Highway Safety Improvement Program (HSIP)

Webinar for the 2013 Call for Projects (Cycle 6)

May 16, 2013

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

Webinar Presenters

Ken Kochevar, FHWA - Safety, Team Leader
Welcome

Ted Davini, DLA - Safety Program Coordinator
Introduction, Background, & Project Identification

Richard Ke, DLA - Safety Program Coordinator
Guidelines, Application Form, & other Call documents

John Bigham, UC Berkeley, SafeTREC
SafeTREC TIMS website & B/C calculator

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WELCOME

- Safety is a FHWA National Goal
- MAP-21
  - Funding
  - SHSP
  - Performance Measures
- Partnership with Caltrans

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Presentation Details

- 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 intend to answer these questions verbally at key points during the webinar
  - Call-In:
    - Presenters will take call-in questions after all presentations are complete
- This presentation is being recorded
  - A copy will be posted on the HSIP webpage

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

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Presentation Outline

- Overall HSIP Overview
  - Background & Lessons Learned
  - Tools and Processes
- Cycle 6 Call for Projects
  - General Information
  - Details
  - Demo
- TIMS website & B/C calculator
- Timeline
- Questions and Answers

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HSIP & HR3 Program Background

- SAFETEA-LU
  - "Emphasized" DATA-DRIVEN but not required
  - Separate HSIP and HR3 programs
  - SHSPs are considered elements of the HSIPs
- 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 $17.6M
  - HSIPs must be based on elements of the SHSPs
  - Overall funding has gone up by approximately 40%

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HSIP & HR3 Program Background

- Programming and Call-Size
  - Originally: Call-sizes were based on yearly apportionments
  - Moving forward: Call-size will be based on the Program's FTIP capacity
    - The goal is to accelerate obligations and use the Program's OA Carryover balance
    - *$175M in SAFETEA-LU carryover OA*

2006 - 2012
- 5 Cycles to date
- $374 million programmed to date

2013: Cycle 6: $150+/- million of new programming
2014: Cycle 7: $150+/- million of new programming

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Lessons Learned - Local Feedback

2012 Survey of Local Agencies (157 Respondents!)

Findings:
- Overall Positive Feedback on Caltrans' shift to Data Driven Selection Process (Some improvements needed)
- Many agencies have limited resources to put towards network analysis and preparation of HSIP applications
- Agencies see the process as complex and resource intensive
- Rural and Small agencies need additional assistance

Outcomes:
- Provide training: 3 statewide trainings before Call starts
- Provide clearer guidance, including examples projects
- Provide specialized training and resources for small/rural agencies

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Lessons Learned - Results

- HSIP Cycle 4
  - Still some Work-Type Projects – partially based on B/C
  - B/C results were impressive: Ave B/C of 7.9
- HSIP Cycle 5 & HR3 Cycle 3
  - Project selection based 100% on B/C ratios
  - B/C results improved further: Ave B/C of 13.4
  - $111M in federal funding => $1.9M in Safety Benefits !!!
  - **Ped & Bike projects competed very well**
    - Average B/C higher that Overall average
    - $28.7 million (26%) of the Cycle 5 funding
  - **HR3 and/or "rural area" projects competed well**
    - $27.9 million (25%) of the Cycle 5 funding
    - Concern: The most rural counties received less funding than their % of Fatalities and Serious Injuries

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Lessons Learned - Results

- The Data-Driven B/C selection process works!
- The era of HSIP "Work-Type" Projects is over
- Overall:
  - Low-cost / Systemic-type improvements had the best chance for funding (signing, striping, ped-signals, etc.)
  - High-cost / Spot Location improvements tended to have lower B/Cs (new signals, shoulder widening, etc.)

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Lessons Learned - Flawed Applications

In Cycle 5:

- 55 Applications (20%) were rejected
  - Misuse of CMs, CM not 20% 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
  - *In the future, these applications may just be rejected!*

✓ Better Training and Clearer Guidance will hopefully reduce the number of flawed applications

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Lessons Learned - Delivery Requirements

The Delivery Requirements are Working!

- No Exceptions = Key to Success!
- Agencies are managing their Federal Safety projects with a higher priority
  - Special Project/Program mangers are being assigned
  - Complicated Safety Projects get additional attention
  - Undeliverable projects are being dropped
- Need to stay focused on Delivering Projects ASAP!

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

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Lessons Learned - Keys for Success

- Analyze your roadway network on a regular basis!
  - All California local agencies have this "responsibility"
  - Given that past crash issues tend to continue until a physical or operational change occurs, addressing past crashes (Spot or Systematic) is often the best way to be "proactively" prevent future crashes.
- 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
  - Past Caltrans HSIP Training Webinars
  - Traffic Safety Professionals (Internal or External if needed)

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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 1.1: Includes minor text changes to Appendix B to help clarify application of CMs

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Tools and Processes - Sample Documents

- Successful Cycle 5 Applications:
  - Wide range of project/countermeasure types
  - Example attachments required with each application
  - Additional comments provide by HSIP managers
- Placer 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.*

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

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Tools and Processes - Past HSIP Webinars

- 2013 Call for Projects Planning Webinar **(February 19th)**:
  - Intro, Background, Lessons Learned, Preparing, Timeline
  - National and Local Agency's Perspectives
  - Handouts and Webinar-Recording Available
- Small and Rural Agency Workshop **(March 6th)**:
  - Don't have full-time traffic safety engineers or on-call consultants
  - Lower traffic volumes and lower numbers of crashes
  - Often have higher "crash rates"
  - Only Handouts Available
- SRTS-Type projects Webinar **(March 11th)**:
  - The future of SRTS funding is uncertain at this time
  - The HSIP B/C selection has funded SRTS-type projects
  - The HSIP goal is to improve the safety of all modes!
  - Only Handouts Available

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Tools and Processes - Who completes Analysis & App

- **This is a highly Technical Process!**
  - Review, analysis, and application of Crash Data
  - Understanding of Countermeasure Effectiveness
  - Developing Project Scope and Estimate
  - *Errors/flaws in application's "benefit" or "cost" = Rejection*
  - *Errors/flaws in scope = Delivery delays & more local funds*
- **Expecting: Traffic and Transportation Engineers**
  - *Other traffic-safety professionals may be appropriate*
- **Stating in Cycle 6, an Engineer's stamp is required!**
  - Preliminary Scope, Engineer's Estimate, Countermeasure Selection, Crash Data, etc.

The HSIP program relies on the integrity of the B/Cs!

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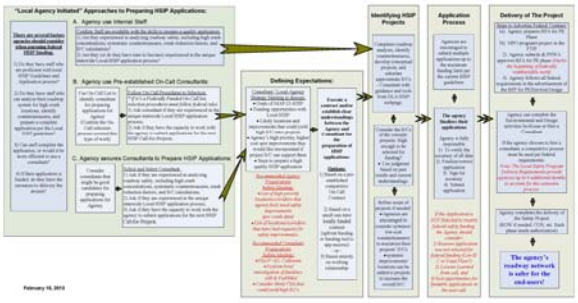
Tools and Processes - Who completes Analysis & App



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

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Tools and Processes – Applying costs to CMs

- When completing the Engineer's 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, 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"

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HSIP Cycle 6 Call for Projects

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

Outline

- General Information
- Details
- Demo
  - Application Form
  - Detailed Engineer's Estimate template
  - Cost in Benefit/Cost Ratio Calculation

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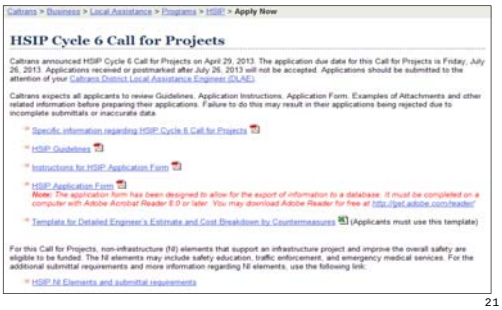
APPLY NOW!

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


Caltrans > Business > Local Assistance > Programs > HSIP > Apply Now

HSIP Cycle 6 Call for Projects

Caltrans announced HSIP Cycle 6 Call for Projects on April 29, 2013. The application due date for this Call for Projects is Friday, July 26, 2013. Applications received or postmarked after July 26, 2013 will not be accepted. Applications should be submitted to the attention of your Caltrans District Local Assistance Engineer (DLAE).

Caltrans expects all applicants to review Guidelines, Application Instructions, Application Form, Examples of Attachments and other related information before preparing their applications. Failure to do this may result in their applications being rejected due to incomplete submittals or inaccurate data.

- Specific information regarding HSIP Cycle 6 Call for Projects
- HSIP Guidelines
- Instructions for HSIP Application Form
- HSIP Application Form
  Note: The application form has been designed to allow for the export of information to a database. It must be completed on a computer with Adobe Acrobat Reader 8.0 or later. You may download Adobe Reader for free at http://get.adobe.com/reader/
- Template for Detailed Engineer's Estimate and Cost Breakdown by Countermeasures (Applicants must use this template)

For this Call for Projects, non-infrastructure (NI) elements that support an infrastructure project and improve the overall safety are eligible to be funded. The NI elements may include safety education, traffic enforcement, and emergency medical services. For the additional submittal requirements and more information regarding NI elements, use the following link:

- HSIP NI Elements and submittal requirements

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General Information

- 3 month Call: Monday April 29rd to Friday July 26th.
- Approx. $150 Million of HSIP funding available
- Applications will be selected based on their B/C ratio
- Non-Infrastructure (NI) elements are eligible
- HR3-eligible projects may have a lower statewide B/C cutoff
- Caltrans is looking for multiple applications from each agency!
  - *Larger of $3M or 2 times the population share*

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Details - Eligible Applicants

- Agencies that own, operate, and maintain the roadway
  - Cities, Counties, Tribal governments
  - Universities, Transportation Agencies
  - Others (reviewed on a case-by-case basis)

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Details - 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
- Some are HR3-eligible projects (Rural Major Collector, Rural Minor Collector, & Rural Local Roads)
- Non-Infrastructure elements

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Details – Funding per Project

- Max. HSIP funds - $1,500,000
- Min. HSIP funds - $100,000
  - Small / Rural agencies may ask the DLAE for an exception on project size due to very low crash numbers within their jurisdiction.
- Max. federal reimbursement ratio – 90%

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Details - Keys to a high B/C ratio

- Increase the benefit
  - Complete a "proactive safety analysis" of roadways
  - Select locations & corridors with high #s of crashes
  - 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

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Details – Application Review

- Projects with B/C ratios less than 1.0 will be rejected
- Applications will be reviewed for "**Fatal Flaws**" in both the Districts and in Headquarters

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Details – Application Review

- Free of "Fatal Flaws" – accurate and complete data
  - Project scope: eligible for HSIP funding
  - Countermeasures in the B/C calculation: appropriately applied based on the project scope
  - Crash data in the B/C calculation: appropriately applied based on the project scope and countermeasures
  - Project cost: the likely total project cost necessary for all phases and for the entire proposed scope
  - Data and attachments: reasonable and meet generally accepted traffic engineering principles

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Details – Project Selection

- Based on B/C Ratio
  - Statewide Project Selection:
    70% to 80% of funding
  - District Project Selection:
    20% to 30% of funding
  - HR3-eligible projects may have lower B/C cutoff

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Details – NI 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 new HSIP NI webpage
  - NI adds to the cost of the project B/C. Otherwise, no restriction to funding these elements

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Details – NI Elements (Cont.)

- Non-Infrastructure (NI) Implementation Requirements
  - 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*

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Details - 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 10/15/2010).

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

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Details - Project Delivery Requirements

- Established to ensure safety projects are delivered in a timely manner
- PE Auth., CON Auth. and project close-out
- 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
  - HR3 projects are ALSO HSIP projects;
  - For applications to be accepted, the DLAE must receive the Request for Authorization package by application due date (July 26, 2013) and verify it is complete

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Application Instructions

- Instructions provide detailed explanations
- Print and review the Application Instructions before filling out the Application Form

  Completing an application without referring to instructions
  = inaccurate/incomplete data
  = fatal flaws
  = rejection

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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

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DEMO: Application Form and Detailed Engineer's Estimate

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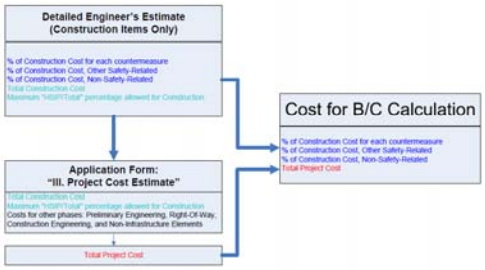
DEMO: Application Form and Detailed Engineer's Estimate



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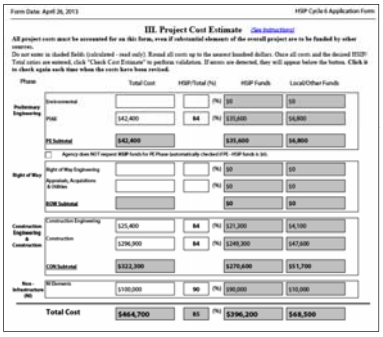
DEMO: Application Form and Detailed Engineer's Estimate



Form Date: April 26, 2013 HSIP Cycle 6 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.

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		(%)	$0	$0
	PS&E	$42,400	84 (%)	$35,600	$6,800
	PE Subtotal	$42,400		$35,600	$6,800
	Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds = $0).				
Right of Way	Right of Way Engineering		(%)	$0	$0
	Appraisals, Acquisitions & Utilities		(%)	$0	$0
	ROW Subtotal			$0	$0
Construction Engineering & Construction	Construction Engineering	$25,400	84 (%)	$21,300	$4,100
	Construction	$296,900	84 (%)	$249,300	$47,600
	CON Subtotal	$322,300		$270,600	$51,700
Non-Infrastructure (NI)	NI Elements	$100,000	90 (%)	$90,000	$10,000
	Total Cost	$464,700	85 (%)	$396,200	$68,500

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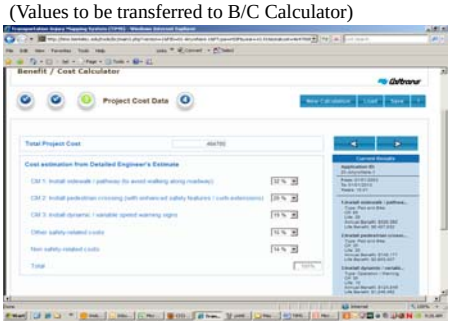
DEMO: Application Form and Detailed Engineer's Estimate

(Values to be transferred to B/C Calculator)



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TIMS - Website and Tools

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TIMS: Website and B/C Calculator

- Overview of TIMS
  - Strategic Goal
  - SWITRS Data Availability
    - Most recent available from CHP (partial 2011 set)
    - ~ 18 months processing time
    - ~ 90% of collisions georeferenced
  - Tutorials
- All Local Agencies now have access to crash data
  - Using TIMS crash data is optional
- All Applications must 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.

http://tims.berkeley.edu/

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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

http://tims.berkeley.edu/

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TIMS: B/C Calculator

- Add application information
- Select crash data time period
- Select countermeasure
- Enter or import collision data
  - Create collision map
- Enter project costs
- Print / save results

http://tims.berkeley.edu/

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TIMS: Tutorials

- SWITRS Query & Map
- SWITRS GIS Map
- Using the SWITRS GIS Map to select collision data for the Benefit / Cost calculator
- How to use the Benefit / Cost calculator

http://tims.berkeley.edu/

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TIMS Funding

- TIMS Website:
  - Funding for this program was provided by a grant from the California Office of Traffic Safety, through the National Highway Traffic Safety Administration.
- Benefit / Cost Calculator:
  - Funding was provided through a contract with the Caltrans Division of Local Assistance for development of the benefit/cost calculator tool.

http://tims.berkeley.edu/

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TIMS: Tips for Success

- Save your password in the web browser.
- Watch the Tutorial Videos first!
  - Most usability questions are answered in the videos.
- If you are seeing something grossly different from the tutorial videos, there are several potential culprits:
  - Your web browser or special plug-ins are blocking the site. If you have ad or pop-up blockers, or Javascript or Flash blocking, the site cannot function.
  - Your IT department/internet network are restricting 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.

http://tims.berkeley.edu/

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TIMELINE

- **May 23rd: Webinar on preparing HFST Applications**
  - High Friction Surface Treatment (HFST) projects can have high B/C ratios and are a FHWA priority
  - This webinar will also focus on project selection and application prep issues applicable to all project types
- **July 26th: Applications are due!**
  - *That's only 2.5 months for roadway analysis, project/ scope identification, and application preparations!*
- **August & September**: Applications will be reviewed for "Fatal Flaws" in both the Districts and in Headquarters
- **October**: Develop the list of recommended projects and secure approval by Caltrans management
- **October**: Agencies will be notified of final selections
  - Applicants with "Fatal Flaws" will be notified at this time

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QUESTIONS & ANSWERS

? ? ?

- *Important points to remember:*
  - *Applications are due July 26th!*
  - *Agencies can receive: $3M or 2 x the agency's population ratio*
  - *HR3 projects are still eligible and needed*
  - *A Safety Delivery Flag = NO new safety funding*
  - *Flawed applications = Rejected Applications*
  - *Higher B/C = Success! (Selection based entirely on B/C ratios)*
    - *Complete a "proactive safety analysis" of all roadways*
    - *Select locations & corridors with high #s of crashes*
    - *Select lower-cost improvements/CMs*

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