



I-70 Bakerville to Eisenhower-Johnson Memorial Tunnels (EJMT) Westbound Auxiliary Lane Technical Team (TT) Meeting #1

Meeting Summary

October 7, 2022, 10:00 AM to 11:30 AM

In Person and Virtual Meeting

1. Welcome and Agenda Review

Mandy Whorton/Peak Consulting Group welcomed the group, and did a roll call of participants:

- Ben Davis, CDOT
- Maria Rocken, CDOT
- Tamara Burke, CDOT
- Christiana Lacombe, CDOT
- Shannon Mero, CDOT
- Joe Walter, DNR
- Kristin Salamack, USFWS
- Carrie DeJiaco-Wiedner, Ulteig
- Angy Casamento, Uletig
- Kory Kleinknecht, Ulteig
- Lindsey Wickman, Ulteig
- Thomas Fakler, Ulteig
- Julia Kintsch, ECO-Resolutions
- Brian Dabling, FHWA
- Julie Smith, EPA
- Steve Cook, DRCOG
- Nora Kern, DRCOG
- Margaret Bowes, I-70 Coalition
- Stoy Streepey, Clear Creek County
- Rob Goodell, Ski Loveland
- Tracy Sakaguchi, Colorado Motor Carriers
- Nicole Malandri, United States Forest Service (USFS)
- Mandy Whorton, Peak Consulting
- Wendy Wallach, Peak Consulting
- Loretta LaRiviere, Peak Consulting

1. Introduction and Purpose

Mandy Whorton (Peak Consulting Group) reviewed the agenda and thanked everyone for attending. The presentation from the meeting is attached to these notes for reference.

Technical Team (TT) members introduced themselves and provided their background on the corridor and experience with the CSS process. Mandy said if you have any questions or clarification about the project or the I-70 Mountain Corridor Context Sensitive Solutions (CSS) process, please feel free to bring them up during this meeting.



Mandy noted that Tracy Sakaguchi (Colorado Motor Carriers Association), Margaret Bowes (I-70 Coalition), and Nicole Malandri (US Forest Service) are also on the Project Leadership Team (PLT). The PLT and TT have different roles and therefore, usually don't have the same members, but because some organizations don't have the depth of staff to appoint someone else, they will be on both. Rob Goodell (Loveland Ski Area), Brian Dabling (FHWA), and Amy Saxton (Clear Creek County) are also on the PLT.

2. Roles and Responsibilities of the TT

The project will follow the CSS six-step process included in the Record of Decision (ROD). The CSS is an established process that has been maturing for several years. It follows the 6-Step Decision Making Process. The TT will be having the most input starting with Step 3 Establishing Criteria.

The TT plays a special role in the CSS process to provide expertise in the Core Values which are the elements beyond the roadway design and technical requirements and that honor the community and environmental values. We have a good multi-disciplinary group which includes members of the project staff from CDOT, the consultant team and stakeholders, and we will get a lot of participation throughout the process which leads to a much better project.

The TT is critical in making sure we are considering the right issues and designing a project that reflects the Corridor context and values.

- We will also have Issue Task Forces (ITFs) that are a subset of the TT. Some are associated with agreements on the Mountain Corridor:
- Section 106 Programmatic Agreement which is related to historic properties
- SWEEP which is streams and wetlands and water quality issues
- ALIVE is focused on mitigation for wildlife movement across I-70

Air Quality and Noise is a newly recommended ITF and we are not entirely sure how this will be set up and perhaps DRCOG, EPA and others may have some ideas on what these groups should focus on and who should be included.

We will also have other ITFs such as maintenance and emergency response where we need expertise from people who don't have the time to participate on the TT but may need to be engaged-on a particular issue.

3. Context, Core Values, Critical Issues, Evaluation Criteria, Measures of Success

These processes all work together. We will define the Context Statement, identify Core Values and critical issues to develop how to measure the effectiveness of the issue in the evaluation criteria and measures of success.

4. Design Options and Considerations

Mandy noted this project was identified as a "specific highway improvement" project in the I-70 Mountain Corridor Record of Decision (ROD). There are two different levels of improvements in the I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS), minimum highway improvements and maximum highway improvements. The maximum



program generally adds a third lane of capacity in both directions through Clear Creek County but that will not be triggered until the specific highway improvements are done and/or the Advanced Guideway System (AGS) is up and running or determined not to be feasible.

This project length is six miles of westbound I-70 from Bakerville to the Eisenhower Johnson Memorial Tunnels (EJMT). It is a long area with steep grades. There are three interchanges in the project area, but only the Loveland/US 6 Interchange was identified for replacement or improvement in the Programmatic Environmental Impact Statement (PEIS). There are three chain stations and this area has been identified as a Linkage Interference Zone (LIZ) for wildlife. This stretch is identified as containing lynx as a target species, but there are other wildlife that attempt to cross the interstate so we will be looking at wildlife mitigation, including crossings.

Beginning and Ending of the Auxiliary Lane

Carrie DeJacommo explained that transitions at each end of the project are problematic with truck conflicts. We could start the auxiliary lane east of the Bakerville ramp but we have complications with ramp traffic getting onto the highway, trucks trying to get into the auxiliary lane and trucks also trying to get through the auxiliary lane to get to the chain station. Is it better to start the auxiliary lane as you're coming under the interchange or is it better to pick it up on the west end of the interchange? If we start under the interchange, we will impact more of the rock outcropping west of the Bakerville interchange.

Could there be an option to start the auxiliary lane at the west end of the chain station to eliminate some of the weave? The chain stations are being looked at for possible expansion and 3-mile backups exist now as trucks wait to pull in and out of the chain stations.

If we started it farther east of the Bakerville interchange, we need to confirm if there is enough clearance for the trucks to pass under the structure. The structure needs some work done to it but it is not slated for a replacement.

At the west end at EJMT, the hazmat vehicles need to exit at US 6 and as you continue further west there is a potential to impact a known landslide if we widen into the hillside. There are also sight distance issues in this area due to I-70 curving around the hillside so people may not see queueing at the EJMT approach. We're trying to figure out the right balance as to where to end the auxiliary lane or if we should continue, possibly as a widened shoulder so the trucks can continue on the shoulder to the brake check station. Dropping the lane before the brake check station would mean the truckers have to get back on I-70, which could be problematic and then weave back over, which could be problematic. We don't want to end the auxiliary lane too close to the tunnel. Traffic is metered at the tunnel so that may help. We could drop the transition at US 6 but we would eliminate a mile of improvements we could have made for the climb to the tunnel, and this location (the last mile to EJMT) is still steep and a place where traffic is known to slow substantially.

Rob said there is a skier tunnel that connects the two sides of Loveland Ski Resort and all the freshwater accumulation that serves all of Loveland Basin happens just east of that tunnel. The bridge over the US 6 exit will have to be addressed if the lane goes beyond the exit, there's an icing issue across the bridges and it would have to be expanded to accommodate



the additional lane. To avoid some of these things, the third lane could become the exit, like Silverthorne.

Margaret said the US 6 interchange to the tunnels is the steepest grade and that is where most of the mobility issues happen so she assumed that section of steep grade would be part of this project.

Mandy said she reviewed the vehicle speeds for the entire Corridor and the section from US 6 to EJMT is the slowest.

Carrie said we will be looking at traffic operations closely as we move forward.

Widening for the Auxiliary Lane

Carrie started a discussion on options for this alignment. She said if we widen to the north, there are rock cuts and there could be some instability with impacting that material. There is also an avalanche chute, debris run and environmental impacts that would have to be considered.

If we shift into the median, at Herman Gulch there is minimal space between the structures, if we widen the westbound bridge, there is not a lot of room to widen to the south before impacting the eastbound bridge.

The I-70 median is pretty narrow so we would be looking at paving the grassy area and putting in a concrete barrier which would impede emergency response because motorists wouldn't be able to pull over due to limited space between the travel lane and the barrier.

I-70 within the project area has the largest property damage only crash areas due to the cable rail guardrail in the median. This cable rail is not the preferred treatment in the Aesthetic Guidelines so we could be looking at other barrier types anyway. If we used concrete, it would limit sight distance going around curves. Maintenance of impacted concrete barrier is also a consideration.

We could do a balance of widening to the median and the outside. If we widen to the median or the outside, we would have to cut the existing edge of pavement on both sides to add on new pavement. This places a new joint on both sides that are likely to fall within the wheel path, the joint will likely deteriorate as people start driving on the joint.

The width for I-70 inside shoulders is typically 4 feet and 10 feet on the outside. The American Association of Highway and Transportation Officials (AASHTO) recommends minimum 12 ft inside and outside shoulders where heavy truck traffic exists. Where the chain stations are along I-70, the shoulder width would have to be wider. Twelve-foot shoulders would be optimal for trucks. Survey work is happening now so once we get that, we'll have a better idea of what the widening options could be.

Mandy noted there will be no widening to the south of the existing eastbound lanes. There are a lot of environmentally sensitive resources on the south side including a large fen wetland complex. The wildlife crossings will run north to south so there will be some structure impacts on the south side. Wildlife crossings should consider the Advanced Guideway System (AGS) and future eastbound lane expansion. It is unlikely that there will be



a third eastbound lane any time soon. However, if the project widens to the median instead of north, this will complicate future widening decisions so we should document that we have considered the future improvements in our process for this project.

Interchanges

The Bakerville interchange has homes and trail head access on Forest Service land. We may not impact this interchange at all depending on where the auxiliary lane starts.

At the Herman Gulch interchange there are also homes on Forest Service Land and trail head access. We will be looking at if we could replace the deck and shore up the girders or depending on cost, replace both structures. The ramps on the north side will be shifted out to accommodate the auxiliary lane. We are looking at the road that goes to the trail head on the northeast corner and how close the ramp will be to the parking area.

At the PLT Meeting, Amy Saxton said the Bakerville Interchange is a recreation hub and is very important to Clear Creek County. There are five different trails that diverge in an area that is a privately owned (Bakerville, LLC) parking lot and functions as a public trailhead. CCC developed a private easement with a homeowner last year for a parking lot that included Port-O-Potties and trash receptacles. Issues are continuing with people living in the parking lot and the trash receptacles were overflowing. One EMT stopped at the parking lot and counted 52 cars in one hour stopping to throw out trash and relieve themselves. This became a huge challenge to manage and keep up with it and CCC is not installing Port-O-Potties or trash receptacles this year.

Ben Davis (CDOT) said the Herman Gulch interchange structures has required some substantial repairs due to the poor condition of the decks.

The US 6/Loveland Pass interchange westbound on ramp to I-70 has a tight turn resulting in slow speeds and entering I-70 that is on steep grades makes getting up to speed difficult. The off-ramp as you are headed eastbound has a hard 90-degree curve at the bottom which is dangerous. We have been looking at relocating the interchange to the east. There is an area that has enough height where we could put in a standard diamond interchange which would pull it away from the curve of I-70 around the mountain side in the approach to EJMT. We would have to work with Loveland Ski area to figure out how we could handle the traffic that needs to get to the parking lot and the traffic that is coming off US 6.

Tracy said we have a lot of chaining operations at the bottom of US 6 for the hazardous materials trucks and would moving the interchange affect where they are currently chaining up or chaining down?

Carrie said at the eastbound I-70 on-ramp there is a chain station as you are going down the grade and going westbound it doesn't impact the last chain up station which is on the east side of Herman Gulch at Watrous Gulch.

Watrous Gulch is the preferred location to chain up for hazmat vehicles. Tracy said depending on the weather, some of the drivers do not use the Watrous Gulch Chain Station but wait until they approach Loveland Pass off of the US 6 exit because the hazardous material trucks need



to chain up on snow and ice due to the potential for the chains to cause sparks. She has heard of conflicts closer to the interchange with chaining up some of the vehicles so, if we move the interchange, we may want to think about that operation that is occurring in an unofficial spot right now closer to the base of the Pass.

Carrie said we will look at that. There is some concern that vehicles park along the ramp so maybe we could designate something more formal.

Tracy said there is a lot of space at that interchange where trucks and cars can park so formalizing it could help with a lot of the interactions.

Rob said this area is used for back country access.

Rob asked if you move the interchange to the east, are you proposing to bring all traffic that is going westbound exiting and continuing on US 6 to a full stop and then turn right to continue west on US 6?

Carrie said as they exit at US 6 at the bottom of the ramp they would come to a stop. Different designs could be looked at to try and provide a free right turn as they travel under I-70 and continue right onto US 6.

Rob said with the current configuration, hazmat vehicles and other traffic going beyond Loveland to A-Basin, Keystone or Summit County is free flowing from I-70 onto US 6. There is a lot of volume, and if all of that traffic as it comes off I-70 has to stop and then make a right turn you will have backups onto I-70 very quickly.

Christiana Lacombe (CDOT) said this will come out in the traffic modeling efforts and the interchange selection as it might not be a diamond layout.

Rob said Loveland Ski Area would not support any design that might push US 6 wider into the Loveland Valley parking areas.

Chain Stations

Carrie said there are two chain stations west of Bakerville at MP 221 and near Watrous Gulch, east of Herman Gulch, at MP 219. Both are parallel to I-70 with a 15' shoulder and 10' lane for a total of 25'. The trucks pull into a parking spot to chain up and there is not a lane for vehicles to accelerate or decelerate into and out of the chain stations. We are looking to see if there is another area to relocate both westbound chain-up stations where safety improvements can be made. CSS Guidelines recommend a physical separation from I-70 and the existing chain stations are just on a wide shoulder. Signing and single exits and entrances and acceleration and deceleration lanes onto I-70 are also required. There is lighting out there now and we will make sure the lighting is just on during a storm event and Intelligent Transportation System (ITS) technology is activated.

Ben asked if we are looking at an ITS component that would indicate the number of chain up spots available.

Carrie said that would be a consideration.



Steve Cook (DRCOG) said the ITS components are very important not only for the chain stations but also traffic congestion and accidents, connected vehicles, inclement weather and wildlife activity alerts and encourages ITS to be a primary consideration and not an afterthought.

We are looking at some areas that are a little flatter where there could be more of a diagonal parking configuration and increase capacity which could solve the problem of traffic backing up 2-3 miles as they approach the first chain station. We could possibly consolidate the two chain stations into one if we can find a big enough area. We need to keep the wildlife crossing in mind when expanding the chain station footprint due to the lighting.

Tracy said she really likes the idea of diagonal parking pull throughs and is intrigued to see how that would work to safely get back onto I-70. Hazmat trucks prefer the Watrous Gulch station because there is usually more snow and ice there.

Wildlife Crossings

Julia Kintsch (ECO-Resolutions) said making the lower chain station longer could potentially conflict with one of the wildlife crossing locations with the increased lighting and wider roadway. Potential wildlife crossing locations are very limited in this area. There is also the issue of the scenic impact of the wildlife fencing. It would be more visible on the north side and we would also have to consider how maintenance would be able to get to it.

Carrie said we originally looked at four wildlife crossing locations. With steep grades and geologic hazards in the area, underpasses are a better option than overpasses and the 2 locations that have been narrowed down are around MP 220.1 and just west of Dry Gulch around MP 217.3. The north side of I-70 in these areas is flatter at the approaches to the underpasses and on the south side there is good access to the creek. Due to the project length spanning 6 miles, 2 crossings are recommended with one near each end of the project area.

With the wildlife crossings going in at those two locations, Julia said it is recommended that wildlife fencing be erected from the Loveland exit all the way to Bakerville on both sides of I-70. That brings up the issue of recreational and emergency access to the fenced areas. Joe said he is concerned about this because Watrous Gulch parking is used for fishing on the south side and hunters park on the north side. It was recommended that someone with recreational expertise be added to the TT. It was also noted that more recreational access could impact lynx habitat.

Mandy reminded the group the ALIVE ITF will be involved in the wildlife crossings and fencing decisions. When we have a decision on the highway design, we can determine where the other components will be placed.

Other items that were mentioned that will be looked at in the design efforts included: signage, paved versus grass medians, guardrail types, structures, retaining walls, ITS, water quality, drainage and rockfall mitigation. Clear Creek County is very concerned about the additional pavement that will be added and the deicing material that will be used.



Visual and scenic views was also brought up. Although parking for backcountry access may be desired, blocking access and parking areas during construction and after would help to preserve the environment and wildlife.

5. Next Steps

Mandy said we will send out the presentation and requested the TT take a look at the Context Statement, Core Values and Critical Issues and let us know if there is anything we have missed.

6. Notes Received after the Meeting

Nicole inquired if there are any buried fiber optic or other utilities in the I-70 ROW that may need to be relocated.

Yes, there is fiber along the westbound pavement that will need to be relocated.