

CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC) AGENDA
January 31, 2019 (9:00 A.M. to end)
County Operation Center
Conference Center Hearing Room
5520 Overland Avenue
San Diego, CA 92123

The Meeting is open and public/local agencies are invited to attend. For further information regarding this meeting, please contact Vijay Talada at (916) 653-1816, or email vijay.talada@dot.ca.gov. Electronic copies of this meeting Agenda and minutes of the previous meetings are available at <http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/index.htm>.

Organization Items

- 1. Introduction**
- 2. Membership**
- 3. Approval of Minutes of the August 9th, 2018 Meeting**
- 4. Public Comments**

At this time, members of the public may comment on any item not appearing on the agenda. Matters presented under this item cannot be discussed or acted upon by the Committee at this time. For items appearing on the agenda, the public is invited to make comments at the time the item is considered by the Committee.

1. Public comment on items not appearing on the agenda shall be limited to a maximum of 5 minutes each. Total public comment period prior to agenda items shall not exceed 20 minutes. Chairperson will ask for a show of hands from the audience present who would like to speak on non-agendized items. The 20 minutes can be proportioned accordingly if there are more than four speakers wishing to speak. Or an additional public comment period on items not appearing on the agenda can be heard after all agenda items are heard.
2. Public comment on agenda item shall be limited to 3 minutes.
3. During public comments, a member of public may speak only once per agenda item unless specifically requested by a majority of the CTCDC to come back and comment again.
4. Longer comments should be provided in writing 10 days prior to the meeting.

Local agencies conducting experiments should incorporate public feedback (if any input was received) in the status report and/or the Final Report. The merits of an experiment's success will be based on the identified problem or issue the Local/State Agency has identified when requesting permission to experiment. Local/State policies decision are not for CTCDC debate or CTCDC public comment as the CTCDC evaluates the technical merits of the experiment and how well it addressed the identified problem or issue.

When addressing the Committee, for the record please state your name, address, and business or organization you are representing.

5. Items under Experimentation

12-21 Final Report - Request to Experiment with In-Roadway Warning Lights (IRWL) System that would supplement existing traffic signals along the Metro Gold Line (LA Metro) (David Fleisch) <http://www.dot.ca.gov/trafficops/ctcdc/docs/Final-Report-IIRPM-Los-Angeles-091018.pdf>

16-33 Final Report - Request to experiment with non-standard striping detail at Express lanes (Duper Tong) <http://www.dot.ca.gov/trafficops/ctcdc/docs/Final-Report-RCTC-Striping-Detail-122118.pdf>

Agenda Items

6. Public Hearing

Prior to adopting rules and regulations prescribing uniform standards and specifications for all official traffic control devices placed pursuant to Section 21400 of the California Vehicle Code, the Department of Transportation is required to consult with local agencies and hold public hearings.

Consent Items (minor discussion with vote expected)

<u>Agenda Item</u>	<u>Description</u>	<u>Submitted by:</u>	<u>Lead</u>	<u>Pages</u>
19-01	Legislative Change (SB 842) and the proposed changes to the CA MUTCD	Caltrans	Duper Tong	8-11
19-02	Alternative Pedestrian Hybrid Beacon Sign	Caltrans	Duper Tong	12-15
19-03	Proposal to revise Section 6F.109(CA) Construction Funding Identification Signs	Caltrans	Duper Tong	16-17

Information Items (New items that may be voted on or brought back as an Action Item in a future meeting)

Action Items (Continuing discussion from prior meetings with vote expected)

<u>Agenda Item</u>	<u>Description</u>	<u>Submitted by:</u>	<u>Lead</u>	<u>Page</u>
17-21	Legislative Change by AB 390 and the proposed changes to the CA MUTCD	Caltrans	Duper Tong	19-22

Request for Experimentation

<u>Agenda Item</u>	<u>Description</u>	<u>Submitted by:</u>	<u>Lead</u>	<u>Page</u>
19-04	Request for experimentation with Non-standard roadside sign – ALL/VEHICLES/MUST/HAVE/ FasTrak™ Logo/TRANSPONDER	RCTC	Duper Tong	23-28
19-05	Request for experimentation Request to Experiment with Bidirectional Pavement Marking	Caltrans District 11	Duper Tong	29-40

7. Discussion Items

<u>Agenda Item</u>	<u>Description</u>	<u>Submitted by:</u>	<u>Lead</u>	<u>Page</u>
18-08	CTCDC Yellow time sub-committee update		Hamid Bahadori	40-40

8. Tabled Items

<u>Agenda Item</u>	<u>Description</u>	<u>Submitted by:</u>	<u>Lead</u>

9. Next Meeting
 May 9th, 2019
 TBD

10. Adjourn

5. Items under Experimentation

Some reports are available at: <http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/status.htm>

12-9 Request to Experiment with Yellow LED Border on Pedestrian Signal (Duper Tong)

Status 1/11/2019-Final report is being drafted

Status-6/21/2018-Before data has been collected from D4 and D1. After data is being collected. Cameras will be installed at D12 locations next week.

Status-1/17/2018-Equipment has been installed in D4, and D1 has received the devices

Status-10/3/2017 –Equipment is in the process of being installed to collect before data.

Status-5/18/2017-CTCDC approved the expansion of the experiment

Status: 1/18/17 – Additional locations are being pursued to install this device and collect additional data as per FHWA guidance.

The complete report is posted on the following website:

<http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/reports.htm>

Joel T. Retanan, P.E., Chief

Division of Research, Innovation and System Information, Caltrans

Ph: (916) 654-8174

15-12 Evaluation of Traffic Calming in Treatments in Princeton, CA (Mike Sallaberry)

Status: 1/11/2019- Final report is being drafted.

Status: 6/20/2018 Caltrans is currently re-surfacing the southern portion of the experimental segment of the project. They should have the experimental striping back in place by the end of next week. Once the striping is replaced, we will collect one more round of data as the visual impact of new pavement with new striping may prove to be a better combination. I'd expect a final report to Caltrans, CTCDC, and FHWA by the end of the calendar year.

Scott M. Lanphier, PE, CFM

Director of Public Works+

1215 Market Street

Colusa, CA 95932

slanphier@countyofcolusa.org

16-08 Request for Permission to Experiment with the Diagonal Down Yellow Arrow Lane Use Control Signal Indications on Freeway (Duper Tong)

Status Date 6/25/2018 District 4 has not implemented experimental graphics yet on the LUS on I-80 due to the opening of the Richmond San Rafael Bridge 3rd Lane Project opening to traffic on April 20, 2018. The RSR Bridge also has the same lane use signs that control the part-time lane, and RSR Bridge connects to the I-80 corridor. Caltrans did not want to confuse the drivers with diagonal down yellow arrows on I-80, when the RSR Bridge 3rd Lane LUS displayed Yellow X. Caltrans is reaching out to FHWA to add RSR Bridge to the experiment.

Status Date- 08/04/2017 Before data is being collected. The data will be collected till fall 2017.

Status Date-08/31/2016 FHWA had provided approval to the request for experimentation

David Man

Caltrans District 4-Senior Transportation Engineer – Electrical

16-09 Request for Permission to Experiment with the Messages and Graphics on Dynamic Message Signs on Freeway (Duper Tong)

Status Date- 6/25/2018 District 4 has started displaying some experimental messages during major incidents with no reported issues. We are moving forward with testing the 4-5 line experimental travel time messages along with BART transit travel times this summer – the experimental messages will be ON throughout the day. Caltrans had some technical delays with BART on exchanging the travel time information from their system, but all issues appeared to be resolved. UC Berkeley recently completed the human factors lab testing of the GRIP aka Congestion Maps display, and researchers are proceeding with driver simulation studies with hopes to submit results to FHWA at the end of 2018 with the goal of live field testing in 2019. The UC Berkeley Study is managed by DRISL.

Status Date- 08/04/2017 Before data is being collected. Experimental six line display message concepts on the six information display boards will be displayed in fall 2017

Status Date-12/9/2016 FHWA had provided approval to the request for experimentation

David Man

Caltrans District 4-Senior Transportation Engineer – Electrical

16-23 Request to experiment with Green backed sharrow in Goleta, CA (Bryan Jones)

Status: 6/29/18 The City has had some delays with our pavement maintenance program for this year and next year. It had been identified that the area of Hollister Ave where we had identified for placement of the Green-backed sharrows was in need of an overlay. We wanted to wait until after the pavement rehabilitation before placing the sharrows since they are expensive to put down. I can provide more information and a schedule for placement once the pavement maintenance projects are scheduled. The pre-construction counts and observations have been completed, the sharrows have not been placed yet.

Status: 11/16/2017 Green backed share lane markings were not installed and agency is waiting for the completion of the slurry seal project which is scheduled to be completed in spring-summer 2018.

Status Date-7/17/2017- The City has completed the before conditions observations. Currently waiting to place the Sharrows until after a needed slurry seal is placed in the project area and it is anticipated that the slurry will be placed late this summer.

Status Date-1/10/2017

The experiment is ongoing. Traffic counts and video data were collected for the before condition observations with standard white shared lane markings on Hollister Avenue in the fall of 2016. The installation of the experimental green-backed sharrows will occur in the next couple months following completion of a roadway surface rehabilitation project that is scheduled for spring of this year on Hollister Avenue.

Thank you,

Teresa

Teresa Lopes, PE

Senior Project Manager

City of Goleta

P (805) 961-7563
F (805) 685-2635
tlopes@cityofgoleta.org

- 16-25 Request to experiment with through lane bicycle box, City of South Pasadena (Mike Sallaberry)
Status Date- 6/25/2018-The project is in the final stage 85% complete. The outstanding items are signage and push ped-buttons. The project is anticipated to be complete early July 2018.
Status Date- 1/18/2018 – The project is out for bid. The bid opening will be on January 30, 2018.
Status Date-10/11/2017- Before study has been completed. The engineering plans are being reviewed. The project is planned to be advertised in November and the project should be complete by January.
Status Date-7/17/2017
The "Before" study will be conducted sometime in the late summer or early autumn of this year after school starts. The "After" study will be conducted after construction, preferably at the same time of year as the "Before" study.
Status Date-1/19/2017
City of South Pasadena is in the process of collecting the “Before” Data
Margaret Lin
Principal Management Analyst
City of South Pasadena
MLin@southpasadenaca.gov
- 17-15 Request for Experimentation-Red colored pavement markings for Transit Only Lanes in left turn only lanes (Pratyush Bhatia)
Status Date-1/11/2019- Data will be collected in May, 2019
Status Date –6/20/2018- The RED BUS ONLY pavement markings were installed at the two approved locations Mid-May and the City will start collecting data for the after conditions later this month or early July to measure the effect of them
Status Date –10/4/2017 In the process of obtaining bids.
Status Date –08/28/2017-FHWA approval was received
Massoud Saberian, PE,
Transportation and Public Works - Traffic Engineering
69 Stony Circle, Santa Rosa, CA 95401
Tel. 707-543-3818
- 17-16 Request to Experiment with Internally Illuminated Raised Pavement Markers LA Metro (David Fleisch)
Status Date-1/14/2019 Metro put out Bids and they are expecting to receive in on January 22, 2019. Once a contractor is chosen, Metro will proceed with the installation.

Status Date-6/21/2018: The design is complete and mylar plans are circulating at the moment for approval signature.

Status Date –10/4/2017 In the process of Designing plans.

Naree Kim, P.E.
Senior Engineer
Transportation Systems
1700 Carnegie Avenue, Suite 100
Santa Ana, CA 92705
T 949.270.9566
M 949.374.0418
E nxk@iteris.com

- 18-15 Request for experimentation with modified 4-section traffic control and R10-15b sign (Andrew Maximous)

Izzad “Izzy” Loh, PE
Chen Ryan Associates
3900 Fifth Avenue, Suite 310 | San Diego, CA 92103
O: (619) 795-6086 | D: (619) 345-0674
www.ChenRyanMobility.com

- 18-16 Request to experiment: Non-standard red colored pavement (Duper Tong)
Status Date-1/11/2019- Installation was completed in December 18 and January 19.

Troy Bucko
Troy.Bucko@dot.ca.gov
D11-Caltrans
619-688-3221 (o)
858-518-3821 (c)

- 18-18 Proposal for experimental use of red pavement markings at a railroad at-grade crossing (Duper Tong)

Status Date-1/11/2019- Pending FHWA approval

Stan Chow
Transportation Engineer
California Department of Transportation
Division of Research, Innovation and System Information
(916) 227-6277

6. Public Hearing

Consent Items (minor discussion with vote expected)

Item 19-01 Legislative Change (SB 842) and the proposed changes to the CA MUTCD

Recommendation: Revise CA MUTCD to include Veterans' Home of California policy.

Requesting Agencies/Sponsor: Caltrans/Duper Tong, CTCDC Member

Proposal: California Senate Bill 842 (SB 842) was approved by the Governor on September 27, 2014 and has added section 101.13 to the Streets and Highways Code. This bill requires Caltrans to erect, at appropriate locations on highways in the state highway system, generic directional signs to each Veteran's Home of California (currently there are 8 statewide locations, based on the California Department of Veterans Affairs website at <https://www.calvet.ca.gov/calvet-programs/veteran-homes>)

Senate Bill No. 842

CHAPTER 654

An act to add Section 101.13 to the Streets and Highways Code, relating to highways.

[Approved by Governor September 27, 2014. Filed with Secretary of State September 27, 2014.]

LEGISLATIVE COUNSEL'S DIGEST

SB 842, Knight. Highway signs: Veterans' Home of California. Existing law provides that the Department of Transportation is in full possession and control of the state highway system. Existing law provides for placement of signs on state highways, as specified.

This bill would require the department to erect, at appropriate locations on highways in the state highway system, generic directional signs to each Veterans' Home of California, upon receiving funds from nonstate sources sufficient to cover the cost.

The people of the State of California do enact as follows:

SECTION 1. Section 101.13 is added to the Streets and Highways Code, to read:

101.13. The department shall erect, at appropriate locations on highways in the state highway system, generic directional signs to each Veterans' Home of California authorized pursuant to Chapter 1 (commencing with Section 1010) or Chapter 2 (commencing with Section 1100) of Division 5 of the Military and Veterans Code, upon receiving funds from nonstate sources sufficient to cover the cost.

Placement of the signs shall be consistent with criteria for signing to federal or state hospitals as set forth in the California Manual on Uniform Traffic Control Devices, adopted pursuant to Section 21400 of the Vehicle Code.

Proposed Policy Changes

Note: **Red** text is proposed text.

~~Struck-out blue~~ text is to be deleted from the CA MUTCD.

Section 2D.37 Destination Signs (D1 Series):

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²⁸ The Veterans National Cemetery (G86-14(CA)) or the Veterans Home of California (G86-16(CA)) Signs may be placed, one in each direction of travel from and on the nearest State highway, based upon a request from the Federal Department of Veterans Affairs.

Table 2D-1(CA). California Conventional Road Guide Sign Sizes (Sheet 2 of 2)

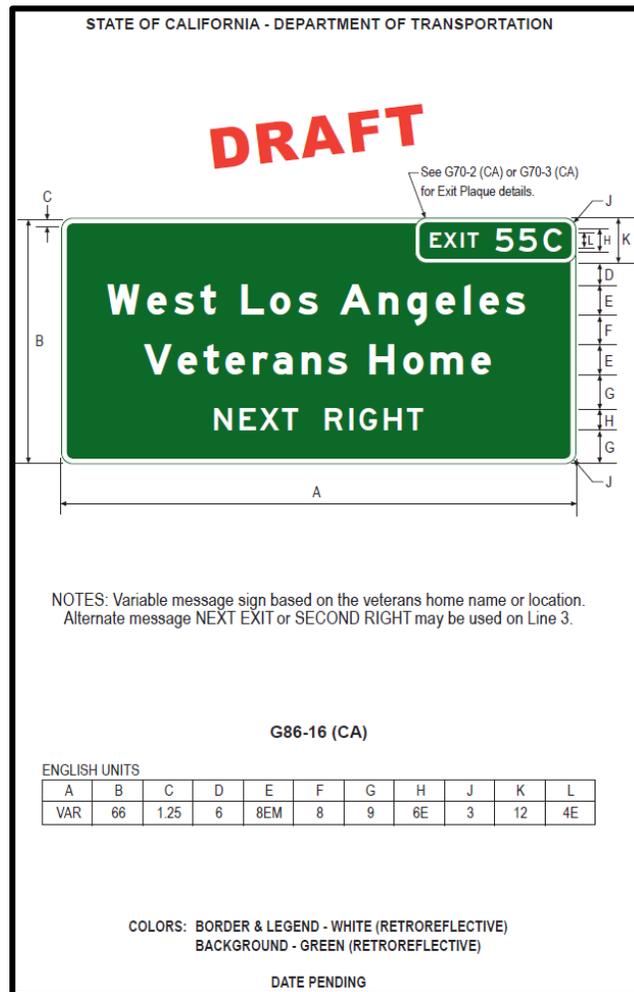
Sign or Plaque	Sign Designation	Section	Conventional Road	Minimum	Oversized
Exit Numbered Supplemental Destination	G86-13(CA)	2D.37	VAR x 78	VAR x 78	VAR x 90
Veterans National Cemetery Sign	G86-14(CA)	2D.37	VAR x 7266	---	---
Veterans Home of California	G86-16(CA)	2D.37	VAR x 66	---	---
PARK - RIDE	G95A(CA)	2D.48	96 x 42	96 x 42	108 x 48
PARK - RIDE NEXT RIGHT	G95B(CA)	2D.48	96 x 60	96 x 60	108 x 72
Park - Ride Courtesy Plaque	G95B-1(CA)	2D.48	96 x 18	96 x 18	108 x 24
BUS SERVICE Plaque	G95D(CA)	2D.48	96 x 24	96 x 24	108 x 30
Park - Ride Plaque	G95E(CA)	2D.48	96 x 18	96 x 18	120 x 24
Intersection Number	G98(CA)	2D.102(CA)	18 x 12	---	---
NO PICKUPS	SG8(CA)	2D.49	84 x 18	84 x 18	120 x 24
Caltrans Facility Entrance	SG26(CA)	2D.103(CA)	72 x 36	---	---
STATE PROPERTY	S1-1(CA)	2D.103(CA)	21 x 15	---	---
Inventory Marker (Survey)	S2(CA)	2D.101(CA)	3.5 x 12	---	---
NO LOITERING, CAMPING, VENDING OR PARKING OF VEHICLES 30 FEET OR LONGER	S22(CA)	2D.48	24x24	24x24	---
VEHICLE INSPECTION ONLY, NO LOITERING OR CAMPING	S22-1(CA)	2D.49	48 x 15	---	---
Caltrans CONSTRUCTION FIELD OFFICE	S27(CA)	2D.103(CA)	36 x 24	---	---

Table 2D-102 (CA). Criteria for Supplemental Destination Signs

Type of Destination	Specific Criteria	Major Metropolitan Areas	Urbanized Areas	Rural Areas
Post Secondary School, Public or Private	Minimum Enrollment (Single Campus Locations, See Note 5). Maximum Miles from a Freeway (See Note 6).	1,000 2	1,000 4	1,000 5
Museum, Zoo, Stadium or Sports Arena	Public Owned and Non-Profit. Minimum Annual Attendance. Maximum Miles from Highway (See Note 2).	1,000,000 2	500,000 2	200,000 3
Convention Center	Public Owned and Non-Pofit. Minimum Annual Attendance. Maximum Miles from Highway (See Note 2).	500,000 3	250,000	-
Military Base	Number of Employees and Permanent Garrison. Maximum Miles from Highway.	5,000 2	5,000 4	5,000 7
National Guard Armory	Only Emergency Center in the Area. Easy Access to Primary Evacuation Route. (See Note 2).	-	-	-
Fairgrounds	Publicly Owned and Operated. Temporary Sign Only, Unless There are Year Round Activities. Minimum Annual Attendance. Maximum Miles from Highway (See Note 2).	500,000 2	200,000 4	200,000 5
Federal or State Hospitals, Prisons, and National Cemeteries, and Veteran Homes	Maximum Miles from Highway (See Note 2).	1	3	5
Government Centers	Number of Employees. Maximum Miles from Highway (See Note 2).	5,000 2	2,000 3	1,000 5
California Welcome Centers	Easy Access from Nearest State Highway. (See Notes 2 and 7)	-	-	-
Airports	Maximum Miles from Highway (See Note 2).	1	3	5
Rail and Light Rail Stations	Easy Access from Nearest State Highway. (See Note 2).	-	-	-

- NOTES: 1. Meeting the above criteria does not guarantee placement of a sign. Limitations on the spacing between sign and the number of messages permitted, specified in Sections 2A.16, 2D.07 and 2D.40, shall be observed and eligible destinations must compete for signing on the basis of traffic service.
2. Follow-up signing, if necessary, shall be installed by local agencies before signs are placed on the State Highway.
3. If a stadium is located at a school campus for which signs are already provided, separate stadium sign will not be placed.
4. Definitions of Area Classifications:
 A. MAJOR METROPOLITAN AREA - An urbanized area, population density of at least 1,000 inhabitants per 2.6 km² (1 mi²), not necessarily related to county boundaries, with a total population of at least 1,000,000 and an included central city with a population of at least 250,000.
 B. URBANIZED AREA - An urbanized area with a total population of at least 50,000 and an included central city with no minimum population.
 C. RURAL AREA - All areas outside of an urbanized area.
5. Public or private postsecondary education institution shall have an enrollment of either 1,000 or more full-time students or an equivalent in part-time students. Refer to CVC Section 21375.
6. No signs to school will be erected until funds from private sources covering the cost of the signs and their installation. If a school, which previously had signs, relocates to contribute to the improvement of the school (as determined by the California Department of Transportation), signs will be erected at the new location at no cost to the school.
7. The California Department of Transportation will charge the Welcome Center directly for the cost of the signs and their installation on the State highway. Cost for sign installation on local roads is the responsibility of the Welcome Center and the local agency.

Proposed New Sign: New G86-16(CA) sign for Veteran Homes of California [similar to the G86-14(CA) for Veteran Memorial signs at <http://www.dot.ca.gov/trafficops/tcd/docs/G86-14.pdf>] for roadside (ground-mounted) sign installation. Varying sign width based on the home's name or location to be used (district to work with requestor on the name).



Item 19-02 Alternative Pedestrian Hybrid Beacon Sign

Recommendation: Incorporate the R10-23a sign in the CA MUTCD

Requesting Agencies/Sponsor: Duper Tong, member CTCDC (Caltrans)

Background: FHWA had issued an official ruling number "4(09)-61 (I) – Use of an Alternative Pedestrian Hybrid Beacon Sign." allowing the use of R10-23a sign by public agencies to help road users understand the portions of the pedestrian hybrid beacon cycle.

It is proposed to include the sign and the below policy in the CA MUTCD.

Proposal:

Proposed Policy Changes

Note: **Red** text is proposed text.

Section 2B.53 Traffic Signal Signs (R10-5 through R10-30)

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Standard:

⁰⁶ The **CROSSWALK STOP ON RED** (symbolic circular red) (R10-23) sign **or CROSSWALK, STOP ON RED, PROCEED ON FLASHING RED WHEN CLEAR (R10-23a) word message sign** (see Figure 2B-27) shall only be used in conjunction with pedestrian hybrid beacons (see Section 4F.02).

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Section 4F.02 Design of Pedestrian Hybrid Beacons

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Standard:

08 A CROSSWALK STOP ON RED (symbolic circular red) (R10-23) sign (see Section 2B.53) shall be mounted adjacent to a pedestrian hybrid beacon face on each major street approach. If an overhead pedestrian hybrid beacon face is provided, the sign shall be mounted adjacent to the overhead signal face.

Option:

08a A CROSSWALK, STOP ON RED, PROCEED ON FLASHING RED WHEN CLEAR (R10-23a) word message sign may be used instead of the required R10-23 sign.

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U.S. Department
of Transportation
**Federal Highway
Administration**

1200 New Jersey Ave., SE
Washington, D.C. 20590

In Reply Refer To:
HOTO-1

Mark Luszczyk, P.E., PTOE
Chief Traffic Engineer
Delaware DOT
P.O. Box 778
800 Bay Road
Dover, DE 19903

Dear Mr. Luszczyk:

Thank you for your October 26 letter requesting an official interpretation as to whether it is permissible to use an alternative sign instead of the CROSSWALK, STOP ON RED (symbolic circular red) (R10-23) sign that is required in Paragraph 8 of Section 4F.02 of the 2009 MUTCD to be used in conjunction with a pedestrian hybrid beacon.

You were prompted to request this official interpretation because your agency and other agencies across the country have noticed that some drivers do not seem to understand that the flashing red signal indications allow them after coming to a complete stop to proceed across the crosswalk if it is safe to do so. Drivers have been observed to remain stopped during the entire period that the red signal indications are flashing even when the crosswalk is clear.

In response to the situation described in the previous paragraph, the FHWA has developed an alternative word message sign that better describes the road user's responsibilities during the various portions of the pedestrian hybrid beacon cycle. The alternative sign is designated as an R10-23a sign and is illustrated on the attached page.

It is the FHWA's official interpretation that a CROSSWALK, STOP ON RED, PROCEED ON FLASHING RED WHEN CLEAR (R10-23a) word message sign may be used instead of the required R10-23 sign in conjunction with a pedestrian hybrid beacon.

For recordkeeping purposes, we have assigned the following official ruling number and title: "4(09)-61 (I) – Use of an Alternative Pedestrian Hybrid Beacon Sign." Please refer to this number and title in any future correspondence regarding this topic.

Thank you for your interest in improving the clarity of the provisions contained in the MUTCD.

Sincerely yours,

Mark R. Kehrli
Director, Office of Transportation
Operations

Item 19-03 Proposal to revise Section 6F.109(CA) Construction Funding Identification Signs

Recommendation: Adopt the proposed policy in the CA MUTCD

Requesting Agencies/Sponsor: Caltrans/Duper Tong

Proposal: It is proposed to incorporate the below policy text regarding SB1 funding sign in Section 6F.109 (CA) of the CA MUTCD.

Proposed Policy Changes

Note: **Red** text is proposed text.

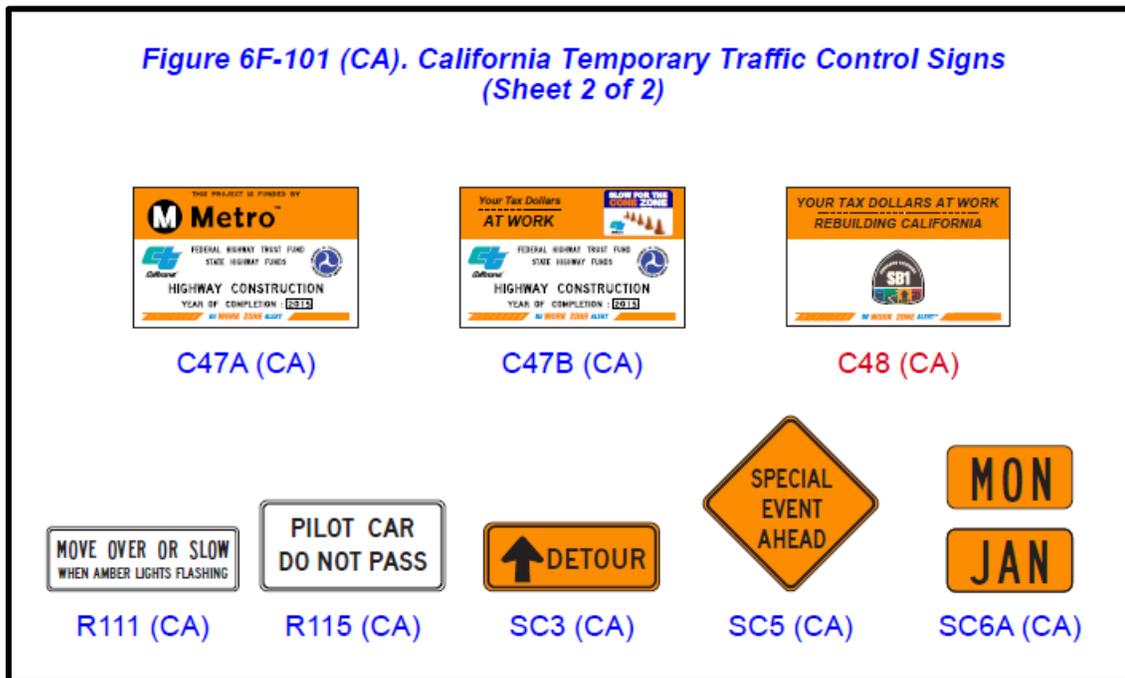
~~Struck-out blue~~ text is to be deleted from the CA MUTCD.

Section 6F.109(CA) Construction Funding Identification (~~C47(CA) Series~~) Signs

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Option:

⁰⁴ The C48 (CA) sign may be used on projects funded by Senate Bill 1. Formats of this sign are flexible to include federal, state and/or local agency funding sources. See Figure 6F-101(CA).



Proposed Sign:



Information Items (New items that may be voted on or brought back as an Action Item in a future meeting)

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Action Items (Continuing discussion from prior meetings with vote expected)

Item 17-21 Legislative Change by AB 390 and the proposed changes to the CA MUTCD

Recommendation: Adopt the proposed changes to CA MUTCD.

Requesting Agencies/Sponsor: Caltrans/Duper Tong, CTCDC Member

Proposal: California Assembly Bill 390 (AB 390) approved by the Governor on October 2, 2017 has amended section 21456 of California Vehicle Code (CVC). This bill allows pedestrians facing a flashing “DON’T WALK” or “WAIT” or approved “Upraised Hand” symbol with a “countdown” signal indicating the time remaining to cross the roadway to enter the crosswalk. The pedestrian is then required to complete the crossing prior to the display of the steady “DON’T WALK” or “WAIT” or approved “Upraised Hand” symbol when the “countdown” ends. The law got effective in January 2018.

To be consistent with the CVC, changes to the CA MUTCD is being proposed.

This proposal was initially brought to CTCDC in November 2017 meeting to solicit feedback and recommendation. Since then, further edits are now being proposed based on comments/feedback received at the November 2017 meeting.

SECTION 1. Section 21456 of the Vehicle Code is amended to read:

21456. If a pedestrian control signal showing the words “WALK” or “WAIT” or “DON’T WALK” or other approved symbol is in place, the signal shall indicate as follows:

(a) A “WALK” or approved “Walking Person” symbol means a pedestrian facing the signal may proceed across the roadway in the direction of the signal, but shall yield the right-of-way to vehicles lawfully within the intersection at the time that signal is first shown.

(b) A flashing “DON’T WALK” or “WAIT” or approved “Upraised Hand” symbol with a “countdown” signal indicating the time remaining for a pedestrian to cross the roadway means a pedestrian facing the signal may start to cross the roadway in the direction of the signal but must complete the crossing prior to the display of the steady “DON’T WALK” or “WAIT” or approved “Upraised Hand” symbol when the “countdown” ends.

(c) A steady “DON’T WALK” or “WAIT” or approved “Upraised Hand” symbol or a flashing “DON’T WALK” or “WAIT” or approved “Upraised Hand” without a “countdown” signal indicating the time remaining for a pedestrian to cross the roadway means a pedestrian facing the signal shall not start to cross the roadway in the direction of the signal, but any pedestrian who started the crossing during the display of the “WALK” or approved “Walking Person” symbol and who has partially completed crossing shall proceed to a sidewalk or safety zone or otherwise leave the roadway while the steady “WAIT” or “DON’T WALK” or approved “Upraised Hand” symbol is showing.

SEC. 2. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

Proposed Policy Changes

Note: **Red** text is proposed text.

~~Struck out black~~ text indicates federal text not applicable in California.

~~Struck out blue~~ text is to be deleted from the CA MUTCD.

Section 2B.52 Traffic Signal Pedestrian and Bicycle Actuation Signs (R10-1 through R10-4, and R10-

24 through R10-26)

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Support:

02 Traffic Signal signs applicable to pedestrians include:

- A. ~~CROSS ONLY ON GREEN (symbolic circular green) (R10-1);~~
- B. ~~CROSS ONLY ON (symbolic walk indication) SIGNAL (R10-2);~~
- C. ~~Push Button for Walk Signal (R10-3 series); and~~
- D. ~~Push Button for Green Signal (R10-4 series).~~

Option:

03 The following signs may be used as an alternate for the R10-3 ~~and R10-4~~ signs:

- A. ~~Push Button to Cross Street Wait for Walk Signal (R10-3a); or~~
- B. ~~Push Button to Cross Street Wait for Green Signal (R10-4a).~~

04 ~~The name of the street to be crossed may be substituted for the word STREET in the legends on the R10-3a and R10-4a signs.~~

Guidance:

05 *The finger in the pushbutton symbol on the R10-3, **and** R10-3a, R10-4, and R10-4a signs should point in the same direction as the arrow on the sign.*

Option:

06 ~~Where symbol type pedestrian signal indications are used, an educational sign (R10-3b) may be used instead of the R10-3 sign to improve pedestrian understanding of pedestrian indications at signalized intersections. Where word type pedestrian signal indications are being retained for the remainder of their useful service life, the legends WALK/ DONT WALK may be substituted for the symbols on the educational sign R10-3b, thus creating educational sign R10-3c. The R10-3d educational sign may be used to inform pedestrians that the pedestrian clearance time is sufficient only for the pedestrian to cross to the median at locations where pedestrians cross in two stages using a median refuge island. The R10-3e educational sign may be used where countdown pedestrian signals have been provided. In order to assist the pedestrian in understanding which pushbutton to push, the R10-3f to R10-3i educational signs that provide the name of the street to be crossed may be used instead of the R10-3b to R10-3e educational signs.~~

Support

06a Pedestrian pushbuttons are used to actuate pedestrian signal timing, to activate accessible pedestrian signals or both. See Section 4E.09 regarding the application of accessible pedestrian signals and detectors.

Standard

06b ~~The bottom panels of signs R10-3b through R10-3i shall be eliminated where the pedestrian signal timing is non-actuated and the pedestrian push button is used solely to activate accessible pedestrian signals.~~

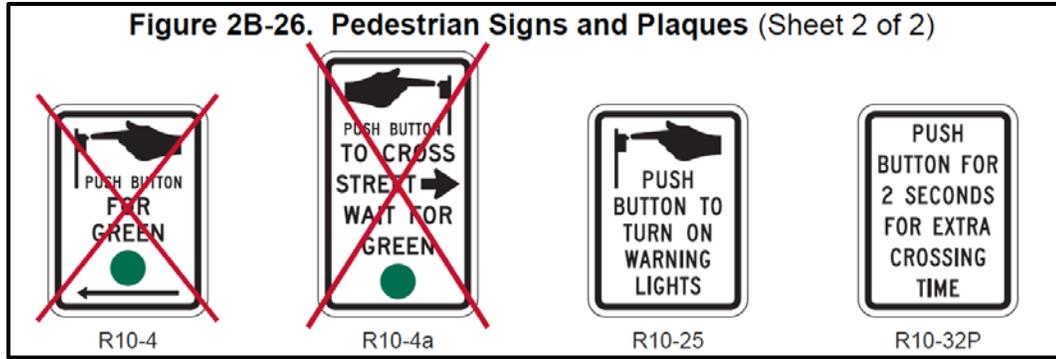
Option:

07 The R10-24 or R10-26 sign (see Section 9B.11) may be used where a pushbutton detector has been installed exclusively to actuate a green phase for bicyclists.

08 The R10-25 sign (see Figure 2B-26) may be used where a pushbutton detector has been installed for pedestrians to activate In-Roadway Warning Lights (see Chapter 4N) or flashing beacons that have been added to the pedestrian warning signs.

Figure 2B-26. Pedestrian Signs and Plaques (Sheet 1 of 2)





Request for Experimentation**Item 19-04 Request for experimentation with Non-standard roadside sign – ALL/VEHICLES/MUST/HAVE/ FasTrak™ Logo/TRANSPONDER**

Recommendation: Request CTCDC to grant approval to the request for experimentation

Agency Making Request/Sponsor: RCTC/ Duper Tong, CTCDC voting member

The Riverside County Transportation Commission (RCTC) requests approval to conduct an experiment using a modified Express Lane roadside sign as a non-standard/new traffic control device to determine its effectiveness in improving enforcement of users carrying transponders in their vehicles in the Express Lane system.

BACKGROUND

The 91 Express Lanes originated as a 10-mile long priced managed lane facility located in the median of State Route 91 in Orange County beginning at the junction of State Routes 91 and 55 and terminating at the Orange/Riverside county line. This facility has been in operation since 1995. RCTC then opened an eight mile extension to the Express Lanes to the junction of State Route 91 and Interstate 15 in the spring of 2017. RCTC is currently under design and construction of approximately 14 miles of express lanes in the median of I-15 from Cajalco Road to State Route 60. This I-15 Express Lanes Project will connect to the State Route 91 facility and is expected to open in August of 2020.

The 91 Express Lanes requires all customers to have a FasTrak transponder. In 2015, an adjacent toll road operator began allowing use of their road without a FasTrak transponder. After this change, the 91 Express Lanes began seeing a rise in customers using the facility without transponders which resulted in higher operating costs, customer confusion and legal issues. Public outreach surveys, focus groups, call centers, CHP officers and courts which process citations have indicated that customers are generally confused over the requirement to have a transponder. Customers and law enforcement working on the Riverside portion of the 91 Express Lanes have indicated that customers believe they are only required to have a FasTrak™ account in order to use the 91 Express Lanes. This unclarity about FasTrak™ is consistent with reports from the 91 Express Lanes call center and a survey TCA conducted.

Orange County Transportation Authority (OCTA) and RCTC have used electronic message signs in the 91 Express Lanes that state that “Fastrak Transponders Required” alternating with other messages. RCTC requests permission to conduct an experiment to install supplemental roadside signage prior to all ingress points of the 91 Express Lanes in Riverside County and Orange County to reiterate the message to customers that a transponder is required while travelling in the express lanes. The static roadside signs will complement and reinforce the existing electronic messages. OCTA staff have reviewed this request to experiment and are supportive of the additional roadside signs and performing this experiment.

PROBLEM STATEMENT

The current signage for Express Lanes states that “Vehicles must have FasTrak.” Until toll agencies began allowing customers to travel without a transponder, FasTrak was intended to represent a transponder associated with a FasTrak account. Today there is confusion amongst toll road and express lanes users as to whether a transponder or FasTrak account is required to use a toll facility. This confusion leads to the issuance of toll evasion notices and citations to customers. The use of the Express Lanes without a transponder also increases operating costs, results in a loss of toll revenue and results in dismissed traffic citations.

Per Section 1A.08 of the CA MUTCD:

03 All regulatory traffic control devices shall be supported by laws, ordinances, or regulations.

CVC Section 23302 states that for toll facilities where electronic toll collection is the only method of paying tolls it is a violation to enter the facility without a transponder or other electronic toll payment device associated with a valid Automatic Vehicle Identification account and if a transponder or other electronic device is used to pay tolls it must be in or on the vehicle.

PROPOSED SOLUTION

RCTC is proposing to add supplemental median mounted roadside signs with black text on white background to indicate an enforceable law (see Exhibit A – Sign Mock-up). The sign would include the word transponder and be placed within the access area for the 91 Express Lanes in Riverside County and Orange County (see Exhibit B – Location Schematics). With four entrance-only access point and two intermediate access point on the SR-91, it is anticipated that 6 signs will be installed and monitored as part of this experiment. The sign would read:



The experimental sign further enhances customer understanding that a transponder is required prior to entering the Express Lanes.

OBJECTIVE

The objective of the test will be to determine the effectiveness of the experimental sign on driver behavior by reducing citations for motorists using the Express Lanes.

WORK PLAN

The roadside signs will be designed and installed as part of the I-15 Express Lanes currently under construction.

Effectiveness and acceptance will be measured in accordance with the time period and evaluation procedures shown below.

EXPERIMENT SCHEDULE

- Pre-Installation Evaluation - N/A
- Installation on 91 Express Lanes - Spring 2019
- Experimental Period - June 2019 – August 2019
- Evaluation of Results - December 2019

EVALUATION PROCEDURES

RCTC requests that the CTCDC approve the preliminary evaluation plan outlined below. Other criteria and procedures may evolve during the evaluation period. Any changes in procedures added to the assessment criteria will be discussed in the scheduled reports submitted to the project sponsor and the CTCDC.

- 1) Installation Documentation - to be prepared by RCTC personnel.
- 2) Maintenance Recording- to be performed throughout the life of the experimentation period. Periodic inspections will be performed and logged by RCTC personnel or contractors.
- 3) Comparison of the percentage of transactions processed by plate from the 91 Express Lanes Project for the six months prior to sign installation and six months after installation to determine the effectiveness of the additional signage.
- 4) Survey local California Highway Patrol and local traffic court to assess improvement in enforcement.

Thank you for your consideration of this request. RCTC is looking forward to working with the Committee to improve the 91 Express Lanes and I-15 Express Lanes Project to the extent possible. Please feel free to contact me (951) 393-6894 if you have any further questions or comments.

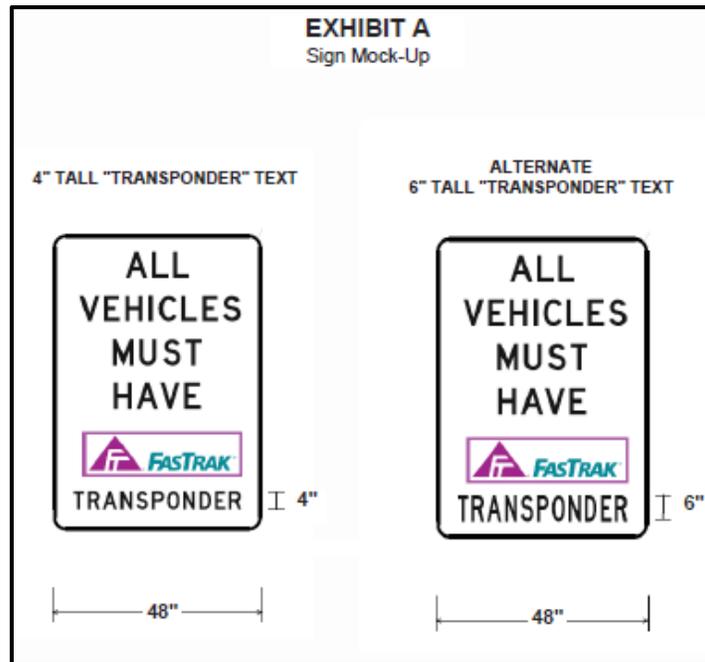
Sincerely,

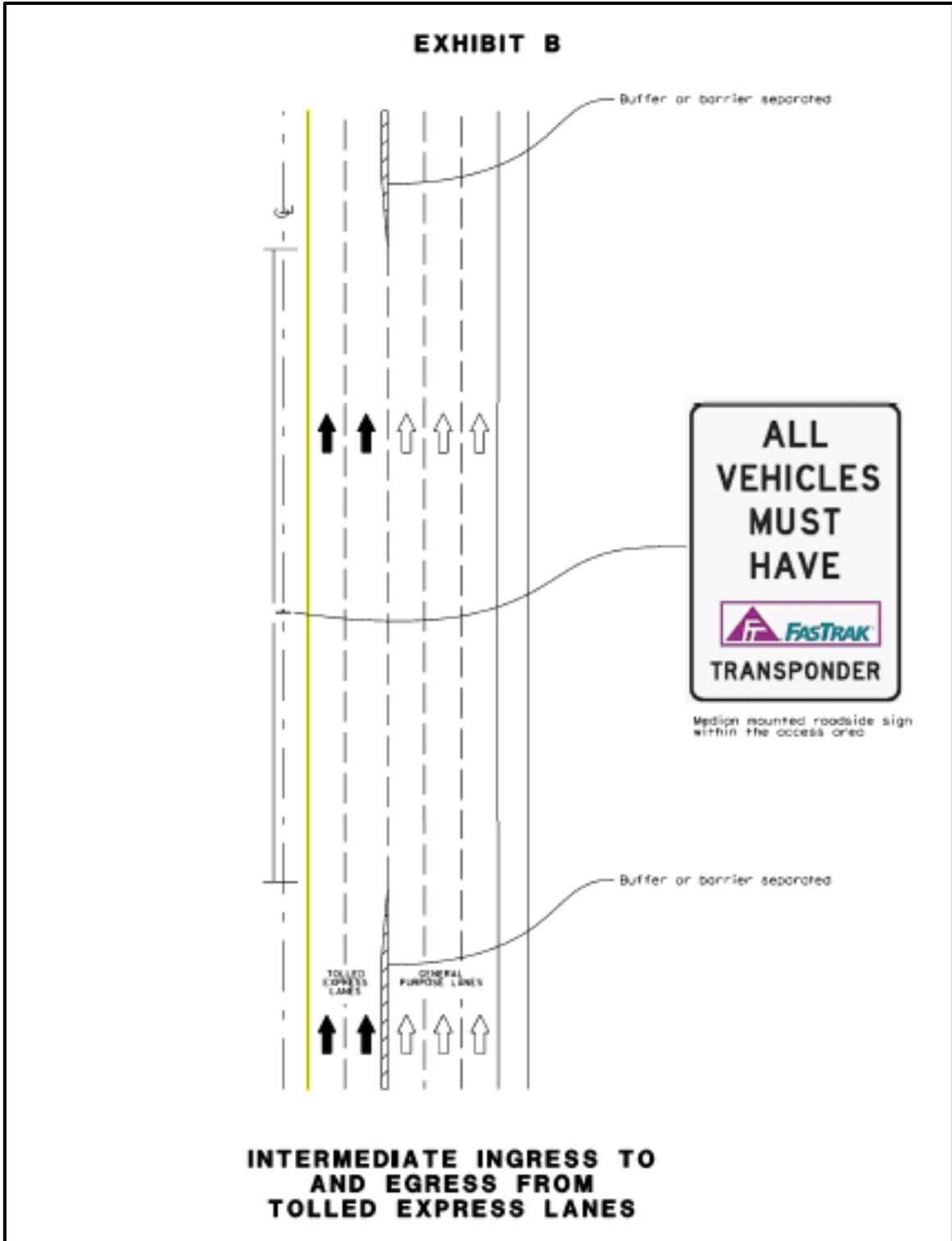
David K. Thomas, PE
Toll Project Manager
Riverside County Transportation Commission

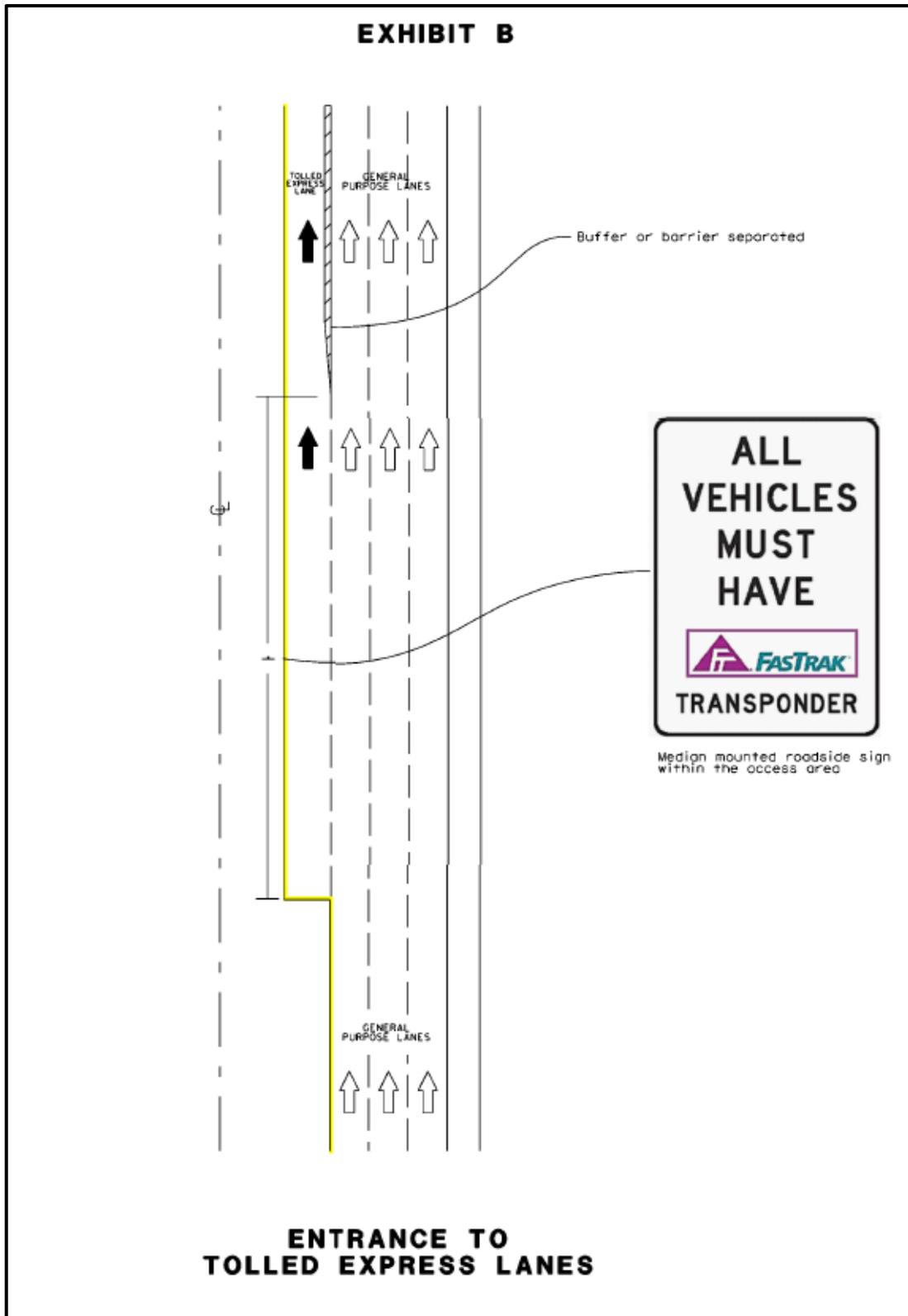
Attachments:

Exhibit A – Sign Mock-up

Exhibit B – Location Schematics







Item 19-05 Request to Experiment with Bidirectional Pavement Marking

Recommendation: Request CTCDC to grant approval to the request for experimentation

Agency Making Request/Sponsor: District 11 Caltrans/ Duper Tong, CTCDC voting member

PROBLEM

Wrong-way driving on state highways is a serious concern in California and the nation as collisions caused by wrong way drivers are more likely to result in fatal or serious injuries than other types of incidents. The California Department of Transportation (Caltrans) has been piloting enhancements for wrong-way motorists after incident rates involving them were unusually high in the first half of 2015, particularly the Sacramento and San Diego regions of Caltrans District 3 and District 11, respectively.

In the first half of 2015, there were 13 fatal wrong-way collisions in San Diego, which was more than two times the average yearly rate for the District and about half of the total statewide rate for a year. During that same period on Sacramento and San Diego area freeways, driving under the influence was a contributing factor in 8 of the fatal wrong-way collisions. A primary cause of wrong-way collisions, especially those which are fatal, is often drivers who are under the influence of drugs or alcohol. Wrong-way drivers not under the under the influence or with no apparent impairment are typically elderly, distracted or confused motorists who do not see the standard wrong-way warning signs and pavement markings at freeway exit ramps.

District 11 had 338 wrong-way drivers reported to the California Highway Patrol (CHP) computer aided dispatch (CAD) log system in 2015. That number rose to 464 reported wrong-way drivers through December 31, 2016, an increase of 126 reported drivers in San Diego County or 37.3% in just one year. Current data and estimates project that the reported wrong way incidents to the CHP CAD System will be around 339 incidents 2017, based on available data through August 2017. See Figure 1 for data summary and projections.

Despite the positive result from the initial pilot project enhancements of red-on-backside reflective pavement markers, it is realized there is still a high number of reported wrong-way incidents in San Diego County and statewide every year. A majority of the more than 300 annual reported wrong way incidents in San Diego do not result in a serious collision. But each wrong-way driver that enters an exit ramp the wrong way and then drives down the freeway the wrong way potentially can cause a serious collision injuring or killing innocent parties.

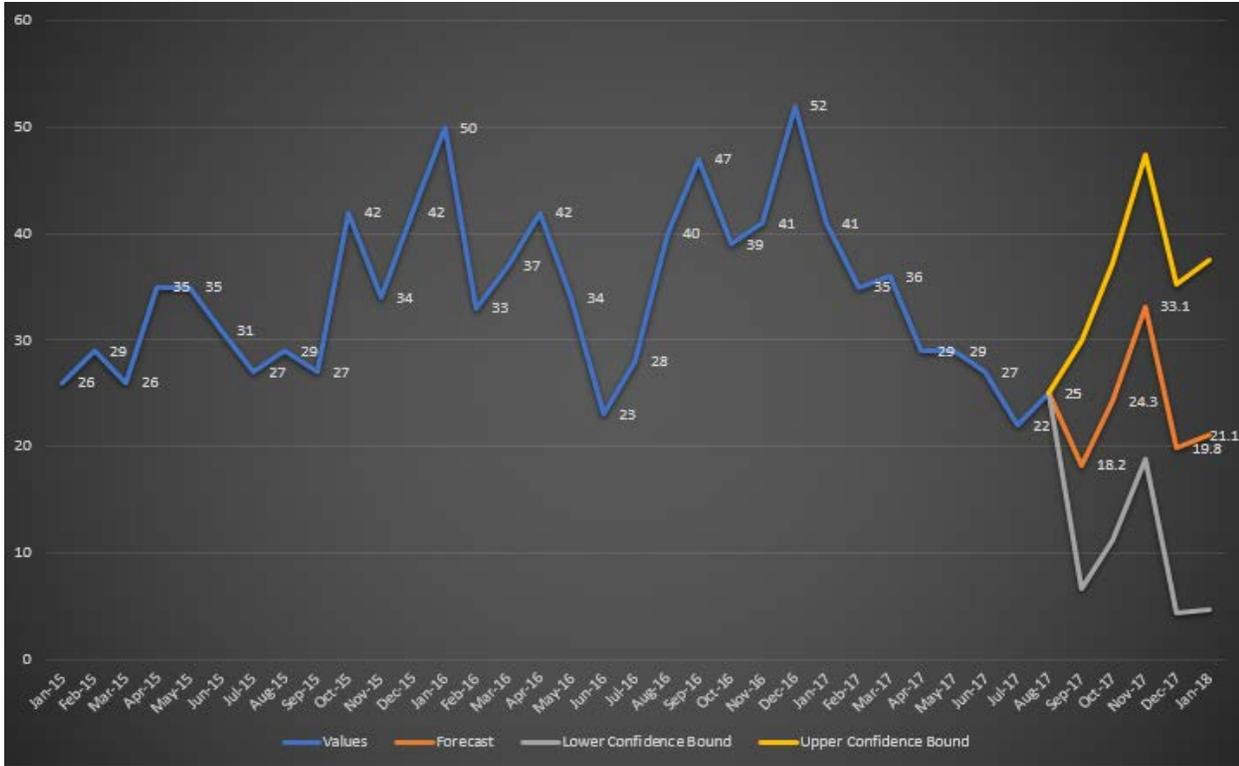


FIGURE 1 – REPORTED WRONG WAY INCIDENTS BY MONTH
(Source CHP Computer Aided Dispatch logs)



Figure 2 – Red on backside markers placed on lane, shoulder and Type V arrows

BACKGROUND

On March 3, 2016, the California Traffic Control Devices Committee (CTCDC) approved the Caltrans District 11 request for permission to experiment with red-on-backside retroreflective pavement markers with ramp edge lines, lane lines and ramp directional arrows Type II, III and V (See Figure 2)

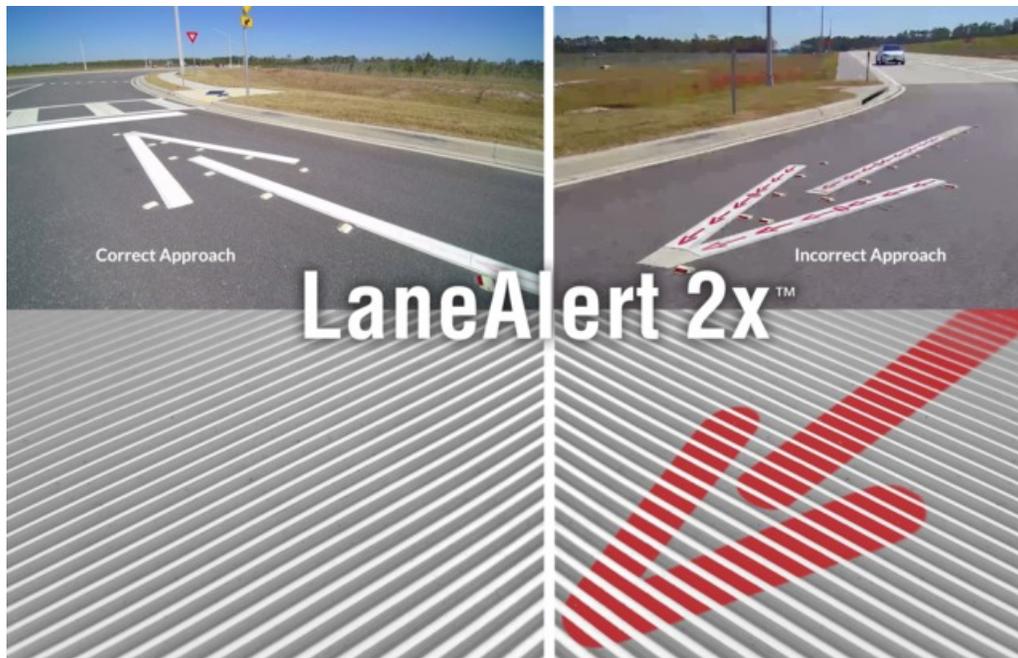
The District 11 Route 15 pilot project was located on State Route 15 (SR-15) starting at post mile (PM) M4.54 into and on Interstate 15 (I-15) ending at PM M30.85. This segment of the corridor was chosen based on a review of the last five Wrong Way Monitoring Report (WWMR) Table A Collision Locations. Two areas of this route were in the WWMR for 2009, 2011 and 2013 (latest one currently available at Pilot Project initiation). For SR-15, at the southern area of this segment, post mile (PM) M5.63 to PM R6.02 was in the 2011 and 2013 WWMRs. For I-15, at the northern area, PM 26.18 to PM M27.01, PM 26.18 to PM M27.17 and PM M25.85 to PM M26.86 were in the WWMR for 2009, 2011 and 2013, respectively.

Based on a review of Regular Ramps (R) and Direct Access Ramps (DAR) (X) between PM M4.54 and PM R30.85, it was concluded that two groupings would be proposed for enhancements. Group 1 ramps were those that were approximately within 5 miles of the wrong way incident segments of the WWMR's and Group 2 were the ramps in between the two WWMR segments (and the ramps in Group 1). Therefore, one to three enhancements were to be provided for every ramp between PM M4.54 and PM R30.85 on Route 15.

The following were the enhancements were complete as of April 15, 2016:
Enhancements "A" was installed on 60 R and X ramps from Groups 1 and 2 (34 and 26, respectively). 17 of the 34 from Group 1 also received Enhancement "B". The enhancement "B" built on enhancement "A" with additional edge line and lane line markings placed closer in spacing over a set distance from the ramp terminus.

These enhancements were successful in reducing reported wrong way incidents on Route 15, and the CTCDC approved use of red-on-backside retroreflective pavement markers a little over a year after the initial study started. These treatments are now part of Caltrans Standard Plans for pavement delineation on ramps and freeways.

A recently developed product called LaneAlert 2x™, that was not available when the original pilot project was initiated, claims the ability to embed wrong way alert messages in pavement striping that are visible only to motorists travelling in the wrong direction. The vendor for this new innovative technology has approached Caltrans to be the first State to test the product.



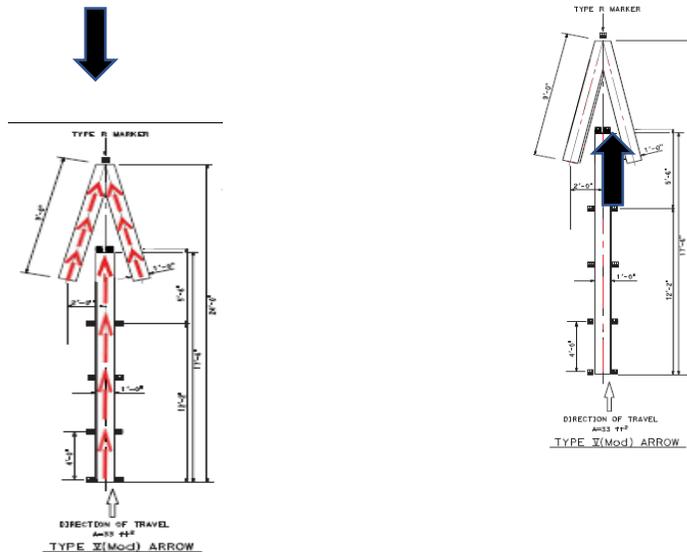
Caltrans would like to evaluate this product to quantify, the potential of this product to reduce the number of instances of wrong way driving on state highways as well as durability and visibility. In addition; the economic and operational feasibility of statewide application would be evaluated. This opportunity would continue Caltrans efforts to further reduce wrong way incidents, using thermoplastic material we already use on our roadways and imprinting a bidirectional message or symbol within the thermoplastic marking that may only be viewed by a wrong way driver.

EVALUATION PROPOSAL/SUMMARY

Caltrans proposes to install LaneAlert 2x™ displaying a warning message or symbol to a driver approaching the reflective pavement marking or striping from the wrong direction. The number of ramps where this treatment would be installed has not been determined; but it should be adequate to analyze post-installed data for its effectiveness

The message or symbol will be very similar to standard wrong-way marking dimensions. Below is a sample of the type of markings that will be used for this product evaluation:

1. Type V Arrow made up of 12in wide panels. (12panels W12in x D36in)
 - a. Wrong way direction will include a white retroreflective background and 2 miniaturized scaled Red Type V Arrows per panel.
 - b. Right way direction will include a white retroreflective with no additional markings.



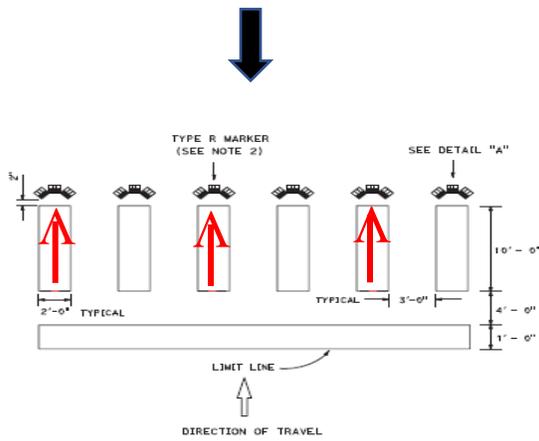
WRONG WAY DRIVER VIEW RIGHT WAY DRIVER VIEW

2. One or more of the following in various combinations may be applied:

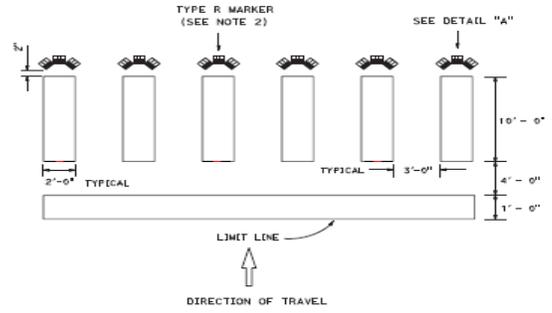
- a. W144in x D12in Limit Line made up of 24in or 36in wide panels with
 - i. Wrong way direction will include a white retroreflective background, the RED words “DO NOT ENTER”, with or without two Red International Do Not Enter symbols. One on each side of the text.
 - ii. Right way direction will include a white retroreflective with no additional markings.

- b. One W24in x D120in Continental Crosswalk Bars (ladder) with Type V arrows, made up of W24in x D24in or D36in panels with
 - i. Wrong way direction will include a white retroreflective background and 1 fitted scaled Red Type V Arrow per panel.
 - ii. Right way direction will include a white retroreflective with no additional markings.

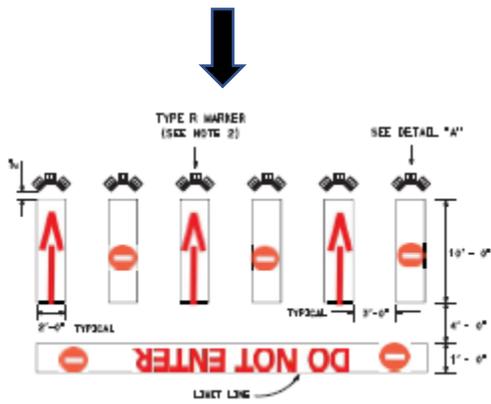
- c. One standard crosswalk marking with a limit line.
 - i. Wrong way direction will include a white retroreflective background and a Red International Do Not Enter symbol imprinted on the limit line
 - ii. Right way direction will include a white retroreflective limit line with no additional markings.



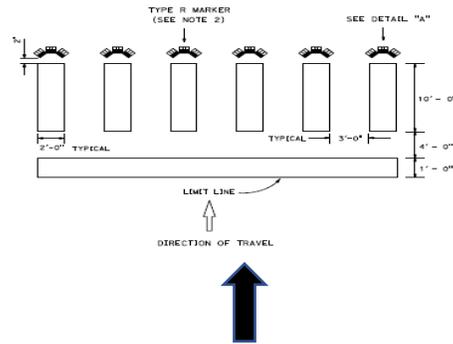
WRONG WAY DRIVER VIEW



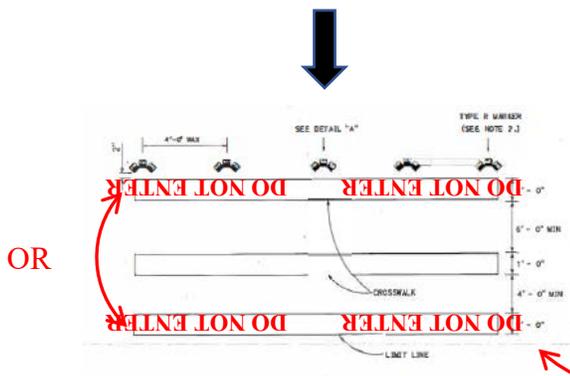
RIGHT WAY DRIVER VIEW



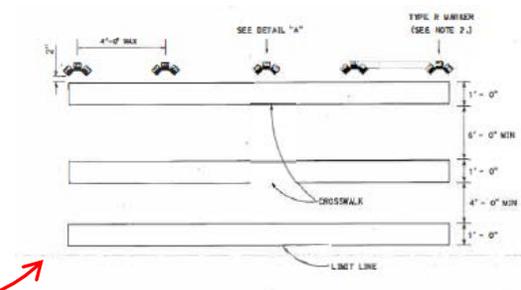
WRONG WAY DRIVER VIEW



RIGHT WAY DRIVER VIEW



OR



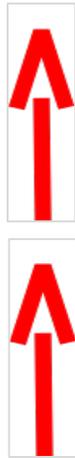
WITH OR WITHOUT LIMIT LINE

WRONG WAY DRIVER VIEW

RIGHT WAY DRIVER VIEW

- 3. One W6in x D360in White Lane Line made up of W6in x D36in panels. (10panels)
 - a. Wrong way direction will include a white retroreflective background and 2 miniaturized scaled Red Type V Arrows per panel.
 - b. Right way direction will include a white retroreflective stripe with no additional markings.

- 4. One W6in x D360in Yellow Lane Line made up of W6in x D36in panels. (10panels)
 - a. Wrong way direction will include a Yellow retroreflective background and 2 miniaturized scaled Red Type V Arrows per panel.
 - b. Right way direction will include a Yellow retroreflective with no additional markings.



W6in x D360in White Lane Line



W6in x D360in Yellow Lane Line

- 5. Additionally, one W36inx D36in single panel wrong way messages.
 - a. Wrong way direction will include a white retroreflective background, and either WHITE on RED “Wrong Way”, or one Red International Do Not Enter symbols.
 - b. Right way direction will include a white NON-retroreflective with no additional markings.



Figure 3, shows a possible marking scenario with the LaneAlert 2x™ product for an exit ramp, such as the DAR shown.

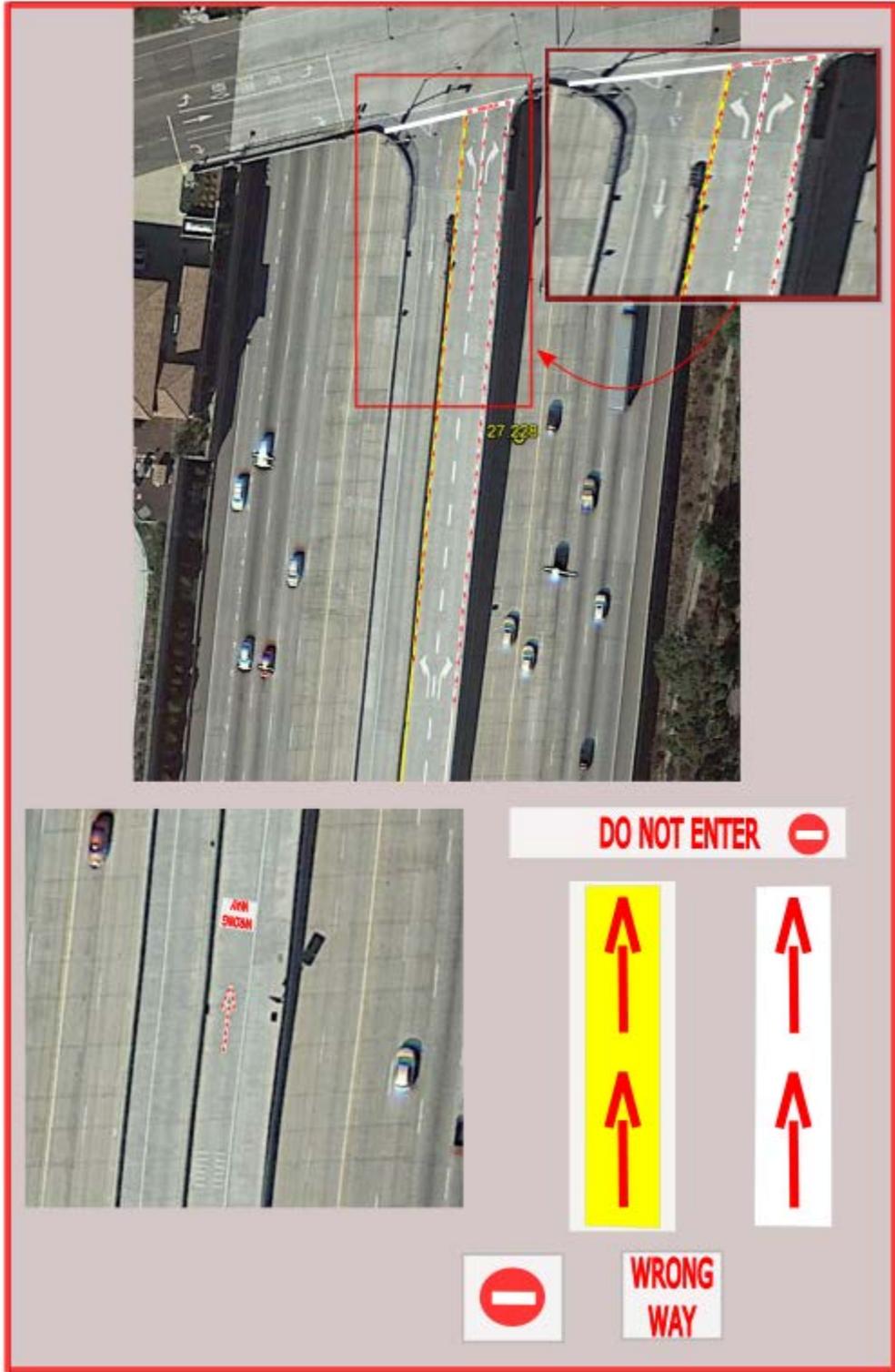


Figure 3 – Possible LaneAlert2X Enhancements to ramps and DAR's

Caltrans District 11 has been in discussions with Caltrans Office of Safety Innovation and Cooperative Research to assist in the evaluation of these treatments for exit ramps and the production of a report at the end of the study period to document the success or failure of the proposed treatments.

The study will likely be a minimum of one year, and the number of ramps that will receive the various new enhancements will be determined by the research team to ensure an appropriate sample size is selected and can be compared to ramps with no additional treatments placed.

After the one-year period, Caltrans District 11 will provide an assessment report to the CTCDC to determine if an adequate assessment has been made of the product, or if more time is needed to evaluate the product.

As part of the initial evaluation of the product, the vendor installed two sets of their products markings at two Caltrans locations. One was at the San Diego District Office, the other was at the Crash Testing Facility in West Sacramento.

A sample of those installations is shown in the Wrong Way LaneAlert2X Pilot photos below.



West Sacramento Crash Testing Facility - Wrong Way Driver View



West Sacramento Crash Testing Facility - Right Way Driver View



West Sacramento Crash Testing Facility

DETAIL 24 WITH IMPRINTED WRONG WAY ARROW

PROPOSED EVALUATION SCHEDULE

- October 2019 – Installation of two sets of sample product at Caltrans facilities in San Diego and West Sacramento. This work is complete
- January/February 2019 – Request the CTCDC approve experimental use of LaneAlert2X.
- February-March 2019 – Caltrans Office of Safety Innovation and Cooperative Research to begin initiating a contract to layout the proposed research of the LaneAlert2X. During the same period, ramp/DAR locations will be selected for placement of the LaneAlert2X treatment.
- April 2019 through March 2020 evaluate the LaneAlert2X markings.
- March 2020 determine if adequate data has been collected to determine the effectiveness of the LaneAlert2X.
- May 2020 – District 11 to report back to the CTCDC on the status of the LaneAlert2X evaluation.

7. **Discussion Items**

Item 18-08 CTCDC Yellow Time Sub committee update

Sponsor: Hamid Bahadori, Automobile Club of Southern California (AAA)

The next CTCDC subcommittee meeting is scheduled to be held on Jan 30th, 2019. An update will be provided to the CTCDC on the discussions of the CTCDC yellow time sub-committee.

8. **Tabled Items**

9. **Next Meeting**

May 9th, 2019

TBD

10. **Adjourn**