AGENDA

CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC)
December 6, 2012 Meeting (Start Time 9 am)
979 17th Ave, Santa Cruz, CA 95062
Simpkins Swim Center (Parks office)

The Meeting is open, and public/local agencies are invited to attend. For further information regarding this meeting, please contact Devinder Singh at (916) 654-4715, or at Devinder.singh@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/signtech/newtech/index.htm

Organization Items

1 Introduction
2 Membership
3 Approval of Minutes of the August 30, 2012 Meetings
4 Public Comments

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

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.

		Page #s
12-16	Proposal to amend Section 3B.18 of the CA MUTCD 2012 to enhance uncontrolled Intersection or mid-block crossings -Proposed by Caltrans	(Continued) (Benton) 8-13
12-20	FHWA's 2009 MUTCD Revisions 1 and 2 –Engineering Judgment & Compliance dates - Proposed by Caltrans	(Continued) (Benton) 14-25
12-22	Amendment to Sections 2B.04 and 4D.34 to make both Sections consistent - Proposed by Caltrans	(Introduction) (Benton) 26-27
12-23	Electric Vehicle Charging Station signs and Pavement Marking - Proposed by Caltrans	(Introduction) (Benton) 28-37

12-24	Updates and corrections for Accessible Parking Space Markings (Section 3B.20 Pavement Word, Symbol, and Arrow Markings, Page 695 of CA MUTCD) - Proposed by Caltrans	(Introduction) (Benton) 38-43

6. Request for Experimentation

12-25	Request for permission to experiment with various Bicycle Treatments - Proposed by the City of Santa Monica	(Introduction) (Ciccarelli) 44-54
08-21	Proposal to Experiment with Regulatory Sign "BIKES IN LANE" with Bicycle Symbol (Originally submitted as "Bike May Use Full Lane") Recommended to remove from the agenda, because FHWA approval was not received	(Continued) (Benton)

7 Information Items

12-17	Interim Approval (1A-15) issued by the FHWA for the optional use of an alternative design for the U.S. Bicycle Route (M1-9) Sign - info by Caltrans	55
12-26	Draft Intersection Control Evaluation Policy - Info by Caltrans	56-58

8 Next Meeting - Suggested dates are March 21, 28 0r April 4, 2013

9 Adjourn

ITEM UNDER EXPERIMENTATION

06-2 Experiment with Colored Bike Lane (Brown/Wong)
(Proposed by the City of San Francisco)
Status:
San Francisco has designed and installed green thermoplastic in the dashed portions of bicycle lanes at 7 intersections. Photos of the green installation at a few locations can be viewed here: http://sf.streetsblog.org/2012/06/22/sfmta-adding-more-green-treatments-to-bike-lane-merging-zones/. We will be working on collecting "After" data in the next two months followed by an analysis of the data to determine if the treatment improves safe merging behavior and compliance with proper lane placement by both bicyclist and motorists.
The revised schedule for the remainder of the experiment is as follows:
August 2012 – Ongoing data collection to continue through September
October 2012 – Draft report
December 2012 – Final report
Thanks,
Darcie Lim, PE
SFMTA | Municipal Transportation Agency
One South Van Ness Avenue, 7th Floor
San Francisco, CA 94103
phone: (415) 701-4545

08-7 Experimentation with new Warning Sign for Bicyclists (Brown/Wong)
(Proposed by the City/Co of San Francisco)
Status: No new update. No change since their last report. The City and County of San Francisco would like to bring this experiment to a close and therefore will analyze collision data collected before and after the installation of this experimental warning sign and submit the results to the Committee within the next 12 months for its evaluation.

09-9 Experiment with Steady Red Stop Line Light (Greenwood/Fisher)
Status: LADOT prepared a draft evaluation report which indicated that the Steady Red Stop Lights at two intersections did reduce vehicle/bus and vehicle/train conflicts based on the camera surveillance data. However, the "Control Intersections" (locations where no Steady Red Stop Lights were installed) also showed similar improvements. Further analysis of more data will be conducted in the next twelve months.
See report on the following website.
http://www.dot.ca.gov/hq/traffops/signtech/newtech/status.htm

09-21 Experiment with Separated/Protected Bikeway (Greenwood/Fisher)
On the Left Side of 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/signtech/newtech/status.htm

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

Status: No new update. See previous report on the following website:
http://www.dot.ca.gov/hq/traffops/signtech/newtech/status.htm

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

11-4 Experiment with Round Rapid Flashing Beacon and RRFB (Greenwood/Fisher)
Status: See report on the following website.
http://www.dot.ca.gov/hq/traffops/signtech/newtech/status.htm

11-12 Experiment with Circular Rapid Flashing Beacon and RRFB (Greenwood/Fisher)

Status: No update.

11-13 Experiment with a Sign "RECKLESS DRIVING PROHIBITED" (Marshall/Mansourian)
Status: No update.

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:

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN JR., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC ENGINEERING & OPERATIONS
1657 RIVERSIDE DRIVE
P. O. BOX 496073
REDDING, CA 96049-6073
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Flex your power!
Be energy efficient!

July 27, 2012

Federal Highway Administration
1200 New Jersey Avenue, S.E., HOTO-1
Washington, DC 20590

Status Report: 4(09)-13 (E) Yellow LED Border on Ped Signal – Caltrans

Thank you for your December 12, 2011 response letter approving our request to experiment with the addition of a yellow LED border to a standard pedestrian signal head. As requested in the response, we are submitting an interim status report to show what has been completed over the last six months. Although the project started off slower than anticipated, I am pleased to report that two major milestones towards evaluating the proposed modification have been completed.

As you are aware, before we can proceed with an evaluation plan for a new traffic device in the State of California, the California Traffic Control Devices Committee (CTCDC) must have an opportunity to review and approve the experiment proposal. Since the CTCDC typically convenes only three times a year, it was important to get on the earliest agenda possible to keep the project on track. Fortunately, thanks to CTCDC Executive Secretary, Devinder Singh, this item was placed on the agenda for the February 16th CTCDC meeting in San Diego.

The proposed pedestrian signal modification and the evaluation plan were described to the committee at the February meeting. The presentation was followed by numerous questions from committee members seeking clarification about the functionality of the device and its proposed operation. One suggestion from the committee was to consider expanding the evaluation to compare the effectiveness of the yellow LED border against the animated eyes symbol that is already allowed in the MUTCD (Section 4E.04). However, the committee was reminded that the FHWA only approved evaluating the yellow LED border modification. Expanding the study would likely require that another evaluation plan be submitted to FHWA for approval. With that understanding, the idea to compare the yellow LED border against the animated eyes symbol was offered only as a consideration. In the end, the CTCDC approved the evaluation plan as presented.

The meeting minutes can be viewed at the following link:
http://www.dot.ca.gov/hq/traffops/signtech/newtech/minutes/Min021612.pdf.

The second major hurdle was to develop the device to use for the evaluation. Several manufacturers from Caltrans' Pre-Qualified Product List for LED Traffic Signal Modules were

contacted to see if they were interested in fabricating the modified pedestrian signal. Most manufacturers declined taking on the work, but after a few months of correspondence with Western Regional Marketing Manager, Kimberly Konte, Leotek Electronics agreed to develop the device.

The prototype pedestrian signal module was demonstrated on May 30th at a Caltrans facility in Sacramento. The module was connected to a pre-programmed 2070 traffic signal controller to show how the yellow LED border would function when a pedestrian call is made. The prototype looked very similar to the illustration submitted to FHWA for conceptual approval and it performed perfectly. It was agreed to move forward with the prototype with only a few minor adjustments – the major change being the reduction of the spacing between the individual yellow LEDs from 2 inches to 1 inch. The reduction in spacing was considered necessary to make the yellow border more visible in bright daylight conditions.

Attached are pictures of the prototype module placed in a standard pedestrian signal housing. The unit has been mounted on a portable signal pole (with pedestrian push button) that can easily be connected to a 2070 controller and used for demonstration purposes. The sequence of pictures shows how the modified signal will operate during the evaluation.

We are currently in the process of purchasing 16 prototype modules that will be used for the evaluation project. Assuming four crosswalks per traffic signal, this will allow us to evaluate two intersections at a time. Provided there are no delays in acquiring the prototype modules, data for at least two intersections will be gathered before winter conditions influence pedestrian activity. Studies will resume in the Spring of 2013 and continue until data is gathered for five intersections.

Feel free to contact me if you have any questions. I can be reached at 530-225-3229 or via email at rob_stinger@dot.ca.gov.

Sincerely,

ROB STINGER, P.E.
Chief, Traffic Engineering & Operations
District 2

Attachment

Cc: FHWA California Division Office
Devinder Singh – CTCDC Executive Secretary
Ed Lamkin – Caltrans District 2 Maintenance & Operations
Don Fogle – Caltrans HQ Traffic Operations
Kim Konte – Leotek Electronics

4(09)-13(E) YELLOW LED BORDER ON PED SIGNAL - CALTRANS

Before activation

(LED border - dark)

Pedestrian push button is activated

(LED border - illuminated)

Walk signal

(LED border - illuminated)

Flashing hand / countdown begins

(LED border - dark)

12-18 Request to experiment with Red Colored Transit-only Lanes (Knowles)

12-19 Request to Experiment with Highlighted Shared Lane Markings (Bahadori)

12-21 Request to Experiment with In-Roadway Warning Lights (IRWL) System that would supplement existing traffic signals along the Metro Gold Line (Robinson)

5. Public Hearing

12-16 Proposal to amend Section 3B.18 to enhance uncontrolled Intersection or Mid-Block Crossings

Recommendations: Caltrans requests the Committee to make recommendations to adopt the amendment to CA MUTCDD Section 3B.18 as shown under the proposal.

Agency Making Request: Caltrans

Sponsor: Janice Benton – Voting Member, Caltrans

Background: At the August 30, 2012 CTCDC Meeting, the Department submitted two alternatives for the CTCDC to consider:

- Alternative 1: If the CTCDC recommends that this policy should not apply to local roads, the following language will be added to Section 3B.18 of the CA MUTCD:

  On State Highways, if a marked crosswalk exists across an uncontrolled intersection or mid-block location where the speed limit exceeds 40 mph and the roadway has four or more lanes of travel and an ADT of 12,000 vehicles per day or greater, advanced yield lines with associated Yield Here to Pedestrian (R1-5, R1-5a) signs should be placed 20 to 50 ft in advance of the crosswalk, pedestrian crossing (W11-2) warning signs with diagonal downward pointing arrow (W16-7p) plaques should be installed at the crosswalk, and a high visibility crosswalk marking pattern should be used.

- Alternative 2: If the CTCDC recommends that local agencies should adopt the state policy, the following language will be added to Section 3B.18 of the CA MUTCD:

  If a marked crosswalk exists across an uncontrolled intersection or mid-block location where the speed limit exceeds 40 mph and the roadway has four or more lanes of travel and an ADT of 12,000 vehicles per day or greater, advanced yield lines with associated Yield Here to Pedestrian (R1-5, R1-5a) signs should be placed 20 to 50 ft in advance of the crosswalk, pedestrian crossing (W11-2) warning signs with diagonal downward pointing arrow (W16-7p) plaques should be installed at the crosswalk, and a high visibility crosswalk marking pattern should be used.

The CTCDC recommended that the guidance apply to all roadways (Alternative 2) and asked the Department to make the following revisions to the language and figure:

- Clarify that the guidance also applies to roadways that have stop or yield control on the cross-streets.
- Clarify that "adequate visibility should be provided by parking prohibitions" in the language.
- Add a note in the figure that "adequate visibility should be provided."
- Show double sign mounts for the pedestrian crossing signs on two-way roadways in the figure.
- Show optional advanced pedestrian warning signs in the figure.
- Show typical (in California) minor intersection with separate left turn lane in the figure.
- Depict only one marked crosswalk at the intersection across the mainline in the figure.

These recommendations were incorporated into the proposed language for Section 3B.18, and the proposed Figure 3B-17(CA).

- See attachments **"Proposal for Section 3B.18.pdf"** and **"Proposed Figure 3B-17(CA).pdf"**.
- Additional guidance for the recommended minimum enhancements are found in the following sections of the CA MUTCD:
    - Section 2B.11 for Yield Here to Pedestrians (R1-5, R1-5a) signs
    - Section 2C.50 for pedestrian crossing (W11-2) signs at the crosswalk (W16-7P) and in advance (W16-9P) of the crosswalk
    - Section 3B.16 for yield lines in advance of crosswalks (paragraphs 12-15)
    - Section 3B.18 for high visibility crosswalk markings (paragraphs 13-14)

Proposal: **See on the following page in red color.**

Section 3B.18 Crosswalk Markings

Support:

01 Crosswalk markings provide guidance for pedestrians who are crossing roadways by defining and delineating paths on approaches to and within signalized intersections, and on approaches to other intersections where traffic stops.

02 In conjunction with signs and other measures, crosswalk markings help to alert road users of a designated pedestrian crossing point across roadways at locations that are not controlled by traffic control signals or STOP or YIELD signs.

03 At non-intersection locations, crosswalk markings legally establish the crosswalk.

Standard:

04 **When crosswalk lines are used, they shall consist of solid white lines that mark the crosswalk. They shall not be less than 6 12 inches or greater than 24 inches in width.**

Guidance:

05 *If transverse lines are used to mark a crosswalk, the gap between the lines should not be less than 6 feet. If diagonal or longitudinal lines are used without transverse lines to mark a crosswalk, the crosswalk should be not less than 6 feet wide.*

06 *Crosswalk lines, if used on both sides of the crosswalk, should extend across the full width of pavement or to the edge of the intersecting crosswalk to discourage diagonal walking between crosswalks (see Figures 3B-17 and 3B-19).*

07 *At locations controlled by traffic control signals or on approaches controlled by STOP or YIELD signs, crosswalk lines should be installed where engineering judgment indicates they are needed to direct pedestrians to the proper crossing path(s).*

08 *Crosswalk lines should not be used indiscriminately. An engineering study should be performed before a marked crosswalk is installed at a location away from a traffic control signal or an approach controlled by a STOP or YIELD sign. The engineering study should consider the number of lanes, the presence of a median, the distance from adjacent signalized intersections, the pedestrian volumes and delays, the average daily traffic (ADT), the posted or statutory speed limit or 85th-percentile speed, the geometry of the location, the possible consolidation of multiple crossing points, the availability of street lighting, and other appropriate factors.*

09 *New marked crosswalks alone, without other measures designed to reduce traffic speeds, shorten crossing distances, enhance driver awareness of the crossing, and/or provide active warning of pedestrian presence, should not be installed across uncontrolled roadways where the speed limit exceeds 40 mph and either:*

A. The roadway has four or more lanes of travel without a raised median or pedestrian refuge island and an ADT of 12,000 vehicles per day or greater; or

B. The roadway has four or more lanes of travel with a raised median or pedestrian refuge island and an ADT of 15,000 vehicles per day or greater.

Insert Guidance:

If a marked crosswalk exists across an uncontrolled roadway where the speed limit exceeds 40 mph and the roadway has four or more lanes of travel and an ADT of 12,000 vehicles per day or greater, advanced yield lines with associated Yield Here to Pedestrians (R1-5, R1-5a) signs should be placed 20 to 50 ft in advance of the crosswalk, adequate visibility should be provided by parking prohibitions, pedestrian crossing (W11-2) warning signs with diagonal downward pointing arrow (W16-7p) plaques should be installed at the crosswalk, and a high visibility crosswalk marking pattern should be used (See Figure 3B-17(CA)).

Support:

10 Chapter 4F contains information on Pedestrian Hybrid Beacons. Section 4L.03 contains information regarding Warning Beacons to provide active warning of a pedestrian's presence. Section 4N.02 contains information regarding In-Roadway Warning Lights at crosswalks. Chapter 7D contains information regarding school crossing supervision.

Guidance:

11 *Because non-intersection pedestrian crossings are generally unexpected by the road user, warning signs (see Section 2C.50) should be installed for all marked crosswalks at non-intersection locations and adequate visibility should be provided by parking prohibitions.*

Support:
12 Section 3B.16 contains information regarding placement of stop line markings near crosswalk markings.
Option:
13 For added visibility, the area of the crosswalk may be marked with white diagonal lines at a 45-degree angle to the line of the crosswalk or with white longitudinal lines parallel to traffic flow as shown in Figure 3B-19.
14 When diagonal or longitudinal lines are used to mark a crosswalk, the transverse crosswalk lines may be omitted. This type of marking may be used at locations where substantial numbers of pedestrians cross without any other traffic control device, at locations where physical conditions are such that added visibility of the crosswalk is desired, or at places where a pedestrian crosswalk might not be expected.
Guidance:
15 *If used, the diagonal or longitudinal lines should be 12 to 24 inches wide and separated by gaps of 12 to 60 inches. The design of the lines and gaps should avoid the wheel paths if possible, and the gap between the lines should not exceed 2.5 times the width of the diagonal or longitudinal lines.*
Option:
16 When an exclusive pedestrian phase that permits diagonal crossing of an intersection is provided at a traffic control signal, a marking as shown in Figure 3B-20 may be used for the crosswalk.
Guidance:
17 *Crosswalk markings should be located so that the curb ramps are within the extension of the crosswalk markings.*
Support:
18 Detectable warning surfaces mark boundaries between pedestrian and vehicular ways where there is no raised curb. Detectable warning surfaces are required by 49 CFR, Part 37 and by the Americans with Disabilities Act (ADA) where curb ramps are constructed at the junction of sidewalks and the roadway, for marked and unmarked crosswalks. Detectable warning surfaces contrast visually with adjacent walking surfaces, either light-on-dark, or dark-on-light. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" (see Section 1A.11) contains specifications for design and placement of detectable warning surfaces.
Standard:
19 **Crosswalk markings near schools shall be yellow as provided in CVC 21368. See Part 7.**
Option:
20 Pedestrian crosswalk markings may be placed at intersections, representing extensions of the sidewalk lines, or on any portion of the roadway distinctly indicated for pedestrian crossing. Refer to CVC 275.
Guidance:
21 *In general, crosswalks should not be marked at intersections unless they are intended to channelize pedestrians. Emphasis is placed on the use of marked crosswalks as a channelization device.*
22 *The following factors may be considered in determining whether a marked crosswalk should be used:*
A. Vehicular approach speeds from both directions.
B. Vehicular volume and density.
C. Vehicular turning movements.
D. Pedestrian volumes.
E. Roadway width.
F. Day and night visibility by both pedestrians and motorists.
G. Channelization is desirable to clarify pedestrian routes for sighted or sight impaired pedestrians.
H. Discouragement of pedestrian use of undesirable routes.
I. Consistency with markings at adjacent intersections or within the same intersection.
Option:
23 Crosswalk markings may be established between intersections (mid-block) in accordance with CVC 21106(a).
Guidance:
24 *Mid-block pedestrian crossings are generally unexpected by the motorist and should be discouraged unless, in the opinion of the engineer, there is strong justification in favor of such installation. Particular attention should be given to roadways with two or more traffic lanes in one direction as a pedestrian may be hidden from view by a vehicle yielding the right-of-way to a pedestrian.*
Option:
25 When diagonal or longitudinal lines are used to mark a crosswalk, the transverse crosswalk lines may be omitted.
Standard:
26 **However, when the factor that determined the need to mark a crosswalk is the clarification of pedestrian routes for sight-impaired pedestrians, the transverse crosswalk lines shall be marked.**

Option:

27 At controlled approaches, limit lines (stop lines) help to define pedestrian paths and are therefore a factor the engineer may consider in deciding whether or not to mark the crosswalk.

28 Where it is desirable to remove a marked crosswalk, the removal may be accomplished by repaving or surface treatment.

Guidance:

29 *A marked crosswalk should not be eliminated by allowing it to fade out or be worn away.*

Support:

30 The worn or faded crosswalk retains its prominent appearance to the pedestrian at the curb, but is less visible to the approaching driver.

Standard:

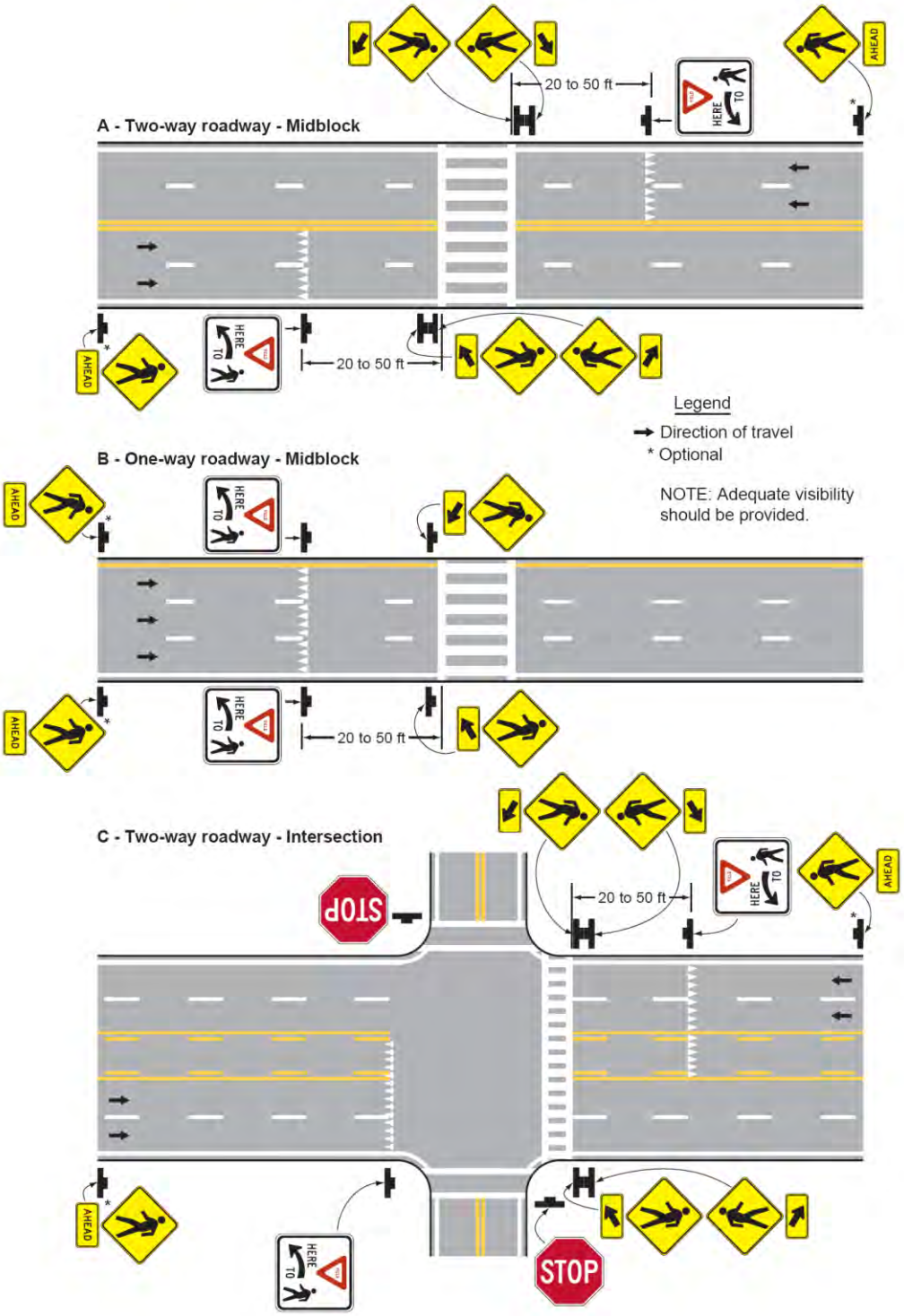
31 **Notification to the public shall be given at least 30 days prior to the scheduled removal of an existing marked crosswalk. The notice of proposed removal shall inform the public how to provide input related to the scheduled removal and shall be posted at the crosswalk identified for removal. Refer to CVC 21950.5**

Option:

32 Signs may be installed at or adjacent to an intersection directing that pedestrians shall not cross in a crosswalk indicated at the intersection in accordance with CVC 21106(b).

33 White PED XING pavement markings may be placed in each approach lane to a marked crosswalk, except at intersections controlled by traffic signals or STOP or YIELD signs.

Figure 3B-17 (CA). Examples of Crosswalk Enhancements at Uncontrolled Multilane Approaches



12-20 FHWA's 2009 MUTCD Revisions 1 and 2 –Engineering Judgment & Compliance Dates

Recommendation:

Caltrans requests that the Committee recommend adoption of FHWA's final rule on 2009 MUTCD Revisions 1 and 2, regarding engineering judgment and compliance dates, into the California MUTCD as per the proposal below.

Agency Making Request/Sponsor: Caltrans

Sponsor: Janice Benton, Voting member, Caltrans

Background:

On May 14, 2012, the FHWA published final rules to revise the MUTCD provisions on engineering judgment and compliance dates. The 2009 MUTCD with Revisions 1 and 2 incorporated (http://mutcd.fhwa.dot.gov/kno_2009r1r2.htm) is now available. The complete text of the Federal Register notices can be accessed at the following links:

- 2009 MUTCD Revision 1 – Engineering Judgment

  PDF: http://www.gpo.gov/fdsys/pkg/FR-2012-05-14/pdf/2012-11712.pdf

  HTML: http://www.gpo.gov/fdsys/pkg/FR-2012-05-14/html/2012-11712.htm

- 2009 MUTCD Revision 2 – Compliance Dates

  PDF: http://www.gpo.gov/fdsys/pkg/FR-2012-05-14/pdf/2012-11710.pdf

  HTML: http://www.gpo.gov/fdsys/pkg/FR-2012-05-14/html/2012-11710.htm

A U.S. Department of Transportation press release (http://www.fhwa.dot.gov/pressroom/fhwa1222.htm) on the adopted revisions is also available.

In the interest of brevity, the above web referenced documents have not been included in this agenda item but multiple hard copies of these documents will be made available at the public meeting for public perusal.

The National MUTCD 2009 Revisions 1 & 2 are not effective immediately in California, California has a maximum of 2 years from the June 13, 2012 effective date to incorporate these changes into the California MUTCD. The revised California MUTCD 2012 edition (current) incorporating the National MUTCD 2009 Revisions 1 & 2 needs to be issued on or before June 13, 2014.

Caltrans hereby seeks CTCDC's formal recommendation for adoption of these National MUTCD 2009 revisions 1 & 2. It is anticipated that pursuant to receiving a formal recommendation from CTCDC, Caltrans will incorporate these (and other changes recommended by CTCDC since January 13, 2012) to issue a newly revised official California MUTCD sometime in early 2013. The deadline for adopting the National MUTCD 2009 Revisions 1 & 2 is June 13, 2014.

California MUTCD 2012 Existing Policy (FHWA's 2009 MUTCD Revision 1 – Engineering Judgment):

Section 1A.09 Engineering Study and Engineering Judgment

Support:

01 Definitions of an engineering study and engineering judgment are contained in Section 1A.13.

01a Refer to CVC 627 for definition and requirements of "Engineering and Traffic Survey". It is also abbreviated in this manual as E&TS.

Standard:

02 **This Manual describes the application of traffic control devices, but shall not be a legal requirement for their installation.**

Guidance:

02a *The decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment.*

Option:

02b When an engineering study or the application of engineering judgment determines that unusual site-specific conditions at a particular location make compliance with a Standard statement in this Manual impossible or impractical, an agency may deviate from that Standard statement at that location.

03 *Early in the processes of location and design of roads and streets, engineers should coordinate such location and design with the design and placement of the traffic control devices to be used with such roads and streets.*

04 *Jurisdictions, or owners of private roads open to public travel, with responsibility for traffic control that do not have engineers on their staffs who are trained and/or experienced in traffic control devices should seek engineering assistance from others, such as the State transportation agency, their county, a nearby large city, or a traffic engineering consultant.*

Support:

05 As part of the Federal-aid Program, each State is required to have a Local ~~Technology~~ Technical Assistance Program (LTAP) and to provide technical assistance to local highway agencies. Requisite technical training in the application of the principles of the MUTCD is available from the State's Local ~~Technology~~ Technical Assistance Program for needed engineering guidance and assistance.

06 In California, Traffic Engineers are classified under a title act and not under a practice act. Traffic engineers can conduct studies but a Civil Engineer must sign plans for traffic control devices that will be placed in the field, per the Professional Engineers Act.

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

Standard:

01 **When used in this Manual, the text headings of Standard, Guidance, Option, and Support shall be defined as follows:**

A. Standard—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. All Standard statements are labeled, and the text appears in bold type. The verb "shall" is typically used. The verbs "should" and "may" are not used in Standard statements. Standard statements are sometimes modified by Options. ~~Standard statements shall not be modified or compromised based on engineering judgment or engineering study.~~

B. Guidance—a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in unbold type. The verb "should" is typically used. The verbs "shall" and "may" are not used in Guidance statements. Guidance statements are sometimes modified by Options.

C. Option—a statement of practice that is a permissive condition and carries no requirement or recommendation. Option statements sometime contain allowable modifications to a Standard or Guidance statement. All Option statements are labeled, and the text appears in

unbold type. The verb "may" is typically used. The verbs "shall" and "should" are not used in Option statements.

D. Support—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs "shall," "should," and "may" are not used in Support statements.

California MUTCD 2012 Proposed Policy (FHWA's 2009 MUTCD Revision 1 – Engineering Judgment):

Section 1A.09 Engineering Study and Engineering Judgment

Support:

01 Definitions of an engineering study and engineering judgment are contained in Section 1A.13.

01a Refer to CVC 627 for definition and requirements of "Engineering and Traffic Survey". It is also abbreviated in this manual as E&TS.

Standard:

02 **This Manual describes the application of traffic control devices, but shall not be a legal requirement for their installation.**

Guidance:

03 *The decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment. Thus, while this Manual provides Standards, Guidance, and Options for design and applications of traffic control devices, this Manual should not be considered a substitute for engineering judgment. Engineering judgment should be exercised in the selection and application of traffic control devices, as well as in the location and design of roads and streets that the devices complement.*

~~02a *The decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment.*~~

OPTION 1

Option:

~~02b~~ 03a When an engineering study or the application of engineering judgment determines that unusual site-specific conditions at a particular location make compliance with a Standard statement in this Manual impossible or impractical, an agency may deviate from that Standard statement at that location.

OPTION 2

~~Option:~~

~~02b When an engineering study or the application of engineering judgment determines that unusual site-specific conditions at a particular location make compliance with a Standard statement in this Manual impossible or impractical, an agency may deviate from that Standard statement at that location.~~

~~03~~ 04 *Early in the processes of location and design of roads and streets, engineers should coordinate such location and design with the design and placement of the traffic control devices to be used with such roads and streets.*

~~04~~ 05 *Jurisdictions, or owners of private roads open to public travel, with responsibility for traffic control that do not have engineers on their staffs who are trained and/or experienced in traffic control devices should seek engineering assistance from others, such as the State transportation agency, their county, a nearby large city, or a traffic engineering consultant.*

Support:

~~05~~ 06 As part of the Federal-aid Program, each State is required to have a Local ~~Technology~~ Technical Assistance Program (LTAP) and to provide technical assistance to local highway agencies. Requisite technical training in the application of the principles of the MUTCD is available from the State's Local ~~Technology~~ Technical Assistance Program for needed engineering guidance and assistance.

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

Standard:

01 **When used in this Manual, the text headings of Standard, Guidance, Option, and Support shall be defined as follows:**

A. Standard—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. All Standard statements are labeled, and the text appears in bold type. The verb "shall" is typically used. The verbs "should" and "may" are not used in Standard statements. Standard statements are sometimes modified by Options. ~~Standard statements shall not be modified or compromised based on engineering judgment or engineering study.~~

B. Guidance—a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in unbold type. The verb "should" is typically used. The verbs "shall" and "may" are not used in Guidance statements. Guidance statements are sometimes modified by Options.

C. Option—a statement of practice that is a permissive condition and carries no requirement or recommendation. Option statements sometime contain allowable modifications to a Standard or Guidance statement. All Option statements are labeled, and the text appears in unbold type. The verb "may" is typically used. The verbs "shall" and "should" are not used in Option statements.

D. Support—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs "shall," "should," and "may" are not used in Support statements.

California MUTCD 2012 Existing Policy (FHWA's 2009 MUTCD Revision 2 – Compliance Dates):

Table I-2. Target Compliance Dates Established by the FHWA (Sheet 1 of 3)

2009 MUTCD Section Number(s)	2009 MUTCD Section Title	Specific Provision	Compliance Date
2A.08	Minimum Retroreflectivity Levels	Implementation and continued use of an assessment or management method that is designed to maintain traffic sign retroreflectivity at or above the established minimum levels	January 22, 2012 (c)
2A.08	Minimum Retroreflectivity Levels	Replacement of regulatory, warning, and post-mounted guide (except street name) signs that are identified using the assessment or management method as failing to meet the established minimum levels	January 22, 2015 (c)
2A.08	Minimum Retroreflectivity Levels	Replacement of street name signs and overhead guide signs that are identified using the assessment or management method as failing to meet the established minimum levels.	January 22, 2018 (c)
~~2A.19~~	~~Lateral Offset~~	~~Crashworthiness of sign supports on roads with posted speed limit of 50 mph or higher~~	~~January 17, 2013 (a)~~
~~2B.03~~	~~Size of Regulatory Signs~~	~~Increased sign sizes and other 2003 MUTCD revisions to Table 2B-1 (*)~~	~~December 22, 2013 (b)~~
~~2B.09~~	~~YIELD Sign Applications~~	~~Changes in YIELD sign application criteria from the 1988 MUTCD to the 2003 MUTCD (*)~~	~~January 17, 2011 (a)~~
~~2B.10~~	~~STOP Sign or YIELD Sign Placement~~	~~Signs mounted on the back of STOP or YIELD signs should not obscure shape of STOP sign, with exception for DO NOT ENTER signs (2003 MUTCD Sections 2B.06 and 2B.10) (*)~~	~~December 22, 2013 (b)~~
~~2B.11~~	~~Yield Here To Pedestrians Signs and Stop Here For Pedestrians Signs (R1-5 Series)~~	~~New Section 2B.11 in the 2003 MUTCD (*)~~	~~December 22, 2013 (b)~~
~~2B.13~~	~~Speed Limit Sign (R2-1)~~	~~Color of changeable message legend of YOUR SPEED legend~~	~~December 22, 2013 (b)~~
~~2B.26~~	~~Reversible Lane Control Signs (R3-9e through R3-9i)~~	~~Removal of the R3-9c and R3-9e signs that had been included in the 2000 MUTCD (2003 MUTCD Section 2B.25)~~	~~December 22, 2013 (b)~~
2B.40	ONE WAY Signs (R6-1, R6-2)	New requirement in the 2009 MUTCD for the number and locations of ONE WAY signs	December 31, 2019
~~2B.55~~	~~Photo Enforced Signs and Plaques (R10-18, R10-19P, R10-19aP)~~	~~New signs (2003 MUTCD Section 2B.46) (*)~~	~~December 22, 2013 (b)~~
~~2C.04~~	~~Size of Warning Signs~~	~~New sizes in the 2003 MUTCD for the W1 Series arrow signs, the W12-2a low clearance signs, the W7 Series runaway truck signs, and the W10-1 advance grade crossing sign (*)~~	~~December 22, 2013 (b)~~
2C.06 thru 2C.14	Horizontal Alignment Warning Signs	Revised requirements in the 2009 MUTCD regarding the use of various horizontal alignment signs	December 31, 2019
~~2C.13~~	~~Truck Rollover Warning Sign (W1-13)~~	~~New W1-13 sign (2003 MUTCD Section 2C.11)~~	~~December 22, 2013 (b)~~
~~2C.20~~	~~NARROW BRIDGE Sign (W5-2)~~	~~Elimination of symbol sign (2003 MUTCD Section 2C.16)~~	~~December 22, 2013 (b)~~
~~2C.30~~	~~PAVEMENT ENDS Sign (W8-3)~~	~~Removal of symbol sign (2000 MUTCD Section 2C.23)~~	~~January 17, 2011 (a)~~
~~2C.38~~	~~Reduced Speed Limit Ahead Signs (W3-5, W3-5a)~~	~~Removal of R2-5 Series Reduced Speed Ahead signs and use of W3-5 or W3-5a warning signs instead (2003 MUTCD Section 2C.30)~~	~~December 22, 2018 (b)~~
~~2C.40~~	~~Merge Signs (W4-1, W4-5)~~	~~New Entering Roadway Merge sign (W4-5) (2003 MUTCD Section 2C.31)~~	~~December 22, 2013 (b)~~
~~2C.41~~	~~Added Lane Signs (W4-3, W4-6)~~	~~New Entering Roadway Added Lane sign (W4-6) (2003 MUTCD Section 2C.32)~~	~~December 22, 2013 (b)~~
~~2C.42~~	~~Lane Ends Signs (W4-2, W9-1, W9-2)~~	~~New design of W4-2 sign (2003 MUTCD Section 2C.33)~~	~~December 22, 2013 (b)~~
~~2C.46~~	~~Intersection Warning Signs (W2-1 through W2-8)~~	~~New design of Circular Intersection (W2-6) sign (2003 MUTCD Section 2C.37)~~	~~December 22, 2013 (b)~~
~~2C.49~~	~~Vehicular Traffic Warning Signs~~	~~New symbol signs W11-1, W11-5, W11-5a, W11-6, W11-11, and W11-14 (2003 MUTCD Section 2C.40)~~	~~December 22, 2013 (b)~~

Table I-2. Target Compliance Dates Established by the FHWA (Sheet 2 of 3)

2009 MUTCD Section Number(s)	2009 MUTCD Section Title	Specific Provision	Compliance Date
~~2C.50~~	~~Non-Vehicular Warning Signs~~	~~Elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow (W16-7P) supplemental plaque if at the crossing (2003 MUTCD Section 2C.41)~~	~~January 17, 2011 (a)(b)~~
~~2C.61~~	~~PHOTO ENFORCED Plaque (W16-10P)~~	~~New plaque (2003 MUTCD Section 2C.53) (*)~~	~~December 22, 2013 (b)~~
~~2C.63~~	~~Object Marker Design and Placement Height~~	~~Width of stripes on Type 3 striped marker (2003 MUTCD Section 3C.01)~~	~~December 22, 2013 (b)~~
~~2D.43~~	~~Street Name Signs (D3-1 or D3-1a)~~	~~6-inch letter height for lettering on post-mounted Street Name signs (except on multi-lane streets with speed limits greater than 40 mph) (2000 MUTCD Section 2D.38)~~	~~January 9, 2012 (a)~~
~~2D.43~~	~~Street Name Signs (D3-1 or D3-1a)~~	~~8-inch letter height on post-mounted signs on multi-lane streets with speed limits greater than 40 mph and 12-inch letter height on overhead signs (2003 MUTCD Section 2D.38)~~	~~December 22, 2018 (b)~~
~~2D.44~~	~~Advance Street Name Signs (D3-2)~~	~~Requirements of new Section 2D.39 in the 2003 MUTCD~~	~~December 22, 2018 (b)~~
2D.45	Signing on Conventional Roads on Approaches to Interchanges	New requirement in the 2009 MUTCD for multi-lane approaches to interchanges to have guide signs to identify which direction of turn is to be made for access to each direction of the freeway or expressway	December 31, 2019
2E.31, 2E.33, and 2E.36	Plaques for Left-Hand Exits	New requirement in the 2009 MUTCD to use E1-5aP and E1-5bP plaques for left-hand exits	December 31, 2014
~~2G.01 through 2G.07~~	~~Regulatory Signs for Preferential Lanes~~	~~Requirements for regulatory signs for preferential lanes (2003 MUTCD Sections 2B.26 through 2B.28) (*)~~	~~December 22, 2013 (b)~~
~~2G.11 through 2G.15~~	~~Preferential Lane Guide Signs~~	~~New Section 2E.59 in the 2003 MUTCD (*)~~	~~December 22, 2013 (b)~~
~~2H.02, 2H.03~~	~~Reference Location Signs, Intermediate Reference Location Signs, and Enhanced Reference Location Signs~~	~~Location and spacing of Reference Location signs and design of Intermediate Reference Location signs (2003 MUTCD Sections 2D.46 and 2E.54)~~	~~December 22, 2013 (b)~~
~~2I.07~~	~~Radio Information Signing~~	~~New Channel 9 Monitored (D12-3) sign (2003 MUTCD Section 2D.45)~~	~~December 22, 2013 (b)~~
~~2I.08~~	~~TRAVEL INFO CALL 511 Signs (D12-5 and D12-5a)~~	~~New TRAVEL INFO CALL 511 Sign (D12-5) (2003 MUTCD Section 2D.45)~~	~~December 22, 2013 (b)~~
~~2J.05~~	~~Size of Lettering~~	~~Minimum height of letters and numerals on Specific Service signs (2000 MUTCD Section 2F.05)~~	~~January 17, 2011 (a)~~
~~2N.03~~	~~Evacuation Route Signs (EM-1 and EM-1a)~~	~~New design and size of EM-1 sign (2003 MUTCD Section 2I.03)~~	~~December 22, 2018 (b)~~
3B.04, 3B.05	White Longitudinal Pavement Markings	New requirement in the 2009 MUTCD for dotted lane lines for dropped lanes and for acceleration, deceleration, and auxiliary lanes	December 31, 2016 or resurfacing, whichever occurs first
~~3B.18~~	~~Crosswalk Markings~~	~~Gap between transverse lines of a crosswalk (2003 MUTCD Section 3B.17)~~	~~December 22, 2013 (b)~~
~~4D.01~~	~~General~~	~~Location of signalized midblock crosswalks~~	~~December 22, 2013 (b)~~
4D.26	Yellow Change and Red Clearance Intervals	New requirement in the 2009 MUTCD that durations of yellow change and red clearance intervals shall be determined using engineering practices	December 31, 2014, or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first
~~4D.31~~	~~Flashing Operation—Transition Out of Flashing Mode~~	~~Duration of steady red clearance interval in change from red-red flashing mode to steady (stop-and-go) mode (2003 MUTCD Section 4D.12)~~	~~December 22, 2013 (b)~~
4E.06	Pedestrian Intervals and Signal Phases	New requirement in the 2009 MUTCD that the pedestrian change interval shall not extend into the red clearance interval and shall be followed by a buffer interval of at least 3 seconds	December 31, 2014, or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first
~~4E.07~~	~~Countdown Pedestrian Signals~~	~~Pedestrian countdown hardware requirements~~	~~December 22, 2013 (b)~~

Table I-2. Target Compliance Dates Established by the FHWA (Sheet 3 of 3)

2009 MUTCD Section Number(s)	2009 MUTCD Section Title	Specific Provision	Compliance Date
~~5C.05~~	~~NARROW BRIDGE Sign (W5-2)~~	~~Elimination of symbol sign~~	~~December 22, 2013 (b)~~
6D.03	Worker Safety Considerations	New requirement in the 2009 MUTCD that all workers within the right-of-way shall wear high-visibility apparel	December 31, 2011
6E.02	High-Visibility Safety Apparel	New requirement in the 2009 MUTCD that all flaggers within the right-of-way shall wear high-visibility apparel	December 31, 2011
~~7B.11~~	~~School Advance Crossing Assembly~~	~~Use of AHEAD (W16-9P) plaque or distance plaque (W16-2P or W16-2aP) (2000 MUTCD Section 7B.08)~~	~~January 17, 2011 (a)~~
~~7B.12~~	~~School Crossing Assembly~~	~~Elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow (W16-7P) supplemental plaque (2000 MUTCD Sections 7B.08 and 7B.09)~~	~~January 17, 2011 (a)~~
~~7B.16~~	~~Reduced Schoool Speed Limit Ahead Sign (S4-5, S4-5a)~~	~~Removal of R2-5 Series Reduced Speed Ahead signs and use of S4-5 or S4-5a warning signs instead (2003 MUTCD Section 7B.12)~~	~~December 22, 2018 (b)~~
7D.04	Uniform of Adult Crossing Guards	New requirement in the 2009 MUTCD for high-visibility apparel for adult crossing guards	December 31, 2011
~~8B.03~~	~~Grade Crossing (Crossbuck) Sign (R15-1) and Number of Tracks Plaque (R15-2P) at Active and Passive Grade Crossings~~	~~Retroreflective strip on crossbuck support (2000 MUTCD Section 8B.02) (*)~~	~~January 17, 2011 (a)~~
8B.04	Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings	New requirement in the 2009 MUTCD for the use of STOP or YIELD signs with Crossbuck signs at passive grade crossings	December 31, 2019
~~8B.19 and 8C.02 through 8C.05~~	~~LRT Approaching-Activated Blank-Out Warning Sign, Flashing Light Signals, and Automatic Gates~~	~~Automatic gates, flashing-light signals, and blank-out signs at highway-LRT crossings per Part 10 of the 2000 MUTCD (*)~~	~~January 17, 2011 (a)~~
~~8C.09~~	~~Traffic Control Signals at or Near Highway-Rail Grade Crossings~~	~~Pre-signals (2003 MUTCD Section 8D.07)~~	~~December 22, 2013 (b)~~
8C.12	Grade Crossings Within or In Close Proximity to Circular Intersections	New requirement in the 2009 MUTCD for study of grade crossings near roundabouts	December 31, 2014
~~9B.18~~	~~Bicycle Warning and Combined Bicycle/ Pedestrian Signs (W11-1 and W11-15)~~	~~Elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow (W16-7P) supplemental plaque if at the crossing (2000 MUTCD Section 9B.15)~~	~~January 17, 2011 (a)~~

Notes: Unless otherwise noted, dates are as established in the Final Rule for the 2009 MUTCD.
(a) Date established in the Final Rule for the 2000 MUTCD
(b) Date established in the Final Rule for the 2003 MUTCD
(c) Date established in the Final Rule for Revision 2 of the 2003 MUTCD
(*) Provisions may have been revised in the 2009 MUTCD

Section 2D.43 Street Name Signs (D3-1 or D3-1a)

Guidance:

01 *Street Name (D3-1 or D3-1a or G7-1(CA)) signs (see Figure 2D-10 and 2D-10(CA)) should be installed in urban areas at all street intersections regardless of other route signs that might be present and should be installed in rural areas to identify important roads that are not otherwise signed.*

Option:

02 For streets that are part of a U.S., State, or county numbered route, a D3-1a Street Name sign (see Figure 2D-10) that incorporates a route shield may be used to assist road users who might not otherwise be able to associate the name of the street with the route number.

Standard:

03 **The lettering for names of streets and highways on Street Name signs shall be composed of a combination of lower-case letters with initial upper-case letters (see Section 2A.13).**

Guidance:

04 *Lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 6 inches in height and lower-case letters at least 4.5 inches in height.*

05 *On multi-lane streets with speed limits greater than 40 mph, the lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 8 inches in height and lower-case letters at least 6 inches in height.*

Option:

06 For local roads with speed limits of 25 mph or less, the lettering on post-mounted Street Name signs may be composed of initial upper-case letters at least 4 inches in height and lower-case letters at least 3 inches in height.

Guidance:

07 *If overhead Street Name signs are used, the lettering should be composed of initial upper-case letters at least 12 inches in height and lower-case letters at least 9 inches in height.*

Support:

08 The recommended minimum letter heights for Street Name signs are summarized in Table 2D-2.

Option:

09 Supplementary lettering to indicate the type of street (such as Street, Avenue, or Road) or the section of the city (such as NW) on the D3-1 and D3-1a signs may be in smaller lettering, composed of initial upper-case letters at least 3 inches in height and lower-case letters at least 2.25 inches in height. Conventional abbreviations (see Section 1A.15) may be used except for the street name itself.

10 A pictograph (see definition in Section 1A.13) may be used on a D3-1 sign.

Standard:

11 **Pictographs shall not be displayed on D3-1a or Advance Street Name (D3-2) signs (see Section 2D.44).**

12 **If a pictograph is used on a D3-1 sign, the height and width of the pictograph shall not exceed the upper-case letter height of the principal legend of the sign.**

Guidance:

13 *The pictograph should be positioned to the left of the street name.*

Standard:

14 **The Street Name sign shall be retroreflective or illuminated to show the same shape and similar color both day and night. The color of the legend (and border, if used) shall contrast with the background color of the sign.**

Option:

15 The border may be omitted from a Street Name sign.

16 An alternative background color other than the normal guide sign color of green may be used for Street Name (D3-1 or D3-1a) signs where the highway agency determines this is necessary to assist road users in determining jurisdictional authority for roads.

Standard:

17 **Alternative background colors shall not be used for Advance Street Name (D3-2) signs (see Section 2D.44).**

18 **The only acceptable alternative background colors for Street Name (D3-1 or D3-1a) signs shall be blue, brown, or white. Regardless of whether green, blue, or brown is used as the background color for Street Name (D3-1 or D3-1a) signs, the legend (and border, if used) shall be white. For Street Name signs that use a white background, the legend (and border, if used) shall be black.**

Guidance:

19 *An alternative background color for Street Name signs, if used, should be applied to the Street Name (D3-1 or D3-1a) signs on all roadways under the jurisdiction of a particular highway agency.*

20 *In business or commercial areas and on principal arterials, Street Name signs should be placed at least on diagonally opposite corners. In residential areas, at least one Street Name sign should be mounted at each intersection. Signs naming both streets should be installed at each intersection.*

Standard:

They ~~should~~ shall be mounted with their faces parallel to the streets they name.

Option:

21 To optimize visibility, Street Name signs may be mounted overhead. Street Name signs may also be placed above a regulatory or STOP or YIELD sign with no required vertical separation.

Guidance:

22 *In urban or suburban areas, especially where Advance Street Name signs for signalized and other major intersections are not used, the use of overhead Street Name signs should be strongly considered.*

Option:

23 At intersection crossroads where the same road has two different street names for each direction of travel, both street names may be displayed on the same sign along with directional arrows.

Support:

24 Information regarding the use of street names on supplemental plaques for use with intersection-related warning signs is contained in Section 2C.58.

Standard:

25 **Street Name signs shall be placed, clearly visible to traffic approaching from all directions, at all signalized intersections. Refer to CVC 21366.**

Option:

26 If structurally adequate luminaire poles are available, the street name signs may be mounted on them at a height of approximately 15 feet. Refer to Department of Transportation's Standard Plans publication. See Section 1A.11 for information regarding this publication.

California MUTCD 2012 Proposed Policy (FHWA's 2009 MUTCD Revision 2 – Compliance Dates):

Table I-2. Target Compliance Dates Established by the FHWA

2009 MUTCD Section Number(s)	2009 MUTCD Section Title	Specific Provision	Compliance Date	
2A.08	Maintaining Minimum Retroreflectivity	Implementation and continued use of an assessment or management method that is designed to maintain regulatory and warning sign retroreflectivity at or above the established minimum levels (see Paragraph 2)	~~2 years from the effective date of this revision of the 2009 MUTCD*~~	June 13, 2014
~~2A.19~~	~~Lateral Offset~~	~~Crashworthiness of sign supports on roads with posted speed limit of 50 mph or higher (see Paragraph 2)~~	~~January 17, 2013 (date established in the 2009 MUTCD)~~	
2B.40	ONE WAY Signs (R6-1, R6-2)	New requirements in the 2009 MUTCD for the number and locations of ONE WAY signs (see Paragraphs 4, 9, and 10)	December 31, 2019	
2C.06 through 2C.14	Horizontal Alignment Warning Signs	Revised requirements in the 2009 MUTCD regarding the use of various horizontal alignment signs (see Table 2C-5)	December 31, 2019	
2E.31, 2E.33, and 2E.36	Plaques for Left-Hand Exits	New requirement in the 2009 MUTCD to use E1-5aP and E1-5bP plaques for left-hand exits	December 31, 2014	
4D.26	Yellow Change and Red Clearance Intervals	New requirement in the 2009 MUTCD that durations of yellow change and red clearance intervals shall be determined using engineering practices (see Paragraphs 3 and 6)	~~5 years from the effective date of this revision of the 2009 MUTCD~~, or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first	June 13, 2017
4E.06	Pedestrian Intervals and Signal Phases	New requirement in the 2009 MUTCD that the pedestrian change interval shall not extend into the red clearance interval and shall be followed by a buffer interval of at least 3 seconds (see Paragraph 4)	~~5 years from the effective date of this revision of the 2009 MUTCD,~~ or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first	June 13, 2017
6D.03**	Worker Safety Considerations	New requirement in the 2009 MUTCD that all workers within the right-of-way shall wear high-visibility apparel (see Paragraphs 4, 6, and 7)	December 31, 2011	
6E.02**	High-Visibility Safety Apparel	New requirement in the 2009 MUTCD that all flaggers within the right-of-way shall wear high-visibility apparel	December 31, 2011	
7D.04**	Uniform of Adult Crossing Guards	New requirement in the 2009 MUTCD for high-visibility apparel for adult crossing guards	December 31, 2011	
8B.03, 8B.04	Grade Crossing (Crossbuck) Signs and Supports	Retroreflective strip on Crossbuck sign and support (see Paragraph 7 in Section 8B.03 and Paragraphs 15 and 18 in Section 8B.04)	December 31, 2019	
8B.04	Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings	New requirement in the 2009 MUTCD for the use of STOP or YIELD signs with Crossbuck signs at passive grade crossings	December 31, 2019	

* Types of signs other than regulatory or warning are to be added to an agency's management or assessment method as resources allow.

** MUTCD requirement is a result of a legislative mandate.

Note: All compliance dates that were previously published in Table I-2 of the 2009 MUTCD and that do not appear in this revised table have been eliminated.

Section 2D.43 <u>Street Name Signs (D3-1 or D3-1a)</u>

Guidance:

01 *Street Name (D3-1 or D3-1a or G7-1(CA)) signs (see Figure 2D-10 and 2D-10(CA)) should be installed in urban areas at all street intersections regardless of other route signs that might be present and should be installed in rural areas to identify important roads that are not otherwise signed.*

Option:

02 For streets that are part of a U.S., State, or county numbered route, a D3-1a Street Name sign (see Figure 2D-10) that incorporates a route shield may be used to assist road users who might not otherwise be able to associate the name of the street with the route number.

Standard:

03 **The lettering for names of streets and highways on Street Name signs shall be composed of a combination of lower-case letters with initial upper-case letters (see Section 2A.13).**

Guidance:

04 *Lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 6 inches in height and lower-case letters at least 4.5 inches in height.*

05 *On multi-lane streets with speed limits greater than 40 mph, the lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 8 inches in height and lower-case letters at least 6 inches in height.*

Option:

06 For local roads with speed limits of 25 mph or less, the lettering on post-mounted Street Name signs may be composed of initial upper-case letters at least 4 inches in height and lower-case letters at least 3 inches in height.

Guidance:

07 *If overhead Street Name signs are used, the lettering should be composed of initial upper-case letters at least 12 inches in height and lower-case letters at least 9 inches in height.*

Support:

08 The recommended minimum letter heights for Street Name signs are summarized in Table 2D-2.

Option:

09 Supplementary lettering to indicate the type of street (such as Street, Avenue, or Road) or the section of the city (such as NW) on the D3-1 and D3-1a signs may be in smaller lettering, composed of initial upper-case letters at least 3 inches in height and lower-case letters at least 2.25 inches in height. Conventional abbreviations (see Section 1A.15) may be used except for the street name itself.

10 A pictograph (see definition in Section 1A.13) may be used on a D3-1 sign.

Standard:

11 **Pictographs shall not be displayed on D3-1a or Advance Street Name (D3-2) signs (see Section 2D.44).**

12 **If a pictograph is used on a D3-1 sign, the height and width of the pictograph shall not exceed the upper-case letter height of the principal legend of the sign.**

Guidance:

13 *The pictograph should be positioned to the left of the street name.*

Standard:

14 **The Street Name sign shall be retroreflective or illuminated to show the same shape and similar color both day and night. The color of the legend (and border, if used) shall contrast with the background color of the sign.**

Option:

15 The border may be omitted from a Street Name sign.

16 An alternative background color other than the normal guide sign color of green may be used for Street Name (D3-1 or D3-1a) signs where the highway agency determines this is necessary to assist road users in determining jurisdictional authority for roads.

Standard:

17 **Alternative background colors shall not be used for Advance Street Name (D3-2) signs (see Section 2D.44).**

18 **The only acceptable alternative background colors for Street Name (D3-1 or D3-1a) signs shall be blue, brown, or white. Regardless of whether green, blue, or brown is used as the background color for Street Name (D3-1 or D3-1a) signs, the legend (and border, if used) shall be white. For Street Name signs that use a white background, the legend (and border, if used) shall be black.**

Guidance:

19 *An alternative background color for Street Name signs, if used, should be applied to the Street Name (D3-1 or D3-1a) signs on all roadways under the jurisdiction of a particular highway agency.*

20 *In business or commercial areas and on principal arterials, Street Name signs should be placed at least on diagonally opposite corners. In residential areas, at least one Street Name sign should be mounted at each intersection. Signs naming both streets should be installed at each intersection.*

Standard:

They ~~should~~ shall be mounted with their faces parallel to the streets they name.

Option:

21 To optimize visibility, Street Name signs may be mounted overhead. Street Name signs may also be placed above a regulatory or STOP or YIELD sign with no required vertical separation.

Guidance:

22 *In urban or suburban areas, especially where Advance Street Name signs for signalized and other major intersections are not used, the use of overhead Street Name signs should be strongly considered.*

Option:

23 At intersection crossroads where the same road has two different street names for each direction of travel, both street names may be displayed on the same sign along with directional arrows.

24 On lower speed roadways, historic street name signs within locally identified historic districts that are consistent with the criteria contained in 36 CFR 60.4 for such structures and districts may be used without complying with the provisions of Paragraphs 3, 4, 6, 9, 12 through 14, and 18 through 20 of this section.

Support:

~~24~~ 25 Information regarding the use of street names on supplemental plaques for use with intersection-related warning signs is contained in Section 2C.58.

Standard:

~~25~~ 26 **Street Name signs shall be placed, clearly visible to traffic approaching from all directions, at all signalized intersections. Refer to CVC 21366.**

Option:

~~26~~ 27 If structurally adequate luminaire poles are available, the street name signs may be mounted on them at a height of approximately 15 feet. Refer to Department of Transportation's Standard Plans publication. See Section 1A.11 for information regarding this publication.

12-22 Amendment to Sections 2B.04 and 4D.34 to make both Sections consistent

Recommendations: Revision of existing policy to make consistent between sections with similar policy language contained in Parts 2 and 4, in the CA MUTCD 2012 edition. Caltrans request to the Committee to make recommendations as shown under proposal to make **Section 2B.04 Right-of-Way at Intersections** consistent with **Section 4D.34 Use of Signs at Signalized Locations**

Agency Making Request: Caltrans

Sponsor: Janice Benton – Voting Member, Caltrans

Background: Currently shown in CA MUTCD 2012 as "Standard" paragraphs 10 and 10a in Section 2B.04; and, "Standard" paragraphs 07 and 08 in Section 4D.34:

Section 2B.04 Right-of-Way at Intersections	**4D.34 Use of Signs at Signalized Locations**
Standard: **10 Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation, except in the following cases:** **A. If the signal indication for an approach is a flashing red at all times;** **B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or** **C. If a channelized turn lane is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.** **10a STOP signs shall not be erected at any entrance to an intersection controlled by traffic signals. Refer to CVC 21355(a)**	**Standard:** **07 STOP signs shall not be used in conjunction with any traffic control signal operation.~~, except in either of the following cases:~~** **~~A. If the signal indication for an approach is a flashing red at all times, or~~** **~~B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists.~~** **08 STOP signs shall not be erected at any entrance to an intersection controlled by traffic signals. Refer to CVC 21355(a).**

Proposal: Proposed edits to make Part 2 consistent with Part 4 (deleting subparagraphs A & B) and make subparagraph C in Section 2B.04 a new option (to become paragraph 10b, that modifies the above Standard) by deleting subparagraph C in para 10 to become Option paragraph 10b in Section 2B.04). Also, the edit will introduce a new option paragraph 09 in Section 4D.34:

Section 2B.04 Right-of-Way at Intersections	**4D.34 Use of Signs at Signalized Locations**
Standard: 10 **Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation.~~, except in the following cases:~~** **~~A. If the signal indication for an approach is a flashing red at all times;~~** **~~B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or~~** **~~C. If a channelized turn lane is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.~~** 10a **STOP signs shall not be erected at any entrance to an intersection controlled by traffic signals. Refer to CVC 21355(a)** Option: 10b YIELD or STOP signs may be used at a channelized turn lane if it is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.	**Standard:** 07 **Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation.~~, except in either of the following cases:~~** **~~A. If the signal indication for an approach is a flashing red at all times, or~~** **~~B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists.~~** 08 **STOP signs shall not be erected at any entrance to an intersection controlled by traffic signals. Refer to CVC 21355(a).** Option: 09 YIELD or STOP signs may be used at a channelized turn lane if it is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.

These recommended edits will make these paragraphs parallel, without ambiguity.

12-23 Electric Vehicle Charging Station Signs and Pavement Marking

Recommendations: Caltrans requests the Committee to make recommendations to adopt four new signs, one new header plaque, a new optional pavement marking, delete 2 existing signs; and, amend content in various sections, figures and tables of the *California Manual on Uniform Traffic Control Devices, 2012 edition* (CA MUTCD) for Electric Vehicle Charging Station locations, per Governor Brown's Executive Order B-16-2012.

1.) Agency Making Request: The Governor's Office of Planning and Research, in cooperation with the California Department of Transportation, Sonoma County General Services Department, and, the California Plug-In Electric Vehicle Collaborative

2.) Sponsor: Janice Benton, Voting Member, Caltrans

3.) Background: Governor Brown's Executive Order B-16-2012, dated March 23, 2012: http://gov.ca.gov/news.php?id=17463 Per Governor Brown's 3/23/2012 Executive Order, the California Department of Transportation, Sonoma County, and, the California Plug-In Collaborative seek to consult with California cities and counties to establish new sign and pavement marking policy standards, guidance, options and support for Caltrans to include in the CA MUTCD, 2012 edition.

PSTATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Zero-Emission Vehicle Signage Information
Redacted from the 2012 ZEV Action Plan

Background: Recognizing the multiple benefits of zero-emission vehicles (ZEVs), and challenges to growing the market, Governor Brown issued Executive Order B-16-2012 on March 23, 2012 that directed California agencies to "encourage the development and success of zero-emission vehicles to protect the environment, stimulate economic growth and improve the quality of life in the State." The Governor's Executive Order sets a long-term target of reaching 1.5 million ZEVs on California's roadways by 2025. The Executive Order also sets a longer term target of reducing transportation-related greenhouse gas emission by 80 percent below 1990 levels by the year 2050.

Current Progress: Our state's ZEV market is poised for major new growth. Auto manufacturers now offer a range of attractive plug-in electric vehicles (PEVs), including many that are manufactured here in the state by new California-based companies. These auto manufacturers have enthusiastically embraced ZEVs and are looking to ways to expand their market in the state. Additionally, California-based fueling infrastructure companies are building thousands of charging stations that allow drivers to charge their electric vehicles conveniently and affordably. Thousands of Californians have already transitioned to PEVs, and they are joined by new PEV drivers each month. Finally, on the near-term horizon, fuel-cell vehicles (FCVs) appear poised to compete in the vehicle market as well, with vehicle introductions as early as 2015.

Benefits: ZEVs are becoming an accessible, attractive transportation option for CA drivers:

- More ZEVs coming to market is good news for California consumers,
- More ZEVs on the road means cleaner air for Californians to breathe,
- ZEV expansion bolsters California's innovation-based clean technology sector, and;
- ZEVs increase our energy independence

Proposal: The widespread use of ZEVs relies on adequate fueling infrastructure for these vehicles. As the market for ZEVs grows, fueling infrastructure must expand to meet consumer needs. One strategy related to infrastructure planning is to provide signage on highway corridors and surface streets that directs drivers to ZEV charging and hydrogen fueling stations and indicates available use of HOV lanes. This includes standardizing signage for public PEV charging and FCV refueling access across the state and ensuring local governments are aware of this standardized signage.

Next Steps: The Governor's Office of Planning and Research will work with Caltrans to explore potential funding sources for the installation of signage along highway corridors to indicate direction and driving distance to PEV charging and hydrogen stations, as well as available use of HOV lanes for qualified ZEV vehicles. Coordination will also occur with local governments to ensure consistent use of the signs on city/county roads.

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 322-2318 FAX (916) 324-9936 www.opr.ca.gov

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GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

October 12, 2012

Mr. Devinder Singh
Executive Secretary, CTCDC
Caltrans
P.O. Box 942874
Sacramento, California 95274

Re: Updates to Signs and Pavement Marking Policy for Electric Vehicles

Dear Executive Secretary Singh,

Thank you for your support and Caltrans staff work on electric vehicle infrastructure, including proposed updates to signs and pavement marking policy. In connection with those efforts, please find the enclosed proposal to add five new signs, delete two existing signs, add an optional pavement marking, and, amend the *California Manual on Uniform Traffic Control Devices, 2012 edition,* for Electric Vehicle Charging Station information.

These changes are consistent with the Governor's Zero Emission Vehicle Executive Order (B-16-2012), which as you know, establishes several milestones, highlighted by the target of 1.5 million ZEVs in California by the year 2025. One of the key strategies in the 2012 ZEV Action Plan is to "Provide signage on highway corridors and surface streets that directs drivers to ZEV charging and hydrogen fueling stations and indicates available use of HOV lanes."

We look forward to working further with you on these issues, and ask that this proposal be scheduled for the December 6, 2012 public hearing of the CTCDC in Santa Cruz, CA.

Sincerely,

Ken Alex

Ken Alex
Senior Policy Advisor to Governor Brown and
Director of the Office of Planning and Research

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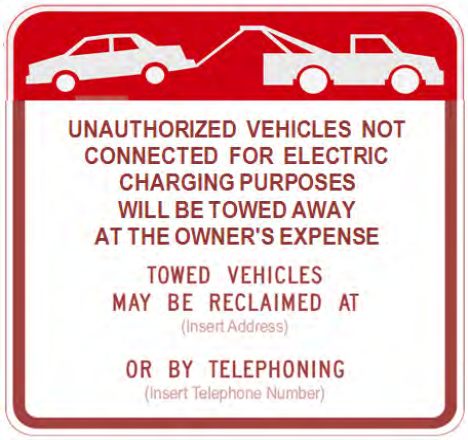
Proposal, outlined in summary, specifies for each subsection in table and digest to follow:

4a.) Per CVC 21511, the following sign is required for Off-Street Parking/Charging Station: Electric Vehicles (red on white regulatory header symbol and word message sign, 24" x 24") Tow-away symbol with "UNAUTHORIZED VEHICLES NOT CONNECTED FOR ELECTRIC CHARGING PURPOSES WILL BE TOWED AWAY AT THE OWNER'S EXPENSE . . ." (Rxxx(CA)) sign



Rxxx(CA) Ryyy(CA) Rzzz(CA)

4b.) No Parking [symbol] EXCEPT FOR ELECTRIC VEHICLE CHARGING (Ryyy(CA)) sign (red on white prohibitive regulatory symbol and word message sign, 12" x 18")

4c.) Permissive "Electric Vehicle __ HOUR CHARGING - __AM TO __PM" (Rzzz(CA)) sign (green on white permissive regulatory sign, 12" x 18")

4d.) The **Electric Vehicle Charging Station** (Alternate Symbol), FWHA CODE D9-11b(Alternate), for California policy, sign code: G66-21B(CA) for symbol sign, will be added to the existing G66-21(CA) word message sign for white on blue general service signs, sizes may be 30" x 30" for freeway or major arterial highway application, 24" x 24" for local streets; and, 18" x 18" off-street parking application, to replace and delete the existing Electric Vehicle Charging D9-11b (with fuel nozzle) symbol sign, and the D9-11bP word message plaque.

G66-21B(CA)
Electric Vehicle Charging Station
Symbol Sign (new)

G66-21(CA)
ELECTRIC VEHICLE CHARGING STATIO
Word Message Sign (existing)

4e.) **FAST Electric Vehicle Charging Station (G66-21C(CA))** header plaque (white on blue general service plaque, sizes 24" x 6"; and, 30" x 8") to identify "Fast" Electric Vehicle charging station locations where EV charging is at least 20 kWh in a 30 minute period, and could include direct current (DC) fast charging and battery switching.

G66-21C(CA)
FAST Electric Vehicle Charging Station
Header Plaque

FAST Electric Vehicle Charging Station header plaques are for use only with FHWA designation D9-11b(Alternate), or, for California MUTCD policy purposes, the **G66-21B(CA)** symbol sign, or the **G66-21(CA)** word message sign.

The above changes will require deletion of two existing national MUTCD signs, shown in Figure 2I-1, on Page 580, and in Table 2I-1, on Page 588. Currently there is no existing policy language for these two signs.

D9-11b
Electric Vehicle
Charging

D9-11bP
Electric Vehicle
Charging

4f.) Optional white "EV CHARGING ONLY" pavement marking (detail for off-street Electric Vehicle Charging Station stalls, or places) to supplement signs and plaque, as shown in items 4a thru 4e, above.

54" wide, by 44" deep optional
EV CHARGING ONLY Pavement Marking detail

4g.) Amend subpart 13 of Paragraph 41, in Section 2I.03 to increase the distance for hydrogen fuel locations within 3 miles of a State highway, consistent with other alternative fuel signs allowed by the CA MUTCD 2012 edition.

The following Signs & Text will be incorporated in to the CA MUTCD 2012:

4a. Rxxx(CA)	**Section 2B.46 <u>Parking, Standing, and Stopping Signs (R7 and R8 Series)</u>** (new Para 84, beginning on Page 181) **<u>Electric Vehicle Charging Station Signs</u>** **Standard:** 84 **The Electric Vehicle Charging Station Tow-Away (Rxxx(CA)) sign shall be placed immediately adjacent to, and visible from, the charging station stall or space, or at each entrance to an off-street parking facility to inform motorists that their vehicles will be towed away if parked in designated stalls or spaces without being connected for electric charging purposes. The sign shall include the address where the towed vehicle can be reclaimed and the telephone number of the local traffic law enforcement agency. Refer to CVC 21511.**
4b. 4c. Ryyy(CA) Rzzz(CA)	**<u>Electric Vehicle Charging Station Signs</u>** (continued) 85 **The No Parking (symbol) EXCEPT FOR ELECTRIC VEHICLE CHARGING (Ryyy(CA)) sign shall be placed immediately adjacent to, and visible from, each charging station stall or space.** 86 **The __HOUR CHARGING __AM TO __PM (Rzzz(CA)) sign shall be placed immediately adjacent to, and visible from, each charging station stall or space to identify the allowable time limit where electric vehicles may be connected, depending upon what time limitations for charging apply to each charging station.**
4d. **G66-21B(CA)**	**Section 2I.03 <u>General Service Signs for Freeways and Expressways</u>** (beginning Page 565) **<u>Electric Vehicle Charging Station Signs (G66-21(CA), G66-21A(CA), G66-21B(CA), G66-21C(CA))</u>** Option: 43 The Electric Vehicle Charging Station (G66-21B(CA) symbol sign, or the ELECTRIC VEHICLE CHARGING STATION (G66-21 (CA)) sign may be used for Electric Vehicle Charging Stations within 3 miles of a State highway and be available to the public at least 16 hours a day. **Standard:** 44 **Follow-up signing, if necessary, shall be placed by local agencies before signs are placed on the State highway.** • Figure 2I-1(CA), on Page 581 will be edited to include this graphic and new sign code, • Table 2I-1 will be amended to reflect these changes

4d. (continued)

G66-21A(CA)

Section 2I.03 General Service Signs for Freeways and Expressways (beginning Page 565, continued)

Guidance:

34 *To avoid misleading the road user, those services that are more than 0.5 mile from the access point on the major route to the service, should have a ~~distance~~Distance with Arrow (G66-21A(CA)) plaque installed below the service sign.*

Option:

45 The Distance with Arrow (G66-21A(CA)) plaque may be used to supplement the G66-21(CA), or G66-21B(CA) sign to provide distance and directional information to the motorist. It may also be used with other general service signs (See Paragraph 34).

4e.

G66-21C(CA)

45a The FAST (G66-21C(CA)) header plaque may be used to supplement the G66-21(CA), or G66-21B(CA) sign to indicate that a Fast Electric Vehicle Charging Station is located off the State highway.

Support:

45b A "Fast" Electric Vehicle Charging Station is where the rate of battery electric charging is at least 20 kWh in a 30 minute period. "Fast" charging stations include direct current (DC) fast charging and battery switching.

- Figure 2I-1(CA), on Page 581 will be edited to include the new header plaque for the FAST (G66-21C(CA)) header plaque; and,
- Table 2I-1 will be amended to add this new header plaque)

4f.

Proposed ***Figure 3B-108 (CA) Electric Vehicle Charging Station Pavement Marking Detail***

54" wide, by 44" deep (optional)
EV CHARGING ONLY

Section 3B.20 Pavement Word, Symbol, and Arrow Markings

Electric Vehicle Charging Station Markings

(subheading and text to be added on Page 693)

Option:

18 Electric vehicle charging stations in off-street locations may be marked with white "EV CHARGING ONLY" pavement markings (See detail in Figure 3B-108(CA)) to supplement Electric Vehicle Charging Station signs in Section 2B.46 and 2I.03.

- Proposed Figure 3B-108(CA), on lower half of Page 771 will be added, to include the optional pavement marking detail.

4g.	**Section 2I.03 <u>General Service Signs for Freeways and Expressways</u>** (beginning mid-way through Paragraph 41, subpart #13, Page 565) (Option) 13. Where hydrogen (HYD) fuel is available, the Hydrogen (G66-22G(CA)) symbol sign and HYDROGEN (G66-22H(CA)) supplemental plaque may be used within 3 miles of a State highway and be available to the public at least 16 hours a day, in addition to the other appropriate signs.

Digest of existing CA MUTCD 2012 language and proposed edits:

Section 2B.46 <u>Parking, Standing, and Stopping Signs (R7 and R8 Series)</u> (new Para's 84-86, beginning on Page 181)

<u>Electric Vehicle Charging Station Signs</u>

Standard:

4a. new

84 **The Electric Vehicle Charging Station Tow-Away (Rxxx(CA)) sign shall be placed immediately adjacent to, and visible from, the charging station stall or space, or at each entrance to an off-street parking facility to inform motorists that their vehicles will be towed away if parked in designated stalls or spaces without being connected for electric charging purposes. The sign shall include the address where the towed vehicle can be reclaimed and the telephone number of the local traffic law enforcement agency. Refer to CVC 21511.**

4b. new

85 **The No Parking (symbol) EXCEPT FOR ELECTRIC VEHICLE CHARGING (Ryyy(CA)) sign shall be placed immediately adjacent to, and visible from, each charging station stall or space.**

4c. new

86 **The __HOUR CHARGING __AM TO __PM (Rzzz(CA)) sign shall be placed immediately adjacent to, and visible from, each charging station stall or space to identify the allowable time limit where electric vehicles may be connected, depending upon what time limitations for charging apply to each charging station.**

Section 2I.03 <u>General Service Signs for Freeways and Expressways</u> (beginning Page 564)

California MUTCD 2012 Edition Page 564
(FHWA's MUTCD 2009 Edition, as amended for use in California)

Guidance:

34 *To avoid misleading the road user, those services that are more than 0.5 mile from the access point on the major route to the service, should have a distance plaque installed below the service sign.*

Support:

35 Accordingly, it would be a disservice to the traveler to lead them off on to a minor road to a business providing a service when that same service can be obtained in a shorter distance by remaining on the major road.

4d.

Guidance:

34 *To avoid misleading the road user, those services that are more than 0.5 mile from the access point on the major route to the service, should have a ~~distance~~ Distance with Arrow (G66-21A(CA)) plaque installed below the service sign.*

Section 2I.03 General Service Signs for Freeways and Expressways (beginning Page 564)

(Continuation of paragraph 41 – Section 2I.03, Page 564)

11. The Liquefied Natural Gas (G66-22B(CA)) sign may be used for Liquefied Natural Gas Refueling Stations within 3 mile of a State highway and be available to the public at least 16 hours a day.

12. Where ethanol E85 fuel is available, the Ethanol E85 (G66-22E(CA)) symbol sign and ETHANOL (G66-22F(CA)) supplemental plaque may be used in addition to the other appropriate signs.
13. Where hydrogen (H) fuel is available, the Hydrogen (G66-22G(CA)) symbol sign and HYDROGEN (G66-22H(CA)) supplemental plaque may be used in addition to the other appropriate signs.

4g.

13. Where hydrogen (HYD) fuel is available, the Hydrogen (G66-22G(CA)) symbol sign and HYDROGEN (G66-22H(CA)) supplemental plaque may be used within 3 miles of a State highway and be available to the public at least 16 hours a day, in addition to the other appropriate signs.

Electric Vehicle Charging Station Signs (G66-21(CA))

Option:

43 The ELECTRIC VEHICLE CHARGING STATION (G66-21(CA)) sign may be used for Electric Vehicle Charging Stations within 3 mile of a State highway and be available to the public at least 16 hours a day.

Standard:

44 **Follow-up signing, if necessary, shall be placed by local agencies before signs are placed on the State highway.**

Option:

45 The Distance with Arrow (G66-21A(CA)) plaque may be used to supplement the G66-21(CA) sign to provide distance and directional information to the motorist.

4d. **Electric Vehicle Charging Station Signs (G66-21(CA), G66-21A(CA), G66-21B(CA), G66-21C(CA))**

Option:

43 The Electric Vehicle Charging Station (G66-21B(CA)) symbol sign, or the ELECTRIC VEHICLE CHARGING STATION (G66-21(CA)) sign may be used for Electric Vehicle Charging Stations within 3 miles of a State highway and be available to the public at least 16 hours a day.

Standard:

44 **Follow-up signing, if necessary, shall be placed by local agencies before signs are placed on the State highway.**

Option:

45 The Distance with Arrow (G66-21A(CA)) plaque may be used to supplement the G66-21(CA), or G66-21B(CA) sign to provide distance and directional information to the motorist. It may also be used with other general service signs (See Paragraph 34).

4e. new

45a The FAST (G66-21C(CA)) header plaque may be used to supplement the G66-21(CA), or G6621B(CA) sign to indicate that a FAST Electric Vehicle Charging Station is located off the State highway.

Support:

45b A "Fast" Electric Vehicle Charging Station is where the rate of battery electric charging is at least 20 kWh in a 30 minute period. "Fast" charging stations include direct current (DC) fast charging and battery switching.

Section 3B.19 Parking Space Markings (insert subheading above new Option Paragraph 18)

4f. new

Electric Vehicle Charging Station Markings

Option:

18 Electric Vehicle Charging Stations in off-street locations may be marked with white "EV CHARGING ONLY" pavement markings (see detail in Figure 3B-108(CA)) to supplement Electric Vehicle Charging Station signs in Sections 2B.46 and 2I.03.

12-24 Updates and Corrections for Accessible Parking Space markings (Section 3B.20 Pavement Word, Symbol, and Arrow Markings, Page 695 of CA MUTCD)

Recommendation: Caltrans requests the Committee to make recommendation to amend Section 3B.20 and Figure 3B-22(CA) to make optional use of the International Symbol of Accessibility (ISA) for the on-street accessible parkings.

Agency Making Request: Caltrans

Sponsor: Janice Benton, Voting member, Caltrans

Background:
David Cordova, Caltrans, Design Division, has pointed out that the figures illustrating markings for accessible parking spaces need revisions and clarification. One of the issues is requiring the ISA marking in all accessible parking spaces. The ISA is not required for on-street parking. There is no codified Federal standard for accessible on-street parking spaces.
The California Building Code requires that off-street parking spaces be marked with the ISA symbol. Other edits shown on Figure 3B-22(CA) are shown to correct a duplicated figure and clarify use of notes.

Proposal:

Standard:
17 The **yield-ahead triangle symbol or YIELD AHEAD word pavement marking shall not be used unless a YIELD sign (see Section 2B.08) is in place at the intersection. The yield-ahead symbol marking shall be as shown in Figure 3B-26.**

~~*Guidance*~~*:*
18 ~~The International Symbol of Accessibility parking space marking (see Figure 3B-22 3B-22(CA)) should shall be placed in each parking space designated for use by persons with disabilities~~.

Standard:
18 **The International Symbol of Accessibility (ISA) parking space marking shall be placed in each off-street parking space (see Figure 3B.22(CA)).**

Guidance:
18a *The ISA parking space marking (3B-22(CA)) should be placed in each on-street parking space designated for use by persons with disabilities*

~~Option:~~

Standard:
19 **A blue background with white border may** shall **supplement the wheelchair symbol as shown in Figure 3B-22** 3B-22(CA).
19a **If used, new construction of accessible off-street parking spaces, and, loading and unloading areas shall include pavement marking details shown on Figure 3B-22 (CA), or as shown on the Department's Revised Standard Plan A90A. The loading and unloading area shall be marked by a border and hatched lines. The border shall be painted blue and the hatched lines shall be painted a suitable contrasting color to the parking space (blue or white paint is preferred).**
19b **If used, new construction of accessible on-street parking shall include a blue painted curb, as shown on the Department's Revised Standard Plan A90B. If on-street parking designated and designed for persons with disabilities includes a loading and unloading area, it shall be marked by a border and hatched**

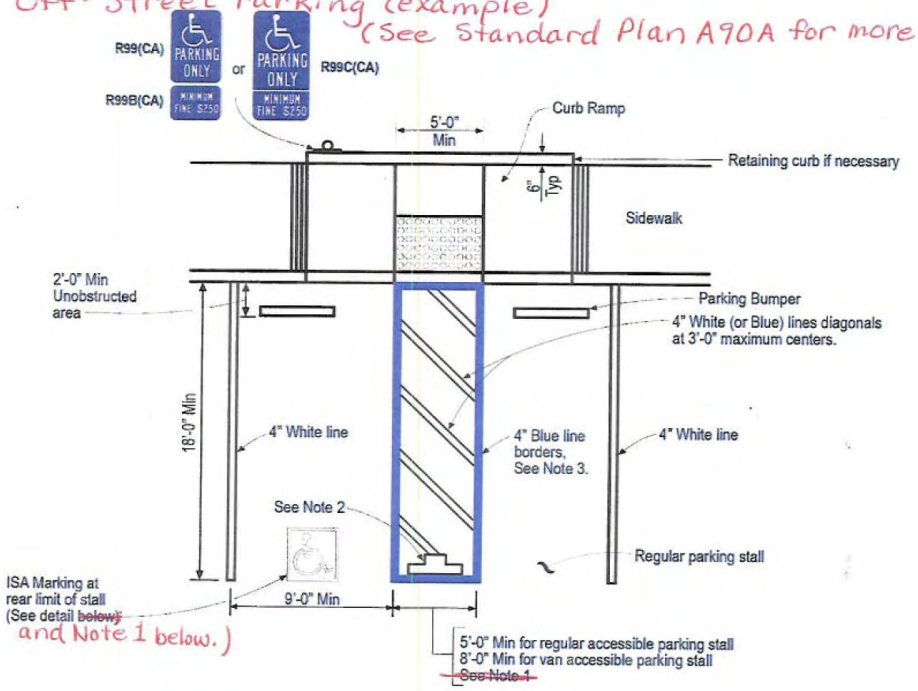
lines. The border shall be painted blue and the hatched lines shall be painted a suitable contrasting color to the parking space (blue or white paint is preferred).

19c Loading and unloading areas shall include the words "NO PARKING" within the blue border and shall be painted in white letters no less than 12 inch high (See detail in Figure 3B-22 (CA)). Refer to California Code of Regulations Title 24, Section 1129B.4.

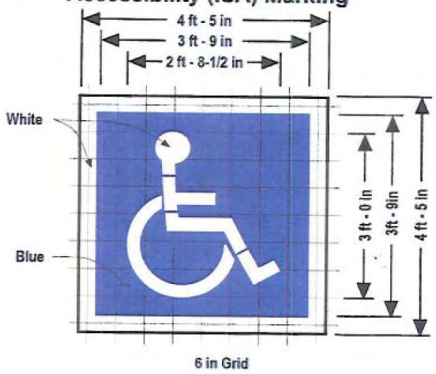
Note: On pages 40 & 41, current Figures shows corrections marked in red color and revised Figures are shown on pages 42 & 43:

Figure 3B-22 (CA). Examples of Disabled Persons Parking Symbol, Legend and Related Markings (Sheet 1 of 2)

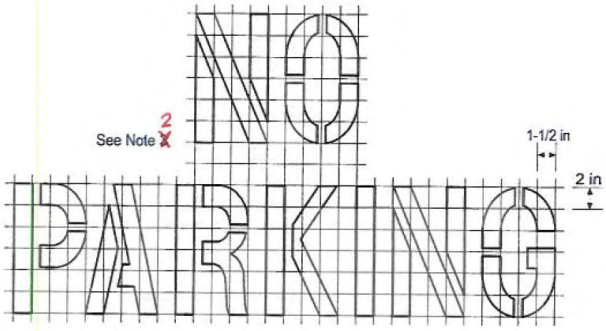
Off-Street Parking (example)
(See Standard Plan A90A for more examples.)



International Symbol of Accessibility (ISA) Marking



Loading and Unloading Area Pavement Marking Legend

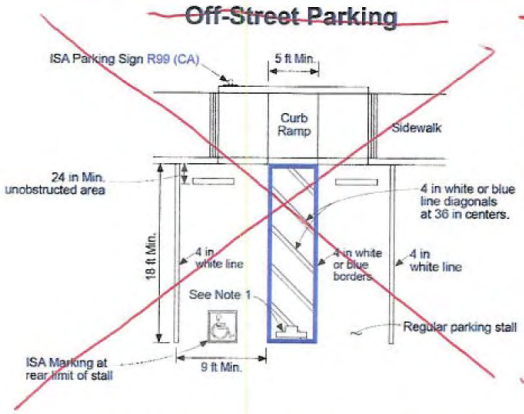


NOTES:

1. The design details for this symbol, legends, and related markings are shown in the Department of Transportation's Standard Plans. See Standard Plan A24C for square unit area for ~~painting~~ the ISA ~~parking space~~ marking.
2. The words "NO PARKING" shall be painted in the loading and unloading area in white letters no less than 12 in high on a contrasting background and located so that it is visible to traffic enforcement officials. See Standard Plan A24E for square unit area for ~~painting the legend~~ "NO PARKING" legend.
3. Loading and unloading area border shall be marked in blue paint. The border shall be painted blue and the hatched lines shall be painted a suitable contrasting color to the parking space. Blue or white paint is preferred.

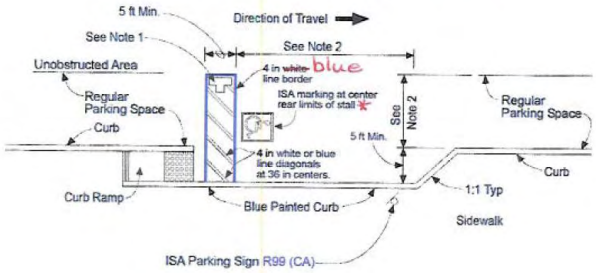
Figure 3B-22 (CA). Examples of Disabled Persons Parking Symbol, Legend and Related Markings (Sheet 2 of 2)

~~Off-Street Parking~~



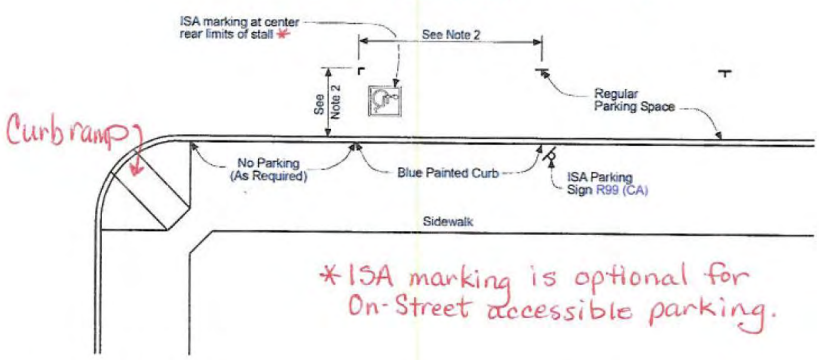
This is already shown on previous page (Sheet 1 of 2).

On-Street Parking (Conventional)



On-Street Parking (Restricted Right of Way Width)

Should be located near curb ramp.



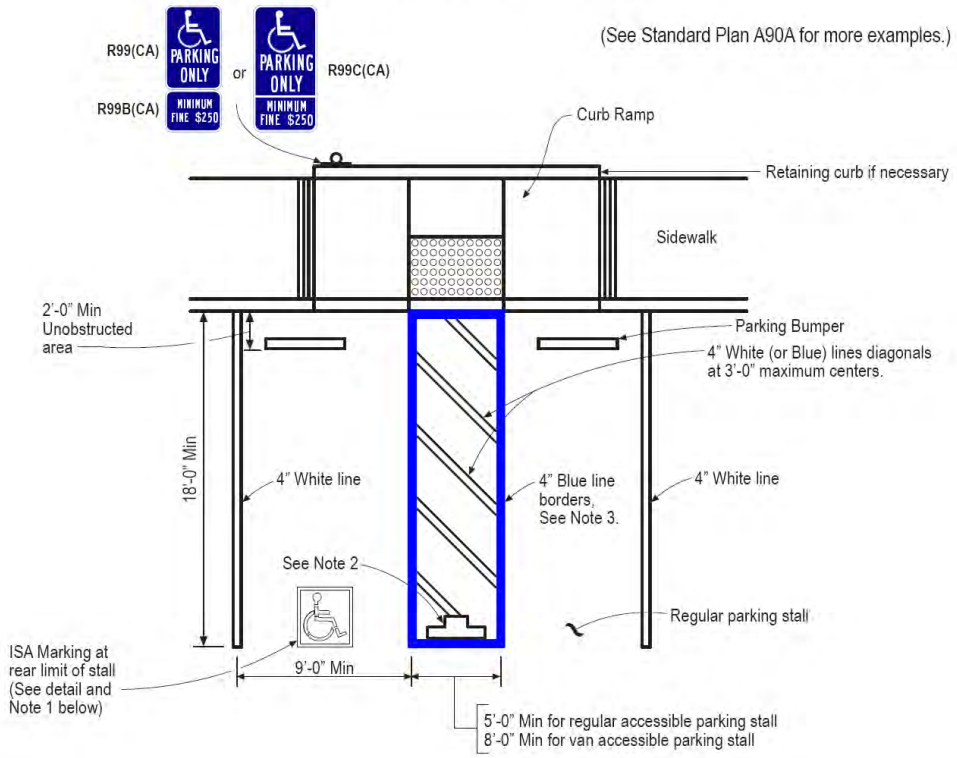
* ISA marking is optional for On-Street accessible parking.

NOTES:

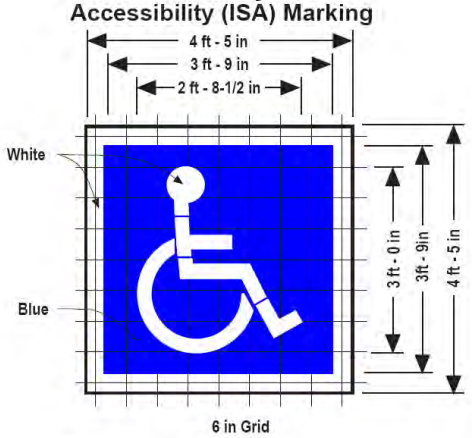
1. The words "NO PARKING", shall be painted in white letters no less than 12 in high on a contrasting background and located so that it is visible to traffic enforcement officials. See Standard Plan A24E for square unit area for painting the legend "NO PARKING".
2. Accessible on-street parking spaces shall not be smaller in length or width than that specified by the local jurisdiction for other parking spaces, but not less than 20 ft in length and not less than 8 ft in width.
3. Blue paint, instead of white may be used for marking accessibility aisles in areas where snow may cause white markings to not be visible.
4. Actual dimensions and curb geometry may differ from that shown. See Standard Plan A90B for additional details.

Figure 3B-22 (CA). Examples of Disabled Persons Parking Symbol, Legend and Related Markings (Sheet 1 of 2)

Off-Street Parking



International Symbol of Accessibility (ISA) Marking



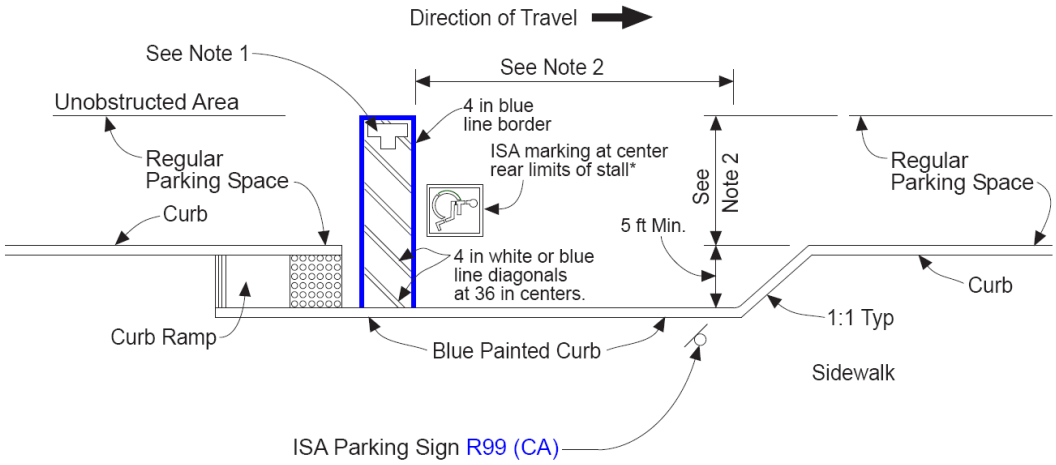
Loading and Unloading Area Pavement Marking Legend

NOTES:

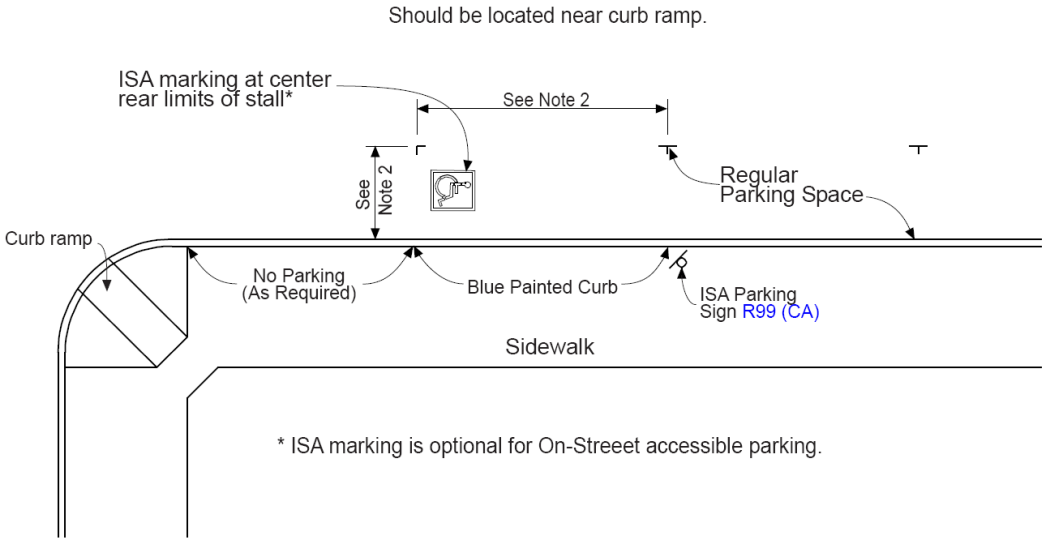
1. The design details for this symbol, legends, and related markings are shown in the Department of Transportation's Standard Plans. See Standard Plan A24C for square unit area for the ISA marking.
2. The words "NO PARKING" shall be painted in the loading and unloading area in white letters no less than 12 in high on a contrasting background and located so that it is visible to traffic enforcement officials. See Standard Plan A24E for square unit area for "NO PARKING" legend.
3. Loading and unloading area border shall be marked in blue paint. The border shall be painted blue and the hatched lines shall be painted a suitable contrasting color to the parking space. Blue or white paint is preferred.

Figure 3B-22 (CA). Examples of Disabled Persons Parking Symbol, Legend and Related Markings (Sheet 2 of 2)

On-Street Parking (Conventional)



On-Street Parking (Restricted Right of Way Width)



NOTES:

1. The words "NO PARKING", shall be painted in white letters no less than 12 in high on a contrasting background and located so that it is visible to traffic enforcement officials. See Standard Plan A24E for square unit area for painting the legend "NO PARKING".
2. Accessible on-street parking spaces shall not be smaller in length or width than that specified by the local jurisdiction for other parking spaces, but not less than 20 ft in length and not less than 8 ft in width.
3. Blue paint, instead of white may be used for marking accessibility aisles in areas where snow may cause white markings to not be visible.
4. Actual dimensions and curb geometry may differ from that shown. See Standard Plan A90B for additional details.

6. Requests for Experimentations

12-25 Requests for Permission to Experiment with Various Bicycle Treatments

Recommendation: The City of Santa Monica requests authorization from the Committee to conduct experiment with Various Bicycle Treatments.
Agency Making Request: City of Santa Monica
Sponsor: John Ciccarelli – Non-motorized Voting Member, Caltrans

City of
Santa Monica®

Planning & Community Development Department
Transportation Engineering and Management Division
1685 Main Street, Room 115
Santa Monica, CA 90401

October 15, 2012

Mr. Devinder Singh, Executive Secretary
California Traffic Control Devices Committee – MS36
P.O. Box 942874
Sacramento, CA 94274-0001

SUBJECT: Request for Permission to Experiment – Various Bicycle Treatments

Dear Mr. Singh / CTCDC Committee:

The City of Santa Monica requests permission to conduct an experiment using various bicycle signing and striping treatments that are not currently approved for use in the State of California. The purpose of the experiment will be to determine the effectiveness of various bicycle signing and marking treatments to encourage bicycling, increase driver awareness, and increase yield compliance from cyclists and motorists.

1. Background

As documented in the 2010 General Plan Land Use and Circulation Element (LUCE), Santa Monica aspires to make this City a place in which 14-35% of all trips are made by bicycle. The City is currently implementing its adopted 2011 Bicycle Action Plan to achieve that result. The Bike Action Plan presents a program of specific practical actions that will encourage people to switch to bicycling, not only because it is environmentally friendly, but also because they will want to enjoy its safety, comfort, and convenience. The City's Open Space Element identifies walking on streets as residents' number one recreational activity. With a successfully implemented Bike Action Plan, bicycling will be a close second, and increases in the number of people who choose to commute by bicycle will surely increase.

Although this is a local plan developed in response to this community's needs and desires, it is also prepared within a national, state, and regional context that, more and more, seeks to encourage and support local communities in their efforts to become less car-focused, more energy efficient and less polluting. In

addition to implementing Santa Monica's LUCE, the Bike Action Plan implements components of state and regional plans, including California Bicycle Transportation Account requirements and Metro's Strategic Bicycle Transportation Plan. Because of its leadership in implementing these State and regional goals, the City anticipates continuing funding support from national, State and regional levels of government.

2. Problem Statement

Like many jurisdictions throughout the State and nation, Santa Monica is concerned with compliance and ensuring that motorists and cyclists yield right-of-way to each other at signal controlled intersections. To address cyclist and motorist compliance, the City has pursued modified applications of a number of currently available treatments designed to designate a space for cyclists, and to bring attention to the cyclist from the motorist's perspective. The treatments employed by the City include bicycle boxes, left- and right-turn sharrows (also known as shared lane markings [SLM]s), combined bicycle through/vehicle right-turn lanes, sharrows at bus stops, and buffered bike lanes.

3. Proposed Changes

3.a Bike Boxes

Bike boxes are experimental intersection facilities that are intended to reduce conflicts with right-turning vehicles and offer improved bicycle visibility at intersections. Cyclists using a bike box first pass queued motor vehicles on the right using a bike lane, then enter the bike box directly in front of waiting cars. Bicycles in the box are visible to motorists and can be correctly positioned as they enter the intersection. Because bike boxes span the width of the entire travel lane, these facilities are also useful at intersections where significant bicycle queuing occurs.

Green color for the bike boxes is recommended to be consistent with the color scheme used in other cities. The green color has already received interim approval from the Federal Highway Administration and the CTCDC for optional use of green colored pavement for bike lanes, and in 2011 received interim approval in the State of California. The City would like to use thermoplastic material rather than paint for the installation of

the bike boxes on asphalt pavement. The material is designed to ensure that both skid resistance and retroreflectivity are maximized, especially when loss of traction in wet conditions is a concern. Retroreflective materials, small glass beads and micro-prismatic reflectors will be mixed into the green thermoplastic material filling or outlining the bike boxes. These materials have the ability to reflect light and make these devices easier to see at night. Additionally, thermoplastic material is more durable than paint.

The advanced stop line is a standard treatment. The proposed device deviates from standards contained in the California Manual on Uniform Traffic Control Devices (CA MUTCD), principally through the application of color and markings in the area between the advanced stop line and back of crosswalk as an exclusive waiting area for cyclists.

The bike box will facilitate bicyclist left turn positioning, protect them from right hook conflicts, and provide more visibility of bicyclists.

Proposed Locations

Broadway at 11th Street

Broadway is the most heavily traveled east-west bikeway in the City. It has a class II bicycle lane and connects residential neighborhoods with Downtown Santa Monica and the beach on the west and the Mixed-Use Creative District and West Los Angeles on the east. 11th Street intersects with Broadway and also contains a class II bicycle lane. Both 11th and 17th Streets are the only north-south class II bicycle facilities serving the mid-city area of Santa Monica. Of the two intersections, Broadway at 11th Street has higher cyclist volumes than Broadway at 17th Street. This is partly due to the fact that many cyclists choose 11th Street over nearby Lincoln Boulevard because of its lower vehicle volumes, speeds and lack of dedicated bicycle lanes. The bicycle lanes on Broadway and 11th Street work together to facilitate bicycle travel between various points within Santa Monica and bicycle boxes are proposed to be tested at this intersection to facilitate through and left-turn movements at this critical intersection. A sketch of a possible layout for the bike boxes at this intersection is illustrated in Figure 1.

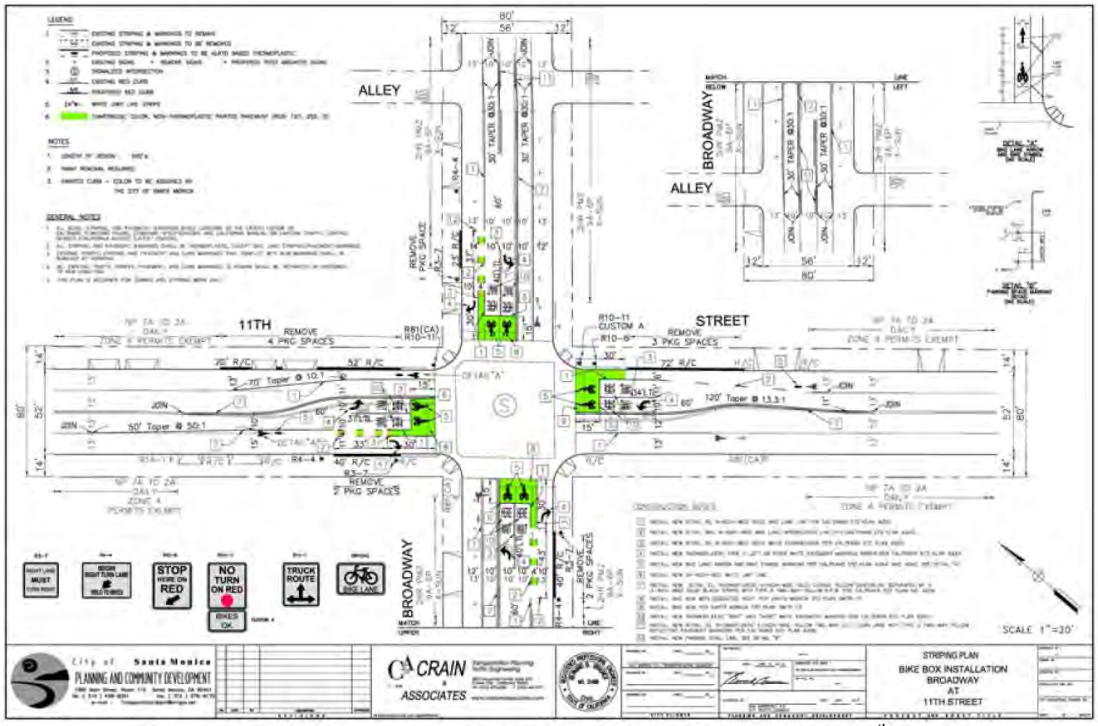


Figure 1: Proposed Intersection Treatment at Broadway and 11th Street

Lincoln Boulevard at Michigan Avenue

At Lincoln Boulevard at Michigan Avenue intersection (Figure 2), no bike lanes are present, although Lincoln Boulevard is classified as a Class III bike route. The State relinquished Lincoln Boulevard to the City, and took possession of the roadway in June 2012. In early 2013 the City will begin a project to resurface and restripe Lincoln Boulevard to include “transit only” lanes which will also allow bicycles. Michigan Avenue is a Class III route to the west toward Santa Monica High School. The Bike Action Plan identifies Michigan Avenue a major bicycle corridor connecting popular destinations throughout the city including schools and two transit centers, and recommends that it become a key east-west element of the priority bikeway backbone network. The City has allocated funding for concept development and been awarded some grant funding for development of this project. As part of the project the Bike Action Plan recommends Michigan Avenue for a neighborhood greenway treatment, a bikeway on a low-speed, low-volume street that will feature wayfinding, branding, and enhanced crossings for bicycles. The LUCE designates Michigan Avenue as a “Lane/Path/Bicycle Boulevard", where "some right of way allocated to bicycles; first level of investment for intersection improvements." The bike box will help satisfy that requirement. The combined improvements to Lincoln Boulevard and Michigan Avenue will greatly improve and promote bicycling at the busy intersection and surrounding area. A sketch of a possible layout for the bike boxes at this intersection is illustrated in Figure 2.

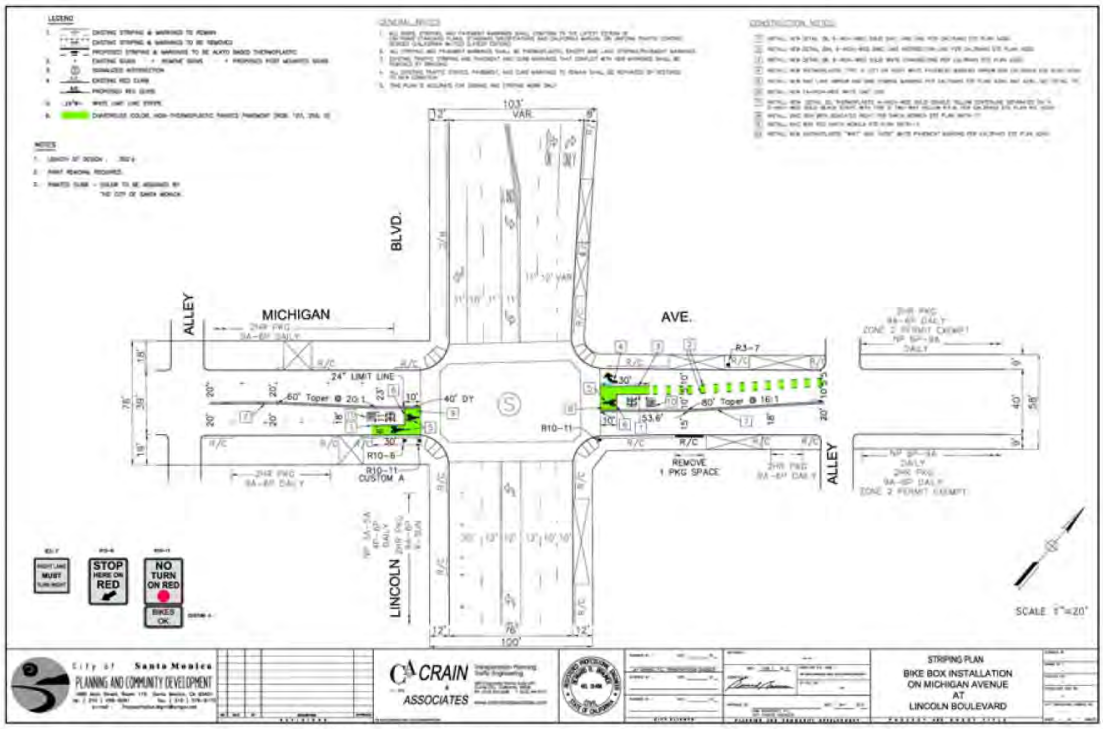


Figure 2: Proposed Intersection Treatment at Lincoln Blvd and Michigan Ave

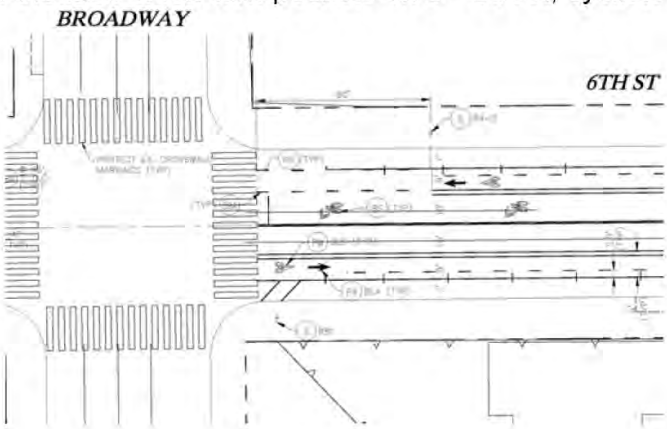
3.b Left- and Right-Turn Sharrow Markings

The shared lane marking (SLM), or sharrow, is often placed in the travel lane to indicate that a bicyclist may use the full lane and to suggest where in that travel lane to position his/herself. In the City of Santa Monica, the suggested location is typically based on where to best avoid parked car door conflicts and where to command possession of the full lane. The City requests testing a modified sharrow marking with the two chevrons above the bike symbol pointing left or right. This modified sharrow indicates the recommended location in the vehicle lane where a cyclist should position his/herself to make the legal and safe turn. These markings are only to be installed where a left-turn pocket is not present, and where a designated bikeway intersects with another designated bikeway. A designated bikeway is defined as a street that has a class II bicycle facility and is a strategic bike connection through the city with high bicycle traffic volumes. This marking will, in turn, act as advance guidance for cyclists that he/she is approaching an intersecting bikeway.

Proposed Locations

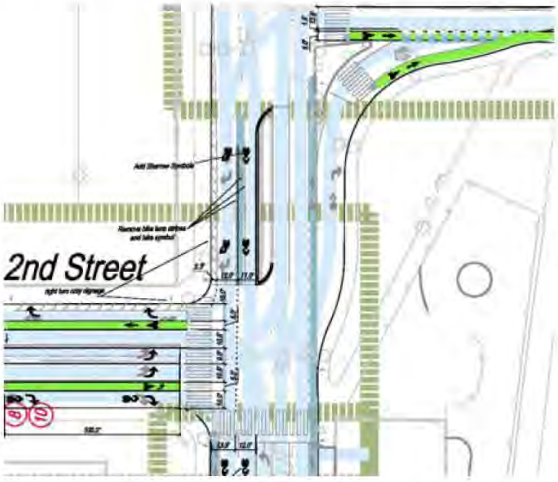
Various intersections along 6th Street

As mentioned above, Broadway is the most heavily traveled east-west bicycle facility in the City. Arizona Avenue is another east-west street similar is bicycle popularity two blocks north and parallel to Broadway. Sixth Street is a two-lane roadway with features newly installed buffered bike lanes that connect Colorado Avenue to Wilshire Boulevard making it the main class II bike facility in downtown Santa Monica. With the lack of left-turn pockets on 6th Street, cyclists must wait in the only travel lane to turn left onto the bike lane on Broadway or Arizona Avenue. The left-turn sharrow suggests where the cyclist should position themselves to safely and legally execute the turn. The left-turn sharrow also reminds motorists that bicycles may be present in the vehicle lane at this location.



Colorado Avenue at Main Street/2nd Street

Second Street and Main Street form an important bikeway through Santa Monica. The 2.5-mile bikeway stretches from the southern City Limit to the north end of the city, connecting Venice Beach via Main Street, downtown Santa Monica and Montana Avenue on the north end of Second Street. The connection at Colorado Avenue where the existing Class II bike lane jogs from Main Street to Second Street is a challenging offset intersection with high volumes of vehicles and bicycles. In addition to the existing activity, a new Bike Center opened a year ago at the intersection of Colorado Avenue at 2nd Street and has proven to be a regular destination for locals and tourists alike. The Bike Center includes bike rentals, repair and secure bike parking with changing facilities and lockers. The intersection geometry as well as the volume of cyclists



using this bikeway highlights the need for innovative improvements like a right-turn sharrow. The right-turn sharrow provides an opportunity to suggest where a cyclist should appropriately position his/herself to make the right turn from Colorado Avenue onto 2nd Street.

3.c Combined Bike Through/Vehicle Right-Turn Lane

In many locations throughout the city, there is simply not enough space to install a bike lane between a vehicle through lane and an exclusive right-turn lane. Many times the class II bike lane drops a few hundred feet short of the intersection to accommodate the vehicle lanes. At intersections with an exclusive right-turn lane, the city suggests a compromise. A right turn lane can be shared with cyclists to provide a designated space at the intersection approach. The *Oregon Bicycle and Pedestrian Plan* (ODOT 1995) recognizes this limitation and states that when this occurs, "a right-turn lane may be marked and signed as a shared-use lane to encourage through cyclists to occupy the left portion of the turn lane".

<u>Proposed Locations</u>

Various intersections along 14th Street

14th Street between Pico Boulevard and Washington Avenue features a newly installed class II buffered bike lane in each direction. This bikeway provides a high-quality connection between south and north Santa Monica. It was chosen because of its direct routing and connections to east-west bikeways that feed into Downtown. Major linkages include: Santa Monica College, Lincoln Middle School, Will Rogers Elementary School, Memorial Park, and Santa Monica Hospital. This corridor is considered a primary school access route and great care was taken to encourage student bicycle travel. To achieve this encouragement, a combined bike lane/right-turn lane will designate a space for cyclists all the way up to the intersection (See Figure 3).

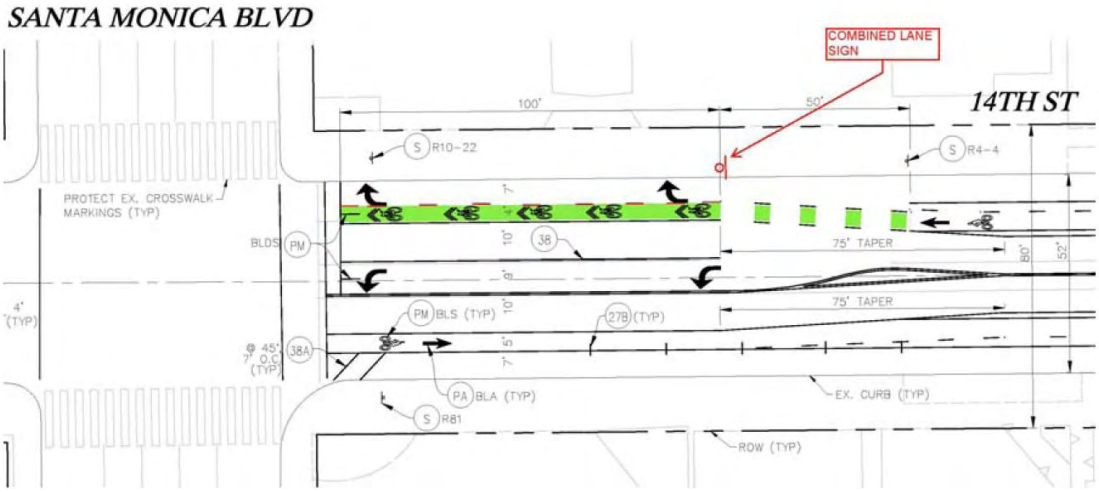
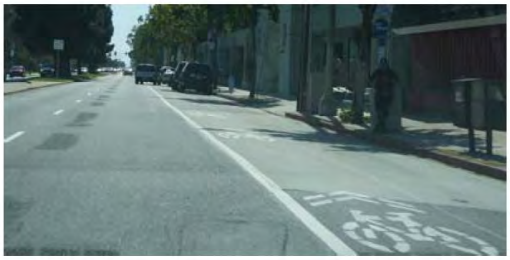


Figure 3: Shared right-turn/sharrow markings on 14th Street

3.d Sharrows at Bus Stops



As mentioned above, a sharrow is used to define a shared space on the roadway. Typically this sharing is between a vehicle and bicycle, but at many locations throughout the city, a bike lane overlaps with a bus stop. Often times when a bus is stopped, cyclists must veer into the vehicle lane to pass the stopped bus. Sharrows in the bike lane at bus stops indicate to the cyclist and bus driver that this is a shared space. In other words, it is a visual cue to bus drivers that they are in a bike lane, and a cue for cyclists that a bus may be encroaching within the bike lane. Project locations include various locations on Ocean Park Boulevard, 6th Street, and 14th Street.

3.e Buffered Bike Lanes

Buffered bike lanes are conventional class II bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent vehicle travel lane and/or parking lane. Buffered bike lanes are allowed as per CA MUTCD guidelines for buffered preferential lanes (Section 3D-

01). The City recently installed buffered bike lanes on various streets with the following varying buffer types and widths:

- **Parking lane buffer.** For all newly installed buffered bike lanes, a minimum 2.5-foot buffer was installed between the parking lane and the bike lane using Caltrans Detail 39A (6 in. white dashed bike lane line). The parking buffer was installed on all new bike lanes where space permitted. Given the high parking turnover rate of many of the busy commercial streets throughout the city, the parking buffer was a high priority. Project locations include Montana Avenue, 2nd Street, Main Street, 17th Street, and Stewart Street.

- **Parking and traffic lane buffer.** Where space permitted, a 1.5-foot traffic buffer was installed along with the parking lane buffer. The traffic buffer was installed on streets with higher vehicle speeds, and where the bike lane was so wide that it might be mistaken for a travel lane or a parking lane. The striping for the traffic buffer is Caltrans Detail 39 (6 in. solid white) on the traffic side, and Caltrans Detail 28A (4 in. solid white) on the bike lane side. Project locations include 6th Street and 14th Street.

4. Evaluation Plan

The objective of this experiment is to evaluate the effectiveness of the above-mentioned bicycle enhancements. The evaluation process includes a "before" and "after" study of both motorist and cyclist behavior and reactions to the experimental treatments. Experimentation requirements outlined in the Manual of Uniform Traffic Control Devices will be used to guide this process. These "before" and "after" studies will be conducted via random observations by City staff at various times of day, interviews with cyclists, and soliciting direct feedback from Santa Monica's various bicycle advocacy groups and other regular bicycle riders. Observations that will be documented include:

- Wrong way riding

- Bicycle lane and box use

- Vehicle encroachment into the bike lane or bicycle box

- Vehicle "No Turn on Red" compliance at bicycle box locations

- Conflicts between cyclists and motorists

- Cyclist's position in the bicycle box, on the sharrow, in the combined lane, in the buffered bike lane

- Bicycle volumes
- Feedback from facility users
- Crash data at affected intersections

The evaluation plan will consist of the following elements:

- Evaluate Existing Setting – Existing traffic facilities and conditions at the locations of all new bicycle facilities under the experiment will be documented.
- Pre-Installation Evaluation – Driver behavior and reactions to bicycles will be observed and documented with existing traffic facilities. If appropriate, average numbers of bicycles using the new features will be estimated based on observations.
- Post-Installation Evaluation – Driver behavior and reactions to bicycles will be observed and documented with the new bicycle treatments. Feedback from local bicycle groups will be solicited, and any accident records will be reviewed and analyzed. If appropriate, average numbers of bicycles using the new features will be estimated based on observations.
- Reporting to CTCDC – Regular reports documenting the City's observations will be prepared and submitted to the CTCDC throughout the one (1) year evaluation period.

5. Experiment Schedule

The following schedule for experimentation is proposed:

Pre-Installation Evaluation	Fall 2012
Bicycle Treatments Installation	Fall 2012
Bicycle Treatments Experiment Period	Fall 2012 – Spring 2013
Evaluation	Summer 2013 - Summer 2014

6. Conclusion

The proposed treatments for experimentation by the City of Santa Monica are potentially important tools to enhance safety conditions for the growing number of Santa Monica residents, commuters, and tourists who bicycle on city streets. Should the results of this experiment conclude that the treatments have been effective and successful in improving bicycle safety, the CTCDC should consider

a guideline for these types of traffic control devices in a future update of the CA MUTCD.

We look forward to receiving approval from the CTCDC. Should you have any questions or require any additional information, please contact me directly.

Respectfully,

Sam Morrissey, P.E.
City Traffic Engineer
Transportation Engineering and Management Division
Planning & Community Development Department
City of Santa Monica
sam.morrissey@smgov.net
Tel: 310.458.8955

7. Information Items:

12-17 Adopt an Interim Approval (IA-15) issued by the FHWA for the Optional Use of an Alternative Design for the U.S. Bicycle Route (M1-9) Sign

The State of California has received blanket Interim Approval dated September 27, 2012 from FHWA for the use of an Alternative Design for the U.S. Bicycle Route (M1-9) Sign, below is approval letter:

U.S. Department of Transportation
Federal Highway Administration

SEP 27 2012

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

In Reply Refer to:
HOTO-1

Ed Lamkin
Division of Traffic Operations
Department of Transportation, State of California
1120 N Street, MS-36
P.O. Box 942873
Sacramento, CA 94273-0001

Dear Mr. Lamkin:

Thank you for your letter of September 26 requesting approval for the optional use of the alternative design for the U.S. Bicycle Route (M1-9) sign on all designated U.S. Bicycle Routes in California. This request would be on a Statewide basis, including all roadways under the jurisdictions of local authorities in California. Your request is made under the provisions of Section 1A.10 of the 2009 edition of the Manual on Uniform Traffic Control Devices and our Interim Approval Memorandum IA-15 dated June 1, 2012.

Your request is approved. Please maintain and periodically update a list of all locations where U.S. Bicycle Route (M1-9) signs using the alternative design are installed in California. Your approval has been assigned the number and title "IA-15.3 – Alternative Design for the U.S. Bicycle Route Sign – California Statewide." Please reference this number in any future correspondence.

Thank you for your interest in improving highway safety. If we can be of further assistance on this matter, please contact Mr. Kevin Dunn at kevin.dunn@dot.gov.

Sincerely yours,

Mark R. Kehrli
Director, Office of Transportation Operations

12-26 Draft Intersection Control Evaluation Policy

Project Title: Policy Update on Use of Intersection Control Strategies
(Via Traffic Operations Policy Directive or TOPD)

The Department (Caltrans) is leading a statewide effort to update and consolidate the individual traffic engineering policies that govern the use of signal, stop and yield "control" at major access points into a holistic decision-making framework that is:

- **driven by system performance outcomes**; **especially safety and operational impacts and benefits**
- influenced by life-cycle cost analysis

Rather than replace the existing policies & procedures, the Department will issue guidance in early 2013 to update the approach to the selection of intersection traffic control strategies for major state highway access points by identifying the best "control" alternatives and a two-step evaluation process. The updated approach / process will emphasize:

- **the consideration of yield-control with circular intersection geometry** (i.e. the modern roundabout) as a standard design practice and highly effective form of intersection control; in fact, there are now over 2,000 roundabouts in the U.S. and the Department recognizes them as a best practice or treatment for major intersections
- **context and the needs of essential and vulnerable highway system users** (e.g. commercial trucks, emergency responders, farm equipment, pedestrians, bicyclists, etc)
- **the role of safety performance analysis for practical "control" alternatives** in order to inform decision-makers on how their choice (signal, stop or yield control) is expected to affect collision frequency and severity
- **streamlined decision-making and documentation requirements for the use of yield-controlled roundabouts**

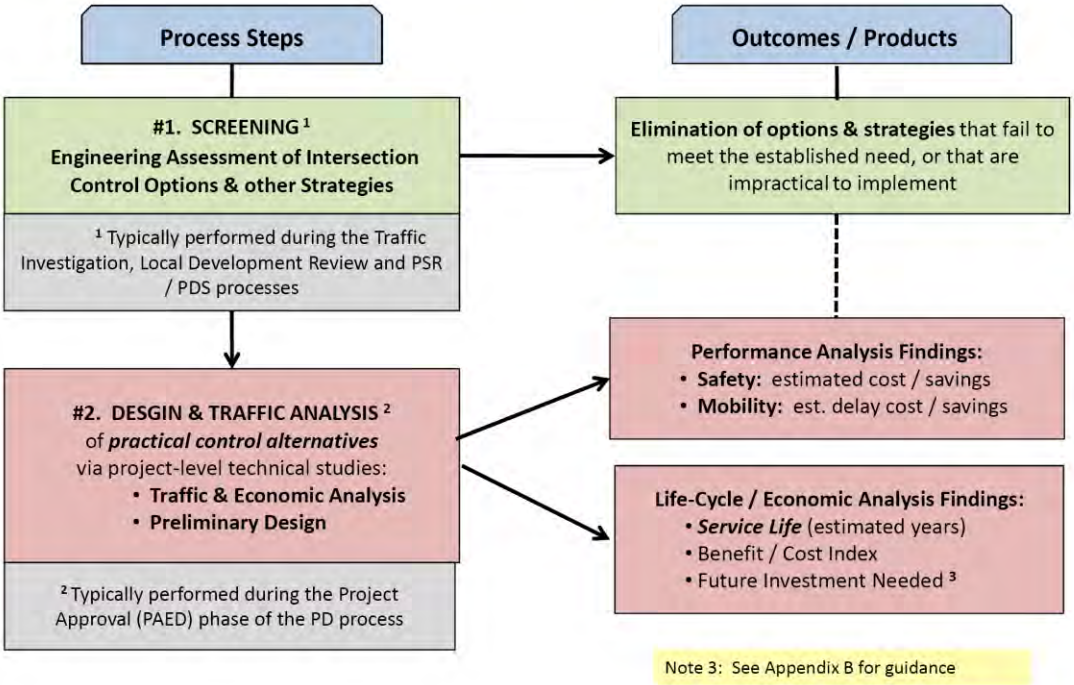
The updated approach for the evaluation and selection of intersection control will be established via issuance of a policy directive in early 2013, and supported by a 6 month "roll-out" campaign prior to a mid-year effective date (possibly July 1st). The directive and it's updated decision-making process will likely be identified by the same title adopted by other state DOT's: "Intersection Control Evaluation" or ***ICE.***

ICE will be applied during the broader transportation planning and capital project development business processes that propose the construction of new intersections, or modification of existing intersections (including interchanges). The policy & process will be monitored, evaluated and adjusted before it is proposed for inclusion in the CA MUTCD as early as the 2015 calendar year.

NOTE: This policy project has been formally endorsed by the California Strategic Highway Safety Plan Executive Committee, whose members include representatives from numerous transportation, public safety and health organizations across the state.

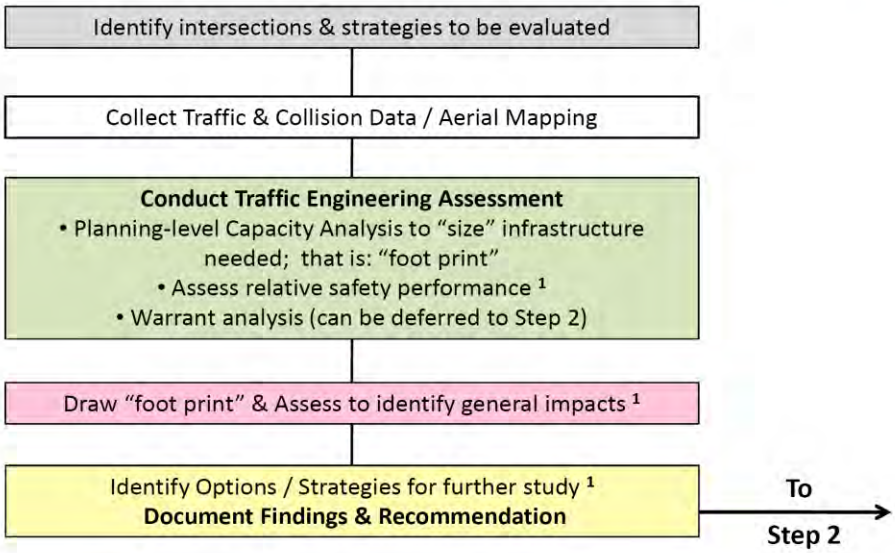
DRAFT Appendix A: ICE Process Steps & Outcomes

1 of 3



DRAFT Appendix A: ICE Process Step One
Screening to Eliminate Ineffective / Impractical Intersection Control Strategies

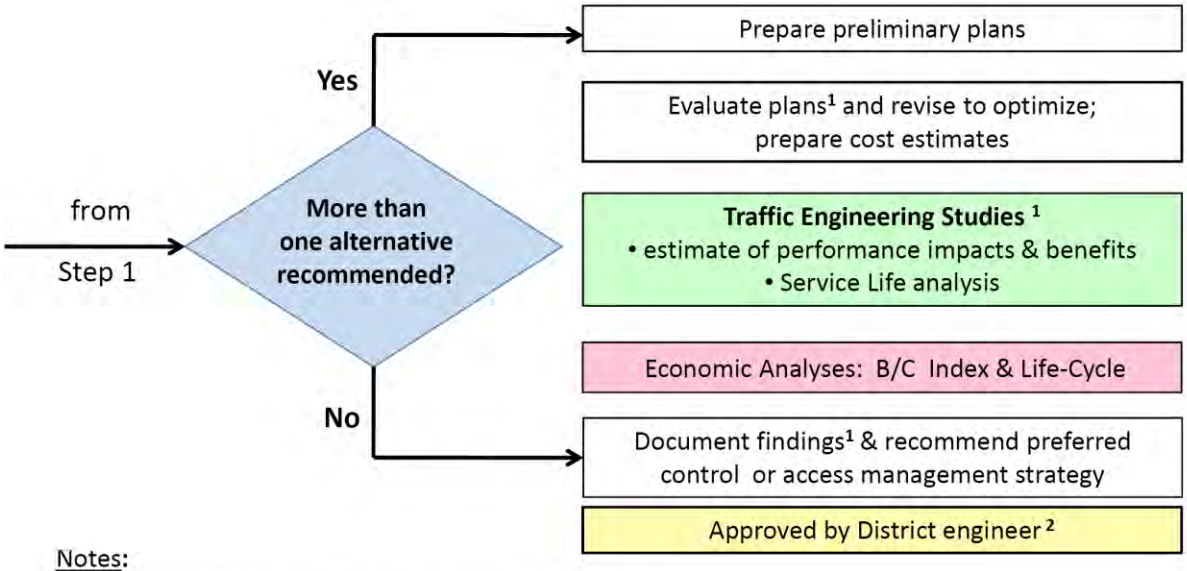
2 of 3



Note 1: Consult with District ICE Coordinator or designated specialists

DRAFT Appendix A: ICE Process Step Two
Project-level Engineering, Economic & Comparative Analyses

3 of 3



Notes:

1. Consult with District ICE Coordinator or designated specialists
2. The engineering functional manager responsible for intersection control strategies; typically the District Highway Operations Engineer or District Traffic Safety Engineer

8. Next Meeting: Suggested dates are March 21, 28 or April 4, 2012.

9. Adjourn: