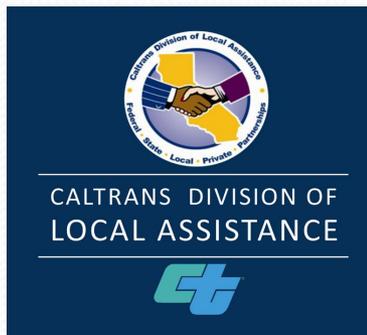


# Local Highway Safety Improvement Program (HSIP) and How It Works

For 8th STIC Local Roadway Departure Safety Workshop

Susanville, CA  
May 2, 2018



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## This presentation covers:

- Federal Legislation, SHSP and Performance Measures;
- Local HSIP Advisory Committee;
- Eligible applicants and eligible projects;
- Safety countermeasures and Benefit/Cost Ratio;
- Funding and Project Selection;
- HSIP Call for Projects (Cycle 9);
- Project delivery requirements and status; and
- Systemic Safety Analysis Report Program (SSARP).

## Federal Legislation

- 23 United States Code (USC) 148; 23 Code of Federal Regulations (CFR) Parts 924 and 490.
- The purpose of the HSIP program is “to achieve a significant reduction in traffic fatalities and serious injuries on **all public roads**, including non-State-owned public roads and roads on tribal land.” (23 USC § 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:

<b>Roadway Departure and Head-On collisions</b>	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 and Target-setting:

Performance Measure (5-Year Rolling Average)	California's Goal	2018 Target
Number of Fatalities	-7.69% per year "Toward Zero Death")	3,590.8
Rate of Fatalities per 100 million VMT		1.029
Number of Serious Injuries	-1.5% per year	12,823.4
Rate of Serious Injuries per 100 million VMT		3.831
Number of Non-motorized Fatalities and Non-motorized Serious Injuries	-10% per year	4,271.1

➤ The MPOs must either agree to support the State DOT targets or establish numerical targets specific to their planning areas.

# Roadway Departure fatalities

## California Traffic Fatalities (2011 to 2015)

Traffic Fatalities	2011	2012	2013	2014	2015	Total
All	2,816	2,966	3,107	3,102	3,176	15,167
Involving a Roadway Departure	1,337 (47%)	1,399 (47%)	1,442 (46%)	1,374 (44%)	1,458 (46%)	7,010 (46%)

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



# Local HSIP Advisory Committee

- **Members from:**
  - FHWA and State (Caltrans);
  - Local Agencies:  
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

## **76 countermeasures (CMs) are pre-defined:**

- Signalized intersections: 18
- Non-signalized intersections: 20
- Roadways: 38

Refer to Local Roadway Safety Manual for California  
Local Road Owners

(<http://www.dot.ca.gov/hq/LocalPrograms/HSIP/2016/CA-LRSM.pdf>)

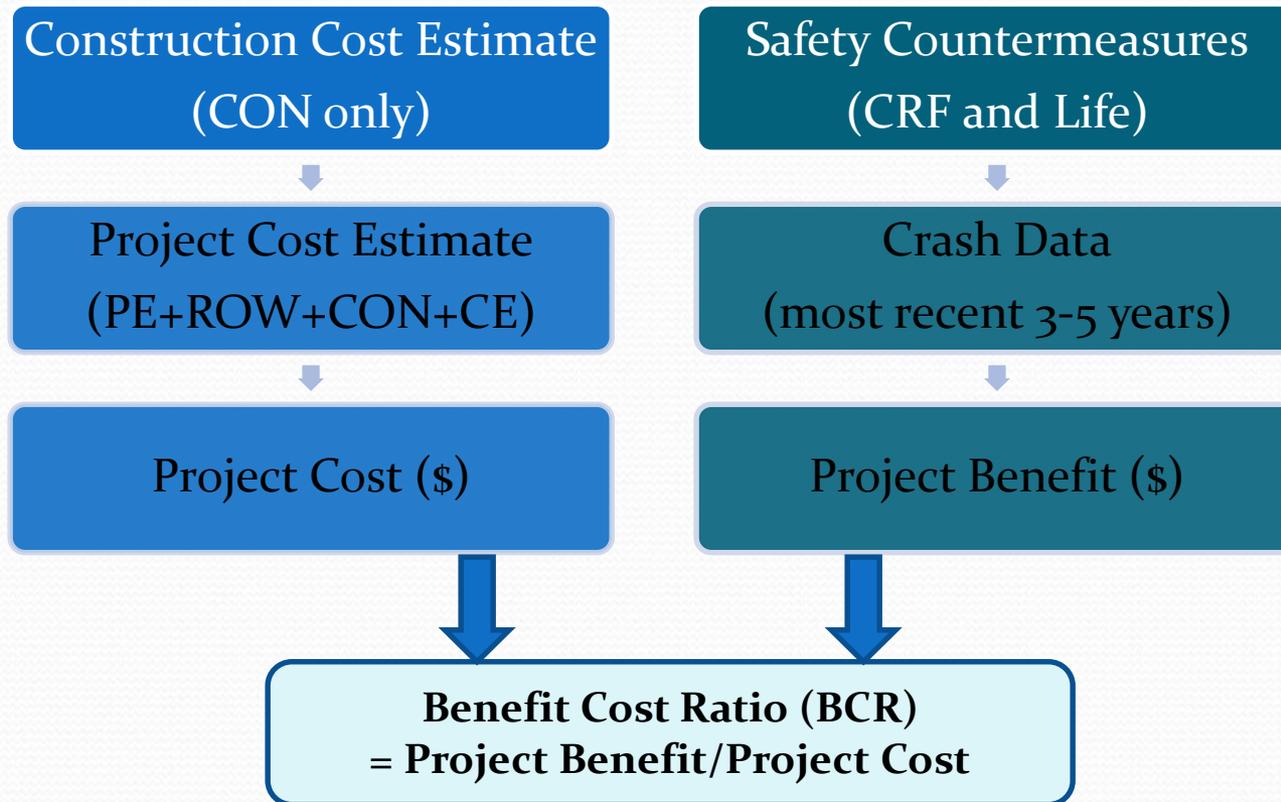
## Safety Countermeasures (cont.)

Each CM is associated with:

- A crash type (all; Ped & Bike; Night; etc.);
- A Crash Reduction Factor (CRF): 10% to 80%; and
- A Service Life: 10 or 20 years.

No.	Type	Countermeasure Name	Crash Type	Crash Reduction Factor (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
- ❑ **Benefit:**
  - 3 (F/SI crashes)/ 5years x 25% x \$1,730,000 x 20 years  
=\$5,190,000
- ❑ **BCR** =  $\frac{\text{Benefits}}{\text{Costs}} = \frac{\$5,190,000}{\$770,000} = 6.7$

# Local HSIP Funding

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

## HSIP Calls for Projects

- ❖ Call interval: every one to two years. Eight calls so far: 2007, 2008, 2010, 2011, 2012, 2013, 2015 and 2016;
- ❖ Cycles 4 to 8: project selection – data-driven.  
\$713 million awarded to 1038 projects. 194 completed/343 in construction. Expected benefits: \$8.8 billion!

Summary of each cycle

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
	<b>Total</b>	<b>1,481</b>	<b>1,038</b>	<b>\$713.2</b>	<b>12.3</b>

# HSIP Calls for Projects

Cycle 8 – Project selection released 11/21/2016

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

## Selected Projects:

- BCR: \$187.6 million /167 projects;
- Set-aside – Guardrail upgrade: \$21.9 million/24 projects;
- Set-aside – Crosswalk Enhancements: \$7.4 million/34 projects.

# HSIP Calls for Projects

## Cycle 8 - Projects with Roadway Departure Safety Related Components

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

## Upcoming HSIP Call for Projects

- Cycle 9 announced on April 30, 2018; Applications due: August 31, 2018;
- Webinar for the call: May 16, 2018;
- Approx. \$140-\$160 million of HSIP funds;
- Project size: \$100k - \$10 million;
- Max. \$10 million per agency;
- Application's minimum BCR: 3.5 (2.5 for HFST);
- Four funding set-asides (no BCR calculation needed).

# Upcoming HSIP Call for Projects

No more than 25% of the funds will be used as set-asides:

- ❖ **Guardrail upgrades (<=\$20 M)**
  - Upgrades of existing guardrail and end treatments;
  - Max. \$1 M per agency;
- ❖ **Horizontal Curve Signing (<=\$5 M)**
  - Horizontal alignment warning signs;
  - Max. \$250k per agency;
- ❖ **Pedestrian Crossing Enhancements (<=\$8 M)**
  - Pedestrian countdown signal heads; Pedestrian crossings; Signs and markings.
  - Max. \$250k per agency.
- ❖ **Tribes (\$2M).**
  - Any of the above; and Low cost roadway safety improvements (CM# R26-R35).
  - Max. \$250k per agency.



# Upcoming HSIP Call for Projects

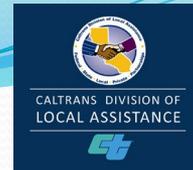
## Key to Successful Applications:

### 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: 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 4/6/18)

Status	Number of Projects (all 8 cycles)	Number of Projects (cycles 1 to 5)
No Authorization	96 (7%)	8 (1%)
In Preliminary Engineering / Right of Way	321 (23%)	14 (2%)
In Construction	389 (28%)	204 (26%)
Completed	587 (42%)	550 (71%)
<b>Total</b>	<b>1393</b>	<b>776</b>

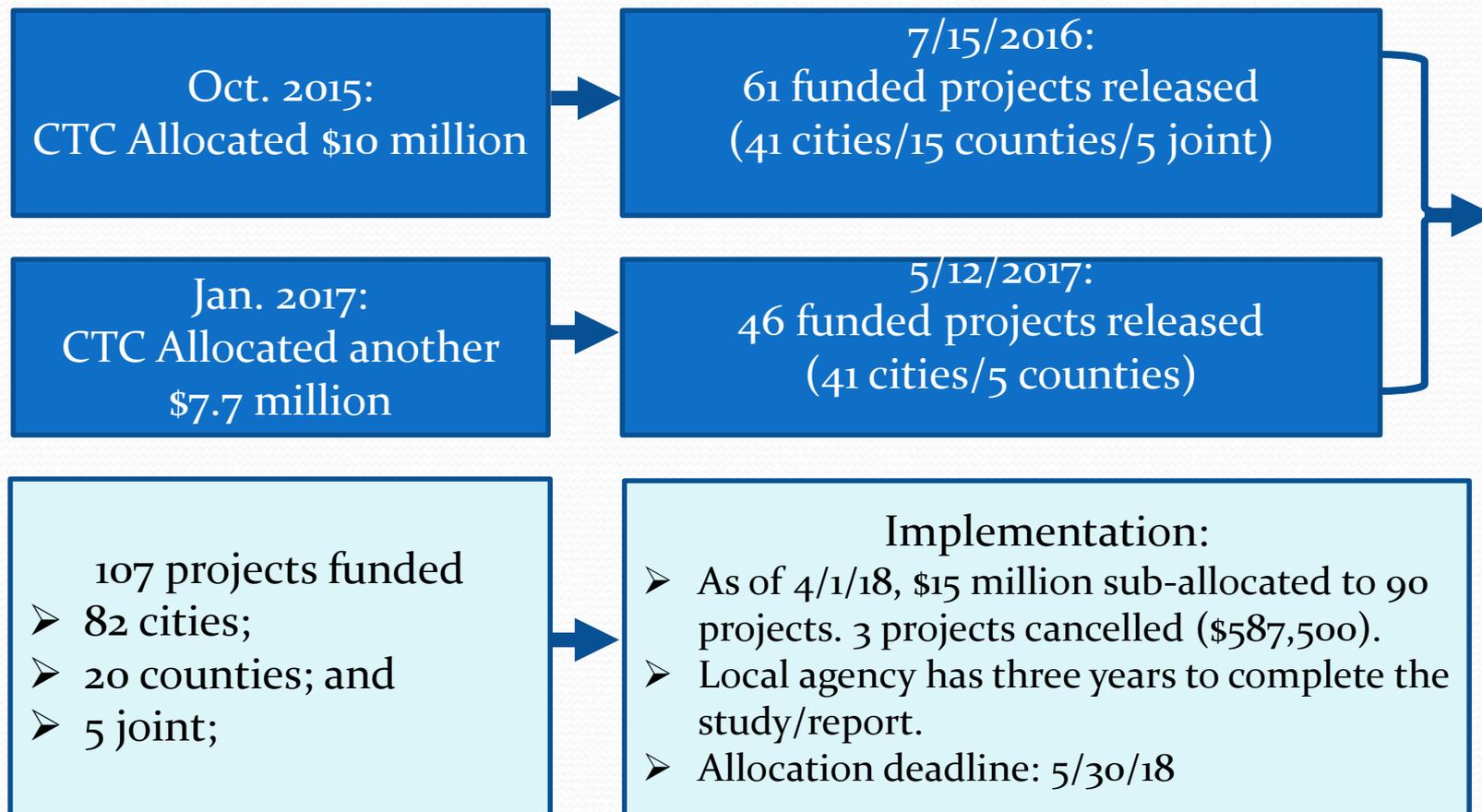


# Systemic Safety Analysis Report Program (SSARP)

- 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)





# HSIP Website and Contact

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

**Or**

- **Google search: “CA Local HSIP”**

**Contact: [richard.ke@dot.ca.gov](mailto:richard.ke@dot.ca.gov); (916)653-4727**

# Questions?



**Thank you ...**