



AGENDA

Technical Advisory Committee

Committee Members

| | |
|------------------|--------------------------------|
| Shaun Pelletier | City of Aliso Viejo |
| Rudy Emami | City of Anaheim |
| Tony Olmos | City of Brea |
| Nabil S. Henein | City of Buena Park |
| Raja Sethuraman | City of Costa Mesa |
| Nardy Khan | County of Orange |
| Doug Dancs | City of Cypress |
| Matthew Sinacori | City of Dana Point |
| Mark Lewis | City of Fountain Valley |
| Vacant | City of Fullerton |
| William Murray | City of Garden Grove |
| Travis Hopkins | City of Huntington Beach |
| Scott Smith | City of Irvine |
| Chris Johansen | City of La Habra |
| Michael Belknap | City of La Palma |
| Mark Trestik | City of Laguna Beach |
| Ken Rosenfield | City of Laguna Hills |
| Jacki Scott | City of Laguna Niguel |
| Akram Hindiyeh | City of Laguna Woods |
| Tom Wheeler | City of Lake Forest |
| Dave Hunt | City of Los Alamitos |
| Mark Chagnon | City of Mission Viejo |
| David Webb | City of Newport Beach |
| Christopher Cash | City of Orange |
| Luis Estevez | City of Placentia |
| Steve Kooyman | City of Rancho Santa Margarita |
| Tom Bonigut | City of San Clemente |
| Steve May | City of San Juan Capistrano |
| William Galvez | City of Santa Ana |
| Steve Myrter | City of Seal Beach |
| Guillermo Perez | City of Stanton |
| Doug Stack | City of Tustin |
| Akram Hindiyeh | City of Villa Park |
| Marwan Youssef | City of Westminster |
| E. Maximous | City of Yorba Linda |

Orange County Transportation Authority
 550 South Main Street, Room 09
 Orange, California
November 14, 2018 1:30 p.m.

Any person with a disability who requires a modification or accommodation in order to participate in this meeting should contact the Measure M2 Local Programs section, telephone (714) 560-5372, no less than two (2) business days prior to this meeting to enable OCTA to make reasonable arrangements to assure accessibility to this meeting.

Agenda descriptions are intended to give members of the public a general summary of items of business to be transacted or discussed. The posting of the recommended actions does not indicate what action will be taken. The Committee may take any action which it deems to be appropriate on the agenda item and is not limited in any way by the notice of the recommended action.

All documents relative to the items referenced in this agenda are available for public inspection at www.octa.net or through the Measure M2 Local Programs office at the OCTA Headquarters, 600 South Main Street, Orange, California.



Call to Order

Self-Introductions

Consent Calendar

All items on the Consent Calendar are to be approved in one motion unless a Technical Advisory Committee member requests separate action on a specific item.

1. Approval of Minutes

Approval of the Technical Advisory Committee regular meeting minutes of August 22, 2018

Regular Items

2. September 2018 Semi-Annual Review – Christina Moore

Overview

The Orange County Transportation Authority recently completed the semi-annual review of projects funded through its Comprehensive Transportation Funding Programs. This process reviews the status of Measure M2 grant-funded projects and provides an opportunity for local agencies to update project information and request project modifications. Recommended project adjustments are presented for review and approval.

Recommendation

Recommend Board approval of all adjustments to Comprehensive Transportation Funding Programs projects and Local Fair Share funds.

3. 2019 Technical Steering Committee Membership – Joseph Alcock

Overview

The Orange County Transportation Authority Technical Advisory Committee provides feedback and input on local streets and roads related items. To do this, it relies on a Technical Steering Committee, made up of nine representatives from local agencies, to provide guidance on major technical issues. Technical Steering Committee members serve two-year terms, with the exception of one-year terms for the Chair and Vice-chair. This year, six positions are open for consideration and proposed 2019 Technical Steering Committee membership recommendations are presented for review and approval.

Recommendation

Approve the proposed 2019 Technical Steering Committee membership recommendations.

Discussion Items

4. Systematic Safety Plan (SSP) Report – Paul Martin



5. Correspondence

OCTA Board Items of Interest

- **Monday, September 10, 2018**

Item 3: Cooperative Agreements for Regional Traffic Signal Synchronization Program projects

Item 4: Comprehensive Transportation Funding Programs – Measure M2 Environmental Cleanup Program Revised 2018 Tier 1 Projects

Item 5: Measure M2 Next 10 Plan: Market Conditions Key Indicators Analysis and Forecast

Item 6: Measure M2 Update: Next 10 Delivery Plan

- **Monday, September 24, 2018**

Item 17: 2019 Bicycle Corridor Improvement Program Call for Projects

- **Monday, October 8, 2018**

Item 4: Grant Award for the Pedestrian and Bicycle Safety Program

Item 5: Active Transportation Program Local Project Prioritization Methodology

Item 6: Measure M2 Quarterly Progress Report for the Period of April 2018 through June 2018

- **Monday, October 22, 2018**

Item 15: 2019 Project W Safe Stops Call for Projects

Announcements by Email

- 2019 CTFP Call for Projects – Now Open, *sent 8/17/18*
- ATP & SB1 Reporting Update Reminder, *sent 8/21/18*
- OCTA Highway Safety Improvement Workshop Materials, *sent 8/21/18*
- Technical Training – Annual Expenditure Reporting Spots Still Available, *sent 8/23/18*
- Senate Bill 1 Planning Grants Public Workshops, *sent 8/27/18*
- September 2018 Semi-Annual Review Reminder, *sent 8/27/18*
- Measure M2 Local Fair Share Program FY 2018-19 through FY 2024-25 Projections, *sent 8/30/18*
- September 12, 2018 Technical Steering Committee Meeting Cancellation Notice, *sent 8/30/18*
- OCTA Workshop: Shared Active Transportation, *sent 8/30/18*
- Reminder: 2019 CTFP Call for Projects Now Open, *sent 9/5/18*
- 2019 Bicycle Corridor Improvement Program Workshops, *sent 9/6/18*
- Save the Date for OCTA CTFP New Applicant Workshop and Q&A Session, *sent 9/13/18*
- September 26, 2018 Technical Advisory Committee Cancellation Notice, *sent 9/18/18*
- 2019 Bicycle Corridor Improvement Program Call for Projects Open, *sent 9/24/18*
- RMRA Local Streets and Roads Expenditure Report Deadline October 1, 2018, *sent 9/25/18*
- CTFP Workshop Reminder and Agenda, *sent 9/26/18*
- Statewide Webinar: FY 2019-20 Caltrans Transportation Planning Grants, *sent 10/1/18*



- October 10, 2018 Technical Steering Committee Meeting Cancellation Notice, *sent 10/3/18*
- Technical Advisory Committee Meeting Date Change 11/14/18, *sent 10/10/18*
- Statewide Webinar: FY 2019-20 Caltrans Transportation Planning Grants, *sent 10/10/18*
- CTFP Call for Projects Deadline Reminder, *sent 10/11/18*
- CTFP Call for Projects Deadline Reminder, *sent 10/16/18*
- Statewide Webinar: FY 2019-20 Caltrans Transportation Planning Grants, *sent 10/17/18*
- October 24, 2018 Technical Advisory Committee Meeting Cancellation Notice and Date Change Announcement, *sent 10/18/18*

6. Committee Comments

7. Caltrans Local Assistance Update

8. Staff Comments

9. Items for Future Agendas

10. Public Comments

11. Adjournment

The Technical Advisory Committee is scheduled to meet monthly on the fourth Wednesday of each month.



August 22, 2018 Technical Advisory Committee Minutes



Voting Representatives Present:

| | |
|------------------|--------------------------------|
| Rudy Emami | City of Anaheim |
| Nabil Henein | City of Buena Park |
| Jennifer Rosales | City of Costa Mesa |
| Nardy Khan | County of Orange |
| Khalid Bazmi | County of Orange |
| Kamran Dadbeh | City of Cypress |
| Matthew Sinacori | City of Dana Point |
| Temo Galvez | City of Fountain Valley |
| Mark Lewis | City of Fountain Valley |
| Don Hoppe | City of Fullerton |
| Mark Linsenmayer | City of Irvine |
| Chris Johansen | City of La Habra |
| Mark Trestik | City of Laguna Beach |
| Ken Rosenfield | City of Laguna Hills |
| Mark Vukojevic | City of Newport Beach |
| Christopher Cash | City of Orange |
| Frank Sun | City of Orange |
| Luis Estevez | City of Placentia |
| Brendan Dugan | City of Rancho Santa Margarita |
| Tom Bonigut | City of San Clemente |
| Taig Higgins | City of Santa Ana |
| Jake Ngo | Westminster |
| E. Maximus | City of Yorba Linda |

Orange County Transportation Authority
550 S. Main Street, Room 09
Orange, CA
August 22, 2018 1:30 PM

Guests Present:

Juanita Martinez, NCE
Nick Mangkalakiri, Cypress
Oliver Luu, Caltrans
Zed Kekula, Santa Ana
Lien Luu, SEC
Chris Gaarder

Staff Present:

Brianna Martinez
Joe Alcock
Dustin Sifford
Harry Thomas
Paul Martin
Corina Tamayo
Adriann Cardoso

Voting Representatives Absent:

| | |
|-----------------|-----------------------------|
| Shaun Pelletier | City of Aliso Viejo |
| Tony Olmos | City of Brea |
| William Murray | City of Garden Grove |
| Travis Hopkins | City of Huntington Beach |
| Michael Belknap | City of La Palma |
| Ziad Mazboudi | City of Laguna Niguel |
| Akram Hindiyeh | City of Laguna Woods |
| Tom Wheeler | City of Lake Forest |
| Dave Hunt | City of Los Alamitos |
| Mark Chagnon | City of Mission Viejo |
| Steve May | City of San Juan Capistrano |
| Steve Myrter | City of Seal Beach |
| Guillermo Perez | City of Stanton |
| Doug Stack | City of Tustin |
| Akram Hindiyeh | City of Villa Park |
| Tiffany Tran | Caltrans |



Meeting was called to order by Mr. Don Hoppe at 1:30 p.m.

Self-Introductions

CONSENT CALENDAR

1. The Minutes for the June 27, 2018 meeting were approved.

Mr. Lewis motioned to approve the minutes. The motion was seconded by Mr. Emami.

There was no further discussion.

DISCUSSION ITEMS

1. OCTA's 2019-20 State and Federal Legislative Platforms – Dustin Sifford

Mr. Sifford provided an overview of OCTA's 2019-20 State and Federal Legislative platforms.

Mr. Hoppe asked whether OCTA would consider language to modify the distribution of state gas tax funds, assuming Proposition 6 fails, and Senate Bill 1 remains law.

Mr. Sifford replied that OCTA cannot adjust any of the language in the transportation funding section of the state platform at this time. He went on to explain that OCTA would revisit the language after the election when Proposition 6 is either approved or rejected.

There was no further discussion. The item was received and filed.

2. Dockless Bikeshare & Electric Scooters – Paul Martin

Mr. Martin provided an overview of bikeshare and electric scooters in Orange County and the issues that local agencies are confronting as a result of these programs. Mr. Martin stated that the unstructured use of these vehicles is leading to conflicts and cities are being pressured to quickly come up with permitting programs. He also stated that it is easy to cross over multiple jurisdictions in Orange County where there is little physical separation between cities. Therefore, OCTA urges multiagency collaboration and discussion when it comes to these types of initiatives. Mr. Martin stated that OCTA could help facilitate an Ad Hoc meeting to better understand the types of best practices that should be incorporated into agreements with these vendors.

Mr. Vukojevic stated that the City of Newport Beach had a vendor deploy 70 or 80 scooters on a Friday night and did not alert City staff until the following Saturday morning. By close of business Monday, the City had removed 99% of unregulated scooters, based upon violation of the City's municipal code. He further stated that the City Council directed staff to not issue vendor permits unless the company could fully comply with all City municipal codes.

Mr. Hoppe asked for examples of what City municipal codes were violated.

Mr. Vukojevic stated that the company lacked a business license, there were helmet violations and the scooters blocked the public right-of-way. He also noted that scootering is not allowed on the boardwalk.

Mr. Martin added that California state law requires all riders of motorized scooters wear a helmet. He also stated that state law also prohibits riding on sidewalks and requires enforcement of speed limit regulations.



Mr. Martin stated that while there are challenges, many agencies across the US are dealing with these issues and OCTA would like to provide both support on navigating this issue, and guidance to assist local agencies in providing for greater multi-modal options for traveling.

Ms. Rosales stated that some small vehicles from Newport Beach ended up in Costa Mesa. She also stated that the City has a bikeway walkability committee which has taken on electric scooters and is advocating for them. Ms. Rosales stated that the City of Costa Mesa would be interested in a meeting to discuss the topic further.

Mr. Hoppe asked Mr. Martin whether he had contacted the City of Santa Monica to inquire about their experience dealing with this issue.

Mr. Martin stated that the City of Santa Monica was attempting to implement permits but has run into obstacles. Mr. Martin stated that OCTA would observe the issue and draw from other jurisdictions to monitor progress.

Mr. Martin concluded that OCTA would send an email to gauge interest in a potential future workshop regarding the matter.

The item was received and filed.

DISCUSSION ITEMS

3. Technical Advisory Committee Vice Chair Assignment – Joseph Alcock

Mr. Alcock presented an overview of the need to appoint a new Vice Chair.

Mr. Hoppe reiterated Mr. Alcock's statements emphasizing the need to have a new Vice Chair appointed, especially in light of his upcoming retirement.

Mr. Lewis was unanimously appointed to serve as Vice Chair of the TAC and TSC for the remainder of 2018. Mr. Lewis expressed his appreciation for the TAC's appointment.

4. Correspondence

- a. OCTA Board Items of Interest – See Agenda
- b. Announcements Sent by Email – See Agenda

5. Committee Comments – None

6. Caltrans Local Assistance Update

Mr. Luu from the Caltrans' Local Assistance Department, stated that the format for Highway Safety Improvement Program (HSIP) progress reports has changed. He stated that the new format was available on the Caltrans website and the deadline was September 5, 2018.

He also announced that HSIP Cycle 9 Call for Projects applications were due August 31; and noted that more information and updates could be found on the Caltrans website.

Mr. Luu also stated that Caltrans had been closely monitoring the inactive project list by contacting agencies on the list more regularly. He noted that in the next quarter, a letter would be sent out to



notify agencies with currently inactive projects. The list of projects that were anticipated to become inactive in the next quarter was provided.

Mr. Luu also announced upcoming trainings/meetings and further stated that the information was also available on the Caltrans Local Assistance webpage.

7. Staff Comments

Ms. Martinez provided the following updates:

- **2019 Technical Steering Committee (TSC) Membership**

A letter requesting letters of interest for TSC membership was mailed to local agency public works directors in August. She stated that TSC membership would require a letter of interest to be sent to the TSC Chair, California Engineering Association of Orange County President, and Joe Alcock by September 1. She also mentioned that if members wished to renew their membership, a letter still would need to be submitted. She also stated that the following positions were open: Chair, Vice Chair, District 2, District 3, and one At-Large position. 2019 It was noted that membership recommendations would be presented at the TAC meeting on November 14th, and subsequently to the Board in December 2018.

- **Technical Advisory Committee (TAC) Membership**

Ms. Maritnez stated that every agency is permitted two representatives on the TAC – one primary member and one alternate. She also stated that letters to OCTA are required to make changes to TAC membership and they must be from the City Manager, or similar position. Ms. Martinez noted that a template of a TAC membership designation letter was available upon request. She also stated that hardcopies are not required.

- **FY 18/19 Eligibility**

Ms. Martinez noted that the Measure M2 eligibility review is underway. She stated that OCTA was in line with where they have been in prior years, in terms of the review process. She also stated that there were no major issues to report. There was 100% compliance for the PMP. She also stated that PMP findings would be presented to the Annual Eligibility Review subcommittee in September and for Board of Director's review in December.

- **September 2019 Semi-Annual Review (SAR) Now Open**

Ms. Martinez stated that the September 2018 SAR process was in progress. Completion dates, final reports, and encumbrance dates should be sent to Brianna Martinez. She added that agencies may request grant amendments during the SAR. She stated that Form 10-17s must be submitted for applicable Tier 1 ECP projects, with appropriate backup documentation. Ms. Martinez added that updated O&M remaining balances could be retrieved from her. It was also announced that the SAR would close on September 14, 2018 at 5PM.

- **2019 CTFP O&P Call for Projects Now Open**

Ms. Martinez announced the Board approval the 2019 O&P Call for Projects on August 13, 2018. \$40 million was made available with \$32 million for Project O (RCP) and \$8 million for Project P (RTSSP) and applications were due on Thursday, October 18 at 5 p.m.

Rosenfield inquired as to the status of notifications to agencies regarding the status of their ECP project applications from the Tier 1 call for projects.

Mr. Alcock replied that the item would go to the Regional Planning and Highways Committee in September and then to the OCTA Board for approval later that month. He stated that after the Board's action local agencies would be notified.



- 8. **Items for Future Agendas - None**
- 9. **Public Comments - None**
- 10. **Adjournment at 2:04 p.m.**



September 2018 Semi-Annual Review



November 14, 2018

To: Technical Advisory Committee
From: Orange County Transportation Authority Staff
Subject: Comprehensive Transportation Funding Programs Semi-Annual Review – September 2018

Overview

The Orange County Transportation Authority recently completed the semi-annual review of projects funded through its Comprehensive Transportation Funding Programs. This process reviews the status of Measure M2 grant-funded projects and provides an opportunity for local agencies to update project information and request project modifications. Recommended project adjustments are presented for review and approval.

Recommendation

Recommend Board of Directors approval of adjustments to Comprehensive Transportation Funding Programs projects and Local Fair Share funds.

Background

The Comprehensive Transportation Funding Programs (CTFP) is the mechanism which the Orange County Transportation Authority (OCTA) uses to administer funding for street, road, signal, transit, and water quality projects. The CTFP contains a variety of funding programs and sources including Measure M2 revenues, State-Local Partnership Program funds, and Local Partnership Program funds. The CTFP provides local agencies and OCTA with a comprehensive set of guidelines for administration and delivery of various transportation funding grants.

As needed, OCTA meets with representatives from local agencies to review the status of projects and proposed project changes. This process is known as the semi-annual review (SAR) process. The goals of the SAR process are to review project status, determine the continued viability of projects, address local agency concerns, confirm the availability of local match funds, and ensure timely closeout of all projects funded under the CTFP.

Discussion

The September 2018 SAR proposed adjustments include four timely use of funds extensions for CTFP projects, one timely use of funds extension for the Local Fair Share Program, four scope changes, six project transfers, and two cancellations. Adjustments are itemized in Attachment A and described in Attachment B.

Local agencies identified several reasons for SAR proposed project adjustments which included the following:

- Extensions (stakeholder/agency coordination issues, right of way issues, utility conflicts, and design issues),
- Scope Changes (technology upgrades/enhanced project benefits, project service expansion, location modifications, and financial constraints)
- Transfers (project savings), and
- Cancellations (low ridership).

The reasons identified above are consistent with expectations for a September SAR cycle which generally sees more project phasing and scope adjustments; whereas, the March SAR cycle is typically influenced by timing constraints of encumbrance and fund expenditure deadlines. Additional information regarding SAR trends over the last seven years is provided for reference in Attachment C.

The September 2018 SAR proposed project adjustments are consistent with prior SAR requests and are also appropriate from a CTFP administration perspective. Therefore, staff is requesting the Technical Advisory Committee to recommend OCTA Board of Directors approval of the SAR adjustments identified in Attachment A. If this recommendation is approved, staff will monitor the implementation of the proposed changes through future SARs, which are conducted and reported on to the TAC two times a year.

Summary

The Orange County Transportation Authority has recently reviewed the status of 373 active project phases funded through the Measure M2 Comprehensive Transportation Funding Programs. Staff recommends the approval of the project adjustments requested by local agencies. The next semi-annual review is currently scheduled for March 2019.

Attachments

- A. Comprehensive Transportation Funding Programs – September 2018 Semi-Annual Review Adjustment Requests
- B. Comprehensive Transportation Funding Programs – September 2018 Semi-Annual Review Adjustment Request Descriptions
- C. Comprehensive Transportation Funding Programs – Semi-Annual Review Adjustment Trend Analysis

Comprehensive Transportation Funding Programs
September 2018 Semi-Annual Review Adjustment Requests

| Timely-Use of Funds Extension Requests- CTFP* | | | | | | | | | |
|---|-------------------------------|---------|---|-------|------------|--|-------------------------|-------------------------------|--|
| Agency | Project Number | Project | Project Title | Phase | Current FY | Current Allocation | Proposed Time Extension | Proposed Expenditure Deadline | |
| Anaheim | 15-ANAH-ACE-3760 ¹ | O | Lincoln Avenue from Harbor Boulevard to West Street | ENG | 15/16 | \$ 590,494 | 24 | 2/9/2021 | |
| Anaheim | 15-ANAH-ACE-3761 ² | O | Lincoln Avenue Widening (East Street to Evergreen Street) | ENG | 15/16 | \$ 762,904 | 24 | 4/12/2021 | |
| Cypress | 14-CYPR-ECP-3731 ³ | X | Priority Sediment/Pollution Removal Project | CON | 14/15 | \$ 211,840 | 24 | 11/9/2020 | |
| County of Orange | 15-ORCO-ACE-3779 ⁴ | O | Cow Camp Road - Segment II | ENG | 15/16 | \$ 1,565,238 | 24 | 4/12/2021 | |
| | | | | | | CTFP Timely-Use of Funds Extensions (4) - Total Phase Allocations | \$ 3,130,476 | | |

Reasons for Project Adjustments

- 1 = Stakeholder/agency coordination issue
- 2 = ROW issue
- 3 = Utility conflicts
- 4 = Design issue

*Once obligated CTFP funds expire 36 months from the contract award date. Local agencies may request a one-time extension of up to 24 months.

| Timely-Use of Funds Extension Requests - LFS** | | | | | | |
|--|-------|-------------------|---|---------------------------|------------------------------------|-----------------------------|
| Agency | FY | Disbursement Date | Disbursement Amount | Proposed Extension Amount | Proposed Interest Extension Amount | Proposed Extension Deadline |
| Costa Mesa | 15/16 | 11/17/2015 | \$ 377,606 | \$ 377,606 | \$ - | 11/17/2020 |
| | | 1/12/2016 | \$ 437,485 | \$ 437,485 | \$ - | 1/12/2021 |
| | | 3/15/2016 | \$ 395,532 | \$ 395,532 | \$ - | 3/15/2021 |
| | | | LFS Timely Use of Funds Extensions (1) - Total Phase Allocations | \$ 1,210,623 | | |

**Net Revenues received by local jurisdictions through the LFS program shall be expended or encumbered within three years. An extension may be granted but is limited to a total of five years from the date of receipt of funds. OCTA uses the check date as the date of receipt of funds. Requests for extension must be submitted as part of the semi-annual review process prior to the end of the third year from the date of receipt of funds. Requests for extensions must include a plan of expenditure.

Comprehensive Transportation Funding Programs
 September 2018 Semi-Annual Review Adjustment Requests

| Scope Change Requests | | | | | | | |
|--|---------------------------------|---------|--|-------|------------|---------------------|---------------------|
| Agency | Project Number | Project | Project Title | Phase | Current FY | Current Allocation | Proposed Allocation |
| Anaheim | 14-ANAH-TSP-3701 ¹ | P | Anaheim Boulevard Regional Traffic Signal Synchronization | PI | 14/15 | \$ 696,860 | \$ 696,860 |
| Fullerton | 17-FULL-TSP-3874 ¹ | P | Gilbert Street and Idaho Street Corridor Regional Traffic Signal Synchronization | PI | 17/18 | \$ 862,560 | \$ 862,560 |
| San Clemente | 16-SCLM-CBT-3841 ² | V | San Clemente Rideshare Services | O&M | Multiple | \$ 914,400 | \$ 914,400 |
| Santa Ana | 14-SNTA-ECP-3751 ^{3,4} | X | Residential South Catch Basin Project | CON | 14/15 | \$ 200,000 | \$ 200,000 |
| Scope Changes (4) - Total Phase Allocations | | | | | | \$ 2,673,820 | \$ 2,673,820 |

Reasons for Project Adjustments

- 1 = Technology upgrades/ enhanced project benefits
- 2 = Expand service period up to 7 years.
- 3 = Location modification
- 4 = Financial constraints

Comprehensive Transportation Funding Programs
 September 2018 Semi-Annual Review Adjustment Requests

| Transfer Requests (6) - Total Project Allocations | | | | | | | | | | |
|--|-------------------------------|---------|--|-------|------------|---------------------|-----------------|---------------------|--|--|
| Agency | Project Number | Project | Project Title | Phase | Current FY | Current Allocation | Transfer Amount | Proposed Allocation | | |
| Costa Mesa | 17-CMSA-ICE-3861 ¹ | O | Hyland Avenue at MacArthur Boulevard Intersection Improvements | ROW | 17/18 | \$ 129,972 | \$ (129,522) | \$ 450 | | |
| | | CON | | 18/19 | \$ 276,212 | \$ 129,522 | \$ 405,734 | | | |
| OCTA | 11-OCTA-TSP-3558 ¹ | P | Warner Avenue | PI | 11/12 | \$ 550,640 | TBD | TBD | | |
| | | | | O&M | 12/13 | \$ 71,208 | TBD | TBD | | |
| OCTA | 12-OCTA-TSP-3616 ¹ | P | Pacific Park Drive and Oso Parkway Signal Synchronization | PI | 12/13 | \$ 1,028,032 | TBD | TBD | | |
| | | | | O&M | 13/14 | \$ 24,466 | TBD | TBD | | |
| OCTA | 12-OCTA-TSP-3618 ¹ | P | Los Alisos Boulevard Corridor (Paseo de Valencia to Altisima) | PI | 12/13 | \$ 309,261 | TBD | TBD | | |
| | | | | O&M | 13/14 | \$ 23,356 | TBD | TBD | | |
| OCTA | 12-OCTA-TSP-3622 ¹ | P | Santa Margarita Parkway Signal Synchronization | PI | 12/13 | \$ 300,051 | TBD | TBD | | |
| | | | | O&M | 13/14 | \$ 11,861 | TBD | TBD | | |
| San Clemente | 16-SCLM-CBT-3841 ¹ | V | San Clemente Rideshare Services | O&M | 16/17 | \$ 457,200 | TBD | TBD | | |
| | | | | | 17/18 | \$ 457,200 | TBD | TBD | | |
| | | | | | 18/19 | \$ - | TBD | TBD | | |
| | | | | | 19/20 | \$ - | TBD | TBD | | |
| | | | | | 20/21 | \$ - | TBD | TBD | | |
| | | | | | 21/22 | \$ - | TBD | TBD | | |
| | | | | | 22/23 | \$ - | TBD | TBD | | |
| Transfer Requests (6) - Total Project Allocations | | | | | | \$ 3,639,459 | \$ - | \$ 3,639,459 | | |

Reason for Adjustment

1 = Project savings in earlier phases/years can support work in later awarded phases/years

Comprehensive Transportation Funding Programs
September 2018 Semi-Annual Review Adjustment Requests

| Cancellation Requests | | | | | | | |
|--|-------------------------------|---------|---|-------|------------|---------------------|---------------------|
| Agency | Project Number | Project | Project Title | Phase | Current FY | Current Allocation | Proposed Allocation |
| Costa Mesa | 16-CMSA-CBT-3821 ¹ | V | Local Circulator from Costa Mesa to Anaheim | CAP | 16/17 | \$ 201,737 | TBD |
| Costa Mesa | 16-CMSA-CBT-3821 ¹ | V | Local Circulator from Costa Mesa to Anaheim | O&M | Multiple | \$ 2,588,901 | TBD |
| Cancellations (2) - Total Phase Allocations | | | | | | \$ 2,790,638 | *TBD |

Reasons for Project Adjustments

¹ = Low ridership

Acronyms

- CTFP - Comprehensive Transportation Funding Programs
- FY - Fiscal year
- O - Regional Capacity Program
- ENG - Engineering
- X - Environmental Cleanup Program
- CON - Construction
- LFS - Local Fair Share Program
- P - Regional Traffic Signal Synchronization Program
- PI - Primary Implementation
- V - Community Based Transit/Circulators
- O&M - Operations and Maintenance
- ROW - Right of Way
- OCTA- Orange County Transportation Authority
- TBD - To be determined
- CAP - Capital

Comprehensive Transportation Funding Programs September 2018 Semi-Annual Review Adjustment Request Descriptions

Comprehensive Transportation Funding Programs (CTFP) Timely-Use of Funds Extensions

Once obligated, CTFP funds expire 36 months from the contract award date. Local agencies may request a one-time extension of up to 24-months. During this semi-annual review cycle, the following timely-use of funds extension requests were submitted.

The City of Anaheim is requesting a 24-month timely use of funds extension for the engineering phase of the Lincoln Avenue Widening (Harbor Boulevard to West Street) Project (15-ANAH-ACE-3760), from February 2019 to February 2021. Additional time is required as the City evaluates the viability and sustainability of the project's alternatives going forward.

The City of Anaheim is requesting a 24-month timely use of funds extension for the engineering phase of the Lincoln Avenue Widening (East Street to Evergreen Street) Project (15-ANAH-ACE-3761), from April 2019 to April 2021. Additional time is required as final design has been delayed due to the extensive coordination required with adjacent property owners.

The City of Cypress awarded a construction contract on November 9, 2015 and is requesting a 24-month timely use of funds extension for the construction phase of the Priority Sediment/Pollution Removal Project (14-CYPR-ECP-3731), from November 2018 to November 2020, primarily due to utility conflicts and the contractor's availability.

The County of Orange (County) is requesting a 24-month timely use of funds extension for the engineering phase of the Cow Camp Road Segment II Project (15-ORCO-ACE-3779) from April 2019 to April 2021. Design is complete for segment 2A and in progress for segment 2B; however, additional time is requested to complete the design for segments 2C-2E and to process these plans for approval with the County.

Local Fair Share Timely-Use of Funds Extensions

The City of Costa Mesa is requesting a 24-month timely use of funds extension of \$1,210,623. The funds being considered for extension were disbursed in three separate installments and must be expended by the extension deadlines provided in Attachment A.

Scope Changes

Agencies may request minor scope changes for CTFP projects if they can assure that project benefits as committed to in the initial application can still be delivered. For

Environmental Cleanup Program Tier 1 projects, the proposed modifications must mitigate the same pollutants, affect the same waterways, and meet all other provisions as stipulated in the CTFP Guidelines. The match rate percentage identified by implementing agencies in the project grant application shall remain constant throughout the project. The proposed modification must be accommodated within the existing

approved grant budget. During this review cycle, the following scope change requests were submitted.

The City of Anaheim is requesting a scope change for the primary implementation phase of the Anaheim Boulevard Traffic Signal Synchronization Project (14-ANAH-TSP-3701). The scope change involves changing out Bluetooth (only) technology with Bluetooth and single point articulation test technology on Anaheim Boulevard. This change would support both travel time collection and connected vehicle applications. The additional change would include replacing an old P-cabinet at Anaheim Boulevard and Broadway Boulevard to a 333L. These changes provide engineers the ability to better monitor traffic for traffic signal coordination.

The City of Fullerton is requesting a scope change for the primary implementation phase of the Gilbert Street and Idaho Street Traffic Signal Corridor Project (17-FULL-TSP-3874). The scope change involves installing new fiber in existing City-owned signal and interconnect conduits along remaining portions of Gilbert Street to complete a fiber optic communication ring. This proposed scope change constitutes a gap closure as defined in the CTFP Guidelines and is in compliance with the intent of the program.

The City of San Clemente (San Clemente) is requesting a scope change for the operations and maintenance phase of the San Clemente Rideshare Services Beta-Test Project (16-SCLM-CBT-3841). The pilot program is nearing the end of the initial two-year term and the scope change would enable San Clemente to continue the services for up to an additional five years (to accommodate the total seven-year request as per the original application). The data is showing that the passengers per hour are trending upward with a relatively low cost. San Clemente also requested consideration of increasing the current 2016 project budget to include funding identified in the 2018 Project V Call for Projects. However, San Clemente has not met the 2018 Project V programming contingency identified by the OCTA Board of Directors in June 2018. While San Clemente has established that the program is a cost-effective substitute for bus service along routes 191 and 193, allocation of additional funds to this program is not warranted at this time. Therefore, the proposed modification will be accommodated within the existing 2016 approved grant budget.

The City of Santa Ana (Santa Ana) is requesting a scope change for the construction phase of the Residential South Catch Basin Project (14-SNTA-ECP-3751). The scope change involves reducing the number of Connector Pipe Screen (CPS) devices from 576 to 547 due significant cost increases. Additionally, due to engineering and location constraints, Santa Ana has found there are insufficient site locations on minor streets to install the proposed 547 devices. As a result, Santa Ana would like to expand the scope to also include installation of municipal catch basins in major streets city-wide.

Transfers

The CTFP Guidelines allow agencies to request to transfer 100 percent of savings of funds between subsequent phases within a project. Funds can only be transferred to a phase that has already been awarded competitive funds. Such requests must be made

prior to the acceptance of a final report and submitted as part of the semi-annual review process. During this review cycle, the following transfer requests were submitted.

The City of Costa Mesa is requesting a transfer for the Hyland Avenue at MacArthur Boulevard Intersection Improvements Project (17-CMSA-ICE-3861). The request is to transfer project savings in the amount of \$129,522 from the right-of-way phase to the construction phase.

OCTA, as administrative lead, is requesting to transfer project savings from the primary implementation phase to the operations and maintenance phase for the following projects. Primary implementation closeout is still in progress, so the exact dollar amount is to be determined.

- Warner Avenue Traffic Signal Synchronization Project (11-OCTA-TSP-3558)
- Pacific Park and Oso Parkway Traffic Signal Synchronization Project (12-OCTA-TSP-3616)
- Los Alisos Boulevard Traffic Signal Synchronization Project (12-OCTA-TSP-3618)
- Santa Margarita Traffic Signal Synchronization Project (12-OCTA-TSP-3622)

The City of San Clemente is requesting a transfer for the San Clemente Rideshare Services Project (16-SCLM-CBT-3841). The transfer includes fiscal year (FY) 16/17 and 17/18 savings from the operations and maintenance phase in an amount to be determined and is to be distributed across the proposed remaining FYs 18/19 through 22/23.

Cancellations

Local agencies may request to cancel projects, as needed. Cancelled projects are eligible to reapply upon resolution of the issues that led to the original project cancellation. During this review cycle, the following cancellation request was received.

The City of Costa Mesa is requesting to cancel both capital and operations and maintenance phases due to low ridership for the City of Costa Mesa Local Circulator Project (16-CMSA-CBT-3821).

**Comprehensive Transportation Funding Programs September 2018
Semi-Annual Review Adjustment Request Descriptions**

As part of the September 2018 Semi-Annual Review (SAR) process, staff conducted a trend analysis of all Measure M2 grant-funded project adjustments since inception (15 SAR evaluations over seven years). The analysis yielded the following observations:

- SAR adjustment requests have generally broken down according to the following percentages:
 - Funds Extension (37%),
 - Scope Change (21%),
 - Delay requests (21%),
 - Transfer (10%),
 - Cancellation (9%), and
 - Advancements (2%).

- There tends to be seasonal trends with respect to SAR adjustment requests. The March SAR process typically experiences a higher volume of adjustment requests than the September SAR. Based upon trend data, the increase in March SAR adjustment requests appears to be linked to the timing of both encumbrance and fund expenditure deadlines.

- There also appears to be an upward trend in the volume of adjustment requests each successive SAR cycle. These increases appear to be attributable to the overall increase in total active project phases within the M2 program. Even year SAR stats are listed below:

| Year | Requests (March & Sept.) | Total active Phases |
|------|-----------------------------|------------------------|
| 2012 | 8 | 256 |
| 2014 | 33 | 248 |
| 2016 | 53 | 358 |
| 2018 | 60 | 373 |

- In terms of funds extension requests¹, the Regional Traffic Signal Synchronization Program (RTSSP) and the Regional Capacity Program (RCP) required the most adjustments. The RTSSP accounted for the largest number of requests (approximately 67% and the RCP approximately 27%). With respect to the RTSSP, it appears the high volume of funds extension requests is likely tied to the large amount of utility conflicts the program experiences. With respect to the RCP, these requests generally appear to be the result of procurement, right-of-way (ROW), and/or construction activities taking longer than anticipated. Also, both the RTSSP and RCP

¹ Once obligated M2 Comprehensive Transportation Funding Programs funds expire 36 months from the contract award date. Funds extension requests allow local agencies to request a one-time extension of up to 24-months.

require a significant amount of coordination and interface with neighboring local agencies/project partners, which frequently impacts project initiation and delivery schedules.

- The majority of scope change adjustment requests have occurred within the RTSSP and Environmental Cleanup Program (ECP). This trend is likely due to the nature of each of these respective programs. These programs' scope adjustments have typically either been for location changes, site constraint issues, and/or for device type/technology modifications. It should be noted that with respect to these programs, site constraint issues do not appear to be well known nor readily apparent until after project initiation. Also, both programs are dependent upon technological devices, which are continuing to evolve during project delivery processes.
- For transfer requests, the majority of these adjustments have occurred within the RCP. This is likely due to engineering and/or right-of-way phase project savings being transferred to the subsequent construction phase. To a lesser extent, the RTSSP and Community Based Transit Circulators (CBT) program also experience project savings. The requests for the RTSSP involve transferring funds from the primary implementation phase to the subsequent operations and maintenance phase. For the CBT program these requests typically involve transferring operations and maintenance funds from one fiscal year to another. Based upon past observations in the CBT program, these requests typically occurred between years one and two of the program and have been attributed to taking longer to "ramp-up" service than initially anticipated.
- Most funds cancellation requests have been evenly distributed amongst the RCP, RTSSP, ECP, and to a lesser extent the CBT program. Typical issues resulting in project cancellations have generally included stakeholder coordination challenges, lack of resolution of ROW impact/negotiations, site constraints, and for the CBT program low ridership.
- Project advancements have occurred much less frequently than other SAR adjustment requests. Most of these requests have been associated with the RCP. Project advancement requests are primarily needed to accommodate procurements and/or earlier project develop phases being completed sooner than anticipated.

Staff will continue to monitor and report on M2 requested project adjustments to further identify, understand, and anticipate future trends which may emerge with respect to M2 project delivery.



2019 Technical Steering Committee Membership



November 14, 2018

To: Technical Advisory Committee
From: Orange County Transportation Authority Staff
Subject: 2019 Technical Steering Committee Membership

Overview

The Orange County Transportation Authority Technical Advisory Committee provides feedback and input on local streets and roads related items. To do this, it relies on a Technical Steering Committee, made up of nine representatives from local agencies, to provide guidance on major technical issues. Technical Steering Committee members serve two-year terms, with the exception of one-year terms for the Chair and Vice Chair. This year, six positions are open for consideration and proposed 2019 Technical Steering Committee membership recommendations are presented for review and approval.

Recommendation

Approve proposed 2019 Technical Steering Committee membership recommendations.

Background

The Orange County Transportation Authority (OCTA) Technical Advisory Committee (TAC) provides input regarding the allocation of Measure M2 (M2) competitive grant funds. The TAC also provides technical advice to staff on issues related to streets and roads planning and programming. The TAC is comprised of representatives from all Orange County cities and the County of Orange. It also includes non-voting representatives from The California Department of Transportation (Caltrans) and the Transportation Corridor Agencies. The TAC uses a Technical Steering Committee (TSC) to vet, review, and discuss major technical issues prior to submittal to the TAC for final review and consideration. The Chair and Vice Chair of the TSC also serve as the Chair and Vice Chair of the TAC.

The TSC consists of nine voting members chosen by the TAC and appointed by the OCTA Board of Directors (Board). There is one position for each of Orange County's five supervisorial districts, two at-large positions, and the TSC Chair

and Vice Chair. The TSC membership selection process is organized and evaluated by the Chair of the City Engineers Association of Orange County (CEAOC), the TAC/TSC Chair, and OCTA staff, before recommendations are advanced to the full TAC for consideration. In recommending and selecting TSC members, priority is given to maintaining a balance between small and large jurisdictions (small jurisdictions are currently defined as those with populations equal to/or less than 64,836). Balance among supervisorial districts and north and south Orange County jurisdictions is also evaluated.

Discussion

In August 2018, OCTA solicited letters of interest from local jurisdictions to fill TSC vacancies for the 2019 calendar year. At that time, it was noted that six of the nine regular TSC positions were open for consideration and appointment. These positions included the Chair, Vice Chair, Second District, Third District, Fifth District, and one At-Large position. In September, letters of interest from nine eligible TAC members were received. In accordance with the OCTA Board-approved guidelines for administering the TSC, the president of the CEAOC and the Vice Chair of the TSC (acting for the TSC Chair) reviewed all letters of interest and developed membership recommendations, which are before the TAC for review and approval (Attachment A).

Consistent with past practice, the Vice Chair is recommended to become the 2019 Chair. In order to ensure that both North and South Orange County are represented in TSC leadership positions, the current District 5 representative is being recommended for the 2019 Vice Chair position. If approved, this appointment would result in an opening in the District 5 seat, which is recommended to be filled by a representative from the City of San Clemente. The Second District position is recommended to be filled by a representative of the City of Costa Mesa. The current Third District representative is recommended for reappointment; and the open At-Large position is recommended to be filled by a representative from the City of Dana Point.

In finalizing these recommendations, the President of the CEAOC and the TSC Vice Chair emphasized the need to maintain a strong balance between both small/large and north/south Orange County cities and the consensus recommendations identified in Attachment A.

Next Steps

If these recommendations are approved by the TAC, they will be advanced to the OCTA Regional Planning & Highways (RP&H) Committee and Board of Directors in December. If these appointments are approved by the RP&H Committee and the Board, new members will be invited to take their places on the TSC effective January 2019.

Summary

The Technical Steering Committee provides guidance and direction on major technical issues before presentation to the full Technical Advisory Committee. Technical Steering Committee members serve two-year terms with the exception of the Chair and Vice Chair who serve one-year terms. There are six positions recommended for appointment in the next calendar year. Presented for consideration and approval is a recommended list of 2019 Technical Steering Committee appointments.

Attachment

- A. Proposed 2019 Technical Steering Committee Membership List

Proposed 2019 Technical Steering Committee Membership List†

| NAME | AGENCY | 2018* POPULATION | MEDIAN POPULATION SIZE | DISTRICT | NORTH/ SOUTH | SEAT EXPIRES |
|-------------------------|------------------------|-----------------------------|---------------------------------------|-------------------|-------------------------|--------------------------|
| Mark Lewis | Fountain Valley | 56,920 | Small | Chair | North | December 31, 2019 |
| Tom Wheeler | Lake Forest | 84,845 | Large | Vice Chair | South | December 31, 2019 |
| Marwan Youssef | Westminster | 94,476 | Large | 1 | North | December 31, 2019 |
| Raja Sethuraman | Costa Mesa | 115,296 | Large | 2 | North | December 31, 2020 |
| Doug Stack | Tustin | 82,344 | Large | 3 | North | December 31, 2020 |
| Rudy Emami | Anaheim | 357,084 | Large | 4 | North | December 31, 2019 |
| Tom Bonigut | San Clemente | 65,543 | Large | 5 | South | December 31, 2020 |
| Matthew Sinacori | Dana Point | 34,071 | Small | At-Large | South | December 31, 2020 |
| Nardy Khan | County of Orange | 3,221,103 | N/A | At-Large | North/ South | December 31, 2019 |

†Shading indicates positions recommended for consideration for the 2019 Technical Steering Committee

*State of California, Department of Finance, *E-1 Population Estimates for cities, counties, and the state with annual percent change — January 1, 2017 and 2018*. Sacramento, California, May 2018.



AGENDA

Technical Advisory Committee

Item #4

Systematic Safety Plan Report



Technical Advisory Committee

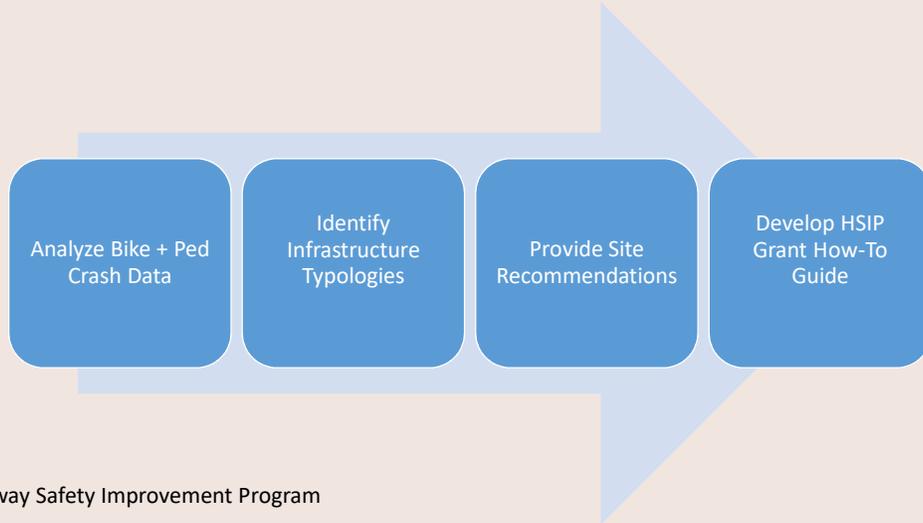
November 14, 2018

Systemic Safety Plan – Project Goal

- Improve Safety and reduce the number and severity of collisions involving people walking and bicycling in Orange County



Systemic Safety Plan – Project Process



Countermeasure Toolbox



Toolbox: HSIP Eligibility & Crash Reduction Factor

68 Countermeasures: 7 Categories

- Signal Timing & Phasing
- Intersection & Roadway Design
- Signs & Markings
- Bikeway Design
- Pedestrian Crossings
- Other
- Low-Cost & Quick Build



Understanding Crash Reduction Factor

Crash Reduction Factor Defined

- The percentage crash reduction that might be expected after implementing a given countermeasure at a specific site.

State & Federal Clearinghouse

<http://www.dot.ca.gov/hq/LocalPrograms/HSIP/2018/CA-LRSM.pdf>
<https://safety.fhwa.dot.gov/tools/crf/>



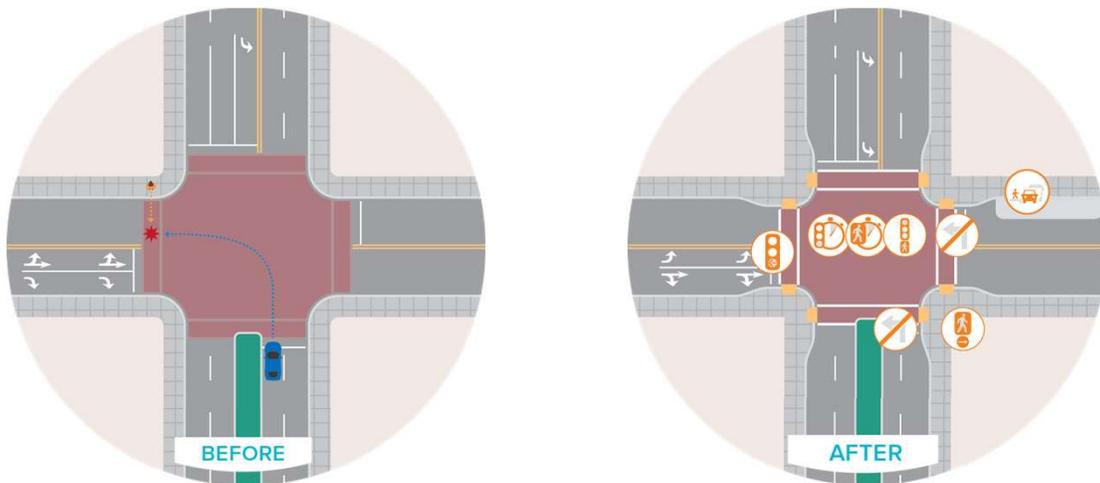
Crash Typologies & Projects

15 Typologies developed, three examples shown on following pages



Typology 1: COMMERCIAL CORRIDOR

With Bicycle and Pedestrian Crashes



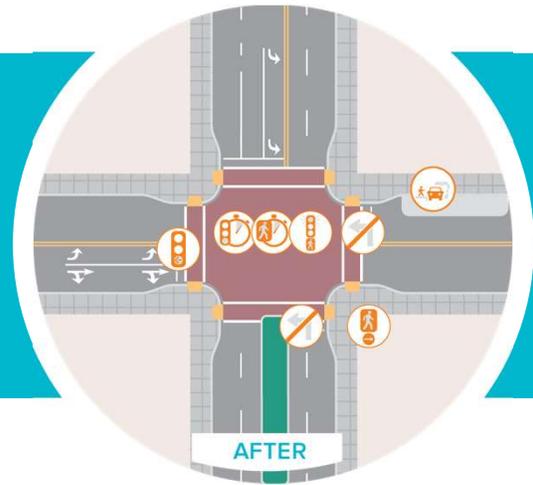
Note: Icons represent toolbox countermeasures

Typology 1: COMMERCIAL CORRIDOR

With Bicycle and Pedestrian Crashes

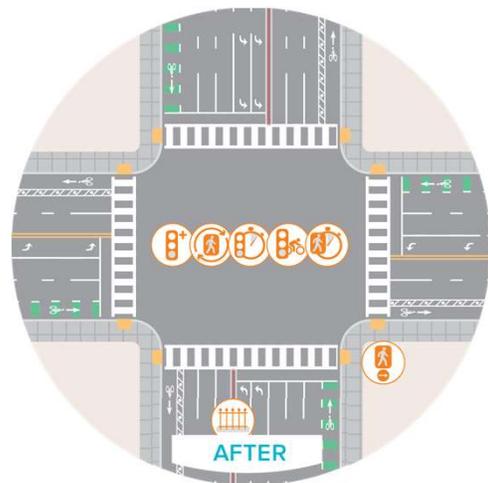
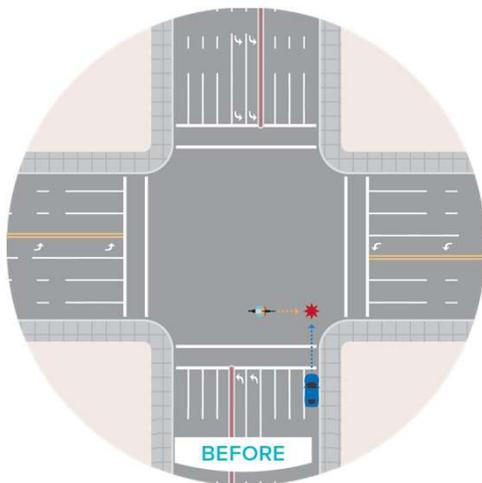
TOTAL COST
\$2,060,800
TOTAL BENEFIT
\$8,814,701
B/C RATIO
4.28

Note: Report will detail cost & benefit calculations



Typology 2: SIGNALIZED INTERSECTIONS, ANGLE CRASHES

With Bicycle Crashes



Note: Icons represent toolbox countermeasures

Typology 2: SIGNALIZED INTERSECTIONS, ANGLE CRASHES

With Bicycle Crashes

TOTAL COST

\$1,128,500

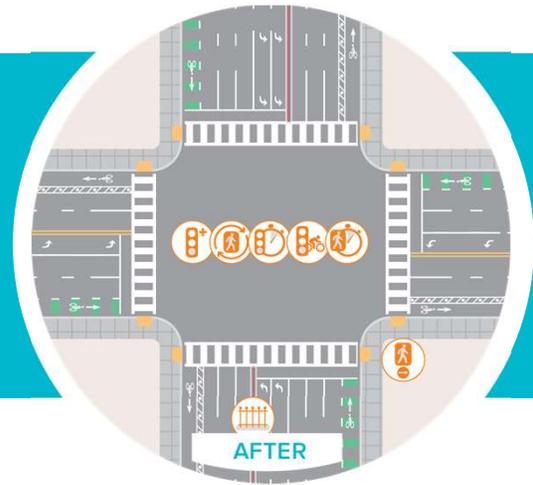
TOTAL BENEFIT

\$10,988,893

B/C RATIO

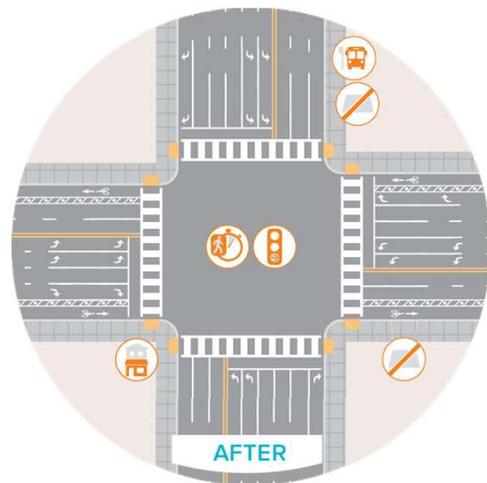
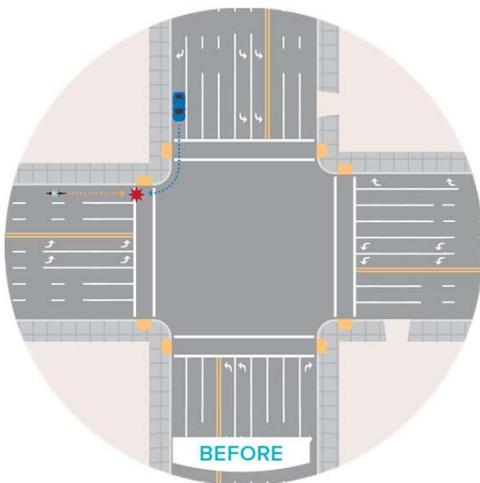
9.74

Note: Report will detail cost & benefit calculations



Typology 3: CONTRA-FLOW BICYCLE RIDING

With Bicycle Crashes

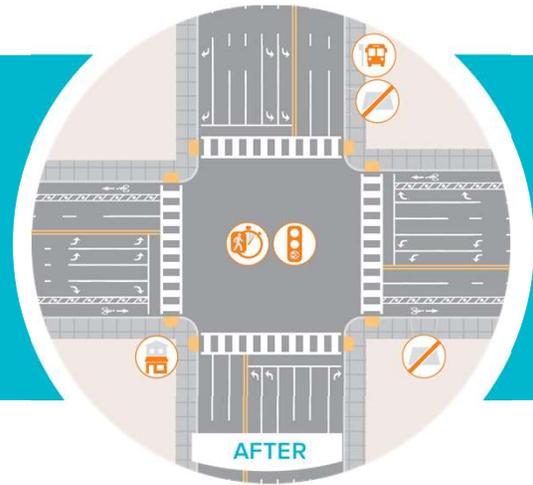


Note: Icons represent toolbox countermeasures

Typology 3: CONTRA-FLOW BICYCLE RIDING

With Bicycle Crashes

TOTAL COST
\$1,741,500
TOTAL BENEFIT
\$7,721,212
B/C RATIO
4.43



Note: Report will detail cost & benefit calculations

Highway Safety Improvement Program (HSIP) How-To Guide



HSIP Workshop & Tips Guide

OCTA Hosted Workshop

- August 1, 2018
- OC Jurisdictions Invited
- Demonstrated HSIP Analyzer
- How-To Guide, Toolbox, and Sample Cut Sheet Distributed

TIPS FOR SECURING HSIP FUNDING

OVERVIEW

Under the federal Fixing America's Surface Transportation (FAST) Act, the Highway Safety Improvement Program (HSIP) is a federal program available to States for the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. Through a competitive grant process, California's HSIP program provides local jurisdictions funding of up to \$3 million for infrastructure projects with nationally recognized safety countermeasures.

Local jurisdictions may be interested in applying for HSIP funding for locations with a high frequency of collisions, under-severe and fatal collisions, or for systemic safety efforts. This grant source is also a good opportunity for funding systemic safety implementation projects, particularly those focused on countermeasures with a California-approved Crash Reduction Factor (CRF) as outlined in the California [Local Road Safety Manual](#). Projects are funded largely based on a benefit-to-cost ratio, which is derived from the crash history (with an emphasis on fatal and severe-crash), project cost estimate, and expected safety benefits. Based on countermeasures (CRMs), low-to-high, quick delivery projects perform well in this process.

SMART HSIP

Fund funding for the Systemic Safety Analysis Report Program (SSARP) is made available by the Highway Safety Improvement Program (HSIP) Account (HSIP) funds. The intent of this program is to assist local agencies in performing a condition analysis, identifying safety issues on their roadway network, and developing a list of potential low-cost countermeasures that can be used to prepare future HSIP and other safety program applications. Systemic safety improvements are encouraged in HSIP applications and there is an opportunity to apply to the HSIP program as part of an SSARP plan. OCTA has prepared a Systemic Safety Plan, which provides recommended projects for 15 common crash types in Orange County.

WHAT'S NEW IN CYCLE 9

California announced the HSIP Cycle 9 Call for Projects on April 10, 2018. The application due date is Friday, August 31, 2018. \$400-\$60 million in funding is available for this cycle.

Updates to the Cycle 9 process, compared with past cycles, include:

- A new required PDF-based HSIP Analyzer application tool for cost estimates, countermeasure evaluations, crash data, and benefit-to-cost ratios. This PDF tool replaces previous spreadsheet tools. Applications will now be submitted electronically only.
- Early submissions are encouraged. Applications will be reviewed on a rolling basis and Caltrans may provide feedback on early applications.
- A minimum 1:5 benefit-to-cost ratio is required for the bulk of funding. Consider including additional locations in applications with high B/C ratios (30%) to relieve systemic benefits.
- There are six funding categories:
 - Benefit-to-Cost Ratio-based Funding (75% of all available funds, available for projects with a minimum benefit-to-cost ratio of 1:5)
 - Set-aside for High Friction Surface Treatments (\$5 million, also requires B/C ratio with a minimum of 1:5)
 - Set-aside for Guardrail Upgrades (\$20 million)
 - Set-aside for Horizontal Curve Signing (\$5 million)
 - Set-aside for Pedestrian Crossing Enhancements (\$5 million)
 - Set-aside for Tribes (\$2 million)



Non-Infrastructure Recommendations



Categories



- Locations



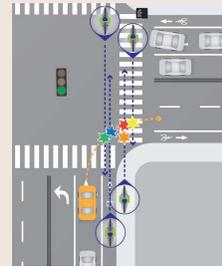
- Parties



- Situations

Topic Areas

- Education
- Enforcement
- Evaluation



Next Steps



Top 15 Crash Typologies

-   1. Commercial Corridor
-   2. Signalized Intersections, Angle Crashes
-   3. Contra-Flow Bicycle Riding
-   4. Crossing at Unsignalized Intersection
-   5. Dual Right Turn/High Right Turn Volume



Top 15 Crash Typologies

-   6. Freeway On-Ramp
-   7. Single-Family Residential Area
-   8. Major Roadways Serving Bicyclists
-   9. Trail Crossing
-   10. Driveway Turns



Top 15 Crash Typologies

-   11.Senior and Children-Serving Land Uses
-   12.Skewed Intersection
-   13.Coastal Uncontrolled Pedestrian Crossing
-   14.Unsafe Speed on Rural Arterial
-   15.Parallel Option to High-Volume Arterial

