State of California

DEPARTMENT OF TRANSPORTATION
CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE

Minutes of Meeting
March 3, 2016

Caltrans District 5
1150 Laurel Lane
Manzanita Conference Room
San Luis Obispo, California 93401

Committee Members in Attendance:
Mark Greenwood, Chair
Rick Marshall, Vice-Chair
Hamid Bahadori
Lt. Scott Baland
David Fleisch
Bryan Jones
Emma Olenberger
Mike Sallaberry
Duper Tong
Jay Walter

Committee Staff:
Chris Engelmann, Committee Executive Secretary
Don Howe, Chief, Signs Branch, Office of Traffic Engineering

Also Present:
Hector Barron, City of Sacramento Department of Public Works, Transportation Division
Troy Bucko, Caltrans District 11
John Cunningham, Contra Costa County
Randy Durenberger, Kimley-Horn
David Edrosolan, City of Sacramento Department of Public Works
Kevin Korth, U.S. Department of Transportation, Federal Highway Administration
David Mann, Caltrans District 4
Paul McClintic, Caltrans District 5
Sean Nozzari, Caltrans District 4
Craig Rhodes, Traffic Management, Inc.
Glenn Urban, San Francisco small business owner
Dustin White, San Francisco Municipal Transportation

ORGANIZATION ITEMS

1. Introduction

Paul McClintic welcomed the committee to San Luis Obispo and spoke about the District 5 area.

Chair Greenwood invited the committee, staff, and members of the public to introduce themselves.

2. Membership

There were no comments or changes to membership.

3. Approval of Minutes of the December 10, 2015 Meeting

> **MOTION**: Vice-Chair Marshall moved to approve the December 10, 2015 California Traffic Control Devices Committee Meeting Minutes as presented. Committee Member Walter seconded. Motion carried unanimously.

4. Public Comments

There were no public comments.

5. Items under Experimentation

a. Update by SFMTA on Red Pavement Transit Lanes

Dustin White, Senior Planner at the San Francisco Municipal Transportation Agency (SFMTA), provided an overview and update of the project.

- In the spring of 2013, SFMTA rolled out its first installation of red-colored transit lanes on three blocks of Church Street.
- In 2014 SFMTA did the bulk of installations at three major corridors. About five linear miles are now installed.
- Since SFMTA's approval, the Federal Highway Administration (FHWA) has approved similar experiments in Chicago and Washington D.C. Seattle and New York have completed experiments.
- Red-colored transit lanes have been recommended by the National Association of City Transportation Officials.
- San Francisco has used two material types for the lanes: preformed thermoplastic tiles and epoxy/acrylic spray coating, which is substantially cheaper to install but necessitates long traffic lane closures.
- SFMTA has learned the importance of prepping the pavement and coordinating with any utility or other repair work going on in the corridor.
- The materials are holding up well – 90% are staying on the pavement after 18 months. The lifespan appears to be five years.
- The motorist violation rate is now lower in the corridors, which is the aim of the experiment.
- On the heavily-used Geary-O'Farrell corridor, median bus travel times dropped by 4% even as traffic congestion increased.
- At the Third Street and Mission intersection, motorists do not seem to be turning right from the through lane; they are merging properly into the turn pocket.

- Preliminary collision analysis has shown a 15% drop in reported collisions along the length of the corridors.
- SFMTA would like to continue the experiment.

Committee Member Questions and Comments

Committee Member Walter asked about the type of collisions that were analyzed. Mr. White did not have the information but could supply the raw data. Committee Member Walter said the information would be helpful to have.

Committee Member Tong asked about any data showing an increase in transit ridership. Mr. White did not have those numbers, but they could be collected and analyzed.

Chair Greenwood inquired as to whether the installation of the red transit lanes had expanded beyond the areas approved by the committee. Mr. White replied that the installation had been used specifically in the 24/7 lanes rather than the part-time lanes. The only place where the lanes had been expanded beyond those shown on the map was Market Street from Fifth to Third, for consistency.

Public Comment

Glenn Urban, co-owner of a car wash on Geary Boulevard, stated that he did not want to see red lines painted in front of his property when the lines are extended. The red lanes are equivalent to stacks of cones or concrete barriers for private vehicles, which negatively affects small businesses. Mr. Urban showed photographs to illustrate the problem. He stated that people avoid red lanes; the lanes have unintended effects on people's behavior.

Committee Member Questions and Comments

Vice-Chair Marshall noted that this item was scheduled as a Status Report; the committee could not take any action. Mr. Urban stated that he had appreciated the opportunity to present the information. Vice-Chair felt that this was something the city and county of San Francisco needed to decide; the CTCDC's job was to decide whether red should be one of the tools in the toolbox. Mr. Urban described painting schemes used in New York City.

Chair Greenwood urged Mr. Urban to work with the SFMTA on this issue, and urged SFMTA to include this issue in their final report and progress report.

Mr. Jones mentioned the importance of having business owners talk about how transportation system projects affect them; the CTCDC then can evaluate the project comprehensively. For Mr. Urban, there must be solutions to be found at the local level.

Mr. Bahadori agreed that this was a local issue for the city and transit people.

AGENDA ITEMS

6. Public Hearing

CONSENT ITEMS (Minor discussion with vote expected)

None

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

15-28: Subcommittee report – Legislative Inquiry on School Zones

Committee Member Bahadori stated that the issues of SB 632 had been discussed in two conference calls. He added that the CTCDC, as well as judges throughout the state, had been struggling with the definition of "*when children are present*" for at least a decade.

Committee Member Bahadori discussed the various aspects of the legislation, including:

- Extension of the zone up to 1320′ (or a quarter mile)
- School crosswalks beyond 1320′
- Proliferation of school zones in towns and cities

The subcommittee in general supported SB 1320 enabling locals to make decisions based on their own Engineering Judgment.

Secretary Engelmann added that this time, the Senate Committee on Transportation and Housing was approaching the CTCDC for help in getting through some of the engineering issues – to provide an opinion. The CTCDC now has a chance to help write the law, and has committed to provide a response by July. Secretary Engelmann stressed that the CTCDC would focus not just on a specific bill, but on the whole concept of school zones.

Committee Member Bahadori argued in favor of enforcement: the presence of a policeman will make people slow down more effectively than education and engineering when it comes to school safety.

Committee Member Jones commented that in his experience, engineering solutions and appropriate roadway design around schools were more critical than enforcement. He agreed that schools operate on "organized chaos" and noted that in some communities, neighborhood schools are being replaced by larger regional schools. In some school situations, 500′ before the school is great for 25 MPH; in others, 1320′ is probably better. Local agencies should be given the opportunity to decide.

Committee Member Bahadori described the situation where drivers ignore the 25 MPH School Zone posting when there is no school visible – the posting is too far from the school.

Committee Member Fleisch referred to the importance of defining the phrase "when children are present." The courts and CHP cannot figure it out, and at least the CTCDC should give its input. If it means 24/7, drivers will ignore it. Committee Member Fleisch expressed concern about whether extending the zone to 1320′ will add any benefit.

Committee Member Bahadori observed that fewer and fewer kids are walking to school. The extension of the school zone gives locals flexibility, based on their Engineering Judgements and field conditions.

Committee Member Winter gave the perspective that the flexibility to use an Engineering Judgment for the size of a school zone is important.

Committee Member Jones discussed the situation where a crosswalk is not contiguous to the school but serves the school. The subcommittee had discussed putting in language for spot improvements for crosswalks like this.

Public Comment

Curt Rhodes, Traffic Engineer for Traffic Management, Inc., recommended considering curfew times for the phrase "when children are present." If the phrase does include 24 hours, possibly there could be zone stepdowns for the speed limit from 45 to 35 to 25.

John Cunningham, Transportation Planner with Contra Costa County, requested the committee to review the material in his submitted letter. He discussed the content of the legislation. He was encouraged by the acknowledgement of the need for more meetings on this topic; possibly we could use the support of consultants from the Department of Transportation.

Committee Member Questions and Comments

Committee Member Bahadori suggested identifying the issues upon which the subcommittee needs to focus. He saw three issues: the language affording flexibility to locals up to 1320′ based on the engineering evaluation of the field conditions; the term *"when children are present;"* and the issue of which highways qualify for speed reduction.

Chair Greenwood stated that he had heard strong support for Engineering Judgements up to 1320′. The committee should take a look at *"when children are present"* and the issue of whether schools are contiguous or not. Chair Greenwood suggested for the subcommittee members to do their own outreach and bring the results to the subcommittee, which would then make its recommendations at the June CTCDC meeting.

Committee Member Jones noted that his company does safe school audits throughout the country and has certified auditors and content experts.

Committee Member Bahadori stressed that improved enforcement is necessary; the CTCDC does not want to send the wrong message.

Committee Member Sallaberry stated that while we obviously care about safety, we want to encourage more walking and biking for children in San Francisco. With the local jurisdictions being able to extend up to 1320′, the dynamics of San Francisco politics are that *"may extend"* will become *"have to extend."* He requested the subcommittee to consider the overuse effect in which people will ignore the reduced speed limit.

Committee Member Baland noticed that as of today, SB 632 is listed as inactive. AB 1659 has very similar language and is active. Committee Member Bahadori explained that SB 632 is a two-year bill and is on hold.

Secretary Engelmann clarified the 24-hour timeframe. He requested Committee Member Baland to join the subcommittee for a law enforcement perspective; Committee Member Baland agreed.

16-01: Hybrid Beacons

Secretary Engelmann reported on the item. He read the current MUTCD regulation stipulating installation of hybrid beacons at least 100′ from a minor intersection or driveway. Caltrans is reluctant to install them within 100′. The National Committee on Uniform Traffic Control Devices (NCUTCD) Technical Committee had provided some input to FHWA for removing the 100′ guidance.

Secretary Engelmann stated that the goal is to decide whether to change the language in the manual to promote or endorse the use of hybrid beacons within the 100′ distance.

Committee Member Questions and Comments

Vice-Chair Marshall asked if anyone is expressing interest in the space between 0-100′ or whether it is really just a matter of adding possible intersection locations.

Committee Member Bahadori pointed out the problem of mixing a traffic signal on a major street with a stop sign on a side street.

Kevin Korth, FHWA, spoke in regard to changing the guidance statement: it did not warrant going to the rule stage, since the device already exists and has fairly well-established boundaries. The National Committee's recommendation will be heard at the proposed rulemaking for the next manual.

Committee Member Fleisch asked why a hybrid beacon would be placed at an intersection between 0-100′. Referring to Committee Member Bahadori's example, maybe we need to look at signage to get rid of the conflict.

The committee discussed the issue. Committee Member Tong explained that in the two-year study of hybrid beacon installation at 26 intersections, there has been very successful operation – a high rate of compliance.

Sean Nozzari, Caltrans District 4, described a unique pedestrian hybrid beacon installation in San Francisco. It has worked fairly well; prior to installation there had been a fatal pedestrian collision.

Public Comment

Troy Bucko, Caltrans District 11, described a stop-controlled San Diego T-intersection with two hybrid beacons within 50′. There is confusion among turning motorists when pedestrians and bicycles cross.

Hector Barron, Traffic Engineer with the City of Sacramento, stated that the two hybrid beacons in Sacramento have been very successful. It provides opportunities for the city to deal with challenging crossings where a traffic signal is not warranted. There is no confusion among motorists.

Committee Member Questions and Comments

Vice-Chair Marshall could see that if a beacon was 50′ from an intersection, it would be like creating two intersections. The solution seems to be to consider hybrid beacons at intersections or at least 100′ away.

> **MOTION**: Committee Member Duper Tong moved to revise the language to read "*The pedestrian hybrid beacon should be installed at intersection or at least 100′ from side street or driveway at intersections that are controlled by stop signs or Yield signs.*" Vice-Chair Marshall seconded. Motion carried unanimously.

Committee Member Fleisch felt that the committee needed to clarify the language.

Secretary Engelmann wanted to ensure that what the committee agrees to vote on does not jeopardize conformance with the federal manual.

Mr. Korth stated that for any guidance or standard statement, the Division Administrator has the authority to change a state manual, making it different from the national manual. It needs to be documented by an Engineering Study or Engineering Support. The FHWA Office of Safety has provided studies showing the safety benefit of putting hybrid beacons at intersections, which the committee is welcome to use for its support.

Chair Greenwood confirmed with Secretary Engelmann that Caltrans will work with FHWA to devise satisfactory language. Committee Member Walter suggested contacting the Cities of Sacramento and San Francisco to obtain data.

Mr. Korth offered to help with clarification of the terms "highway traffic signal" and "traffic control signal" in the National Manual on Uniform Traffic Control Devices (MUTCD).

VOTE: The CTCDC members voted unanimously in favor of the Motion.

16-02: Non-traffic control devices signs Section 1A.08

Secretary Engelmann stated that Caltrans is getting requests for signs that are not traffic control-related; there is a need to provide clarification and conditions to be met. Secretary Engelmann referred to the four criteria listed in the CTCDC Agenda.

~~Commissioner~~ Committee Questions and Comments

Chair Greenwood requested photos. Secretary Engelmann gave an example of a sign in Lompoc. He noted that districts sometimes have difficulty refusing requests because of other signs in existence.

Committee Member Fleisch stated that these signs are not traffic control devices; why are they not billboards handled under an Encroachment permit? Committee Member Bahadori explained the beginning of the discussion in the San Diego watershed district. Secretary Engelmann explained a project on Highway 50 in Sacramento that had driven the discussion.

Committee Member Jones doubted if the MUTCD should be specific for Caltrans; the document should be for all California roadways, not just state facilities.

Committee Member Walter pointed out that local cities often have their own sign ordinances; the MUTCD tends to stay with official traffic control devices within the right of way. Chair Greenwood noted that the real estate and tour sign is not a traffic control device but is in the right-of-way.

Committee Member Fleisch noted that there have been lawsuits lately over demands for church and other signs to be taken down.

Committee Member Bahadori recommended for the committee not to touch the issue because Caltrans does not have jurisdiction over cities and counties regarding signs that are not traffic control devices.

Public Comment

There was no public comment.

MOTION: Vice-Chair Marshall moved for the CTCDC to take no action. Committee Member Walter seconded. Motion carried with ~~Caltrans~~ Member Tong abstaining.

16-03: ADA Tone/Voice – Ped signal

Secretary Engelmann requested that the committee not vote on the item today, as Caltrans still needed to vet it through representatives of the blind community.

He provided an overview to explain the use of audible and chirping walk indications at pedestrian crosswalks.

Committee Member Tong explained the differing interpretations of the manual, which they had tried to clarify.

Secretary Engelmann explained for Committee Member Walter why one intersection wouldn't be handled with one type of indication versus two: the preference is to use chirping, but when the distance between two accessible pedestrian signals is less than 10′, an audible message must be used. In those cases, should it be applied to the entire intersection, or just one corner?

Committee Member Walter asked why the indications would be mixed at the same intersection.

Committee Member Jones asked why the chirping indication is preferred over the audible. Secretary Engelmann answered that the audible has more flaws. Committee Member Bahadori added that the chirping is an international language.

Public Comment

Mr. Rhodes commented that Long Beach uses both a chirp and a warble which enables differentiation between the two sides. He added that the audible indication had used a voice with a very heavy accent that the pedestrians could not understand.

Mr. Korth gave the FHWA interpretation: with the change in wording, it is up to the discretion of the engineer whether to use audible for both sides of the intersection. The new version and the previous version both provide flexibility, and he supported either.

~~Commissioner~~ Committee Questions and Comments

Committee Member Sallaberry interpreted the wording not to have any flexibility: with more than 10′, chirping must be used. Vice-Chair Marshall agreed.

Committee Member Walter had observed that the visually impaired community and the groups that represent them have a clear difference of opinion on which indication they prefer. He asked how we will get to the point of deciding one way or the other.

Committee Member Tong suggested consulting the Americans with Disabilities Act (ADA) community.

16-04: Proposal to modify section 3B.19 on angled parking

Committee Member Jones explained the issue and suggested that there is no need for the language to be in the MUTCD anymore. If Caltrans wants to establish policies for angled parking, this can be in the *Design Manual* or the *Main Street Guide*.

He disagreed with the proposal because he believed that engineers and planners need flexibility in angled parking design.

MOTION: Committee Member Jones moved to remove the two sentences from the MUTCD. Committee Member Bahadori seconded.

~~Commissioner~~ Committee Questions and Comments

Committee Member Walter ascertained that with the removal of the sentences, some agencies could pass local ordinances for parking.

Representing Caltrans, Committee Member Tong supported the idea to remove the sentences.

Committee Member Fleisch suggested removing paragraph 15, 16, and 17. Committee Member Jones agreed to add this to the motion.

VOTE: The CTCDC members voted unanimously in favor of the Motion.

Committee Member Jones cautioned about using this language in the *Highway Design Manual.* He would include the dimensions of angled parking that Caltrans wants, then allow flexibility.

16-05: Proposal to modify CA MUTCD and eliminate use of rigid barrier posts on entries to bikeways

Secretary Engelmann reported that in attending California Bicycle Advisory Committee (CBAC) meetings recently, he has regularly heard requests to remove the bollards or barrier posts on Class I bike facilities.

He displayed photos to illustrate the proposal. He posed the question of whether the language should be in the *Highway Design Manual* (HDM) rather than the MUTCD. An option would be to use a flexible type of barrier.

~~Commissioner~~ Committee Questions and Comments

Committee Member Sallaberry felt the language should be somewhere, and that the HDM would be a more appropriate place.

Committee Member Fleisch commented that the bollard becomes a traffic control device when a Class I path is immediately adjacent to a traveled road, and there are side streets. In that case the language should be in the manual.

Committee Member Jones commented that most trails are 8-10′ wide and do not look like roads. Many barriers and posts cause safety issues with handlebars and pedals hitting them as bicyclists try to go through. There are ways other than bollards to design places where the trail interacts with the roadway or intersection to make it look like a trail entrance.

Committee Member Bahadori asked if the change would be retroactive. He noted that in Orange County, the concern was not as much for people driving intentionally on the trails, but for restricting vehicle access for dangerous or illicit activities in remote areas.

Committee Member Sallaberry noted that his community has a number of off-street paths, and very rarely does he see someone driving down them. He agreed that design can be done without bollards.

Committee Member Walter felt that the committee shouldn't say not to do it, when there may be a good reason to do it. We need some guidance for the problem of bicyclists being able to get through the entry.

Chair Greenwood commented on the poor design in the photo examples.

Committee Member Jones felt that any language the committee can remove that indicates that this is a requirement for a Class I facility would be beneficial. The design failures in the photos are definitely being perpetuated.

Committee Member Bahadori stressed that the issue is not traffic safety, but security in remote areas.

Chair Greenwood commented that in his case, he had placed bollards only on pedestrian/ bicycle bridges which are not designed for the load of a vehicle. Because of these situations in which a solid barrier is both effective and necessary, there should not be language in the MUTCD that prohibits it.

Secretary Engelmann suggested keeping the language in the manual, but encouraging consideration of a flexible barrier instead of a rigid one.

Vice-Chair Marshall supported the language in the MUTCD.

Committee Member Jones suggested documenting for the CBAC the reason for the barrier installation so that it wouldn't be viewed as simply a hazard.

Committee Member agreed with Vice-Chair Marshall that considering the committee's purview, the language does not need to be changed.

The Committee Members continued the discussion.

> **MOTION**: Committee Member Walter moved to leave the language as is. {A Committee Member} seconded. The Motion did not carry.

The Committee Members discussed placement of the paragraphs.

> **MOTION**: Committee Member Jones moved to reformat paragraphs 4 and 5 into the 1 and 2 positions; language would read *"Generally barrier configurations that preclude entry by motorcycles and motor vehicles present safety and convenience problems for people riding bicycles. Such devices should be used only where extreme problems are encountered or anticipated."* Committee Member Olenberger seconded.

Committee Member Jones accepted the suggestion for a Motion amendment. The wording will be changed to *"…Such devices should not be used except where extreme problems are encountered or anticipated."*

Chair Greenwood relayed Caltrans' suggestion to continue this item until the June meeting; meanwhile they will talk to CBAC and finalize the language.

Committee Member Bahadori pointed out that the section has no reference to *vehicle* barriers creating inconvenience or safety hazards for bicyclists; the reference is for *motorcycle* barriers.

The Committee Members concurred with Chair Greenwood's suggestion to continue the item, meanwhile seeking further input and further refinement of the language.

<u>Public Comment</u>

Mr. Korth noted that a section can be started with a guidance statement. The typical structure is to begin with a support statement. He also noted that Definition 191, Shared Use Path Class I Facility, refers to a design feature and could possibly be removed completely.

ACTION ITEMS (Continuing discussion from prior meetings with vote expected)

None

7. Request for Experimentation

16-06: Request to experiment with bike boxes and Two-stage Left-turn Queue Boxes in the City of Sacramento

David Edrosolan, City of Sacramento, gave a presentation.

- He identified the project location along Carlson Drive at the H Street and J Street intersections.
- In the five years from 2010-1014, there have been 31 crashes, six involving bicycles.
- Challenges are the amount of traffic, roadway configuration, and number of bicycles and pedestrians going back and forth to the university and bike trail nearby.
- The City of Sacramento is looking to better accommodate the bikers and pedestrians, particularly the ability for bikers to make left turns.
- This would be done via bike boxes and two-stage bike boxes. Mr. Edrosolan described how they operate.
- Mr. Edrosolan described the proposed locations.
- The experimentation period would last one year.

Committee~~Commissioner~~ Questions and Comments

Committee Member Fleisch commented that bike boxes across multiple lanes are a concern for cyclists making that lateral movement. He requested for the City to track any crashes and conflicts. He suggested having pedestrian countdown signals that are also visible to cyclists.

Committee Member Olenberger was interested in seeing the signage giving instructions for the cyclist and the motorist on what to do when the stoplight is green or red.

Committee Member Bahadori noted that the concept of motorists at a red light having bicyclists come and stop in front of them is not intuitive. Mr. Edrosolan stated that the City would make an effort to educate the community, specifically the bikers. This treatment has been used in some other cities.

Committee Member Fleisch felt that the project's success would not be the engineering, but the education. Much outreach must be done, more to the motorists than to the bicyclists.

Committee Member Walter suggested a way to simplify the bike box street configuration.

Mr. Edrosolan informed Committee Member Fleisch that there would be a way to detect bicyclists in the queue box.

He informed Committee Member Bahadori that at one location only there would be a No Right Turn on Red. Committee Member Bahadori pointed out other locations where it would be needed.

Public Comment

Mr. Korth gave a summary of how Washington D.C. solved the No Right Turn on Red question.

> **MOTION**: Committee Member Jones moved to approve the Request for Experiment as submitted. Committee Member Tong seconded. The Motion passed unanimously.

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

Committee Member Sallaberry introduced the item. It addresses a safety issue: a condition where Light Rail passengers are alighting or boarding directly from the roadway.

Mr. White gave an overview of Taraval Street, a corridor where Light Rail runs along the surface for about three miles in the center lanes. Most of the stops along this corridor do not have boarding islands. In the few locations where there are boarding islands, there have been no collisions in the past five years. The proposal is to expand the number of boarding islands in this corridor.

In going through the outreach process with the community, SFMTA has found that merchants are very concerned with the potential removal of on-street parking in this dense commercial district.

The two components of this Request to Experiment are an updated sign and a striping treatment involving 8″ solid white cross-hatching along the distance of the train, with a Stop bar at the rear.

The proposed locations are five stops heading toward downtown. All are intersections controlled by stop signs.

At all of the other locations where SFMTA is seeing collisions, the agency is proposing to build boarding islands.

The duration of the experiment should be fairly short: about six months. Actual installation should be low-cost. If it is deemed not effective, the right approach will be to go forward with boarding islands.

Committee~~Commissioner~~ Questions and Comments

Committee Member Bahadori asked about putting stop arms on the trains similar to those on school buses. Mr. White responded that it has been suggested, but it is not easy for the San Francisco fleet to accommodate, and the cost would be prohibitive.

Committee Member Bahadori noted that the signs do not indicate people getting on the train, but only those leaving. Mr. White referred to the California Vehicle Code Section 21756. Committee Member Bahadori felt that picturing the train alone may be more forceful.

Committee Member Walter and Mr. White discussed vehicle behavior.

Committee Member Jones commented that the sign on the train is not legible; he encouraged bigger text. He asked if the trains can have wig-wag lights such as those on buses. Mr. White responded that the technology exists for trains to communicate with traffic lights, but it is not cheap. Committee Member Fleisch suggested using a sensor with a sign reading "Stop Here When Flashing."

Vice-Chair Marshall pointed out that sometimes the trains will stop when it is not a passenger activity.

Committee Member Bahadori felt that anything done to protect pedestrians by way of signage on the sidewalk will not help. The focus needs to be on the train; lighting or a stop arm will probably be cheaper than an island.

Secretary Engelmann asked if it is the intent to have permanent raised islands for the five locations. Mr. White replied that it is the desire of the SFMTA – however, if the proposal is effective, it would meet their needs.

Secretary Engelmann suggested creating a buffer area next to the train and the through lane, and eliminating the parking. Committee Member Jones noted that the agency is trying to solve the problem without giving up the parking.

Chair Greenberg noted that drivers do ignore school buses even in the presence of signs and flashing lights. He also noted that the point of the experiment is to gather information on whether the markings and signs are useful.

Committee Member Fleisch wondered about driver behavior when they come to the hatching – they may not know what to do. Committee Member Jones suggested a pedestrian symbol or a train stencil. The group discussed the issue.

Committee Member Walter felt that the proposed sign was not large enough.

Committee Member Tong noted that the striping will indicate to motorists not to block at any time – a permanent message. SFMTA may want to consider a different striping pattern or a word message.

Public Comment

Mr. Korth supplied the text in the national MUTCD and the state MUTCD (Section 3B.17) for cross-hatching. He explained why the striping would be a concern to use mid-block for a temporary condition. Regarding signs, he pointed out that Section 2A.15 of the MUTCD supplies alternatives to standard signs. The FHWA may ask what has been done in terms of traffic control besides the infrastructure improvements to try to increase the recognition of the signs.

Committee~~Commissioner~~ Questions and Comments

Chair Greenwood asked if the proposal has been submitted to FHWA for experimentation. Mr. White answered that it has not, but they are open to it. The SFMTA has not been able to find any other light rail systems in California that have this situation; Mr. White was unsure of its applicability at the national level.

Secretary Engelmann suggested a series of crosswalk ladder markings.

With all of the ideas the Committee Members were submitting, Committee Member Fleisch suggested that the SFMTA bring an updated Experimentation Request back in June.

Committee Member Sallaberry suggested replacing the cross-hatching with pavement markings such as “Transit Loading Area.”

Committee Member Bahadori felt that signs and markings to the right of the drivers are lost.

Mr. White favored experimenting with Committee Member Sallaberry's suggestion of a combination of the sign, stop bar, and pavement message rather than transverse or cross-hatch markings.

Committee Member Jones favored Mr. Korth's suggestion to include the state law at the top of the sign.

The Committee Members continued discussing ideas with Mr. White.

> **MOTION**: Committee Member Sallaberry moved to approve the Request for Experiment with the replacement of the cross-hatching with "Transit Boarding Area" pavement messages and the inclusion of the state law on the signs. Committee Member Jones seconded. The Motion passed unanimously.

16-08: Request for Permission to Experiment with the Diagonal Down Yellow Arrow Lane Use Control Signal Indications of Freeway

Mr. Nozzari introduced the item.

- The project is along the I-80 corridor between the Carquinez Bridge and the I-580 interchange in Oakland – the most congested stretch in the Bay Area.
- The project showcases the value of system management.
- The cost is $80 million.
- Caltrans is fully committed to see that the project is evaluated and used in other places statewide.

David Mann, Caltrans District 4 Project Corridor Manager, highlighted the importance of the corridor.

- It is the worst commute in the Bay Area.
- The project goal is to alleviate congestion, improve safety, and improve travel time reliability.
- Strategies include active traffic management for the freeways, speed harmonization, lane management, incident management, and adaptive ramp metering.
- New devices include a lane use signal, an information display board, variable message signs, and variable advisory speed signs.
- Caltrans is currently trying to finalize the project with public outreach as well as testing. The goal is to turn the entire system on in late May.

Mr. Mann gave an overview of the proposed Diagonal Down Yellow Arrow (or Lane Signal Indication).

- 11 gantries will be installed over the western portion of the freeway, spaced between ½ and 1 mile.
- They will let the motorist know that down the road a lane is blocked.
- Caltrans is asking for the diagonal down arrow as the best implementation for the signs. A high percentage of motorists find the yellow X confusing.
- Caltrans is going to conduct user surveys to see how the public reacts to the sign. They are also going to look at crash data, monitor the situation, and talk to CHP and the field engineers.

Committee~~Commissioner~~ Questions and Comments

Committee Member Jones asked if the five arrow signs were all being requested. Mr. Mann answered that they were.

Committee Member Sallaberry asked if it is more efficient to have people merge early. Mr. Nozzari replied that this has not been proven; part of the objective is to figure that out. One of the main advantages of getting people out of the lane more quickly is to get emergency responders to the scene of the accident.

Committee Member Jones confirmed with Mr. Mann that speed harmonization is for metering drivers ahead of time so they are not breaking hard. Mr. Mann said there are cameras at every interchange and some in between. The signs are for lane blockages and closures; they won't be on all the time.

Committee Member Olenberger confirmed with Mr. Mann that the sign colors will change from green to yellow to red.

Committee Member Bahadori confirmed with Mr. Mann that the signs are all advisory rather than regulatory.

Mr. Mann informed Committee Member Sallaberry that harmonization will be used first for incidents, and later for recurrent congestion as well.

Mr. Mann confirmed that secondary collisions will be part of the study.

Public Comment

There was no public comment.

> **MOTION**: Vice-Chair Marshall moved to approve the Request for Experiment. Committee Member Olenberger seconded. The Motion passed unanimously.

16-09: Request for Permission to Experiment with the Messages and Graphics on Dynamic Message Signs on Freeway

Mr. Mann explained that Caltrans was proposing to put those specific messages only on information display boards.

- There are six information display boards, 13 1/2′ wide and 16′ tall.
- The signs support both graphics and text.
- They are installed just before major decision points, just before known bottlenecks.

Mr. Mann described the messages and graphics to be used on the information display boards. They are intended to help motorists make more informed choices, as well as to cut down on distracted driving (as people stop using their mobile devices to obtain the same information).

Mr. Mann cited a Texas study showing the effectiveness of using graphics along with the lines of text.

This project will require more field study at the six locations.

Committee~~Commissioner~~ Questions and Comments

Committee Member Jones felt that perhaps the signs contain too much information for the motorist to comprehend. Mr. Mann responded that the drivers are not going at fast speeds,

and that the graphics help in terms of comprehension. Randy Durenberger of Kimley-Horn added that the signs capture two primary destinations only.

Mr. Nozzari explained that the two signs displayed were intended to show the range of things Caltrans can do. Caltrans will be very cautious about how much information they deliver. Motorists will focus on the destination they are interested in.

Chair Greenwood confirmed with Mr. Nozzari that the density of information on the signs can be in context to the speed of traffic.

Committee Member Tong asked about off-peak hours with no congestion. Mr. Mann replied that operating hours will be around 5:00 A.M. to 8:00 P.M.

Mr. Mann stressed that Caltrans was not asking for specific message approval, but for approval of the three concepts.

Committee Member Walter felt that the graphic approach was an improvement over the current monochromatic display. The route shields with colors and numbers are important to see.

Committee Member Bahadori offered a note of caution that the fourth panel gives information that is dynamic (parking information and train departure times).

Public Comment

Mr. Korth recommended steering away from departure times of 15 minutes or less. He also asked about the link-based portion: the speed thresholds for red and green – are they similar to the QuickMap or Google thresholds?

> **MOTION**: Vice-Chair Marshall moved to approve the Request for Experiment. Committee Member Olenberger seconded. The Motion passed unanimously.

16-10: Request for Permission to use wrong-way retroreflective markers for ramp edgelines and ramp directional arrows Type II, III and V

Mr. Bucko presented the information. Last year the San Diego and Sacramento regions saw a large increase in wrong-way incidents. In response, the State Legislature passed legislation mandating Caltrans to update a 1989 study.

- The proposed corridor for the implementations is the Interstate 15 corridor, which had over 200 wrong-way incidents last year.
- Most of these incidents result in serious injury or fatality to the occupants driving the correct way.
- The joint CHP/Caltrans committee came up with suggestions for pavement markings and additional signage.
- The Caltrans Division of Research and Innovation will be instrumenting most of the ramps with video detection.
- Treatments include wrong-way illuminated LED signs, as well red-facing markers in the wrong way direction for ramp arrows and pavement edgelines. The state of Texas has had good results with the latter treatment.
- Caltrans is proposing about 60 ramps with additional pavement marker treatments, including an enhanced treatment for 17 of those. 9 ramps will be instrumented with the advanced LED signage and protection packages.

- Mr. Bucko described the technical installation of the pavement markers and LED markers, which are solar-powered.

Committee~~Commissioner~~ Questions and Comments

Committee Member Walter asked if the arrow markers will become the standard for all freeway onramps; Mr. Bucko answered that they would.

Committee Member Tong mentioned that all components are MUTCD-compliant.

Committee Member Sallaberry was in favor of using red on the edgelines but expressed concern about using it on the arrows – would it affect control of motorcycles? Mr. Bucko answered that they will be evaluating the effect on motorcycles. District 11 does prefer the pencil treatment; they will try them both out.

Mr. Bucko noted that they were also hoping to catch the 200 people per year who are seen going the wrong way, but get off the freeway before they hit someone.

Public Comment

Mr. Korth noted that this is a state-only experiment; the national MUTCD already allows for this kind of treatment. It is the California MUTCD that has the restriction of the red pavement marker.

> **MOTION**: Committee Member Fleisch moved to approve the Request for Permission. Committee Member Tong seconded. The Motion passed unanimously.

8. Discussion Items

None

9. Tabled Items

15-15: Proposal for striping a space for bicycle use at locations with right-turn-only lanes

Secretary Engelmann reported that Caltrans is still developing figures to consider putting into the California MUTCD. He agreed to re-agendize it at an appropriate time.

10. Next Meeting

June 30, 2016
City of San Carlos

11. Adjourn

Chair Greenwood adjourned the meeting at 2:09 p.m.