



Local Highway Safety Improvement Program (HSIP)

**Webinar for
Local HSIP Cycle 8 Call for
Projects**

May 19, 2016

Caltrans - Division of Local Assistance

Office of Bridge, Bond and Safety Programs

Webinar Presenters

Ken Kochevar, FHWA

– Safety Program Manager

Robert Peterson, Caltrans Local Assistance

**– Chief, Office of Bridge, Bond and Safety Programs
(OBBSP)**

Richard Ke, Caltrans Local Assistance

– HSIP Manager, OBBSP

Local HSIP Cycle 8 Webinar Details

- Welcome
- Expected to last up to 2 hours
- Questions and Answers

Chat-Pod:

- Participants may post questions in the ‘chat-pod’ at any time during the webinar
- Presenters will likely answer these questions verbally at key points during the webinar
- Any unanswered questions will be addressed later and posted on “apply_now” webpage

Local HSIP Cycle 8 Webinar Details

- Questions and Answers
 - Will open lines after each presenter
- This presentation is being recorded
 - A copy will be posted on the “apply_now” HSIP webpage

http://www.dot.ca.gov/hq/LocalPrograms/HSIP/apply_nowHSIP.htm

HSIP Cycle 8 Webinar Outline

- National Focus Towards Roadway Safety
- Federal Legislation and Local HSIP Overview
- Tools and Processes
- Local HSIP Cycle 8
- Timeline
- Questions and Answers

National Focus Toward Roadway Safety

FAST Act

- Fixing America's Surface Transportation (FAST) Act signed on December 4, 2015
- Covers five fiscal years (FY 2016 – 2020)
- Largely maintains current program structures and funding
- Increases average annual funding by 10%
- Changes to streamlining the approval process, providing new safety tools and new programs to advance critical freight
- First law in over 10 years offering long-term funding certainty

HSIP Project Eligibility



Highway Safety Improvement Program Project Eligibility

The Focus is Results!

In 2009, motor vehicle fatalities reached levels not seen since 1950. Can all of this decline be attributed to the economic downturn leading to less roadway travel? The numbers say "no." Vehicle miles traveled (VMT) have declined much less than the decrease in fatalities, giving credence to the fact the increased focus on and commitment to safety is paying off. Legislation in 23 USC 148 and advances in the science of safety have ushered in a different approach for states, regions, and localities to address safety issues and challenges, and the difference is clear.

By requiring the states to develop and implement Strategic Highway Safety Plans (SHSP) as part of the Highway Safety Improvement Program (HSIP), HSIPs became part of a broader vision involving multiple stakeholders and integrating into the planning process. The clear purpose is to achieve significant reductions in traffic fatalities and serious injuries on all public roads. The new approach provides direction for achieving the purpose.

A formula apportions HSIP funds to state departments of transportation (DOT) to administer, but any public road or pathway, including those owned by local governments, can benefit. The objective is to target resources where they will be most effective, which means the focus is results.

Eligibility Criteria

All transportation projects should include an explicit consideration of safety and can be funded through a variety of Federal and state sources. To most effectively and efficiently apply limited HSIP funds, use the criteria below.

- Project addresses priorities in the state's SHSP.

Through collaboration with safety partners, the SHSP process identifies statewide emphasis areas with the greatest potential for reducing fatalities and serious injuries. Linking the HSIP with the SHSP ensures HSIP projects address priorities identified through the broader statewide strategic approach. For example, many SHSPs include a roadway departure emphasis area addressed using HSIP funds to implement low-cost safety improvements.

- Project or countermeasure selection is based on a data-driven process.

Data is the driving force in the decision-making process. With good data and analytic tools, states are able to identify systemic or site-specific safety problems, select and prioritize countermeasures, and evaluate impact on reducing fatalities and serious injuries.

- The selected countermeasures address the identified problems.

Ample resources and tools are available to help select the most effective projects, which also may include well-designed innovations.

The Focus is Results

<http://safety.fhwa.dot.gov/hsip/resourc>
<http://www.fhwa.dot.gov/map21>

National Performance Management Measures for the HSIP

5 Performance Measures:

- Number of Fatalities
- Rate of Fatalities per 100 million VMT
- Number of Serious Injuries
- Rate of Serious Injuries per 100 million VMT
- Number of Non-motorized Fatalities and Non-motorized Serious Injuries

5-Year Rolling Averages

Systemic Approach to Safety

- **Systemic Safety Improvement**
 - An improvement that is widely implemented based on high-risk roadway features that are correlated with particular severe crash types.
- **Systemic Problem Identification**
 - System-wide crash analysis
 - Crash characteristics at the system level





Questions?



Federal Legislation and Local HSIP Overview

Federal Legislation

- The Fixing America's Surface Transportation Act (FAST) Signed on 12/4/2015.
 - Includes Performance Measures and Targets
 - HSIPs must be based on elements of the SHSPs
 - **(New)** Non-infrastructure (NI) elements are not eligible to be funded

HSIP Project Status

- Local HSIP
 - 7 cycles to date
 - 1,259 Safety projects with \$684 million in federal funds
- Status as of May 3, 2016
 - 230 - have not started (19%)
 - 204 -are in PE/RW phase (17%)
 - 384 - are in Construction (32%)
 - 376 – Completed (31%)
 - 65 – cancelled or combined

Local HSIP Cycles 4-7 Results

Cycle	Release Date	Number of Applications	Number of projects selected	Federal funds approved (\$M)	Average BCR of projects selected
4	2/23/2011	357	179	\$74.5	7.9
5	10/19/2012	276	221	\$111.3	14.6
6	11/14/2013	389	231	\$150.0	10.7
7	11/12/2015	212	182	\$160.5	16.9

Local HSIP Cycles 4-7 Results

- Applications were not selected because:
 - ❖ Fatal flaws:
 - Misuse of countermeasures (CMs)
 - Use shoulder widening or roadway realignment CMs before implementing an incremental approach
 - CMs < 15% of Construction Cost
 - Collision Data missing/flawed
 - Collisions not in CM's influence area
 - BCR lower than required minimum
 - ❖ Low BCRs

Cycle 7 Results

	Applications	Selected Projects	% Selected
	212	182	86%
Federal Funds (\$M)	\$199.3	\$160.5	81%
Benefits (\$M)	\$2,905.3	\$2,621.9	90.2%

- Selected Projects:
 - 104 intersection projects - 1861 intersections.
 - 78 roadway projects – 1,998 miles.
 - Non-motorized: \$48.5M or 30%
 - Rural: \$30.4M or 19%

Cycle 7 Results

- BCR of the Selected Projects:
 - Average: 16.9
 - Range: 5.0 to 232.0
 - Systemic (18.4) vs. Spot Locations (14.9)
 - Rural (27.3) vs. Urban (12.1)
 - Intersections (13.4) vs. Roadways (21.5)

Cycle 7 Results

	Federal Funds Requested	Selected	% Selected	Average BCR
Systemic (\$M)	\$122.6	\$112.0	92%	18.4
Spot Locations (\$M)	\$77.7	\$48.4	62%	14.9

Lower-cost / Systemic-type improvements (signing, striping, ped-signals, etc.) vs. Higher-cost / Spot Location (new signals, shoulder widening, etc.)

- Higher BCR
- Better chance to be selected for funding



Tools and Processes

Tools and Processes - Overview

- DLA Local Roadway Safety Manual (LRSM)
- HSIP Call for Projects Process
- FHWA Safety Website
- SafeTREC TIMS Website
- Example documents

Tools and Processes - LRSM

Local Roadway Safety Manual for California Local Road Owners (LRSM) outlines the basic elements of a proven process for Crash Analysis & Project Identification:

1. Introduction and Purpose
2. Identifying Safety Issues
3. Safety Data Analysis
4. Countermeasure Selection
5. Calculating the B/C ratio and Comparing Projects
6. Identifying Funding and Construct Improvements
7. Evaluation of Improvements

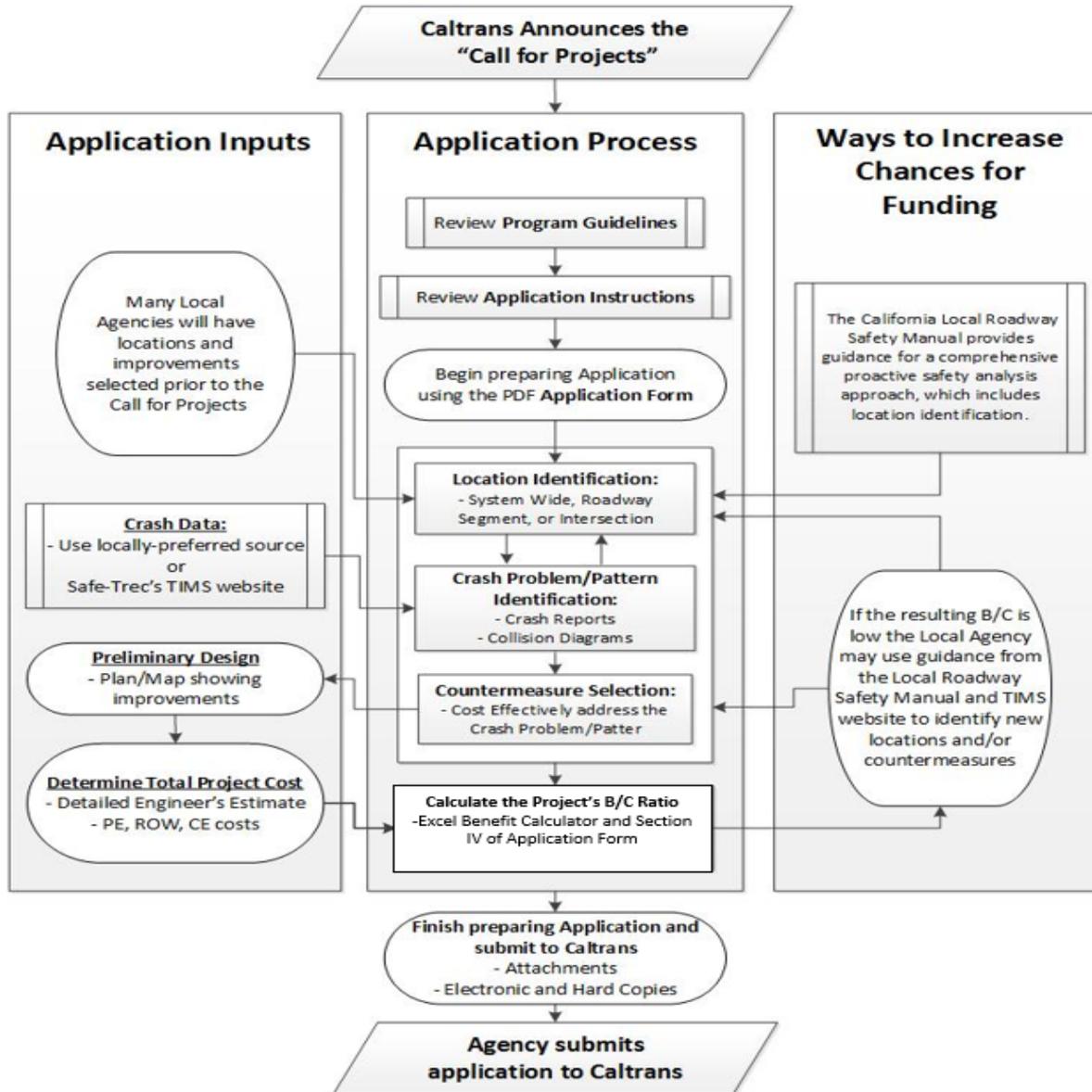
Appendix A through G

- Appendix B: Details on all countermeasures (where to use & why it works)

Tools and Processes – HSIP Application Process

(LRSM – Appendix A)

HSIP Call-for-Projects
Flowchart of Application Process



Analyze your roadway network

- Identify and investigate locations & corridors with highest number of crashes particularly with fatal and serious injury crashes
 - Don't identify projects first and then look for crashes
 - Group locations facing similar safety issues
- Look for patterns of crashes that are susceptible to being reduced.
- Select countermeasures based on those patterns

Tools and Processes

– FHWA Safety Website

<http://safety.fhwa.dot.gov/>

The screenshot shows the FHWA Safety Website homepage. At the top, it features the U.S. Department of Transportation Federal Highway Administration logo and navigation links for About, Programs, Resources, Briefing Room, Contact, and Search FHWA. Social media icons for Facebook, YouTube, Twitter, and LinkedIn are also present. The main navigation bar includes links for About, Office of Safety Programs, Initiatives, Resources, and Contact, along with a search box labeled "Search Safety". A dropdown menu is open under "Office of Safety Programs", listing: Highway Safety Improvement Program, Intersection Safety, Local & Rural Road Safety, Pedestrian & Bicycle Safety, Roadway Departure Safety, Roadway Safety Data Program, and Speed Management. The main content area features a large graphic of a road with cars and a bus, overlaid with yellow circular sensor waves. A text box on the graphic reads: "Learn how Intelligent Transportation Systems (ITS) can save lives!". Below the graphic are navigation buttons for "Pause", "Previous", and "Next", and a numbered list from 1 to 9. The "Office of Safety" section at the bottom contains four featured articles with images and titles: "Highway Safety Improvement Program", "Intersection Safety", "Roadway Departure Safety", and "Roadway Safety Data & Analysis".

Tools and Processes

- Transportation Injury Mapping System (TIMS)

- SafeTREC, UC Berkeley



- TIMS Funding:
 - The California Office of Traffic Safety, through the National Highway Traffic Safety Administration.

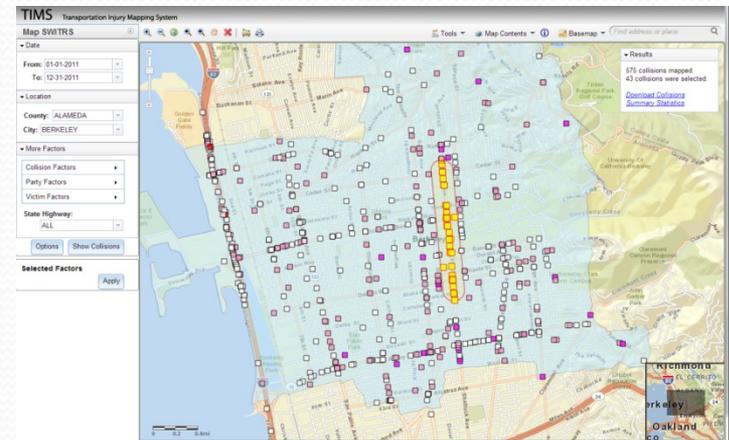
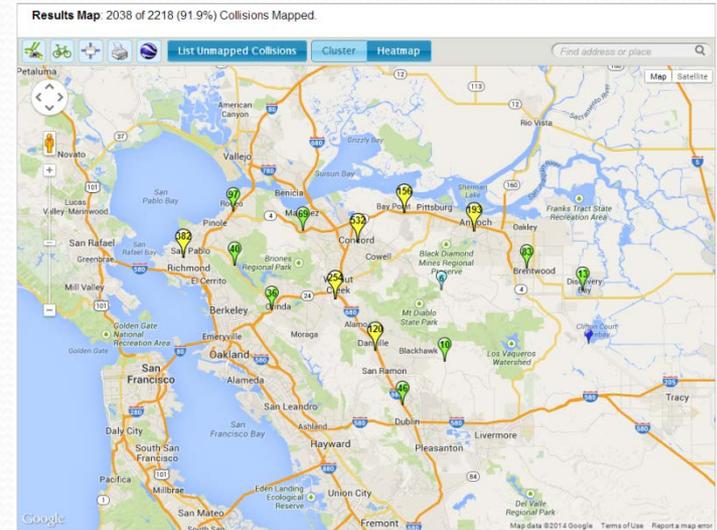
A screenshot of the TIMS (Transportation Injury Mapping System) website homepage. The page has a dark header with the "TIMS" logo and the full name "Transportation Injury Mapping System". Below the header is a navigation menu with links for Home, About, Tools, Resources, News, and Help. A search bar is located in the top right corner. The main content area features a banner image of a car accident scene. Below the banner, there is a "WELCOME TO TIMS!" section with introductory text and the SafeTREC logo. To the right of this text is a "SITE UPDATES" section with three entries, each featuring a blue circular icon with a plus sign, a date, and a time. The first update is from 2016-02-04, the second from 2016-01-21, and the third from 2015-10-27. Each update entry includes a brief description of the data update and a link to view more details. At the bottom of the page, there is a footer with a navigation menu and a copyright notice for UC Regents, 2011-2016.

Tools and Processes - TIMS

- TIMS provides data and mapping analysis tools and information for traffic safety related research, policy and planning
- All Local Agencies have access to TIMS' Crash Data
 - This should be considered as an “option”
 - Limitation on data (timeliness)
 - Agencies may use their locally preferred crash data analysis tools (i.e., Crossroads).

Tools and Processes - TIMS

- SWITRS Query & Map
 - Data query focused application
 - One page summary statistics
 - Google Maps collision display
 - 5,000 collisions limit
 - Collision points clustered until zoomed in
- SWITRS GIS Map
 - Map-centric collision viewing with other data layers
 - 1,000 collision display limit
 - Focused collision spatial selection tools (Drawing, Buffer, and Region)



Tools and Processes - Sample Documents

- Sample Successful Applications:
 - Wide range of project/countermeasure types
 - Additional comments provide by HSIP managers
- Placer County and Nevada County's concept for including Roadway Safety Signing Audits (RSSAs):
 - Concept reviewed and approved by HSIP managers
 - Including an RSSA in the PE phase allows for comprehensive traffic safety/engineering
- The application's BCR must be based on countermeasures and scope of work that is not in question and will be constructed.

Tools and Processes - Who completes Analysis & Application

- **This is a Technical Process**
 - Review, analysis, and application of crash data
 - Understanding of collision patterns and countermeasure effectiveness
 - Developing Project Scope and Estimate
 - ❖ **Expecting: Traffic and Transportation Engineers**
 - *Other traffic-safety professionals may be appropriate*
- **Engineer's stamp is required**
 - Crash data, countermeasure selection, preliminary scope, engineer's estimate, etc.

The HSIP program relies on the integrity of the BCRs!



Local HSIP Cycle 8 Overview

Local HSIP Cycle 8

http://www.dot.ca.gov/hq/LocalPrograms/HSIP/apply_nowHSIP.htm

- ❖ Announcement – May 9, 2016
- ❖ Applications Due: August 12, 2016
- ❖ \$150 million in Federal HSIP Funds
 - ❖ May be more if more funds can be obligated
- ❖ Min/Max - \$100k/\$10 million per application
- ❖ Up to \$10 million per agency
- ❖ No limit on the number of applications per agency
- ❖ Any City, County or Tribal Government can apply

Local HSIP Cycle 8

- ❖ Application's minimum BCR: 3.5
- ❖ Non-infrastructure components NOT eligible
- ❖ Countermeasures have different federal eligibility %'s:

CM Type	100%	90%	50%	Total
Signalized Intersection (S)	13	4	1*	18
Non-Signalized Intersection (NS)	12	8	0	20
Roadway (R)	15	23	0	38
Total	40	35	1	76

*S3, Improve signal timing

Local HSIP Cycle 8 – Funding Set-asides

- Set-aside for guardrail upgrades:
 - for upgrades of existing guardrails and end treatments; bridge rails are not eligible
 - Total set-aside: \$20m
 - Max amount per agency: \$600k
 - Eligible for being 100% federally reimbursed
- Set-aside for crosswalk enhancements at unsignalized locations and/or pedestrian countdown heads at signalized intersections
 - Total set-aside: \$10m
 - Max amount per agency: \$250k
 - Eligible for being 100% federally reimbursed
- No BCR calculation is required.

Local HSIP Cycle 8

- BCR Calculation
 - No longer uses TIMS website
 - Use Excel Benefit Calculator (macro-driven) and Section IV of the Application Form
- **Important:** Review Appendix A of the application form instructions

Local HSIP Cycle 8

- Eligible Projects/Improvements
 - Generally, any work on publicly owned roadway or bicycle/pedestrian pathway that corrects or improves the safety for users
 - Must lead to the construction of safety improvements
 - Improvement-type must have an established Crash Reduction Factor to be included in the Application's BCR Calculation (except for set-asides)
 - Prefer projects that can be delivered quickly and have minimal ROW and Environmental impacts

Local HSIP Cycle 8

- 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
- Need to show that an incremental approach (e.g., new curve signing or additional signs, or HFST) has been tried before considering the below CMs
 - R16, Widen shoulder (paved)
 - R19, Improve horizontal alignment (flatten curves)
 - R20, Flatten crest vertical curve
 - R21, Improve horizontal and vertical alignments

Local HSIP Cycle 8

- If a traffic signal is being proposed, an engineering study should include consideration of a roundabout (yield control). If a roundabout is determined to provide a viable and practical solution, it should be studied in lieu of, or in addition to a traffic signal
- For all new raised median project proposals, removal of structural sections (so that plantings can be placed) are not eligible for federal funds

Local HSIP Cycle 8

Engineer's Checklist is required to be filled out by registered engineer – help with sending in complete applications

May 2016	Cycle 8 HSIP Application, Engineer's Checklist	May 2016	Cycle 8 HSIP Application, Engineer's Checklist
	<p align="center">Cycle 8 HSIP Application – Engineer's Checklist</p> <p>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.</p> <p><i>Special Considerations for Engineers before they Sign and Stamp this document attesting to the accuracy of the application: Chapter 7, Article 8, Section 6725 of the Professional Engineer's Act of the State of California requires engineering calculations to be prepared by 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 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 6725 and 6726.</i></p> <p>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.</p>		
<p>1. Vicinity map / Location map a. The project limits must be clearly depicted in relationship to the overall agency boundary</p> <p>2. Project layout plan showing existing and proposed conditions must: 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 excavations/terminals f. Show agency's right of way (ROW) lines. (Also show Caltrans', Railroad, and all other government agencies)</p> <p>3. Project cross-section showing existing and proposed conditions. (Only required for projects with roadway excavation, cut/slopes, and changes to lane widths) a. Show and dimension: changes, ROW lines, safety countermeasures, etc.</p> <p>4. Countermeasure Selection (used throughout the application): 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.</p> <p>5. Crash Data used in the BCR calculations must be: 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 list(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</p>	<p>6. Collision Diagram(s) (Shown separately or combined) a. Should be to scale with crash locations accurately plotted b. Reveals collision pattern(s) necessary to justify CM(s) c. The influence area for each CM is shown separately on the diagrams (unless the areas are identical) d. All crashes, included in the BCR Calculation, must be clearly shown within the influence area of that CM e. Totals for each Location and/or CM are shown with crashes segregated based on Crash Severity f. The totals shown match the totals shown in the Collision List and Collision Summary</p> <p>7. Collision List(s) (Shown separately or combined) a. Totals for each Location and/or CM are shown with crashes segregated based on Crash Severity b. 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 c. The totals shown match the totals shown in the Collision Diagram and Collision Summary d. Each crash is only counted as one, even if there were multiple victims and/or vehicles involved</p> <p>8. Collision Data Summary/Summaries (HSIP Form in Excel) a. Totals for each Location are shown with crashes segregated based on Crash Severity b. The totals for each Location match the totals shown in the Collision Diagram and Collision List c. 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.</p> <p>9. Detailed Engineer's Estimate (HSIP Form in Excel) a. All likely construction costs associated with the project are identified and included in the estimate b. 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 c. Costs for each item are distributed between CMs using a logical method to fairly calculate each CM's cost d. Each CM included in the BCR calculation must represent a minimum of 15% of the construction costs e. "Other Safety" and "Non-Safety" construction items/costs are identified and properly accounted for f. The total construction cost in the estimate must match the "Construction" cost in Section III of the application</p> <p>10. Benefit Results and Benefit Summary (Excel Benefit Calculator) a. Project locations are grouped appropriately per Appendix A of the application form instructions b. For each of the benefit calculation runs, the CMs and crash data shown match the totals shown in the corresponding Collision Data Summary c. The calculation sheets from all benefit calculation runs must be signed by the Engineer in Responsible Charge and attached to the application d. 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</p> <p>11. Benefit/Cost Ratio (BCR) Calculation (Section IV of the application form) a. The CMs, the crash data period and the benefits by CM shown match the output of the Excel Benefit Calculator / Benefit Summary sheet b. The total project cost in the BCR calculation must match the total project cost in Section III of the application</p> <p>12. Warrant studies/guidance (Check if not applicable) 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.</p>	<p>13. Additional narration, documentation, letters of support: 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, clearly non-standard application of countermeasures, crashes and/or costs, appropriate documentation is attached to the application to document the engineering decisions and calculations</p> <p>Licensed Engineer: Name: _____ Title: _____ Engineer License Number: _____ Signature: _____ Date: _____ Email: _____ Phone: _____</p> <p>Engineer's Stamp: </p> <p>To ensure the application's quality and the agency's commitment to deliver the safety project in an expedient 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.</p> <p>Transportation Manager: Name: _____ Title: _____ Signature: _____ Date: _____</p>	

Project Delivery Requirements

- Established to ensure safety projects are delivered in a timely manner
- 2 Milestones (start date: Jan 1 of the year following the project selection)
 - E-76 with PE - within 9 months; and
 - E-76 with CON - within 36 months
- Use the Expedited Project Selection Procedures (EPSP) in delivering HSIP projects

Details are at:

http://www.dot.ca.gov/hq/LocalPrograms/HSIP/delivery_status.htm

Project Delivery Requirements

- The agency is not eligible to apply for Cycle 8 HSIP funds if an active HSIP project is flagged for not meeting the delivery requirements
- Still eligible if one of the below two happens:
 - Resolve the flag by August 12, 2016: the DLAE must receive the Request for Authorization package by application due date (August 12, 2016) and verify it is complete; OR
 - An extension is granted if justified (Delivery Commitment Form with Status Update)

Project Delivery Status

For Current project delivery status and documents (requirements, Use of EPSP, and Delivery Commitment Form), visit http://www.dot.ca.gov/hq/LocalPrograms/HSIP/delivery_status.htm

Delivery Requirements and Status Reports for HSIP Projects

DELIVERY REQUIREMENTS AND THE USE OF EPSP TO EXPEDITE THE DELIVERY

In an effort to increase the visibility and improve the delivery, the Office of Bridge, Bond and Safety (OBBSB) has developed delivery requirements for the local Highway Safety Improvement Program (HSIP) projects. All agencies are expected to deliver their HSIP projects within the time frames provided in the delivery requirements.

→ [Project Delivery Requirements for Local HSIP Projects](#)

If an HSIP project is ready to move forward to the next phase however the project is not programmed in the current Federal Fiscal Year (FFY), the local agency can and should use the Expedited Project Selection Procedures (EPSP) to advance the delivery of the project in order to meet the delivery time frames. Caltrans District and Headquarters staff will work with local agencies to ensure that the use of the EPSP and the authorization requests are approved as quickly as possible.

→ [Using EPSP to Request Authorizations for Local HSIP Projects Not Programmed in the Current FFY](#)

POTENTIAL INELIGIBILITY FOR HSIP CYCLE 8 FUNDING DUE TO AN EXISTING DELAYED CYCLE 5 OR CYCLE 6 SAFETY PROJECT

Your agency may be excluded from this funding opportunity as our records indicate that an existing HSIP project is currently flagged for not meeting a delivery milestone, which can be viewed via the following link:

→ [Delayed Cycle-5 and Cycle-6 Project List](#)

If your agency has a delayed Cycle 5 or Cycle 6 project, please read the potential ineligibility memo and fill out inside the memo the delivery commitment form, which you can download via the following link:

→ [Potential Ineligibility Memo](#)

PROJECT AND PROGRAM SUMMARIES

The table below has links to summary reports for the HSIP program. Since the High Risk Rural Roads (HR3) Program is now part of the HSIP, the existing HR3 projects have been combined into the HSIP.

Local agencies with on-going HSIP projects should check and monitor the delivery status of each of their projects by opening the "Complete Project Listing" report. This report shows the expected PE and CON authorization dates for each project and its current status.

Reports Updated As Of	Highway Safety Improvement Program (HSIP) Includes High Risk Rural Road Projects
	Program Status Overall Program Status Complete Project Listing

Application Form

- Designed for local agency traffic safety practitioners to complete the application process
 - Complete their roadway analyses
 - Define the project scope – CMs/CRFs
 - Prepare plans and crash diagrams
 - Estimate the cost/schedule
- Application Form is a savable PDF file
 - Data validation by dropdown lists/JavaScript
 - Adobe Acrobat Reader 8.0 or later is required (<http://get.adobe.com/reader/> to download)
 - Data to be exported – DO NOT CHANGE Application Form.
 - Final file MUST be submitted as part of application package

Application Form Instructions

- Instructions provide detailed explanations – if more clarification is needed, please contact your DLAE.
- Print and **read the Application Instructions before filling out** the Application Form
Completing an application without referring to instructions could lead to
Inaccurate/incomplete data  fatal flaws

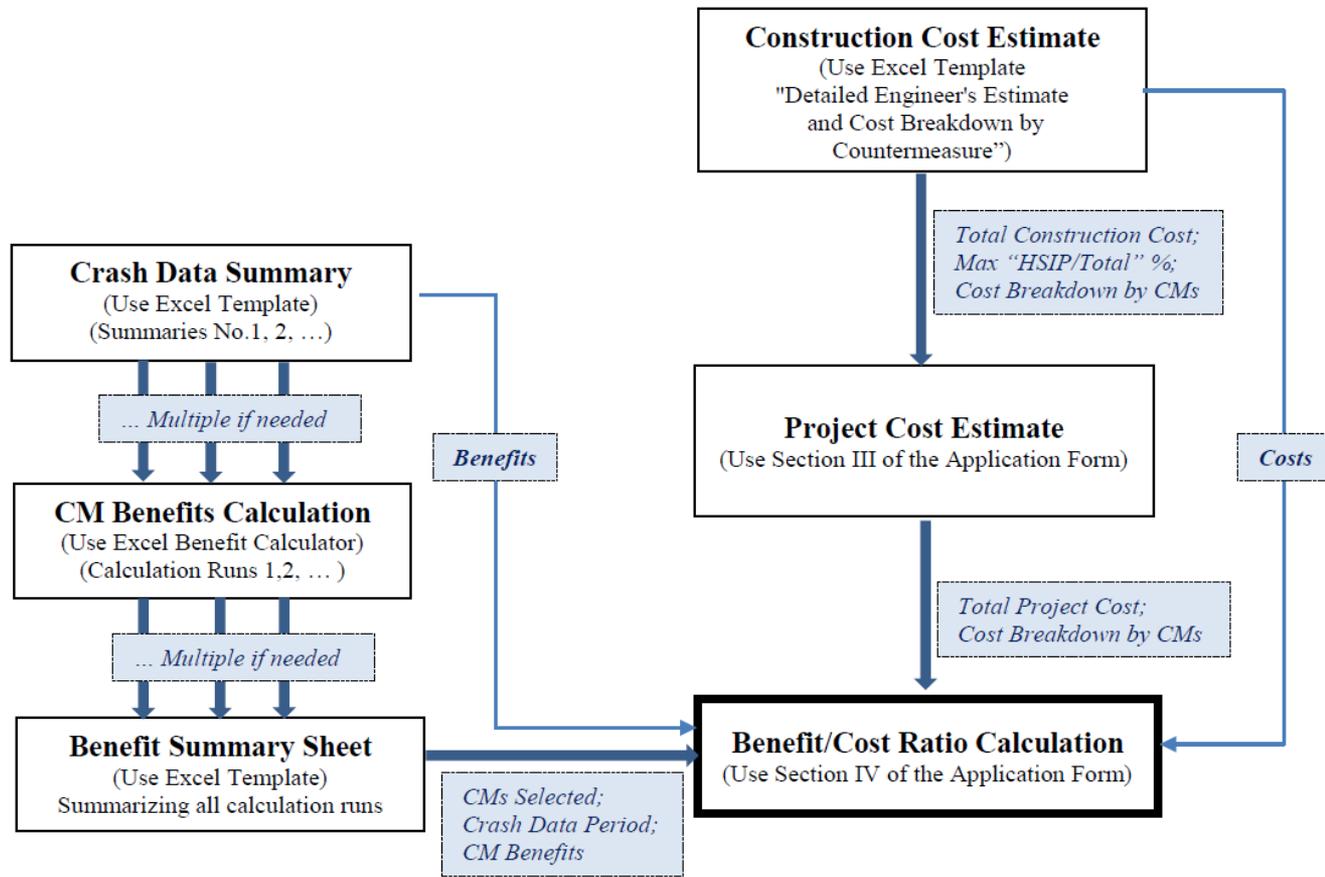
Application Form Instructions – Appendix A

- Application Form Instructions – Appendix A
“Instructions for Project Cost Estimate and Benefit/Cost Ratio (BCR) Calculation”

Explains:

- i) Construction cost estimate;
 - ii) Project cost (all phases) estimate;
 - iii) Countermeasure (CM) benefits calculation; and
 - iv) The BCR calculation.
- Reviewing Appendix A is critical for preparing your application correctly.

Application Form Instructions – Appendix A



Application Form Instructions – Appendix A

- Group the locations so that within each group, the same countermeasures apply to all locations and their crash data.
 - With each group, the crash modification factors are multiplicative. Example:
 - CM#1: $CRF_1=30\%$ so $CMF_1=1-CRF_1=70\%$
 - CM#2: $CRF_2=20\%$ so $CMF_2=1-CRF_2=80\%$
 - The combined CMF is $70\% * 80\% = 56\%$, and the combined CRF is $1-56\% = 44\%$.
 - The benefits for each location group are calculated separately using Excel Benefit Calculator.
 - When there are multiple location groups in one project, the benefits must be summed by CMs using the Benefit Summary spreadsheet before they can be entered into Section IV of the application form for the BCR calculation.

Group 1	
CM#1	
CM#2	
CM#3	
CM#1, CM#2 & CM#3	

Project 1:
Only one (1) location group is needed

Group 1	Group 2	Group 3	Group 4	Group 5
CM#1				
	CM#2			
		CM#3		
CM#1 Only	CM#1 & CM#2	CM#1, CM#2 & CM#3	CM#2 & CM#3	CM#2 Only

Project 2:
Five (5) location groups are needed

Crash Data Summary Sheet

- Required for each location group;
- Totals (yellow fields) are to be entered in Crash Data Table in the Benefit Calculator Tool.

HSIP CYCLE 8 Call-for-projects CRASH DATA SUMMARY SHEET								
Important: Read the Instructions to the right and Appendix A of the application form instructions before entering data. Do not enter data in shaded fields (with formulas).								
Agency:				Application ID:				
Prepared by:				Date:				
Crash Data Period			for Benefit Calculation Run:			(e.g. 1 of 2)		
From:			CMNo. for Coastermeasure #1:			(e.g. NS20)		
To:			CMNo. for Coastermeasure #2:					
			CMNo. for Coastermeasure #3:					
No.	LOCATION # (Intersection Name or Corridor Limit)	Sub-dataset (select from list; blank if not a sub-dataset)	Fatal	Severe Injury	Other Visible Injury	Complain t of Pain	PDO	Total
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
	Total**		0	0	0	0	0	0
	Total (subset)**	Night	0	0	0	0	0	0
	Total (subset)**	Ped&Bike	0	0	0	0	0	0
	Total (subset)**	Emergency Vehicle	0	0	0	0	0	0
	Total (subset)**	Animal	0	0	0	0	0	0

* Crash Total for each Location must match the total shown on the Crash Diagrams and Crash Lists
 ** Crash Totals highlighted in yellow will be entered in the Crash Data Table in the corresponding benefit calculation run in Excel Benefit Calculator.

CM Benefit Calculation

- Use Excel Benefit Calculator

- One calculation run per each location group;
- Most projects only need one calculation run;
- Data input:
 - Select CMs: each CM must account for 15% of CON cost;
 - Crash Data Table (3-5 years): must match Crash Data Summary;
 - When roundabout CM is selected, Urban/Rural, Intersection Type, Roundabout lanes and ADTs are also needed.
- *Use Benefit Summary sheet to summarize benefits if there are multiple calculation runs for one project.*

HSIP Cycle 8 Call for Projects - Benefit Calculator
 (Read instructions to the left. For more instructions please refer to Appendix A of the application form instructions)
 All yellow-highlighted fields are required.

Application ID: Calculation Run No: (e.g. 1 of 2)

1. Countermeasures Utilized
 (Select up to 3 countermeasures from the dropdown lists. At least one must be selected. Use CM#1 first then CM#2/CM#3.)

Countermeasure #1:
 Countermeasure #2:
 Countermeasure #3:

NOT required for this project:
 The below information is NOT required since roundabout has NOT been selected as a countermeasure (S18/NS4A/NS4B).

Project location: (Select from Dropdown List)
 Intersection type: (Select from Dropdown List)
 Roundabout: (Select from Dropdown List)

Average Daily Traffic (ADT)	Major Road	Minor Road	Total ADT

2. Crash Data

From: (required)
 To: (required)
 Number of Years: (must between 3 and 5).

Crash Data Table (data sets or rows highlighted in yellow are required as they are related to the selected countermeasures)

Dataset / Sub-dataset	Fatality	Severe Injury	Injury - Other Visible	Injury - Complaint of Pain	Property Damage Only	Total
All						0
Night						0
Ped & Bike						0
Emergency Vehicle						0
Animal						0

3. Results - Benefits by Countermeasures
 (Enter these results in Sheet "Benefit Summary" if this project has multiple benefit calculation runs)

	CM ID	Crash Dataset /Sub-dataset Applied	Crash Reduction Factor (CRF)	Life (Years)	Life benefits
Countermeasure #1					
Countermeasure #2					
Countermeasure #3					
Total Benefits					\$0

Safety Practitioner/Engineer (Print):

Signature:

Date:

By signing this benefit calculation sheet, you are attesting to your authority / responsibility as the Engineer in Responsible Charge of the preparation of the HSIP application and you are attesting to the accuracy of the values on this page and that they have been entered into the HSIP Application Form correctly, DO NOT SIGN if any of this is not the case.

Summary of Benefits by CMs

- Use Benefit Summary sheet to summarize benefits if there are multiple calculation runs for one project.
- Results are to be entered in Section IV of the Application Form for BCR Calculation.

Summary of Benefits by Countermeasures for combing benefits from multiple benefit calculation runs (see Appendix A of the application form instructions)			
Note: Do not enter in yellow fields (with formulas and read-only).			
Application ID:	<input type="text"/> (same as in Application Form, e.g. 03-Sacramento-1)		
	CM #1	CM #2	CM#3
CM No. (e.g. NS3, R2, etc)			
	CM #1 Benefit (\$)	CM #2 Benefit (\$)	CM #3 Benefit (\$)
Calculation Run #1			
Calculation Run #2			
Calculation Run #3			
Calculation Run #4			
Calculation Run #5			
Calculation Run #6			
Calculation Run #7			
Total	\$ -	\$ -	\$ -
(The totals are to be entered in Section IV of the Application Form)			

Engineer' Estimate and Cost Breakdown by CM

- When completing estimate:
 - Safety-Related Costs Tied to a CM
 - New Sidewalk (CM# R37) Example: CM could include costs of: new sidewalk, ADA ramps, grading, drainage/DIs, retaining walls, etc
 - Other Safety-Related Costs
 - New Sidewalk (CM# R37) Example: CM would not include costs of: new street lighting (not relocated), extra widening for a bike lane, etc. These costs are still safety-related!
 - Non Safety-Related Costs
 - New Sidewalk (CM# R37) Example: Cost relating to a landscaped buffer, widening the roadway for parking, or unrelated maintenance work (i.e. drainage, structural section fixes) must be included in the Engineer's Estimate under "non safety-related"

Project Cost Estimate (all phases)

- Use Section III of the Application Form;
- Include all costs to fully construct the project regardless of funding sources
 - results from the Engineer's Estimate (for construction); and
 - PE, ROW and CE.
- HSIP/Total % of each phase can NOT be more than the maximum HSIP/Total % from the Engineer's Estimate.

III. Project Cost Estimate

Important: Please review Appendix A of the [Application Form Instructions](#) before you start this section.

1. Construction Cost
The first step is to estimate the project construction cost by using the provided Excel template "Detailed Engineer's Estimate and Cost Breakdown by Countermeasure". Enter the results from the construction cost estimate below.

Total Construction Cost Maximum "HSIP/Total" Percentage (e.g. Enter 90 for 90%)

Cost Breakdown (%) (e.g. enter 20 for 20%. Total is 100.)

CM #1 <input type="text"/>	CM #2 <input type="text"/>	CM #3 <input type="text"/>	Other Safety-Related Costs <input type="text"/>	Non Safety-Related Costs <input type="text"/>
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2. Project Costs - All Phases
Then project costs of all phases must be accounted for, even if substantial elements of the overall project are to be funded by other sources.

Shaded fields are calculated (read only). Round all costs up to the nearest hundred dollars. Once all costs and the desired HSIP/Total ratios are entered, click "Check Cost Estimate" to perform validation. If errors are detected, they will appear below the button. Click it to check again each time when the costs have been revised.

Phase	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Environmental	<input type="text"/>	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
Preliminary Engineering	PS&E	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	PE Subtotal		<input type="text"/>	<input type="text"/>
<input checked="" type="checkbox"/> Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).				
Right of Way	Right of Way Engineering	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	Appraisals, Acquisitions & Utilities	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	ROW Subtotal		<input type="text"/>	<input type="text"/>
Construction Engineering & Construction	Construction Engineering	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	Construction	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	CON Subtotal	(Read Only - From "1" above - "Total Construction Cost")	<input type="text"/>	<input type="text"/>
Total Cost	<input type="text"/>	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>

Project Cost Estimate (all phases)

- click "Check Cost Estimate" button for error checking:
 - *Minimum HSIP amount: \$100K*
 - *Maximum HSIP amount: \$10M*
 - *PE (HSIP\$): <=25% of Construction;*
 - *ROW (HSIP\$): <=10% of Construction;*
 - *CE (HSIP\$): <=15% of Construction.*
- Results will be used in Section IV: BCR Calculation

III. Project Cost Estimate

Important: Please review Appendix A of the [Application Form Instructions](#) before you start this section.

1. Construction Cost
The first step is to estimate the project construction cost by using the provided Excel template "Detailed Engineer's Estimate and Cost Breakdown by Countermeasure". Enter the results from the construction cost estimate below.

Total Construction Cost Maximum "HSIP/Total" Percentage (e.g. Enter 90 for 90%)

Cost Breakdown (%) (e.g. enter 20 for 20%. Total is 100.)

CM #1 <input type="text"/>	CM #2 <input type="text"/>	CM #3 <input type="text"/>	Other Safety-Related Costs <input type="text"/>	Non Safety-Related Costs <input type="text"/>
----------------------------	----------------------------	----------------------------	---	---

2. Project Costs - All Phases
Then project costs of all phases must be accounted for, even if substantial elements of the overall project are to be funded by other sources.

Shaded fields are calculated (read only). Round all costs up to the nearest hundred dollars. Once all costs and the desired HSIP/Total ratios are entered, click "Check Cost Estimate" to perform validation. If errors are detected, they will appear below the button. Click it to check again each time when the costs have been revised.

Phase	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering	Environmental	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	PS&E	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	PE Subtotal		<input type="text"/>	<input type="text"/>
<input checked="" type="checkbox"/> Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).				
Right of Way	Right of Way Engineering	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	Appraisals, Acquisitions & Utilities	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	ROW Subtotal		<input type="text"/>	<input type="text"/>
Construction Engineering & Construction	Construction Engineering	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	Construction	<input type="text"/> (%)	<input type="text"/>	<input type="text"/>
	CON Subtotal	(Read Only - From "1" above - "Total Construction Cost")	<input type="text"/>	<input type="text"/>
Total Cost			<input type="text"/>	<input type="text"/>

Total Cost (%)

BCR Calculation

- Use Section IV of the Application Form
- Data needed:
 - (From Section III) Project Cost Estimate and Cost %s pertaining to CMs, Other Safety and Non-Safety;
 - (From Benefit Calculation runs/Benefit Summary) Benefits by CM.
- The BCRs per CM is for info only. Only the project's BCR is used for ranking.

IV. Benefit/Cost Ratio Calculation

Important: Please review Appendix A of the [Application Form Instructions](#) before you start this section.

This section is utilized to calculate the Benefit/Cost (B/C) Ratio (BCR) of the project. Prior to this calculation, applicants are required to complete the following:

1. Use the Excel "Detailed Engineer's Estimate and Cost Breakdown by Countermeasure" template and Section III (Project Cost Estimate) of this application form to complete the construction cost estimate and the overall project cost estimate; and
2. Use the Excel "Benefit Calculator" to calculate the benefits of the safety countermeasures (the final printouts of the benefit calculation results must be provided as one of the application attachments).

1. Project Cost
Read Only - From Section III (Project Cost Estimate)

Total Project Cost

Cost Breakdown (% Total is 100.)

CM #1 CM #2 CM #3 Other Safety-Related Costs Non Safety-Related Costs Total: 100%

2. Countermeasures and Benefits
Enter the Exact Data from the Excel "Benefit Calculator" Results

Crash Data Period: from to

Number of Countermeasures Utilized (Max 3)

	Countermeasures	Life Benefit (\$)
#1	<input type="text"/>	<input type="text"/>
#2	<input type="text"/>	<input type="text"/>
#3	<input type="text"/>	<input type="text"/>

3. BCR Calculation

	Life Benefit	Expected Cost	Resulting BCR
Countermeasure #1	<input type="text"/>	<input type="text" value="\$0"/>	<input type="text" value="0.00"/>
Countermeasure #2	<input type="text"/>	<input type="text" value="\$0"/>	<input type="text" value="0.00"/>
Countermeasure #3	<input type="text"/>	<input type="text" value="\$0"/>	<input type="text" value="0.00"/>
Project's Total (Overall)	<input type="text"/>	<input type="text" value="\$0"/>	<input type="text" value="0.00"/> <small>(Project BCR Used in Ranking)</small>

Tips for Successful Application

1. Do It Right – No Fatal Flaws

- Review guidelines and Local Roadway Safety Manual (LRSM);
- Review Appendix A of the application form instructions to have an integral picture of crash data, CMs, benefits, construction costs, project overall costs and the BCR calculation.
 - Define location groups correctly;
 - Does each CM used in benefit calculation account for at least 15% of the construction costs?
 - Does Crash Data Table in benefit calculation matches Crash Data Summary?
 - Are collisions listed for each countermeasure (CM) within the influence area of the proposed project?

Tips for Successful Application

1. Do It Right – No Fatal Flaws (con'd)

- Review Appendix B of the LRSM: any specific requirements for the CMs used in your application? Example:
 - New signals: warrants
 - Shoulder widening/road realignments: incremental approach has been tried

Tips for Successful Application

2. Have a high BCR

- Increase the benefit
 - Complete a safety analysis of roadways
 - Select locations & corridors with high number of crashes. Don't identify projects first and then look for collisions to justify the project.
 - Where possible, use countermeasures (CMs) with high Crash Reduction Factors (CRFs)
- Reduce the cost
 - Select lower-cost improvements
 - Combine multiple CMs or multiple locations into one application to improve project delivery efficiencies
 - Minimize adding non-safety elements (or elements without established CRFs) into project scope

TIMELINE

- **August 12, 2016** : Applications are due to DLAE
- **August & September**: Applications will be reviewed by Districts and Headquarters
- **October**: Develop the list of recommended projects and secure approval by Caltrans management
- **October/November**: Agencies will be notified of final selections
 - Applicants that didn't make the cut will be notified at this time



Thanks for attending!!

QUESTIONS?