CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC) AGENDA

November 2nd, 2017 (9:00 A.M. to end)
City Hall Council Chamber,
915 I Street, 1st Floor
Sacramento, CA 95814

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

Organization Items
1. Introduction
2. Membership
   a. Election of Chairperson and Vice Chairperson
   b. Appreciation Certificates
3. Approval of Minutes of the August 10th, 2017 Meeting
4. Public Comments
   At this time, members of the public may comment on any item not appearing on the agenda. Matters presented under this item cannot be discussed or acted upon by the Committee at this time. For items appearing on the agenda, the public is invited to make comments at the time the item is considered by the Committee.

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

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

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

13-01 Request to Experiment with Green & Shared Roadway Bicycle, City of Oakland
Experiment Closeout: Final Report has been submitted and can be accessed at:
http://www.dot.ca.gov/trafficops/ctcdc/docs/Final_40thStreet_FinalReport_17-04-03-CTCDC-
17.11.02.pdf
Agency/Sponsor: City of Oakland / Jay Walter

16-10 Request for Permission to use wrong-way retroreflective markers for ramp edgelines and ramp
directional arrows Type II, III and V
Experiment Closeout: Final Report has been submitted and can be accessed at:
Agency/Sponsor: Caltrans District 11/ Duper Tong

Agenda Items

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

Consent Items (minor discussion with vote expected)

<table>
<thead>
<tr>
<th>Agenda Item</th>
<th>Description</th>
<th>Submitted by:</th>
<th>Lead</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-20</td>
<td>Legislative Change that will impact Specific Service (Business Logo) sign policy in the CA MUTCD for EV CHARGING</td>
<td>Caltrans Tong</td>
<td>09-11</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Agenda Item</th>
<th>Description</th>
<th>Submitted by:</th>
<th>Lead</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-21</td>
<td>Legislative Change by AB 390 and changes to the CA MUTCD to be consistent with the CVC</td>
<td>Caltrans Tong</td>
<td>12-15</td>
<td></td>
</tr>
<tr>
<td>17-22</td>
<td>Proposed Changes to Section 9C.03 Marking Patterns and Colors on Shared-Use Paths</td>
<td>Caltrans Tong</td>
<td>16-16</td>
<td></td>
</tr>
</tbody>
</table>
**Action Items (Continuing discussion from prior meetings with vote expected)**

<table>
<thead>
<tr>
<th>Agenda Item</th>
<th>Description</th>
<th>Submitted by:</th>
<th>Lead</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-02</td>
<td>Word Message Signs and proposed edits to CA MUTCD</td>
<td>CTCDC Member</td>
<td>Winter</td>
<td>17-20</td>
</tr>
<tr>
<td>17-18</td>
<td>Proposal to change the G66-22G (CA) – Hydrogen General Service Sign</td>
<td>GO-Biz Tong</td>
<td></td>
<td>21-21</td>
</tr>
<tr>
<td>15-15</td>
<td>Striping a space for bicycle use at locations with right-turn-only lanes</td>
<td>Caltrans Jones</td>
<td></td>
<td>22-29</td>
</tr>
<tr>
<td>16-30</td>
<td>Proposed edits to CA MUTCD for Class IV Bikeway</td>
<td>Caltrans Jones</td>
<td></td>
<td>30-36</td>
</tr>
</tbody>
</table>

7. **Request for Experimentation**

<table>
<thead>
<tr>
<th>Agenda Item</th>
<th>Description</th>
<th>Submitted by:</th>
<th>Lead</th>
<th>Page</th>
</tr>
</thead>
</table>

8. **Discussion Items**

<table>
<thead>
<tr>
<th>Agenda Item</th>
<th>Description</th>
<th>Submitted by:</th>
<th>Lead</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-23</td>
<td>Proposal to review CA MUTCD with regard to Engineering and Traffic Study Procedure</td>
<td>Rock Miller Sallaberry</td>
<td></td>
<td>38-38</td>
</tr>
<tr>
<td>17-24</td>
<td>Proposed edits to Section 2B.32 of the CA MUTCD</td>
<td>Winter</td>
<td></td>
<td>39-40</td>
</tr>
</tbody>
</table>

9. **Tabled Items**

| Agenda Item | Description                                                                 | Submitted by:        | Lead     | |
|-------------|------------------------------------------------------------------------------|----------------------|----------|

10. **Next Meeting**
February 8th, 2018
Santa Monica Public Library, Multipurpose Room
601 Santa Monica Blvd, Santa Monica, CA 90401

11. **Adjourn**
5. Items under Experimentation

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

11-19  Experiment with 2nd advance California Welcome Center Destination Sign (Tong)

7/21/2017: Chamber of commerce has informed the CTCDC that they will begin the experiment closeout process after completing the collection of data till the end of 2017.
Status 3/29/2017: Experiment is ongoing. Data collection is under progress.

Debbie Manning
President & CEO
El Dorado Hills Chamber of Commerce
California Welcome Center
2085 Vine Street, Suite 105
El Dorado Hills, CA  95762

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

Status-10/3/2017 –Equipment is in the process of being installed to collect before data.
Status-5/18/2017-CTCDC approved the expansion of the experiment
Status: 2/15/2017-FHWA has provided approval letter to install the experimental TCD at 5 more intersections
Status: 1/18/17 – Additional locations are being pursued to install this device and collect additional data as per FHWA guidance. Division of Research Innovation and System Information (DRISI) has made a request to the FHWA regarding expansion of the experiment. The complete report is posted on the following website:
http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/reports.htm

Joel T. Retanan, P.E., Chief
Division of Research, Innovation and System Information, Caltrans
Ph: (916) 654-8174

12-21  Request to Experiment with In-Roadway Warning Lights (IRWL) System that would supplement existing traffic signals along the Metro Gold Line (LA Metro) (Winter)
Status: 10/2/2017: Data collection is complete and is currently being analyzed
Status: 3/29/2017: Data collection is in progress
Status: 3/10/2017: LA Metro has received FHWA approval regarding request to modify experiment
Status: 1/11/2017: 8(09)-8(E)-Red In-Roadway Lights at LRT Grade Crossings-Los Angeles, CA (Reference# HOTO-1)
LA Metro is adjusting the experimentation evaluation plan due to data collection issues.

Lia Yim
LA Metro
Transportation Planning Manager
13-07 Request to Experiment with Bike Boxes (Greenwood)
-Proposed by National City
Status: 7/18/2017 received a memo from City to request to close the experiment since blanket approval for IA 18 was received.
Status:1/11/2017 Status report was provided in the form of post bike box implementation report. It is anticipated that the Local Agency is going to present its findings in the next southern California CTCDC meeting. The report can be accessed at:
http://www.dot.ca.gov/trafficops/ctcdc/status.html
Leo Espelet, PE, TE
leo.espelet@kimley-horn.com
Kimley-Horn | 401 B Street, Suite 600, San Diego, CA
www.kimley-horn.com
Stephen Manganiello
National City
Director of Public Works/City Engineer
SManganiello@nationalcityca.gov
(619) 336-4380

15-12 Evaluation of Traffic Calming in Treatments in Princeton, CA (Sallaberry)
Status: 10/04/2017 Data collection is complete. Next steps would be to start the experiment close out process by preparing the Final Report.
Status: 01/11/2017 Requested the latest speed data from Caltrans for evaluation. Speed data yet to be received.
Scott M. Lanphier, PE, CFM
Director of Public Works+
1215 Market Street
Colusa, CA 95932
530-458-0466 (p)
530-458-2035 (f)
slanphier@countyofcolusa.org
www.countyofcolusa.org

15-25 Bike Boxes on State Route 131, Tiburon Blvd in the Town of Tiburon (Bryan Jones)
Status Date-10/6/2017 Final Evaluation Report was provided to District 4 – Caltrans in which it was indicated that the bike boxes meet the conditions of Interim Approval 18. Final Report has been posted on the CTCDC website.
Status Date-1/9/2017 We collected video observations of the site in August 2016 before the project installation. The project finished installation in December 2016. Final inspection was completed in January and Notice of Completion was filed January 3, 2017. Rounds 2 and 3 of the project evaluation will take place in May and Sept / Oct.
16-06 Request to experiment with bike boxes and Two-stage Left-turn Queue Boxes in the City of Sacramento (Bryan Jones)
Status: 10/13/-Received a letter informing CTCDC that the Two Stage Left-turn Queue Boxes comply with IA 20 and that the City of Sacramento would like to discontinue the experiment.
Status: 7/13/17- pre construction bike counts were completed and project is currently under construction.
4/3/17- Before data is anticipated to be collected in April /May of 2017.
David Edrosolan
dedrosolan@cityofsacramento.org

16-07 Request to experiment with modified signage and pavement markings requiring vehicles to stop behind light rail vehicles stopped to board or alight passengers (Mike Sallaberry)
Status Date-10/5/17- Currently reviewing video data to check the vehicle compliance rate. Scheduled to complete analysis by the end of the month and a recommendation to be provided after November, 2017.
Status Date-4/4/17 After data is being collected
Status Date-2/8/17 Installation of the Pavement markings was under way and pictures were provided on 2/13/17
Status Date-1/20/17
Our project team will begin implementing the experiment at the end of January. The timeline to complete the implementation will be 5 weeks long lasting through the end of February because we are making additional improvements throughout the 2+ mile corridor. The evaluation period will begin when construction is over and will last a period of 6 months which puts us at the end of August 2017.
Robert Lim, SFMTA

16-08 Request for Permission to Experiment with the Diagonal Down Yellow Arrow Lane Use Control Signal Indications on Freeway (Duper Tong)
Status Date- 08/04/2017 Before data is being collected. The data will be collected till fall 2017.
Status Date-08/31/2016 FHWA had provided approval to the request for experimentation
David Man
Caltrans District 4-Senior Transportation Engineer – Electrical

16-09 Request for Permission to Experiment with the Messages and Graphics on Dynamic Message Signs on Freeway (Duper Tong)
Status Date- 08/04/2017 Before data is being collected. Experimental six line display message concepts on the six information display boards will be displayed in fall 2017
Status Date-12/9/2016 FHWA had provided approval to the request for experimentation
David Man
Caltrans District 4-Senior Transportation Engineer – Electrical

16-23 Request to experiment with Green backed sharrow in Goleta, CA (Bryan Jones)
Status Date-7/17/2017- The City has completed the before conditions observations. Currently waiting to place the Sharrows until after a needed slurry seal is placed in the project area and it is anticipated that the slurry will be placed late this summer.

Status Date-1/10/2017
The experiment is ongoing. Traffic counts and video data were collected for the before condition observations with standard white shared lane markings on Hollister Avenue in the fall of 2016. The installation of the experimental green-backed sharrows will occur in the next couple months following completion of a roadway surface rehabilitation project that is scheduled for spring of this year on Hollister Avenue.

Thank you,
Teresa

**Teresa Lopes, PE**
Senior Project Manager
*City of Goleta*
P (805) 961-7563
F (805) 685-2635
tlopes@cityofgoleta.org

---

16-25  Request to experiment with through lane bicycle box, City of South Pasadena (Mike Sallaberry)
Status Date-10/11/2017- Before study has been completed. The engineering plans are being reviewed. The project is planned to be advertised in November and the project should be complete by January.

Status Date-7/17/2017
The "Before" study will be conducted sometime in the late summer or early autumn of this year after school starts. The "After" study will be conducted after construction, preferably at the same time of year as the "Before" study.

Status Date-1/19/2017
City of South Pasadena is in the process of collecting the “Before” Data

Margaret Lin
Principal Management Analyst
City of South Pasadena
MLin@southpasadenaca.gov

---

16-33  Request to experiment with non-standard striping detail at Express lanes (Duper Tong)
Status Date -8/10/2017- Provided an in person status report at the Aug 10th, CTCDC meeting
Status Date -3/29/2017 -Experimental striping was installed on March 20, 2017

David Thomas
Riverside County Transportation Commission
DThomas@RCTC.org

---

17-03  Request to install “Use Turn Signal” warning sign. (Bill Winter)
Status Date –10/4/2017-Installation of the sign has been completed on 6/6/2017.
Status Date –04/3/2017 Installation of the sign has been requested.
Anthony Pham
Public Works Engineer
Phone: 909-387-8186

17-15 Request for Experimentation-Red colored pavement markings for Transit Only Lanes in left turn only lanes (Jay Walter)
Status Date –10/4/2017 In the process of obtaining bids.
Status Date –08/28/2017-FHWA approval was received
Massoud Saberian, PE,
Transportation and Public Works - Traffic Engineering
69 Stony Circle, Santa Rosa, CA 95401
Tel. 707-543-3818

17-16 Request to Experiment with Internally Illuminated Raised Pavement Markers
LA Metro (Bill Winter)
Status Date –10/4/2017 In the process of Designing plans.
Sam Morrissey, MBA, PE, TE
Associate Vice President
Transportation Systems
801 S Grand Ave | Suite 530
Los Angeles, CA 90017
T213.802.1724
6. **Public Hearing**

**Consent Items (New items that are voted on with minimal discussion)**

**Item 17-20**  
Legislative Change that will impact Specific Service (Business Logo) sign policy in the CA MUTCD for EV CHARGING

**Recommendation:** Adopt Changes in Chapter 2J, as proposed.

**Requesting Agencies/Sponsor:** Tong, CTCDC Voting Member (Caltrans)

**Background**

California Assembly Bill 1633 (AB 1633) will require changes to sign policy in the *California Manual on Uniform Traffic Control Devices* (CA MUTCD). This agenda item informs the *California Traffic Control Devices Committee* (CTCDC) of this legislative change for sign-related statute and describes changes that will be needed.

**Electric Vehicle Charging** (EV CHARGING) is added as an additional specific service (Business Logo) sign category eligible for directional information signs on freeways in rural population areas (less than 5,000). California Assembly Bill 1633 (AB 1633) by Assembly member Jim Frazier (D-Discovery Bay), signed into law by Governor Brown on July 31, 2017 takes effect on January 1, 2018. This amended statute in Section 101.7 of the *California Streets and Highways Code* adds “Electric Vehicle Charging” as the seventh qualifying specific service (Business Logo) sign category. The original specific services are: 1) FOOD, 2) FUEL, 3) LODGING, 4) CAMPING, which were later expanded, in statute, by adding 5) 24-HOUR PHARMACY, and 6) Approved ATTRACTIONS.

As amended, Section 101.7 of the California Streets and Highways Code now adds a seventh category, Electric Vehicle Charging (EV CHARGING). Participating specific service providers may additionally include EV CHARGING facilities, and place this specific service on their sponsor panel. For example, in North Carolina, it is common practice to allow specific service FOOD and LODGING businesses to include EV CHARGING as an alternate fuel specific service for Electric Vehicle road users (see: [http://www.pluginnc.com/wp-content/uploads/2016/06/6-EVSEFlyer-final-02122016-VL-1.pdf](http://www.pluginnc.com/wp-content/uploads/2016/06/6-EVSEFlyer-final-02122016-VL-1.pdf))

An excerpt from this link, is inserted at right, from Cary, North Carolina McDonald’s restaurant, off of EXIT 99, at 3494 Kildaire Farm Road from US-64 Westbound.

The proposed CA MUTCD policy language, and sign figure for information signs, are proposed in Chapter 2J, to include cross-purpose “EV CHARGING” on existing sign assemblies for other specific service businesses. If a business does not qualify for one of the six established specific services, such as a Lowes home improvement store, there will be an opportunity for a Lowes with EV CHARGING facilities.
to participate in the program. An EV CHARGING-only specific service business that may install its business logo panels, after paying a fee to include its Logo panel on a specific service sign assembly.

Existing specific service businesses that also provide EV Charging facilities may identify “EV CHARGING” on their existing specific service Logo panel by providing updated sponsor panels and paying a fee to replace the mainline, and end-of-ramp panels.

If there are less than four specific service sign assemblies in advance of a rural freeway exit, a separate “EV CHARGING” sign assembly may be erected, or combined with a sign assembly with less than 3 sponsor panels, and qualifying businesses with qualifying EV Charging facilities will pay a fee to have a specific service “EV CHARGING” panels placed: 1) on the freeway, in advance of the exit; and, 2) At the end-of-ramp, with a directional sign identifying which direction to turn, to direct traffic to the specific service business that provides EV CHARGING facilities.

Policy Language updates required:

Beginning with CHAPTER 2J. SPECIFIC SERVICE SIGNS, Para 10, sub-paragraph E:

Section 2J.01 Eligibility [Para 10, sub-paragraph E:]

If State or local agencies elect to provide Specific Service signing, there should be a statewide policy for such signing and criteria for the availability of the various types of services. The criteria should consider the following:

E. To qualify for an Electric Vehicle Charging (EV CHARGING) logo sign panel, a business should have:
   1. Availability to the public 16 hours a day.
   2. Location within 3 miles of a freeway interchange.

Paragraph 14, as proposed for amendment:

5. Electric Vehicle Charging

   The business:
   A. Shall be located not more than 3 miles from the interchange where the Logo Panel is to be displayed according to the State Measured Distance.
   B. Shall be open for business, with the ability to provide Electric Vehicle Charging, for at least 16 consecutive hours daily, seven (7) days a week, except that the qualified business shall not be considered to be in violation of this requirement when, as a result of a shortage of electricity, the facility is closed or when its hours of operation are reduced.
   C. A Logo permittee for Food, Fuel, Lodging or Camping may include the legend “EV CHARGING” which represent this service across the bottom of their permitted Logo sign panel, if they also offer EV CHARGING within 3 miles of a freeway interchange, and make this service available at least 16 hours daily, seven (7) days a week.


   A Qualified Specific Service Business shall give written assurances of its conformity with all applicable laws concerning the provisions of public accommodations without regard to race, sex, religion, color, or national origin and shall not be in continuing breach of that assurance.

67. Equal Access

   A. The order of priority for granting permits to “LODGING,” “EV CHARGING” or “CAMPING” businesses for the installation of their Logo Panels on Specific Service (Mainline) Signs or Specific Service (Ramp) Signs, when applications are received from a greater number of
Qualified Specific Service Businesses which meet the minimum eligibility criteria than there is space available on the Specific Service Sign, shall be determined based upon the State Measured Distance; with first priority going to the closest business, second priority to the next closest business, and so on until all available space on the Specific Service Sign has been allocated. The same order of priority shall apply when the maximum number of permits has been issued and a new application is received from a Qualified Specific Service Business located closer to the interchange than another qualified business, which is already signed.

Section 2J.02 Application

Standard:

01 The number of Specific Service signs along an approach to an interchange or intersection, regardless of the number of service types displaced, shall be limited to a maximum of four. In the direction of traffic successive Specific Service signs shall be for 24-hour pharmacy, attraction, electric vehicle charging, camping, lodging, food and gas fuel services, in that order.

02 A Specific Service sign shall display the word message GAS FUEL, FOOD, LODGING, CAMPING, ATTRACTION, or 24-HOUR PHARMACY, or EV CHARGING, an appropriate directional legend such as the word message EXIT XX, NEXT RIGHT, SECOND RIGHT, or directional arrows, and the related logo sign panels.

Support:

05a California Streets and Highways Code, Division 1, Chapter 1, Article 3, Section 101.7 and California Code of Regulations, Title 21, Division 2, Chapter 19, Sections 2100 through 2120, do not include the “attractions”, “24 hour pharmacy”, or “electric vehicle charging” categories.

Section 2J.03 Logos and Logo Sign Panels

Support:

10 Typical supplemental message might include DIESEL, 24 HOURS, CLOSED and the day of the week when the facility is closed, ALTERNATIVE FUELS (See Section 2I.03), EV CHARGING, and RV ACCESS.

Section 2J.101(CA) Signs at Ramps (SG42-4(CA), SG42-5(CA), SG42-8(CA) and SG42-12(CA)

Standard:

01 Specific Service (Ramp) Signs shall be on located on, opposite of, or at the terminus of an off-ramp, in the same direction of travel as the Specific Service (Mainline) Signs (See Section 2J.07 and 2J.08). As viewed in the direction of travel, the successive signs shall be those for “EV CHARGING,” “CAMPING,” “LODGING,” “FOOD,” and “FUEL” in that order.

[new] Figure 2J-3(CA). California Examples of Supplemental Messages on Logo Sign Panels
**Information Items** (New items that may be voted on or brought back as an Action Item in a future meeting)

**Item 17-21** Legislative Change by AB 390 and the proposed change to the CA MUTCD to be consistent with the CVC

**Recommendation:** Solicit feedback from the committee on the proposed changes to the CA MUTCD.

**Requesting Agencies/Sponsor:** Tong, CTCDC Voting Member (Caltrans)

**Background**

California Assembly Bill 390 (AB 390) will require changes to the *California Manual on Uniform Traffic Control Devices* (CA MUTCD). This bill allows a pedestrian facing a flashing “DON’T WALK” or “WAIT” or approved “Upraised hand” symbol with a “countdown” signal to proceed so long as he or she completes the crossing before the display of the steady “DON’T WALK” or “WAIT” or approved “Upraised Hand” symbol.

AB 390 has amended Section 21456 of the Vehicle Code.

Source: [https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201720180AB390](https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201720180AB390)

Blue text indicates new language and red strikethrough text indicates deletions.

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

21456. Whenever if a pedestrian control signal showing the words "WALK" or "WAIT" or "DON'T "DON'T WALK" or other approved symbol is in place, the signal shall indicate as follows:

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

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

(b) (c) Flashing or a steady "DON'T "DON'T WALK" or "WAIT" or approved "Upraised Hand" symbol. No pedestrian shall symbol or a flashing "DON'T WALK" or "WAIT" or approved "Upraised Hand" without a "countdown" signal indicating the time remaining for a pedestrian to cross the roadway means a pedestrian facing the signal shall not start to cross the roadway in the direction of the signal, but any pedestrian who started the crossing during the display of the "WALK" or approved "Walking Person" symbol and who has partially completed crossing shall proceed to a sidewalk or safety zone or otherwise leave the roadway while the steady "WAIT" or "DON'T WALK" or approved "Upraised Hand" symbol is showing.

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

Note: Red text is proposed text.
Struck-out black text indicates federal text not applicable in California.
Struck-out blue text is to be deleted from the CA MUTCD.

Section 2B.52 Traffic Signal Pedestrian and Bicycle Actuation Signs (R10-1 through R10-4, and R10-24 through R10-26)

......

Support:
02 Traffic Signal signs applicable to pedestrians include:
A. CROSS ONLY ON GREEN (symbolic circular green) (R10-1);
B. CROSS ONLY ON (symbolic walk indication) SIGNAL (R10-2);
C. Push Button for Walk Signal (R10-3 series); and
D. Push Button for Green Signal (R10-4 series).

......

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

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

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

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

Option:
07 The R10-24 or R10-26 sign (see Section 9B.11) may be used where a pushbutton detector has been installed exclusively to actuate a green phase for bicyclists.
08 The R10-25 sign (see Figure 2B-26) may be used where a pushbutton detector has been installed for pedestrians to activate In-Roadway Warning Lights (see Chapter 4N) or flashing beacons that have been added to the pedestrian warning signs.
Signs with red borders shown above need to be deleted or modified.
Section 4E.02 Meaning of Pedestrian Signal Head Indications

Standard:

01 Pedestrian signal head indications shall have the following meanings:

A. A steady WALKING PERSON (symbolizing WALK) signal indication means that a pedestrian facing the signal indication is permitted to start to cross the roadway in the direction of the signal indication, possibly in conflict with turning vehicles. The pedestrian shall yield the right-of-way to vehicles lawfully within the intersection at the time that the WALKING PERSON (symbolizing WALK) signal indication is first shown.

A1. A flashing DONT WALK or UPRAISED HAND symbol with a countdown pedestrian signal indicating the time remaining for a pedestrian to cross the roadway means a pedestrian facing the signal may start to cross the roadway in the direction of the signal but must complete the crossing prior to the display of the steady DONT WALK or UPRAISED HAND symbol when the countdown ends. Refer to CVC 21456.

B. A flashing UPRAISED HAND (symbolizing DONT WALK) signal indication means that a pedestrian shall not start to cross the roadway in the direction of the signal indication, but that any pedestrian who has already started to cross on a steady WALKING PERSON (symbolizing WALK) signal indication shall proceed to the far side of the traveled way of the street or highway, unless otherwise directed by a traffic control device to proceed only to the median of a divided highway or only to some other island or pedestrian refuge area.

C. A steady UPRAISED HAND (symbolizing DONT WALK) signal indication means that a pedestrian shall not enter the roadway in the direction of the signal indication.

D. A flashing WALKING PERSON (symbolizing WALK) signal indication has no meaning and shall not be used.

Section 4E.06 Pedestrian Intervals and Signal Phases

Standard:

01 At intersections equipped with pedestrian signal heads, the pedestrian signal indications shall be displayed except when the vehicular traffic control signal is being operated in the flashing mode. At those times, the pedestrian signal indications shall not be displayed.

02 When the pedestrian signal heads associated with a crosswalk are displaying either a steady WALKING PERSON (symbolizing WALK) or a flashing UPRAISED HAND (symbolizing DONT WALK) signal indication, a steady or a flashing red signal indication shall be shown to any conflicting vehicular movement that is approaching the intersection or midblock location perpendicular or nearly perpendicular to the crosswalk.

03 When pedestrian signal heads are used, a WALKING PERSON (symbolizing WALK) signal indication or a flashing DONT WALK or UPRAISED HAND with a countdown pedestrian signal shall be displayed only when pedestrians are permitted to leave the curb or shoulder.

04 A pedestrian change interval consisting of a flashing UPRAISED HAND (symbolizing DONT WALK) signal indication shall begin immediately following the WALKING PERSON (symbolizing WALK) signal indication except as provided in Section 4D.27. Following the pedestrian change interval, a buffer interval consisting of a steady UPRAISED HAND (symbolizing DONT WALK) signal indication shall be displayed for at least 3 seconds prior to the release of any conflicting vehicular movement. The sum of the time of the pedestrian change interval and the buffer interval shall not be less than the calculated pedestrian clearance time (see Paragraphs 7 through 16). The buffer interval shall not begin later than the beginning of the red clearance interval, if used.
Item 17-22  Proposed Changes to Section 9C.03 Marking Patterns and Colors on Shared-Use Paths

Recommendation: Solicit feedback from the committee on the proposed changes to Section 9C.03 of the CA MUTCD.

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

Note: Red text is proposed text.

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

Background:

As per the Highway Design Manual (HDM), Index 1003.1 Class I Bikeways (Bike Paths) (1) (b)

(b) Shoulder. A minimum 2-foot wide shoulder, composed of the same pavement material as the bike path or all weather surface material that is free of vegetation, shall be provided adjacent to the traveled way of the bike path when not on a structure; see Figure 1003.1A. A shoulder width of 3 feet should be provided where feasible. A wider shoulder can reduce bicycle conflicts with pedestrians. Where the paved bike path width is wider than the minimum required, the unpaved shoulder area may be reduced proportionately. If all or part of the shoulder is paved with the same material as the bike path, it is to be delineated from the traveled way of the bike path with an edge line.

A change to the CA MUTCD is being proposed to reflect the above guidance in the HDM.

Proposal:

Section 9C.03 Marking Patterns and Colors on Shared-Use Paths

Option:

01 Where shared-use paths are of sufficient width to designate two minimum width lanes, a solid yellow line may be used to separate the two directions of travel where passing is not permitted, and a broken yellow line may be used where passing is permitted (see Figure 9C-2).

Guidance:

02 Broken lines used on shared-use paths should have the usual 1-to-3 segment-to-gap ratio. A nominal 3-foot segment with a 9-foot gap should be used.

03 If conditions make it desirable to separate two directions of travel on shared-use paths at particular locations, a solid yellow line should be used to indicate no passing and no traveling to the left of the line.

04 Markings as shown in Figure 9C-2 9C-8 should be used at the location of obstructions in the center of the path, including vertical elements intended to physically prevent unauthorized motor vehicles from entering the path.

Support:

04a A centerline marking is particularly beneficial in the following circumstances:

A. Where there is heavy use;
B. On curves with restricted sight distance; and,
C. Where the path is unlighted and nighttime riding is expected.

Option:

05 A solid white line may be used on shared-use paths to separate different types of users. The R9-7 sign (see Section 9B.12) may be used to supplement the solid white line.

05a A solid white line may be used to delineate the traveled way of the bike path from the shoulder if the shoulder is paved with the same material as the bike path.

Support:

05b Refer to Caltrans’ Highway Design Manual Index 1003.1.

06 Smaller size letters and symbols may be used on shared-use paths. Where arrows are needed on shared-use paths, half-size layouts of the arrows may be used (see Section 3B.20).
Action Items (Continuing discussion from prior meetings with vote expected)

Item 17-02  Word Message Signs and proposed edits to CA MUTCD

Recommendation:  Adopt proposed changes
Agency Making Request/Sponsor: Bill Winter, CTCDC member

Note: Red text is proposed text.
Struck-out blue text is to be deleted from the CA MUTCD.

This matter was discussed as part of the CTCDC’s March 2, 2017, meeting. At that time, the only concern expressed was that agencies should not be creative in the wording used with regulatory signs that have a moving violation consequence. Therefore, the following has been revised to address this concern. Specifically, a reference is added to the standard statement that would apply to Caltrans and local agencies that a request for experimentation is required if a proposed regulatory sign is dealing with a part of the Vehicle Code that carries a violation point assessment.

Caltrans and local agencies routinely post word-only signs that are not listed in the CAMUTCD sign chart. As long as these signs are “message only” and do not attempt to incorporate a new symbol or deviation from standard colors or shapes then under the federal MUTCD an experimentation request is not necessary. However, the CAMUTCD’s reference to the “CTCDC process” in Section 2C.03 as well as the limitation in paragraph 13 of Section 2A.06 that Caltrans is the developer of special word message signs puts the CTCDC in the position of being part of the decision.

The change in the CAMUTCD shown below is intended to restore the flexibility that the federal MUTCD provides Caltrans and local agencies in coming up with special word message signs. However, a consultation with the CTCDC is advisable in order to:

- Give the requestor a consensus opinion, which comes from the broader perspective of the membership on the CTCDC, on the advisability of their choice of wording.
- Discern if the sign is a solution in search of a problem and/or if other alternatives exist.
- If there is a statewide problem being addressed as opposed to a localized concern, then determine if the sign should be given a sign designation number and incorporation into the standard sign chart.

Note, the change shown below also covers Section 2C.17 because it uses the term “CTCDC process”. Included are photos of truck escape areas on roads in Los Angeles County that are evident of differing wording treatment for what is essentially the same roadway feature. This indicates agencies are currently using flexibility in coming up with special word messages without conducting a “CTCDC process”.

Section 2A.06 Design of Signs

...  
...  

Standard:
11 Where a standard word message is applicable, the wording shall be as provided in this Manual.
12 In situations where word messages are required other than those provided in this Manual, the signs shall be of the same shape and color as standard signs of the same functional type.

Option:
13 State and local highway agencies, Caltrans and local highway agencies, may develop special word message signs in situations where roadway conditions make it necessary to provide road users with additional regulatory, warning, or guidance information, such as when road users need to be notified of special regulations or warned about a situation that might not be readily apparent. Unlike colors that have not been assigned or symbols that have not been approved for signs, new word message signs may be used without the need for experimentation.

Standard:
13a Except as noted in the Option below, Caltrans and local highway agencies shall not develop special word message signs for regulatory matters that carry a violation point assessment. Rather, a request for experimentation is required if the contemplated regulatory sign is associated with any of the Vehicle Code provisions associated with negligent operator counts. See https://www.dmv.ca.gov/portal/dmv/detail/dl/vioptct for a listing. In accordance with CVC Section 21401, only word message signs conforming to Caltrans standards and specifications shall be placed on streets and highways.

Option:
13b Local agencies may develop place/facility name or day, date, time portion of the word message on signs to notify road users of special events/circumstances or to warn road users of a situation that might not be readily apparent. Unlike symbol signs and colors, these place/facility name or day, date, time modified word message signs may be used without the need for experimentation.

Support:
13c 13b Sign design details are contained in FHWA’s “Standard Highway Signs and Markings” book and Caltrans’ California Sign Specifications. These publications contain commonly used signs in California, and are not meant to be used as a comprehensive sign chart or a stand-alone sign design tool. Indeed, signs other than those shown in these publications, the MUTCD or this California MUTCD may be required under special conditions. See Section 1A.11 for information regarding these publications. Caltrans and local highway agencies are encouraged to consult with the Secretary of the CTCDC as part of the development of a special word message sign.

...  
...  

Section 2B.02 Design of Regulatory Signs

Standard:
01 Regulatory signs shall be rectangular unless specifically designated otherwise. Regulatory signs shall be designed in accordance with the sizes, shapes, colors, and legends contained in the “Standard Highway Signs and Markings” book and Caltrans’ California Sign Specifications (see Section 1A.11).

Option:
02 Regulatory word message signs other than those classified and specified in this Manual, and the “Standard Highways Signs and Markings” book and the Caltrans’ California Sign Specifications (see Section 1A.11) may be developed to aid the enforcement of other laws or regulations. See Section 2A.06.

03 Except for symbols on regulatory signs, minor modifications may be made to the design provided that the essential appearance characteristics are met.

Support:
04 The use of educational plaques to supplement symbol signs is described in Section 2A.12.
Guidance:
05 Changeable message signs displaying a regulatory message incorporating a prohibitory message that includes a red circle and slash on a static sign should display a red symbol that approximates the same red circle and slash as closely as possible.

Section 2C.03 Design of Warning Signs

Option:
02 A warning sign that is larger than the size shown in the Oversized column in Table 2C-2 and 2C-2(CA) for that particular sign may be diamond-shaped or may be rectangular or square in shape.
03 Except for symbols on warning signs, minor modifications may be made to the design provided that the essential appearance characteristics are met. Modifications may be made to the symbols shown on combined horizontal alignment/intersection signs (see Section 2C.11) and intersection warning signs (see Section 2C.46) in order to approximate the geometric configuration of the intersecting roadway(s).
04 Word message warning signs other than those provided in this Manual may be developed by Caltrans (via CTCDC process) and installed by State and or local highway agencies. See Section 2A.06.

Section 2C.17 Truck Escape Ramp Signs (W7-4 Series)

Option:
03 A SAND (W7-4dP), GRAVEL (W7-4eP), or PAVED (W7-4fP) supplemental plaque (see Figure 2C-4) may be used to describe the ramp surface. State and local highway agencies and Caltrans and local highway agencies (via CTCDC process, see Section 2A.06) may develop appropriate word message signs for the specific situation.
EXAMPLES OF TRUCK ESCAPE SIGNS

State Route 2 (Angeles Crest Highway)
https://www.google.com/maps/@34.2149341,-118.2000435,3a,75y,194.65h,85.03t/data=!3m6!1e1!3m4!1sBUcPhxVnoVeQl5snjNFoqw!2e0!7i13312!8i6656

Kanan Dume Road (Malibu)
https://www.google.com/maps/@34.0240498,-118.8016781,3a,75y,213.34h,77.81t/data=!3m6!1e1!3m4!1sX01_zKkTOnvDcZZ2DTkrLw!2e0!7i13312!8i6656

Hawthorne Boulevard (Rolling Hills Estates)
https://www.google.com/maps/@33.7865279,-118.3599976,3a,27y,74.81h,85.29t/data=!3m6!1e1!3m4!1s3bSPF_6sMf0p7--_YTHIYwl2e0f7i13312!8i6656
**Item 17-18  Proposal to change the G66-22G (CA) – Hydrogen General Service Sign**

**Recommendation:** Select a suitable version from two alternates #1 and #2, below, to replace the “HYD” Alternate Fuel general service sign, in coordination with FHWA.

**Requesting Agencies/Sponsor:** California Governor’s Office of Business and Economic Development (GO-Biz) / Duper Tong, CTCDC Voting Member (Caltrans)

**Background**
California has 31 open retail hydrogen stations (as of 9/07/17), with an additional 32 stations funded by the state and a commitment to fund at least 100 stations through 2023, and one privately-funded retail station. This retail network is the first in the world and fuels the more than 2,500 fuel cell electric vehicles (FCEVs) on California’s roadways. Governor Jerry Brown has set a goal of 1.5 million zero-emission vehicles by 2025 and automakers have committed to bringing thousands of additional FCEVs to California to support this rapidly growing market.

Existing Signs
G66-22G (CA)
G66-22H (CA) (Optional educational Plaque)

The current hydrogen station signage (see below) may not be the best indication of fueling stations for drivers, as “HYD” is not used to communicate hydrogen in any other context. The existing signage has been deployed in only two location in California to-date to the best of our knowledge.

Two alternates are presented and this request is for the Committee to recommend a H₂ Hydrogen station general service sign, below, which is appropriate and effective to meet current and future directional signing needs. Finalization is subject to review and approval by FHWA’s MUTCD team.

![G66-22G(CA) update (Alternate #1)](image1)
(with H₂ in middle third of “Fuel Pump” with top of horizontal stroke at the height of bottom of fuel hose hook-up)

![G66-22G(CA) update (Alternate #2)](image2)
(with H₂ centered within “Fuel Pump” with top of “H” horizontal with the bottom of fuel hose hook-up)
Item 15-15  Striping a space for bicycle use at locations with right-turn-only lanes

Recommendation:
Request to make a recommendation to include the figures and text shown below in the CA MUTCD.

Agency Making Request/Sponsor:  Caltrans/ Bryan Jones Active Transportation voting member

Note: Red text is newly proposed text.
Struck-out blue text is to be deleted from the CA MUTCD.

Background:
As per the Highway Design Manual (HDM), Index 403.6:

“Locations with right-turn-only lanes should provide a minimum 4-foot width for bicycle use between the right-turn and through lane when bikes are permitted, except where posted speed is greater than 40 mph, the minimum width should be 6 feet.”

Caltrans implemented this advisory standard which applies even if there is no bike lane (Class II) present. However, this same provision in the CA MUTCD is written in the context of applying only when there is a bike lane (Class II). It is recommended that the CA MUTCD allow as an optional provision, the space for bike use between the right-turn lane and the through lane when no bike lane facility exists. Four foot width continues to be the stated bike use width, except when the posted speed is greater than 40 MPH, the minimum width should be 6 feet.

Varying striping is recommended depending on the speed: where the posted speed is greater than 40 miles per hour (mph) and for the case when the speed is less than 40 mph. When the posted speed is greater than 40mph, a buffer may be added to the bicycle lane.

The proposed changes to the Section 9C.04 was heard by the CTCDC at the December 2016 meeting and August 2017 meeting. The motion in the August 10th, 2017 CTCDC meeting was:

MOTION: Committee Member Tong moved to adopt the language with a change to paragraph 9e to “optional use;” the language will be modified and brought back to the committee. Committee Member Bahadori seconded. Motion carried unanimously.

The agenda item has been revised to reflect the above motion and is presented to the committee.
403.7 Refuge Areas
Traffic islands should be used to provide refuge areas for bicyclists and pedestrians. See Index 405.4 for further guidance.

403.8 Prohibited Turns
Traffic islands may be used to direct bicycle and motorized vehicle traffic streams in desired directions and prevent undesirable movements. Care should be taken so that islands used for this purpose accommodate convenient and safe pedestrian and bicycle crossings, drainage, and striping options. See Topic 303.

403.9 Effective Signal Control
At intersections with complex turning movements, channelization is required for effective signal control. Channelization permits the sorting of approaching bicycles and motorized vehicles which may move through the intersection during separate signal phases. Pedestrians may also have their own signal phase. This requirement is of particular importance when traffic-actuated signal controls are employed.

The California MUTCD has warrants for the placement of signals to control vehicular, bicycle and pedestrian traffic. Pedestrian activated devices, signals or beacons are not required, but must be evaluated where directional, multiline, pedestrian crossings occur. These locations may include:

- Mid-block street crossings;
- Channelized turn lanes;
- Ramp entries and exits; and
- Roundabouts.

The evaluation, selection, programming and use of a chosen device should be done with guidance from District Traffic Operations.

403.10 Installation of Traffic Control Devices
Channelization may provide locations for the installation of essential traffic control devices, such as “STOP” and directional signs. See Index 405.4 for information about the design of traffic islands.

403.11 Summary
- Give preference to the major move(s).
Proposal:
Add the following in the CA MUTCD, Section 9C.04:

**Section 9C.04 Markings For Bicycle Lanes**

**Support:**
01 Pavement markings designate that portion of the roadway for preferential use by bicyclists. Markings inform all road users of the restricted nature of the bicycle lane.

**Standard:**
02 Longitudinal pavement markings shall be used to define bicycle lanes.

**Guidance:**
03 If used, bicycle lane word, symbol, and/or arrow markings (see Figure 9C-3) should be placed at the beginning of a bicycle lane and at periodic intervals along the bicycle lane based on engineering judgment.

**Standard:**
04 If the bicycle lane symbol marking is used in conjunction with word or arrow messages, it shall precede them.

**Option:**
05 If the word, symbol, and/or arrow pavement markings shown in Figure 9C-3 are used, Bike Lane signs (see Section 9B.04) may also be used, but to avoid overuse of the signs not necessarily adjacent to every set of pavement markings.

**Bicycle Lane Treatment at Intersections**

**Option:**
06a When a bike lane approaches an intersection with right- or left-turn only lanes, Figures 9C-1, 9C-4, 9C-4(CA) or 9C-5 may be used.

**Standard:**
06 A through bicycle lane shall not be positioned to the right of a right turn only lane or to the left of a left turn only lane.

**Support:**
07 A bicyclist continuing straight through an intersection from the right of a right-turn lane or from the left of a left-turn lane would be inconsistent with normal traffic behavior and would violate the expectations of right- or left-turning motorists.

**Guidance:**
08 When the right through lane is dropped to become a right turn only lane, the bicycle lane markings should stop at least 100 feet before the beginning of the right-turn lane. Through bicycle lane markings should resume to the left of the right turn only lane.

09 An optional through-right turn lane next to a right turn only lane should not be used where there is a through bicycle lane. If a capacity analysis indicates the need for an optional through-right turn lane, the bicycle lane should be discontinued at the intersection approach.

09a A dashed line across the right-turn-only lane should not be used on extremely long lanes, or where there are double right-turn-only lanes. For these types of intersections, all striping should be dropped to permit judgment by the bicyclists to prevail.

**Option:**
09b A Bicycle Crossing (W11-1) sign may be used to warn road users of the potential for bicyclists crossing their path. See Section 9B.18.

09c When a bike lane approaches ramp intersection that intersects the local facility at or close to 90° (typical of a compact or spread diamond configuration), then Figures 9C-4, 9C-4(CA) and 9C-5 may be used. the appropriate method of getting bike lanes through the interchange.
Guidance:
However, when a bike lane approaches one or more ramp intersections that intersect the local facility at various angles other than 90° (typically high-speed, skewed ramps), Figure 9C-103(CA) should be used.

Option:
At locations with right-turn-only lanes where bicycles are not prohibited but Class II bicycle facilities do not exist on the approach, a minimum 4-foot wide space for bicycle use may be provided between the right-turn and through lane, and where the posted speed is greater than 40 mph the minimum width should be 6 feet.

When the width between the right-turn and through lane is greater than 4-feet, a buffer area may be striped adjacent to the 4’ minimum width for bicycle travel, regardless of the posted speed.

The buffer may be placed on the left or on the right of the 4’ space for bicycle travel.

Support:
Refer to Caltrans’ Highway Design Manual, Index 403.6.

Standard:
If used, the space for bicycle use shall be delineated by Detail 39 on the right of the through lane and Detail 38A on the left of the right-turn-only lane.

Support:
Refer to Figure 9C-4(CA) for details on striping and Figure 9C-104 (CA) for details on buffer area striping.

Guidance:
Posts or raised pavement markers should not be used to separate bicycle lanes from adjacent travel lanes.

Support:
Using raised devices creates a collision potential for bicyclists by placing fixed objects immediately adjacent to the travel path of the bicyclist. In addition, raised devices can prevent vehicles turning right from merging with the bicycle lane, which is the preferred method for making the right turn. Raised devices used to define a bicycle lane can also cause problems in cleaning and maintaining the bicycle lane.

Option:
A bicycle lane for travel in the same direction as the general purpose lanes may be placed on the left hand side of the general purpose lanes.

Bicycle Lane Treatment at Right Turn Only Lanes

Guidance:
A dashed line across the right-turn-only lane should not be used on extremely long lanes, or where there are double right-turn-only lanes. For these types of intersections, all striping should be dropped to permit judgment by the bicyclists to prevail.

Option:
A Bicycle Crossing (W11-1) sign may be used to warn road users of the potential for bicyclists crossing their path. See Section 9B.18.

When a bike lane approaches a ramp intersection that intersects the local facility at or close to 90° (typical of a compact or spread diamond configuration), then Figures 9C-4, 9C-4(CA) and 9C-5 may be the appropriate method of getting bike lanes through the interchange.

Guidance:
However, when a bike lane approaches one or more ramp intersections that intersect the local facility at various angles other than 90° (typically high-speed, skewed ramps), Figure 9C-103(CA) should be used.

Bicycle Lane Treatment through Interchanges

Support:
Markings for a bike lane through a typical interchange are shown in Figure 9C-103(CA).

Option:
Figure 9C-103(CA) may also be used where the preferred designation is a Class III Bikeway (Bike Route), with the Bike Lane (R81(CA)) signs being replaced with Bike Route (D11-1) signs and the bike lane delineation eliminated. A 4 inch stripe may be used to delineate the shoulder throughout the bike route designation.

Standard:
Signing and striping as shown in Figure 9C-103(CA) shall be repeated at additional onramps within the interchange.

**Guidance:**

Where the onramps intersect at the local road at or near 90°, the striping should be per Figure 9C-4(CA).

**Standard:**

The shoulder width shall not be reduced through the interchange area. The minimum shoulder width shall match the approach roadway shoulder width, but not less than 4 feet, or with not less than 3 feet of pavement if a gutter exists. If the shoulder width is not available, the designated bike lane shall end at the previous local road intersection.
Proposed Figures

*Figure 9C-4 (CA). Example of Bicyclic Lane Treatment at a Right Turn Only Lane
(Sheet 1 of 3)*

*Note: 4 ft minimum width, 6 ft minimum width for posted speed greater than 40 mph. Refer to Figure 9C-109 (CA) for alternate pavement markings.*

<table>
<thead>
<tr>
<th>Legend</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Direction of Travel</td>
<td>NOT TO SCALE</td>
</tr>
</tbody>
</table>
Figure 9C-4 (CA). Example of Bicycle Lane Treatment at a Right Turn Only Lane, Posted Speed > 40 mph (Sheet 2 of 3)

a - Right-Turn-Only Lane

b - Right Lane Becomes Right-Turn-Only Lane

* 4 ft minimum width
** 2 ft (minimum 18 in) buffered area may be striped on the left or on the right within the space for bicycle use
d = Advance Placement Distance (See Section 2C.05)

LEGEND

→ Direction of Travel

NOT TO SCALE
Figure 9C-4 (CA). Example of Bicycle Lane Treatment at a Right Turn Only Lane, Posted Speed ≤ 40 mph (Sheet 3 of 3)

a - Right Turn Only Lane

b - Right Lane Becomes Right Turn Only Lane

* 4 ft minimum width

\[ d = \text{Advance Placement Distance (See Section 2C.05)} \]

**LEGEND**

- Direction of Travel
- NOT TO SCALE
Item 16-30  Proposed edits to CA MUTCD for Class IV Bikeway

Recommendation:

Request to make a recommendation to include the figures and text shown below in the CA MUTCD.

Agency Making Request/Sponsor:  Caltrans / Bryan Jones, Active Transportation voting member

Note: Red text is newly proposed text.
Struck-out blue text is to be deleted from the CA MUTCD.

Background:

Design Information Bulletin 89 was published by the California Department of Transportation to provide design criteria for separated bikeways. These bikeways are categorized as Class IV Bikeways. There is a need for providing the definition of Class IV Bikeways (i.e., separated bikeways), in addition to traffic control devices appropriate to separated bikeways. The following changes are being proposed, which provide fundamental Standards, Options, Guidance and Support for separated bikeways. This proposal signifies the first step in ensuring that the CA MUTCD provides sufficient information related to separated bikeway traffic control devices. The intent is that additions will be made to CA MUTCD Part 9 to provide comprehensive guidance and support on separated bikeways. This proposal aims to be consistent with DIB 89.

The proposed changes to the Section 9C.04 was heard by the CTCDC at the December 2016 meeting. The CTCDC directed staff to form a subcommittee to further refine this item. A subcommittee was formed and this item was discussed in a meeting held on June 2017. The result of the subcommittee’s input is presented below for incorporation into the CA MUTCD.

Proposal:

Add the following text in the CA MUTCD, Page iii:

Addresses for Publications Referenced in the California MUTCD

National Association of City Transportation Officials (NACTO)
120 Park Avenue, 23rd Floor
New York, NY 10017
Email: nacto@nacto.org
Telephone: 929-276-2286

Change the following text in the CA MUTCD, Chapter 1A:

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

......
......
31e. Class IV Bikeway (such as a cycle track or separated bikeway) – Provides a right-of-way designated exclusively for bicycle travel adjacent to a roadway and which is separated from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking. Refer to California Streets and Highways Code Section 890.4. Refer to Caltrans’ Design Information Bulletin Number 89 for design criteria.
......
......
Section 9A.02 Scope
Support:
01 Part 9 covers signs, pavement markings, and highway traffic signals specifically related to bicycle operation on both roadways, separated bikeways and shared-use paths.

Guidance:
02 Parts 1, 2, 3, and 4 should be reviewed for general provisions, signs, pavement markings, and signals.

Standard:
03 The absence of a marked bicycle lane or any of the other traffic control devices discussed in this Chapter on a particular roadway shall not be construed to mean that bicyclists are not permitted to travel on that roadway.

Section 9A.04 Maintenance
Guidance:
01 All signs, signals, and markings, including those on bicycle facilities, should be properly maintained to command respect from both the motorist and the bicyclist. When installing signs and markings on bicycle facilities, an agency should be designated to maintain these devices.
02 Separated bikeways should be accessible to street maintenance equipment (e.g., street sweeping, snow removal).

Section 9A.05 Relation to Other Documents
Support:
01 “The Uniform Vehicle Code and Model Traffic Ordinance” published by the National Committee on Uniform Traffic Laws and Ordinances and the California Vehicle Code (see Section 1A.11) has provisions for bicycles and are the basis for the traffic control devices included in this Manual.
01a Refer to California Streets and Highway Code Section 890.4 for definition of “Bikeways”.
02 Informational documents used during the development of the signing and marking recommendations in Part 9 include the following:
A. “Guide for Development of Bicycle Facilities,” which is available from the American Association of State Highway and Transportation Officials (see Page i for the address); and
B. State and local government design guides;
C. “Highway Design Manual” (Caltrans);
D. “Complete Intersections: A Guide to Reconstructing Intersections and Interchanges for Bicyclists and Pedestrians” (Caltrans);
E. “Separated Bike Lane Planning and Design Guide,” which is available from the Federal Highway Administration (see Page ii for the address); and
F. NACTO Urban Bikeway Design Guide and Urban Street Design Guide (see Page iii for the address).
03 Other publications that relate to the application of traffic control devices in general are listed in Section 1A.11.

Section 9A.06 Placement Authority

J. Section 890.4 – Definitions of Class I, II, and III, and IV bikeways.
Section 9B.12 Shared-Use Path Restriction Sign (R9-7)

Option:
  01 The Shared-Use Path Restriction (R9-7) sign (see Figure 9B-2) may be installed to supplement a solid white pavement marking line (see Section 9C.03) on facilities that are to be shared by pedestrians and bicyclists in order to provide a separate designated pavement area for each mode of travel. The symbols may be switched as appropriate.
  01a The Shared-Use Path Restriction (R9-7) sign may be used for locations with sidewalk level separated bikeways to further communicate the appropriate use of each space. The symbols may be switched as appropriate.

Guidance:
  02 If two-way operation is permitted on the facility for pedestrians and/or bicyclists, the designated pavement area that is provided for each two-way mode of travel should be wide enough to accommodate both directions of travel for that mode.

Section 9C.04 Markings For Bicycle Lanes

......

Standard:
  22 Raised barriers (e.g., raised traffic bars and asphalt concrete dikes) or raised pavement markers shall not be used to delineate bike lanes on Class II Bikeways (Bike Lane).

Support:
  23 Raised barriers prevent motorists from merging into bike lanes before making right turns, as required by the CVC, and restrict the movement of bicyclists desiring to enter or exit bike lanes.
  24 They also impede routine maintenance. Raised pavement markers increase the difficulty for bicyclists when entering or exiting bike lanes, and discourage motorists from merging into bike lanes before making right turns.

Option:
  25 Physical barriers may be used to convert a Class II Bikeway (Bike Lane) to Class I Bikeway (Bike Path) or Class IV Bikeway (Separated Bikeway).

......

Section 9C.102 (CA) Class IV Bikeways

Support:
  01 Refer to FHWA “Separated Bike Lane Planning and Design Guide” for detailed information on planning and design of separated bike lanes.

Option:
  02 Separated bikeways may be delineated for one-way or two-way operation by using traffic control devices.

Standard:
  03 Vertical elements shall be used to define separated bikeways.

Support:
  04 Vertical elements in the buffer area are critical to separated bikeway design. Forms of vertical separation include, but are not limited to, grade separation, flexible delineator posts, inflexible physical barriers, landscaping or on-street parking. See Figure 9C.107 (CA). See DIB 89 for more information.

Standard:
  05 Where separated bikeways are designed for two-way travel, a solid yellow line shall be used to separate the two directions of travel where passing is not permitted. A broken yellow line shall be used where passing is permitted (Refer to Figure 9C-107(CA). See Section 9C.03 for marking patterns.

Option
A through separated bikeway may be positioned to the right of a right turn only lane or to the left of a left turn only lane, if bicycle signals are used. See Section 4D.104 for optional use of Bicycle Signal Faces.

**Standard:**

- The Bike Symbol pavement markings or Helmented Bicyclist Symbol (Figure 9C-3 Option A or Option B) shall be placed on the far side of each intersection.

**Option:**

- The Bicycle only (RXXX (CA)) sign may be used to discourage entry into the separated bikeway or where there is a break in continuity of the separated bikeway.

- The DO NOT ENTER (R5-1) sign with the supplemental EXCEPT Bicycle plaque (R118 (CA)) may be used on separated bikeways to reduce the likelihood of accidental entrance by motor vehicles.

**Support:**

- The RXXX (CA) sign is shown in Figure 9B-2(CA).

**Buffer**

**Standard:**

- If used, the buffer area between the separated bikeway and general-purpose lane and parking lane (if present) shall be delineated.

- The buffer area shall be delineated by longitudinal pavement markings. See Section 9C.04 for buffer striping details.

**Support:**

- The buffer area width includes the width of the parallel lines.

- See DIB 89 for buffer area width requirements.

**Unobstructed passage**

**Standard**

- If accessible parking or loading zones are provided on a roadway alongside a separated bikeway, then unobstructed access shall be maintained.
Proposed Figures

Figure 9C-107(CA). Examples of Markings for Separated Bikeways (Sheet 1 of 2)

One-Way Separated Bikeway With On-Street Parking

Curb or Edge of Pavement

Lane Line

6 in Solid White

See Note 3

White diagonal markings should be used if buffer area is 4 ft or wider (See Note 1)

One-Way Separated Bikeway On Street With No Parking

Curb or Edge of Pavement

Lane Line

6 in Solid White

Vertical Element

See Note 3

White chevron markings should be used if buffer area is 4 ft or wider (See Note 2)

NOT TO SCALE

NOTES:

1. See Figure 3B-21(CA) for examples of parking space markings.

2. Vertical elements in the buffer are an important separation feature of the Separated Bikeway. These may include grade separation, flexible posts, inflexible physical barriers, or on-street parking. See DIB 89 for more information.

3. See DIB 89 for separated bikeway width and buffer width.
NOT TO SCALE

NOTES:

1. See Figure 3B-21(CA) for examples of parking space markings.

2. Vertical elements in the buffer are an important separation feature of the Separated Bikeway. These may include grade separation, flexible posts, inflexible physical barriers, or on-street parking. See DIB 89 for more information.

3. See DIB 89 for separated bikeway width and buffer width.
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

SIGN DESIGNATION PENDING

ENGLISH UNITS

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>8</td>
<td>.25</td>
<td>.375</td>
<td>1</td>
<td>3.5</td>
<td>.5</td>
<td>2E</td>
<td>1.5</td>
</tr>
<tr>
<td>24</td>
<td>18</td>
<td>.375</td>
<td>.625</td>
<td>2.625</td>
<td>7.5</td>
<td>1.25</td>
<td>4E</td>
<td>1.5</td>
</tr>
</tbody>
</table>

COLORS: BORDER & LEGEND - BLACK
BACKGROUND - WHITE (RETROREFLECTIVE)

DRAFT DATE PENDING
7. Request for Experimentation
8. Discussion Items

Item 17-23 Proposal to review CA MUTCD with regard to Engineering and Traffic Study Procedure

Recommendation: Solicit feedback from the Committee
Requesting Party/Sponsor: Rock Miller, CA Strategic Highway Safety Plan Bicycle Challenge Area Action 1.2 Lead / Michael Sallaberry

Background
The CA Strategic Highway Safety Plan is a statewide data-driven traffic safety plan that coordinates the efforts of a wide range of organizations to reduce traffic accident fatalities and serious injuries on all public roads. In coordination with federal, state, local and private sector safety stakeholders, the SHSP establishes goals, objectives, and emphasis (or challenge) areas.

The Bicycle Challenge Area, Action 1.2 is as follows:
“Explore revision to the California Manual on Uniform Traffic Control Devices (CA MUTCD) speed-setting standards to balance 85% approach with safe systems approach that better incorporates crash history, safety of pedestrians, bicyclists.”

There has been considerable discussion recently about the practice of using the 85th Percentile speed as a substantial factor in setting of speed limits. In August, the National Transportation Safety Board (NTSB) issued a report identifying speed as a substantial factor in traffic collisions. Their report specifically identified speed as a factor cited in 31% of all fatal traffic collisions. NTSB identified many issues that should be considered to address their concerns and made many recommendations. Two of their significant recommendations were made to the Federal Highway Administration to:

Revise Section 2B.13 of the Manual on Uniform Traffic Control Devices so that the factors currently listed as optional for all engineering studies are required, require that an expert system such as USLIMITS2 be used as a validation tool, and remove the guidance that speed limits in speed zones should be within 5 mph of the 85th percentile speed. (H-17-27)

Revise Section 2B.13 of the Manual on Uniform Traffic Control Devices to, at a minimum, incorporate the safe system approach for urban roads to strengthen protection for vulnerable road users. (H-17-28)

The California MUTCD has an extensive discussion of the procedure for establishing speed limits. Any revision to the National Manual would be subject to consideration by California as part of the substantial conformance provision, as the CA MUTCD closely regulates the speed zoning through the Engineering and Traffic Survey process which is based upon the 85th percentile measurement. The purpose of this item is to solicit feedback from the committee on potential courses of action that could be taken now. The recent NTSB study can be found at: [https://www.ntsb.gov/safety/safety-studies/Documents/SS1701.pdf](https://www.ntsb.gov/safety/safety-studies/Documents/SS1701.pdf)
Item 17-24 Proposed edits to Section 2B.32 of the CA MUTCD

Recommendation: Solicit feedback from the Committee
Requesting Party/Sponsor: Bill Winter, CTCDC Voting member

Note: Red text is proposed text.

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

Background

Wrong way driving has been the subject of numerous studies and design guides. Here is a relevant sampling:


July 2016 - Prevention and Detection of Wrong-Way Collisions on Freeways (Caltrans): http://www.dot.ca.gov/docs/Prevention-DetectionWrongWayCollisionsFreeways.pdf

Based on the May 2001 study, the 2009 MUTCD included the following statement in Section 2B.40 (regarding One-Way signage):

At an intersection with a divided highway that has a median width at the intersection itself of less than 30 feet, Keep Right (R4-7) signs and/or ONE WAY signs shall be installed (see Figures 2B-16 and 2B-17). If Keep Right signs are installed, they shall be placed as close as practical to the approach ends of the medians and shall be visible to traffic on the divided highway and each crossroad approach. If ONE WAY signs are installed, they shall be placed on the near right and far left corners of the intersection and shall be visible to each crossroad approach.

Given the problem with trying to reconcile the “and/or” aspect of this new standard, the CTCDC at the time took an action to strike out the above paragraph and instead make the standard apply to the R4-7 (Keep Right) sign.

Recall, there is a compliance date of December 31, 2019 in the CAMUTCD for section 2B.40:

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

<table>
<thead>
<tr>
<th>2009 MUTCD Section Number(s)</th>
<th>2009 MUTCD Section Title</th>
<th>Specific Provision</th>
<th>Compliance Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A.08</td>
<td>Maintaining Minimum Retroreflectivity</td>
<td>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)</td>
<td>June 13, 2014</td>
</tr>
<tr>
<td>2A.40</td>
<td></td>
<td>Retroreflectivity of sign supports on roads with posted speed limit of 60 mph or higher (see Paragraph 6)</td>
<td>December 17, 2019</td>
</tr>
<tr>
<td>2B.40</td>
<td>ONE WAY Signs (R8-1, R8-2)</td>
<td>New requirements in the 2009 MUTCD for the number and locations of ONE WAY signs (see Paragraphs 4, 9, and 10)</td>
<td>December 31, 2019</td>
</tr>
</tbody>
</table>
At this time, the CTCDC may wish to revisit the manner in which Sections 2B.32 and 2B.40 deal with the signage treatment for medians that are less than 30 feet in width. The reason being:

- The May 2001 Guide was not very thorough in its review of the various types of divided highways. There
- The December 2012 NTSB restricted its analysis to crashes on entrance/exit ramps and controlled-access highways
- The June 2014 Handbook notes:

  The use of a Keep Right (R4-7 Series) or a Double Arrow (W12-1) sign with the addition of a low-mounted Type 1 Object Marker (OM1-1) near the median and channelizing island noses, respectively, could also be helpful to aging road users. These signs are optional and can be used if they are warranted. Since markings primarily supplement signing, this treatment should be placed in addition to the signing available for these locations.

Section 2B.32 Keep Right and Keep Left Signs (R4-7, R4-8)

... ...

Standard:

04 The Keep Right sign shall not be installed on the right-hand side of the roadway in a position where traffic must pass to the left-hand side of the sign.

Guidance:

04a At an intersection with a divided highway that has a median width at the intersection itself of less than 30 feet, Keep Right (R4-7) signs shall should be installed (see Figures 2B-16 and 2B-17).

Option:

05 The Keep Right sign may be omitted at intermediate ends of divisional islands and medians.
06 Word message KEEP RIGHT (LEFT) with an arrow (R4-7a or R4-7b) signs (see Figure 2B-10) may be used instead of the R4-7 or R4-8 symbol signs.
07 Where the obstruction obscures the Keep Right sign, the minimum placement height may be increased for better sign visibility.
08 A narrow Keep Right (R4-7c) sign (see Figure 2B-10) may be installed on the approach end of a median island that is less than 4 feet wide at the point where the sign is to be located.

... ...
9. **Tabled Items**

<table>
<thead>
<tr>
<th>Agenda Item</th>
<th>Description</th>
</tr>
</thead>
</table>

10. **Next Meeting**

    February 8th, 2018  
    Santa Monica Public Library, Multipurpose Room  
    601 Santa Monica Blvd, Santa Monica, CA 90401

11. **Adjourn**