FAQ: Webinar: Safe Transportation for Every Pedestrian (STEP) June 17, 2021

1. **Question: The goal of Safe Transportation for Pedestrians is to reduce the accidents and fatalities of pedestrians and I noticed that the fatality graphs-based ethnicity and race is huge and skewed. What can we do to help these ethic & race challenged individuals to become safer as pedestrians? And How we can redesign the roads to ensure these populations are not disproportionately impacted? And ensure that they are educated on how to be safe as pedestrians because of the lawless and inattentive drivers?**

Answer: Anthony Boutros, from FHWA is currently working on this issue.

2. **Question: Is the Safe System Approach the same as Goal Zero/Towards Zero Deaths?**

Answer: The Goal is Zero/Towards Zero Deaths and the Safe System Approach is how we get there. SSA is about managing kinetic energy so that when a crash does happen it's not a fatal or series injury. https://safety.fhwa.dot.gov/zerodeaths/zero_deaths_vision.cfm

3. **Question: Is Caltrans challenging speed survey requirements to reduce speed?**

*Answer***:** *Caltrans is currently working on a research project that represents the first steps toward developing a Safe System Approach to setting sped limits in California and replacing the outdated 85th percentile methodology, moving away from using driver behavior entirely to set speed limits. The research team is led by UC Berkeley SafeTREC (Safe Transportation Research & Education Center) and the Vision Zero Network. The project's anticipated completion is February 2022.*

4. **Question: In the data area, "high risk" areas were noted. Is this specifically based upon collision data or is public feedback also considered? We often get the comments about scary areas and locations which are accidents waiting to happen.**

Answer: Collision data as well as other data sources are considered. Public concerns are addressed directly at the district level by the District Traffic Safety Engineer.

5. **Question: How will California develop comprehensive safety and security criteria for pedestrian and bicycling safety, since California does not systematically collect safety data on off-road pedestrian and bicycling paths, but funds these facilities as safety improvements for walking and bicycling?**

Answer: *Caltrans is currently exploring visual inspection methods to collect data for off-system paths. Any concerns related to a specific facility should be directly addressed by the District Traffic Safety Engineer.*

6. **Question: Does the emphasis on walking facing traffic, where there is not a sidewalk, lead to excessive unsafe crossings?**

Answer: I am not aware of research regarding this specific question, but will state if sidewalks are only built on one side of the roadway it may lead to excessive crossings.

7. **Question: Do we need a change to our laws to support crossing midblock?**

Answer: FHWA would encourage making midblock crossings safer since the data shows more than 72% of pedestrian fatalities occur at midblock crossings. There is nothing that is stopping agencies from installing/improving midblock crossings. However, agencies may put a higher priority on vehicle flow/capacity versus pedestrian safety and in these situations laws or policies should be considered.

8. **Question: Does it account for VOLUME of pedestrians crossing at marked crosswalk vs unmarked?**

Answer: Not sure if this is referring to Table 1 or MUTCD or crosswalks in general. Table 1 does not take pedestrian volume into consideration. The MUTCD does provide some guidance on pedestrian volumes for the PHB and then for signals there are warrants.

9. **Question: Maybe people becomes more interested to cross at marked x-walk and exposure of pedestrians get high? False security?**

Answer: The Zegeer study addressed that issue. Looked at a 1000 marked crosswalks and 1000 unmarked comparison sites. Concluded number of lanes, ADT and speeds were the main contributing factors.

10. **Question: Anything we can do to mitigate speeds increases safety overall but specifically for pedestrian/bike?**

Answer: Yes, there are speed mitigation measures. Many of the treatments help slow vehicles down prior to the crosswalk so they will stop or yield for pedestrians. The way the road is designed, parking, curb extensions, number of lanes, narrow lanes, pedestrian refuge islands/median, can all have an effect on the corridor of the speed.

11. **Question: If you have a neighborhood exit between 2 adjacent signalized signals, can you cross there?**

Answer: If the neighborhood exit is a road then yes pedestrians can legally cross there.

12. **Question: If a pedestrian is struck by a vehicle when the pedestrian traveling on the roadway outside of a marked or unmarked crosswalk, is the vehicle at fault or is the pedestrian at fault? Does the California Vehicle Code specify this?**

Answer: The answer to that is it depends on the circumstances of the crash. The vehicle has the right-of-way meaning the pedestrian should yield for vehicles but that doesn't automatically make the pedestrian at fault.

13. **Question: Why aren't more unmarked crosswalks turn into marked ones? How much does it cost generally to do that?**

Answer: There are a lot of intersections on the roadway network and it would be very expensive to mark and maintain them all. Not every intersection has marked or unmarked crosswalks since a crosswalk is an extension of the pedestrian walkway across an intersection. Context is very important since many residential intersections function fine without marked crosswalks.

14. **Question: Due to the typically small number of pedestrian collisions, should not all incidents be captured even if there is no injury, or slight injury. Less severe collisions could be severe except "by the grace of God", and there are uncounted unreported incidents as well. Why is real data being left out?**

Answer: Yes, trying to improve on capturing all pedestrian crashes.

15. **Question: When discussing Raised Crosswalks - what would be the suggested max speed street? 25mph, 30mph probably not 35mph?**

Answer: 30 mph or less, also 2 to 3 lanes and AADT below 9,000.

16. **Question: In the example, why not a stop bar 5 feet back from the crosswalk?**

Answer: A stop bar can be placed 5 feet back from the crosswalk, but the countermeasure being presented is for an Advance stop are or yield lines which helps with visibility issues caused by the multi-threat situation.

17. **Question: Could moving up stop bar reduce capacity of road?**

Answer: I would say it's negligible and would say the safety benefits outweigh the capacity loss if any.

18. **Question: Some cities have diagonal intersection pedestrians crossing, What's your thought on that?**

Answer: These are called the Scramble and they have their appropriate application. Typically, there is a longer delay for the pedestrians since they have to wait for vehicle cycles in one direction and then the other direction before the pedestrians get a pedestrian cycle where they can walk in any direction. Works best when there are high volumes of pedestrians.

19. **Question: Why isn't there more emphasis on the driver's responsibility to slow down before passing a vehicle that has slowed down in an adjacent lane?**

*Answer***:** Good question, there should be more emphasis/education on driver and pedestrian responsibilities.

20. **Comment: There's a project in Fort Bragg and that had large curb radius, so we reduce the right turning curb radius in private street to ensure that the crosswalk design is safe and sound.**

21. **Question: What advice do you have on getting fire depts to support smaller radii? Their concerns have been small radii puts them onto opposing traffic after the turn.**

Answer: Start the discussion with them about. Not suggesting all intersection radius be small but setting the default to be pedestrian friendly not large vehicle friendly.

22. **Question: Can many trucks make tight radii turns by going slower?**

Answer: Yes, on the design program Auto turn if you dial down the speed the radius can be made smaller.

23. **Question: With truck aprons, is there a need for shared roads to guide bicyclists to the smooth portion of the road?**

Answer: I don't think so since we don't provide guidance through roundabouts and we haven't heard of problems there.

24. **Question: Are there any strategies for reducing conflicts between bike/pedestrian and freight trucks, particularly in a rural setting?**

Answer: I think bicyclists may naturally look to avoid vertical deflections and I think truck aprons still have a small 3" vertical height to them. The best strategy for reducing freight/bike conflicts on rural roads that I can think of is providing a wide paved shoulder for bike use...amongst others (go for rural pedestrians too).

25. **Question: Related to the fatality data presented early on, do we have data about how effective these Spectacular Seven features can lower death rates?**

*Answer***:** *Yes, for each of the tech sheets there are Crash Reduction Factors associated with them.*

26. **Question: Are links to the studies that develop pedestrian the CRFs available on FHWA's website?**

Answer: Yes, tech sheets have references to studies. Linked here: *https://safety.fhwa.dot.gov/pedestrian_bike/step/resources/*

27. **Comment: For California - detectable warning at passageway/island refuge is required to be 36" min. deep. Please check CA code for additional information.**

28. **Question: Do you mean that the width of the detectable warning strip is 36"?**
*Answer***:** *Yes, the detectable warning strip in Calif. is required to be 36" deep min. x opening of the passageway. That 36" depth rule applies to the detectable warning tiles, strips, or truncated domes on curb ramps as well.*

29. **Question: Continuous raised medians though encourage people to cross mid-block. I remember Keith mentioning talking about depending on where you've been training to teach crossing the street, here, I wouldn't be teaching my population to cross that way. Will raised medians mostly only be in areas with uncontrolled intersections?**

Answer: *11B-705.1.2.3 Islands or cut-through medians. Detectable warnings at pedestrian islands or cut-through medians shall be 36 inches (914 mm) minimum in depth extending the full width of the pedestrian path or cut-through less 2 inches (51 mm) maximum on each side, placed at the edges of the pedestrian island or cut-through median, and shall be separated by 24 inches (610 mm) minimum of walking surface without detectable warnings. Exception: Detectable warnings shall be 24 inches (610 mm) minimum in depth at pedestrian islands or cut-through medians that are less than 96 inches (2438 mm) in length in the direction of pedestrian travel.*

30. **Question: Continuous raised median is to reduce mid-block crossing and protect drivers from median conflicts? Or does it also provide refuge too.**

Answer: Continuous raised median does provide some refuge where midblock crosswalks may.

31. **Question: Where I can find the slop requirement on both sides of a raised x walk?**
Answer: No requirements on the slope. Traffic Calming ePrimer might be a reference for you https://safety.fhwa.dot.gov/speedmgt/ePrimer_modules/module3pt2.cfm#mod314 as well as the MUTCD regarding the markings and dimensions that can help establish a slope. I'm referencing the CA MUTCD here https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ca-mutcd/rev6/camutcd2014-part3-rev6.pdf Page 759 Figure 3B-30 shows the Pavement Markings for Speed Tables or Speed Humps with Crosswalks and it shows some typical dimensions.

32. **Comment: 4.3.14 Detectable Warning Surface**

(1) Detectable warning surfaces shall be provided at curb ramps and blended transitions at pedestrian street crossings. Detectable warning surfaces shall extend 3 feet [sic] in the direction of pedestrian travel. At curb ramps and blended transitions, detectable warning surfaces shall extend the full width of the ramp run (excluding any flared sides), blended transition, or turning space.

[PROWAG R208.1(1), PROWAG R305.1.4 and detectable warning surface depth per Standard Plan A88A and A88B]

33. **Question: When we are designing the crosswalk where the building is at the corner of the sidewalk 6 ft and 6 ft wide and there is no room to install 36-inch warning strip, what can we do? Should we reduce that strip to 24 inch or continue using 36 inch per code?**

Answer: Without seeing the design/place for myself, I say that if you can't fit an ADA device in the allotted space, document the conflict and use the 24" wide domes.

34. **Question: Regarding the RRFB blanket approval. There is a blanket approval for IA-21 to use RRFBs statewide in California. What's about in-pavement crosswalk lights with flashing beacon?**

Answer: Flashes would be beneficial if implemented at a minimum distance well ahead of the crosswalk; this alerts the driver ahead of time. Both pedestrians and vehicles would benefit from an alert system ahead of their approach. You can have an advanced RRFB but you still need to have an RRFB at the crossing. RRFB pushbuttons still must comply with MUTCD standards on accessible locations within the curb return.

35. **Question: Are additional advanced warning signs necessary for the PHB or is the signal designed to be visible for an appropriate distance?**

*Answer***:** *Depending on the situation advanced warning signs could be used. The PHB should be designed to be seen from an appropriate distance.*

36. **Question: Do the pedestrian-buttons for the Beacon have to be APS as well?**

Answer: Depends on what regulations you are looking at. I like to reference the ADA which states, "The ADA prohibits discrimination on the basis of disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications. It also applies to the United States Congress." I don't know of another option than APS but if there is then the answer to the question would be no.

37. **Question: For new developments where new roads intersect with existing roads, can PHBs be used as a temporary Pedestrian crossing measure on a signal mast arm until a signal is warranted?**

Answer: Yes, PHB's can be used at intersections. Either temporary or permanent, however an engineering study should be done. See information in the MUTCD. Often times a solution is considered before analyzing the problem so could something else, maybe less effective be done? Consider using Table 1 of the STEP Guide.

38. **Question: Is PHB for mid-block or at intersection as well?**

Answer: PHB's can be installed mid-block or at intersections but in either case an engineering study should be done.

39. **Question: What's about signage?**

Answer: The MUTCD provides information on what signs are required and optional.

40. Question: When was PHB allowed for use on the road?

Answer: It was first introduced in the 2009 MUTCD but experimentation was given prior to that time. The first installation was in 2000 in AZ.

41. Question: Is PHB and RPHB included in CA MUTCD (latest version revision no. 6)?

Answer: Yes to PHB https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ca-mutcd/rev6/camutcd2014-part4-rev6.pdf

The RRFB is under Interim Approval 21 and CA has applied to use them. https://mutcd.fhwa.dot.gov/resources/interim_approval/ia21/index.htm

42. Question: How much to install a PHB system?

Answer: Costs for PHB can range from $80k to $100k depends on a variety of factors. There is a solar option now that is less expensive, around $26k just for the equipment. Note mast arms, ROW, curb ramps and other factors need to be considered.

43. Question: For new construction, for example with a planned transit stop, what assumptions can be made about the need for pedestrian crossings and signals as part of the original construction?

Answer: Yes, PHBs can be used at intersections but the PHB can control only one crosswalk. To keep it simple, regardless of your transit mode, wherever you have a stop/station you usually have a crossing. Meaning people are going to cross the roadway at the transit stop. So, we need to have transit stops located in areas with good sight lines and as close to a crosswalk as possible.

44. Question: Is blank signal considered 4 ways stop for PHB?

Answer: A blank PHB is not considered the same as a stop sign. Drivers are to ignore a blank PHB or any other blank beacon.

45. Question: I've been told that each additional travel lane on a road adds significantly less capacity than the first lane in each direction. Is this correct? I would like more specific information on the additional capacity provided by additional lanes.

Answer: Answer in parts-Part A: It is true for turn lanes. A single turn lane efficiency is 1.0, an added second lane is only 0.80, and a triple left (3rd lane) is 0.7. So, a triple left turn is 2.50 not 3.0. While this may seem, small actual results are likely even worse because of lane utilization; typically, it is heaviest in the rightmost left turn lane. Observe next time you take a walk. The majority of left turners will move one lane from a through lane to the first left turn bay. Fewer drivers will move over to a second lane or much less so a third lane. Part B: I'll need to verify the loss of efficiency for through lanes, but I don't think it is the same. However, for midblock capacity compared to approach lane capacity at a signalized intersection, the number of passenger cars per lane per hour drops from 1800 to 600. But for free flow segments I don't think a similar reduction in capacity is applicable. Capacity is a moving target for segments and depends on upstream and downstream traffic generators, lane widths, obstructions near the travel way, % trucks, etc.

46. **Question: What is the biggest disadvantage of Road Diets?**

*Answer***:** *In terms of road diets, it depends on the land use and driveway density along the road. For a 4-lane roadway with a lot of driveways generating a lot of left turns, operationally it functions like a 3-lane roadway because the inner lanes backup whenever a left-turning car is waiting for a gap. You know if done right I don't know if there is one. Maybe some vehicles can't speed, but is that a disadvantage. Some people may be uncomfortable with change, but that's why the public involvement process is done.*

47. **Question: Does intersection and pedestrian signals come with sensor built in that will detect/sense the pedestrians still walking or taking long time to walk at the intersection or crosswalk that will also delay the traffic signal timing?**

*Answer***:** *The technology is available but not sure how widely it is used.*

48. **Question: How is pedestrian safety at the roundabout?**

Answer: Roundabouts that I've observed, it seems like the pedestrian crossing is upstream of vehicles entering the roundabout, so pedestrians will be seen first. After they have cleared, vehicles can enter traffic flow within the roundabout. If the Roundabout is designed properly it should have slow speeds for vehicles at the entry, through and exit. About 15 to 20 mph. Those vehicles will yield/stop for pedestrians. If vehicle and pedestrians crash it is more likely it will be survivable. Single lane roundabouts are safer than multi-lane roundabouts, since there isn't the multi-threat situation. Lastly, roundabouts are safer than traditional intersections because of less conflict points.

49. **Question: Any light assessment needed for roundabout?**

Answer: Yes, lighting assessment should be done for the engineering study.

50. **Question: Would you recommend no right turn on red for LPI signals?**

Answer: *Yes, restrict RTOR with LPI.*

51. **Question: Does each agency/city decide on their own if they want to implement this? I find this should be done across the state.**

Answer: Yes, the decision is made by the agency that has jurisdiction for the signals.

52. **Question: What is APS?**

Answer: APS = Accessible Pedestrian Signals. APS uses techniques and devices to convey crossing information to the visually impaired.

53. **Comment: The Caltrans Active Transportation Plans are a great place for folks to share specific locations where active transportation improvements are needed on, across or parallel to the SHS. Each District has its own survey. Please share!**

Resources:

https://scag.ca.gov/go-human

https://scag.ca.gov/go-human-get-involved

https://scag.ca.gov/sites/main/files/file-attachments/scaggohumanmediakit_2018.pdf?1604884174

https://dot.ca.gov/about-caltrans/executive-biographies/director

https://www.catplan.org/

https://safetrec.berkeley.edu/tools/street-story-platform-community-engagement

You may sign up for ATRC mailing list: https://apps.cce.csus.edu/sites/cce/reg/?CID=2086

CMF clearinghouse at http://www.cmfclearinghouse.org/

https://safety.fhwa.dot.gov/pedestrian_bike/step/resources/

Caltrans 2020-24 Strategic Plan - https://dot.ca.gov/-/media/dot-media/programs/risk-strategic-management/documents/sp-2020-16p-web-a11y.pdf "We strive to make the year 2050 the first year without a single death or serious injury on California's roads"

https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ca-mutcd/rev6/camutcd2014-rev6.pdf

AB-1238 https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1238

Truck apron white paper Peter mentioned: https://altago.com/wp-content/uploads/Corner-Design-for-All-Users_Alta_Sept-2020.pdf

Caltrans developedestrian the Contextual Guidance for Bike Facilities last March - https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/planning-contextual-guidance-memo-03-11-20-a11y.pdf