



Meeting Summary

Technical Team #8

November 29, 2017 | CDOT Offices - Golden

Jonathan Bartsch, CDR Associates, opened the meeting with a brief overview of the agenda. Self-introductions followed.

The TT reviewed the process to date and outcomes from TT Meeting #7:

- Completion of a segment-by-segment WBPPSL mapping exercise along with video corridor review. **Outcome:** TT identified operational issues, areas that need improvements, wildlife concerns, safety issues, rockfall, and opportunities and context both on and off the pavement
- Information from mapping exercise was integrated into a baseline contextual design along the length of the corridor.
- The goal for today's meeting (11/29/17) is to review and provide feedback on the baseline contextual design.

Fall River Road Bridge: PLT will be set up in the next couple weeks to move forward on the design phase.

I-225 Re-striping: CDOT added a shoulder lane at I-225/I-25 interchange at Yosemite. Previously there was a bottleneck at this location. This is an 8-month pilot project. The lane has been in operation for 2 weeks. If safety issues come up, CDOT will re-stripe again next summer. This is similar to WB PPSL because it is using the existing shoulder lane as a travel lane. However, it is not a capacity improvement, it is an interchange modification due to its short length.

WB PPSL (including CR 314) and Greenway Elements: Gina McAfee, HDR, reviewed handouts describing the Greenway Project and WB PPSL Project Improvements. These handouts can be located on the [Project GDrive](#).

Kevin Shanks, THK, introduced the Greenway Project map. The purpose of this map is to demonstrate where the Greenway segments are, where future trails are proposed and who is building the different Greenway segments.

The map is located on the [Project GDrive](#)

The INFRA grant funding would go toward three separate construction packages:

1. Fall River Road Greenway – note that Fall River Road Bridge is a separate project. The Fall River Road Bridge will proceed first to construction.
2. WBPPSL Mainline will be the second package.
3. The Greenway elements/trail noted on the map with a yellow dashed line will be the third package. The primary reason this is last is that right-of-way needs to be secured for these sections. This is also the case with CR 314 improvements..

Until a feasibility study is completed to look at moving the Greenway away from the Silver Lakes area to be north of the frontage road, north of I-70, there is no sense of cost. Kevin noted the previously determined feasibility issues with the Greenway north of I-70. Tim Mauck requested a walk through of the Greenway locations along Silver Lakes and north of I-70, to review any issues in the field. Tim asked if the northern alignment was included in the WB PPSL funding package. The response is that it is not due to the schedule and budget constraints associated with this section of trail.

It was noted that the Greenway is not a temporary solution, even though it will be built and considered with the WBPPSL highway project, which is temporary. The Greenway is on its own timeframe – it is not part of the Maximum Program and can be done now. CDOT's role is to help design and build portions of the Greenway, but Clear Creek County (CCC) is leading the Greenway with CDOT partnerships.

ACTION: CDR map to post on [Project GDrive](#).

Agreement: The TT agrees to form a small group to review the Greenway issues in the field.

Gina McAfee, HDR, reviewed the P&N for the project. Nothing has changed since last week.

Some of the problems that we already know include:

- Travel time reliability is unpredictable in peak periods
- Travel time during peak periods is close to twice that in non-peak periods

- Crashes are related to congestion and concentrated at curves or next to the concrete barriers
- Or crashes are related to wildlife hazards and concentrated along the US 40 off and on- ramps
- The crash clearance time is high and noticeably affects congestion
- There are deficient highway elements (pavement, retaining walls, drainage facilities)
- Rock falls are a problem. In the last three years, there have been 49 rock falls that have affected all lanes, one lane or the shoulder.

TT did not add more P&N elements at this time.

Adam Parks, CDOT, reviewed the Context Maps with TT comments from the November 8 TT meeting.

Adam then reviewed the Baseline Concept Design maps starting on the West End. This map includes widening areas, rockfall area and clear zone to rockface, existing trails, Greenway trails (existing and proposed), AGS hybrid alignment and crash history.

The thick black line on the map represents areas that will need widening because the existing pavement would not be able to accommodate a 39 foot section similar to EB PPSL or would not be wide enough due to contextual constraints (e.g. no existing shoulder to work with, on and off-ramps, current pavement is below 39').

There is a line toward the top of the map that describes the “median barrier condition,” e.g. “steel barrier – offset from pavement edge”. The location of the barrier relative to the pavement edge determines where shy distance must be considered.

The AGS hybrid alignment is shown on the maps. Adam described how this could be accommodated within narrow spaces using an elevated section. The AGS Feasibility Report indicated that it would be mostly at a different level vertically than I-70. When it is elevated, it would be 30 feet above the pavement.

These maps can be located on the [Project GDrive](#)

Map 1: Starting on the West End of the map – areas noted for widening are described below

US 40 overpass area: widen to 39' where pavement is less than 39'

Older Box Culvert area: widen to 39 where pavement is less than 39. Need to do some other work along the exit ramp here to mitigate wildlife issues here as well.

Exit Ramp Area: smaller RT shoulder , so will need to widen. Potentially widen about 8 feet (this will vary).

Just West of Mile Marker 233: Proposed turnout.

After the Lawson Bridge West section. The **median condition changes** from offset from pavement edge to a barrier that is right up against the pavement. Shy distance becomes an issue here. Therefore, any widening that happens will be toward the North.

In between Lawson West and Lawson East bridges: Is there a way to get the Greenway on the North Side of the road? A cantilever design? Cantilevers are expensive.

Agreement: The TT agrees to discuss Greenway considerations in a separate small group/ITF to look at different pinch points.

Just east of Lawson to Entrance Ramps: due to the median condition (where the steel barrier is right up against the pavement) CDOT recommends increasing shy distance to 2 feet, which results in 40' of pavement.

- **Clear Creek County:** CCC notes that this addition to 40' of pavement when adjacent to steel barrier will need to be discussed further. There is not necessarily a problem with a 39' section as it would match the EB PPSL conditions. The shy distance concern is when the median barrier is a tall concrete type, not when it's a steel w-beam like it is in this section.
- **CDOT responds:** The biggest issue we have heard with users of the Eastbound PPSL is the narrow shy distance, and we would like to consider increasing this shy distance.

East of Lawson: Proposed turnout.

East of 38' bridge: Truck ramp and vehicle on-ramp merge here. Widening is necessary to fit in WB PPSL with the truck ramp coming in at the same time.

- Truck ramp improvements – the issue is at the merge when trucks come onto public on-ramp. Vehicles are up to full speed coming up the on-ramp, but need to get over when there is a truck. There is a need to improve this merge area.
- CMCA expresses support for this option

Mile Marker 234 - just west of Downieville: Needs to install retaining walls to help buttress the interstate. These walls will be below interstate facing the truck weigh station, so there is no visual impact as viewed from the interstate.

East of Mile Marker 234: The median changes again. The road starts to bifurcate, and the guardrail comes up against traffic and shy distance becomes an issue again. The proposal is to widen to 40' on the North (into the mountain).

CCC: Notes that they may want to consider 39' here. In speaking with EMS, CCC's understanding was that the problem of shy distance is reported when there are concrete median barriers. If this area has steel W-beam median barriers, it would not feel as dangerous.

CCC also notes that there are a number of additional safety solutions that don't involve adding more pavement. These were described in the FHU Safety Analysis. We would like to look at these other safety options before moving to 40'.

Map 2: Middle stretch. Bifurcated. Steel guardrail next to pavement.

This area has rockfall and is an issue. Proposal to remove some rock face in certain locations to create a larger clear zone since the General Purpose and truck traffic will be pushed closer to rock.

CDOT suggests 40' instead of 39' for entire stretch for shy distance purposes based on median conditions. CCC comments that they would prefer 39' throughout entire stretch and go with EB PPSL model of less shy distance since it's not the high concrete barrier.

Exit Ramp: need to widen.

It was noted that there is hesitancy to move into median due to design criteria constraints and the loss of the wildlife refuge. There is a need to look at all the options. If the TT did want to go into the median, the PLT would need to weigh in and approve a variance from the design criteria.

West of Mile Marker 236: Proposed turnout. No rock excavation needed.

Would need to extend Box Culvert: 6-8 feet extension of Box Culvert for North Spring Gulch Road.

- **USFS:** Comments that these culverts can work well for wildlife issues if designed properly. If we are going to extend the box culvert, it would be good to look at how this would impact wildlife issues (e.g. tapered at one end to improve visibility for wildlife).

CDOT notes that whenever the highway is less than 20 feet from rocks, there will need to be excavation to create a bigger clear zone, otherwise, if vehicles slide off the road, they are more likely to hit the rock wall. CDOT is not sure how much rock will be removed yet and they are in the midst of preliminary surveys. Not enough information to determine exact

amount of rock cut at this time. Even without WB PPSL, there are areas of rockfall that need to be mitigated due to a history of rocks falling onto the road.

Agreement: These are decision points that will need to be made at a future TT meeting 1) going into the median versus the rock and 2) how much rock should be cut.

Fall River Road stretch: Widening required at the exit ramp area. Will need to lengthen ramp to give more time to slow down as this will become a stop condition instead of a yield condition.

Map 3: Headed into Idaho Springs (moving West)

It was noted that the Exit Ramp to Idaho Springs was not relocated. This was because the design is starting with a minimum impact.

CCC noted that moving the Exit Ramp would be helpful for the residents. The issue is that because of increased traffic wanting to get to destinations along the frontage road, more traffic is going to be moving through that neighborhood. Moving the Exit 239 gore point could alleviate some of that.

SH 103 Idaho Springs Interchange: Will look at fixing drainage problem and EB improvements. The WB exit ramp needs improvement and widening. Some parking spaces in the Idaho Springs parking lot would be reconfigured with the goal to keep the same number of spaces. The EB on ramp is also deficient. We plan to look at how we can fit a longer one in – perhaps by slightly realigning WB lanes.

CDOT: This Eastbound on-ramp is short here because lengthening it would require digging up existing inlets. There is a need to fix the drainage and work on clogged/flooding inlets. Would like to put in a longer inlet.

Agreement: These are decision points that will need to be made at a future TT Meetings: 1) Moving the Idaho Springs Exit Ramp and 2) What additional shifting of the road is required for EB on-ramp entrance requirements without shifting south to Water Wheel Park? 3) Fixing drainage near on-ramp for SH 103.

Signage would be good (pointing to Mt Evans scenic byway). CDOT has a work order in to get some scenic byway signs.

Speeds are a problem in this area. People are going very fast. Speed differentials are also a problem.

Slowing this area down might help economic opportunity here if people are contemplating whether or not to get off. Needs to be opportunity to get off the highway and go to Idaho Springs. This needs to be a really easy place to exit.

Just east of 38' bridge over Soda Creek Rd: There is another opportunity for a turn out here – but it would mean a taller retaining wall below the freeway.

- **CCC:** Notes that a taller RT side barrier could provide some incidental noise reduction benefits but could also impact the viewshed of Idaho Springs. Should use lower railings/walls West of Safeway, where views to the commercial area are more important. East of Safeway, the viewshed might not be as important.
- **CDOT:** Where a concrete barrier is proposed, in the East side of Idaho Springs, it is mostly residential, and a higher concrete barrier would be good. Viewshed less important.

Agreement: A decision point that will need to be made at future TT meetings is: height of RT side concrete barriers. Normally these barriers are 34 inches tall, with optional glare screen adding 18 inches. Will need to make a decision on how high and where should concrete barriers be located.

Just west of Mile Marker 241: Proposed turnout at the curve.

CMCA: Want to ensure that the turnouts are long enough for commercial vehicles. This is a known area for staging.

There is also a suggestion for a chain down area in this area. Need areas for trucks to stop.

Agreement: A decision point that will need to be made at future meetings is: turn out area design and chain down station locations.

The map does not look at a rumble strip buffer or lane width at this time.

Agreement: A decision point that will need to be made at a future TT meeting is: rumble strips integrated into the roadway design - - impact on noise levels, driver safety and lane width.

Summary of Issues that will need to be discussed at future TT meetings:

- Median widening locations, rockfall mitigation, , turnout locations, truck parking locations and chain down, shy distance to steel W-beam barrier (1' v. 2'), rumble strip buffer and lane widths, improvements to EB acceleration lane adjacent to Water Wheel Park, Greenway between Lawson East and Lawson West Bridge, safety options and mitigation issues from previously prepared reports. CDOT requested that CCC provide these reports.

CCC/FHWA: Note that the safety discussion is really important. There is a request to spend more time looking at different mitigation measures and alternative safety recommendations.

Adam Parks and the CDOT team to advance the roadway design details considering TT feedback from today's meeting.

December 13, 2017 TT Meeting – Agenda Suggestions:

Safety Discussion at the 12/13/17 Meeting.

1. Discussion of corridor wide safety tools.
2. Create a “cheat sheet” of (a) what the safety tools are and (b) what general conditions the safety tools will address.

Idaho Springs

1. Ensure that Idaho Springs reps can attend the 12/13 Meeting
2. Focus on Idaho Springs site-specific issues, criteria and/or ITF.

It was noted that there is not an expectation to come up with one preferred solution for Idaho Springs at the next meeting. The goal is to come up with 2-3 different alternatives and run these through the evaluation matrix through the lens of the context considerations. The TT will look at all the different options and agree on range of alternatives to evaluate.

ACTION: Ensure Idaho Springs can attend the 12/13/17 meeting.

January 10, 2018 TT Meeting – Agenda Suggestions

Begin to go through the alternatives evaluation for Idaho Springs.

ACTION: TT Schedule: Update schedule to identify decision points and make sure the right people are in the room.

Agreement: The TT agrees to form a small group to review the Greenway issues in the field.

Agreement: The TT agrees to discuss Greenway considerations in a separate small group/ITF to look at different pinch points.

Agreement: These are decision points that will need to be made at a future TT meeting 1) going into the median versus the rock and 2) how much rock should be cut.

Agreement: These are decision points that will need to be made at a future TT Meetings: 1) Moving the Idaho Springs Exit Ramp and 2) What additional shifting of the road is required for EB on-ramp entrance requirements without shifting south to Water Wheel Park? 3) Fixing drainage near on-ramp for SH 103.

Agreement: A decision point that will need to be made at future TT meetings is: height of RT side concrete barriers. Normally these barriers are 34 inches tall, with optional glare screen adding 18 inches. Will need to make a decision on how high and where should concrete barriers be located.

Agreement: A decision point that will need to be made at future meetings is: turn out area design and chain down station locations.

Agreement: A decision point that will need to be made at a future TT meeting is: rumble strips integrated into the roadway design - - impact on noise levels, driver safety and lane width.

ACTION: Ensure Idaho Springs can attend the 12/13/17 meeting.

ACTION: TT Schedule: Update schedule to identify decision points and make sure the right people are in the room.

[REDACTED]

Carol Kruse, Adam Bianchi (USFS); Randy Wheelock, Cassandra Patton, Tim Mauck (Clear Creek County); Amy Saxton (CCC Greenway); Tracy Sakaguchi (CMCA); Margaret Bowes (I-70 Coalition); Steve Long, Gina McAfee, Chau Nguyen, Wendy Wallach (HDR); Kevin Shanks, Julie Gamec (THK); Kelly Galardi (FHWA); Tyler Brady, Bobby VanHorn, Kevin Brown, Stephen Harelson, Neil Ogden, Vanessa Henderson, Adam Parks, Stacia Sellers, Ben Kiene (CDOT); Jonathan Bartsch and Taber Ward (CDR)