AMENDED 2-23-2015

CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC) AGENDA

March 5, 2015 Meeting (9:00 am to 4:00pm)
Caltrans District 7
100 S. Main Steet
Los Angeles, CA 90012
Room 01.040A

The Meeting is open, and public/local agencies are invited to attend. For further information regarding this meeting, please contact Chris Engelmann at 916-653-1816, **or at Chris.Engelmann@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. **Approval of Minutes of the September 25, 2014 Meeting**
3. **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. Any person addressing the Committee will be limited to a maximum of five (5) minutes so that all interested parties have an opportunity to speak. When addressing Committee, please state your name, address, and business or organization you are representing for the record.

4. Items under Experimentation

Agenda Items

5. 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 (CVC), the Department of Transportation is required to consult with local agencies and hold public hearings.

Agenda Item	Description	Submitted by:	Lead	Page #s
14-05	Bicycle Signal Faces - CA MUTCD edits	Caltrans Non-motorized	Ciccarelli	9 -27
15-01	Proposal to modify CTCDC meeting format.	Caltrans	Tong	28 - 30
15-02	Request for opinion on whether new legislation is necessary in order to experiment with HOV/Express lane striping.	Caltrans	Tong	31 - 33
15-03	CA MUTCD edits in Sections 2B.54, 2C.37, 4D.27, 4E.08, 4I.03, 4N.02	Caltrans	Tong	34 - 39
15-04	Coachella Valley NEV Plan and associated TCDs	Coachella Valley Assoc. of Governments	Greenwood	40 - 43

Public Hearing continued

Agenda Item	Description	Submitted by:	Lead	Page #s
15-05	Proposed update for "Construction Funding Identification Sign"	Caltrans	Tong	44 - 45
15-08	Modify CA MUTCD Section 6F.01 to include Manual for Assessing Safety Hardware (MASH) criteria	Caltrans	Tong	46 - 48

6. Request for Experimentation-

Agenda Item	Description	Submitted by:	Lead	Page #s
15-06	Request Experimental status for a dynamic roadside information sign that provides travelers information on time to destination Item is withdrawn	Caltrans	Tong	49
15-07	Request Experimental status a modified flash rate for a pedestrian crossing flashing beacon. Item is withdrawn	Caltrans	Tong	50

7. Information Items -
None

8. Discussion Items -

Agenda Item	Description	Submitted by:	Lead	Page #s
14-02	"PRESERVE AMERICA" sign not added in 2014 CA MUTCD in Section 2D.104(CA) to the CA MUTCD to due risk of not meeting substantial conformance with 2009 MUTCD.	Tuolumne Co	Tong	51 - 54

9. Tabled Items
None

10. Next Meeting

June 4, 2015
Caltrans Headquarters
1120 N Street
Sacramento, CA 95814
Basement Board Room

11. Adjourn

ITEMS UNDER EXPERIMENTATION

09-9 Experiment with Steady Red Stop Line Light (Greenwood)
Status: No new update
See report on the following website.
http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/status.htm

09-21 Experiment with Separated/Protected Bikeway On the Left Side of (Greenwood)

Two One-Way Streets in the City of Long Beach (Rte 9-112E)
Status: No new update. See report on the following website.
http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/status.htm

10-3 Experiment with Second Train Warning Sign "Additional Train May Approach" with a Symbol Sign (Submitted by City of Riverside) (Greenwood)

Status: No new update. See report on the following website:
http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/reports/Final%20Report%20Additional%20Train%20May%20Approach%20Sign.pdf

11-3 Experiment with Buffered Bicycle Lanes on 2nd St.between Bayshore & PCH in Naples (Greenwood)
Status: No update.

11-12 Experiment with Circular Rapid Flashing Beacon and RRFB (Greenwood)
Status: No update.

11-13 Experiment with a Sign "RECKLESS DRIVING PROHIBITED" (Winter)
Status: (04-09-14) The County of Los Angeles Department of Public Works recently completed its experimental phase of the "Reckless Driving Prohibited" sign and is currently in the process of gathering data from the local law enforcement agencies (United States Forest Service, Los Angeles County Sheriff's Department, and the California Highway Patrol). This data is needed in order to prepare the final report, which is tentatively scheduled to be completed by June 5, 2014. Please forward any future correspondences regarding the experimental sign directly to me. Thank you.
Update (11-5-2014) The County has requested an additional year of collecting data in order to determine the impact of increased enforcement, number of citations issued, and reduction in collisions.

Arnel G. Dulay, P.E., T.E.
Head, Traffic Investigations II Section
Traffic and Lighting Division
(626) 300-4748; Dulay, Arnel [ADULAY@dpw.lacounty.gov]

11-19 Experiment with 2nd advance California Welcome Center Destination Sign (Benton)
Status: No update.

12-9 Request to Experiment with Yellow LED Border on Pedestrian Signal (Benton)
Status: (12-4-2014) Experiment has been completed. Pending review by FHWA and Signals Technical Committee (STC) before a final presentation is made to the CTCDC.

EXECUTIVE SUMMARY

Items Under Experimentation

At most signalized intersections, there is a potential for conflict between pedestrians using a crosswalk and turning traffic. Many times, pedestrians are not noticed by motorists because they are out of their direct line of sight. Low light and/or inclement weather conditions can also contribute to poor pedestrian visibility. The purpose of this experiment was to determine the effectiveness of adding an actuated yellow LED border to a standard pedestrian signal head. The intent of the modification was to advise vehicular and pedestrian traffic that the signal has received a call to serve a specific crosswalk. To measure its effectiveness, the study examined before and after-treatment video data to determine the percent change in the following areas:
1. Pedestrian-vehicle conflicts
2. Pedestrian crossing violations
3. Repeated pedestrian button pushes Sixteen prototype pedestrian signal modules were manufactured to conduct the evaluations at five intersections in the City of Redding, CA. Each location was reviewed in the before and after-treatment condition for 5-7 consecutive days, 14-16 hours each day. The Yellow Pedestrian Border (YPB) modules were installed at each location for 24 to 67 days prior to collecting the after-treatment data. The average results for all five locations show a modest reduction in pedestrian-vehicle conflicts of 17.1%. Considering the limited deployment of the device during the evaluation, the conflict results are likely conservative. Pedestrian violations showed a more significant decrease at 28.4%. Although not counted as accurately as the other categories, the largest reduction was for the repeated button pushes. For the 12 crosswalks studied in this experiment, the number of extra button pushes was reduced by an average of 60.2%. The standard deviations for these results were fairly large due to the range of outcomes between the different locations.

This experiment demonstrated that the yellow LED border is a positive enhancement to a standard pedestrian signal and has no apparent downside. The border does not distract motorists, nor does it adversely affect their driving behavior. It provides supplemental information to vehicular traffic while giving pedestrians reassurance that the signal will provide a WALK indication soon. Lastly, the border is most visible, providing the greatest benefit, to pedestrians and motorists during low light or inclement weather conditions when the potential for conflict is greatest. It is recommended that the yellow LED border be approved as an optional feature on standard countdown pedestrian signals. Additionally, guidance should be provided so that the device is applied at locations similar to the ones studied in this experiment. The suggested intersection criteria are as follows:
☐The traffic signal is located in an urbanized area with regular pedestrian activity
☐The pedestrian signals are pushbutton actuated
☐The posted speed limit is 40-mph or less
☐One or more crosswalks operate concurrently with vehicular traffic

The complete report is posted on the following website:
http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/reports.htm

Rob Stinger, P.E.
Chief - Traffic Engineering & Operations
Caltrans District 2
530-225-3229

12-18 Request to experiment with Red Colored Transit-only Lanes (SF) (Patterson)
Status: (1-8-15)

Update on CTCDC item 12-18: A request to experiment with red colored transit-only lanes that was originally approved by the CTCDC and FHWA in 2012. The attached fact sheet provides an overview of the treatment and its purpose.

Our original timeline for implementing the red transit lanes was somewhat delayed, primarily by the need to coordinate pavement and utility repairs before installing the red treatments. Below is a summary of corridors in San Francisco completed in 2013-2014:

Items Under Experimentation

- 3rd Street between Market and Townsend (preformed thermoplastic)
- Church Street between 16th and Duboce (epoxy-modified acrylic spray coating)
- Geary Street between Gough and Market (preformed thermoplastic)
- Haight Street between Laguna and Market (epoxy-modified acrylic spray coating)
- Market Street between 5th and 12th (preformed thermoplastic)
- O'Farrell Street between Gough and Market (preformed thermoplastic)

We completed "before" data collection along several of these corridors in March/April 2014, and plan to wait until the same months this year to collect "after" data in order to minimize potential seasonal variations before submitting an evaluation report.

If you have any questions or concerns, please contact me.

Best,

Dustin White
Transportation Planner
SFMTA | Municipal Transportation Agency
One South Van Ness Avenue, 7th Floor
San Francisco, CA 94103
415.701.4603

Geary Street

Background

- One of numerous SFMTA initiatives focused on improving the speed, reliability and safety of transit service.
- SFMTA operates ~18 miles of transit-only lanes, with up to 40 additional miles currently planned.
- In 2012 the SFMTA received approval to experiment with red transit-only lanes from the Federal Highway Administration and California Traffic Control Devices Committee.
- Before/after evaluation focused on transit travel times and variability, illegal motorist behavior (driving and double parking), and legal motorist behavior (entering lanes to make turns or access curbside parking). Evaluation will also compare performance of two material types: thermoplastic tiles and epoxy- modified acrylic spray coatings.
- Corridors completed 2013-2014:

Corridor	Primary Muni Routes
3rd between Jessie and Townsend	8X, 30, 45
Church between 16th and Duboce	J, 22
Geary/O'Farrell between Gough and Powell	38/38L
Haight between Laguna and Market	6, 71
Market between 5th and 12th	F, 6, 9/9L, 71

Items Under Experimentation

Expected Benefits

- Better compliance through enhanced visibility
- Reduced transit travel times
- Reduced transit travel time variability that leads to bunching and gaps
- Improved safety when buses don't have to change lanes to avoid double parked vehicles

3rd Street

Design and Implementation Considerations

- The SFMTA developed design guidelines for dashing transit-only lanes approaching intersections where right-turns are permitted to discourage right-hook collisions.
- Per the experiment approved by the CTCDC, red treatments can only be used with full-time transit-only lanes and cannot be used with peak-hour only lanes.
- Importance of pavement quality assessment/repairs and underground utility work prior to installation.

Installation Details

Thermoplastic tiles are cut to size and applied to roadway using epoxy and heat, and can be opened to traffic in less than an hour.

Spray coating requires longer lane closures to apply multiple coats with drying time between.

O'Farrell Street (thermoplastic) lane on (spray coating)

Church Street - San Francisco's first red transit-only

Related Projects

Transit Signal Priority – SFMTA is upgrading to a GPS-based system which communicates between traffic signals and transit vehicles to extend green signals along transit corridors or shorten green signals for cross-streets. Installation at 60 traffic signals along Mission Street resulted in 15% transit travel time savings and 10% improvement in travel time variability. SFMTA plans to add TSP at 600 intersections along high-ridership transit corridors by 2016 (San Francisco has 1,200 total signalized intersections).

Double Parking Enforcement – SFMTA sponsored legislation amending the California Vehicle Code to use cameras on buses to issue citations for double parking violations within transit-only lanes. Pilot program authorized through 2015.

12-19 Request to Experiment with Highlighted Shared Lane Markings (LA City) (Bahadori)
Status: No new update.

Items Under Experimentation

12-21 Request to Experiment with In-Roadway Warning Lights (IRWL) System that would supplement existing traffic signals along the Metro Gold Line (LA Metro) (Winter)
Status: No new update.

12-25 Request for permission to experiment with various Bicycle Treatments (Winter)
(Santa Monica)
Status: No new update. See report on the following website:
http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/exp/city-of-santa-monica-update-bike-ctcdc-buffered-lanes-04-09-2014.pdf

13-01 Request to Experiment with Green & Shared Roadway Bicycle
Markings – Proposed by the City of Oakland (Patterson)
Status: No new update

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Bicycle & Pedestrian Program Manager
Transportation Planning & Funding Division
Department of Engineering & Construction
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(510) 238-7049 | (510) 238-7415 Fax
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13-02 Request to Experiment with Bike Boxes and Wide Bike Strip Stripe (Patterson)
-Proposed by the City of Davis
Status: (12/1/2014) City of Davis installed experimental bike boxes in September 2014. Experimentation is ongoing.

Items Under Experimentation

4. Public Hearing

14-05 Bicycle Signal Faces - CA MUTCD edits

Recommendations: CTCDC non-motorized members John Ciccarelli requests that the Committee makes recommendations to adopt the policy for Optional Use of a Bicycle Signal Face as described under the proposal.

Requesting and Sponsor Agency: John Ciccarelli, Caltrans Non-motorized Member

Background: During the February 19th, May 14th, Sept 24, 2014 CTCDC meetings, John Ciccarelli, Caltrans Non-motorized member had discussed proposed language with the CTCDC members.

John proposed a policy to modify CA MUTCD Part 4 - Signals, based in large part on future US MUTCD content approved by the National Council on Uniform Traffic Control Devices (NCUTCD). The NCUTCD content is the joint product of the NCUTCD Bicycle Technical Committee (BTC) and Signals Technical Committee (STC), responding to Interim Approval #16 issued by FHWA. To see the FHWA Interim Approval Memo, please visit on the following website:

http://mutcd.fhwa.dot.gov/resources/interim_approval/ia16/ia16.pdf

Subject	CTCDC Item 14-05: Bicycle Signal Faces	**Date**	2/2/2015
To	Chris Engelmann, Executive Secretary California Traffic Control Devices Committee (CTCDC)		
Sponsor	John Ciccarelli, Bicycle Solutions Member, CTCDC		
Requesting Agency	Caltrans		

History

CTCDC first addressed Bicycle Signals in 1990 (Item 90-7) in a proposed experiment by the City of Davis. Davis has several locations were high volumes of bicycle traffic enter and leave signalized intersections as the fourth leg of what is otherwise a T intersection. In 1996 Davis reported successful outcomes, and CTCDC asked the City, with assistance from CBAC, to develop proposed warrants, standards and draft legislation for the device. In 1999 warrants were recommended for use when a separate bicycle signal phase is needed.

In 2000 Caltrans developed a Standard Plan. By 2002 the Caltrans Traffic Manual had incorporated Bicycle Signal Heads in Chapter 9, Traffic Signals and Lighting. Traffic Manual content was incorporated into the California's MUTCD in the 2006 edition, in Sections 4C.102(CA) Bicycle Signal Warrant and 4D.104(CA) Bicycle Signals. 4C.102(CA) has three warrant conditions:

- volume (peak hour motor vehicles x bicycles)
- collision history
- geometry

Recent FHWA and NCUTCD Activity

The US (FHWA) MUTCD previously did not address Bicycle Signal Faces. In December 2013 FHWA issued Interim Approval #16 for Bicycle Signal Faces, with many more configurations and operational choices than in the CA MUTCD. In response, the National Council on Uniform Traffic Control Devices (NCUTCD) Signals Technical Committee (STC) and Bicycle Technical Committee (BTC) began working jointly on a MUTCD proposal covering the layout, meaning and operation of Bicycle Signal Faces. That proposal was reviewed by NCUTCD Sponsor organizations, and at its June 2014 meeting the NCUTCD Council forwarded the approved proposal to FHWA.

CA MUTCD Proposal

This memo:

- Proposes CA MUTCD content for Bicycle Signal Faces based in large part on the NCUTCD proposal likely to appear in the next (2016?) FHWA MUTCD, with certain California exceptions and additions;
- Adds CA-specific content for use of Bicycle Signal Faces with Pedestrian Hybrid Beacons (PHBs), a context not well addressed in the NCUTCD proposal. This includes a CA-specific Figure xx-2 showing recommended phasing for use with a PHB.
- Adds CA-specific content for use of Bicycle Signal Faces to implement bicycle scramble phases, not permitted by the NCUTCD proposal. This includes a CA-specific Figure xx-1 showing recommended signal face design incorporating flashing yellow bike and flashing yellow circular indications.

The following pages are the NCUTCD proposal, with its original line numbers removed and California differences added (indicated in GREEN TEXT).

Joint BTC/STC #1
With California changes indicated in green

National Committee on
Uniform Traffic Control Devices

12615 West Keystone Drive * Sun City West, AZ, 85375
Telephone (623)680-9592 * e-mail: ncutcd@aol.com

NOTE: This is a recommendation to FHWA on changes to the MUTCD by the National Committee on Uniform Traffic Control Devices (NCUTCD). This recommendation is not a revision to the MUTCD and does not constitute official standards, guidance, or options. No proposed revision to the MUTCD is effective unless and until approved by FHWA through an Interim Approval or through the Federal rulemaking process.

TECHNICAL COMMITTEE:	**Bicycle Technical Committee and Signals Technical Committee**
TOPIC:	**Recommendation – Bicycle Signal Faces**
STATUS/DATE OF ACTION:	Recommended to send to sponsors following the January 2014 NCUTCD meeting
Technical Committee Vote:	BTC – 19-1-0 STC – 35-0-0
Transmitted to Sponsors:	March 2014
Council Approval:	June 28, 2014
ORIGIN OF REQUEST:	Various

AFFECTED SECTIONS OF MUTCD: Various portions of Parts 1, 4, & 9

SUMMARY:
An Interim Approval has been issued for the optional use of a bicycle signal face (IA-16). This joint technical committee recommendation provides proposed MUTCD language to update the existing MUTCD standards, guidance, and options to add provisions for bicycle signal faces to control certain bicycle movements. This recommendation is based on the Interim Approval.

DISCUSSION:
The concept of providing separate signal faces to control bicycle movements at traffic control signals has been a topic of discussion in recent years. Informal working group sessions have been held at National Committee meetings to discuss this topic and work toward the development of proposed MUTCD language. However, following the June 2013 NCUTCD meeting, FHWA indicated their intent to issue an

Interim Approval by the end of 2013 to allow the optional use of bicycle signal faces. There was insufficient time for the NCUTCD technical committees to develop proposed language, submit it to the sponsoring organizations for review, and refine and present it to the NC Council for a vote prior to the time FHWA needed a response. Therefore, the Bicycle Technical Committee (BTC) and the Signals Technical Committee (STC) worked jointly to develop a joint technical committee recommendation that was submitted to FHWA in November 2013. That joint technical committee recommendation was sent to sponsors as an information item at the time it was submitted to FHWA. The Interim Approval was issued December 24, 2013.

At the January 2014 NCUTCD meeting, the BTC and STC held a special joint session to discuss the Interim Approval and develop proposed language for inclusion in the Notice of Proposed Amendment (NPA) for the next MUTCD. The following is presented as a joint technical committee recommendation to add provisions for the use of bicycle signal faces to the MUTCD. Most of the language is new and is proposed to be in a new MUTCD chapter. However, there are some minor changes needed to existing MUTCD sections to incorporate the new chapter.

There are some items that should be considered when reviewing this recommendation.
1. While the current MUTCD does not specifically address bicycle signal faces, Section 4D.07 references "circular indications in a signal face installed for the sole purpose of controlling a bikeway or a bicycle movement". Although no similar reference exists for the use of arrow indications to control a bikeway or a bicycle movement, there is also nothing prohibiting arrow indications for that application. Therefore, the use of bicycle signal faces with all circular indications or all arrow indications have been included in the recommendation. Since straight through yellow arrows and red arrows are not permitted, the use of bicycle signal faces with all arrow indications has been limited to all left or all right arrows.
2. A new definition has been included for a "bicycle symbol signal indication". This definition is for a red, yellow, or green signal indication that displays a bicycle symbol rather than a circular indication. It is important to note the difference and distinction between a "bicycle symbol signal indication" and a "bicycle signal indication". A "bicycle signal indication" simply refers to an indication in a bicycle signal face. This could be a circular indication, an arrow indication, or a bicycle symbol signal indication. However, a "bicycle symbol signal indication" refers specifically to an indication that displays a red, yellow, or green bicycle symbol.
3. The two illustrations from the Interim Approval were included as figures in the joint Technical Committee Recommendation that was sent to sponsors. However, during the joint BTC/STC session at the meeting, the committees felt that combinations of arrow indications and bicycle symbol indications in the same signal face should not be allowed. The recommendation language was therefore revised to delete references to such combinations of indications in a bicycle signal face and Attachment 1A-16-2 from the IA that included [such] signal faces was deleted from the recommendation. Attachment 1A-16-1 was revised to show bicycle signal faces that include only circular indications, only bicycle symbol indications, only left arrow indications, or only right arrow indications.
4. The following concerning the use of bicycle signal faces is included as #1 in the Interim Approval: *However, if an agency opts to use bicycle signal faces under this Interim Approval, such use shall be limited to situations where bicycles moving on a green or yellow signal indication in a bicycle signal face are not in conflict with any simultaneous motor vehicle movement at the signalized location, including right (or left) turns on red.*

The BTC & STC felt this is unnecessarily restrictive and included less restrictive language. When sent to Sponsors, the second Guidance paragraph in Section xx.02 was listed as a Standard. This was

changed to Guidance during the joint BTC/STC session. It was felt that an agency may desire to provide a bicycle signal face at each signalized location along a route with a bicycle lane or separate bicycle facility to provide consistency indications provided to control the bicycle movements at successive signalized locations.

5. Several revisions considered editorial were made based on Sponsor comments. In addition, the following modifications were presented to and approved by National Committee in the final recommendation:

- Added an Option to specifically allow the use of a bicycle signal face at a mid-block signal that does not have a motor vehicle movement parallel to the bicycle crossing.
- Added an Option to specifically allow the use of a BICYCLE SIGNAL : with a bicycle signal face that contains only bicycle symbol indications. This sign is required for a bicycle signal face that does not contain all bicycle symbol indications and the technical committees felt it was important to note that, while not required, a sign is allowed when all of the indications in a bicycle signal face are bicycle symbol indications.
- Included sign sizes other than those included in the Interim Approval in order to improve visibility and layout.
- Included a Standard that prohibits exclusive and simultaneous bicycle movements from perpendicular directions rather than using the language included in the IA. This is to allow an exclusive diagonal bicycle movement through an intersection, but not a "scramble" phase that could have conflicting perpendicular bicycle movements.

NOTE: The California-specific content of this modified NCUTCD proposal specifies that a flashing yellow bicycle signal indication shall be displayed on all approaches with conflicting perpendicular bicycle movements during such a "scramble" phase.

- Included Guidance that a bicycle signal face should not be used with a hybrid beacon. This was included as a Standard in the IA. It was felt that bicycle faces could be used with a hybrid beacon as long as the requirements of the hybrid beacon are satisfied, primarily the required sequence of indications.

NOTE: The California-specific content of this modified NCUTCD proposal includes a phasing sequence for use with a pedestrian hybrid beacon.

RECOMMENDED CHANGES TO THE CALIFORNIA MUTCD:

Recommended changes to the California MUTCD consist of all changes listed in the RECOMMENDED CHANGES TO THE MUTCD sections that follow, except those delimited by green lines such as these:
<BEGIN CALIFORNIA-ONLY>
<END CALIFORNIA-ONLY>
California-specific commentary appears in Green Highlight.

RECOMMENDED CHANGES TO THE MUTCD:

Other than minor changes in Section 4D.06, there is no existing **FHWA** MUTCD language proposed for deletion as part of this recommendation. **Proposed California deletions are described in green below.** The deletions in 4D.06 are shown in red strikethrough (~~red~~

~~strikethrough~~). Proposed additions are shown using red underline (red underline). Some text in the draft recommendation is in yellow highlight. Yellow highlighting indicates text that is providing supplemental information related to the recommendation, but is not part of the recommended text.

Add the following two new definitions (Standards) in Section 1A.13 following definition 23 Bicycle Lane:

Section 1A.13 Definitions
Standard:

xx. Bicycle Signal Face - a signal face, consisting of three or more signal sections, that exclusively controls a bicycle movement from a designated bicycle lane or from a separate facility such as a shared use path, and that displays signal indications that are applicable only to the bicycle movement.

xx. Bicycle Symbol Signal Indication - a red, yellow, or green signal indication that displays a bicycle symbol rather than a circular or arrow indication.

<BEGIN CALIFORNIA-ONLY>

Delete CA MUTCD section 4C.102(CA) Bicycle Signal Warrant. Rationale:

- The NCUTCD proposal contains no conditions comparable to 4C.102(CA)'s Volume or Collision warrant.
- Proposed new section XX.03 Warrants for Bicycle Signal Faces, in proposed new Chapter XX Bicycle Signal Faces, states that "[n]o new traffic signal warrant(s) specific to bicycle signal faces or in addition to those already provided in Chapter 4C are established".
- 4C.102(CA)'s Geometric warrant is replaced by the NCUTCD proposal's new Sections 4D.04 and 9D.03.

~~Section 4C.102(CA) Bicycle Signal Warrant~~
~~Guidance:~~
~~01 A bicycle signal should be considered for use only when the volume and collision or volume and geometric warrants have been met:~~
~~1. Volume; When W = B x V and W > 50,000 and B > 50.~~
~~Where: W is the volume warrant. B is the number of bicycles at the peak hour entering the intersection. V is the number of vehicles at the peak hour entering the intersection. B and V shall use the same peak hour.~~
~~2. Collision; When 2 or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal have occurred over a 12-month period and the responsible public works official determines that a bicycle signal will reduce the number of collisions.~~
~~3. Geometric;~~
~~(a) Where a separate bicycle/ multi use path intersects a roadway.~~
~~(b) At other locations to facilitate a bicycle movement that is not permitted for a motor vehicle.~~

Delete CA MUTCD section 4C.104(CA) Bicycle Signals. Rationale:

- The NCUTCD proposal includes substantially more detail and options.

~~Section 4D.104(CA) Bicycle Signals~~
~~Support:~~
~~01 A bicycle signal (see Figure 4D-112(CA)) is an electrically powered traffic control device that may only be used in combination with an existing traffic signal. Bicycle signals shall direct bicyclists to take specific actions and may be used to improve an identified safety or operational problem involving bicycles. Refer to CVC 21450.~~
~~Standard:~~
~~02 Only green, yellow and red lighted bicycle symbols, shall be used to implement bicycle movement at a signalized intersection. The application of bicycle signals shall be implemented only at locations that meet Department of Transportation Bicycle Signal Warrants (see Section 4C.102(CA)).~~
~~03 A separate signal phase for bicycle movement shall be used.~~
~~Guidance:~~
~~04 Alternative means of handling conflicts between bicycles and motor vehicles should be considered first.~~
~~05 Two alternatives that should be considered are:~~
~~A. Striping to direct a bicyclist to a lane adjacent to a traffic lane such as a bike lane to left of a right-turn-only lane.~~
~~B. Redesigning the intersection to direct a bicyclist from an off-street path to a bicycle lane at a point removed from the signalized intersection.~~
~~06 A bicycle signal phase should be considered only after these and other less restrictive remedies have had an adequate trial with enforcement and with the result that the collision frequency has not been reduced.~~

<END CALIFORNIA-ONLY>

Add the following new Section 4D.04 following existing Section 4D.03 and renumber later sections in Chapter 4D. Note: Any references to 4D in this document refer to the existing 4D section numbers, not renumbered section numbers.

Section 4D.04 Provisions for Bicyclists
Option:
Where it is desired to provide separate signal indications to control bicycle movements at a traffic control signal, bicycle signal faces may be used (see Chapter XX).

Modify Paragraph 01 in Section 4D.06 to not require circular or arrow indications for bicycle symbol signal indications.

Section 4D.06 Signal Indications – Design, Illumination, Color, and Shape
Standard:
01 Each signal indication~~,~~ shall be circular or arrow except those used for pedestrian signal heads, ~~and~~ lane-use control signals, and bicycle symbol signal indications ~~shall be circular or arrow~~.

Add the following new Section 9D.03.

Section 9D.03 Provisions for Bicyclists
Option:

Where it is desired to provide separate signal indications to control bicycle movements at a traffic control signal, bicycle signal faces may be used (see Chapter XX).

Add the following new chapter for bicycle signal faces. NOTE: All of the following is new.

CHAPTER XX. BICYCLE SIGNAL FACES

Section XX.01 General

Support:

See Section 1A.13 for the definitions of bicycle signal face and bicycle symbol signal indication.

Section XX.02 Use of Bicycle Signal Faces

Support:

The use of a bicycle signal face is optional.

A bicycle signal face can be used to provide separate control of the bicycle movement for various situations such as the following:

A. Bicyclist non-compliance with the previous traffic control.
B. Provide a leading or lagging bicycle interval.
C. Continue the bicycle lane on the right-hand side of an exclusive turn lane that would otherwise be in non-compliance with Paragraph 6 of Section 9C.04.
D. Augment the design of a contra-flow bicycle facility.
E. Provide for unusual or unexpected arrangements of the bicycle movement through complex intersections, conflict areas, or signal control.

< BEGIN CALIFORNIA-ONLY >

F. Provide for bicycle movements parallel to the pedestrian crossing movements controlled by a Pedestrian Hybrid Beacon.

< END CALIFORNIA-ONLY>

Guidance:

Agencies should exercise consistency with the decision to introduce bicycle signal faces to a roadway or bikeway network and use caution with any non-systematic policy to use bicycle signal faces.

Support:

The use of bicycle traffic signal faces containing bicycle symbol indications and bicycle signal faces containing circular indications in the same corridor or jurisdiction could create comprehension issues by the roadway user or violate bicyclist expectation.

Guidance:

A bicycle signal face should only be used to control bicycle movements from a designated bicycle lane or from a separate facility such as a shared use path, and, other than as provided in the Option below, only where the bicycle movement controlled by the bicycle signal face is sometimes allowed to proceed or sometimes required to stop at times when other traffic, making

the same movement, and controlled by other vehicular signal faces, is required to stop or allowed to proceed respectively.

<BEGIN NCUTCD CONTENT DELETED FOR CALIFORNIA>
Option:
A bicycle signal face may be used at a mid-block traffic control signal where there are no motor vehicle movements parallel to the bicycle crossing.
<END NCUTCD CONTENT DELETED FOR CALIFORNIA>

<BEGIN CALIFORNIA-ONLY (REPLACES NCUTCD CONTENT DELETED ABOVE) >
Option:
A bicycle signal face may be used at a mid-block traffic control signal or Pedestrian Hybrid Beacon.
Guidance:
When a bicycle signal face is used to control bicycle movements in the direction parallel to the pedestrian crossing movement of a Pedestrian Hybrid Beacon, the phasing should be as described in Figure xx-2 (see Section XX.13).
<END CALIFORNIA-ONLY >

Section XX.03 Warrants for Bicycle Signal Faces

Support:
No new traffic signal warrant(s) specific to bicycle signal faces or in addition to those already provided in Chapter 4C are established. Retrofitting existing traffic signals with bicycle signal faces is analogous to retrofitting existing traffic signals with pedestrian signals where such a determination is not required through an engineering study.

Standard:
New designs or installations for any traffic control signal shall be based on an engineering study in accordance with Paragraph 1 of Section 4C.01. For the purposes of an engineering study, the appropriate warrant(s) provided in Chapter 4C shall be followed.

Guidance:
The need to incorporate bicycle signal faces into a new location or design should be established through the engineering study performed in accordance with Paragraph 1 of Section 4C.01 to determine that the installation of a traffic control signal is justified.
Engineering judgment should be exercised in determining whether or not it would be advantageous or beneficial to install a bicycle signal face(s) or pedestrian signals at an existing traffic control signal.

Support:
For the purpose of warrant analyses, provisions for classifying bicycles are provided in Paragraph 15 of Section 4C.01 and Paragraph 2 of Section 9D.01.

Section XX.04 BICYCLE SIGNAL Sign

Support:

The purpose of the BICYCLE SIGNAL (R10-10b) sign is to inform road users that the signal indications in the bicycle signal face are intended only for bicyclists.

Standard:

A BICYCLE SIGNAL (R10-10b) sign shall be installed adjacent to (including above or below) a bicycle signal face unless all indications in that face are bicycle symbol signal indications.

Option:

A BICYCLE SIGNAL sign may be installed, based on engineering judgment, adjacent to a bicycle signal face consisting of all bicycle symbol indications.

<BEGIN CALIFORNIA-ONLY>

Guidance:

A BICYCLE SIGNAL sign should be installed wherever a parallel motor vehicle movement is controlled by a STOP or YIELD sign.

<END CALIFORNIA-ONLY>

Standard:

Except when used with a supplemental near side bicycle signal face containing 4-inch indications, the BICYCLE SIGNAL sign shall be a minimum size of 18 inches x 24 inches as shown in Figure xx .

Option:

A BICYCLE SIGNAL sign that is a minimum size of xx inches x xx inches may be used with a supplemental near-side bicycle signal face containing 4-inch indications.

Section XX.05 Meaning of Bicycle Signal Indications

Standard:

Steady and flashing RED BICYCLE and YELLOW BICYCLE signal indications and steady GREEN BICYCLE signal indications shall have the same meanings as described in Paragraph 3 of Section 4D.04 for steady and flashing CIRCULAR RED and CIRCULAR YELLOW indications and steady CIRCULAR GREEN signal indications except that the bicycle signal indications shall only be applicable to bicyclists within the designated bicycle facility.

Section XX.06 Application of Bicycle Signal Indications

Standard:

Steady bicycle signal indications shall be applied as follows:

A. A steady RED BICYCLE signal indication shall be displayed when it is intended to prohibit bicycle traffic from entering the intersection or other controlled area. Turning after stopping shall be permitted as stated in Item C.1 in Paragraph 3 of Section 4D.04.

B. A steady YELLOW BICYCLE signal indication shall be displayed following a GREEN BICYCLE signal indication in the same signal face. A YELLOW BICYCLE signal indication

or a steady YELLOW ARROW indication shall be displayed following a GREEN ARROW in the same signal face. A yellow indication shall not be displayed in conjunction with the change from the RED BICYCLE signal indication to a green signal indication. The YELLOW BICYCLE indication shall be followed by a RED BICYCLE signal indication.
C. A steady GREEN BICYCLE signal indication shall be displayed only when it is intended to permit bicyclists to proceed in any direction that is lawful and practical.

Section XX.07 Layout of Bicycle Signal Faces

Option:
Bicycle signal faces may be oriented vertically or horizontally.

<BEGIN NCUTCD CONTENT NEEDING EDIT CORRECTION>
Support:
See Figures XX-1 and XX-2 for typical arrangements of signal sections in bicycle signal faces.
<END NCUTCD CONTENT NEEDING EDIT CORRECTION>
<BEGIN REPLACEMENT CONTENT WITH EDIT CORRECTION>
Support:
See Figure XX-1 for typical arrangements of signal sections in bicycle signal faces.
<END REPLACEMENT CONTENT WITH EDIT CORRECTION>

Standard:
Bicycle signal faces shall consist of one of the following:
A. All bicycle symbol signal indications,
B. All circular indications, or
C. All left arrow or all right arrow indications.

The layouts and arrangements of the bicycle signal face shall be in accordance with the following provisions:
A. Only the bicycle symbol shown on Page 6-7 in the 2004 Standard Highway Signs book shall be used for bicycle symbol signal indications. The bicycle symbol shall only be positioned horizontally and shall face to the left.
B. The RED BICYCLE, YELLOW BICYCLE, and GREEN BICYCLE symbol signal indications shall be in the same relative position to each other as specified for the CIRCULAR RED, CIRCULAR YELLOW, and CIRCULAR GREEN signal indications respectively, in Sections 4D.09 and 4D.10.
C. Circular signal indications and bicycle symbol signal indications shall not be used in the same bicycle signal face.
D. Bicycle symbol signal indications and arrow signal indications shall not be used in the same bicycle signal face.
E. As a specific exception to Paragraph 5 of Section 4D.09, two YELLOW BICYCLE signal indications or two GREEN BICYCLE signal indications shall not be arranged horizontally adjacent to each other at right angles to the basic straight line arrangement to form a clustered signal face.
F. Single sections for continuous movements that would implement the bicycle symbol as illustrated in Group C of Figure 4D-2 shall not be used.

<BEGIN CALIFORNIA-ONLY>
G. If a FLASHING YELLOW BICYCLE symbol signal indication is used, it shall be in the position otherwise occupied by the GREEN BICYCLE symbol signal indication.
<END CALIFORNIA-ONLY>

Section XX.08 Size of Bicycle Signal Faces

Standard:

The provisions of Section 4D.07 apply to the sizes of bicycle signal faces except as follows:

A. There shall be three nominal diameter sizes for bicycle signal indications: 4 inches, 8 inches, and 12 inches.

B. The bicycle symbol used for bicycle symbol signal indications shall be proportioned to fit within the signal lens.

C. All signal indications in a bicycle signal face shall be of the same size.

D. Four-inch signal indications shall only be used in supplemental, post-mounted, near-side bicycle signal faces.

Option:

As a specific exception to Paragraph 2 in Section 4D.07, 4-inch and 8-inch arrow signal indications may be used in bicycle signal faces.

If used, 4-inch signal indications may exclude the accompanying visor(s) and backplate.

Near-side bicycle signal faces may alternatively be either 8-inch or 12-inch.

Section XX.09 Placement of Bicycle Signal Faces

Standard:

The provisions of Sections 4D.13 through 4D.16 shall apply to the placement of the bicycle signal faces except as follows:

A. As a specific exception to Item A in Paragraph 1 of Section 4D.11, a minimum of one primary bicycle signal face shall be provided to control traffic for the bicycle movement, even if a bicycle through movement exists.

B. The primary bicycle signal face shall have either 8-inch or 12-inch signal indications, even if it is located at the near side of the signal-controlled location.

C. When the primary bicycle signal face is located more than 120 feet beyond the stop line, a supplemental near-side bicycle signal face shall be provided.

Guidance:

When the primary bicycle signal face is located more than 80 feet and up to 120 feet beyond the stop line, a supplemental near-side bicycle signal face should be provided.

Bicycle signal faces should be placed such that visibility is maximized for bicyclists and minimized for adjacent or conflicting vehicle movements not controlled by the bicycle signal face. In cases where drivers not controlled by the bicycle signal face might be confused by viewing the bicycle signal indications, such as when the start or end of a green bicycle signal indication occurs at a different time than the start or end of a green signal indication for a concurrent adjacent vehicle movement controlled by other than the bicycle signal face, consideration should be given to using visibility-limited bicycle signal faces.

A bicycle signal face should be separated vertically or horizontally from the nearest vehicular traffic signal face for the same approach by at least 3 feet.

Section XX.10 Mounting Height of Bicycle Signal Faces

Standard:

The provisions of Section 4D.15 apply to the mounting height of bicycle signal faces except as follows:

A. The bottom of the signal housing (including brackets) of a bicycle signal face that is not located over a roadway shall be a minimum of 7 feet above the sidewalk or ground, except where a BICYCLE SIGNAL (R10-10b) sign is installed below the bicycle signal face. If a BICYCLE SIGNAL (R10-10b) sign is installed below the bicycle signal face, the minimum mounting height to the bottom of the sign shall be 6 feet. If the bottom of the sign is mounted less than 7 feet above a pedestrian sidewalk or pathway, the supplemental sign shall not project more than 4 inches into the pedestrian facility.

B. If 4-inch signal indications are used in a supplemental, post-mounted, near-side bicycle signal face, the bottom of the signal housing (including brackets) shall be a minimum of 4 feet and a maximum of 8 feet above the sidewalk or ground. Bicycle signal faces with 4" signal indications installed above a pedestrian sidewalk or pathway shall not project more than 4 inches into the pedestrian facility.

Section XX.11 Intensity and Light Distribution of Bicycle Signal Faces

Guidance:

Except for the 4-inch nominal size of the lens diameter, the intensity and distribution of light from each illuminated bicycle signal face should be similar to that recommended for vehicular traffic signal faces in accordance with Paragraph 10 of Section 4D.06 to the extent practicable.

Section XX.12 Backplates for Bicycle Signal Faces

Option:

Backplates may be used with bicycle signal faces.

Standard:

If backplates are used, ancillary legends of any kind that identify the purpose or operation of the bicycle signal face shall not be placed on the backplate.

Section XX.13 Operation of Bicycle Signal Faces

Standard:

If a bicycle signal face contains a green arrow that would otherwise be readily visible to drivers in the adjacent lane(s) controlled by other than the bicycle signal face, the bicycle signal face shall be visibility-limited.

The mode of operation of the bicycle signal faces at a traffic control signal shall be the same as the mode of operation of the other traffic signal faces. Bicycle signal faces shall operate in the steady (stop-and-go) mode when the other traffic signal faces are operating in the steady (stop-and-go) mode. Bicycle signal faces shall operate in the flashing mode when the other signal faces are operating in the flashing mode, whether programmed or due to a malfunction.

<BEGIN NCUTCD CONTENT DELETED FOR CALIFORNIA>

Bicycle signal faces shall not be placed in a dark mode when other vehicular traffic signal faces are operating in the flashing mode.

<END NCUTCD CONTENT DELETED FOR CALIFORNIA>

<BEGIN CALIFORNIA-ONLY (REPLACES ABOVE NCUTCD CONTENT) >

Bicycle signal faces shall not be placed in a dark mode when other vehicular traffic signal faces for the same approach are operating in the flashing mode.

When used to control simultaneous bicycle movements from perpendicular directions, all bicycle signal faces for those approaches shall display a flashing YELLOW indication or flashing YELLOW ARROW indication as appropriate.

<END CALIFORNIA-ONLY>

As a specific exception to Paragraph 10 of Section 4D.05, the simultaneous display of a straight-through GREEN ARROW signal indication in a bicycle signal face and a CIRCULAR RED signal indication in another vehicle signal face for the same approach shall be permitted.

<BEGIN CALIFORNIA-ONLY>

Guidance:

When a bicycle signal face is used to control bicycle movements in the direction parallel to the pedestrian crossing movement of a Pedestrian Hybrid Beacon, the phasing should be as described in Figure xx-2.

<END CALIFORNIA-ONLY>

Section XX.14 Yellow Change and Red Clearance Intervals for Bicycle Signal Faces

Standard:

The provisions of Section 4D.26 shall apply to the duration of the yellow change and the red clearance intervals of a bicycle signal phase except as follows:

A. The minimum duration of the yellow change interval shall be 3 seconds.

B. The exclusive function of the yellow change interval shall be to warn bicyclists approaching a signalized location that their permission to proceed is being terminated after which they will be directed to stop.

Support:

Providing clearance time for a bicyclist to travel through the intersection or conflict area is the purpose of the red clearance interval rather than the yellow change interval.

Guidance:

The maximum duration of the yellow change interval should be 6 seconds.

If discernible non-concurrent activations or terminations of phases for bicycles controlled by bicycle signal faces and other vehicular traffic controlled by other signal faces are necessary, visibility-limiting devices should be used on the bicycle signal face.

<BEGIN NCUTCD CONTENT DELETED FOR CALIFORNIA>

Section XX.15 Prohibited Use of Bicycle Signal Faces

Standard:

Bicycle signal faces shall not be used to control exclusive and simultaneous bicycle movements from perpendicular directions.

Guidance:

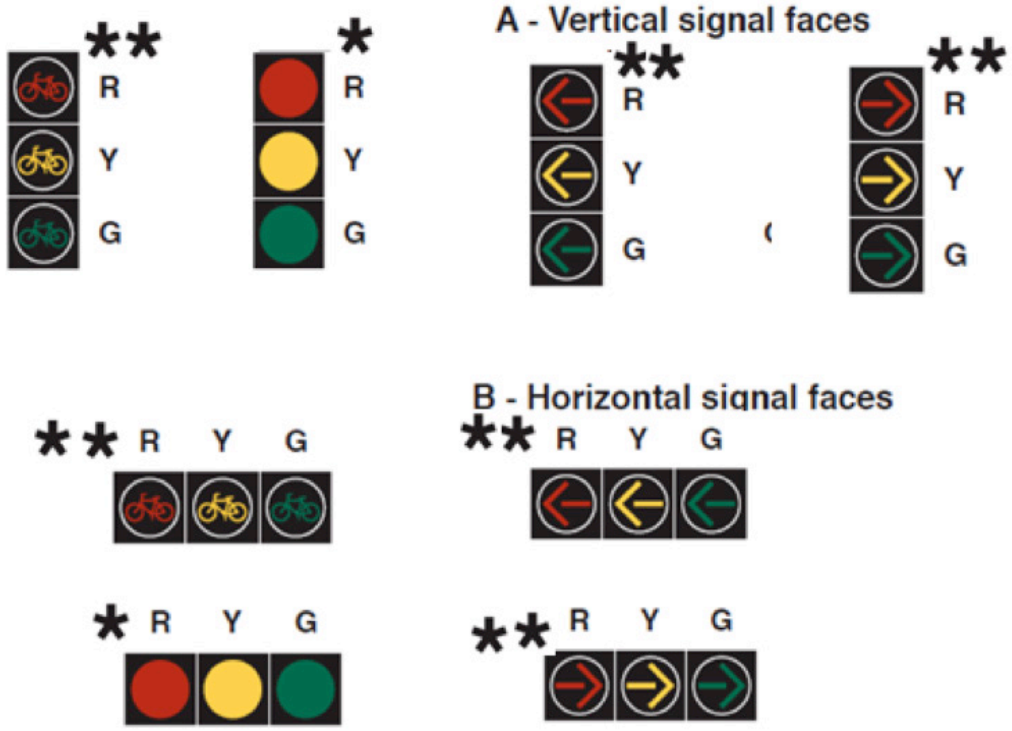
Bicycle signal faces should not be used in any manner with respect to the design and operation of a hybrid beacon.

<END NCUTCD CONTENT DELETED FOR CALIFORNIA>

<BEGIN NCUTCD CONTENT DELETED FOR CALIFORNIA>

Figure xx-1

Typical Arrangements of Signal Sections in Bicycle Signal Faces



* BICYCLE SIGNAL sign required

** BICYCLE SIGNAL sign optional

<END NCUTCD CONTENT DELETED FOR CALIFORNIA>

<BEGIN CALIFORNIA-SPECIFIC CONTENT (REPLACES NCUTCD's Figure xx-1) >

Figure xx-1 (CA)

Typical Arrangements of Signal Sections in Bicycle Signal Faces

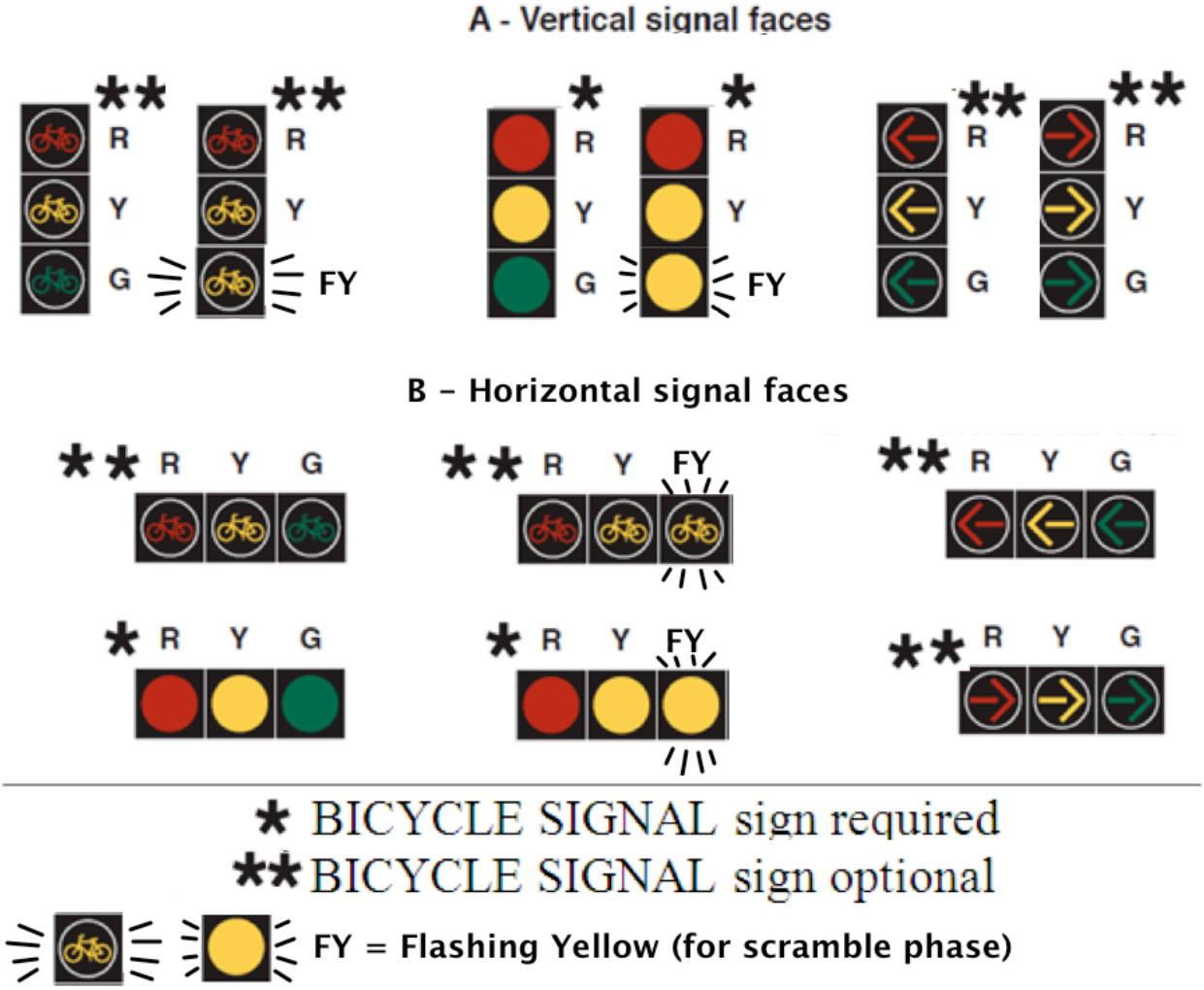
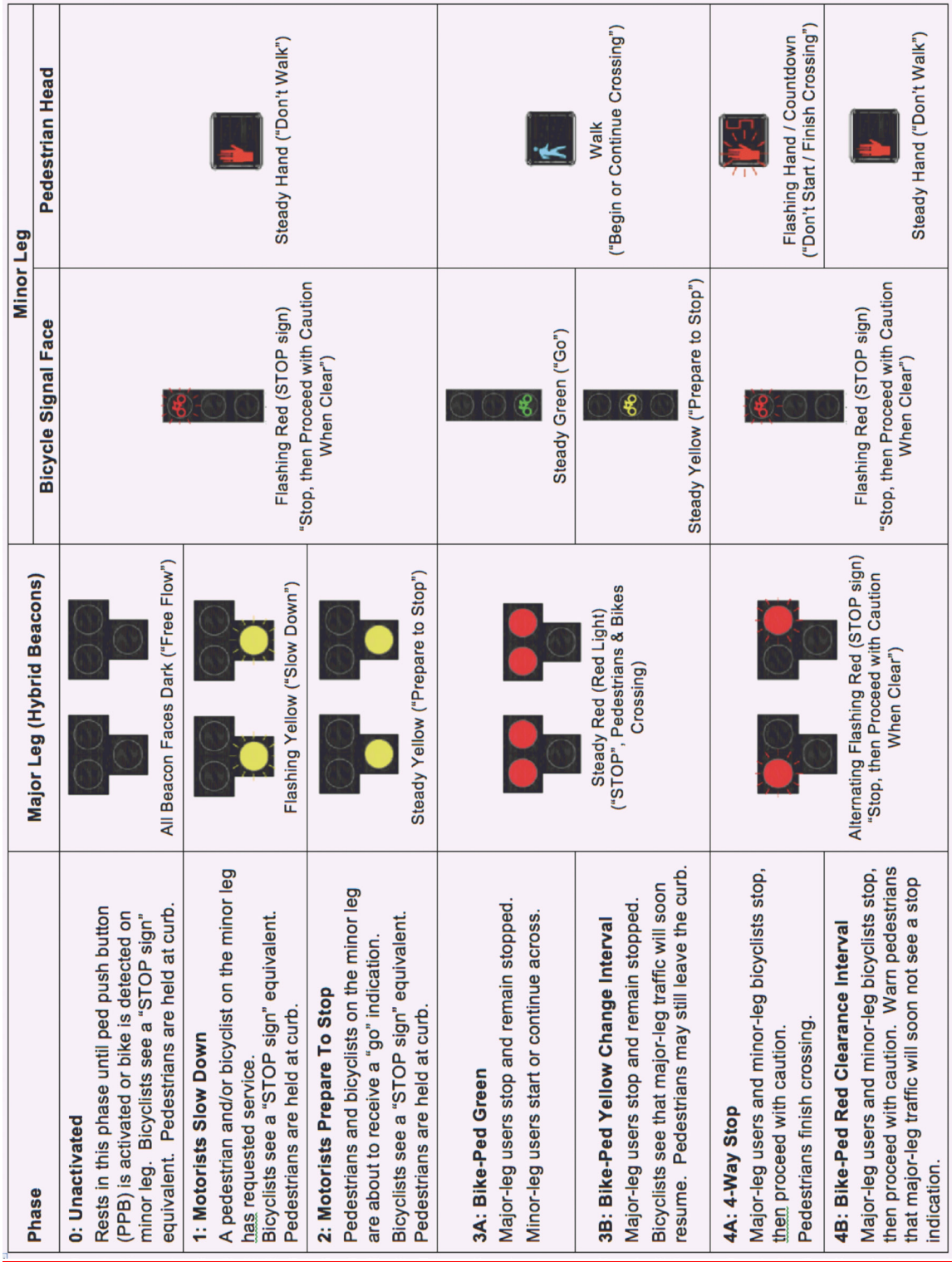


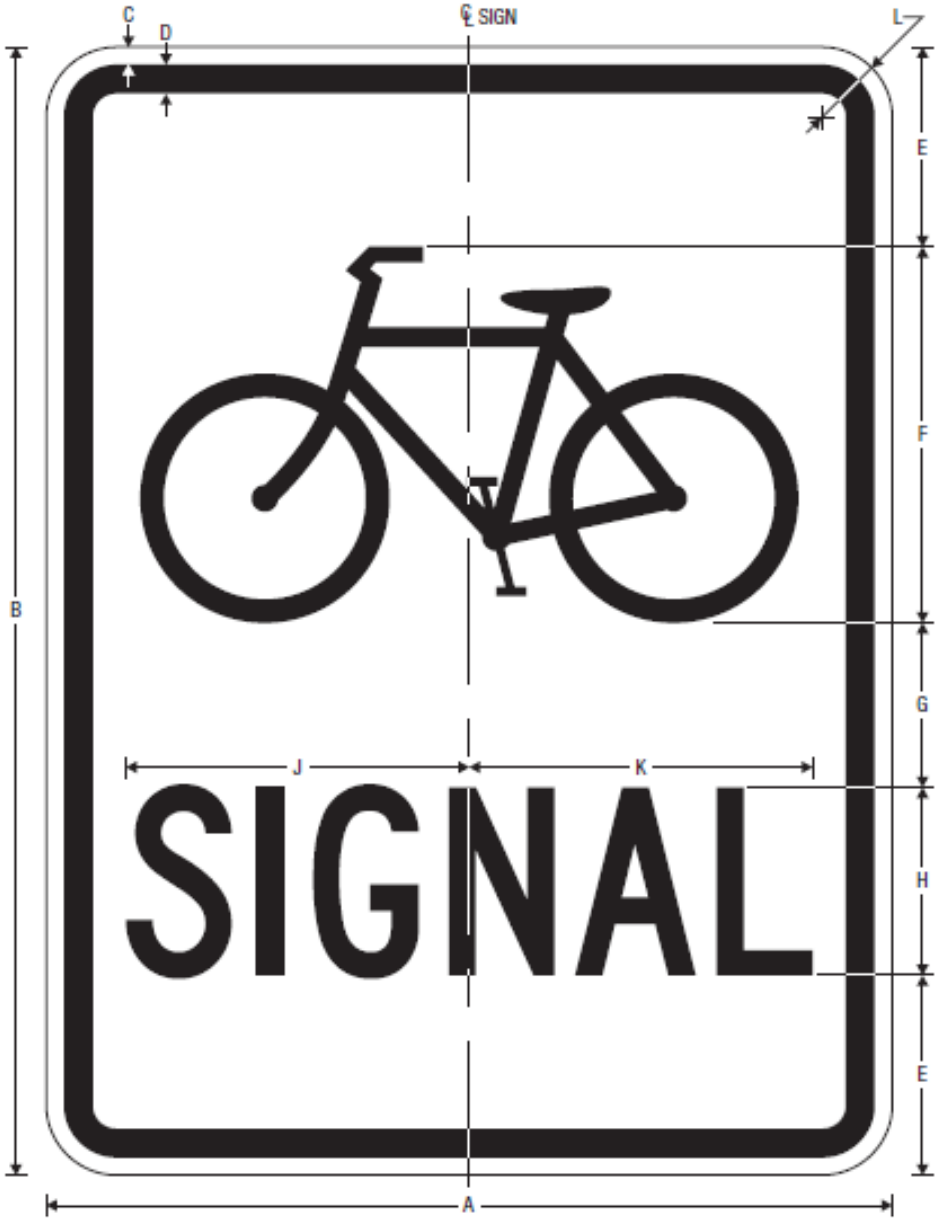
Figure xx-2 (CA)

Typical Bicycle Signal Face Phasing for Use With Pedestrian Hybrid Beacon



<END CALIFORNIA-SPECIFIC CONTENT>

BICYCLE SIGNAL Sign Issued by FHWA



R10-10b
Bicycle SIGNAL

★ Reduce character spacing 20%.

A	B	C	D	E	F	G	H	J	K	L
12	18	0.375	0.375	4	5	2.5	2.5 C*	4.564	4.564	1.5
18	24	0.375	0.625	4.25	8	3.5	4 C*	7.303	7.302	1.5

COLORS: LEGEND, BORDER — BLACK
BACKGROUND — WHITE (RETROREFLECTIVE)

See following page for alternate design/size proposed to be used in place of this

Proposed alternate BICYCLE SIGNAL sign design/size

Bicycle Signal (R10-xx) sign - 24" x 24"
10" symbol, 6" B text
(design could also be used for a 6" x 6" size under 4" near-side indications with a 2.5" symbol and 1.5" B text)

Bicycle Signal (R10-xx) sign - 18" x 24"
8" symbol, 4" B text

Note: The text includes an Option for the use of a smaller size BICYCLE SIGNAL sign with signal faces that have 4-inch indications. However, a size was not determined at the time this item was presented to the National Committee Council so the size is unspecified. Therefore, a sign design/size needs to be developed for the small size signal face.

This sign would be used with near-side supplemental bicycle signals with 4" indications and therefore the sign and signal face may be mounted relatively low. Considering possible impacts on pedestrian traffic and that the sign is intended for bicyclists that are at or near the signal face, it is anticipated that a relatively small minimum size would be acceptable. The use of a BICYCLE SIGNAL sign with a signal face with 4-inch indications would be optional unless the signal face contained something other than all bicycle symbol indications

15-01 Considerations for meeting format and TCD approval changes

Recommendations: Provide recommendations on proposed changes.

Requesting and Sponsor Agency: Duper Tong, Caltrans, Caltrans' Voting Member

Background: In January 2014, the California Transportation Agency (CALSTA) published the SSTI Assessment and Recommendations. As a result, Caltrans, in an effort to heed recommendations in this assessment is proposing minor changes that streamline the process of approving changes in the CA MUTCD. In addition, minor changes in how the meeting is conducted may improve efficiency of the approval of traffic control devices. CALSTA is also suggesting that the CA MUTCD becomes a more living document with updates more frequently than current practice.

Proposal:
In order to provide members with more time to review agenda items and meet CALSTA expectations, Caltrans proposes the following:

1. Consent items would be very routine, typically like corrections of typos in the CA MUTCD, or items that do not need significant discussion. These items may be handled via email prior to the meeting with an action requested at the meeting.
2. Information items would be the more complex items that need full discussion and debate. They should be introduced for the first time at a meeting, where the Committee gets the benefit of a presentation on the background, need, possible option, etc. There can be discussion and public comment on the item, but the decision is reserved for the following meeting, after all questions have been responded to and amendments made to the proposal. It also allows for additional discussion with affected parties (bicycle and pedestrian groups). Information items should be limited in time in order get to all agenda items in one meeting.
3. Action Items on the agenda are for continuing discussions from the previous meeting with an action requested.
4. CTCDC meetings are held as quarterly meetings.
5. CTCDC meeting locations and dates are planned in advance for one year. See attached Agenda Item Preparation Schedule.
6. Draft Agenda Items are provided to the CTCDC members six weeks in advance of the next CTCDC meeting. CTCDC members have opportunity to record comments about agenda items on an comment matrix, prior to the scheduled meeting. See attached.
7. CA MUTCD is updated semi-annually or annually.

California Traffic Control Devices Committee (CTCDC) Meeting

Item# <YY-XX>

<Title>

Sample Comment Matrix

DATE:	COMMENTS BY:	COMMENTS:	INCORPORATED IN DOCUMENT: (YES/NO)	IF NO, WHY: IF YES, HOW:
Voting Members:				
	Hamid Bahadori, Chair			
	Duper Tong, Caltrans			
	Jay Walter, LOCC			
	William Winter, CSAC			
	Mark Greenwood, Vice Chair			
	Emma Olenberger, AAA Southern CA			
	Lt. David Ricks, CHP			
	Rick Marshall, CSAC			
	John Ciccarelli, CT – Non-motorized			
	Bryan Jones, CT – Non-motorized			
Alternate Members:				
	Marianne Kim, AAA Southern CA			
	Christian Engelmann, Caltrans			
	Michael Kenney, County of San Diego			
	Robert Brown, AAA Northern CA			
	Chuck Gunter, CHP			
	Robert W. Bronkall, CSAC			
	Daniel A. Gutierrez, CT – Non-motorized			
	Rock Miller, CT – Non-motorized			

2015 Meeting & Preparation Schedule
California Traffic Control Devices Committee (CTCDC)
Deadlines

CTCDC Meeting Date	**CTCDC Meeting Location**	**CTCDC Members submit draft agenda Items and draft supporting documents to CTCDC Secretary**	**CTCDC Secretary compiles and submits supporting documents and draft agenda to CTCDC Members, and posts for public review**	**CTCDC Members review supporting documents and draft agenda and provide comments to CTCDC Secretary**	**CTCDC Secretary compiles a comment matrix for each agenda item and submits comment matrix and final agenda to CTCDC Members**
Thursday, June 04, 2015	Caltrans Headquarters 1120 N Street, Sacramento	Friday, April 17, 2015	Friday, April 24, 2015	Monday, May 18, 2015	Monday, May 25, 2015
Thursday, Sept 03, 2015	Caltrans District 11 Office 4050 Taylor Street, San Diego	Friday, July 17, 2015	Friday, July 24, 2015	Monday, August 17, 2015	Monday, August 24, 2015
Thursday, Dec 03, 2015	Caltrans Headquarters 1120 N Street, Sacramento	Friday, October 16, 2015	Friday, October 23, 2015	Monday, November 16, 2015	Monday, November 23, 2015

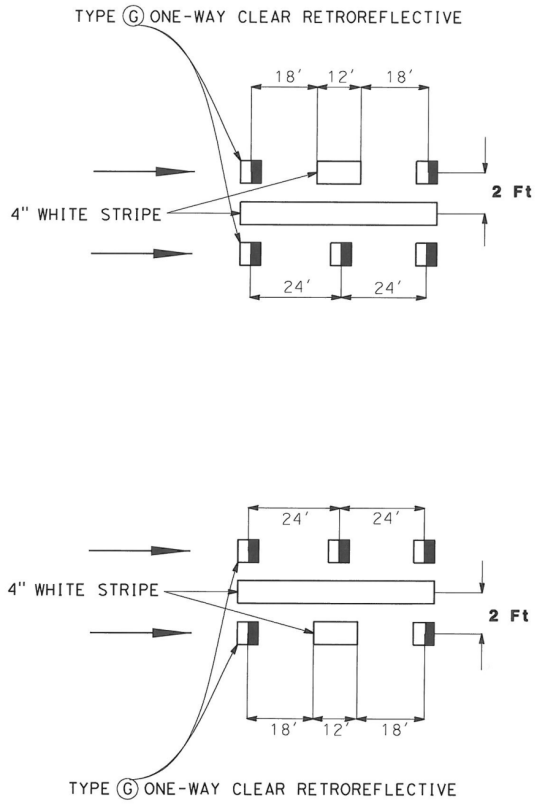
15-02 Request for opinion on whether new legislation is necessary in order to experiment with HOV/Express lane striping.

Recommendation: Caltrans requests that the Committee provide an opinion on whether or not the proposed striping would require new legislation in order to be utilized for ingress/egress for HOV/Express lanes.

Requesting & Sponsoring Agency: Caltrans, Duper Tong, Caltrans Voting Member

Background: Caltrans is working with VTA on improving operations on westbound State Route 237 express lane by allowing carpools from Cadavers Boulevard to enter the express lane by merging left into the lane while preventing those already in the lane from merging right out of the lane to exit the freeway At First Street. The proposed scheme is intended to minimize erratic weaving maneuvers between three closely spaced interchanges; thus, avoiding potential traffic safety and operational risks. Use of solid and broken stripes are easily understood by the motorists as it would be similar to the treatment we have with yellow centerline stripes to allow or prohibit passing on two way roads. Currently, there is no legislation governing the combination of solid and broken white stripes.

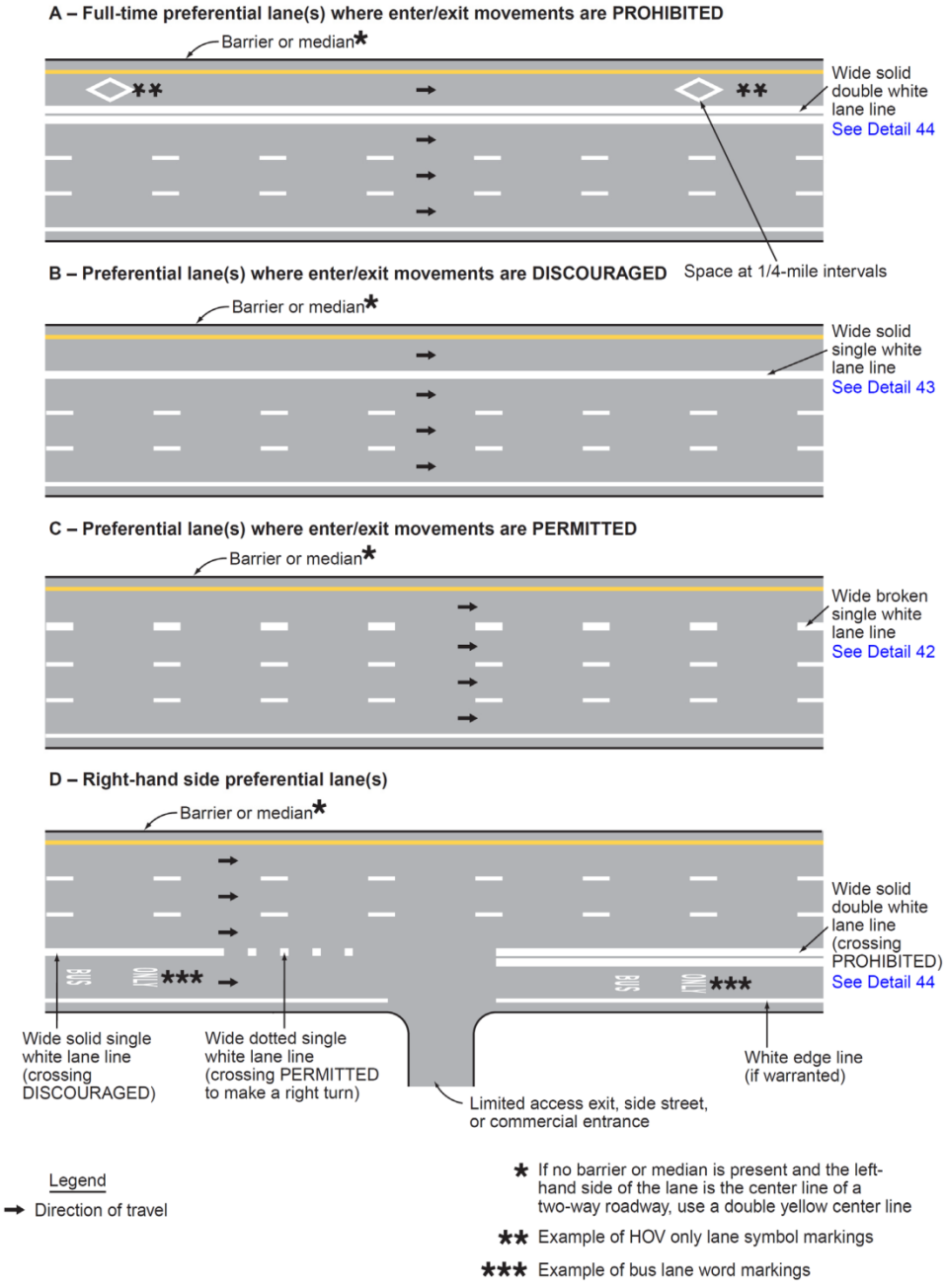
Proposed striping



NO SCALE

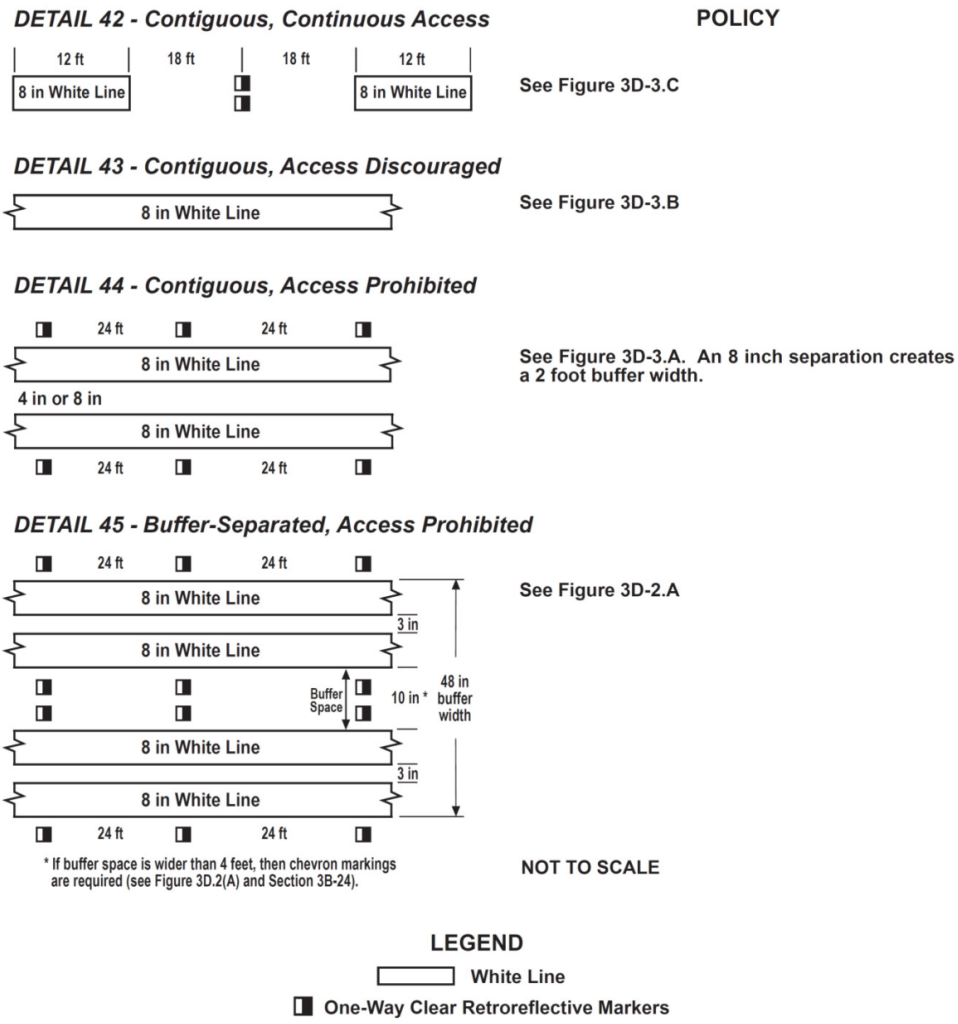
Existing Marking for contiguous preferential lanes

Figure 3D-3. Markings for Contiguous Preferential Lanes



15-02 Request for opinion on whether new legislation is necessary in order to experiment with HOV/Express lane striping.

Figure 3A-113 (CA). Examples of Preferential Lane Lines



Double Lines

21460. (a) If double parallel solid yellow lines are in place, a person driving a vehicle shall not drive to the left of the lines, except as permitted in this section.

(b) If double parallel solid white lines are in place, a person driving a vehicle shall not cross any part of those double solid white lines, except as permitted in this section or Section 21655.8.

(c) If the double parallel lines, one of which is broken, are in place, a person driving a vehicle shall not drive to the left of the lines, except as follows:

(1) If the driver is on the side of the roadway in which the broken line is in place, the driver may cross over the double lines or drive to the left of the double lines when overtaking or passing other vehicles.

(2) As provided in Section 21460.5.

(d) The markings as specified in subdivision (a), (b), or (c) do not prohibit a driver from crossing the marking if (1) turning to the left at an intersection or into or out of a driveway or private road, or (2) making a U-turn under the rules governing that turn, and the markings shall be disregarded when authorized signs have been erected designating offcenter traffic lanes as permitted pursuant to Section 21657.

(e) Raised pavement markers may be used to simulate painted lines described in this section if the markers are placed in accordance with standards established by the Department of Transportation.

Amended Sec. 2, Ch. 114, Stats. 2011. Effective January 1, 2012.

15-02 Request for opinion on whether new legislation is necessary in order to experiment with HOV/Express lane striping.

15-03 Proposal to edit Sections 2B.54, 2C.37, 4D.27, 4D.111 (CA), 4E.08, 4I.03, 4N.02 of the CA MUTCD 2014

Recommendation: Caltrans requests that the Committee recommend to amend Sections 2B.54, 2C.37, 4D.27, 4D.111(CA), 4E.08, 4I.03as proposed for consistency and include figures for the METER ON and PREPARE TO STOP signs.

Requesting & Sponsoring Agency Caltrans, Duper Tong

Background: On November 7, 2014, the 2014 CA MUTCD was adopted. The proposed edits bring consistency to the manual.

Proposal: Edit the 2014 CA MUTCD as follows:

Section 2B.54 No Turn on Red Signs (R10-11 Series, R10-17a, and R10-30)
Option:
05 Alternatively, an Activated Blank-Out~~blank-out~~ sign may be used instead of a static NO TURN ON RED (symbolic circular red) (R10-11) sign, to display either the NO TURN ON RED legend or the No Right Turn symbol or word message, as appropriate, only at certain times during the day or during one or more portion(s) of a particular cycle of the traffic signal.

Section 2C.37 Advance Ramp Control Signal Signs (W3-7 and W3-8)
Support:
00 For State highways, see Department of Transportation's Ramp Metering Design Manual. See Section 1A.11 for information regarding this publication.
Option:
01 A RAMP METER AHEAD (W3-7) sign (see Figure 2C-6) may be used to warn road users that a freeway entrance ramp is metered and that they will encounter a ramp control signal (see Chapter 4I).
Guidance:
02 When the ramp control signals are in operation ~~operated only during certain periods of the day~~, a RAMP METERED WHEN FLASHING (W3-8) sign (see Figure 2C-6), or an ~~internally illuminated~~overhead Activated Blank-Out "METER ON" (W88-2(CA), W88-3(CA)) ~~indication~~message sign, or ~~an extinguishable~~ "PREPARE TO STOP" (W89(CA)) message sign should be installed in advance of the ramp control signal near the entrance to the ramp, or on the arterial on the approach to the ramp, to alert road users to the presence and operation of ramp meters.

Section 4D.27 Preemption and Priority Control of Traffic Control Signals
Option:
20 ~~Extinguishable~~ Activated Blank-Out or changeable message regulatory signs and/or appropriate red traffic control signal indications that are visible only during railroad or light rail transit pre-emption may be used to prohibit movements from a signalized location toward a highway-rail crossing. Examples of applicable regulatory signs that may be used in an ~~extinguishable~~ Activated Blank-Out format include the R3-1, R3-2 and R3-27 signs.
Support:
21 Left turns from a nearby signalized intersection toward a highway-rail crossing can be prohibited during railroad or light rail transit pre-emption by use of a red-left arrow display or an ~~extinguishable~~ Activated Blank-Out R3-2 sign. Likewise, right turns from a nearby signalized intersection toward such a crossing can be prohibited by use of a red right arrow display or an ~~extinguishable~~ Activated Blank-Out R3-1 sign. Through movements from a nearby signalized intersection toward a highway-rail crossing can be prohibited by a circular red display or an ~~extinguishable~~ Activated Blank-Out R3-27 sign.
22 Where the highway-rail crossing impacts two streets near a signalized intersection, then steady all red operation may be appropriate during railroad or light rail transit pre-emption.

23 Where the typical pre-emption period tends to be short, such as for light rail vehicles or commuter trains, a single pre- emption signal phase that serves some vehicular movements and prohibits others may be appropriate. So-called "limited-service" operation, which provides a steady circular green to traffic except for the movements that approach the highway-rail crossing, is one such example.

24 Where the pre-emption period tends to be long, such as for some freight train movements, all-red flash or special sequential phases that alternate among movements that do not approach the highway-rail crossing, possibly in combination with ~~extinguishable~~ Activated Blank-Out signs, may be appropriate to provide alternating right-of-way.

25 Where there are exclusive turn lanes that accommodate turns toward the highway-rail crossing, then it becomes practical to prohibit those moves during railroad pre-emption.

26 Where exclusive turn lanes or special sequential phases are not feasible, then all-red flash may be desirable to allow movements to be made after motorists stop to assess the railroad or light rail transit pre-emption operation.

27 The desirability of prohibiting movements toward the highway-rail crossing during railroad or light rail transit pre-emption increases as:

1) the distance between the signalized intersection and the highway-rail crossing decreases; and,
2) the volume that likely would enter increases.

Section 4D.111(CA) Permissive Left-Turn Phasing

Guidance:

01 When a protected-permissive or permissive-protected left-turn phasing operation is used for a signal system, no information sign is necessary.

Standard:

02 **If a sign is used, it shall be a LEFT TURN YIELD ON GREEN (Green Ball symbol) (R10-12) sign.**

Option:

03 Public agencies having jurisdiction may use an ~~extinguishable~~ Activated Blank-Out ~~message~~ sign on local roads in place of the R10-12 sign on their local roads that are not part of an intersection with a State highway.

Standard:

04 The ~~extinguishable message~~Activated Blank-Out sign shall say LEFT TURN YIELD in at least 6 inch high letters. The light source shall be designed and constructed so that when illuminated, the message shall be white and remain dark when not in use.

Section 4E.08 Pedestrian Detectors

Standard:

10 **Signs (see Section 2B.52) shall be mounted immediately above ~~adjacent to~~ or integral with pedestrian pushbuttons, explaining their purpose and use.**

Section 4I.03 Operation of Freeway Entrance Ramp Control Signals

Guidance:

01 Operational strategies for ramp control signals, such as periods of operation, metering rates and algorithms, and queue management, should be determined by the operating agency prior to the installation of the ramp control signals and should be closely monitored and adjusted as needed thereafter.

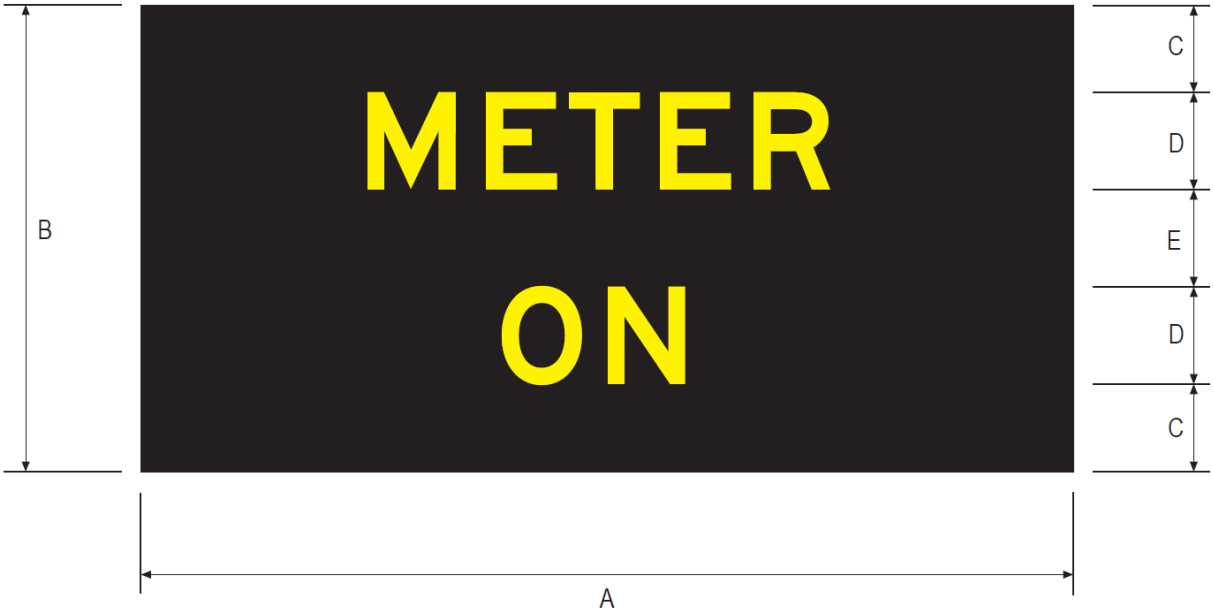
02 When the ramp control signals are in operation ~~operated only during certain periods of the day~~, a RAMP METERED WHEN FLASHING (W3-8) sign (see Section 2C.37) or an ~~internally illuminated~~ overhead Activated Blank-Out "METER ON" (W88-2(CA), W88-3(CA) ~~indication~~message sign, ~~or an internally illuminated "METER ON" indication~~, or an ~~extinguishable~~ Activated Blank-Out "PREPARE TO STOP" (W89(CA)) message sign (see Figure 2C-6(CA) should be installed in advance of the ramp control signal near the entrance to the ramp, or on the arterial on the approach to the ramp, to alert road users to the presence and operation of ramp meters.

Section 4N.02 In-Roadway Warning Lights at Crosswalks

Standard:

11 **If pedestrian pushbuttons are used to actuate the in-roadway lights, a Push Button To Turn On Warning Lights (with pushbutton symbol) (R10-25) sign (see Figure 2B-26) shall be mounted immediately above~~adjacent to~~ or integral with each pedestrian pushbutton.**

Ramp Meter Activated Blank-Out Signs	
Sign Code	Figure
W88-2 (CA)	
W88-3 (CA)	
W89 (CA)	



W88-2 (CA) Activated Blank-Out

ENGLISH UNITS

A	B	C	D	E
96	48	8.75	10E	9.5

COLORS: LEGEND - AMBER LED (STEADY ON, NON-FLASHING WHEN ACTIVATED, LED CHROMATICITY WAVELENGTH OF 590-600 nm)
BACKGROUND - BLACK

8/1/2014

W88-3 (CA) Activated Blank-Out

ENGLISH UNITS

A	B	C	D	E
96	48	8.75	10E	9.5

COLORS: LEGEND - AMBER LED (STEADY ON, NON-FLASHING WHEN ACTIVATED, LED CHROMATICITY WAVELENGTH OF 590-600 nm)
BACKGROUND - BLACK

8/1/2014

W89 (CA) Activated Blank-Out

ENGLISH UNITS

A	B	C	D	E
96	48	8.75	10E	9.5

COLORS: LEGEND - AMBER LED (STEADY ON, NON-FLASHING WHEN ACTIVATED, LED CHROMATICITY WAVELENGTH OF 590-600 nm)
BACKGROUND - BLACK

8/1/2014

15-04 Coachella Valley NEV Plan and associated TCDs

Recommendation: CVAG is seeking Committee action on the traffic control devices described herein, and requests one of the following actions for each:

1. Include recommended devices as shown in this memorandum in the CA-MUTCD
2. Approve some or all of these devices for use without explicit inclusion in the CA-MUTCD (i.e. support based on existing design flexibility or general conformance)
3. Conditionally approve specific devices subject to revisions
4. Do not approve specific devices

Requesting & Sponsoring Agency: Mark Greenwood & Coachella Valley Association of Governments (CVAG)

Background: Neighborhood Electric Vehicles (NEVs) are four wheeled motor vehicles which can travel at least 20 mph but no more than 25 mph and are classified as a Low Speed Vehicle (LSV) in the Code of Federal Regulations (49 CFR Part 571). The California Vehicle Code uses the federal definition of NEVs and provides for registration by the Department of Motor Vehicles (CVC 385.5 and 21250).
The CVAG NEV Plan is intended to support on-street connectivity to the 50 mile long CV Link pathway, which is currently in project approval and preliminary design phase with construction anticipated to begin in late 2017. The NEV Plan design solutions are required to clarify where and how Neighborhood Electric Vehicles (NEVs) may be operated, as well as improve connectivity to and between different classes of CV Link segments.The draft Master Plan is available for review on the CVAG website (http://www.cvag.org/).

Context and background for each traffic control device is given on the referenced page numbers. Where applicable, a summary of the background or rationale is provided here.

Figure # Page #	Illustration	Traffic Control Device	CAMUTCD / FHWA Reference	Request and Background
Figure 6 Page 49		NEV PARKING ONLY REGULATORY SIGN	R7 Series signs; similar to R22 to R25 in the CA-MUTCD	Approve use of legend-only regulatory sign. In most cases, a standard car parking space will be sufficient. Should a preferential parking space be allocated, this sign would be used.

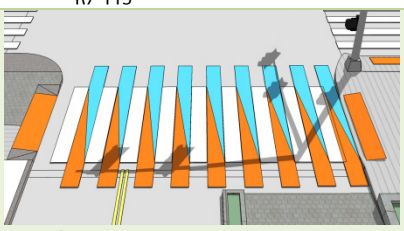
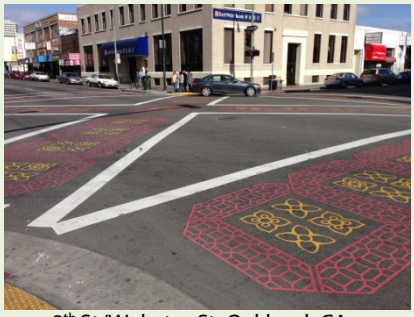
Figure # Page #	Illustration	Traffic Control Device	CAMUTCD / FHWA Reference	Request and Background
Figure 7 Page 50	 R7-111  R7-112  R7-113  R7-113aP  R7-113bP	Electric Vehicle Parking/Charging Regulatory Signs: R7-111; R7-112; R7-113; R7-112aP; R7-113bP	See FHWA memorandum, INFORMATION: Regulatory Signs for Electric Vehicle Charging and Parking Facilities. June 2013.	Approve use of legend-only regulatory sign. Some local bylaws prohibiting golf cart motor vehicles in motor vehicle parking spaces will need to be amended.
Figure 11 Page 54	 CV Link proposed crosswalk  8th St/Webster St, Oakland, CA  Alabama St/Michigan St, Indianapolis, IN	CV Link enhanced crosswalk markings	FHWA Application of Colored Pavement Interpretation Letter 3(09)-24(I)	Approve use of colored crosswalk. The CV Link colored crosswalk uses brighter colors not approved by the FHWA but which are of a standard ladder type design. Similar treatments are used to highlight culturally significant linkages in Oakland and Indianapolis. These crosswalk markings project the neighborhood or corridor's identity and reinforce cultural connections to the area. In Oakland's Chinatown, the crosswalk designs are a re-creation of images from the Ching Dynasty. Along the Indianapolis Cultural Trail, the colorful designs clarify where different users should travel within the crosswalk.

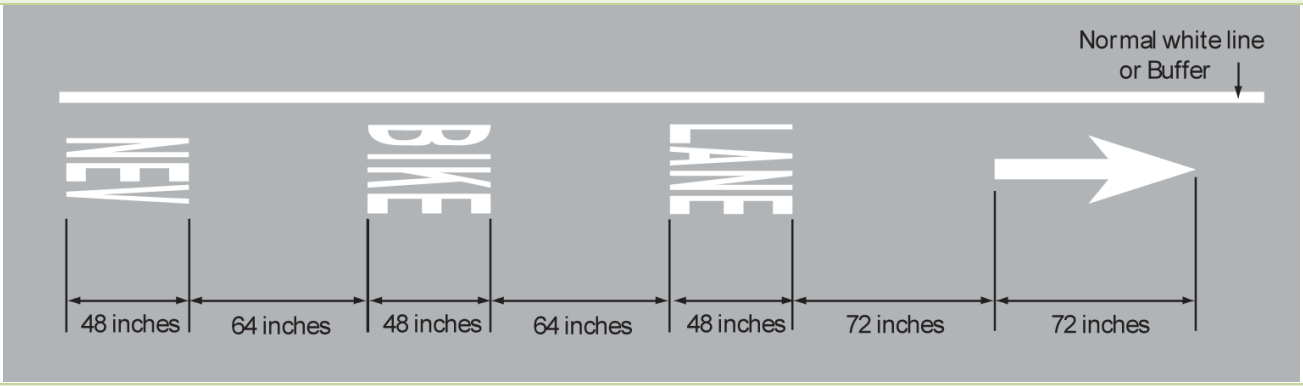
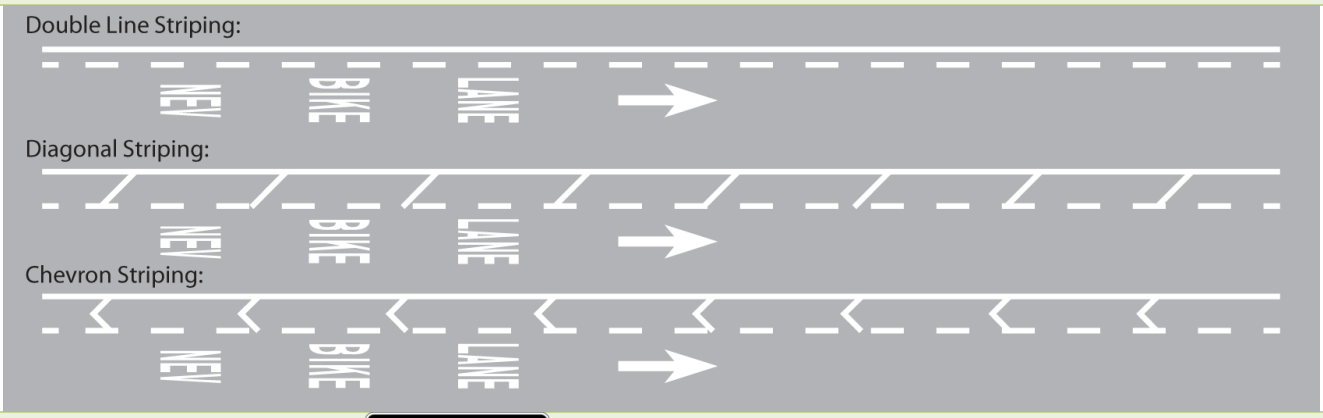
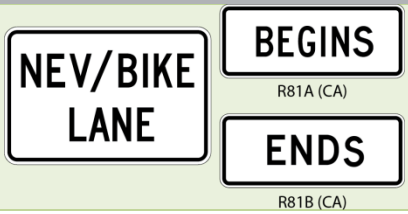
Figure # Page #	Illustration	Traffic Control Device	CAMUTCD / FHWA Reference	Request and Background
Figure 15 Page 57	 Modified R9-5	Modified R9-5 NEV BIKE USE PED SIGNAL regulatory sign	Based on R9-5 BIKE USE PED SIGNAL sign	Approve use of legend-only regulatory sign.
Figure 19 Page 60	(see below)	NEV BIKE LANE pavement marking	Based on word legend option C in figure 9C-3 of the CAMUTCD	Approve use of pavement marking for identifying NEV/BIKE lanes.
				
Figure 20 Page 60	(see below)	NEV preferential lane markings	Preferential lane striping is described in section 3D.02 of the CAMUTCD.	Approve preferred application of longitudinal striping options where a buffer it to be utilized.
				
Figure 21 Page 61		NEV/BIKE LANE regulatory sign	Based on R81 of the CAMUTCD.	Approve use of legend-only regulatory sign. Similar signs already exist in Coachella Valley but generally say "Golf Cart / Bike Lane" or have a pictorial

Figure # Page #	Illustration	Traffic Control Device	CAMUTCD / FHWA Reference	Request and Background
				LOGO RATHER THAN TEXT.
Figure 22 Page 61		NEVS PROHIBITED BEYOND THIS POINT	N/A – BASED ON PROPOSED DESIGN IN CITY OF LINCOLN NEV PLAN	APPROVE USE OF REGULATORY SIGN. INFORMS NEV OPERATORS THAT THE ROUTE BEING TRAVELED IS NO LONGER ACCESSIBLE, GENERALLY AT A POINT WHERE THEY ARE DIRECTED TO TURN ONTO ANOTHER ROUTE OR FACILITY.
Figure 25 Page 56		"EXCEPT NEVS/BIKES" PLAQUE	AN "EXCEPT BICYCLES" SIGN WAS APPROVED IN THE FALL 2014 SESSION OF THIS COMMITTEE.	APPROVE USE OF SUPPLEMENTARY REGULATORY SIGN. TEXT IS PROPOSED RATHER THAN A LOGO TO CLARIFY THE LEGAL DISTINCTION BETWEEN GOLF CARTS AND NEVS, AS SOME SUCH ROADWAYS WILL NOT BE OPEN TO GOLF CARTS BUT MAY BE OPEN TO NEVS.
Figure 32 Page 60		NEV ROUTE SIGN	BASED ON D11-1 IN THE CAMUTCD	APPROVE USE OF LEGEND-ONLY GUIDE SIGN.

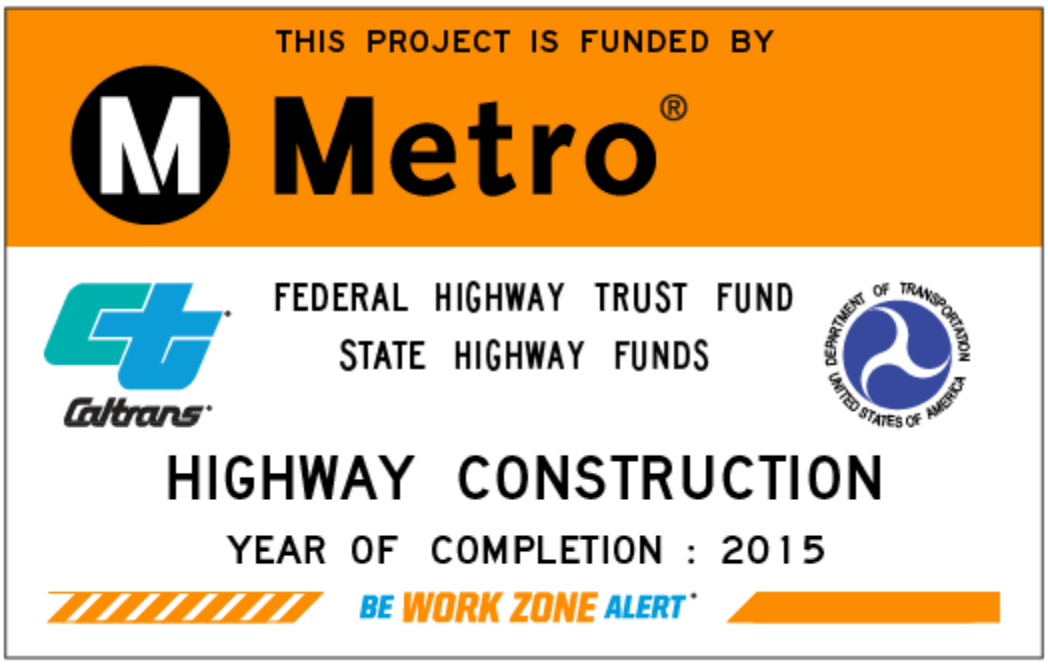
15-05 Proposed update for "Construction Funding Identification Sign"

Recommendation: Caltrans is requesting approval to update the "Construction Funding Identification Sign" to be standardized in the California Manual on Uniform Traffic Control Devices (CA MUTCD)

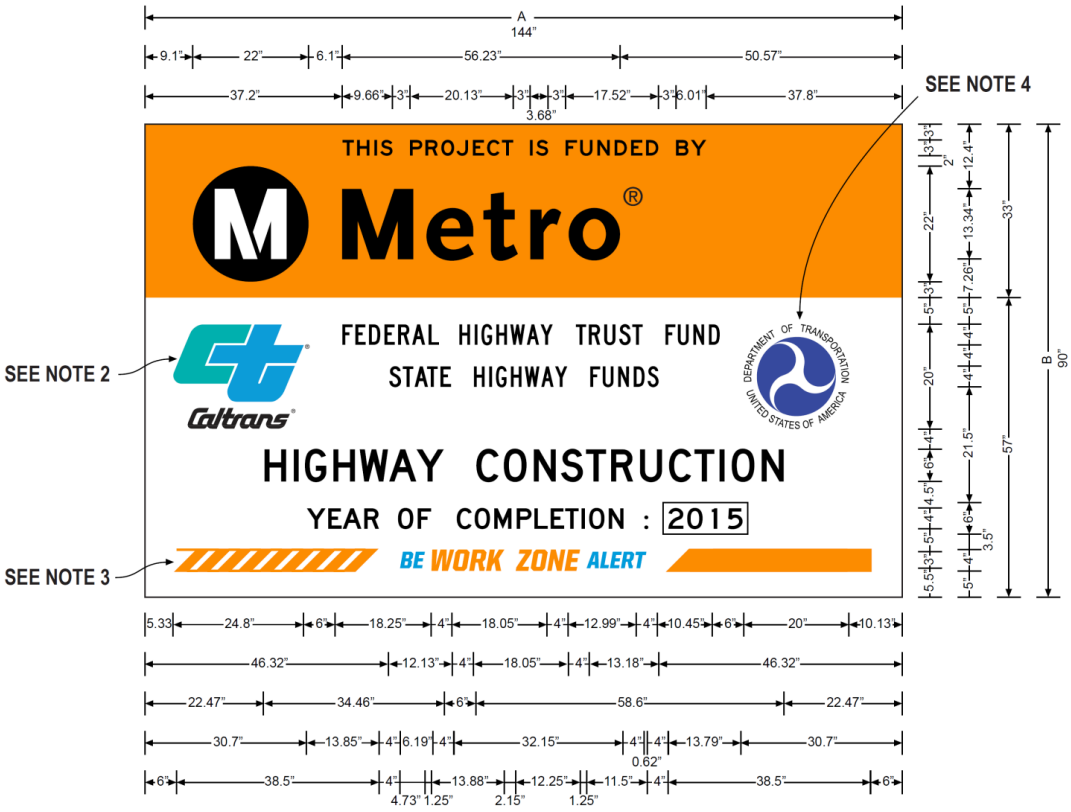
Requesting Agency & Sponsor: Caltrans District 7, Duper Tong, Caltrans' Voting Member

Background: Currently available Project Information Signs are limited in type and based on funding source. See http://www.dot.ca.gov/hq/traffops/engineering/control-devices/projectinfosigns.htm

Proposed update for "Construction Funding Identification Sign" to be standardized in Part 6 of the *California Manual on Uniform Traffic Control Devices* (CA MUTCD). Freeway size: 144" W x 90" H; and, Conventional Highway size: 96" W x 60" H. The sign, shown below, was proposed for use on the I-405 project, with Los Angeles MTA ("Metro®") as a major funding contributor to the project, and includes a new Caltrans "*BE WORK ZONE ALERT*®" safety campaign graphic across the bottom of the sign assembly.
Caltrans finds that the Municipal Planning Organizations (MPO's) want to create sign with elements that do not meet CA MUTCD guidelines. This proposed design provides a uniform sign template for the purpose of presenting a temporary sign to identify participating funding entities, and funding sources. The orange-background funding header panel will provide options for local agencies to place their information, or Caltrans can offer variations that are similar to the 2006 "Revised Standard Plan T7."



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



CXXX (CA)

ENGLISH UNITS

A	B
144	90
96	60

COLORS:
LEGEND - BLACK
BACKGROUND - WHITE AND FLOURESCENT ORANGE

NOTES:
1. DIMENSIONS FOR THE 144X90 SIGN ARE PROVIDED ON THE FIGURE. DIMENSIONS FOR THE 96X60 SIGN MUST BE CALCULATED BY MULTIPLYING EACH DIMENSION BY 2/3 (0.66).
2. PANTONE #299 BLUE, #326 GREEN.
3. PANTONE #299 BLUE, #137 ORANGE.
4. PANTONE #2747 BLUE.
5. THE SIGN MESSAGES SHOWN FOR TYPE OF PROJECT AND FUND TYPES ARE EXAMPLES ONLY. SEE THE SPECIAL PROVISIONS FOR THE APPLICABLE TYPE OF PROJECT AND FUND TYPE MESSAGES TO BE USED.
6. YEAR OF COMPLETEION OF PROJECT CONSTRUCTION SHOW ON THE OVERLAY IS AN EXAMPLE ONLY. SEE SPECIAL PROVISIONS.
7. USE WHEN THE PROJECT INVOLVES FEDERAL HIGHWAY TRUST FUND ONLY.

DRAFT 02/05/2015

15-08 Modify CA MUTCD Section 6F.01 to include Manual for Assessing Safety Hardware (MASH) criteria

Recommendation: Caltrans requests that the Committee recommends to amend Section 6F.01as proposed.

Requesting & Sponsoring Agency: Caltrans, Duper Tong

Background: The Federal Highway Administration (FHWA) currently requires that roadside safety hardware used on the National Highway System meet the crash testing criteria of National Cooperative Highway Research Program (NCHRP) Report 350 (or the latest crash test criteria adopted by FHWA). MASH crash testing guidelines were published by the American Association of State and Highway and Transportation Officials on November 20, 2009, and supersede NCHRP Report 350 for roadside safety hardware developed after January 1, 2011.

Proposal: Edit the 2014 CA MUTCD as follows:

Section 6F.01 Types of Devices

Guidance:

01 *The design and application of TTC devices used in TTC zones should consider the needs of all road users (motorists, bicyclists, and pedestrians), including those with disabilities.*

Support:

02 FHWA policy requires that all roadside appurtenances such as traffic barriers, barrier terminals and crash cushions, bridge railings, sign and light pole supports, and work zone hardware used on the National Highway System meet the crashworthy performance criteria contained in the National Cooperative Highway Research Program (NCHRP) Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features" or the Manual for Assessing Safety Hardware (MASH). MASH crash testing guidelines were published by the American Association of State and Highway and Transportation Officials on November 20, 2009, and supersede NCHRP Report 350 for roadside safety hardware developed after January 1, 2011. The FHWA website at "http://safety.fhwa.dot.gov/programs/roadside_hardware.htm" identifies all such hardware and includes copies of FHWA acceptance letters for each of them. In the case of proprietary items, links are provided to manufacturers' websites as a source of detailed information on specific devices. The website also contains an "Ask the Experts" section where questions on roadside design issues can be addressed.

02a Caltrans adopted the Manual for Assessing Safety Hardwar (MASH) crash testing guidelines in 2012 (TOPD 12-02) for testing and evaluating new roadside safety hardware, bridge railings and barriers and appurtenances to those new highway safety features.

03 Various Sections of the MUTCD require certain traffic control devices, their supports, and/or related appurtenances to be crashworthy. Such MUTCD crashworthiness provisions apply to all streets, highways, and private roads open to public travel (see definition in Section 1A.13). Also, State Departments of Transportation and local agencies might have expanded the NCHRP Report 350 crashworthy criteria to apply to certain other roadside appurtenances.

04 Crashworthiness and crash testing information on devices described in Part 6 are found in AASHTO's "Roadside Design Guide" (see Section 1A.11).

05 As defined in Section 1A.13, "crashworthy" is a characteristic of a roadside appurtenance that has been successfully crash tested in accordance with a national standard such as the NCHRP Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features." or MASH crash guidelines.

Standard:

06 **Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide road users, placed on, over, or adjacent to a street, highway, private roads open to public travel (see definition in Section 1A.13), pedestrian facility, or bikeway by authority of a public body or official having jurisdiction.**

15-08 Modify CA MUTCD Section 6F.01 to include Manual for Assessing Safety Hardware (MASH) criteria

07 **All traffic control devices used for construction, maintenance, utility, or incident management operations on a street, highway, or private road open to public travel (see definition in Section 1A.13) shall comply with the applicable provisions of this Manual.**

08 **Caltrans shall implement NCHRP 350 or MASH criteria for crashworthy TTC devices in TTC zones on all State highways effective as of December 1, 2005. Crashworthiness of TTC devices shall be substantiated. When no longer needed, TTC devices shall be removed from the TTC zone.**

09 **Crashworthiness of TTC devices shall be substantiated as follows:**

10 **Category 1 devices purchased after October 1, 1998 shall be employed based on the vendor's self-certification. Self-certification shall be based on crash testing, crash testing of similar devices, or years of demonstrable safe performance.**

11 **Category 2 devices shall be on FHWA's list of Acceptable Crashworthy Category 2 Hardware for Work Zones which meet NCHRP Report 350 or MASH criteria for crashworthiness. Category 2 devices that have not received FHWA acceptance and were purchased before October 1, 2000, shall not be used. Category 2 devices in use that have received FHWA acceptance shall be labeled with the FHWA acceptance letter number and the name of the manufacturer by the start of the project. The label shall be readable and permanently affixed by the manufacturer. Category 2 devices without a label shall not be used in highway work zones.**

12 **Category 3 devices shall be crash tested in accordance with NCHRP Report 350 or MASH criteria. Caltrans shall include Standard Special Provision (SSP) 12-000, Standard Plans and construction details in all contract documents.**

Support:

13 For Category 3, the compliance date was October 1, 1998 for truck mounted attenuators and work zone crash cushions. The compliance date for other Category 3 devices was October 1, 2002.

From Section 1A.13 Definitions of Headings, Words, and Phrases in this Manual, page 71

37. Constant Warning Time Detection—a means of detecting rail traffic that provides relatively uniform warning time for the approach of trains or light rail transit traffic that are not accelerating or decelerating after being detected.

37a. Consulting Engineer – See Professional Engineer. Refer to California Business and Professions Code Section 6704.

38. Contiguous Lane—a lane, preferential or otherwise, that is separated from the adjacent lane(s) only by a normal or wide lane line marking.

39. Controller Assembly—a complete electrical device mounted in a cabinet for controlling the operation of a highway traffic signal.

40. Controller Unit—that part of a controller assembly that is devoted to the selection and timing of the display of signal indications.

41. Conventional Road—a street or highway other than a low-volume road (as defined in Section 5A.01), expressway, or freeway.

42. Counter-Flow Lane—a lane operating in a direction opposite to the normal flow of traffic designated for peak direction of travel during at least a portion of the day. Counter-flow lanes are usually separated from the off-peak direction lanes by tubular markers or other flexible channelizing devices, temporary lane separators, or movable or permanent barrier.

43. Crashworthy—a characteristic of a roadside appurtenance that has been successfully crash tested in accordance with a national standard such as the National Cooperative Highway Research Program Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features." or MASH crash guidelines (see Section 6F.01)

44. Crosswalk—(a) that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway, and in the absence of a sidewalk on one side of the roadway, the part of a roadway included within the extension of the lateral lines of the sidewalk at right angles to the center line; (b) any portion of a roadway at an intersection or

elsewhere distinctly indicated as a pedestrian crossing by pavement marking lines on the surface, which might be supplemented by contrasting pavement texture, style, or color. As per CVC 275, "Crosswalk" is either: (a) That portion of a roadway included within the prolongation or connection of the boundary lines of sidewalks at intersections where the intersecting roadways meet at approximately right angles, except the prolongation of such lines from an alley across a street. (b) Any portion of a roadway distinctly indicated for pedestrian crossing by lines or other markings on the surface. Notwithstanding the foregoing provisions of this section, there shall not be a crosswalk where local authorities have placed signs indicating no crossing.

45. **Crosswalk Lines—white** or yellow (in school areas per CVC 21368) **pavement marking lines that identify a crosswalk.**
46. **Cycle Length—the time required for one complete sequence of signal indications.**
47. **Dark Mode—the lack of all signal indications at a signalized location. (The dark mode is most commonly associated with power failures, ramp meters, hybrid beacons, beacons, and some movable bridge signals.)**
48. **Delineator—a retroreflective device mounted on the roadway surface or at the side of the roadway in a series to indicate the alignment of the roadway, especially at night or in adverse weather.**

48a. Department of Transportation – California Department of Transportation or Caltrans.

49. **Design Vehicle—the longest vehicle permitted by statute of the road authority (State or other) on that roadway.**
50. **Designated Bicycle Route—a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route signs, with or without specific bicycle route numbers.**
51. **Detectable—having a continuous edge within 6 inches of the surface so that pedestrians who have visual disabilities can sense its presence and receive usable guidance information.**
52. **Detector—a device used for determining the presence or passage of vehicles** (including motorcycles), bicycles **or pedestrians.**

From Section 6F.03 Sign Placement, page 1055

16 **The bottom of a sign mounted on a barricade, or other portable support, shall be at least 1 foot above the traveled way.**

Option:

17 For mobile operations, a sign may be mounted on a work vehicle, a shadow vehicle, or a trailer stationed in advance of the TTC zone or moving along with it.

Support:

18 If alterations are made to specific traffic control device supports that have been successfully crash tested in accordance with NCHRP Report 350 or MASH crash guidelines, the altered supports might not be considered to be crashworthy.

19 Refer to Section 2A.21 for mounting of small plastic signs on channelizers (CA), cones or portable delineators.

15-08 Modify CA MUTCD Section 6F.01 to include Manual for Assessing Safety Hardware (MASH) criteria

5. Request for Experimentation Item is withdrawn

15-06 Request Experimental status for a modified flash rate for a pedestrian activated flashing beacon.

Recommendation: Grant permission to experiment with a modified flash rate for a pedestrian activated flashing beacon..

Requesting Agency & Sponsor: Caltrans District 3, Duper Tong, Caltrans Voting Member

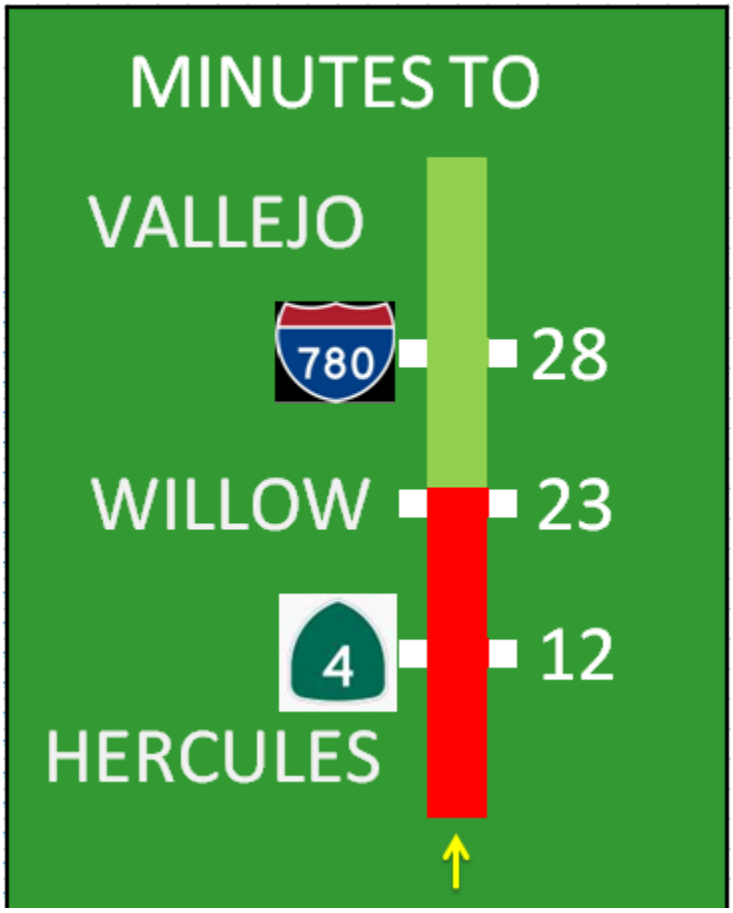
Background: Driver compliance with the existing flashing beacons has been poor. District 3 is proposing a modified flash rate that operates beacons at 50 to 60 flashes per minute, but includes flickers for each beacon at 3 times per second and 2 times per second.

15-07 Request Experimental status for a Graphic Route Information Panel that provides travelers information on time to destination. Item is withdrawn

Recommendation: Caltrans is requesting permission to experiment with a dynamic traveler information sign.

Requesting Agency & Sponsor: Caltrans District 4, Duper Tong, Caltrans Voting member

Background: Current dynamic message signs use three lines of 16 alphanumeric characters and no more than two phases in a display to convey a single message. Graphic Route Information Panel will use graphics to improve over traditional text based DMS by providing drivers with real-time color-coded congestion information in a graphical format for specific segments of the local highway network.



15-07 Request Experimental status for a Graphic Route Information Panel that provides travelers information on time to destination.

8. Discussion Item:

14-02 "PRESERVE AMERICA" sign not added in 2014 CA MUTCD in Section 2D.104(CA) to the CA MUTCD to due risk of not meeting substantial conformance with 2009 MUTCD.

Requesting Agency & Sponsor: Caltrans, Duper Tong, Caltrans Voting Member

Background: FHWA requested removal the added reference in order for the 2014 CA MUTCD to be in substantial conformance.

Recommendation: Await revisions to 2009 MUTCD, then revisit this topic.

From: kevin.d.korth@dot.gov [mailto:kevin.d.korth@dot.gov]
Sent: Wednesday, October 29, 2014 4:20 PM
To: Engelmann, Chris@DOT; Bhullar, Gurinderpal S@DOT
Cc: Vivien.Hoang@dot.gov
Subject: RE: CA MUTCD Substantial Conformance Letter

Johnny,

As we discussed on October 15th, the Division Office was questioning Section 1A.08 PP06 F addition to the 2014 CA MUTCD as the last remaining modification under our consideration. To receive our letter, we request you remove the added reference from the September 2014 CTCDC Section 1A.08 PP06 F. The Division Office wants this topic to remain silent in the CA MUTCD for this Section. It may be reconsidered by the committee in a different manner and we can discuss other options after 2016 CA MUTCD publication.

Thank you for your efforts.

Kevin Korth, EIT
Traffic Operations Engineer
FHWA CA-Division

Previous submittal:

A Tradition of Stewardship
A Commitment to Service

Department of Public Works

1195 Third Street, Suite 101
Napa, CA 94559-3092
www.countyofnapa.org/publicworks

Main: (707) 253-4351
Fax: (707) 253-4627

Steven Lederer
Director

August 4, 2014

14-02 "PRESERVE AMERICA" sign not added in 2014 CA MUTCD in Section 2D.104(CA) to the CA MUTCD to due risk of not meeting substantial conformance with 2009 MUTCD.

Devinder Singh, Executive Secretary
California Traffic Control Devices Committee
P.O. Box 942874
Sacramento, CA 94274-0001

Subject: Request for Agenda Item – Preserve America Community Sign

Dear Devinder,

This proposal was considered at the February 19, 2014 meeting of the Committee, at the request of Tuolumne County and sponsored by me. At that time, there was discussion about the request in the context of a larger issue of non-traffic control devices in public road rights-of-way. It was suggested that some work had been done recently at the Federal level which would inform the Committee's consideration of this topic. The matter was referred to a subcommittee to evaluate alternative approaches to the proposal and return to the Committee with a recommendation.

In February, John Ciccarelli and Larry Patterson agreed to serve on the subcommittee with me. With Larry's work transition, he was not able to participate in this discussion prior to his departure from the Committee. Since that time, I have invited Mark Greenwood to join the subcommittee, so that there would be a representative from the cities, as well as from both northern and southern California.

I contacted Johnny Bhullar, Caltrans staff, and asked him for information about recent activity at the Federal level on this same subject, which had been alluded to in the February meeting. He provided the following perspective on the question: "…(this) issue was reflected in the CA MUTCD per Section 1A.08. I believe the work I was referring to (in February) at the NCUTCD is now already included in the CA MUTCD 2012 edition. Please verify if it satisfies your concern. If not, let's discuss and figure out the next steps."

For reference, here is an excerpt from Section 1A.08:

Support:
06 Certain types of signs and other devices that do not have any traffic control purpose are sometimes placed within the highway right-of-way by or with the permission of the public agency or the official having jurisdiction over the street or highway. Most of these signs and other devices are not intended for use by road users in general, and their message is only important to individuals who have been instructed in their meanings. These signs and other devices are not considered to be traffic control devices and provisions regarding their design and use are not included in this Manual. Among these signs and other devices are the following:
A. Devices whose purpose is to assist highway maintenance personnel. Examples include markers to guide snowplow operators, devices that identify culvert and drop inlet locations, and devices that precisely identify highway locations for maintenance or mowing purposes.
B. Devices whose purpose is to assist fire or law enforcement personnel. Examples include markers that identify fire hydrant locations, signs that identify fire or water district boundaries, speed measurement pavement markings, small indicator lights to assist in enforcement of red light violations, and photo enforcement systems.
C. Devices whose purpose is to assist utility company personnel and highway contractors, such as markers that identify underground utility locations.
D. Signs posting local non-traffic ordinances.
E. Signs giving civic organization meeting information.
Standard:
07 **Signs and other devices that do not have any traffic control purpose that are placed within the highway right-of-way shall not be located where they will interfere with, or detract from, traffic control devices.**

14-02 "PRESERVE AMERICA" sign not added in 2014 CA MUTCD in Section 2D.104(CA) to the CA MUTCD to due risk of not meeting substantial conformance with 2009 MUTCD.

Paragraph 06 refers to signs or devices placed within the right-of-way with the permission of the jurisdiction, which are not considered to be traffic control devices. A list follows which is introduced with "among these," seeming to indicate the list is not the sum total of all such signs which could be placed. Paragraph 07 goes on to refer to such signs and devices, and indicates that they shall not conflict with traffic control devices. The combination of these two paragraphs would seem to address the concerns which were raised at the February meeting: that there be an approach which is more general than just the "Preserve America" request which had been presented, and that there be criteria on the placement of such signs.

The subcommittee concluded that the existing language in the Manual is sufficient to cover Tuolumne County's request, and considered three possible options for how to wrap this up:

1. No action needed from the CTCDC.
2. CTCDC Action Item to confirm this understanding.
3. CTCDC Action Item to propose modified language to clarify that honorary designation signs, such as Preserve America or the other examples which were cited in the February meeting, are to be considered as allowable non-traffic-control devices in the right-of-way (essentially, adding an item "F" to the list of "A" through "E" in paragraph 06 of Section 1A.08 above).

The subcommittee recommends in favor of Option #1, that no further action is needed from the CTCDC. If there is consensus from the committee, I will convey that message to Tuolumne County and Caltrans District 10. The subcommittee also indicated that if there was a preference on the part of CTCDC, they could support Option #3, which would modify Paragraph 06 as follows:

Support:
06 Certain types of signs and other devices that do not have any traffic control purpose are sometimes placed within the highway right-of-way by or with the permission of the public agency or the official having jurisdiction over the street or highway. Most of these signs and other devices are not intended for use by road users in general, and their message is only important to individuals who have been instructed in their meanings. These signs and other devices are not considered to be traffic control devices and provisions regarding their design and use are not included in this Manual. Among these signs and other devices are the following:
A. Devices whose purpose is to assist highway maintenance personnel. Examples include markers to guide snowplow operators, devices that identify culvert and drop inlet locations, and devices that precisely identify highway locations for maintenance or mowing purposes.
B. Devices whose purpose is to assist fire or law enforcement personnel. Examples include markers that identify fire hydrant locations, signs that identify fire or water district boundaries, speed measurement pavement markings, small indicator lights to assist in enforcement of red light violations, and photo enforcement systems.
C. Devices whose purpose is to assist utility company personnel and highway contractors, such as markers that identify underground utility locations.
D. Signs posting local non-traffic ordinances.
E. Signs giving civic organization meeting information.
F. Honorary community designation signs for public agencies such as towns, cities, counties or the state, such as Preserve America Community, Bicycle Friendly Community, Tree City USA and others.

Background – Original Request

Certain communities have been designated by the Federal government as Preserve America communities, including 38 within California. This designation recognizes communities that protect and celebrate their heritage, use their historic assets for economic development and community revitalization, and encourage people to experience and appreciate local historic resources through education and heritage tourism programs. The designation is provided by a coalition of federal agencies, including the Department of

Transportation, but the Federal Highway Administration (FHWA) has not yet incorporated the sign indicating this designation into the Manual on Uniform Traffic Control Devices (MUTCD).

The Federal government makes this sign available for designated communities to post at their entrances. I was recently contacted by staff from Tuolumne County, who were interested in doing so at several locations on State routes, and whose application for encroachment permit to do so was denied by Caltrans District 10. The primary cause for denial of their application was that the sign is not incorporated into the CA MUTCD. In her denial letter, the Caltrans District Director referred Tuolumne County to the CTCDC, and they have contacted me as the representative for northern counties.

As the sign proposed consists of a word message and pictograph only, it is my understanding that the CTCDC can approve it for use by communities in California which are interested, which includes the County of Tuolumne. The proposed sign would be new to the CA MUTCD, so I have proposed language to be included, and recommended a designation code for the sign.

Regards,

Rick Marshall (e-signature)
Rick Marshall
Deputy Director of Public Works
Road Commissioner & County Surveyor
Member, CTCDC – Northern Counties' Representative

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