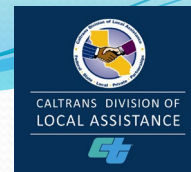


Local Highway Safety Improvement Program (HSIP) and How It Works

**For 7th STIC Local Roadway Departure Safety Workshop
Marina
March 7, 2018**



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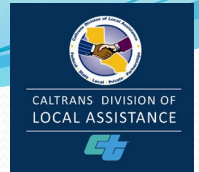
This presentation covers:

- 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;
- Upcoming 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:

| | | |
|---|---|---------------------------------|
| 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 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 |

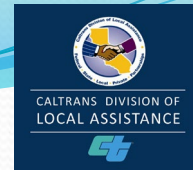
➤ The MPOs must either agree to support the State DOT targets or establish numerical targets specific to their planning areas.

Roadway Departure fatalities

California Traffic Fatalities (2011 to 2015)

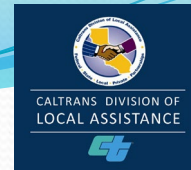
| Traffic Fatalities | 2011 | 2012 | 2013 | 2014 | 2015 | Total |
|-------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| All | 2,816 | 2,966 | 3,107 | 3,102 | 3,176 | 15,167 |
| Involving a Roadway Departure | 1,337 (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:

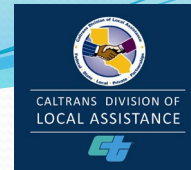
Any local agency that owns, operates, and maintains the public roadways

- 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>)

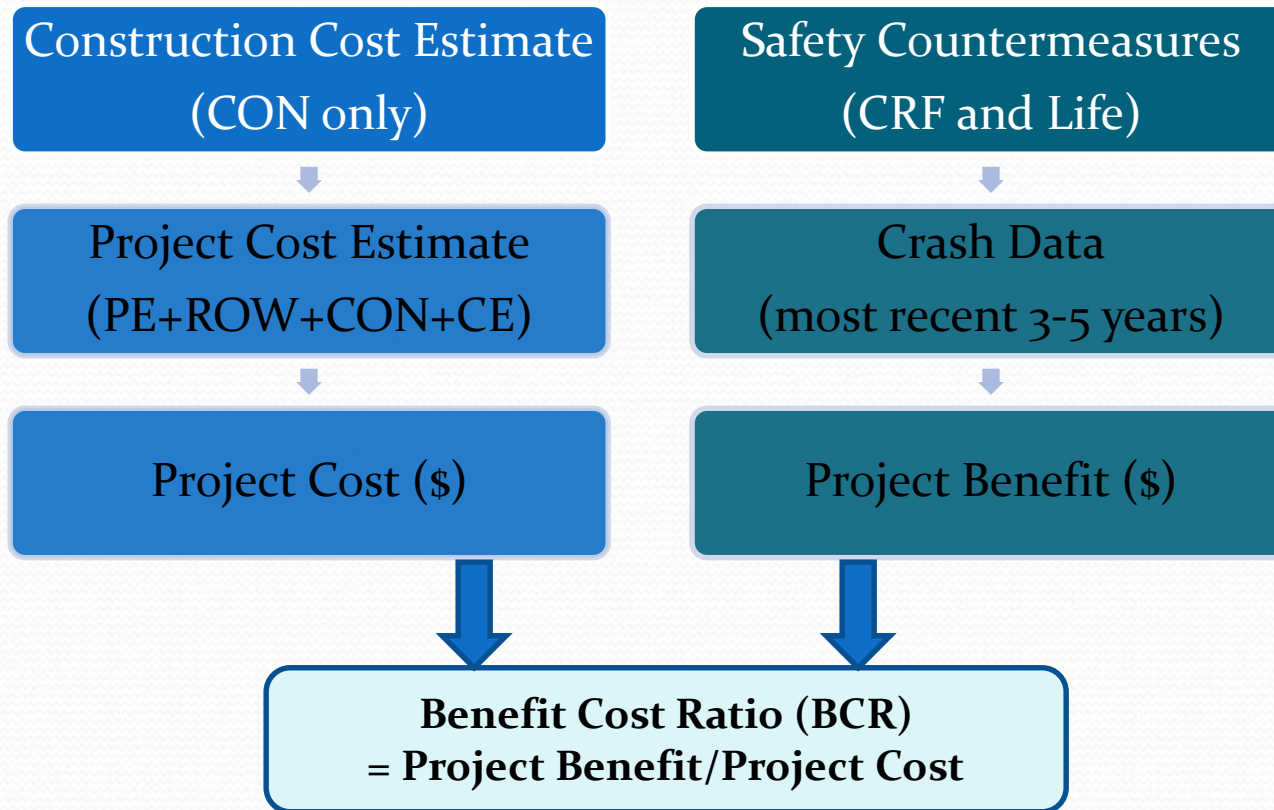
Safety Countermeasures (cont.)

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 |
| | Total | 1,481 | 1,038 | \$713.2 | 12.3 |

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 |
| Roadway Departure Safety Related | 56 (34%) | \$47.4 million (25%) | 12.9 (25% higher) |

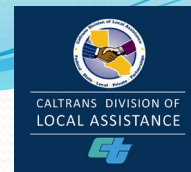
Upcoming HSIP Call for Projects

- Cycle 9 will be announced around April/May, 2018;
- Webinar for the call: within 2 weeks from the announcement;
- Applications due: August 31, 2018;
- Approx. \$140-\$160 million of HSIP funds;
- Project size: \$100k - \$10 million;
- Max. \$10 million per agency;
- Application's minimum BCR: 3.5;
- 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 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.



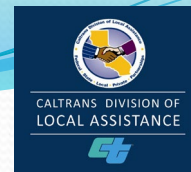
Local HSIP: Project Delivery Requirements

- 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 2/5/18)

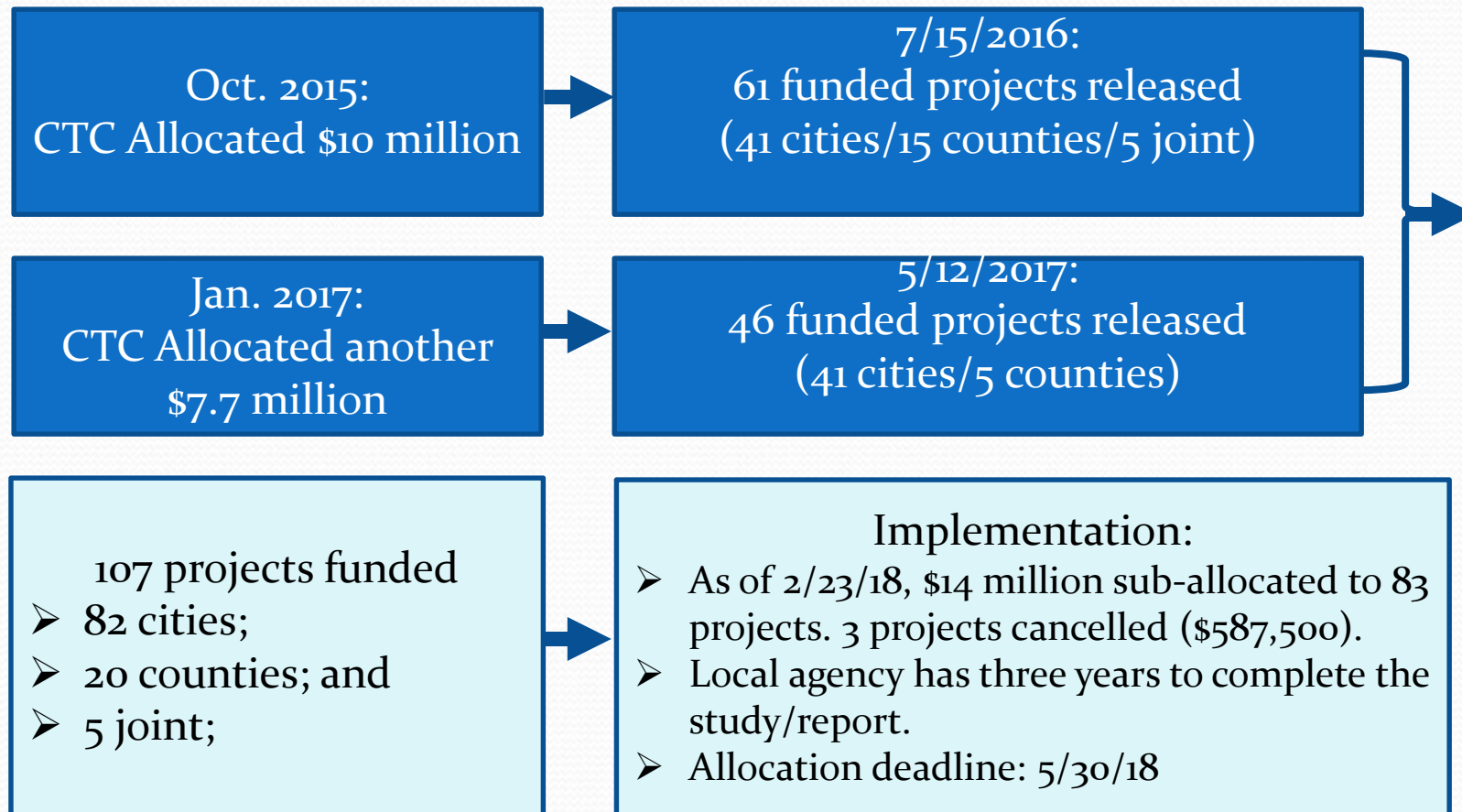
| Status | Number of Projects (all 8 cycles) | Number of Projects (cycles 1 to 5) |
|---|--------------------------------------|---------------------------------------|
| No Authorization | 104 (7%) | 8 (1%) |
| In Preliminary Engineering / Right of Way | 341 (24%) | 22 (3%) |
| In Construction | 398 (29%) | 223 (29%) |
| Completed | 552 (40%) | 523 (67%) |
| Total | 1395 | 776 |

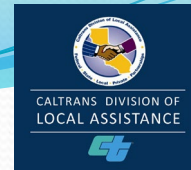


Systemic Safety Analysis Report Program (SSARP)

- 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)





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; (916)653-4727

Questions?



Thank you ...