Local Highway Safety Improvement Program (HSIP)

Webinar for Local HSIP Cycle 7 Call for Projects

May 21, 2015

Caltrans - Division of Local Assistance
Office of Bridge, Bond and Safety Programs

Webinar Presenters

Ken Kochevar, FHWA – Safety Program Manager

Robert Peterson, Caltrans – Safety Program Manager, Local HSIP

Greg Tom, Caltrans – Safety Program Manager, Local HSIP

Local HSIP Cycle 7 Webinar Details

- Welcome
- Expected to last up to 2.5 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

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

Local HSIP Cycle 7 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

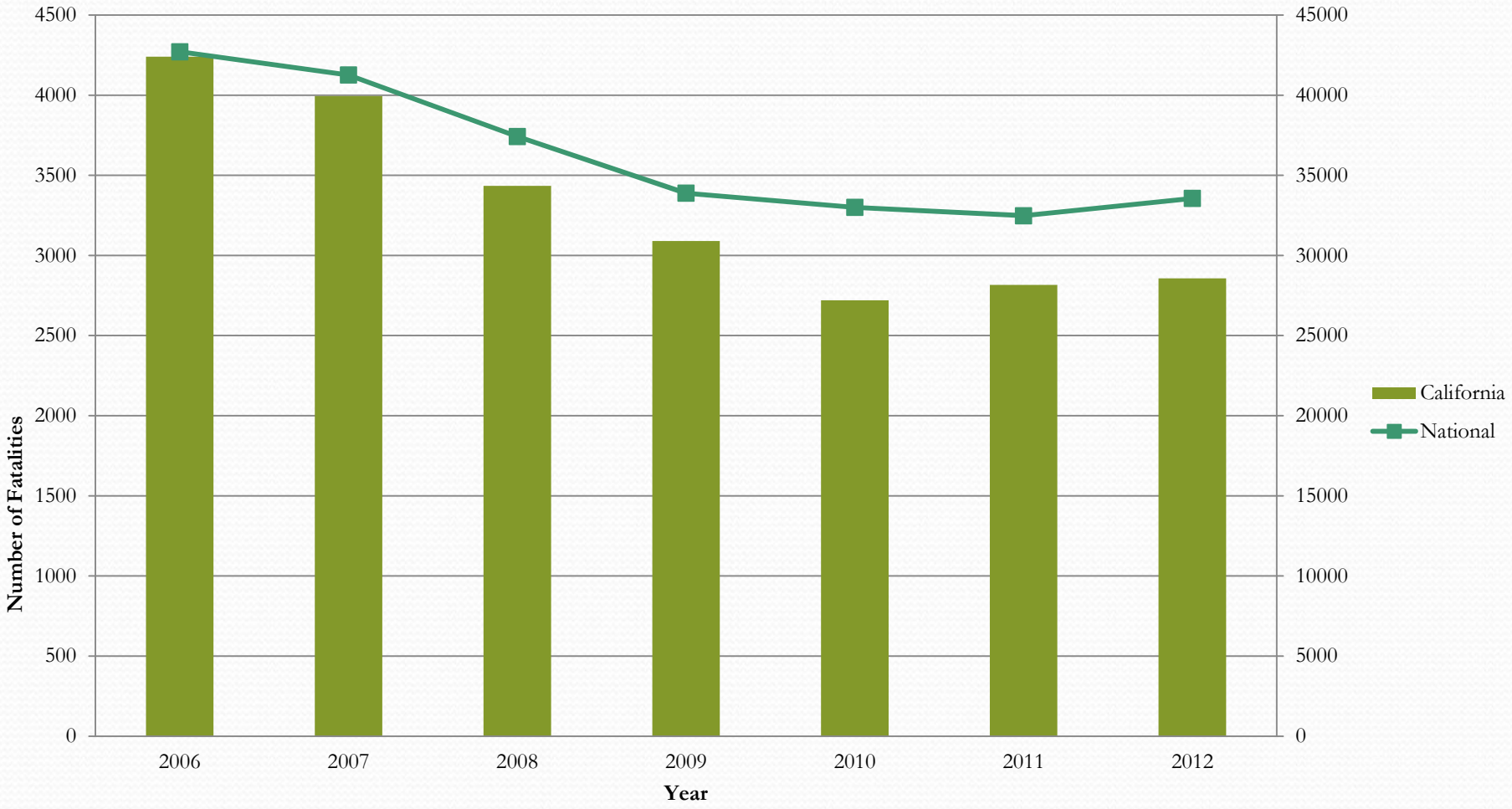
http://www.dot.ca.gov/hq/LocalPrograms/HSIP/apply_now.htm

HSIP Cycle 7 Webinar Outline

- National Focus Towards Roadway Safety
- Federal Legislation and Local HSIP Cycle 7 Overview
- Application Demonstration
- TIMS Website & B/C calculator
- Timeline
- Questions and Answers

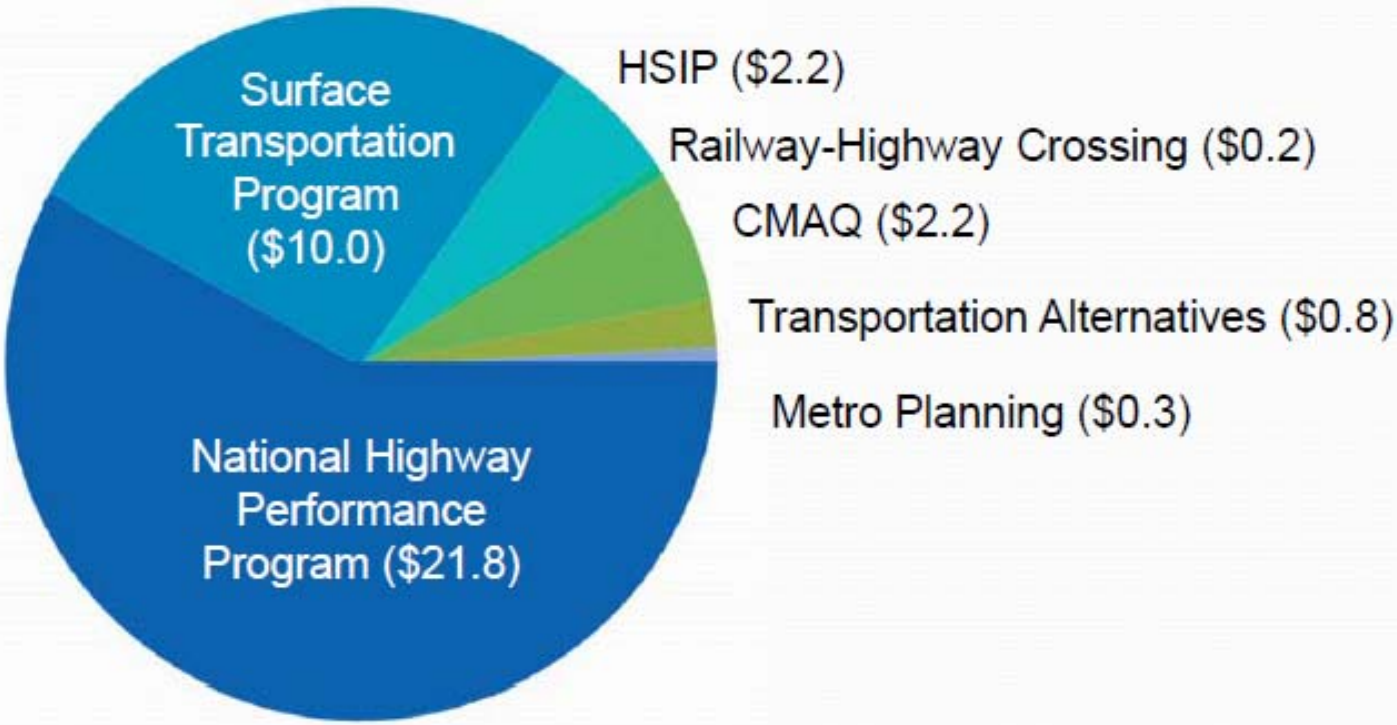
National Focus Toward Roadway Safety

National Safety Trends



MAP-21

$37.7 billion/year in formula funding



Highway Safety Improvement Program

<u>Purpose:</u>

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

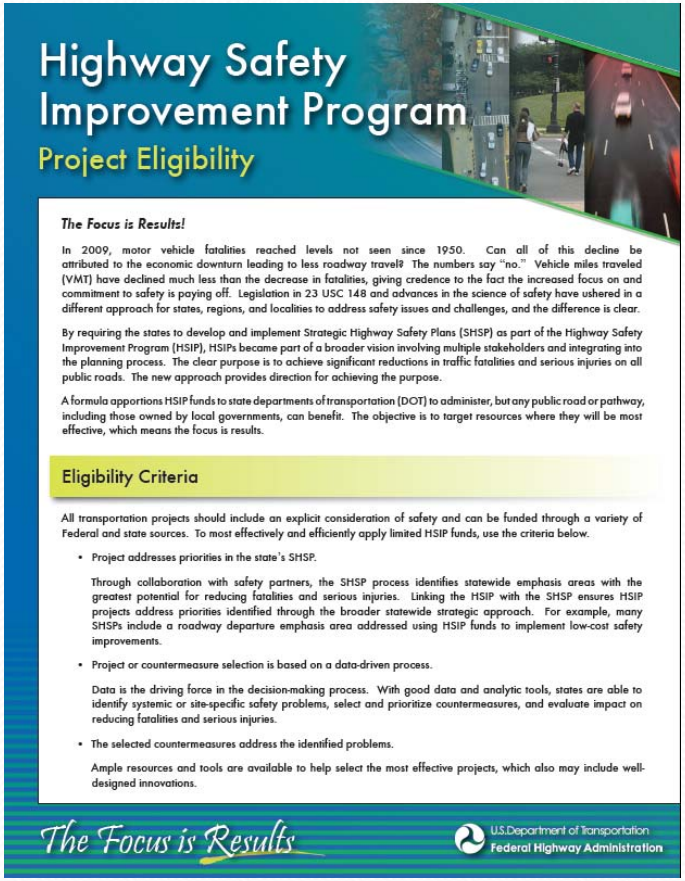
HSIP Project Eligibility

Addresses an SHSP Priority

Identified through a data-driven process

Targets identified safety issue

Reduces fatalities and serious injuries



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.

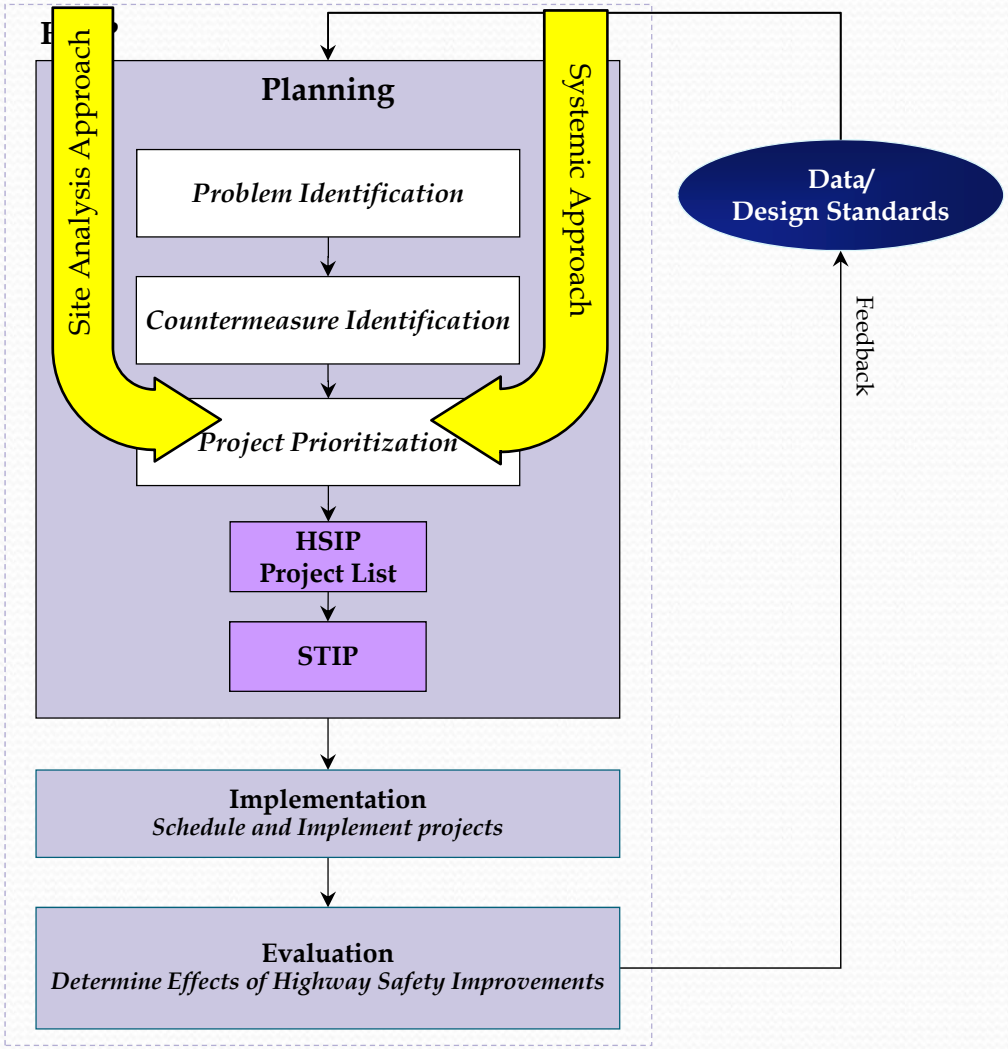
The Focus is Results

U.S. Department of Transportation
Federal Highway Administration

http://safety.fhwa.dot.gov/hsip/resourc

http://www.fhwa.dot.gov/map21

State Highway Safety Improvement Program



Site Analysis Approach

- Network Screening Process
  - Establish reference population
  - Apply problem identification methodology
  - Apply screening method
  - Evaluate and screen results

HCLs

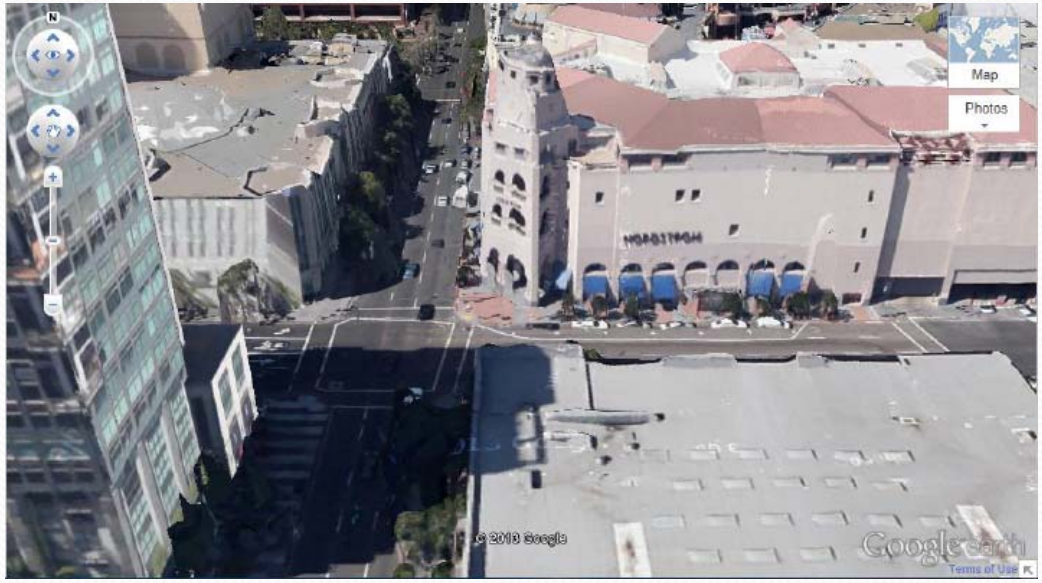
Systemic Approach to Safety

- 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

Select focus crash type(s) → Select focus facilities → Identify common characteristics

Data needs/sources

- Crash data
  - Law enforcement
  - TIMS
  - FARS
- Roadway data
  - Video logs
  - Online Arial imagery
  - Windshield surveys
- Exposure data
  - AADT

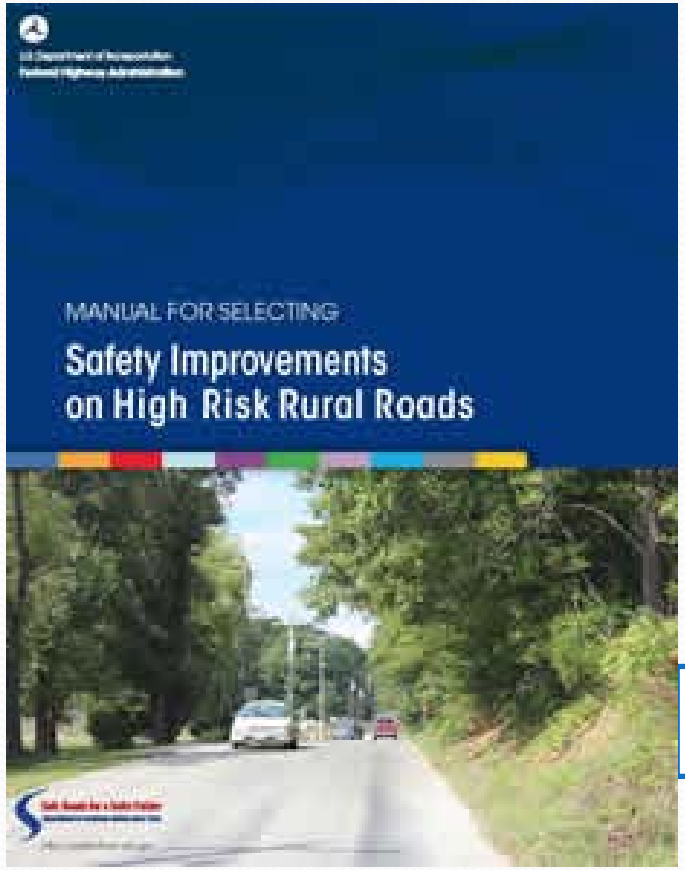


Benefits of a data-driven process

- Target areas of greatest need
- Systematic and repeatable process
- Prioritized investments
- Defensible decisions
- Lives saved!!!

New Resources

High Risk Rural Roads Manual



Systemic Safety Project Selection Tool

http://safety.fhwa.dot.gov

Questions?

Federal Legislation and Local HSIP Overview

Federal Legislation and Local HSIP

- MAP-21
  - "Requires" a DATA-DRIVEN selection process
  - Includes Performance Measures and Targets
  - Combined HR3 into HSIP, but with a special rule:
    - If the fatality "rate" increases on HRRR over two consecutive years, California to obligate $17.6 million
  - HSIPs must be based on elements of the SHSPs
  - Overall funding has gone up by approximately 40%

- Local HSIP
  - 6 cycles to date
  - 1,077 Safety projects with $524 million in federal funds

HSIP Project Status

- As of April 2015
  - 52 have not started (5%)
  - 374 are in PE/RW phase (36%)
  - 295 are in Construction (29%)
  - 304 – Completed (30%)

Local HSIP Cycles 5 & 6 Results

- Lower-cost / Systemic-type improvements had the best chance for funding (signing, striping, ped-signals, etc.)
- Higher-cost / Spot Location improvements tended to have lower B/Cs (new signals, shoulder widening, etc.)

Local HSIP Cycle 5 Results

In Cycle 5:

- 276 Applications received
- 221 project programmed
- 55 Applications (20%) were not selected
  - Misuse of CMs, CM not 15% of Construction Cost, Collision Data missing/flawed, Collisions not in CM's influence area, Structural Overlay Project, B/C <1 . . .
- Additional applications included flaws that could be resolved by reviewers
  - *For this cycle, these applications may not be considered depending on the number of applications received.*

Local HSIP Cycle 6 Results

In Cycle 6:

389 applications received

231 project programmed

- 158 Applications didn't make the cut
  - 1 out 3 applications were submitted with significant errors in their B/C calculation as noted previously
- Rural Roadway Projects received 23% of the funding Average B/C - 11.9
- Non-motorized users received 34% of the funding Average B/C = 11.5

Local HSIP Cycle 6 Results

In Cycle 6:

- Systemic vs. Spot Location
  - – B/C was ~25% higher -11.6 vs. 8.3
- Roadway Segment vs Intersection
  - – B/C was also 25% higher - 11.2 vs. 9.0

Local HSIP Cycle 7

Tools and Processes

Tools and Processes

- **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.
  - Look for patterns of crashes that are susceptible to being reduced –
  - Select countermeasures based on those patterns

Tools and Processes

- **Use Proven Analysis Tools and Procedures**
  - SafeTREC TIMS tools are "available" to all agencies
  - FHWA Safety Website: http://safety.fhwa.dot.gov/
    - Site just for Locals: http://safety.fhwa.dot.gov/local_rural/
  - DLA Local Roadway Safety Manual (LRSM)
    - Appendix B is a "required" part of applications
  - Example documents, including Cycle 5 Example Projects
  - Traffic Safety Professionals (Internal or External if needed)

Tools and Processes - LRSM

- The 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 H
  - Appendix B: Details on all CMs available for this Call for Projects
- Version 1.2: Includes text changes to Appendix B to help clarify application of CMs. All changes are noted in **red text.**

Tools and Processes - Sample Documents

- Successful Cycle 5 Applications:
  - Wide range of project/countermeasure types
  - Additional comments provide by HSIP managers
- Placer and Nevada County's concept for including RSAs:
  - Concept reviewed and approved by HSIP managers
  - Including an RSA in the PE phase allows for comprehensive traffic safety/engineering studies to be done and federally reimbursed

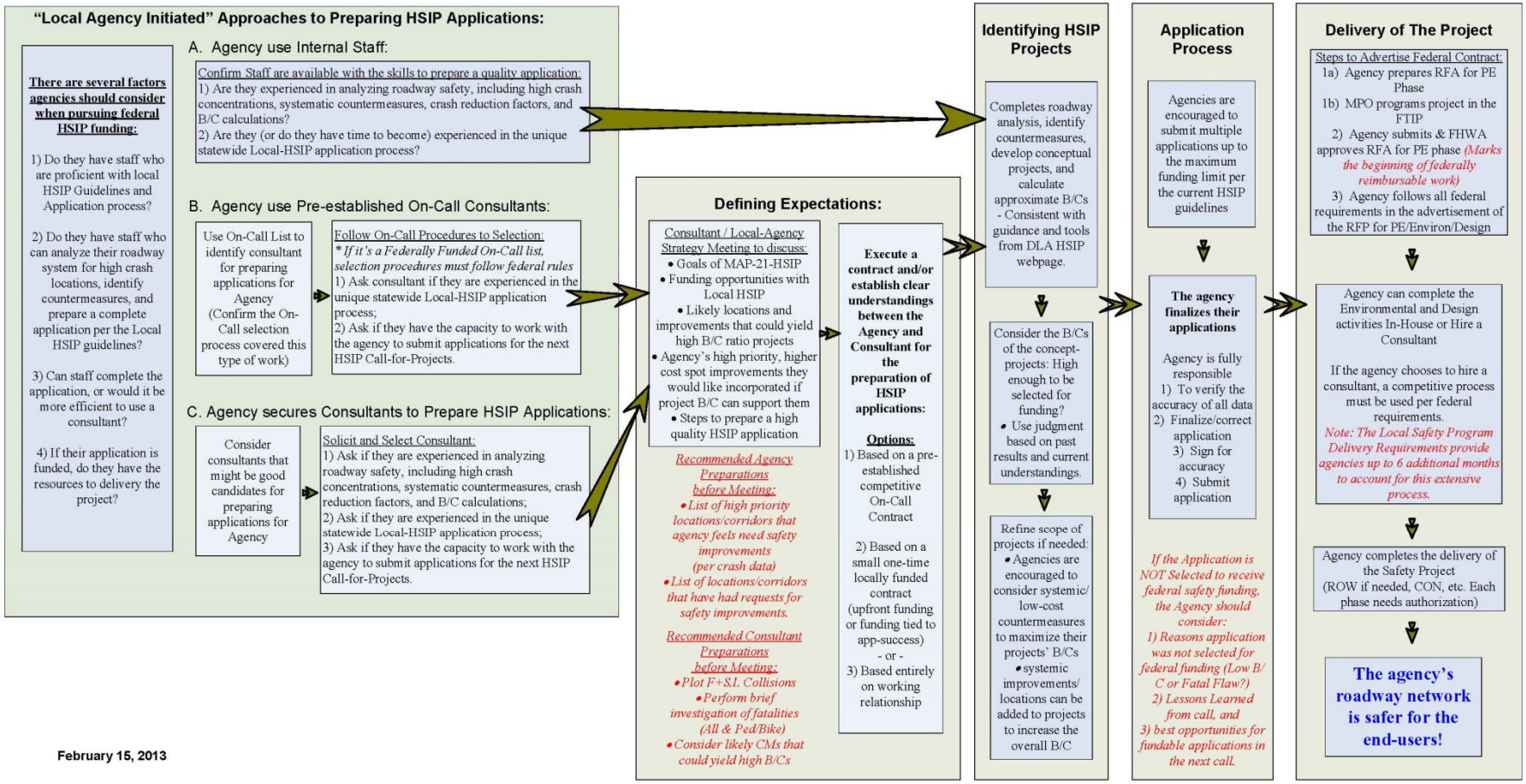
❖ *The application's B/C ratio must be based on countermeasures and scope of work that is not in question and will be constructed.*

Tools and Processes - Who completes Analysis & App

- **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 B/Cs!

Tools and Processes - Who completes Analysis & App



http://www.dot.ca.gov/hq/LocalPrograms/HSIP/2015/HSIP-APPL-FLOW-CHART.pdf

Local HSIP Cycle 7 Overview

Local HSIP Cycle 7

- Announcement – April 27, 2015
- $150 million in Federal HSIP Funds
- Minimum - $100,000 per application
- Maximum - $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
- Applications Due: July 31, 2015

http://www.dot.ca.gov/hq/LocalPrograms/hsip.htm

Local HSIP Cycle 7

- B/C greater than 5.0 to submit application
- Collisions Costs have been updated
  - Fatal Cost and Severe Injury Costs have been combined (more on this later)
- 38 countermeasures are now 100% federal eligible
  - 13 - Signalized Intersections
  - 11 - Non-Signalized Intersections
  - 14 – Roadway

http://www.dot.ca.gov/hq/LocalPrograms/HSIP/2015/Cycle%207/CA-LRSM-(Ver-1.2).pdf

Local HSIP Cycle 7

- High Risk Rural Road(HR3) are still eligible and needed (Note: may have a lower statewide B/C cutoff)
  - MAP-21 includes special rule, if triggered: Obligate - $17.6 million

Local HSIP Cycle 7

- Potential impacts to raising limit to $10 million per application & per agency
  - Anticipate that fewer applications will be programmed
  - More competition as agencies may send in more proposals than in previous cycles
  - Goal: Fund complete <u>safety</u> projects

Local HSIP Cycle 7

- Raising B/C to 5.0 should…..
  - Reduce the number of applications to review
  - Reduce the workload to agencies as only high B/C project proposals will be developed
  - More systemic type project proposals likely will make the cut as they typically have the higher B/C ratio.

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 B/C Calculation
- Prefer projects that can be delivered quickly and have minimal ROW and Environmental impacts
- Non-Infrastructure elements can be included

Local HSIP Cycle 7 Changes from Cycle 6

- Signal Warrant calculation sheet is now 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

- Will need to show that an incremental approach has been tried before several countermeasures can be proposed, e.g., new curve signing or additional signs been installed, or HFST before a curve realignment is proposed

HSIP Cycle 7 Changes from Cycle 6

- Engineer's Checklist will be required to be filled out by registered engineer – help with sending in complete apps
- Crash Data Summary Sheet has been developed to identify which crashes fall under which countermeasure(s)
- 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

Application Review - Engineer's Checklist and Engineer's Stamp -Required

Form Date April 2015 HSIP Cycle 7 Application Form

Application Data Checklist and Engineer's Stamp

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 –to-Cost Ratio (B/C); allowing the application to be accurately ranked in the statewide selection process. Applications with errors in the supporting data for the B/C calculation will not be considered in the application process.

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

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

1. **Vicinity map /Location map** **Engineer's Initials:** _____
   a. The project limits must be clearly depicted in relationship to the overall agency boundary
2. **Project layout-plan** showing existing and proposed conditions must: **Engineer's Initials:** _____
   a. Be to a scale which allows the visual verification of the overall project limits and the "construction" limits of each safety countermeasure included in the application's B/C ratio
   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 B/C ratio
   d. Show all changes to existing lane and shoulder widths. Label the proposed widths
   e. Show limits of all roadway excavation/demolition
   f. Show agency's right of way (ROW) lines. (Also show Caltrans', Railroad, and all other government agencies)
3. **Project cross-section** showing existing and proposed conditions. **Engineer's Initials:** _____
   (Only required for projects with roadway excavation, cut/fill slopes, and changes to lane widths)
   a. Show and dimension: changes, ROW lines, safety countermeasures, etc.
4. **Countermeasure Selection** (used throughout the application): **Engineer's Initials:** _____
   a. The CMs used are appropriate and reasonable based specifically on the guidance in the HSIP call-for-projects guidelines and application instructions, including Appendix B of the Local Roadway Safety Manual.
5. **Crash Data** used in the B/C calculations must be: **Engineer's Initials:** _____
   a. From a reliable and well documented source
   b. Within influence area of CM and applied to CMs using generally accepted traffic engineering principles
   (Example: If the CM only addresses the northbound lanes of a divided roadway, then southbound crashes should be excluded.)
   c. Accurately shown in collision diagram(s) and collision lists(s) attached to this application.
   d. Crashes are presented in terms of the number of crashes (**not** the number of injuries and fatalities)
   e. The most recent crash data available and a minimum 5 yrs and maximum 10 yrs of data
6. **Collision Diagram(s)** (Shown separately or combined) **Engineer's Initials:** _____
   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 B/C 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

Form Date: April 2015 HSIP Cycle 7 Application Form

7. **Collision List(s)** (Shown separately or combined) **Engineer's Initials:** _____
   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 B/C 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
8. **Collision Summary (HSIP Form)** **Engineer's Initials:** _____
   a. Totals for each Location/CM are shown with crashes segregated based on Crash Severity
   b. The totals for each Location/CM match the totals shown in the Collision Diagram and Collision List
   c. The totals for each CM at the bottom of the form match the totals in the TIMS B/C Output Summary
9. **Detailed Engineer's Estimate (HSIP Form)** **Engineer's Initials:** _____
   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 B/C 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
10. **TIMS B/C output summary sheet** **Engineer's Initials:** _____
    a. CMs and crash data shown match the totals shown in the Collision Summary form
    b. The total project cost in the B/C calculation must match the total project cost in Section III of the application
    c. The combined CRF applied to any single set of crashes is less than or equal to 0.8
    d. The sheet attached to the application must be signed by the Engineer in Responsible Charge
11. **Warrant studies/guidance (Check if not applicable)** **Engineer's Initials:** _____
    ☐ N/A 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.
12. **Additional narration, documentation, letters of support:** **Engineer's Initials:** _____
    a. The text in the "Narrative Questions" in the application is consistent with and supports the engineering logic and calculations used in the development of the application's B/C ratio
    b. When needed to clarify non-standard application of countermeasures, crashes and/or costs; appropriate documentation is attached to the application to document the engineering decisions and calculations

Licensed Engineer:

Name: _____

Title: _____

Engineer License Number _____

Signature: _____

Date: _____

Email: _____

Phone: _____

Engineer's Stamp:

Crash Data Summary Sheet -Required

HSIP CYCLE 7
CRASH DATA SUMMARY SHEET

Important: Read the Instructions in the other sheet (tab) before entering data. Do not enter data in shaded fields (with formulas).

Agency:		Application ID:		Prepared by:		Date:	

LOCATION * (Intersection Name or Corridor Limit)		Countermeasure #1				CM Number		Countermeasure #2				CM Number		Countermeasure #3				CM Number	
		Fatal	Severe Injury	Other Visible Injury	Complaint of Pain	PDO	Total	Fatal	Severe Injury	Other Visible Injury	Complaint of Pain	PDO	Total	Fatal	Severe Injury	Other Visible Injury	Complaint of Pain	PDO	Total
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
Countermeasure Total**																			

* Crash Total for each Location must match the total shown on the Crash Diagrams and Crash Tables
** Crash Totals for each Countermeasure must match the Total Inputted shown into the TIMS B/C Calculator and B/C Summary Sheet

Collision Costs Updated

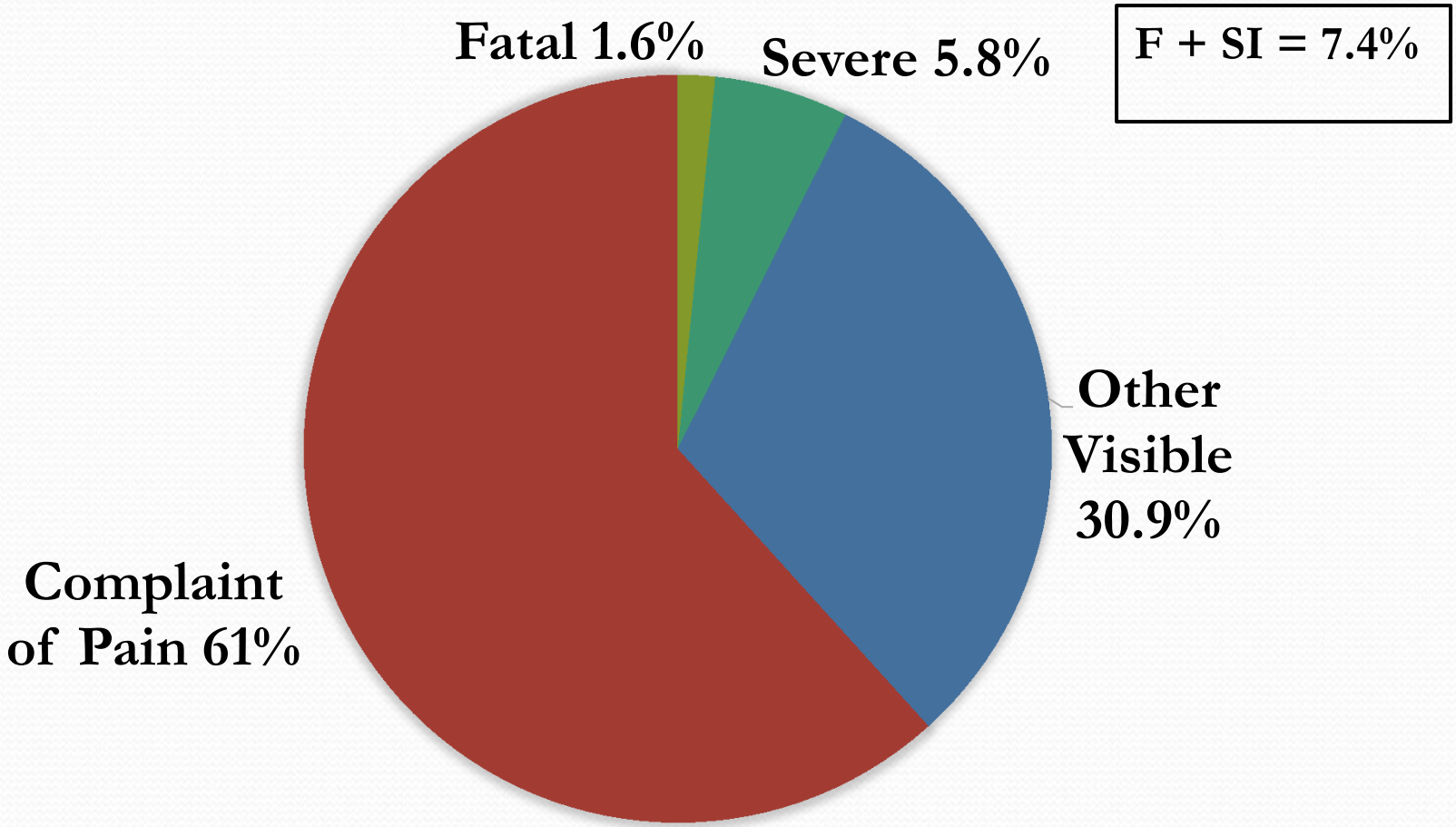
- Fatal $5,579,400
- Severe/Disabling Injury(A).....$297,100
- Evident Injury – Other Visible(B).....$108,600
- Possible Injury – Complaint of Pain (C)...$61,300
- Property Damage Only (O).....$10,000

Collision Costs Updated

Collision Cost Values used for Calculating Benefit/Costs for HSIP Project Proposals				
Previous Cycles		Cycle 7 -Combined Fatal and Severe/Disabling Injury Collision Costs		
		Roadway	Signalized	Non-Signalized
Fatal	$ 4,008,000	$ 1,730,000	$ 1,260,000	$ 2,000,000
Severe/Disabling Injury(A)	$ 216,000			
Evident Injury – Other Visible(B)	$ 79,000	$ 108,600	$ 108,600	$ 108,600
Possible Injury – Complaint of Pain	$ 44,000	$ 61,300	$ 61,300	$ 61,300
Property Damage Only (O)	$ 7,400	$ 10,000	$ 10,000	$ 10,000

http://www.dot.ca.gov/hq/LocalPrograms/hsip.htm

Injury Severity by Percentage



Collision Costs Updated

- Using the fatal cost in the B/C calculation can lead to the tendency of focusing on locations with fatal collisions.

- Missed opportunities - A location could be the local agency's top priority but without a fatal collision, <u>getting a qualifying B/C may be difficult</u>.

Collision Costs Updated
(Example B/C)

<u>Roadway</u>

- High Friction Surface Treatment, 21 collisions over 5 years, 2 fatals, 0 Incapacitating Injury, 9 Non-capacitating Injury, 10 Possible Injury, 0 PDO Project Cost =$450,000

  B/C = 17.0

- Same project: HFST (without fatals)

  B/C = 2.9

- Using F+SI Average Collision Methodology, (F+SI) = $1.73 million B/C = 6.7

Collision Costs Updated (Example B/C)

<u>Signalized Intersection</u>

- Upgrade traffic signals at 5 intersections(convert to mast arm), 3 Fatals, 2 SI, 11 Non Inc, 58 C.O.P., 0 PDO
- 74 collisions over 10 years, Project Cost =~$770 K
    - B/C = 17.2
- Same project: (without fatals)
    - B/C = 4.9
- Using F+SI Average Collision Methodology ($1.26 million) B/C = 8.6

Funding per Project

- Max. HSIP funds - $10,000,000 (per agency and per application)
- Min. HSIP funds - $100,000
  - Small / Rural agencies may ask the DLAE for an exception on project size within their jurisdiction.
- Max. federal reimbursement ratio – 90% unless countermeasures selected are one of the 38 countermeasures listed as being eligible.
  - **NOTE: For an application to be 100% federally eligible, ALL countermeasures selected in the application need to eligible**

Non-Infrastructure Elements

- Non-Infrastructure (NI) elements/requirements in the Application.
  - Safety Education for adults and children, Enforcement, and Emergency Medical Services are eligible for funding
  - An NI Activity Worksheet and NI Project Cost Estimate Form are required attachments to the application
  - Limitations to NI costs have been provided on the HSIP NI webpage
  - NI adds to the cost of the project B/C. Otherwise, no restriction to funding these elements

Non-Infrastructure Elements

- Implementation of NI projects are unique. Recommend being familiar with the procedures prior to applying for these funds
  - Small Procurement Procedures
  - Contracted Services requires competitive bidding

- For more information, go to new HSIP NI Webpage at:

  http://www.dot.ca.gov/hq/LocalPrograms/HSIP/NIelements.html

Project Delivery Requirements

- Established to ensure safety projects are delivered in a timely manner
- 2 Milestones: PE Authorization, CON Authorization
- If an active HSIP project is flagged for not meeting one or more of these milestones, Caltrans will not accept HSIP applications from that agency unless the flags have been resolved by the application due date
  - For applications to be accepted, the DLAE must receive the Request for Authorization package by application due date (July 31, 2015) and verify it is complete

Project Delivery Status

Agencies can check current project status under the "Project and Program Summaries" section on this web page

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

Safety Program Delivery Status Reports

In an effort to increase the visibility of the federal safety programs and improve the delivery of local agency safety projects, the Office of Bridge and Safety (OBSP) has developed safety program delivery requirements and program/project summary reports for each safety program. See the table, below, for the summary reports. For additional information, read the Safety Program Delivery Requirements [pdf] (Updated 9/30/2011). OBSP established similar, but unique delivery requirements for Federal Safe Routes to School non-infrastructure projects. Safety Program Delivery Requirements-Non Infrastructure [pdf] (Updated 10/13/2010).

The OBSP expects all agencies to deliver their safety projects within the time frames provided. Local agencies may be required to use the Expedited Project Selection Procedures (EPSP) and advance the delivery of the project in order to meet the delivery time frames. Caltrans District and Headquarters staff will work with the local agency to use EPSP and ensure that authorization requests for all phases are approved as quickly as possible. For additional information on the use of EPSP, read Using EPSP to Meet Delivery Requirements [pdf]. (Updated 12/15/2010)

The table below has links to summary reports for the three (3) safety programs. Since the High Risk Rural Roads (HR3) Program is part of the Highway Safety Improvement Program (HSIP) in the new federal surface transportation act, "Moving Ahead for Progress in the 21st Century" (MAP-21), there were only two (2) cycles of standalone HR3 Call-for-Projects.

Local agencies with on-going safety 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. This report also identifies projects with delivery requirement in current Federal Fiscal Year.

PROJECT AND PROGRAM SUMMARIES

Report Period	Highway Safety Improvement Program (HSIP)	High Risk Rural Roads Program (HR3)	Federal Safe Routes to School Program (SRTS)	All Three (3) Safety Programs (HSIP, HR3, and SRTS)
				Summary by

Application 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 not considered in selection process

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

DEMO: Application Form and Detailed Engineer's Estimate

Print Form

APPLICATION FOR
CYCLE 7 HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

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.

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

Application ID: 10-Any Agency-1

Submitted By (Agency):
Any Agency

Caltrans District	Application Number	Out of
10	1	1

Project Location

At the intersection of Cheatum and Howe

Project Description

Upgrade Traffic Signals

Countermeasure 1: S2: Improve signal hardware: lenses, back-plates, mounting, size, and number

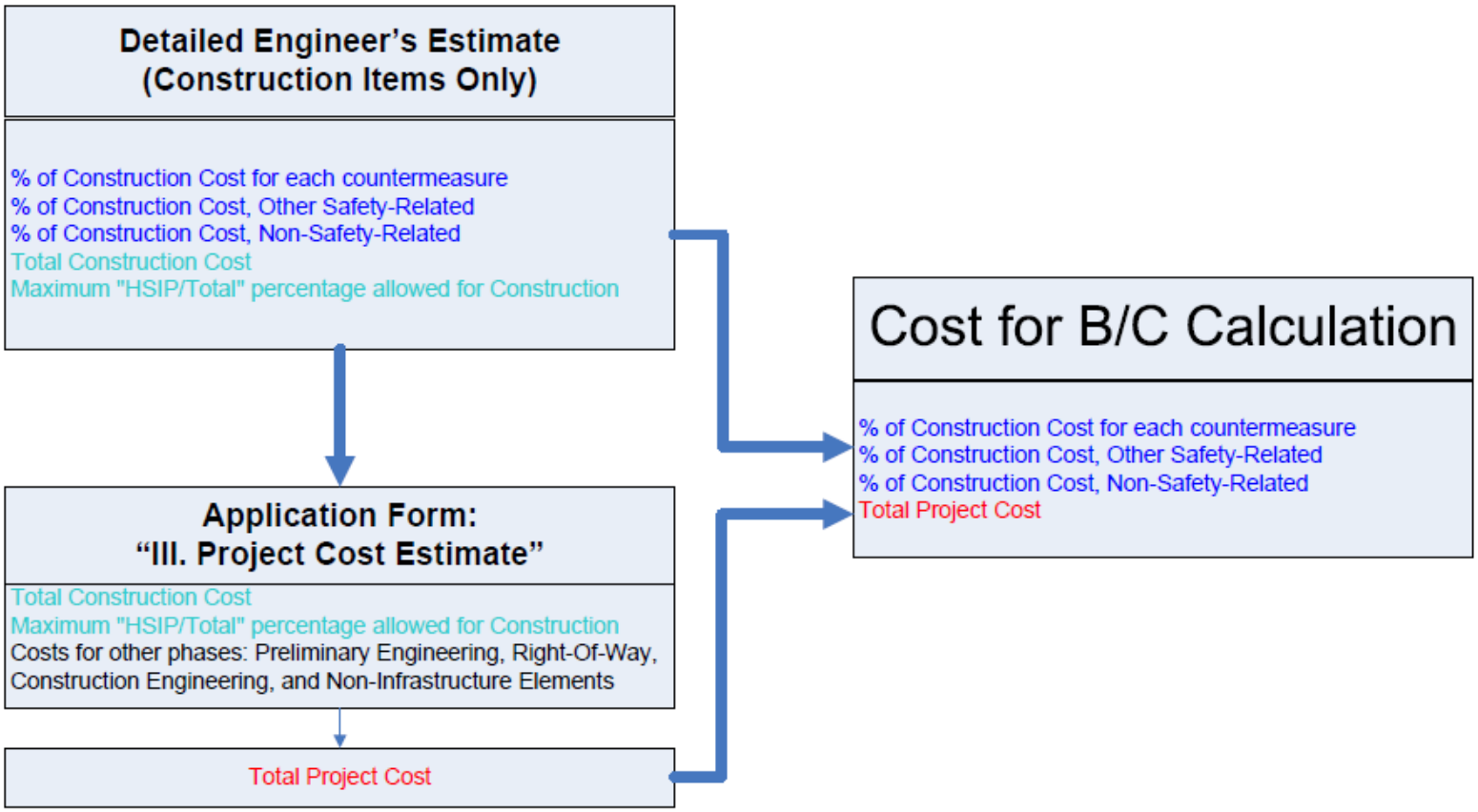
Countermeasure 2: S3: Improve signal timing (coordination, phases, red, yellow, or operation)

Countermeasure 3:

Total Expected Benefit $6,035,040.00 **Total Project Cost** $715,000.00

B/C Ratio: 8.44

DEMO: Application Form and Detailed Engineer's Estimate



Engineer Estimate

Detailed Engineer's Estimate and Cost Breakdown by Countermeasure

For Construction Items Only

Important: Read the Instructions in the other spreadhsheet(tab) before entering data.
Do not enter in shaded fields (with formulas).

Agency:		**Application ID:**			**Prepared by:**					**Date:**						
Project Description:																
Project Location:																
Engineer's Estimate (for Construction Items Only)						**Cost Breakdown**										
						Safety-Related Costs									**Non Safety-Related Costs**	
						Countermeasure #1		**Countermeasure #2**		**Countermeasure #3**		**Other Safety-Related**				
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Total**	**%**	**$**	**%**	**$**	**%**	**$**	**%**	**$**		**%**	**$**
1															100	
2															100	
3															100	
4															100	
5															100	
6															100	
7															100	
8															100	
9															100	
10															100	
11															100	
12															100	
13															100	
14															100	
15															100	
16															100	
17															100	
Sub Total of Construction Items:																
% of "Construction Items only" Cost per Countermeasure (Yellow fields - To be entered in TIMS B/C Calculator)							**CM #1**		**CM #2**		**CM #3**		**Other Safety**			**Non Safety**
Construction Item Contingencies (% of Con Items): **Enter in the cell to the right**																
Total (Construction Items & Contingencies):						(Rounded up to the nearest hundreds)										
Maximum "HSIP/Total" percentage allowed for Construction					**90%**											
Maximum "HSIP/Total" percentage allowed for Construction (Use only when all countermeasures are 100% federally eligible)					**100%**											

Engineer' Estimate

- When completing estimate:
  - Safety-Related Costs Tied to a CM
    - New Sidewalk (CM# R37) Example: CM <u>could</u> include costs of: new sidewalk, ADA ramps, grading, drainage/DIs, retaining walls, relocating utilities, ROW acquisitions, 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"

DEMO: Application Form and Detailed Engineer's Estimate

Form Date: April 26, 2015

HSIP Cycle 7 Application Form

III. Project Cost Estimate (See Instructions)

All project costs must be accounted for on this form, even if substantial elements of the overall project are to be funded by other sources. (For federal funds to be 100% reimbursable, all countermeasures selected must be 100% eligible)

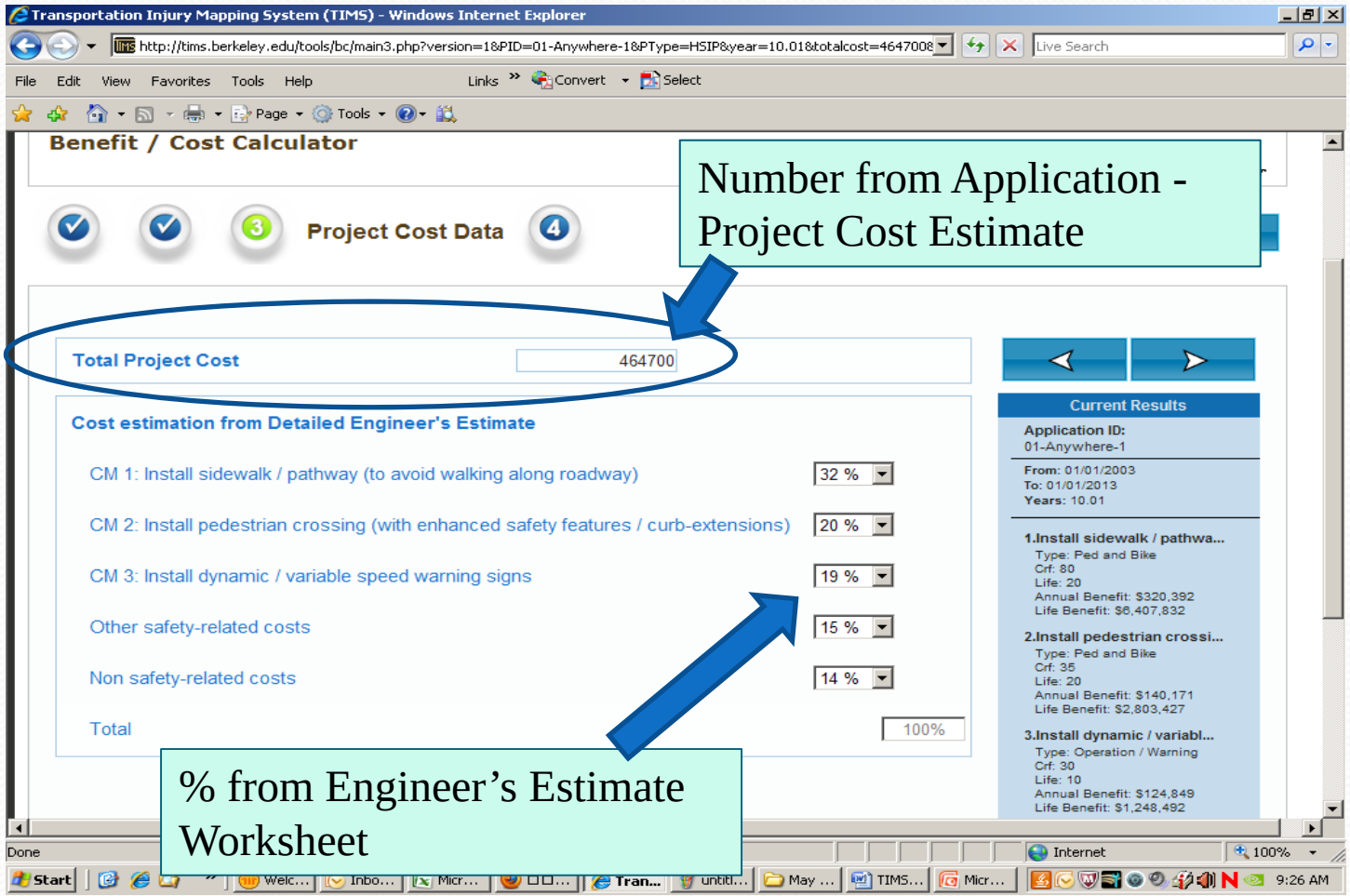
Do not enter in shaded fields (calculated - read only). Round all costs up to the nearest hundred dollars. Once all costs and the desired HSIP/ Total ratios are entered, click "Check Cost Estimate" to perform validation. If errors are detected, they will appear below the button. **Click it to check again each time when the costs have been revised.**

Phase		Total Cost	HSIP/Total (%)		HSIP Funds	Local/Other Funds
Preliminary Engineering	Environmental	$20,000	90	(%)	$18,000	$2,000
	PS&E	$40,000	90	(%)	$36,000	$4,000
	PE Subtotal	**$60,000**			**$54,000**	**$6,000**
	☐ Agency does NOT request **HSIP** funds for PE Phase (automatically checked if PE - HSIP funds is $0).					
Right of Way	Right of Way Engineering	$5,000	90	(%)	$4,500	$500
	Appraisals, Acquisitions & Utilities	$5,000	90	(%)	$4,500	$500
	ROW Subtotal	**$10,000**			**$9,000**	**$1,000**
Construction Engineering & Construction	Construction Engineering	$30,000	[illegible]	(%)	$27,000	$3,000
	Construction	$500,000	90	(%)	$450,000	$50,000
	CON Subtotal	**$530,000**			**$477,000**	**$53,000**
Non-Infrastructure (NI)	NI Elements			(%)	$0	$0
	Total Cost	**$600,000**	90	(%)	**$540,000**	**$60,000**

Number for EE Worksheet goes here

DEMO: Application Form and Detailed Engineer's Estimate

(Values to be transferred to B/C Calculator)



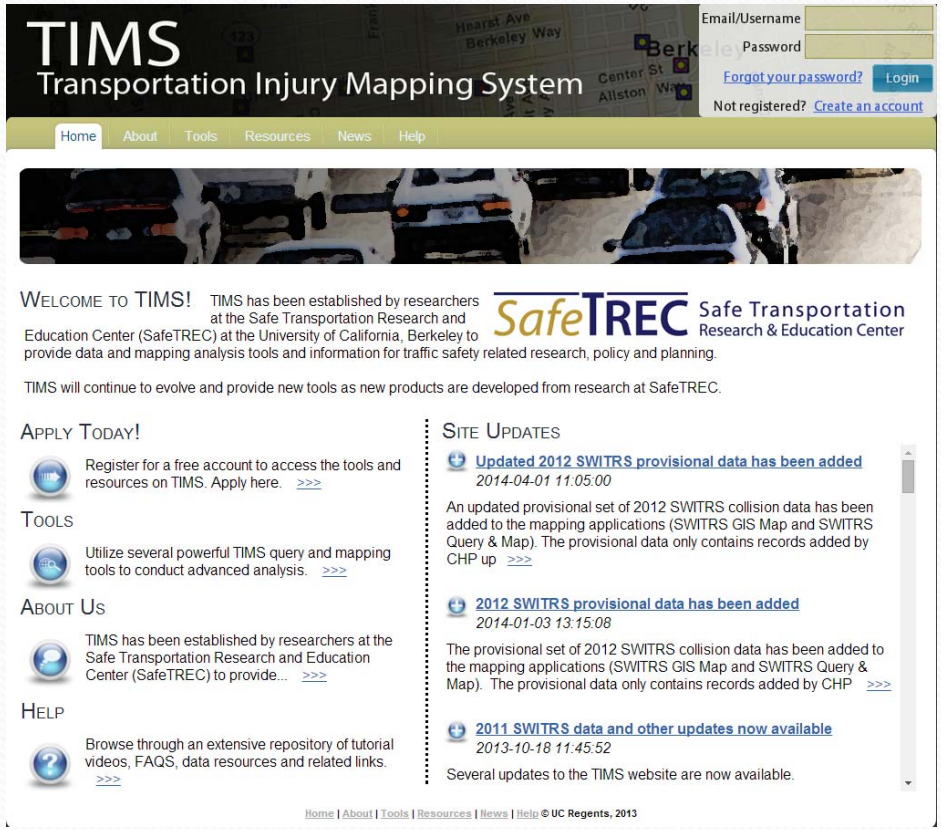
SafeTREC Transportation Injury Mapping System (TIMS) website & B/C calculator

Transportation Injury Mapping System (TIMS)

- SafeTREC, UC Berkeley

SafeTREC Safe Transportation Research & Education Center

- TIMS Funding:
  - the California Office of Traffic Safety, through the National Highway Traffic Safety Administration.
- Benefit / Cost Calculator:
  - Caltrans Division of Local Assistance.



http://tims.berkeley.edu/

TIMS: Website and B/C Calculator

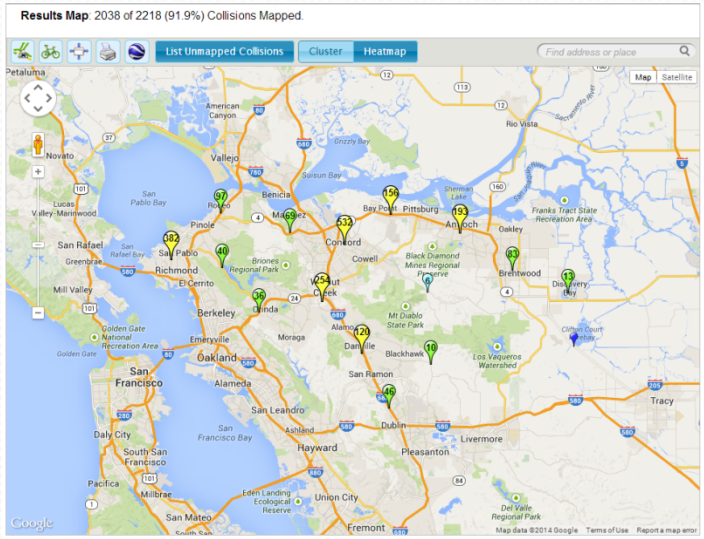
- TIMS provides data and mapping analysis tools and information for traffic safety related research, policy and planning
  - Limitation on Data (Timeliness & Geo-referencing)

- All Local Agencies have access to Crash Data
  - This should be considered as an "option"

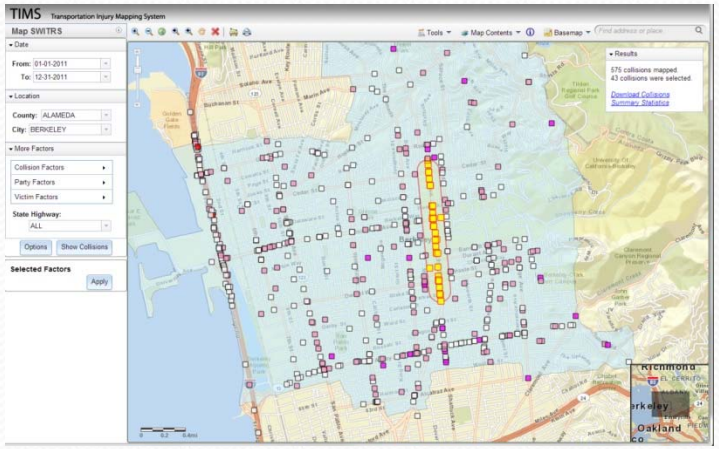
- All Applications <u>must</u> include a TIMS B/C calculation
  - Agencies may use their locally preferred crash data analysis tools (i.e., CrossRoads) or import the data directly from TIMS crash summary files.

TIMS Crash Mapping Applications

- 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

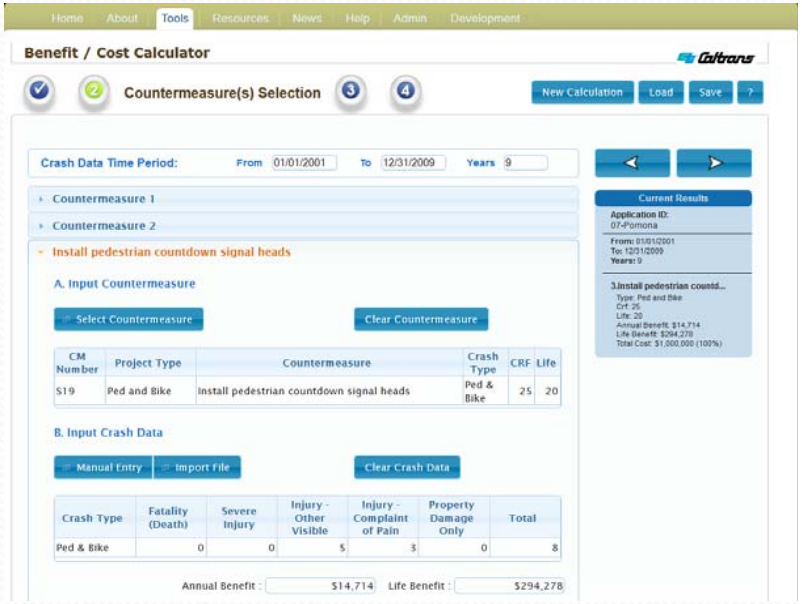


- SWITRS GIS Map
  - Map-centric collision viewing with other data layers
  - 1,000 collision display limit
  - Focused collision spatial selection tools (Drawing, Buffer, and Region)



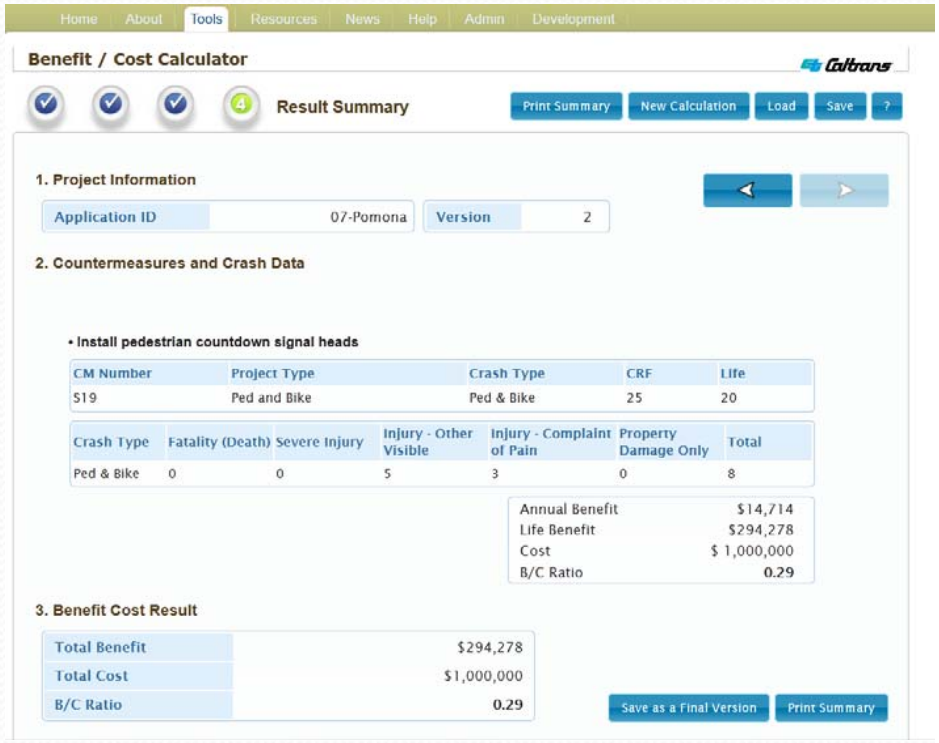
TIMS: B/C Calculator

- Evaluate the potential cost benefits of a safety countermeasure
- Benefits gained from collision reductions over time based on historical collision data
- Costs are based on total project estimate including support



TIMS: B/C Calculator

- Add application information
  - Agency & MPO added
- Select crash data time period
- Select countermeasure(s)
- Enter or import collision data
  - Create collision map
- Enter total project costs
- Print / save results



TIMS: Tutorials

- Now have updated help documentation.
  - Video tutorial is no longer available
- Using the SWITRS GIS Map to select collision data for the Benefit / Cost calculator
  - http://tims.berkeley.edu/helpdoc/Selecting_for_HSIP.php
- How to use the Benefit / Cost calculator
  - http://tims.berkeley.edu/helpdoc/BC_Tool.php

TIMS' Tips for Success

- Save your password in the web browser.
- Read the help documentation first!
- If you are seeing something different from the help doc, there are several potential culprits:
  - Your web browser or plug-ins could block the site. If you have ad or pop-up blockers, or Javascript blocking, the site cannot function.
  - Your IT department/internet network could restrict the site. Please contact them to add an exception for tims.berkeley.edu.
  - Try Mozilla Firefox or Google Chrome as web browser instead.
- Test out the site on a home computer or other internet network to see if you have a different experience. Do not keep trying the same function if it's not working.

Tips for a High B/C ratio

- Increase the benefit
  - Complete a safety analysis of roadways
  - Select locations & corridors with high number of crashes (Combining F+SI collision costs should help push these locations to the top of the list)
  - 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

In Summary - Tips for Successful Application

- Focus on lower cost quick-delivery projects –
- Select locations & corridors with highest numbers of crashes – Identify highest crash corridors first and then look for projects in those corridors. Don't identify projects first and then look for collisions to justify the project.
- Don't focus on the fact that the federal funds amount per application has been raised to $10 million, only projects with the highest B/C will be programmed.
- Are collisions listed for each countermeasure (CM) within the influence area of the proposed project?

In Summary - Tips for Successful Application

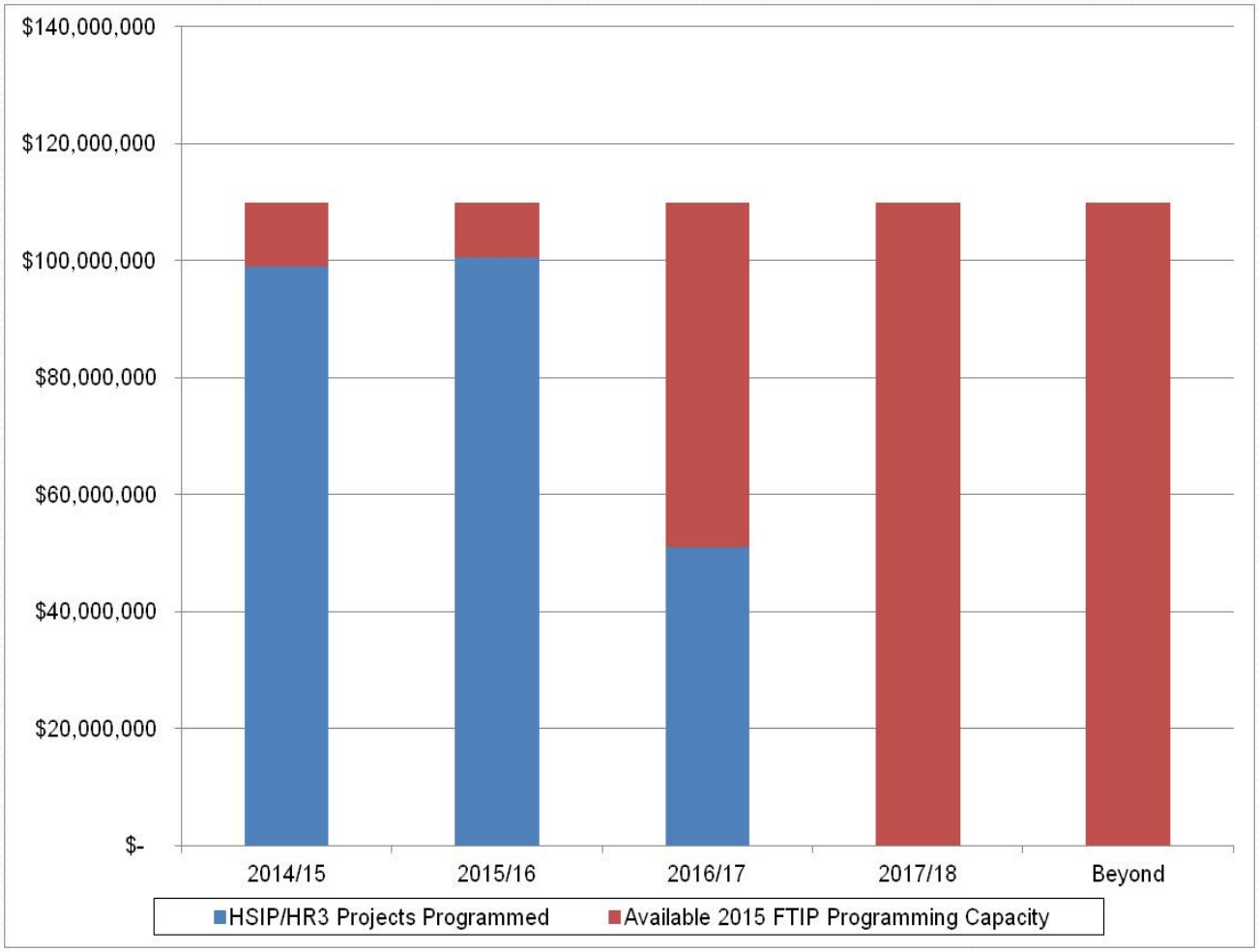
- Have you reviewed the specific requirements in Appendix B of the LRSM?
- Before considering a roadway realignment, documentation is required that an incremental approach was tried and has failed to reduce crashes.
- Combine multiple CMs or multiple locations into one application to improve project delivery efficiencies
- Minimize adding non-safety elements (or elements without established CRFs) into project scope – Non safety elements will make the project harder to deliver and lower the project's B/C.

TIMELINE

- **July 31st : 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**: Agencies will be notified of final selections
  - Applicants that didn't make the cut will be notified at this time

HSIP Program Status

2015 FTIP Programming



Thanks for attending!!

QUESTIONS?