**CTCDC November 2017 agenda items relating to bicycling.**

**Minutes of the November 2017 meeting were not available as of Dec 4th.**

**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

…….

16-25 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

…….

**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).

.....

**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.

**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:

05a 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:*

09d *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:

09e 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.

09f 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.

09g The buffer may be placed on the left or on the right of the 4' space for bicycle travel.

Support:

09h Refer to Caltrans' Highway Design Manual, Index 403.6.

**Standard:**

09i **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:

09j Refer to Figure 9C-4(CA) for details on striping and Figure 9C-104 (CA) for details on buffer area striping.

*Guidance:*

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

Support:

11 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:

11a 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:*

26 *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:

27 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.

28 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:*

29 *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:

30 25 Markings for a bike lane through a typical interchange are shown in Figure 9C-103(CA).

Option:

31 26 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:**



32 27 **Signing and striping as shown in Figure 9C-103(CA) shall be repeated at additional onramps within the interchange.**

*Guidance:*

33 28 *Where the onramps intersect at the local road at or near 90º, the striping should be per Figure 9C-4(CA).*

**Standard:**

34 29 **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.**

[JB – figures provided in the agenda are not included here.]

.....

**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 have provisions for bicycles and is 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.

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## 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
06 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:**
07 **The Bike Symbol pavement markings or Helmeted Bicyclist Symbol (Figure 9C-3 Option A or Option B) shall be placed on the far side of each intersection.**
Option:
08 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.
09 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:

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

**Buffer**

**Standard:**

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

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

Support:

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

14 See DIB 89 for buffer area width requirements.

**Unobstructed passage**

**Standard**

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

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**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
.....