

Local Highway Safety Improvement Program (HSIP) and How It Works

For 3rd STIC Local Roadway Departure Safety Workshop
Crescent City, CA
July 17, 2017



Richard Ke, P.E.
HSIP Manager
Division of Local Assistance
California Department of Transportation
(CALTRANS)



This presentation covers:

- Federal Legislation, SHSP and Performance Measures;
- Role of Local HSIP Advisory Committee;
- Eligible applicants and eligible projects;
- Safety countermeasures and Benefit/Cost Ratio;
- Funding and project selection;
- Project delivery requirements and status; and
- Systemic Safety Analysis Report Program (SSARP).

Federal Legislation

- The purpose of the HSIP program is “to achieve a significant reduction in traffic fatalities and serious injuries on all public roads” (23 U.S. Code § 148 (b)(2))
 - HSIP projects:
 - must be based on elements of the Strategic Highway Safety Plan (SHSP);
 - Are identified through a data-driven process;
 - Target identified safety issue;
 - Reduce fatalities and serious injuries.

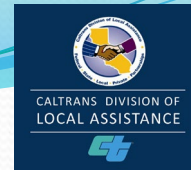


California Strategic Highway Safety Plan (SHSP)

- First developed in 2005, amended in 2010, and updated in 2014;
- Statewide, coordinated safety plan;
- Focus on 4Es:
Engineering, Enforcement, Education and Emergency Medical Services;
- Identified 15 Challenge Areas:

Roadway Departure and Head-On collisions	Intersections, Interchanges, and other Roadway Access	Work Zones
Alcohol and Drug Impairment	Occupant Protection	Speeding and Aggressive Driving
Distracted Driving	Driver Licensing and Competency	Pedestrians
Bicycling	Young Drivers	Aging Road Users
Motorcycles	Commercial Vehicles	Emergency Medical Services

Visit <http://www.dot.ca.gov/trafficops/shsp> for more info.



National Performance Management Measures for the HSIP

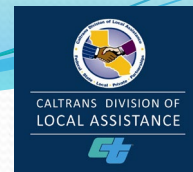
FHWA Final Rule (released 3/15/2016; effective 4/14/16) Docket Number: FHWA-2013-0020

Five Performance Measures (5-Year Rolling Averages):

- 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

Target setting:

- Caltrans will first establish statewide targets by August 31, 2017 HSIP Annual Report for calendar year 2018, and annually thereafter.
- MPOs will then establish their targets by
 - 1) agreeing to plan and program projects so that they contribute toward the accomplishment of the State targets or
 - 2) committing to a quantifiable HSIP target for the metropolitan planning area.

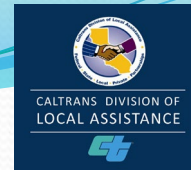


National Performance Management Measures for the HSIP

California Traffic Fatalities (2011 to 2015)

Traffic Fatalities	2011	2012	2013	2014	2015
All	2,816	2,966	3,107	3,102	3,176
Involving a Roadway Departure	1,337	1,399	1,442	1,374	1,458

From 2011 to 2015, 46% of the traffic fatalities in California involved a roadway departure!



Local HSIP Advisory Committee

- Members from:
Caltrans; California Transportation Cooperative Committee;
California State Association of Counties; League of California
Cities; Rural County Task Force; RTPAs; MPOs
- Provides high-level balanced strategic guidance to
California's Local HSIP and other safety programs and
efforts regarding safety on California local roadways.
- Meet about 6 times per year.



Eligible Applicants:

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

- City and County agencies
- Tribal Governments
- Others (reviewed on a case-by-case basis)

Eligible Projects:

Work on publicly owned roadway or bicycle/pedestrian pathway that corrects or improves the safety for users

- Prefer projects that can be delivered quickly and have minimal ROW and Environmental impacts.
- Work must be tied to safety countermeasures in the pre-defined lists.

Safety Countermeasures (CMs)

Safety CMs in the pre-defined lists:

	Signalized Intersections	Non-signalized Intersections	Roadway
Number of CMs	18	20	38

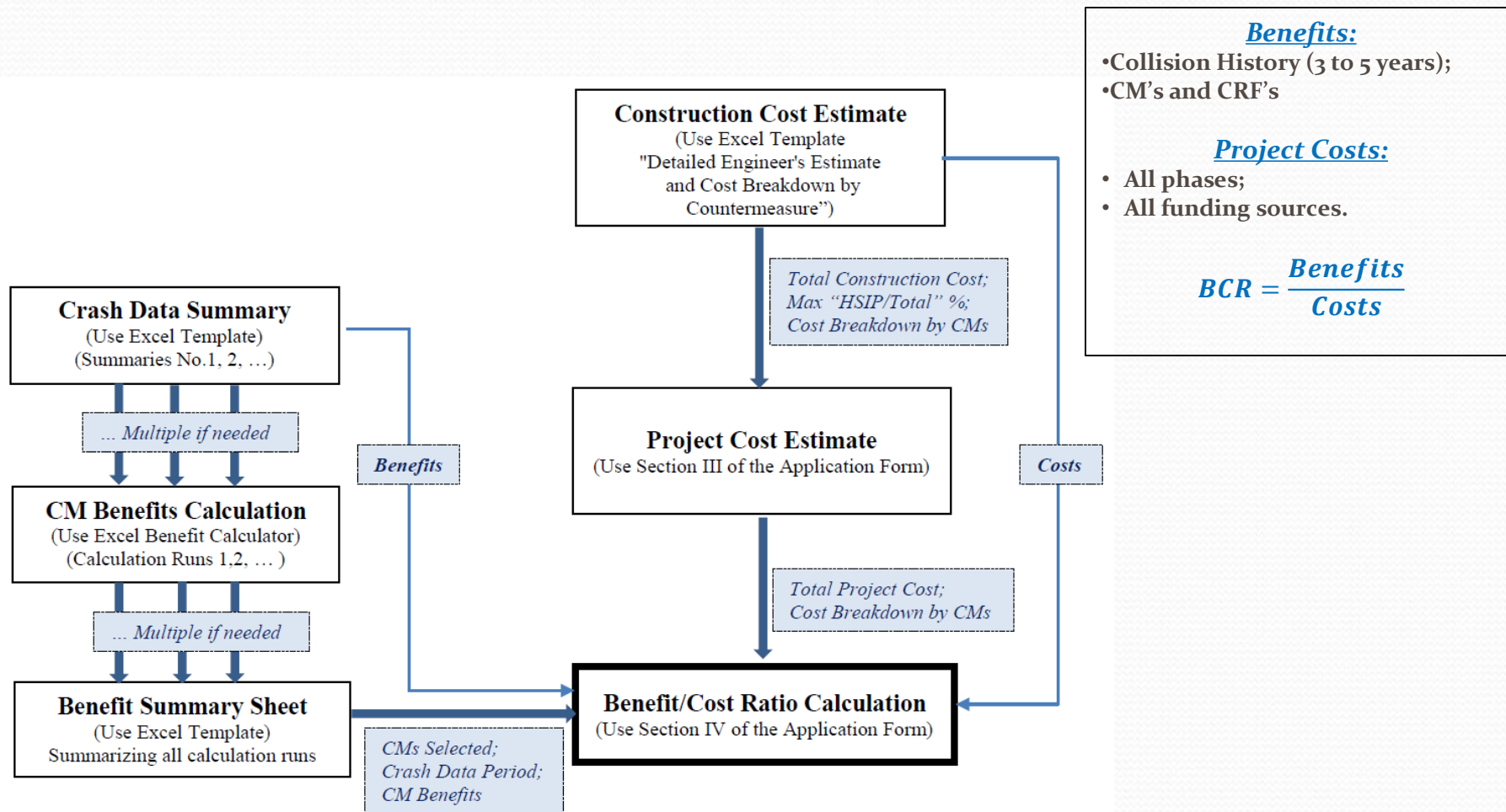
Each CM is associated with:

- A crash type (all; Ped & Bike; Night; etc.);
- A Crash Reduction Factor (CRF): 10% to 70%; and
- A Service Life: 10 or 20 years.

Example:

No.	Type	Countermeasure Name	Crash Type	CRF	Expected Life (Years)	Federal Funding Eligibility	Systemic Approach Opportunity?
R9	Geometric Mod.	Install raised median	All	25%	20	90%	Medium

Benefit/Cost Ratio (BCR) Calculation





BCR Calculation - Example

- Project: Install raised median
CRF=25%; Expected life = 20 years
- Crash history:
1 fatal crash and 2 severe injury crashes in the last 5 years;
- Cost Estimate: PE \$105,000 + CON \$620,000 + CE 45,000 = \$770,000

CALCULATION:

- Benefit:
 $3 \text{ (fatal/severe injury crashes)}/5 \text{ years} \times 25\% \times \$1,730,000 \times 20 \text{ years} =$
 $\$5,190,000$
- $BCR = \frac{\text{Benefits}}{\text{Costs}} = \frac{\$5,190,000}{\$770,000} = 6.7$



Key to Successful Applications

1. Develop good projects:

- Select locations where safety improvements are most needed (high crash-concentration spots vs. systemic approach).
- Apply effective safety countermeasures.

2. Prepare your applications – no fatal flaws.

- A technical process not grant writing – engineer's work.
- Collect/verify data and use data correctly.

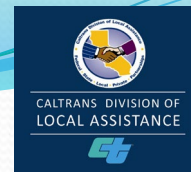


Local HSIP: Funding and Project Selection

- ❖ Local HSIP apportionments: approx. \$81 million per year (2016-2020 average)

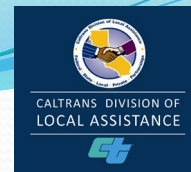
National	California	California Local HSIP
\$2.317 billion/year	\$204 million/year	\$81 million/year

- ❖ Calls for Projects:
 - ❖ Interval: every one to two years (8 calls from 2007);
 - ❖ Most recent call (Cycle 8): May, 2016;
 - ❖ Next call (Cycle 9): expected to be around May, 2018.



Local HSIP: Funding and Project Selection Cycle 8 Call for Projects (2016):

- ❖ Announced on May 9, 2016;
- ❖ Applications Due August 12, 2016;
- ❖ Min: \$100k per application;
Max: \$10 million per application and per agency.
- ❖ Three Categories:
 - **Benefit/Cost Ratio (BCR) projects:**
Application's minimum BCR: 3.5
 - **Set-aside for guardrail upgrades:**
For upgrades of existing guardrails and end treatments
 - **Set-aside for crosswalk enhancements and pedestrian countdown heads**

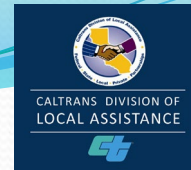


Local HSIP: Funding and Project Selection Cycle 8 Call for Projects (2016):

	Applications	Selected Projects	% Selected
	247	225	91%
Federal Funds	\$252 million	\$216.9 million	88%

Selected Projects:

Category	Benefit/Cost Ratio	“Guardrail upgrade” set-aside	“Crosswalk enhancements/ pedestrian countdown heads” set-aside
Number of Projects	167	24	34
Federal Funds	\$187.6 million	\$21.9 million	\$7.4 million



Local HSIP: Funding and Project Selection Cycle 8 Call for Projects (2016):

Projects with Roadway Departure Safety Related Components

	Number of Projects	Federal Funds	Benefit/Cost Ratio
All BCR Projects	167	\$187.6 million	10.3
Roadway Departure Safety Related	56 (34%)	\$47.4 million (25%)	12.9 (25% higher)



Cycles 4-8: Selected Projects

Selected Projects

Cycle	Release Date	Number of Applications	Number of projects selected	Federal funds approved (\$M)	Average BCR of selected projects
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
8	11/21/2016	247	225	\$216.9	10.3
	Total	1,481	1,038	\$713.2	12.3

Expected benefits: \$8.8 billion!



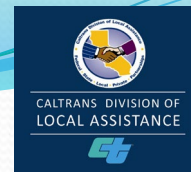
Local HSIP: Project Delivery Requirements

- Need to follow federal-aid process;
- Requirements established to ensure safety projects are delivered in a timely manner
 - PE Authorization - within 9 months; and
 - CON Authorization - within 36 months
 - Can not apply for new HSIP funds if either milestone is not met
 - If there is still no CON authorization within 5 years, project will be removed from the program.

Local HSIP Project Delivery Status

Status of Local HSIP Projects (as of 7/12/17)

Status	Number of Projects (all 8 cycles)	%	Number of Projects (cycles 1 to 5)
No Authorization	222	16%	6
In Preliminary Engineering / Right of Way	279	20%	21
In Construction	389	28%	256
Completed	509	36%	493
Total	1399	100%	776

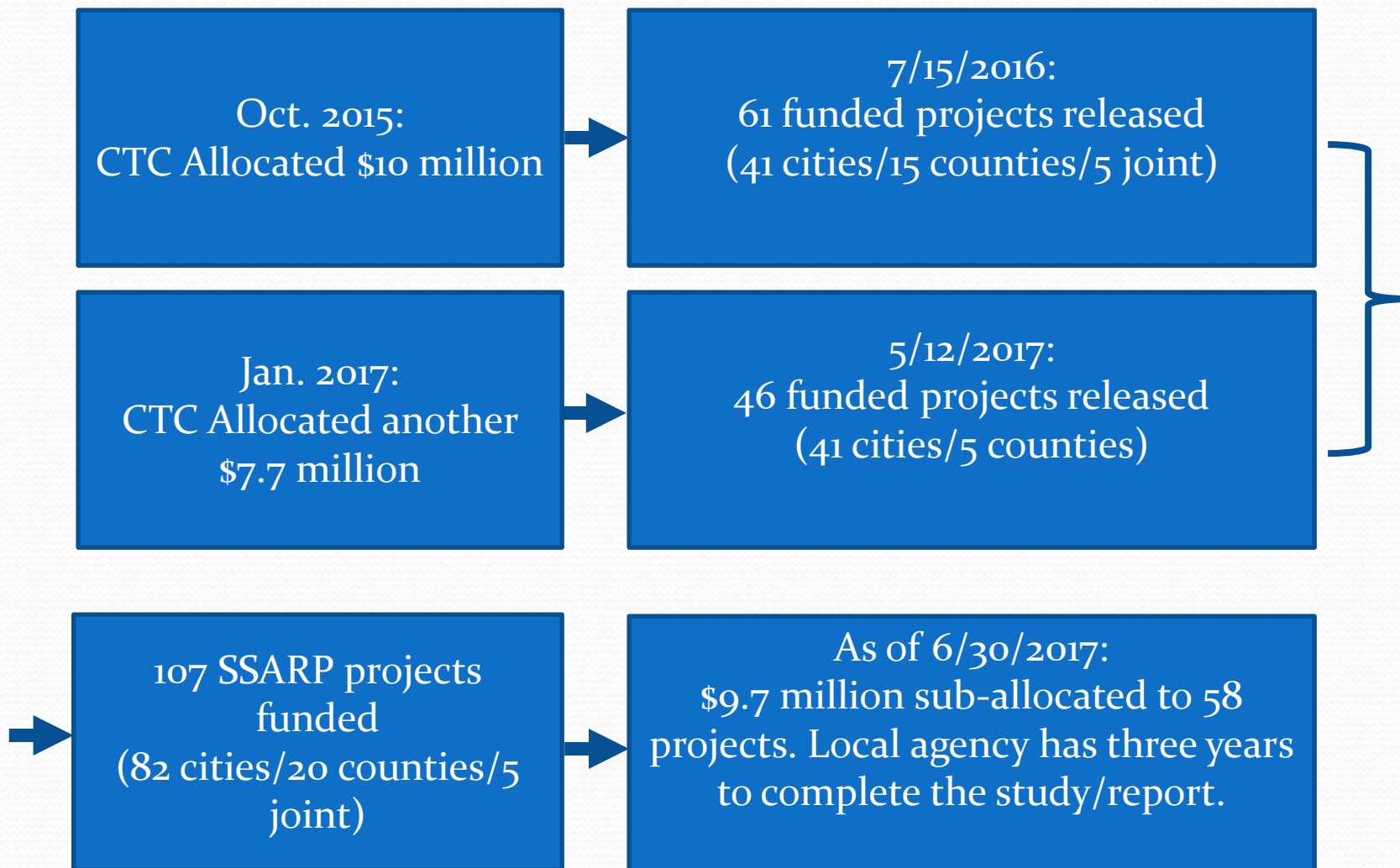


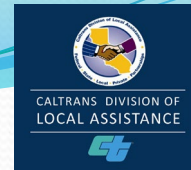
Systemic Safety Analysis Report Program (SSARP)

- Provides state funds to do a comprehensive systemic safety analysis on roadway networks.
- Assists local agencies that do not have safety analysis expertise.
- Up to \$250,000 for one agency; up to \$500,000 for a joint application (two or more agencies).



Systemic Safety Analysis Report Program (SSARP)





Questions? Thank you ...

- **Local HSIP Website:**
<http://www.dot.ca.gov/hq/LocalPrograms/hsip.html>

Or

- **Google search: “CA Local HSIP”**