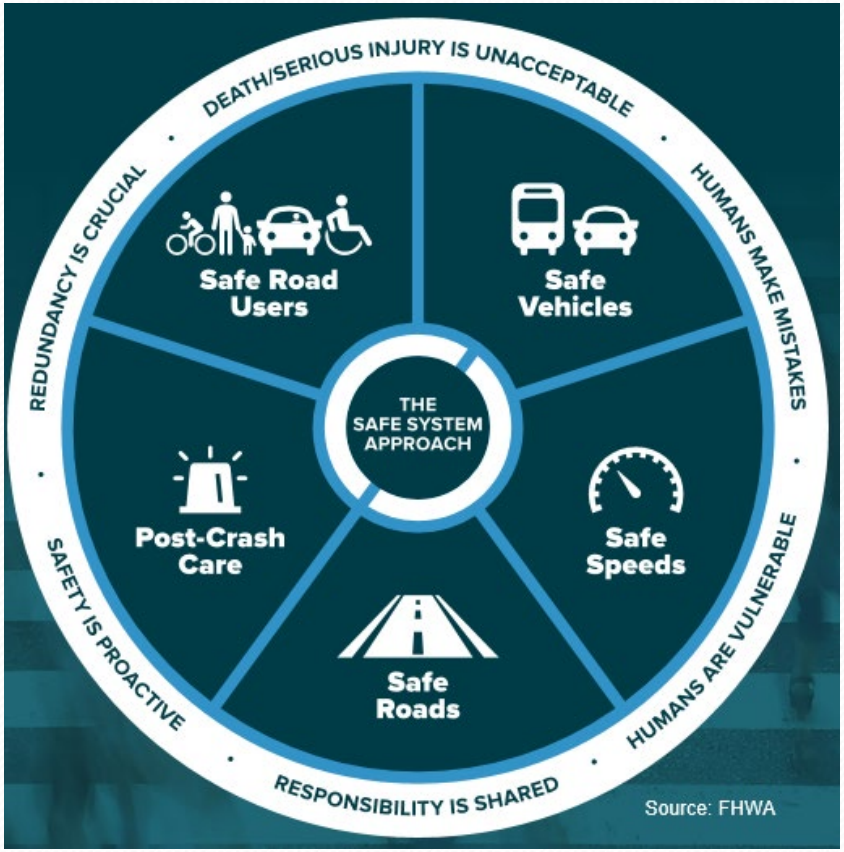
National Roadway Safety Strategy

https://www.transportation.gov/NRSS



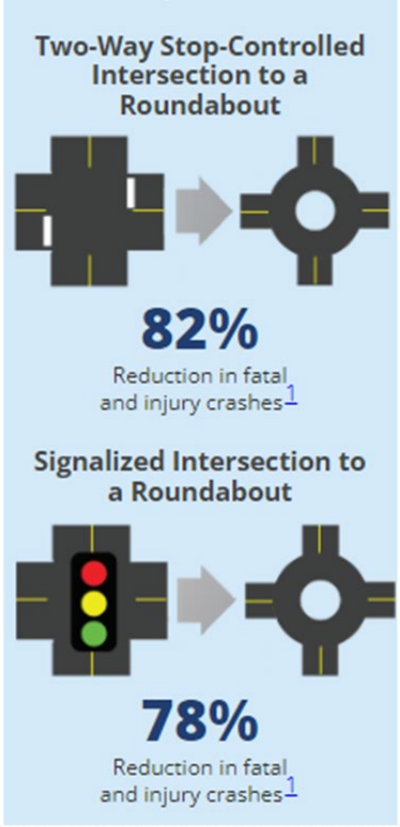
Safe System Approach

- Accommodating human mistakes
- Keeping impacts on the human body at tolerable levels



Proven Safety Countermeasures

- Total of 28 Proven Safety Countermeasures
- Experimental, Tried and Proven



https://highways.dot.gov/safety/proven-safety-countermeasures

California's Safe Streets for All (SS4A) Grants

- 124 Total Awards
  - ❑ 110 Planning and Demonstration Grants
  - ❑ 14 Implementation Grants
- Over $322 million
- August 29, 2024, by 5:00 pm ET Deadline #3 for Planning and Demonstration

https://www.transportation.gov/grants/SS4A

FHWA Resources

- The Safe System Approach
- Proven Safety Countermeasures
- Local and Rural Safety Program
- High Risk Rural Roads (HRRR)

Questions & Answers

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Local Highway Safety Improvement Program (HSIP)
Cycle 12 Call for Projects
Webinar

Caltrans Local Assistance

Office of Federal Programs

May 21, 2024

Local HSIP Overview

Robert Peterson

Chief, Office of Federal Programs (OFP)
Caltrans Division of Local Assistance

Robert.Peterson@dot.ca.gov

Overview

- Local HSIP Purpose
- Eligible Applicants
- Local HSIP Funding Level
- Calls for Projects
- Project Delivery Requirements & Status

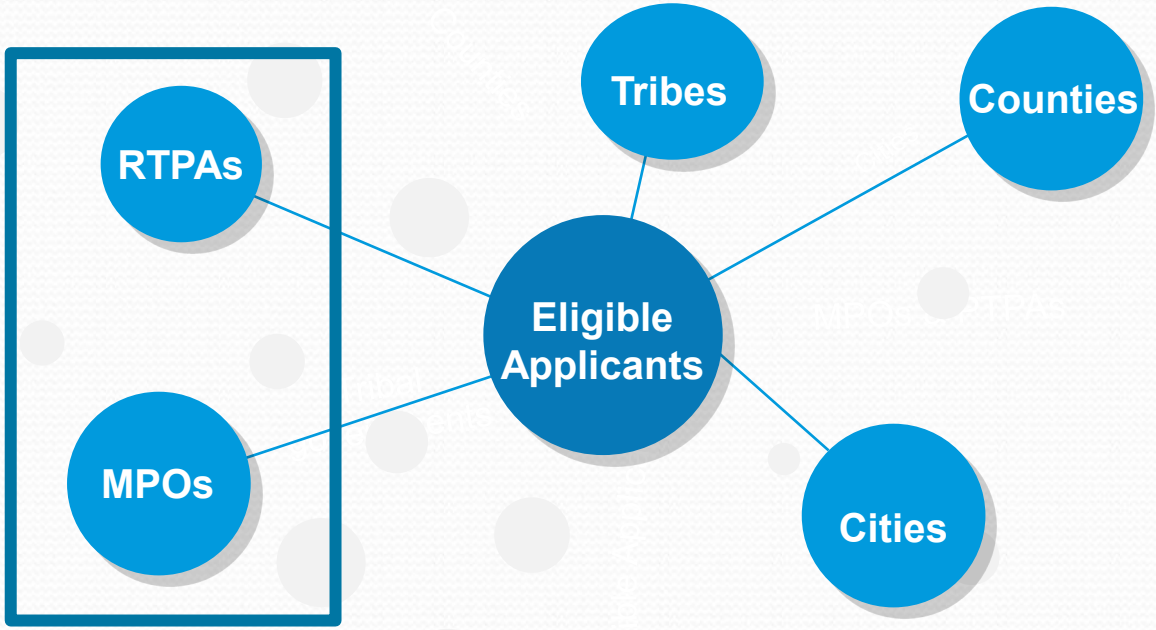
Local HSIP Purpose

To achieve a significant reduction in fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal land.

- Title 23 US Code 148 Highway Safety Improvement Program
- 23 Code of Federal Regulations, 924 & 490 HSIP Implementation Guidance

Eligible Applicants

Any local agency that owns, operates, and maintains public roadways



RTPAs and MPOs can apply on behalf of local agencies

- RTPA: Regional Transportation Planning agency
- MPO: Metropolitan Planning Organization

Local HSIP Funding

California HSIP:
50/50 split between State HSIP and local HSIP

State Highways Local Roads

- Local HSIP: $120 Million/year
- State funding made possible via SB 137 funding exchange

HSIP Calls for Projects

Cycle	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Year	2007	2008	2010	2011	2012	2013	2015
Cycle	**8**	**9**	**10**	**11**	**12**		
Year	2016	2018	2020	2022	2024		

Past HSIP Calls for Projects

Cycles 8 to 11:

$868 billion awarded to 999 projects. 212 completed/343 in construction. Expected benefits: $19 billion.

Cycle	Release Date	Number of Applications	Number of projects selected	HSIP funds approved ($M)	BCR Cutoff	Average BCR of selected projects
8	11/21/2016	247	225	$216.9	3.5	10.3
9	12/12/2018	351	220	$180.8	7.5	17.7
10	3/30/2021	429	268	$238.3	12.0	24.0
11	3/9/2023	434	286	$231.6	18.0	35.5
	Total	1,461	999	$867.6		21.9

Project Delivery Requirements

Established to ensure safety projects are delivered in a timely manner:

Must meet two delivery milestones:

- Preliminary Engineering (PE) Authorization - within 9 months; and
- Construction (CON) Authorization - within 36 months

Time extension may be requested via District Local Assistance Engineer (DLAE):

- 2nd time extension request of the phase: need to present at a Local HSIP Advisory Committee meeting

Project Delivery Status

Cycle 8 -11 Project Delivery Status
(as of 4/3/2024)

Status	Number of Projects	Percentage
No Authorization	137	14%
Preliminary Engineering (PE) or Right-of-Way (ROW)	284	29%
In Construction (CON)	343	35%
Completed	212	22%
Total	**976**	**100%**

72 projects delayed (32 on PE; 40 on CON)

Local HSIP Overview
Question & Answer - Session 1

Robert Peterson

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Local HSIP Cycle 12 Call-for-projects

Richard Ke

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Overview

- Local HSIP Cycle 12 Timeline
- General Information
- Eligible Applicants
- Funding set-asides
- Benefit Cost Ratio (BCR) Applications
- Useful Documents & Websites
- Application Form
- HSIP Analyzer
- Demonstration

Local HSIP Cycle 12 Timeline

https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program/apply-now

- Announcement - May 6, 2024
- Applications Due - September 9, 2024
- Applications will be reviewed by Caltrans Districts and Headquarters – September/October 2024
- Develop the list of recommended projects and secure approval by Caltrans management - November/December 2024

General Information

- Total funding: $300 million
- Expected to use both federal and state funds
  - State funding made possible via SB 137 funding exchange;
  - Federal funding is for larger projects and High Risk Rural Roads (HRRR)/Vulnerable Road User (VRU) Special Rule projects.
- Fund Reimbursement Ratio: 90%
  (exception: 50% for Countermeasure SI03)
- Application categories:

  Benefit Cost Ratio (BCR) Applications and Funding Set-asides.

Eligible Applicants

Applicants: Cities, Counties, Tribes and Other

1) Local Roadway Safety Plan (LRSP) requirement:
   - Applicants must have completed LRSP or equivalent
   - Update/validate the LRSP if >5 years.

2) Agencies with delivery delays on their current HSIP projects must resolve the delays by 9/30/2024
   - District Local Assistance Engineer (DLAE) must receive the Request for Authorization package by 9/30/2024 and verify it is complete; OR
   - An extension is granted.

3) Agencies with two or more active HSIP projects that are still not in construction after 5 years from project selection are not eligible to apply

Application Categories

- **Benefit Cost Ratio (BCR) Applications**
  - Majority of the applications ($252 million)
  - BCR calculation is required. Project selection based on BCR.
  - Application minimum BCR: 4.0
  - Maximum $10 million per agency.
  - Number of applications per agency: no limit
- **Funding Set-asides**
  - $48 million for all set-asides
  - No BCR required
  - Number of applications per agency: 1 for each set-aside

Funding Set-asides

Five Set-asides:

- Guardrail Upgrades;
- Pedestrian Crossing Enhancements;
- Installing Edgelines;
- Bike Safety Improvements;
- Tribes

Project selection criteria (priority in the below order):

- Agencies with no funds awarded in Cycles 10&11;
- agencies with no same set-aside funds awarded in Cycles 10&11;
- Agencies with more Fatal + Severe Injury (F+SI) crashes in the last 3 years.

Funding Set-asides

- Guardrail Upgrades
  - Total $15M; Max per agency: $1M
  - For upgrades of existing guardrails and end treatments; bridge rails are not eligible
- Pedestrian Crossing Enhancements
  - Total $20M; Max per agency: $350k
  - Install pedestrian countdown signal heads, Rectangular Rapid Flashing Beacons (RRFB) and other flashing beacons, pedestrian signal/crossing/signs, advanced yield lines/signs, and other signs/striping.

Funding Set-asides

- Installing Edgelines
  - Total $3M; Max per agency: $350k
  - Installing edgelines along roadways
- Bike Safety Improvements
  - Total $7M; Max per agency: $350k
  - Installing bike lanes / separated bike lanes. Removing objects and installing way finding signs for multi-use paths/trails

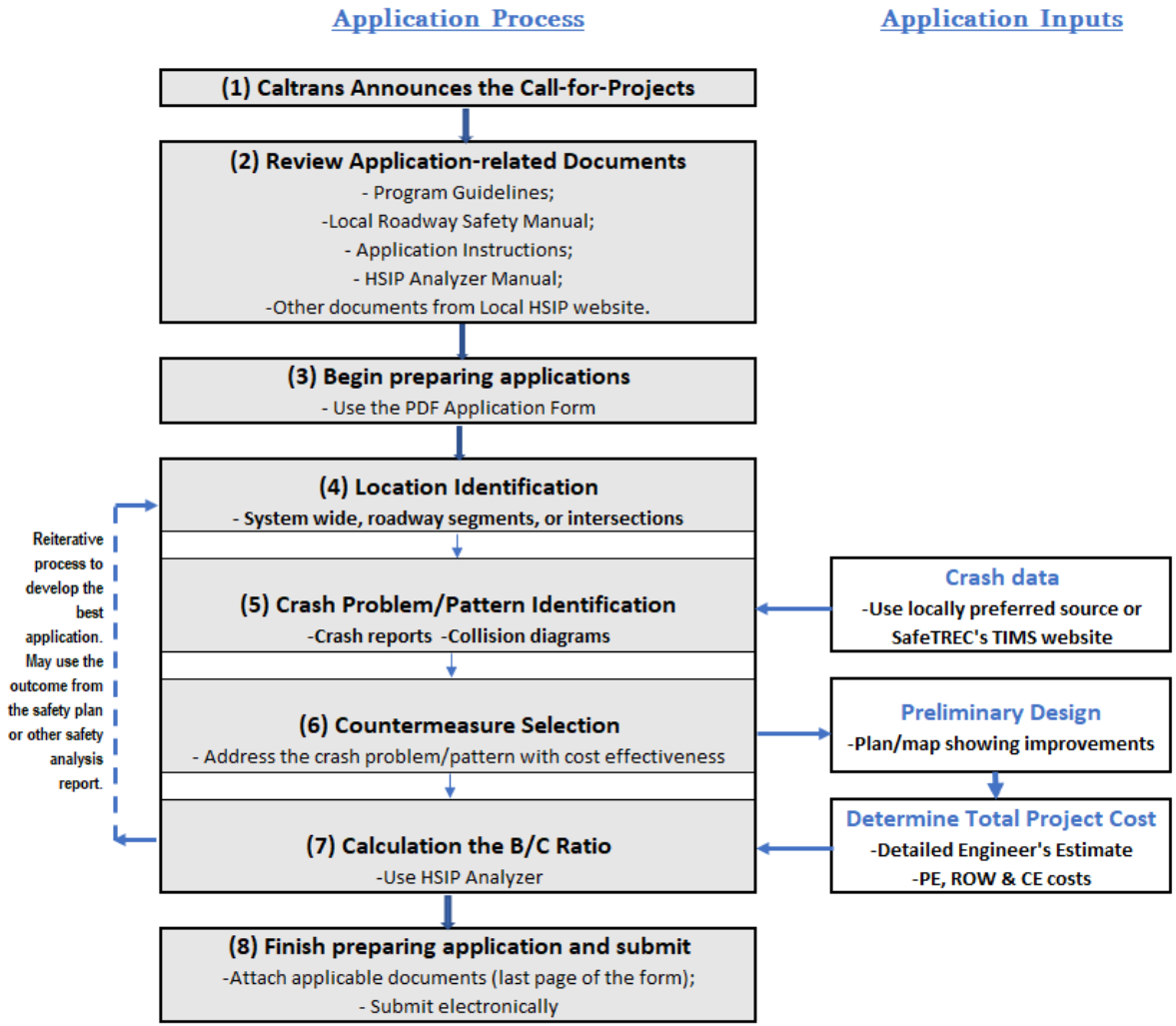
Funding Set-asides

- Tribes
  - Total $3M; Max per agency: $350k
  - Applicants must be federally recognized tribes in California
  - For any work under the other 4 set-asides, and other low-cost roadway safety improvements (signs, pavement delineators, edge-lines, centerlines, rumble strips/stripes, etc.)

Benefit Cost Ratio (BCR) Applications

- Work must be related to the safety countermeasures as listed;
- Prefer projects that can be delivered quickly and have minimal Right-Of-Way (ROW) and environmental impacts;
- BCR applications are selected for funding based on the BCRs. Applications will be ranked per BCRs from highest to lowest.
- BCR cutoff is unknown at the time of application submittal.
- BCR must be at least 4.0 for submitting.

BCR Applications - Steps



BCR Applications: Safety Countermeasures

- Safety improvements must be related to the 86 Safety countermeasures (CMs) with established Crash Reduction Factor (CRF)
- CMs by location types
  - Signalized Intersection (SI): 22
  - Non-Signalized Intersection (NS): 25
  - Roadway (R): 39
- CMs by Crash types (for applying CRFs)
  - All: 63
  - Pedestrians and Bicyclists: 18
  - Night: 3
  - Emergency vehicle involved: 1
  - Animal involved: 1

Local Roadway Safety Manual (LRSM)

LRSM outlines the basic elements:

- Analyzing safety data and identifying safety issues
- Selecting safety countermeasures
- Calculating the B/C ratio and Comparing Projects

Appendix B: Detailed Tables of Countermeasures

Appendix C: BCR Calculations

BCR Applications: Safety Countermeasures

CM List Example - CMs for Signalized Intersections:

Table 1. Countermeasures for Signalized Intersections

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	HSIP Funding Eligibility	Systemic Approach Opportunity?
SI01NT	Lighting	Add intersection lighting (S.I.)	Night	40%	20	90%	Medium
SI02	Signal Mod.	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	All	15%	10	90%	Very High
SI03	Signal Mod.	Improve signal timing (coordination, phases, red, yellow, or operation)	All	15%	10	50%	Very High
SI04EV	Signal Mod.	Install emergency vehicle pre-emption systems	Emergency Vehicle	70%	10	90%	High
SI05	Signal Mod.	Install left-turn lane and add turn phase (signal has no left-turn lane or phase before)	All	55%	20	90%	Low
SI06	Signal Mod.	Provide protected left turn phase (left turn lane already exists)	All	30%	20	90%	High
SI07	Signal Mod.	Convert signal to mast arm (from pedestal-mounted)	All	30%	20	90%	Medium
SI08	Operation/ Warning	Install raised pavement markers and striping (Through Intersection)	All	10%	10	90%	Very High
SI09	Operation/ Warning	Install flashing beacons as advance warning (S.I.)	All	30%	10	90%	Medium
SI10	Operation/ Warning	Improve pavement friction (High Friction Surface Treatments)	All	55%	10	90%	Medium
SI11	Geometric Mod.	Install raised median on approaches (S.I.)	All	25%	20	90%	Medium
SI12PB	Geometric Mod.	Install pedestrian median fencing on approaches	P & B	35%	20	90%	Low
SI13	Geometric Mod.	Create directional median openings to allow (and restrict) left-turns and u-turns (S.I.)	All	50%	20	90%	Medium
SI14	Geometric Mod.	Install right ¯ turn lane (S.I.)	All	15%	20	90%	Medium
SI15	Geometric Mod.	Reduced Left-Turn Conflict Intersections (S.I.)	All	50%	20	90%	Medium
SI16RA	Geometric Mod.	Convert intersection to roundabout (from signal)	All	Varies	20	90%	Low
SI17RA	Geometric Mod.	Convert intersection to compact roundabout (from signal)	All	Varies	20	90%	Low
SI18PB	Ped and Bike	Install pedestrian countdown signal heads	P & B	25%	20	90%	Very High
SI19PB	Ped and Bike	Install pedestrian crossing (S.I.)	P & B	25%	20	90%	High
SI20PB	Ped and Bike	Pedestrian Scramble	P & B	40%	20	90%	High
SI21PB	Ped and Bike	Install advance stop bar before crosswalk (Bicycle Box)	P & B	15%	10	90%	Very High
SI22PB	Ped and Bike	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	P & B	60%	10	90%	Very High

BCR Applications: Safety Countermeasures

- **Incremental approach:**

  For certain high-cost safety improvements: need to show that low-cost improvements, e.g., new curve signing or additional signs, or High Friction Surface Treatment (HFST), have been tried.

  - R15 (Widen shoulder),
  - R16 (Curve shoulder widening (outside only)),
  - R17 (Improve horizontal alignment (flatten curves)) and
  - R18 (Flatten crest vertical curve)

BCR Applications: Safety Countermeasures

- **NS03: New traffic signals**

  Signal Warrant calculation sheet is required as an attachment to the application for installing new traffic signals and must meet warrant (4) Pedestrian Volume, (5) School Crossing or (7) Crash Experience

- **NS25PB: Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))**

  Warrant 4, 5 and/or 7, or passing the test in Figure 4F-1/4F-2 in Chapter 4F of California Uniform Traffic Control Devices (CA MUTCD).

- **SI07 and SI02 should not be used together**

  SI07: Convert signal to mast arm; SI02: Improve signal hardware.
  Signal hardware is part of new mast arm.

Multiple Applications for the Same Project

Two situations when multiple applications may be submitted for the same project:

1) Two applications: one as BCR, the other applying for a funding set-aside.
   - The BCR one will be considered first.

2) For a “systemic approach” project (i.e. locations with similar characteristics and crash types):
   - Less locations: higher BCR;
   - More locations: lower BCR;
   - BCR cutoff is unknown at application time.

   To overcome this dilemma, you may develop multiple applications with different BCRs.

Application Preparation

1) For set-aside applications

- Select project locations systemically.
- Make sure the work is eligible for the respective set-asides.

2) For BCR applications

- Use safety countermeasures that target the crash types at the project locations.
- Use crashes within the influence area of the CMs.
- Special requirements:

  Incremental approach for certain CMs; Warrant requirement for signals; projects involving state highways, etc.
- Maximize project benefit:

  Select locations with high number of crashes; select effective CMs; Use multiple CMs when applicable.
- Lower project cost:

  Use low-cost CMs; Minimize non-safety related components.

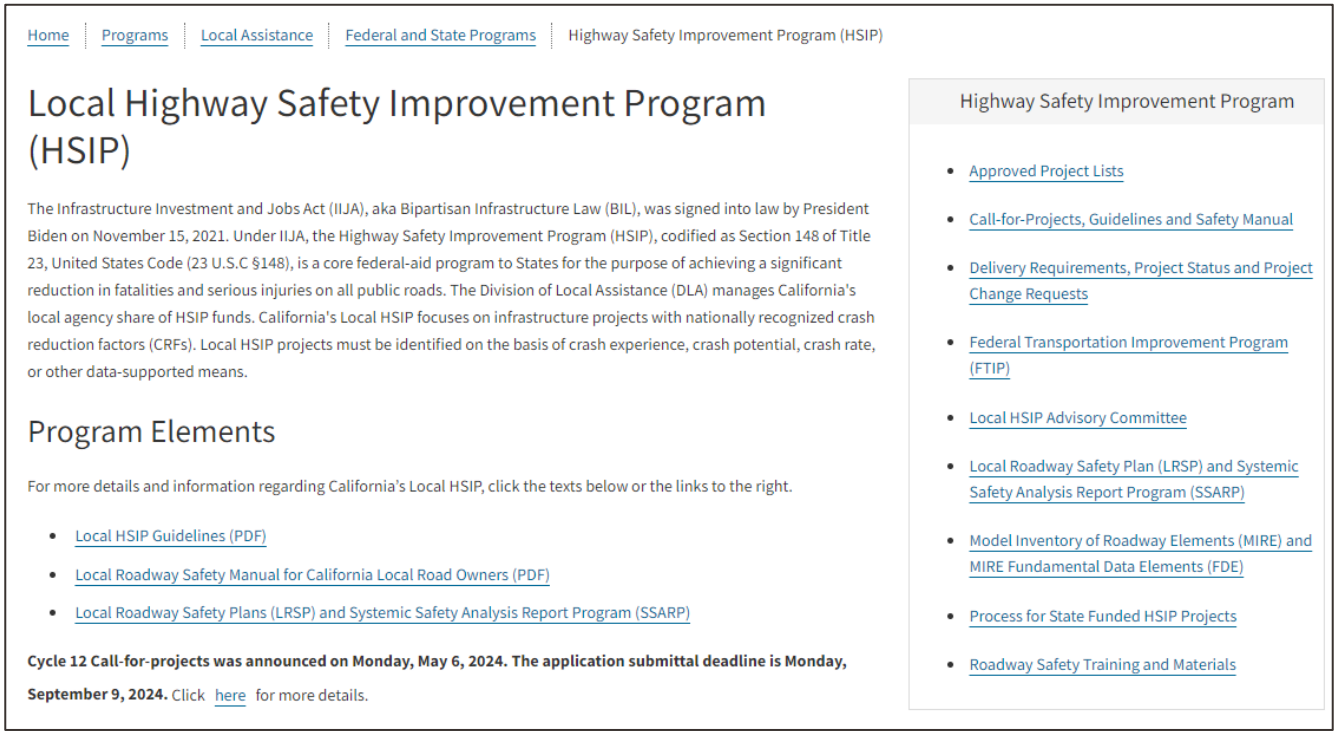
Useful Documents & Websites

- **Local HSIP Website:**
  https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program
  or Google search “CA Local HSIP”
- **Transportation Injury Mapping System (TIMS):** http://tims.berkeley.edu/
- **FHWA Safety Website:** https://highways.dot.gov/safety

Local HSIP Website

https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program or Google search “CA Local HSIP”

- Call for projects;
- Approved project lists;
- Process for State funded projects;
- Current project delivery status;
- Local HSIP Advisory Committee;
- And more …



Home | Programs | Local Assistance | Federal and State Programs | Highway Safety Improvement Program (HSIP)

Local Highway Safety Improvement Program (HSIP)

The Infrastructure Investment and Jobs Act (IIJA), aka Bipartisan Infrastructure Law (BIL), was signed into law by President Biden on November 15, 2021. Under IIJA, the Highway Safety Improvement Program (HSIP), codified as Section 148 of Title 23, United States Code (23 U.S.C §148), is a core federal-aid program to States for the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. The Division of Local Assistance (DLA) manages California's local agency share of HSIP funds. California's Local HSIP focuses on infrastructure projects with nationally recognized crash reduction factors (CRFs). Local HSIP projects must be identified on the basis of crash experience, crash potential, crash rate, or other data-supported means.

Program Elements

For more details and information regarding California's Local HSIP, click the texts below or the links to the right.

- Local HSIP Guidelines (PDF)
- Local Roadway Safety Manual for California Local Road Owners (PDF)
- Local Roadway Safety Plans (LRSP) and Systemic Safety Analysis Report Program (SSARP)

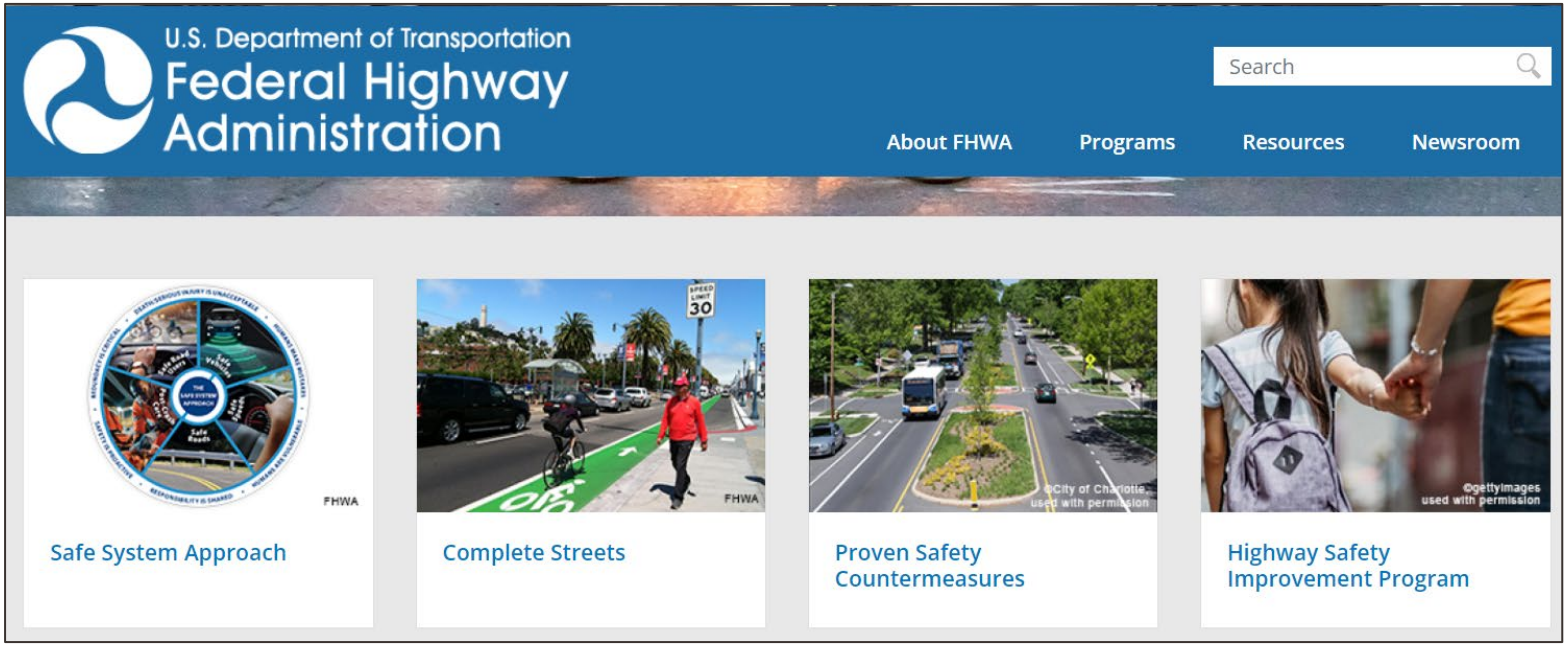
Cycle 12 Call-for-projects was announced on Monday, May 6, 2024. The application submittal deadline is Monday, September 9, 2024. Click here for more details.

Highway Safety Improvement Program

- Approved Project Lists
- Call-for-Projects, Guidelines and Safety Manual
- Delivery Requirements, Project Status and Project Change Requests
- Federal Transportation Improvement Program (FTIP)
- Local HSIP Advisory Committee
- Local Roadway Safety Plan (LRSP) and Systemic Safety Analysis Report Program (SSARP)
- Model Inventory of Roadway Elements (MIRE) and MIRE Fundamental Data Elements (FDE)
- Process for State Funded HSIP Projects
- Roadway Safety Training and Materials

FHWA Safety Website

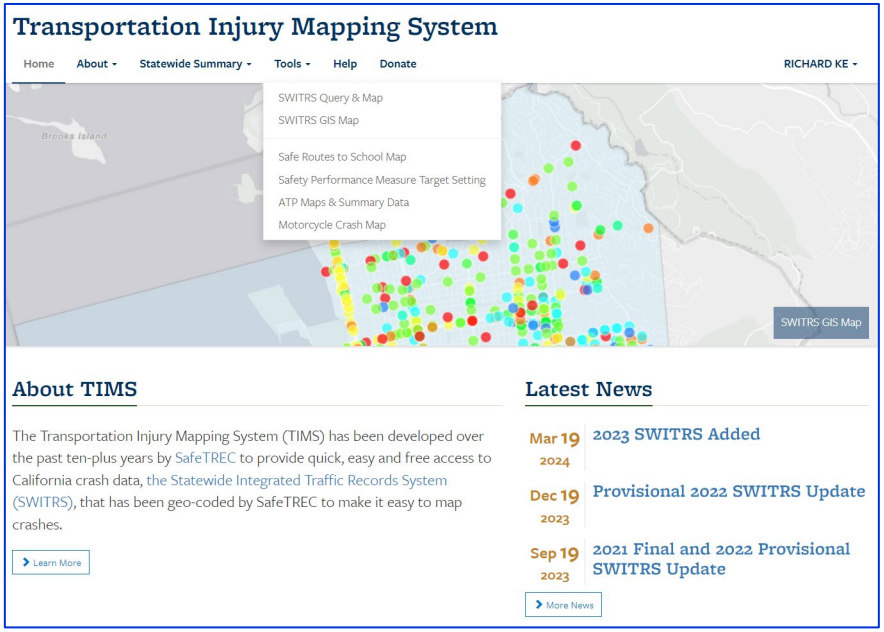
https://highways.dot.gov/safety



Transportation Injury Mapping System (TIMS)

http://tims.berkeley.edu/

- Developed by UC Berkeley Safe Transportation Research & Education Center (SafeTREC)



- TIMS provides crash data and mapping analysis tools and information for traffic safety related research, policy and planning
- All Local Agencies have access to California Statewide Integrated Traffic Records System (SWITRS) Crash Data
  - Agencies may use their locally preferred crash data analysis tools (e.g. Crossroads)
  - A great option for agencies without own traffic crash database

Application Submittal

- Application Form is a savable PDF file
  - Adobe Acrobat Reader is required: https://www.adobe.com/acrobat/pdf-reader.html

- Submit electronically via Smartsheet
  - All required information and **attachments** must be added to the Application Form
  - Follow the form link to submit

    (Link available at the Call-for-projects webpage, and also in the Application Instructions)

Application attachments

1. Required for all applications:
   - Local Roadway Safety Plan (LRSP) Certification (required)
   - Engineer's Checklist (required)
   - Vicinity map/Location map (required)
   - Project maps/plans showing existing and proposed conditions (required)
   - Pictures of existing condition (required)
   - HSIP Analyzer (required)
2. Required for BCR applications:
   - Collision Diagram(s) (required for BCR applications)
   - Collision List(s) (required for BCR applications)
3. Required for signal applications:
   - Warrant studies (required for new signals)
4. Required for projects involving State Highway System (SHS):
   - Letter/email of Support from Caltrans
5. Optional:
   - Additional narration, documentation, letters of support, etc.

HSIP Analyzer

HSIP Analyzer is required to use for all applications.

HSIP Analyzer for Set-aside applications:

- General Information
- Project Schedule
- Engineer's estimate for construction items; and
- Project cost estimate

HSIP Analyzer for BCR applications:

- General Information
- Project Schedule
- Engineer's estimate for construction items; and
- Project cost estimate
- List of Project Locations
- Selection of CMs
- Crash data
- BCR calculation

HSIP Analyzer

HSIP Analyzer is a PDF form. Adobe Acrobat Reader is required https://www.adobe.com/acrobat/pdf-reader.html to download.

After completion:

- Enter key data to the Application Form;
- Attach the completed HSIP Analyzer to the HSIP Application Form as Attachment No. 6

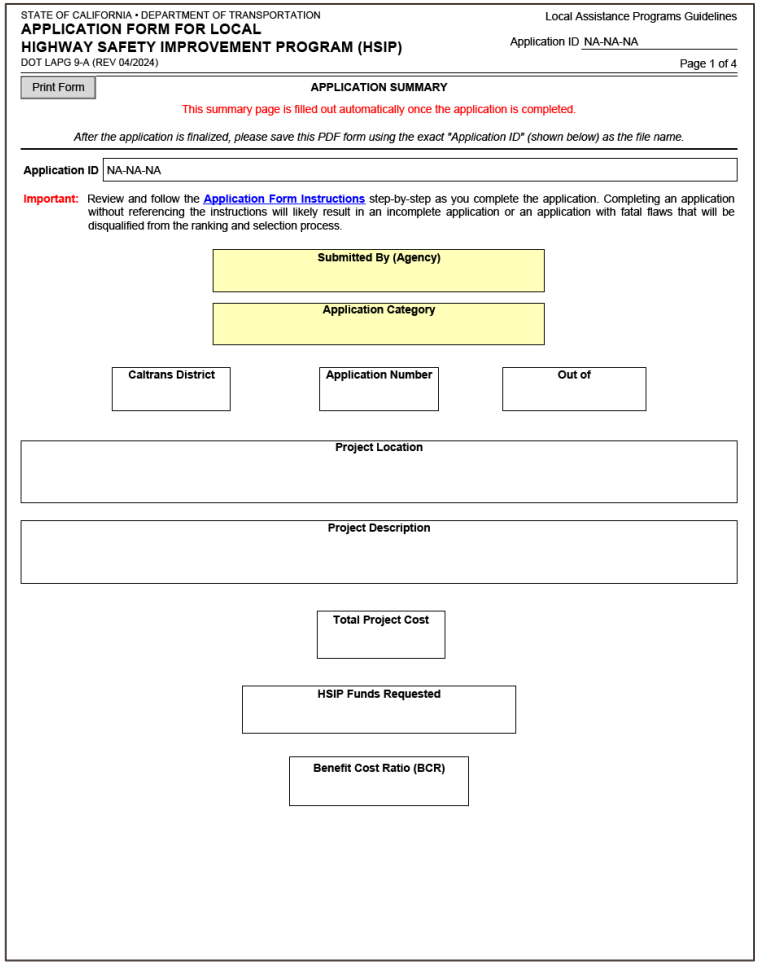
Manual for HSIP Analyzer:

- Refer to the manual while using the HSIP Analyzer;
- Completing the analysis without referring to the manual could lead to errors and fatal flaws

Demonstration

- Application Form
- HSIP Analyzer

Application Form



STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
APPLICATION FORM FOR LOCAL HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)
DOT LAPG 9-A (REV 04/2024)

Local Assistance Programs Guidelines
Application ID NA-NA-NA
Page 1 of 4

Print Form

APPLICATION SUMMARY

This summary page is filled out automatically once the application is completed.

After the application is finalized, please save this PDF form using the exact "Application ID" (shown below) as the file name.

Application ID NA-NA-NA

Important: Review and follow the Application Form Instructions step-by-step as you complete the application. Completing an application without referencing the instructions will likely result in an incomplete application or an application with fatal flaws that will be disqualified from the ranking and selection process.

Submitted By (Agency)

Application Category

Caltrans District | **Application Number** | **Out of**

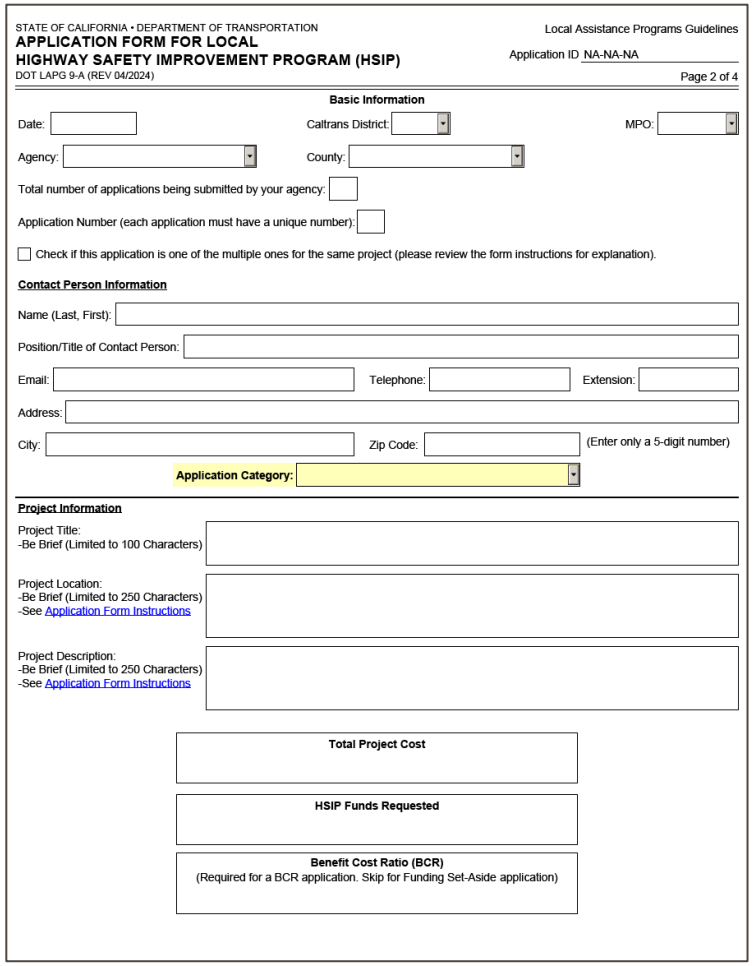
Project Location

Project Description

Total Project Cost

HSIP Funds Requested

Benefit Cost Ratio (BCR)



STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
APPLICATION FORM FOR LOCAL HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)
DOT LAPG 9-A (REV 04/2024)

Local Assistance Programs Guidelines
Application ID NA-NA-NA
Page 2 of 4

Basic Information

Date: | Caltrans District: | MPO:

Agency: | County:

Total number of applications being submitted by your agency:

Application Number (each application must have a unique number):

☐ Check if this application is one of the multiple ones for the same project (please review the form instructions for explanation).

Contact Person Information

Name (Last, First):

Position/Title of Contact Person:

Email: | Telephone: | Extension:

Address:

City: | Zip Code: (Enter only a 5-digit number)

Application Category:

Project Information

Project Title:
-Be Brief (Limited to 100 Characters)

Project Location:
-Be Brief (Limited to 250 Characters)
-See Application Form Instructions

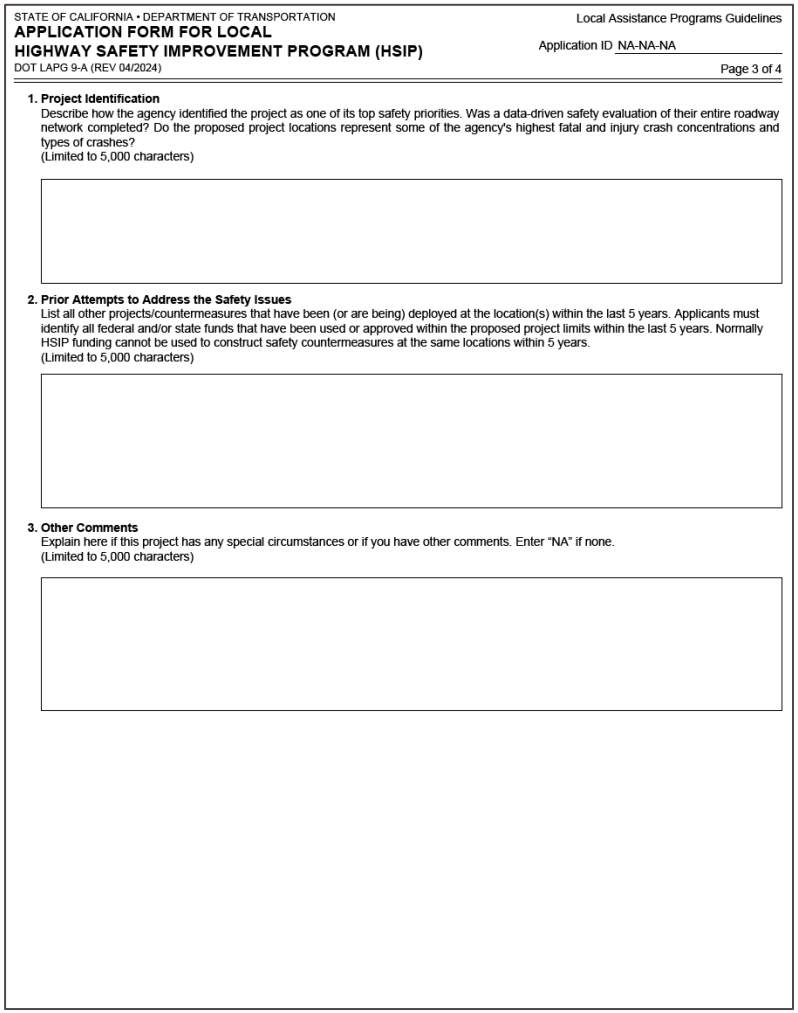
Project Description:
-Be Brief (Limited to 250 Characters)
-See Application Form Instructions

Total Project Cost

HSIP Funds Requested

Benefit Cost Ratio (BCR)
(Required for a BCR application. Skip for Funding Set-Aside application)

Application Form



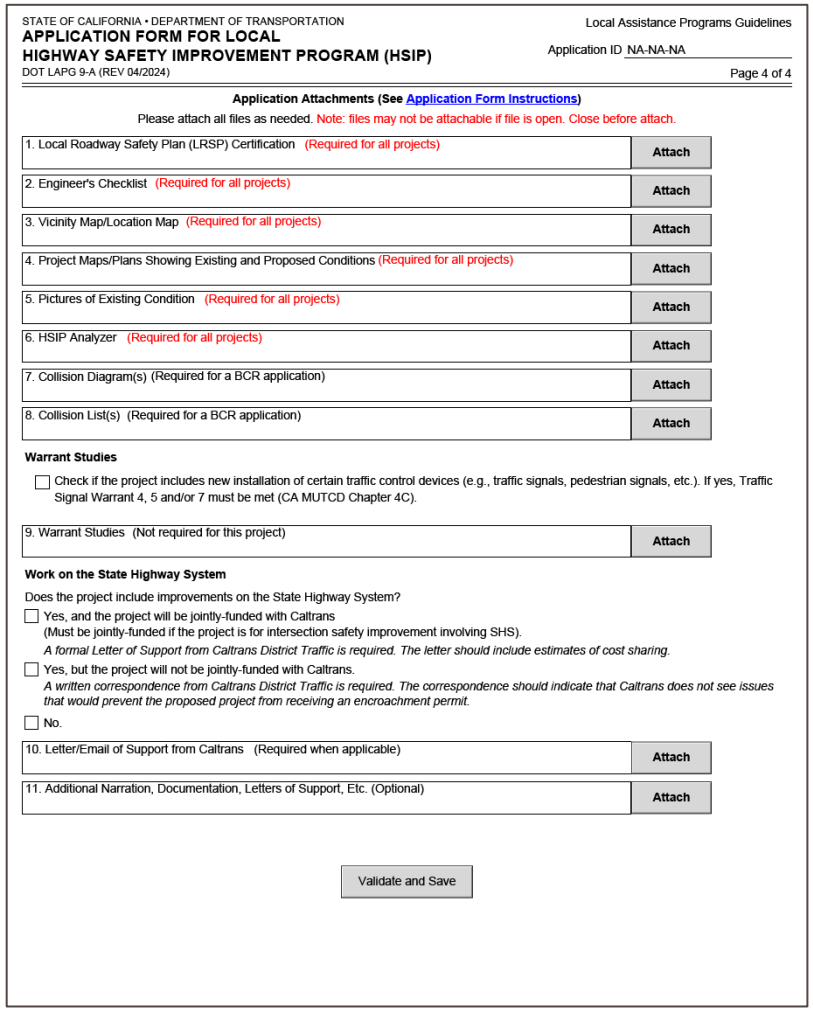
STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
APPLICATION FORM FOR LOCAL
HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)
DOT LAPG 9-A (REV 04/2024)

Local Assistance Programs Guidelines
Application ID NA-NA-NA
Page 3 of 4

1. Project Identification
Describe how the agency identified the project as one of its top safety priorities. Was a data-driven safety evaluation of their entire roadway network completed? Do the proposed project locations represent some of the agency's highest fatal and injury crash concentrations and types of crashes?
(Limited to 5,000 characters)

2. Prior Attempts to Address the Safety Issues
List all other projects/countermeasures that have been (or are being) deployed at the location(s) within the last 5 years. Applicants must identify all federal and/or state funds that have been used or approved within the proposed project limits within the last 5 years. Normally HSIP funding cannot be used to construct safety countermeasures at the same locations within 5 years.
(Limited to 5,000 characters)

3. Other Comments
Explain here if this project has any special circumstances or if you have other comments. Enter "NA" if none.
(Limited to 5,000 characters)



STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
APPLICATION FORM FOR LOCAL
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Page 4 of 4

Application Attachments (See Application Form Instructions)
Please attach all files as needed. Note: files may not be attachable if file is open. Close before attach.

1. Local Roadway Safety Plan (LRSP) Certification (Required for all projects) — Attach
2. Engineer's Checklist (Required for all projects) — Attach
3. Vicinity Map/Location Map (Required for all projects) — Attach
4. Project Maps/Plans Showing Existing and Proposed Conditions (Required for all projects) — Attach
5. Pictures of Existing Condition (Required for all projects) — Attach
6. HSIP Analyzer (Required for all projects) — Attach
7. Collision Diagram(s) (Required for a BCR application) — Attach
8. Collision List(s) (Required for a BCR application) — Attach

Warrant Studies

☐ Check if the project includes new installation of certain traffic control devices (e.g., traffic signals, pedestrian signals, etc.). If yes, Traffic Signal Warrant 4, 5 and/or 7 must be met (CA MUTCD Chapter 4C).

9. Warrant Studies (Not required for this project) — Attach

Work on the State Highway System

Does the project include improvements on the State Highway System?

☐ Yes, and the project will be jointly-funded with Caltrans
(Must be jointly-funded if the project is for intersection safety improvement involving SHS).
A formal Letter of Support from Caltrans District Traffic is required. The letter should include estimates of cost sharing.

☐ Yes, but the project will not be jointly-funded with Caltrans.
A written correspondence from Caltrans District Traffic is required. The correspondence should indicate that Caltrans does not see issues that would prevent the proposed project from receiving an encroachment permit.

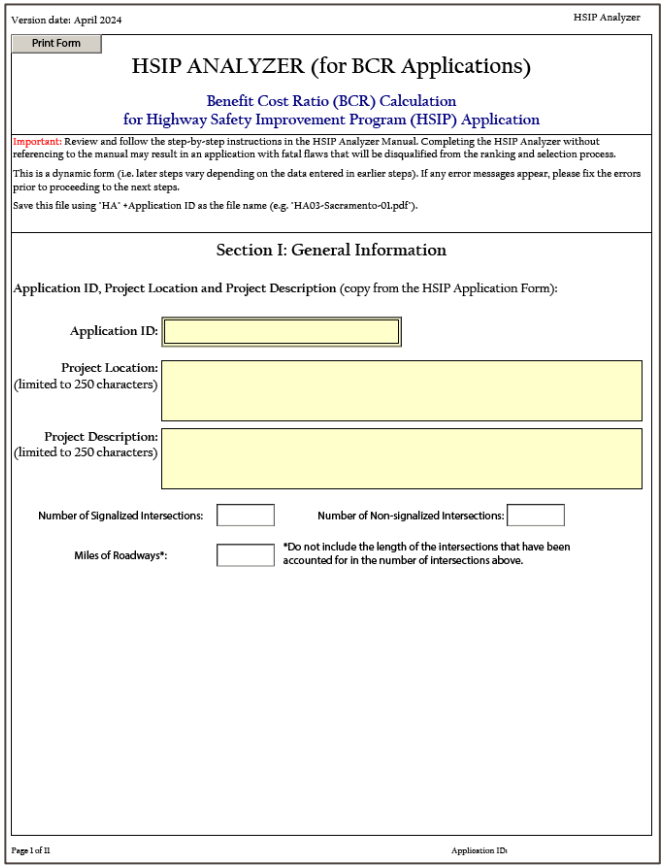
☐ No.

10. Letter/Email of Support from Caltrans (Required when applicable) — Attach
11. Additional Narration, Documentation, Letters of Support, Etc. (Optional) — Attach

Validate and Save

HSIP Analyzer for BCR Applications

Section I. General Information



Version date: April 2024 HSIP Analyzer

Print Form

HSIP ANALYZER (for BCR Applications)

Benefit Cost Ratio (BCR) Calculation
for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in the HSIP Analyzer Manual. Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

This is a dynamic form (i.e. later steps vary depending on the data entered in earlier steps). If any error messages appear, please fix the errors prior to proceeding to the next steps.

Save this file using "HA" +Application ID as the file name (e.g. "HA03-Sacramento-01.pdf").

Section I: General Information

Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

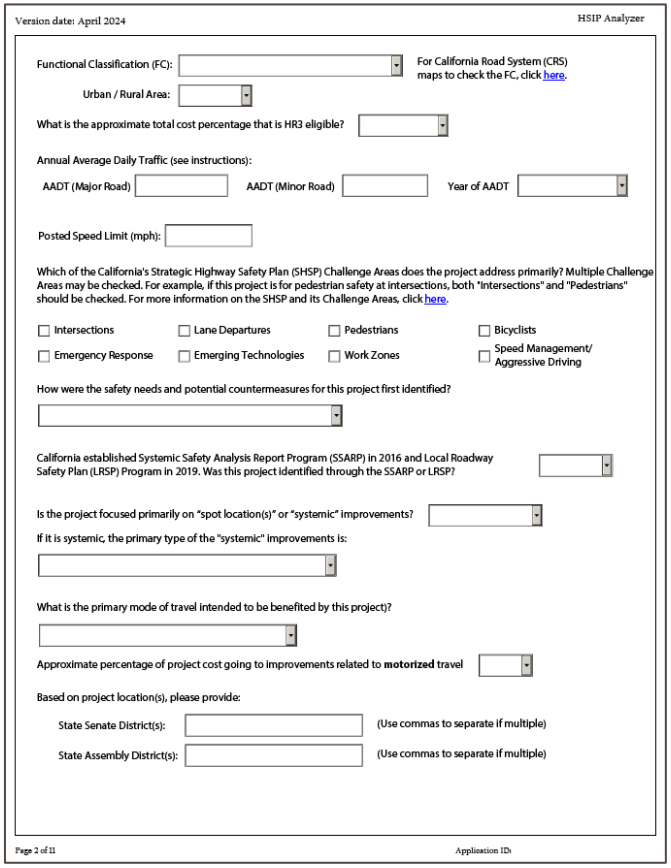
Project Location:
(limited to 250 characters)

Project Description:
(limited to 250 characters)

Number of Signalized Intersections: Number of Non-signalized Intersections:

Miles of Roadways*: *Do not include the length of the intersections that have been accounted for in the number of intersections above.

Page 1 of 11 Application ID:



Version date: April 2024 HSIP Analyzer

Functional Classification (FC): For California Road System (CRS) maps to check the FC, click here.

Urban / Rural Area:

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

Annual Average Daily Traffic (see instructions):

AADT (Major Road) AADT (Minor Road) Year of AADT

Posted Speed Limit (mph):

Which of the California's Strategic Highway Safety Plan (SHSP) Challenge Areas does the project address primarily? Multiple Challenge Areas may be checked. For example, if this project is for pedestrian safety at intersections, both "Intersections" and "Pedestrians" should be checked. For more information on the SHSP and its Challenge Areas, click here.

☐ Intersections ☐ Lane Departures ☐ Pedestrians ☐ Bicyclists
☐ Emergency Response ☐ Emerging Technologies ☐ Work Zones ☐ Speed Management/ Aggressive Driving

How were the safety needs and potential countermeasures for this project first identified?

California established Systemic Safety Analysis Report Program (SSARP) in 2016 and Local Roadway Safety Plan (LRSP) Program in 2019. Was this project identified through the SSARP or LRSP?

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

If it is systemic, the primary type of the "systemic" improvements is:

What is the primary mode of travel intended to be benefited by this project)?

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

Based on project location(s), please provide:

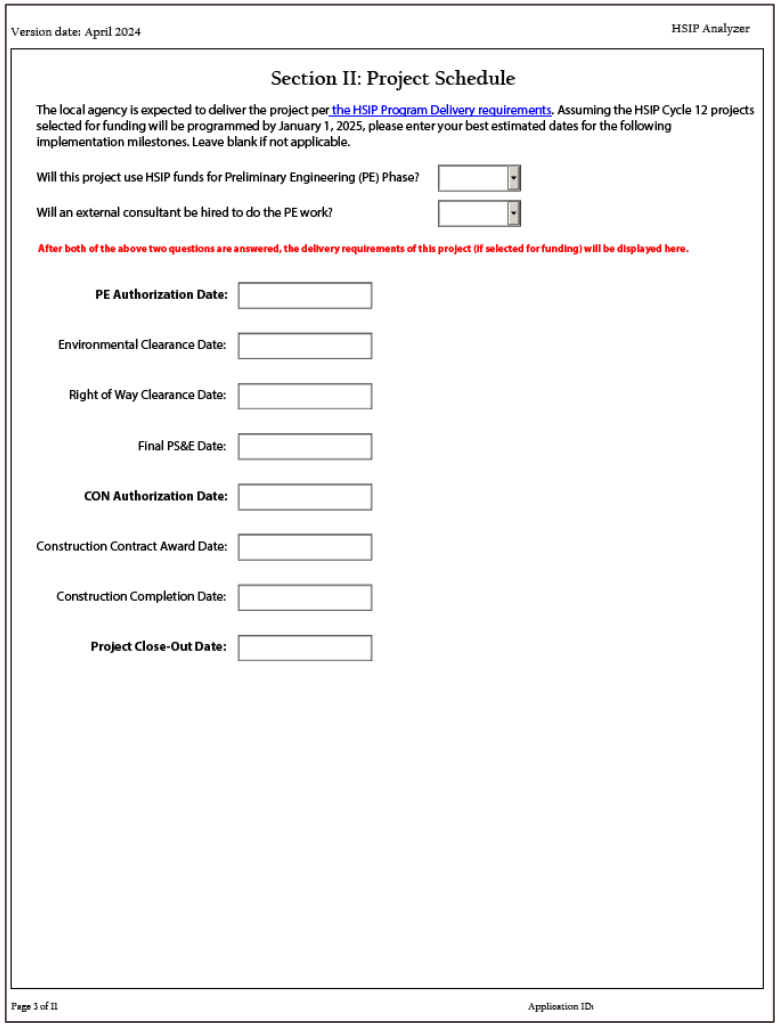
State Senate District(s): (Use commas to separate if multiple)

State Assembly District(s): (Use commas to separate if multiple)

Page 2 of 11 Application ID:

HSIP Analyzer for BCR Applications

Section II. Project Schedule



Version date: April 2024 HSIP Analyzer

Section II: Project Schedule

The local agency is expected to deliver the project per the HSIP Program Delivery requirements. Assuming the HSIP Cycle 12 projects selected for funding will be programmed by January 1, 2025, please enter your best estimated dates for the following implementation milestones. Leave blank if not applicable.

Will this project use HSIP funds for Preliminary Engineering (PE) Phase?

Will an external consultant be hired to do the PE work?

After both of the above two questions are answered, the delivery requirements of this project (if selected for funding) will be displayed here.

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:

Project Close-Out Date:

Page 3 of 11 Application ID:

HSIP Analyzer for BCR Applications

Section III.
Safety Countermeasures, Crash Data & Project Benefit Calculation

Version date: April 2024

HSIP Analyzer

Step 1: Select safety countermeasures

Does this application include Signalized Intersections (SI)? Yes

Does this application include Non-signalized Intersections (NS)? No

Does this application include Roadway Segments (R)? No

** Normally a BCR application only includes locations of one of the above 3 categories (SI, NS or R). Multiple categories may be selected if the application proposes corridor safety improvements or uses a systemic approach, or the applicant chooses to bundle multiple locations in the same vicinity together.*

Signalized Intersections (SI):

Click the check box in the 1st column to select up to 3 countermeasures.

Hide unselected countermeasures | View all countermeasures

Select	No.	Countermeasure Name
✓	6	SI06: Provide protected left turn phase (left turn lane already exists) (CRF=0.3 for All crashes; Life=20 yrs; FE=90%)
✓	18	SI18PB: Install pedestrian countdown signal heads (CRF=0.25 for Ped & Bike crashes; Life=20 yrs; FE=90%)

HSIP Analyzer for BCR Applications

Section III.
Safety Countermeasures, Crash Data & Project Benefit Calculation

Version date: April 2024 HSIP Analyzer

Step 2: Click to generate table for project locations, enter the project locations and select countermeasures for each location. If any of the selections have been changed, you must re-click the below button to refresh.

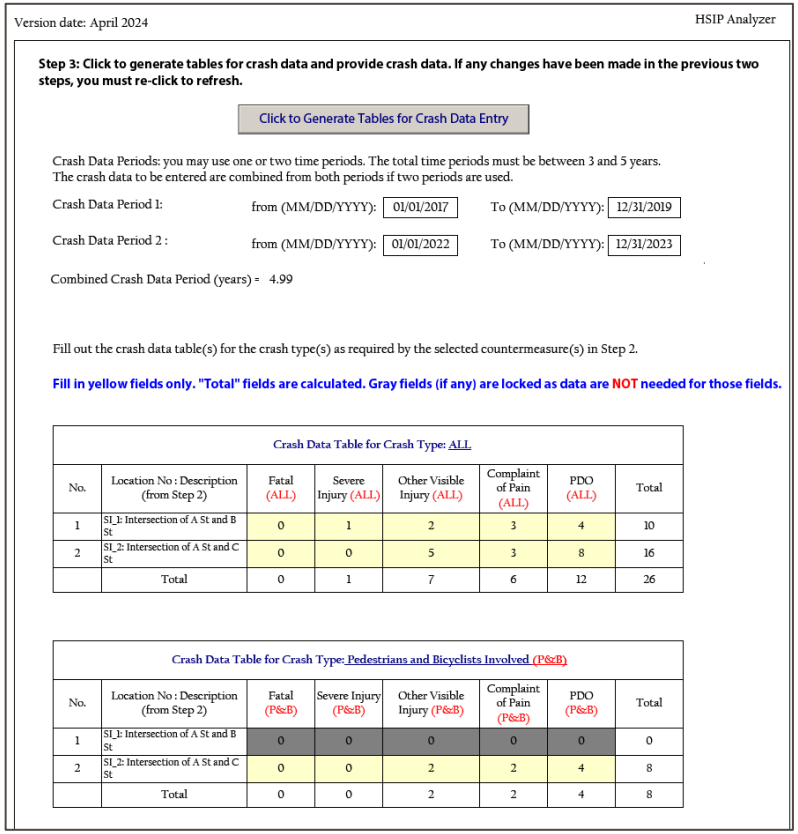
Click to Generate Table for Project Locations Entry

CMs have been selected. Ok to proceed.

+/- Line	Location No.	Location Description (Intersection Name or Road Limit or General Description)	Click to select Countermeasures			Error Messages (must resolve)
	(Signalized Intersections)					
			SI06	SI18PB		
+ -	SI_1	Intersection of A St and B St	●			
+ -	SI_2	Intersection of A St and C St	●	●		

HSIP Analyzer for BCR Applications

Section III.
Safety Countermeasures, Crash Data & Project Benefit Calculation



Version date: April 2024 HSIP Analyzer

Step 3: Click to generate tables for crash data and provide crash data. If any changes have been made in the previous two steps, you must re-click to refresh.

Click to Generate Tables for Crash Data Entry

Crash Data Periods: you may use one or two time periods. The total time periods must be between 3 and 5 years. The crash data to be entered are combined from both periods if two periods are used.

Crash Data Period 1: from (MM/DD/YYYY): 01/01/2017 To (MM/DD/YYYY): 12/31/2019

Crash Data Period 2 : from (MM/DD/YYYY): 01/01/2022 To (MM/DD/YYYY): 12/31/2023

Combined Crash Data Period (years) = 4.99

Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 2.

Fill in yellow fields only. "Total" fields are calculated. Gray fields (if any) are locked as data are NOT needed for those fields.

Crash Data Table for Crash Type: ALL

No.	Location No : Description (from Step 2)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	SI_1: Intersection of A St and B St	0	1	2	3	4	10
2	SI_2: Intersection of A St and C St	0	0	5	3	8	16
	Total	0	1	7	6	12	26

Crash Data Table for Crash Type: Pedestrians and Bicyclists Involved (P&B)

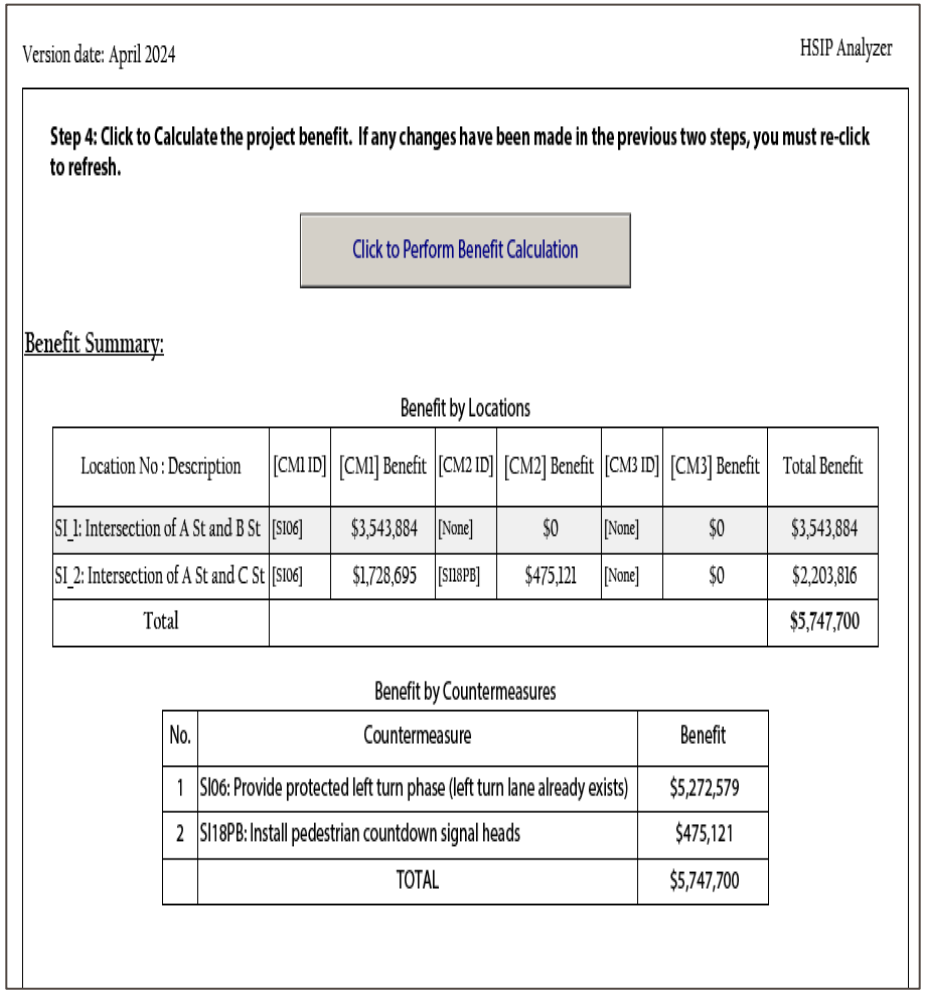
No.	Location No : Description (from Step 2)	Fatal (P&B)	Severe Injury (P&B)	Other Visible Injury (P&B)	Complaint of Pain (P&B)	PDO (P&B)	Total
1	SI_1: Intersection of A St and B St	0	0	0	0	0	0
2	SI_2: Intersection of A St and C St	0	0	2	2	4	8
	Total	0	0	2	2	4	8

HSIP Analyzer for BCR Applications

Section III.
Safety Countermeasures, Crash Data & Project Benefit Calculation

Step 4: Calculate the project benefit.
Automatic error-checking. Detect possible errors such as:

- Crash data period is not between 3 - 5 years
- Number of crashes in a sub-dataset > the num in All dataset
- CM NS03 should not be used with any other CM
- Roundabout, when selected, should be the only CM
- CMs SI07 and SI02 should not be used together



Version date: April 2024 HSIP Analyzer

Step 4: Click to Calculate the project benefit. If any changes have been made in the previous two steps, you must re-click to refresh.

Click to Perform Benefit Calculation

Benefit Summary:

Benefit by Locations

Location No : Description	[CM1 ID]	[CM1] Benefit	[CM2 ID]	[CM2] Benefit	[CM3 ID]	[CM3] Benefit	Total Benefit
SI_1: Intersection of A St and B St	[SI06]	$3,543,884	[None]	$0	[None]	$0	$3,543,884
SI_2: Intersection of A St and C St	[SI06]	$1,728,695	[SI18PB]	$475,121	[None]	$0	$2,203,816
Total							$5,747,700

Benefit by Countermeasures

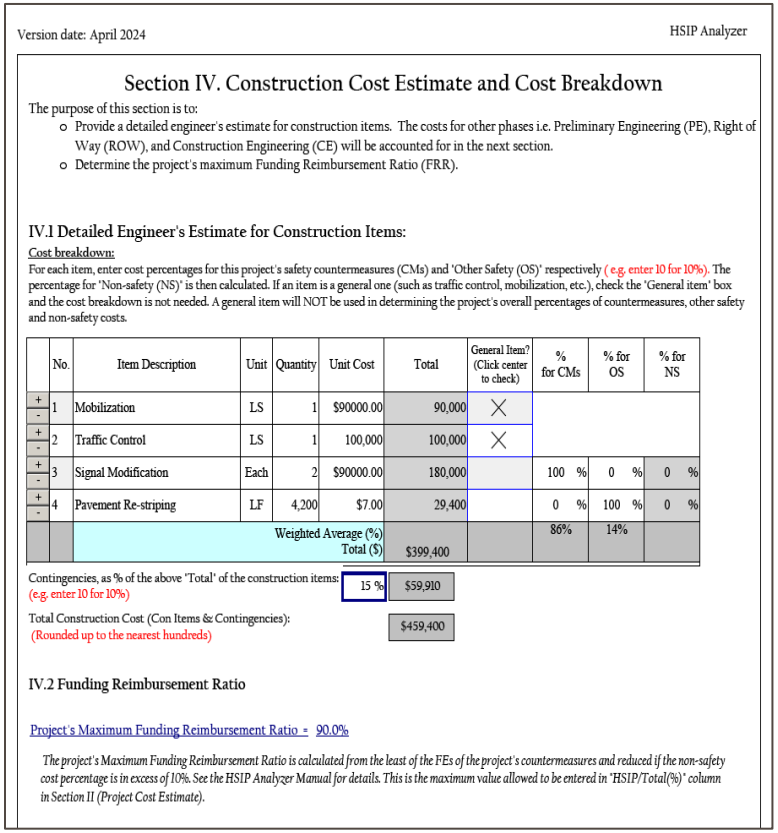
No.	Countermeasure	Benefit
1	SI06: Provide protected left turn phase (left turn lane already exists)	$5,272,579
2	SI18PB: Install pedestrian countdown signal heads	$475,121
	TOTAL	$5,747,700

HSIP Analyzer for BCR Applications

Section IV.

Construction Cost Estimate & Cost Breakdown

- For construction costs only
- Distribute the cost of each item among CMs, other safety-related (OS) and non-safety-related (NS) components. Check “General Item” such as Mobilization and Traffic Control.
- Calculate the max Funding Reimbursement Ratio (FRR) of the project. The FRR will be used in Section V.



Version date: April 2024 HSIP Analyzer

Section IV. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:
- 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 the next section.
- Determine the project's maximum Funding Reimbursement Ratio (FRR).

IV.1 Detailed Engineer's Estimate for Construction Items:

Cost breakdown:

For each item, enter cost percentages for this project's safety countermeasures (CMs) and 'Other Safety (OS)' respectively (e.g. enter 10 for 10%). The percentage for 'Non-safety (NS)' is then calculated. If an item is a general one (such as traffic control, mobilization, etc.), check the 'General item' box and the cost breakdown is not needed. A general item will NOT be used in determining the project's overall percentages of countermeasures, other safety and non-safety costs.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	General Item? (Click center to check)	% for CMs	% for OS	% for NS
+ -	1	Mobilization	LS	1	$90000.00	90,000	X			
+ -	2	Traffic Control	LS	1	100,000	100,000	X			
+ -	3	Signal Modification	Each	2	$90000.00	180,000		100 %	0 %	0 %
+ -	4	Pavement Re-striping	LF	4,200	$7.00	29,400		0 %	100 %	0 %
		Weighted Average (%) Total ($)				$399,400		86%	14%	

Contingencies, as % of the above 'Total' of the construction items: 15 % $59,910
(e.g. enter 10 for 10%)

Total Construction Cost (Con Items & Contingencies): $459,400
(Rounded up to the nearest hundreds)

IV.2 Funding Reimbursement Ratio

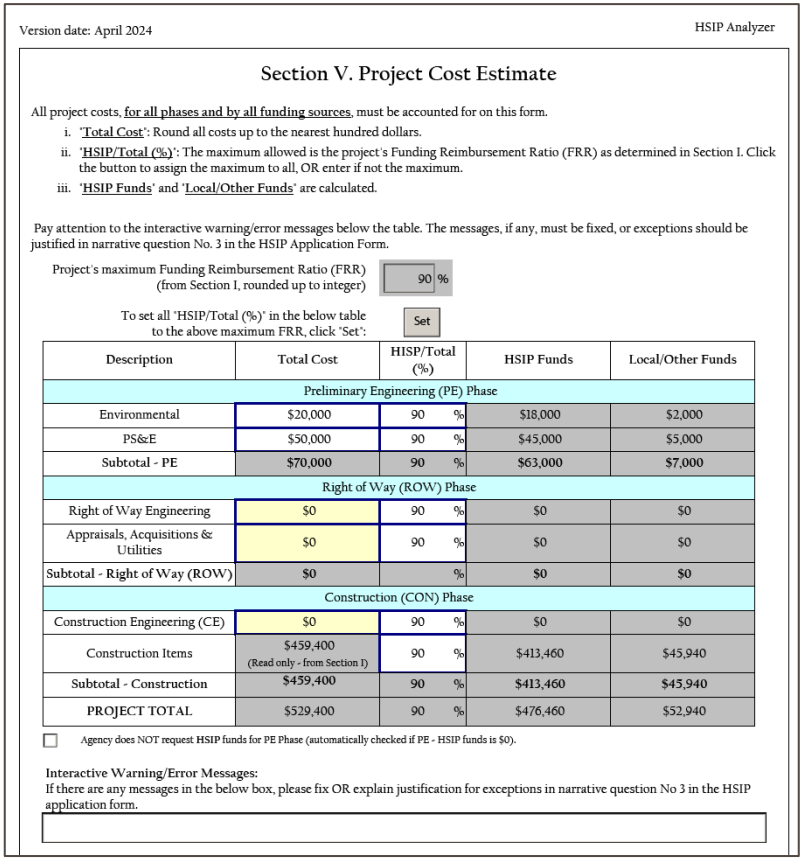
Project's Maximum Funding Reimbursement Ratio = 90.0%

The project's Maximum Funding Reimbursement Ratio is calculated from the least of the FEs of the project's countermeasures and reduced if the non-safety cost percentage is in excess of 10%. See the HSIP Analyzer Manual for details. This is the maximum value allowed to be entered in "HSIP/Total(%)" column in Section II (Project Cost Estimate).

HSIP Analyzer for BCR Applications

Section V.
Project Cost Estimate

- Include all phases (PE, ROW, CON & CE) and all funding sources
- Automatic data-checking:
  - Minimum HSIP amount: $100K
  - Maximum HSIP amount: $10M
  - PE (HSIP$): <=25% of Construction
  - ROW (HSIP$): <=10% of Construction
  - CE (HSIP$): <=15% of Construction
- Exceptions to the above rules should be explained in narrative question No. 3 in the HSIP Application Form



Version date: April 2024 HSIP Analyzer

Section V. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

i. 'Total Cost': Round all costs up to the nearest hundred dollars.
ii. 'HSIP/Total (%)': The maximum allowed is the project's Funding Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
iii. 'HSIP Funds' and 'Local/Other Funds' are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in narrative question No. 3 in the HSIP Application Form.

Project's maximum Funding Reimbursement Ratio (FRR) (from Section I, rounded up to integer): 90 %

To set all 'HSIP/Total (%)' in the below table to the above maximum FRR, click 'Set': Set

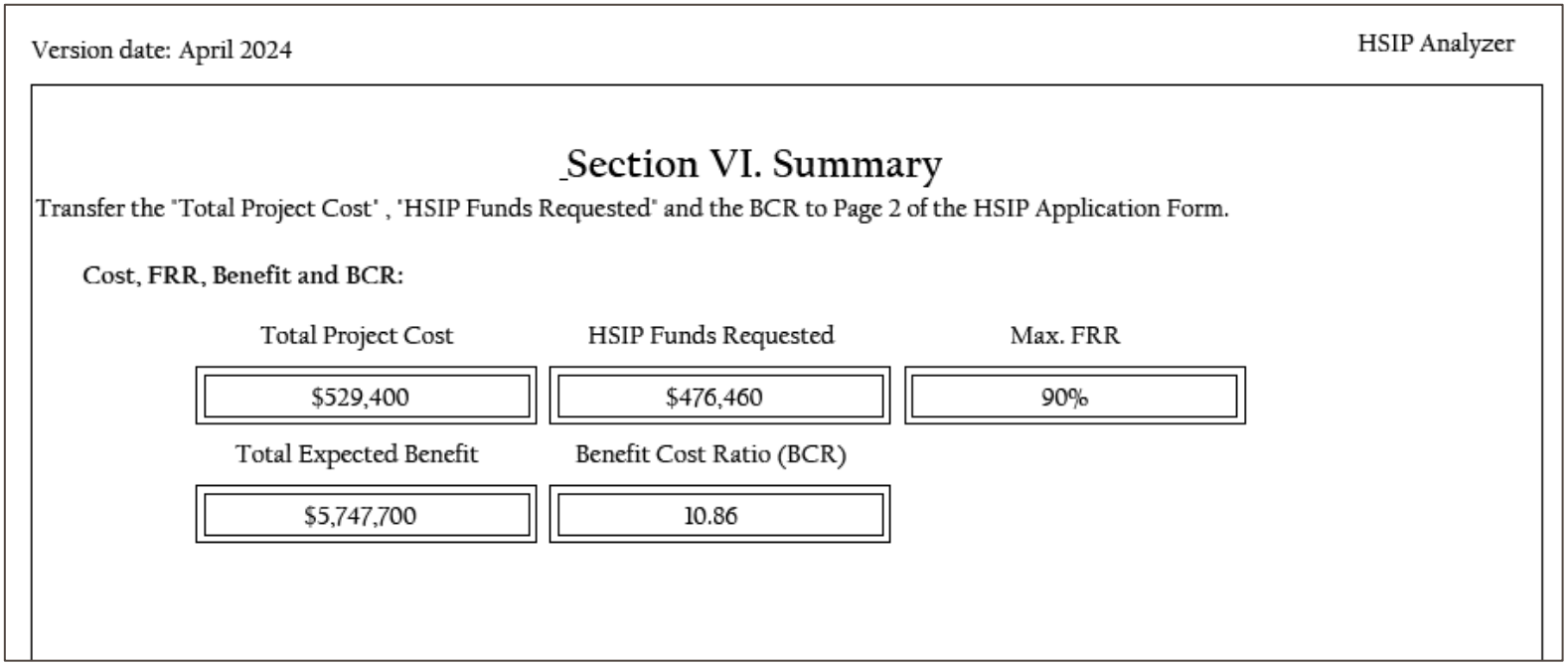
Description	Total Cost	HISP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	$20,000	90 %	$18,000	$2,000
PS&E	$50,000	90 %	$45,000	$5,000
Subtotal - PE	$70,000	90 %	$63,000	$7,000
Right of Way (ROW) Phase				
Right of Way Engineering	$0	90 %	$0	$0
Appraisals, Acquisitions & Utilities	$0	90 %	$0	$0
Subtotal - Right of Way (ROW)	$0	%	$0	$0
Construction (CON) Phase				
Construction Engineering (CE)	$0	90 %	$0	$0
Construction Items	$459,400 (Read only - from Section I)	90 %	$413,460	$45,940
Subtotal - Construction	$459,400	90 %	$413,460	$45,940
PROJECT TOTAL	$529,400	90 %	$476,460	$52,940

☐ Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is $0).

Interactive Warning/Error Messages:
If there are any messages in the below box, please fix OR explain justification for exceptions in narrative question No 3 in the HSIP application form.

HSIP Analyzer for BCR Applications

Section VI. Summary



Version date: April 2024

HSIP Analyzer

Section VI. Summary

Transfer the "Total Project Cost" , "HSIP Funds Requested" and the BCR to Page 2 of the HSIP Application Form.

Cost, FRR, Benefit and BCR:

Total Project Cost	HSIP Funds Requested	Max. FRR
$529,400	$476,460	90%

Total Expected Benefit	Benefit Cost Ratio (BCR)
$5,747,700	10.86

Local Assistance HSIP Contacts

- District Contact: District Local Assistance Engineer (DLAE)
- Richard Ke, Richard.Ke@dot.ca.gov or (279) 599-3395
- Simrit Dhillon, Simrit.Dhillon@dot.ca.gov or (916) 628-6007