

Local Road Safety Training – March 3, 2021

Chat Discussion

- 00:26:56 Steve Pyburn: FHWA Proven Safety Countermeasures
<https://safety.fhwa.dot.gov/provencountermeasures/>
- 00:28:43 Denice Hutten: Municipal Project Management (CIP)
- 00:29:01 Tracy Coan: Poll responses (Other): I'm with a surveying and mapping consultant (we do both design and construction) and am interested in safety information related to highway/roadside work in general.
- 00:29:23 Tracy Coan: Poll Response - I work in Encroachments
- 00:44:24 Tracy Coan: You will find the training materials at this Portal URL --
<https://apps.cce.csus.edu/portal/?forumID=6246>
- 00:46:47 Hillary Isebrands: Link to FHWA Safe System Approach -
https://safety.fhwa.dot.gov/zerodeaths/zero_deaths_vision.cfm
- 00:55:00 Kathryn Kleinschmidt: I wonder the effects with COVID in regards to bicycle and pedestrian collision trends. Vehicle trips were reduced but alternate modes might have increased. Not sure if you have 2020 data yet.
- 00:59:56 Tracy Coan: @Diana Shu, one older study (2009) found intersections controlled by regulatory signs had a higher number of fatalities than signals and intersections with no controls.
- 01:02:34 Steve Pyburn: 2020 data is not available yet, and it may prove to be an anomaly. Early data shows lower VMT but higher speeds in some areas, and higher bike activity.
- 01:02:44 Steve Pyburn: Only 8 known ped and bike fatalities in the US at roundabouts. Total for all years!
- 01:04:02 diana shu: When would we not use a raised crosswalk? Speed? visibility? Other?
- 01:04:43 Ria Lo: Why were the first three not proven countermeasures?
- 01:05:43 Steve Pyburn: Raised crosswalks are typically installed on 2-lane or 3-lane roads with speed limits of 30 mph or less and annual average daily traffic (AADT) below about 9,000. Raised crossings should generally be avoided on truck routes, emergency routes, and arterial streets.
https://safety.fhwa.dot.gov/ped_bike/step/docs/techSheet_RaisedCW2018.pdf
- 01:10:46 Matthew Bomberg: Is there any research into the pros/cons/benefits/drawbacks of placing push buttons in a median island when combining an RRFB and median refuge island?
- 01:11:49 Aruna Bodduna: RRFBs are said to have high compliance, why is it NOT considered a proven safety countermeasure
- 01:14:22 Hillary Isebrands: FHWA has featured many of these strategies under the Every Day Counts - Safe Transportation for Every Pedestrian (STEP) initiative - more information on these 7 strategies can be found at this link.

https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/step2.cfm Additionally, FHWA will be releasing an update to the Proven Safety Countermeasures in the very near future!

01:15:51 Steve Pyburn: PPBs would typically be used on a median of a road where the pedestrian will not have enough time to cross the whole street. Depending on the situation, it may be beneficial to have a button in an island to extend the flashing time of an RRFB. Not sure that topic has come up before. That is a great question for the ITE forum.

01:16:16 Colin Clarke: Thank you so much; this is helpful! Is "proven safety countermeasure" confusing to the general public? a measure counter to safety: seems to have internal conflict within the term - negating itself? Is it OK locally to use "Safe Systems Action Toolbox" instead? Are there other alternative phrases?

01:16:39 Steve Pyburn: FHWA Proven Safety Countermeasures

<https://safety.fhwa.dot.gov/provencountermeasures/>

NHTSA Data Visualization Tool

https://explore.dot.gov/views/DV_FARS_PD/Home?.iid=1&:isGuestRedirectFromVizportal=y&:embed=y

Safe Transportation for Every Pedestrian (STEP)

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

STEP Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

https://safety.fhwa.dot.gov/ped_bike/step/docs/STEP_Guide_for_Improving_Ped_Safety_at_Unsig_Loc_3-2018_07_17-508compliant.pdf

Bikeway Selection Guide

https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa18077.pdf

Road Diet Informational Guide

https://safety.fhwa.dot.gov/road_diets/guidance/info_guide/

01:16:46 Ken Kochevar: Ria, Every 3 - 4 years since 2008, FHWA convenes to discuss what countermeasures should be listed as "proven safety countermeasures". Currently, we are going through the 4th iteration. Another 7 should be announced soon. When the committee is deciding which ones should be elevated to this level, we look a lot at studies that have been done that show very good results in regards to CRFs. We also factor in costs to implement and how many states or locals are implementing the countermeasure. It is not an exact science. We can't include everything or nothing would be a high priority or PSCs. If the first three show promise, they would definitely be discussed. Stay tuned. You may see some of these in the next rollout.

01:17:58 Steve Pyburn: La Jolla Boulevard case study for road diet that included roundabouts to reduce delay and improve safety. <https://www.pps.org/article/road-diet-la-jolla-a-jewel-of-a-street>

01:18:13 Blake Kloczl: Why has FHWA not considered dynamically adjusting crossing time using microwave sensors for roadways?

01:21:46 Hillary Isebrands: Thanks Colin - as a follow up to Steve's comments - we also use the term "Solution" and "Strategy." You will see this when I speak this afternoon on LRSPs.

01:22:58 Ofurhe Igbiniedion: I think it's 'counter' to collisions, right?

01:23:06 Colin Clarke: Yes, helps - Thank you!

01:24:47 Ofurhe Igbiniedion: Is there evidence the RRFBs cause more of the crashes Maria Bhatti described where the second car goes around because they don't see why the first car stopped?

01:25:53 Julia Malmo-Laycock, San Mateo County: Maria thank you for the presentation - extremely informative!

01:26:12 Lynne Filson: Have you had any liability issues with putting in one of these countermeasures at one location and there was a ped accident at another location

01:27:52 Tim Snellings: Besides shoulder widening, what are some common Ped/Bike countermeasures you see applied on rural roads?

01:28:11 Ria Lo: Given the effects of speed, does FHWA have a perspective on the 85%ile rule?

01:28:34 Julia Malmo-Laycock, San Mateo County: +1 to Ria's question

01:29:01 Steve Pyburn: The purpose of RRFB is to increase awareness by drivers that there are pedestrians crossing the street, especially with ped crossing signs and RRFBs on both sides of the street.

01:29:17 Alejandra Belalcazar: +1 to Tim's question

01:30:55 Cory Peterson: I would also like to know more about ped/bike countermeasures in rural areas as asked above

01:31:21 Maria Bhatti: Thanks Julia. I am glad it was helpful.

01:32:24 Colin Clarke: Does a City Council have a legal right to modify or reject a staff recommendation to increase a posted speed limit based on an 85th-percentile study analyzing observed speeds?

01:32:27 Lynne Filson: Thank you.

01:32:46 Mike Bagheri: road diets also lower vehicular speeds reducing the severity of peds injures!

01:33:00 Hillary Isebrands: @Diana Shu - I am not sure what 2009 study you are referring to regarding intersection safety; however, two-way stop control, all-way stop control, signals (with varying phasing and design options) and roundabouts (both single lane and multi-lane) all have unique crash reduction factors. Some additional sources of research/crash reduction factors in this area are included in the Highway Safety Manual, NCHRP Report 572, NCHRP Report 888, as well as publications and resources found at our FHWA intersection webpage - <https://safety.fhwa.dot.gov/intersection/>. Additionally, Caltrans has intersection safety rate groups for B/C analysis. Ivy and Steve are going to speak more to intersection safety later this morning.

01:33:19 Joel Slavik: I understand multi-lane roundabouts can be more stressful to bicyclists than single lane roundabouts. Are there specific treatments you'd recommend for multi-lane roundabouts that are different than single lane roundabouts?

01:34:43 Robert Peterson: Concerning road diets, we have had some safety projects in past cycles where there was pushback from the community that was going to be affected by this change and the safety project had to be canceled. So before going forward with the roadway reconfiguration (road diets), there may be a need to do some public outreach before an application gets submitted.

01:34:45 Ben Frazier: FHWA's Small Town and Rural Multimodal Networks Guide has a lot of good information on that topic - https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/page00.cfm

01:34:50 Tim Snellings: Great suggestions...on rural, thanks

01:36:21 Mike Bagheri: in Europe most ped xings are away from the intersections that improves line of sight similar to roundabout xings. why this practice is not implemented in US?

01:51:39 Tracy Coan: YouTube Safe Systems Approach. <https://www.youtube.com/watch?v=MigxAs0KjBw>

01:52:51 diana shu: Thank you!

01:52:58 Hillary Isebrands: @JoelSlavik: regarding bicyclists at multi-lane roundabouts. NCHRP 672 Roundabouts: An Information Guide (Chapter 6, Exhibit 6-67) does provide general guidance for treatments of bike lanes/shoulders in advance of multi-lane roundabouts. Bicyclists have the option to move from the bike lane/shoulder/outside lane and take the desired approach lane or leave the roadway and navigate the intersection on a multi-use path/sidewalk. There is a range of distances provided for design consideration for a bicyclist to safely transition to one of these options (i.e. distance to change lanes, separation between bike ramp and crosswalk). The skill level of the bicyclist may determine which option they choose to traverse the roundabout. For multi-lane roundabouts it is ideal to provide both options to the user. Education of roundabouts in the community is always important as part of implementation, particularly if roundabouts are not common in your area. If you have a more specific question or example, please contact us.

02:05:46 Steve Pyburn: Justin, I am not aware of such feedback. I do know the flash rates of RRFBs are very specified in the MUTCD and are based on human factors research. I am familiar with the flashing STOP signs in Rocklin on Blue Oaks Boulevard but am not aware of how the flash rate for those were developed. I do think your STOP signs are effective in getting driver's attention.

02:06:44 Ken Kochevar: HFST, when using the fully automated method, should last between 8 - 10 years.

02:08:49 Sarah Kolarik: Are there any best practices or use cases for using rumble strips or raised pavement markers adjacent to bicycle lanes (Class II or IV)?

02:08:59 Ken Kochevar: Recommend staying away from placing HFST by hand when possible unless a very small area (< 200 sq yds). Manual placement leads to quality issues.

02:09:16 Mario Barragan: Is there a limit on the rumble strips?

02:09:38 Ying Smith: Does high friction surface treatment apply to bicycle lanes? Wet pavement is a concern for bicyclists as well.

02:09:56 Gerardo Rodriguez: Where are these rumble strips mainly recommended within the roadway network?

02:10:46 Reuel Brady: Are rumble strips a problem for bicyclist?

02:12:04 Gerardo Rodriguez: How do we incorporate these rumble strips with like lane reductions or as Reuel Brady mentioned above?

02:14:39 Jesse Peoples: Do you see Caltrans developing guidelines for transverse rumble strips (for example to supplement warning signs on higher speed roadways)? So far, they only have standards for temporary transverse rumble strips for construction traffic control.

02:15:21 Steve Pyburn: Reuel, I can answer as a cyclist. Yes, rumble strips can be a pain for cyclists. However, the revised Caltrans guidelines include breaks in the rumble strip to allow bicyclists to cross. If a rumble strip keeps a driver from straying onto the shoulder where bikes and peds may be, then that makes the inconvenience worth it.

02:15:59 Kathy Kleinschmidt: Feedback from CHP in Modoc County was he noticed braking after vehicles transitioned from HFST to regular pavement and asked that a better transition be provided to help with driver's reaction to the different pavement (feel and additional noise with the friction treatment).

02:20:36 Bjorn Gripenburg: Re: Steve's note above, yes, rumble strips can help protect people on bikes, but it's essential that shoulders be kept clear of debris or other obstructions so that bicyclists don't have to abruptly exit the lane along stretches with rumble strips. They're extremely jarring to ride over.

02:21:58 Bjorn Gripenburg: (Speaking from experience having ridden on SR-12 between Santa Rosa and Sonoma plenty of times -- there are some sections where the shoulder narrows and the rumble strips create a real challenge)

02:25:19 Ken Kochevar: Moon, we are looking at the edge of paved shoulder as there shouldn't be items within the shoulder.

02:26:32 Ken Kochevar: Ying, we have seen HFST used on bicycle lanes, but it is limited. More of this is colored pavements to delineate the bike lane.

02:27:00 Ken Kochevar: Kathy, Caltrans is looking at continuous friction measurement equipment which will tell us exactly where to start and stop the HFST. Hopefully this will prevent issues in the transition. This is the first I've heard of noise and feel from the driver. Thanks-

02:28:48 Su Shu: Are there any approved cable barrier types by Caltrans? What is the typical situation for cable barrier application? steep shoulder?

02:30:07 Tracy Coan: Virtual Booth:
https://safety.fhwa.dot.gov/local_rural/tribal/Local_Rural_Local_Road_Virtual_Trade_Show.pdf

02:33:06 Tracy Coan: Resources: https://safety.fhwa.dot.gov/roadway_dept/

02:35:37 Julia Malmo-Laycock, San Mateo County: Thanks very much Ken and Robert for the presentation. Is there a cost associated with the more specific, in-person training opportunities you mentioned are available?

02:38:18 Ken Kochevar: Julia, No cost to us. We just need to find a time and place if out of COVID. Please contact us if interested. BTW, I will be retiring May 31st so you need to hurry if you want me involved.

02:39:35 Cory Peterson: Thanks for the info on HFST, especially the Del Norte County case study. Are there any good case studies or best practice uses for HFST in urban/suburban areas maybe not on curves? (ie. intersections)

02:39:39 Julia Malmo-Laycock, San Mateo County: Thanks Ken! Congrats on the upcoming retirement. Another question: I'm curious about whether you have any info about whether the number of fatality/ severe injury collisions are distributed different by race across the three topic areas being covered this morning

02:44:04 Chanda Singh: Thanks for the presentation! I'm curious - has there been any research on whether vehicle speeds increase with the provision of larger clear zones?

03:06:24 Ken Kochevar: Chanda, I have not seen any studies on vehicle speeds increasing when there are larger CRZs, but that doesn't mean there aren't any. Intuition would tell me that when a driver can see what is around the corner versus not being able to see around the corner, that their speed probably would increase. That is why we have speed limits and advisory signs!

02:45:25 Robert Peterson: For HFST in urban/suburban areas, many agencies are installing it on curves on urban roadways and approaching intersections, especially where posted speeds are 45 mph or higher. I know Caltrans D11, San Diego placed HFST at locations approaching signalized intersections on an expressway. Not sure the state route.

02:47:44 Steve Pyburn: While we wait, do any of you see a lot of resistance towards roundabouts? If so, what are the arguments against them?

02:48:40 Zack Azzari: Roundabouts work great in Europe and other countries.

02:49:09 Steve Pyburn: Proven Safety Countermeasures
<https://safety.fhwa.dot.gov/provencountermeasures/>

02:49:36 Robert Peterson: Cable barriers have been typically installed at locations on freeways with wider medians, typically 45 feet or greater. Don't know of any cable barriers being installed on outside shoulders.

02:50:08 Steve Pyburn: FHWA Intersection Safety website
<https://safety.fhwa.dot.gov/intersection/>

02:58:27 Steve Pyburn: All that energy has to go somewhere in a crash. People are not good at absorbing energy!

03:00:16 Steve Pyburn: In 2016, Caltrans did a before and after study of crashes of roundabouts on state highways. At that time, they found a 100% reduction in Fatal and Serious Injury crashes and 67% reduction of total crashes.

03:02:31 Robert Ovadia: Where can we find guidance on minimum roundabout sizes in right-of-way constrained areas?

03:02:47 Ken Kochevar: As mentioned earlier on edge lines, when going from a 4" to a 6" edge line on a 2-lane rural road, yields a CRF of 17.5% for all severity crashes and a CRF of 36.5% for all F + I crashes per Park CMF ID 4736 and 4737. Please consider this countermeasure when restriping!

03:04:16 Theo Sanchez: Might be an ignorant question but is there any effort made to restrict ped movement within a roundabout to only a counter-clockwise direction? Many drivers going thru a roundabout are not focusing on what's happening to their right

03:07:15 Steve Pyburn: NCHRP 672 has design guidelines. Other sources, like the Kansas State University List-serve also includes discussion on roundabout topics, including design advice. Here is the NCHRP report: https://mdotcf.state.mi.us/public/tands/Details_Web/nchrp_rpt_672-%20fed%20roundabout%20guide.pdf

03:07:36 Kathy Kleinschmidt: For pedestrian crossings at a roundabout I know there was push to have them controlled with a pedestrian hybrid beacon for the visually impaired. Is there any more updates on this? It would be very expensive to have those controls in place.

03:08:44 Steve Pyburn: Peds have a simpler task at roundabouts. They only have to look one way at a time for cars, cars are going slower, and there are fewer lanes to cross at a time. This helps them make better decision before crossing.

03:10:00 Jae Riddle: How will RCUT's influence goals toward reducing VMT? A left turn lane in the image provided appears to add 0.5 to 0.75 mile per vehicle

03:10:06 Sarah Kolarik: Are there any resources or best practices for installing mini roundabouts on neighborhood streets?

03:10:07 Hillary Isebrands: @Robert Ovadia - mini roundabouts (full mountable center islands) have a diameter range from 45-90ft. For single lane roundabouts (non-mountable center islands) the typical diameter range is from 90-180ft. We tend to refer to roundabouts in constrained environments "compact" roundabouts. Robert Peterson and CA LTAP are hosting a webinar on compact designs featuring Washtenaw County, MI.

03:12:12 Chanda Singh: Are there any specific design considerations for roundabouts where there are disproportionate traffic volumes (e.g., major 25k v. intersecting minor street 5k)?

03:12:59 Raquel Mendez: probably it is a different topic from the safety presentation but I was wondering about speed humps or speed bumps. are they considered to be a counter measurement? Any study where can be found on the FHWA site and recommended by you to learn more about and able to educate public?

03:13:08 Steve Pyburn: Proven Safety Countermeasures

<https://safety.fhwa.dot.gov/provencountermeasures/>

FHWA Intersection Safety Case Study

https://safety.fhwa.dot.gov/intersection/innovative/roundabouts/case_studies/fhwasa09013/

Guidelines for Timing Yellow and All-Red Intervals at Signalized Intersections (NCHRP Report 731)

<http://www.trb.org/Publications/Blurbs/168017.aspx>

FHWA Traffic Signal Timing Manual

<https://ops.fhwa.dot.gov/publications/fhwahop08024/chapter4.htm#4.5>

Restricted Crossing U-Turn Intersection

https://safety.fhwa.dot.gov/intersection/alter_design/pdf/fhwasa14070_rcut_infoguide.pdf

FHWA Safety website

<https://safety.fhwa.dot.gov/>

03:13:19 Hillary Isebrands: @SarahKolarik - Mini roundabouts and compact roundabouts are the most common in lower speed neighborhood environments. FHWA has guidance on mini roundabouts as well as using NCHRP 672 (Roundabouts Informational Guide) and focusing on the lower range of the diameters. There are examples on both the FHWA website and in NCHRP 672. -

<https://safety.fhwa.dot.gov/intersection/innovative/roundabouts/>

03:13:31 Cory Peterson: Can the link to the video at the beginning of this section on intersections also be shared?

03:14:00 Tracy Coan: Principles of Intersection Safety

<https://www.youtube.com/watch?v=6B8gmCpMXMw>

03:14:03 Thien Pham - County of Santa Clara: Going back to using microwave sensors at signalized crosswalks to dynamically adjust pedestrian crossing times, the sensors would be used to provide dynamic crossing time extensions, in addition to the required clearance times, as demonstrated by on going efforts in Santa Clara County at expressway and non-expressway signalized intersections.

03:16:13 Thien Pham - County of Santa Clara: A demo video link:

https://www.youtube.com/watch?v=HO5uEoYD_Eg&feature=youtu.be

03:18:52 Hillary Isebrands: @KathyK - there are several treatments that have been studied at multi-lane roundabouts for pedestrians related to accessibility. Those include Pedestrian Hybrid Beacons, RRFBs, raised crosswalks. Studies such as NCHRP 674, NCHRP 834, FHWA TOPR34 -

<https://safety.fhwa.dot.gov/intersection/innovative/roundabouts/docs/fhwasa15069.pdf>

03:20:59 Hillary Isebrands: FHWA Mini roundabout summary -

<https://safety.fhwa.dot.gov/intersection/innovative/roundabouts/fhwasa10007/fhwasa10007.pdf>

03:21:57 Lynne Filson: What is a good document to look at for spacing of speed humps?

03:22:59 Hillary Isebrands: 2019 Mini Roundabout Symposium (go to the bottom of the page for links to presentations) - <http://ctt.nonprofitsoapbox.com/2019miniroundaboutsymposium>

03:23:15 George White: for roundabout questions to the listserv you can email your questions to ROUNABOUTS@LISTSERV.KSU.EDU

03:23:58 John Everett: Has anyone successfully installed a multilane roundabout in your jurisdiction. I've seemed them used in Europe/Asia. but not so much here in CA.

03:24:46 Colin Clarke: Long Beach has a multi-lane roundabout

03:25:11 Christopher Rider: Los Angeles has one on Riverside Drive.

03:26:18 John Everett: Thanks, cross streets are helpful.

03:26:18 Christopher Rider: <https://www.atlasobscura.com/places/riverside-roundabout>
We have not yet been successful at removing a signal and replacing it with a roundabout.

03:26:42 Hillary Isebrands: Here is a link to a roundabout database if you are interested - <https://roundabouts.kittelson.com/> (It also has traffic circles and rotaries in the database)

03:27:45 Ofurhe Igbiniedion: Will the resource links from the first presentation be posted?

03:27:56 Julia Malmo-Laycock, San Mateo County: Burlingame, CA (in San Mateo County) implemented a roundabout in 2018: https://www.burlingame.org/business_detail_T54_R40.php

03:28:03 Colin Clarke: Does FHWA have baseline collision data and guidance on how local agencies can encourage or require CIDs/HOAs to implement strategies to reduce the number of severe injuries (and close-calls) on thousands of miles of privately owned & maintained streets within community-interest-developments? (commonly known as homeowners associations/HOAs, which have jurisdictional control over 20% of Californians' home neighborhoods (14.1 million residents) throughout California). 60-80% of new construction is in an HOA.

03:28:18 Justin Nartker-City of Rocklin: Rocklin, CA has to two multilane roundabouts on Rocklin Road, with another one about to go out to bid.

03:28:38 Ofurhe Igbiniedion: With all this data-driven anti-collision funding and improvements, why do we think collisions have been increasing?

04:35:23 Zack Azzari: Are there any available California Roundabout case studies, you can share with us?

04:37:32 Frances Neade: Do the local road safety plans need to be adopted by our board of supervisors?

04:40:43 Robert Peterson: Yes, we highly recommend having your Board of Supervisor or City Council approve / adopt the plan.

04:40:59 Ken Kochevar: Frances, Yes, that is our goal, that a Board approves your Plan so there is buy-in from all above.

04:46:36 Lisa Foster: City of Alameda passed a Vision Zero policy and the Action Plan is in progress. Resources here: <https://www.AlamedaCA.gov/VisionZero>

04:48:00 Kathy Kleinschmidt: GHD is working on several Local Road Safety Plans. We have one adopted (Shasta Lake), a draft that is on a website for public comment, and several other in the beginning to mid stages. I really enjoy this process. Also, wanted to note we are complimenting CA SHSP in using the 5-E's (engineering, education, enforcement, emergency response, and emerging technologies).

04:49:07 Ken Kochevar: Thanks Kathy. Glad to hear you are incorporating the 5 Es!

04:51:11 Kathy Kleinschmidt: Here is the link for the Shasta Lake LRSP
<https://www.cityofshastalake.org/DocumentCenter/View/2889/Final-Shasta-Lake-LRSP---w-Appendices>

04:59:45 Tim Snellings: Does anyone have a simple RFP/RFQ for a LRSP?

05:02:00 Lee Reis: @Tim - I just sent out two RFPs for LRSPs

05:02:29 Kathryn Kleinschmidt: Here is a link to a public facing website used for community engagement for City of Waterford's LRSP (also developed by GHD)
<https://lrsp.mysocialpinpoint.com/waterford/lrsp>

05:04:11 Aruna Bodduna: How often does LRSP needs to be updated?

05:05:02 Aruna Bodduna: The reason I ask is if Federal guidelines on proven countermeasures are being updated every few years, is there also a need to update/revise LRSP as needed

05:05:54 Kathy Kleinschmidt: Great question. Our approach has been the agencies preference but most our a formal update every 5 years but this is a living document that can be updated as needed.

05:07:35 Ken Kochevar: Aruna, Good question. We have discussed this and there is no exact timeline, but we are looking at a 5-yr. max. which mirrors the SHSP update. Most definitely if you see new countermeasures or issues arise, you can modify this at any time. This should be a living document.

05:12:23 Erika McLitus: My organization is looking at doing a countywide safety plan with LRSPs for each jurisdiction (7 cities pooling resources). Recently, we've had a few stakeholders question whether or not we would be better served by Vision Zero Action Plans instead of LRSPs. What are the primary differences in these approaches?

05:12:32 Aruna Bodduna: do you have any suggestions on gathering "near miss" data?

05:14:55 Christopher Rider: In the aggregate it's hard, at a spot location I've been trying to get a contract with microtraffic who does video analytics for near miss. There're a few other companies doing that as well.

05:16:33 Ken Kochevar: Erika, need to let Hillary and Robert give their take on this, but with my limited involvement in both, the VZ AP seems to focus more on speed and in urbanized areas. I'm more familiar with LRSPs being in rural areas, but know they are developed in urbanized areas too. Both are acceptable to meet the requirements of applying for HSIP funds.

05:16:43 Tracy Coan: <https://safety.fhwa.dot.gov/LRSPDIY/>

05:16:55 Reuel Brady: Here is the link to Marin County's LRSP
<https://www.marincounty.org/depts/pw/divisions/transportation/transportation/roadway-safety-review>

05:17:11 John Saelee: Is there a LRSP deadline for HSIP Cycle 11 applicants?

05:18:22 Lisa Foster: @Aruna, the City of Alameda worked with consultants to create an interactive map where people submitted near-miss experiences. But that was a one-time effort requiring \$\$\$. In the long run, we are considering re-working our SeeClickFix system to allow people to report near-miss experiences there.

05:19:16 Reuel Brady: Above is the attachment where Marin County is going with a towards zero program.

05:19:17 Aruna Bodduna: Thanks for your suggestion. We are in the process of developing LRSP for City of Mountain View.

05:21:15 Leah Greenblat: Can you provide more information on how Marin County found the data that showed they were experiencing more bicycle collisions than they thought?

05:23:56 Lisa Foster: +1 Leah's question re bicycle crash data. Sounds like they captured crashes that weren't in SWITRS. Hospital data? Surveys?

05:25:39 Ken Kochevar: Leah, I don't have that specific information, but feel free to contact Reuel from Marin at RBrady@marincounty.org to ask.

05:29:01 Robert Peterson: Cycle 11 call for projects will occur around March/April of 2022 and selecting applications for funding will be around Sept/Oct 2022. The approved plan will need to be in place when cycle 11 project selections are made. However, it would be good to see HSIP project applications from the plans, even though they may be draft but will be approved later in 2022.

05:29:35 Lisa Foster: Do LRSPs need to include specific projects? The plan my city is developing is designed to guide all our transportation efforts and doesn't get into individual engineering projects. It has all the other elements you've mentioned (data, partners, locations in the form of high injury corridors and intersections, etc.)

05:30:28 Erika McLitus: County Transportation Agency working with suburban cities

05:30:59 Reuel Brady: Leah - Marin included a rep from the local hospital who was able to provide ER data for bike related injuries with the location.

05:31:50 Erika McLitus: Thank you for the great explanation, Hillary! That will help guide our decision

05:35:04 Julia Malmo-Laycock, San Mateo County: @Robert could you include the key dates in the chat here for posterity?

05:40:06 Kathy Kleinschmidt: I would agree. Potential projects are important to include in the plan. Also, we typically calculate preliminary benefit to cost ratios so you could see how competitive the

project would be for HSIP. Of course, this will have to be updated once the next cycle requirements are released.

05:44:26 Cory Peterson: Apologies if I missed this, but does Caltrans have specific guidance on the elements that are required to be in your LRSP? Most of what I have seen is primarily guidance

05:49:24 Robert Peterson: Cory, please go to our Local Assistance HSIP website for information. It is guidance (as intended) as we are following the FHWA LRSP information on what should be in the plan and we have provided links in our website. Please contact me, if you have further questions.

06:17:55 Ofurhe Igbiniedion (she/her): Are there safety tips for doing audits where there isn't walking infrastructure (yet)? Especially at nighttime?

06:18:10 Ken Kochevar: Ofurhe, to respond to your previous question if I understand correctly, yes there are some safety tips. Since we are doing a Road "Safety" Audit, we want to make sure everyone is safe, especially doing the field review. There are two items I would mention. 1) The RSA team should stay inside their vehicles if there are unsafe conditions. You may have to drive through multiple times, but it is much safer. 2) When you do get out of your vehicle(s), make sure everyone is wearing a safety vest and hard hat. If possible, especially if near the roadway, have a lookout person for added safety. Hope this answers your question.

06:24:44 Zack Azzari: Hidden curve

06:25:05 Paul Pascoal: Sight lines.

06:25:08 Julia Malmo-Laycock, San Mateo County: Nighttime visibility

06:25:21 Paul Pascoal: Fix by putting up convex mirrors on the "T"

06:25:26 Su Shu: establish ROW control at side street.

06:25:26 Mario Barragan: trim some of the mountain

06:25:33 Cory Peterson: No clear recovery zone

06:25:35 Ria Lo: No ped/bike space

06:25:36 Sai Midididdi: chevron signs

06:25:39 Joshua Rawley: Left Turn hazard.... need signalization/signage

06:25:40 Jamar Stamps: chevrons

06:25:40 Alan Velasquez: Ditto to the convex mirror

06:25:43 Mario Barragan: level out the road.

06:25:46 Gerardo Rodriguez: Chevron Signs

06:25:52 Su Shu: edgeline

06:25:55 Mario Barragan: Guard rail

06:25:55 Sai Midididdi: edgelines

06:26:03 Zack Azzari: One-way street?

06:26:04 Gerardo Rodriguez: Reduction in speed sign

06:26:07 Craig Pyle: Acceleration lane from side road

06:26:07 Don Schmidt: merge lane

06:26:17 Jimmy Zhou: Advanced intersection sign

06:26:18 Sai Midididdi: Clear zone

06:26:20 Jamar Stamps: intersection approach warning for main road approach to side street
intersection

06:26:22 Ria Lo: parallel trail for non-motorized

06:26:25 Mario Barragan: clear the side of the road

06:26:31 Hanieh Houshmandi: Retro reflective curve markers

06:26:36 Russell Chen: Advance curve warning sign

06:26:38 Gerardo Rodriguez: Roadway Centerline Delineators

06:26:45 anthony moore: Delineators

06:27:05 Zhong Tan: stop sign

06:27:07 Hanieh Houshmandi: Glass beads in the striping

06:27:09 Sai Midididdi: lighting improvement

06:27:18 Jae Riddle: shift the smaller road's connection point further toward the camera
man

06:27:20 Moon Rana: flexible yellow channelizer on double yellow line

06:27:27 Craig Pyle: hill blocks view, T intersection pre-warning

06:27:28 Don Schmidt: change location of second roadway entrance

06:27:36 Russell Chen: Retroreflective pavement markers

06:27:48 Mario Barragan: Reduce Speed Limit

06:28:05 Tim Snellings: no-one mentioned a rural roundabout

06:28:13 Mike Bagheri: rumbles strips

06:33:29 Theo Sanchez: needs curve ahead sign, add retroreflective markers, add stop ahead
sign

06:33:47 Zack Azzari: Change the CL striping to no passing!

06:34:23 Tinh Le: edge line and chevron signs

06:34:35 Jamar Stamps: inadequate curve warning...esp. for night driving; no barrier for potential road departure, or refuge area

06:35:35 Ken Kochevar: All good comments and suggestions! Good job