

# State of California

## DEPARTMENT OF TRANSPORTATION CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE

Minutes of Meeting  
January 31, 2019

County Operation Center  
Conference Center Hearing Room  
5520 Overland Avenue  
San Diego, CA 92123

### Committee Members in Attendance:

Robert Bronkall, Chair  
Hamid Bahadori, Vice-Chair  
Pratyush Bhatia  
Lt. Rick Hatfield  
Xavier Maltese  
Andrew Maximous  
Duper Tong

### Alternate Committee Members:

Rock Miller  
Zoubir Ouadah  
Doug Bilse

### Committee Staff:

Vijay Talada, Executive Secretary  
Arshad Iqbal, Senior Transportation Engineer

### Presenters:

Troy Bucko, Caltrans  
Dave Thomas, Riverside County Transportation Commission  
Lia Yim, Los Angeles Metro

### Public Comment

Jay Beeber, Safer Streets L.A.  
Chris Costigan, CHP  
David DePierro, City Traffic Engineer, City of Oceanside  
Chad Dornsife, Best Highway Safety Practices  
Steve Pyburn, FHWA  
Hamid Zolfaghari, Caltrans

## ORGANIZATION ITEMS

### 1. Introduction

Chair Bronkall opened the meeting and thanked everyone for attending.

On behalf of the host county, Zoubir Ouadah, San Diego County Traffic Engineer, welcomed everyone to the meeting.

### 2. Membership

The CTCDC members and the audience introduced themselves.

### **3. Approval of Minutes of the August 9, 2019 Meeting**

**MOTION:** Vice-Chair Bahadori moved to approve the August 9, 2018 California Traffic Control Devices Committee Meeting Minutes as presented. Committee Member Tong seconded. Motion passed unanimously.

### **4. Public Comments**

There were no public comments.

### **5. Items under Experimentation**

#### **12-21: Final Report - Request to Experiment with In-Roadway Warning Lights (IRWL) System that would supplement existing traffic signals along the Metro Gold Line (LA Metro)**

Lia Yim, Los Angeles Metro, presented a project update.

- Ms. Yim displayed a map of the Metro Gold Line Eastside extension in Los Angeles, a light rail line that extended from downtown LA to East LA. It has eight stations and is six miles long with two underground stations. There are 24 at-grade intersections.
- Ms. Yim reviewed the incident history. From 2009 to 2012, there were 17 incidents involving motorists, 14 of which were caused by illegal turns. There is definitely a safety concern.
- Metro decided to look at experimental use of in-road Internally Illuminated Raised Pavement Markers (IIRPMs).
  - IIRPMs give a steady illumination of red and are located parallel to the light rail train tracks.
  - They only turn on when a train car is present, and stay on as long as the train car is present (about 35-45 seconds).
  - They have been angled in alternating directions for pedestrians and traffic.
  - They are designed to reinforce existing traffic control measures – they are an experimental device.
- Ms. Yim showed photos of before and after the lights were placed.
- She showed a picture and videos of the IIRPMs in action.

#### **Committee Questions and Discussion**

Committee Member Maximous asked if IIRPMs are wired for solar. Ms. Yim answered that they are, and LA Metro feels that they have resolved many of the installation issues such as correct torque. Committee Member Maximous asked about issues of failure. Ms. Yim answered that once they are in place they last several years.

Ms. Yim continued with the presentation.

- LA Metro received approval from FHWA in 2012 to experiment with the lights. In 2013 they added two additional locations. In May 2015 the installation was complete and the experimentation began.
- They teamed with CA State University Fullerton, working with professors and the ITE chapter to perform the statistical analysis. They had 12 demonstration intersections and five control intersections. The findings showed a statistically significant reduction

in violations when the lights were on versus off. There was a minor difference in the violations in the control intersections during the lights on/lights off time periods. There was no statistically significant reduction in violation rates between the demonstration and control intersections. LA Metro believes this was due to the small size of the control group.

- The conclusion was that these lights have a potential to reduce violations and increase safety.
- LA Metro submitted the final report to FHWA last fall. Today they are asking the CTCDC to accept the final report and allow these IIRPMs to remain until the FHWA makes a final ruling.

### Committee Questions and Discussion

Committee Member Miller asked how many hours of data collection the statistics are based upon. Ms. Yim replied that they had planned on two years of data collection before installation and two years after. However, there were installation issues and the red light cameras were upgraded to capture many more violations – it was not an apples-to-apples comparison. FHWA allowed them to look at daily averages over a one-month period for on and for off, resulting in over 30 data points for each.

Committee Member Ouadah asked if all the violations happened during the red no-turn phase or if some happened during the yellow phase. Ms. Yim replied that they happened during the red phase with the red light cameras. Committee Member Ouadah commented that quite a few of the violations happen during the first two-tenths or three-tenths of a second after the yellow turn light ends; it is hard for drivers to judge whether to drive through yellow lights.

Committee Member Ouadah asked if they had considered using the flashing sign for the train. Ms. Yim felt that was a good suggestion. Right now, the device they were looking at for FHWA's review is the IIRPM with the steady light – they want to isolate that and keep it separate. Ms. Yim also agreed that it is difficult to gauge yellow lights. LA Metro had had a professional look at the footage for when the actual turn took place. They had cleansed anything questionable out of that – these were actual violations they were looking at. In addition, the same methodology was used for counting the violation whether the lights were on, off, or at a control intersection.

**MOTION:** Vice-Chair Bahadori moved to receive and approve the report and to let the video equipment stay in place in the field as installed. Committee Member Ouadah seconded. Motion passed unanimously.

### **16-33: Final Report - Request to Experiment with non-standard striping detail at Express lanes**

David Thomas, Riverside County Transportation Commission (RCTC), gave the presentation.

- The experiment started in 2016. RCTC had presented two stripes for experiment: a double 4-inch solid white stripe and a combination skip solid white stripe.
- The stripes were implemented and the new express lanes were opened on State Route 91 in March 2017. RCTC conducted the first experiment between March and July.
- They conducted an updated evaluation between May and June 2018.
- In September 2017 they made the enhancement to striping and signage which includes the double 6-inch stripe.

- Mr. Thomas provided photos which he explained.
- The concern had been that with the RCTC extension and the intermediate access, traffic would try to enter at the access point; RCTC was using the stripes and signage combinations to deter traffic from making this unsafe move.
- Mr. Thomas provided a schematic which he explained.
- An existing stationary camera captured most of what was occurring in the exit location.
- Mr. Thomas showed tables that listed the numbers.
- In summary, the vehicles waiting to exit in the lane were about 90% of the traffic – 700-800 vehicles per hour exiting from the express lane facility at the county line.
- The skipped solid line was intended to encourage traffic to move in one direction but not the other. The percentages were fairly low, in the 5-7% range.
- The movement from the express lanes which was a violation was traffic crossing the double white lines, not entering the exit lane as they should, but waiting to exit and then cutting over. A small percentage did this.
- RCTC also observed traffic moving from the GP lanes into the express lane facility at the exit; this had been the main concern. The initial numbers were fairly high and decreased with time. Over a year's time, there was a slight decrease in the violations coming from the GP lanes in the express lanes at the exit.
- Mr. Thomas broke down the recommendation between the two different stripes. For the skipped solid combination, vehicles could be staying in the lanes longer than RCTC would like them to because those lanes are moving faster than the GP lanes, or because drivers do not understand that they can move across that stripe. The data in inconclusive.
- RCTC's first recommendation is to replace the stripe with a standard detail: an 8-inch dashed stripe, to be done sometime this year.
- The second recommendation has to do with the double solid. When they installed it, part of the enhancement was the wet night thermal plastic; they eliminated the raised pavement markers with that stripe. This application would be a good use of the double 6-inch solid stripe. RCTC was requesting to leave it in place for this application.

**MOTION:** Vice-Chair Bahadori moved to approve the recommendations.  
Committee Member Bhatia seconded. Motion passed unanimously.

## **AGENDA ITEMS**

### **6. Public Hearing**

#### **Consent Items (minor discussion with vote expected)**

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

Committee Member Tong explained the legislative change of a few years ago to include the Veterans Homes of California in the CA MUTCD and to create the signage.

Mr. Iqbal stated that SB 842 was approved by the Governor in September 2014. It adds Section 101.13 to the Streets and Highways Code. Generic directional signs are needed for each of the Veterans Homes.

Mr. Iqbal indicated the changes to Section 2D.37 (D1 Series) and two of the tables.

#### Committee Questions and Discussion

Committee Member Maximous mentioned the exit number tab – other than streets and highway interchanges guidance signs do not tend to have them. Mr. Iqbal answered that the Caltrans Office of Traffic Engineering maintains exit number signs, and if a new number is assigned, it will be required to be added to the sign as well.

Committee Member Ouadah mentioned the problem of adding the language into an optional section of the MUTCD. Secretary Talada answered that based on Caltrans' review of the application, they may install the sign. That is why it remains an option statement.

Committee Member Tong added that when they receive the request, the room and space at the location may not be sufficient to put up the sign; they will have to work with the applicant.

**MOTION:** Committee Member Tong moved to pass the requested sign.  
Committee Member Ouadah seconded.

**MOTION WITH ADDENDUM:** Committee Member Tong moved to pass the requested sign with language on the exit number to make it consistent with the rest of the manual. Committee Member Ouadah seconded.

Committee Member Maltese asked for confirmation that if the veterans sign is approved by the Legislature and erected by Caltrans, then it is funded by Caltrans. Committee Member Tong confirmed. Committee Member Maltese pointed out that the *shall* or *may* option goes back to whether Caltrans wants to fund it. Committee Member Tong explained the process. The engineering, funding, and installation is done by Caltrans.

**VOTE:** Motion passed unanimously.

#### **19-02: Alternative Pedestrian Hybrid Beacon Sign**

Committee Member Tong gave the background for the proposal, which was based on feedback from the district traffic engineers regarding the need to educate the public on how to deal with the pedestrian hybrid beacon.

Secretary Talada walked the Committee through the FHWA documentation and the proposal. It is Caltrans' opinion that the sign has the potential to prevent user confusion at pedestrian hybrid beacon locations. It is a combination warning/regulatory sign and is consistent with the CVC.

#### Public Comment

Chad Dornsife, Best Highway Safety Practices, asked how a motorist would discern flashing red as a stop signal versus a solid red. People might think they can ignore it. If the only differentiation is this sign, it may be problematic.

#### Committee Questions and Discussion

Secretary Talada stated that his office has received a few requests from local agencies as well as districts on developing a new sign which includes their own symbol. In order to prevent that kind of non-uniformity, it is recommended that the sign be incorporated in the MUTCD.

Vice-Chair Bahadori expressed concern about potential confusion: the sign says to proceed on flashing red if there are no pedestrians, but the CVC says if there is flashing red you must make a full stop. There is an enforcement issue.

Committee Member Ouadah stated that the sign is both regulatory and not regulatory. He agreed with Vice-Chair Bahadori.

The Committee discussed the wording. Vice-Chair Bahadori suggested, “Stop on flashing red, proceed when clear.”

Committee Member Miller shared Vice-Chair Bahadori’s concern. He had seen many variations of this sign and did not feel that we have identified the best sign at either the federal or the state level.

Committee Member Maximous noted that since there is already a letter of interpretation from FHWA on the sign, is the State allowed to customize it? A suggestion would be to ask Caltrans to come up with a more diagrammatical/symbol sign with less wording. Secretary Talada responded that this wording was the FHWA’s recommendation.

Committee Member Ouadah that with this hybrid beacon, the sequence is very important to the motorist; even though it is redundant to say “Stop on red,” he saw the need to include it on the sign. Motorists should know to stop on flashing red. Because of the timing sequence of this new traffic device, we are trying to educate the motorist on what to do.

Vice-Chair Bahadori commented that not having any sign at all may actually help the case.

Committee Member Tong pointed out that the motorist does not know how to handle the flashing red, though they all understand solid red. That is the purpose of the sign. He asked if Caltrans has an option to modify the sign. Secretary Talada answered that they do, and can present it to the CTCDC. He informed Committee Member Maximous that if we use a symbol, we will have to get the approval of FHWA.

Chair Bronkall asked the CHP to comment on any legal interpretations based on the discussion. Committee Member Hatfield agreed that the wording is redundant, even contradictory. There is room for clarification.

#### Public Comment

David Depierro, City Traffic Engineer, City of Oceanside, voiced concern about the viability issue. The second vehicle in a line might read “Proceed on flashing red when clear,” proceed, and rear-end the vehicle in front. The sign is ambiguous and causes indecision for the drivers.

#### Committee Questions and Discussion

Vice-Chair Bahadori commented that in the past during the late-night time period, many traffic signals would change to flashing red. People know that flashing red means to stop rather than proceed.

Vice-Chair Bahadori suggested for Caltrans and the CHP to work out better wording, with which the FHWA will agree.

Committee Member Tong stated that he would table the item and work with FHWA and CHP to come up with better language for the sign.

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

Committee Member Tong informed the Committee that the new signage indicates the new funding. Caltrans had worked with FHWA. The signage is consistent with existing signs.

Mr. Iqbar provided details pertaining to the CA MUTCD. C48 is the new sign, similar to C47B in the font and colors.

#### Committee Questions and Discussion

Vice-Chair Bahadori noted that the sign had been linked to Proposition 6, which failed. Where did this request come from? Committee Member Tong replied that SB1 funding is not only for Caltrans, but also the local agencies. We have received questions from local agencies on what the funding sign looks like; we are also seeing local agencies doing their own SB1 funding signs. The request was a Caltrans internal request.

Chair Bronkall added that there is a drive from counties to advertise the funding source properly to the public.

Vice-Chair Bahadori viewed the signs as advertising signs – of no value to the motorist at all.

Committee Member Maximous pointed out that most of the public does not know how things are paid for; it is important to let them know.

Committee Member Ouadah questioned the language proposed for the Option: instead of “funding source”, use “logo”. Mr. Iqbal responded that the language follows that used in C47B.

Vice-Chair Bahadori commented that San Diego County and Orange County already use their own construction logos. What is the difference with SB1? Mr. Iqbal replied that if the project has SB1 funding in addition to county funding, the SB1 logo should be the most prominent on the sign. We want to have a uniform format.

#### Public Comment

Mr. Dornsife stated that the MUTCD charter was to minimize signs. Signs are objects in the roadway that can kill people when they hit them. Signs that provide no guidance to the motorist should not be permitted.

Mr. Pyburn stated that FHWA had a number of problems with the sign. He acknowledged that outside forces were pushing Caltrans in a direction inconsistent with the MUTCD. He provided the background, and said that this is a low-impact sign: it doesn't regulate, doesn't warn, doesn't guide. FHWA feels that the sign represents a reasonable compromise; the national MUTCD team does not like it, but the California division has the flexibility to approve the sign and supports it. Mr. Pyburn gave comments on the sign; the SB1 logo is clear. He did not personally support putting other agencies' funding logos on the sign and asked that it be stricken from the MUTCD. He requested to remove the extraneous dashed line.

Vice-Chair Bahadori agreed that it is next to impossible to read all the information on C47B. For C48, he suggested a simplified sign with “Your tax dollars at work”, the logo for SB1, and the logo for a cone zone. Mr. Pyburn was amenable.

Mr. Pyburn noticed the trademark (™) symbol on the “Be Work Zone Alert” phrase; that is not allowed on any MUTCD sign. He did not ask for its removal, because what led to the sign was a very long negotiation. He noticed the same symbol on C47A, and could see removing that. Committee Member Tong thought the symbol was a mistake.

Committee Member Ouadah gave a local agency perspective: he saw the need to inform citizens of their tax dollars at work. He asked if a local agency could add their own logo to the sign. Mr. Iqbal replied that you can add a county logo that is one-third the size of the SB1 logo.

**MOTION:** Committee Member Ouadah moved to approve the C48 sign, and its associated language in the MUTCD. Committee Member Tong seconded.  
Motion passed unanimously.

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

#### **17-21: Legislative Change by AB390 and the proposed changes to the CA MUTCD**

Committee Member Tong stated that the change reflected feedback from the CTCDC at the November 2017 meeting.

Mr. Iqbal stated that AB390, approved by the Governor in 2017, amended the CVC code to allow a pedestrian to enter a crosswalk facing the flashing “DON’T WALK”, “WAIT”, or approved upraised hand symbol. To be consistent with the CVC changes, they proposed to have the same changes done in the CA MUTCD.

#### **Committee Questions and Discussion**

Committee Member Ouadah asked why we are removing R10-1. Mr. Iqbal answered that the law says that you can enter the crosswalk even if the sign is flashing.

Committee Member Ouadah gave his understanding of the sign. He did not see the connection between that specific sign, and the fact that you want the pedestrian to enter the phase at the beginning or clear the phase before it ends, as the law states. Secretary Talada responded that at the last meeting, they had discussed the signage and it was recommended that the sign be removed because it had no value – most of the signals have the phasing built in. He was willing to keep the sign and its associated language in the manual.

Committee Member Maximous agreed that R10-1 is still relevant in many cities that do not have pedestrian communications. He asked about when the countdown mandate was implemented and the expected compliance date. Hamid Zolfaghari of Caltrans responded that the countdown hand was mandated in 2013, and the compliance date was 2016. Committee Member Maximous felt that the “time remaining to finish crossing” information on R10-3e and R10-3i was still relevant and should be kept on those signs.

Secretary Talada stated that these are low-value educational signs. The last time this was discussed, CTCDC representatives from the local agencies felt that there has been enough education and the signs are no longer needed. However, from today’s discussion it seems that the educational signs are needed with minor modifications to a few of them.

Committee Member Ouadah concurred with Committee Member Maximous: there is a need in the cities for a sign to tell the pedestrian what to do.



Committee Member Tong pointed out that his staff had spent time going through the signs in response to the Committee's recommendation to try to remove educational signs. Today the Committee seems to be having second thoughts. He asked what the Committee wants.

Committee Member Maximous stated that of the ten that are proposed to be stricken from the MUTCD, the Committee was asking to retain three.

Chair Bronkall gave the northern counties' perspective that the educational period has come and gone. He agreed with Caltrans that perhaps it is time for this sort of sign to go away. The countdown has been in effect long enough.

Doug Bipse, City of Carlsbad, stated that a new educational period is needed because the flashing light countdown law has changed.

**MOTION:** Committee Member Ouadah moved to approve the proposal from Caltrans with the following exceptions: keep R10-1 in the manual; continue work on R10-3e and R10-3i, modifying them to comply with the new law; return to the next meeting with the two modified signs. Motion includes keeping the stricken language. Committee Member Miller seconded. Motion passed unanimously.

### **Request for Experimentation**

#### **19-05: Request for experimentation with Bidirectional Pavement Marking (*taken out of order*)**

Committee Member Tong introduced the item, which explores another option to address the problem of wrong-way driving and the associated high fatalities. The striping will show during wrong-way movement but not during movement in the correct direction.

Mr. Troy Bucko, San Diego District 11 Caltrans, gave a presentation explaining the product, which is designed to prevent wrong-way drivers from entering the freeway. It is a bidirectional product for striping material. Mr. Bucko used photos to illustrate. The right-way driver only sees the normal striping, but a wrong-way driver sees signs or messages which are already in the current CA MUTCD or the federal manual.

Caltrans is proposing to experiment with the product on limit lines, crosswalk markings, and Type V arrows.

Caltrans is also interested in providing messaging at the start of the ramp, and providing an arrow on lane lines and edge lines. In addition they have the ability to print a message to be placed at some point down the ramp.

Mr. Bucko gave the proposed evaluation schedule. The trial period would be about a year.

If the message and symbol signs are already in the federal manual, FHWA does not feel that it would require any additional Request to Experiment at the federal level.

At the Annual Biosafety and Biosecurity Conference (ABSA), the product won the Most Innovative Product of the Year.

### **Committee Questions and Discussion**

Committee Member Miller asked if, as it wears, the red will remain visible from the wrong direction. Mr. Bucko explained that the thermoplastic spray will allow that.

Vice-Chair Bahadori asked how they will measure the effectiveness – do they already have many locations with this kind of violation? Mr. Bucko replied that they made use of CHP resources to pull data over the last four years showing these locations. They do not yet know how many ramps they will use – they are leaving that to the research team to determine a good statistical sample. Some may have limit lines only and some may have a combination of limit lines and edge lines, to see which are most effective. They may use camera monitoring. Committee Member Tong noted that camera use may depend on the location.

Committee Member Bhatia asked how long they will measure the data. Mr. Bucko replied that they would like to start with one year and possibly extend it depending on the data points.

Vice-Chair Bahadori asked about the cost of the treatment. Mr. Bucko replied that it runs between \$7-10 per linear foot – probably less than \$15,000 per ramp.

Chair Bronkall expressed concern about the size of some of the symbols – they may not be apparent at a higher speed. Was any thought given to creating a larger swath of possibly black or gray thermoplastic that would have larger red messaging? Mr. Bucko replied that most of these will be applied on a ramp where speeds are fairly slow for the wrong-way driver getting on the ramp. The other benefit is that further down the ramp, the entire Type V arrow can be lit up in red. Chair Bronkall suggested having additional arrows closer toward the gore point. Mr. Bucko agreed that they could look at that if they see that they are not capturing vehicles soon enough on the ramp. The messages certainly can be scaled for visibility.

Committee Member Ouadah asked, since wrong-way driving is such a critical issue for safety of the motorist, if it would be possible to make the wrong-way marking more of a hologram – a three-dimension look. Mr. Bucko replied that some DOTs in other countries have tried to use a hologram to create a visual wall. He was not aware of any vendors in the U.S. who are doing that. Caltrans could come back and look at that.

#### Public Comment

Mr. Zolfaghari stated that his only concern was that if the product is proprietary, we will have some issues. Mr. Bucko replied that the vendor is not patenting the actual product, only the process of how they apply the red. The verbiage in the national MUTCD and others is that as long as they are not patenting this product specifically, it will be allowable for use.

Chris Costigan, CHP, asked if this pilot project will take place at the same locations as are currently being tested in San Diego and Sacramento, or at different locations. Also, CAD data relies on people notifying CHP Dispatch that a wrong-way driver entered a ramp. Many times this happens late at night and early in the morning; the rate of these is probably severely under-reported. He cautioned against relying on CAD data alone. He is a strong proponent of incorporating some kind of video surveillance to check the effectiveness of the program. He also suggested making notification so that CHP can take some preventative measures and stop the wrong-way drivers if they do not self-correct.

Mr. Bucko responded that the existing pilot project has 18 ramps in Northern California and six in Southern California of the advance notification and detection systems, where if the driver is coming down the ramp the wrong way, the system detects the vehicle and sends a message to try to alert law enforcement to intervene. The project has shown that it is a very short window of time to find the driver and get them out of the way. They have had a better

response from the red-on-backside markers that they have placed, or just placing the red flashing LED sign bordered around their wrong-way panels.

Mr. Bucko stated that they would like to try new ramps not part of the pilot project, because they have already done a number of treatments on those ramps.

#### Committee Questions and Discussion

Committee Member Hatfield asked about any other methods to determine effectiveness. Mr. Bucko stated that working with the research people, they can look at setting up a number of ramps with the camera detection.

Chair Bronkall suggested using intersections currently not being considered for the treatment for the video monitoring. A year out from now, the treatment can be applied, providing a direct comparison.

Committee Member Miller asked if pedestrians crossing the wrong way would be able to see the marking. Mr. Bucko replied that they would see the red if they were going in an opposing direction, but not walking on top of it or on the approach side.

At the request of Committee Member Miller, Mr. Bucko laid out a sample of the product.

Committee Member Miller expressed concern about putting the treatment in crosswalk markings. It is a little more visible in the unintended direction than he had thought. Pedestrians may think they are supposed to walk there.

Chair Bronkall inquired about how these might be viewed from a larger and higher vehicle. Mr. Bucko replied that there is a bit of an overspray that comes on that angle; the manufacturer can abrade the top layer to remove the red part of the angle. As the thermoplastic wears down a bit, the groove at the top of that angle wears off fairly quickly.

Chair Bronkall agreed that it may be best not to include these features in the crosswalk area itself so as not to send mixed messages to pedestrians. Committee Member Bhatia concurred. Mr. Bucko clarified that sometimes the limit line is attached to the crosswalk forming the ladder; more often it is a couple of feet away, in which case he would not have a problem with it.

Committee Member Ouadah recommended to use the treatment in the crosswalk for the purpose of finding out the pedestrian perspective and documenting it.

At the request of Vice-Chair Bahadori, Mr. Bucko showed the video again. Committee Member Miller noted that the arrow is visible in both forward and reverse directions. Pedestrians who have had too much to drink are the ones most likely to be confused by this. The issue will never be attributed to the problem with the marking, but to the condition of the pedestrian.

**MOTION:** Committee Member Miller moved to allow Caltrans to proceed with the experiment, with the advice that the arrows not be applied to crosswalk marking surfaces. Committee Member Tong seconded. Motion passed unanimously.

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

Mr. Thomas stated that this is a new request to experiment with a message on a regulatory sign. He read the Problem Statement and described the current scenario. RCTC presently posts the message “FasTrak™ Transponder Required” on the changeable message sign when another message does not override, and they still have the problem of customers using the 91 Express Lanes facility without transponders. With the opening of I-15 next year, this message will become even more important.

Mr. Thomas described the proposed transponder sign. He reviewed the experiment schedule and evaluation procedures. The two primary evaluation items would be to look at the violations to see if there has been a reduction, and to survey the CHP and the courts to assess improvement in enforcement.

#### Committee Questions and Discussion

Vice-Chair Bahadori stated that if this sign is to be used for the purpose of informing drivers of an existing law, Caltrans does not need an experimentation. They just need to develop a sign spec and install it. Mr. Thomas stated that the CVC Section is 23302.

Committee Member Miller stated that he is a TCA FasTrak driver, and his transponder has not beeped in several years – the battery may be dead. He does not know if he is in or out of compliance. Mr. Thomas explained the process: the license plate is picked up, and there is an OCR process to validate it. As long as the OCR read works, it is still a violation because you do not have a working transponder, but you are typically not billed. If it does not pick up the OCR read, there is a manual effort involved and a higher likelihood that you will receive a violation notice.

Committee Member Miller noted that there is no way for the user to know if the battery is dead. Mr. Thomas stated that in 2019, RCTC is installing new technology and all users will be issued a transponder that does not require a battery.

Committee Member Ouadah suggested shortening the message to “Transponder Required”. Mr. Thomas replied that they would be open to other wording.

Vice-Chair Bahadori reiterated that this is not a Request for Experimentation – it is a reflection of a section in the CVC.

Committee Member Hatfield stated that there are no enforcement issues with the proposal.

Secretary Talada agreed with Vice-Chair Bahadori: the sign can be approved without requiring a Request for Experimentation. However, the policy language for the sign has not been developed today and cannot be incorporated into the CA MUTCD.

Committee Member Maximous pointed out that the original express lane sign without “Transponder” is in the manual. He pointed out that express lanes, like toll lanes, may be trending toward online pay-later type fees that do not require transponders. He recommended flexibility in the development of the sign to reflect this.

#### Public Comment

Mr. Pyburn stated that we are having this discussion because there is no consistency in enforcement of the Vehicle Code among toll operators in California. Northern California requires a FasTrak transponder for any toll lane and for bridges, but Southern California rules

are different. The new transponder sign would not need an experiment but would provide the legal enforceability that RCTC is looking for.

Mr. Pyburn also suggested that Caltrans be directed to enforce the Vehicle Code. Vice-Chair Bahadori agreed with the need to enforce statewide policy uniformly, but noted that Caltrans cannot enforce it: in TCA facilities, the CHP officer sitting behind the antenna location does not see a red light coming on – as long as the license plate is registered, the system recognizes it and the officer does not know if the vehicle is carrying a transponder or not. Mr. Pyburn agreed; Caltrans attorneys should be leaning on TCA to require the transponder.

Vice-Chair Bahadori noted that the direction of toll collection throughout the country is to move away from transponders. Mr. Pyburn countered that the near-term direction is for Caltrans to keep the transponders. Until the Vehicle Code is changed, that is the way all toll collection is to be administered in the state.

#### Committee Questions and Discussion

Committee Member Miller asked if it would be possible for Caltrans to come up with a final version in time for RCTC to install it in six months, or if it would be better to allow use of the sign with an experimental status. RCTC needs an approval fairly quickly. Secretary Talada responded that Caltrans would prefer the sign be approved for use in RCTC's facilities. They can look at the FasTrak transponder policy at a later date, and develop a uniform sign and policy for all TCAs.

**MOTION:** Vice-Chair Bahadori moved to approve the sign proposed by the RCTC. Committee Member Miller seconded.

Committee Member Ouadah asked if it were possible to add a placard to the existing sign. Committee Member Miller felt that with a placard the meaning may be lost.

**VOTE:** Motion passed unanimously.

### **7. Discussion Items**

#### **18-08: CTCDC Yellow time sub-committee update**

Vice-Chair Bahadori reported that the subcommittee members, comprised of both the public and the private sector, had reached consensus that the MUTCD as currently written is totally insufficient regarding the issue of minimum yellow timing for traffic signals. The MUTCD establishes a three-second minimum but does not say anything more. All of the agencies canvassed have gone beyond that timing. The City of Los Angeles bases timing on the length of the pocket and the number of lanes in the lefthand pocket. Agencies such as Caltrans base timing on the approach speed. All agree that for the sake of consistency the minimum needs to be raised; the standard needs to help cities with fewer resources to set timing.

Vice-Chair Bahadori continued that a traffic signal workgroup inside Caltrans makes monthly conference calls to all 12 districts regarding traffic signal timing and operation. The workgroup desires to make the correct decisions and the matter is not considered urgent.

The next step is for the subcommittee to prepare a paper for the workgroup. The paper will probably be ready for the August meeting or perhaps later.

#### Public Comment

Mr. Zolfaghari stated that the Caltrans workgroup meets quarterly rather than monthly.

Jay Beeber, Safer Streets L.A. and a subcommittee member, commented that with the through movement there are fewer factors to consider (perception-reaction time, deceleration, and approach speed); with turning lanes there is approach speed, entry speed, the point at which the motorist slows down, long lanes/short lanes – it is a complicated issue. The subcommittee must determine the protocol, the formula, and the assumptions that go into that formula. It has been a long and complicated research process. In partnership with the signal ops people, they hope to come up with some good recommendations for standardization and safety.

**8. Tabled Items**

There were no tabled items.

**9. Next Meeting**

Secretary Talada stated that the May 9 meeting will be held in Davis.

**10. Adjourn**

Chair Bronkall adjourned the meeting at 12:59 p.m.