



I-70 Bakerville to Eisenhower-Johnson Memorial Tunnels (EJMT) Westbound Auxiliary Lane Meeting with Loveland Ski Area

Meeting Summary

December 19, 2022, 4:00 PM - 5:00 PM

In Person and Virtual Meeting

1. Attendees

- Ben Davis, CDOT
- Francesca Tordonato, CDOT
- Maria Rocken, CDOT
- Rob Goodell, Loveland Ski Area
- Carrie DeJacomio, Ulteig
- Angy Casamento, Ulteig
- Lindsey Wickman, Ulteig
- Kory Kleinknecht, Ulteig
- Mandy Whorton, Peak Consulting Group
- Wendy Wallach, Peak Consulting Group
- Loretta LaRiviere, Peak Consulting Group

1. Welcome and Meeting Purpose

Wendy Wallach (Peak Consulting Group) thanked everyone for attending. The materials presented at the meeting are attached to these notes for reference.

Wendy said today we will walk through drafts of the I-70 Loveland Interchange options the design team has been working on. We will also review the criteria and, even though it's lengthy, we're here to get Loveland Ski Area input on both.

Mandy Whorton (Peak Consulting Group) said at the December Technical Team (TT) meeting we reviewed the beginning and the end of the project area, but the Loveland Interchange options will be presented at the next TT. Because the interchange is so important to Loveland Ski Area, the team wanted to review the options one-on-one with Loveland before they are presented to the Technical Team in early 2023.

- Rob Goodell (Loveland Ski Area) said he sincerely appreciates being involved in this process.

2. Design Options

Option 1C Extending the Existing Acceleration Lane

Lindsey Wickman (Ulteig) said this option is very similar to the existing operations. CDOT is proposing to replace the existing structure, possibly with a buried structure to address some of the icing conditions, along with slight improvements to the curve on the westbound (WB) on-ramp. The WB on ramp will still have a 15 mile per hour (mph) curve, but a full acceleration lane onto Westbound I-70 is proposed.



Lindsey said the buried structure option will need to be fully analyzed to see if it's viable but is similar to structure F-13-S, which is on the west side of the tunnel. The buried structure option is being considered to address the icing issues on I-70 in this area as it maintains a similar alignment.

One of the cons with the buried structure is construction phasing as it may be challenging to maintain traffic during the structure replacement. The buried structure is essentially like a buried culvert. Whether the side walls are separate from the top and bottom slabs comes down to how it is designed. Preliminary conversations have occurred about how much fill the structure can hold, meaning we may have to design two structures, but this will be determined further into design.

- Ben Davis (CDOT) said we've heard icing issues from maintenance and other people who are familiar with the area as these are the first structures to ice up on the I-70 Corridor due to their elevation.
- Rob asked for clarification that the westbound exit from I-70 onto US 6 remains basically unchanged. The westbound on ramp turn radius and acceleration lane is the only main changes on this alternative.

Lindsey said that is correct.

Option 2C Realignment to the East

Lindsey said Option 2C realigns the crossing with I-70 to the east making it perpendicular to US 6. This tie-in to US 6 will allow for the WB off ramp to maintain a continuous movement onto WB US 6. The tie-in is across from the Loveland Ski School access, which may help to minimize the left turns that exist at the current configuration today.

The team would like some feedback from Loveland as to whether this is a desirable configuration. Is having the ramp tie-in straight across from the parking area viewed as positive or negative? Also, thoughts on removing the existing structures and potentially adding a new structure, whether that's a buried structure or a different unidentified structure type, being across from the Loveland Ski School property?

Carrie DeJacomio (Ulteig) said Option 2C allows a little bit more storage for WB off ramp vehicles that are going straight and not turning right onto US 6. Right now, that storage tends to back up the off-ramp, and this option will provide a small amount of extra storage. In addition, exiting vehicles don't have to make a left turn if they're going straight across to the Loveland Ski School, which may help to ease some of the backups in the area.

- Rob likes this option because it's maintaining the merge lane onto US 6 westbound and reduces the speed of WB vehicles coming off I-70, especially the commercial carriers as they come up to US 6. He would like to see if the merge lane could be extended farther west to give more opportunity for the vehicles to find an opening to move over.

Carrie said a parallel acceleration lane could be designed to help address the merge.



- Rob likes the idea of a parallel ramp because one of the current challenges is the short merge distance for traffic coming off I-70 and traveling straight on US 6. Rob prefers the addition of a parallel acceleration lane with markings on the highway to give more opportunities to merge onto US 6.
- Ben said he thinks this option presents a lot of opportunity with the existing grading tying into the old US 6 intersection footprint.

Lindsey said based on feedback, Ulteig will look at the parallel ramp entrance to US 6 as opposed to a taper entrance.

- Rob recalled previous conversations about additional recreational parking along the WB off ramp and Option 2C depicts a cut on the north side near where people currently park along the ramp. He asked if any of the options give opportunity for more parking in that area?

Lindsey said the team has not identified any parking locations in the current design, but there has been some discussion of maintaining an area for additional recreational parking.

Mandy said there may be an opportunity to repurpose the old ramp area for parking on this option.

- Lindsey asked where formalized parking would be desirable?

Rob said it would only be on the north side. He would not recommend anything on the south side of I-70 unless CDOT has any need for it. CDOT has a materials storage for avalanche mitigation on the south side of I-70 near the eastbound (EB) off ramp. Parking at the south side is not desirable because there's nowhere to cross I-70 without a pedestrian tunnel.

- Mandy said there is an opportunity to repurpose the vacated pavement, whether it's for paved purposes or other restoration purposes.
- Ben said if CDOT is going to remove the existing structures on I-70, without adding retaining walls, quite a bit of embankment would be required. The needed embankment to fill in the existing structure location may negate the ability to pave the area for parking, but the opportunity is worth considering.

Option 3C Realigned to the East with Separated EB on Ramp

Lindsey said this option is relatively similar to Option 2C. Realignment still occurs to the east. The major difference would be a separated eastbound on-ramp to I-70 from the US 6 alignment. This separation would require retaining walls. The height of the walls will depend on existing grades and will need to be confirmed once we have survey. The WB on ramp radius would remain the same as Option 2C, along with a similar perpendicular crossing of I-70.

Lindsey noted that the comment from Rob about the WB off ramp having a parallel merge to US 6 can be applied to Option 3C too.



Lindsey said this option has a full westbound I-70 on ramp acceleration lane. There is some improvement for the WB off ramp left turn storage onto US 6; however, I-70 EB on ramp traffic will need to make a left at this intersection to access the eastbound on-ramp. This concept removes the skewed bridge underneath I-70, allows for frontage road access to Loveland Ski Area, and removes third-party access from the eastbound on-ramp.

The cons for this concept include a grade and elevation difference among I-70, the eastbound on-ramp, and US 6, where retaining walls are estimated to be approximately 30 to 40 feet high. Storage space is reduced when traffic backs up on US 6 to the left turn for both the westbound and eastbound I-70 on-ramps. Motorists expect some of these movements, but it's different than the current configuration.

- Rob asked if the current entrance from US 6 to eastbound I-70 would be removed.

Lindsey said that is correct, it would no longer be necessary. The eastbound on-ramp starts sooner and then gives trucks direct access from I-70 into the existing chain station instead of using US 6 to access it.

- Rob asked if any commercial travelers, including hazmat, or private vehicles coming over Loveland Pass would have to slow to a near stop to make a left hand turn onto I-70 eastbound?

Carrie said that's correct.

- Rob said this would be a concern because there are high I-70 corridor volumes in both summer and winter, and people Google “alternate route” and take US 6. With this option, they would have to make a left-hand turn from US 6 to access the ramp to eastbound I-70, which will cause backups all the way to Keystone.

Carrie said this option was included because the team wanted to know what would be required to separate the frontage at the Loveland Ski School with the eastbound I-70 on ramp. The team has eliminated a couple of other options that looked at moving the I-70 crossing even farther east but grades in the area would not work with the westbound ramps.

Rob wants to ensure everyone is aware that are we looking at the location of Loveland Valley. The larger ski destination is Loveland Basin, which is to the west and the ski area is concerned about access to the Basin. Once the parking lot at the Basin fills up, people are sent to park down at the Valley and then are bused back up to the Basin. While there are some concerns about a long straight run out of US 6 to get to I-70 being used as an acceleration lane, this design would change that. With the volume of traffic accessing eastbound I-70, a left turn would be difficult. Carrie said the team has not run traffic models on the options yet. The team would like to identify which options will move forward and will then run the scenarios to see how well traffic performs with the different options.

Rob said he is interested in the output.



- Ben said it would be nice to separate I-70 traffic from Loveland Basin and Loveland Valley traffic. He is supportive of the work developed to date. He is also thinking about a diverging diamond interchange (DDI) to accommodate the flow of traffic. The team has not recommended an option yet, but as the team comes up with another ideas, we'll share them with Rob.
- Mandy said Carrie mentioned a couple other options the team had developed, that were problematic and fared worse than Option 1C. She asked Rob if he would be okay with setting those options aside. We don't want to eliminate anything, but the team did a thorough analysis to develop a range of options, but some were not feasible.

Rob agreed and noted he appreciated the opportunity for input. He does understand the goal to address the I-70 bridge icing that occurs because it's a major problem.

3. Evaluation Matrix

Lindsey said the Evaluation Matrix has all the Core Values, and the options are ranked as Fair, Better or Best.

- Angy noted that when looking at the different options, these are not compared to each other, they are compared to the current existing conditions.

Lindsey said we identified both 2C and 3C as “better” under Safety based on the potential changes to the turning movements at US 6 providing additional storage as well as the improvements to operations in accessing Loveland Ski Area. Option 3C provides direct I-70 access to the eastbound chain station, which is positive for the trucking community.

The vertical grades associated with on and off ramps is also a safety issue. The existing configuration is approximately 0.2%, whereas if there is realignment with 2C and 3C, the grades would be 4.5%, so 1C is rated as “better”.

2C and 3C were ranked equally for operations at Loveland Ski Area, compared to existing conditions. Lindsey offered Rob the opportunity to voice any concerns about the traffic operations at Loveland associated with Option 3C and solicited input on whether it should be classified or ranked or evaluated differently.

- Rob said Option 3C is similar to the current condition, and he is not sure why it would be better. He assumes it's because it aligns with one of Loveland's parking lot entrances.

Lindsey said that is correct. The team thought it would be better because people are not forced to make a left turn to enter Loveland's parking lot. This option would provide access straight into the parking lot. Since the main parking lot is at the Basin, this could be used as an overflow parking lot and then Loveland could bus people back up. The left turn may not be a significant issue if most traffic is going to the Basin.

- Rob indicated that Loveland has parking for approximately 2,000 cars. 1,000 of these cars are parking at Loveland Basin so they would be continuing from the off ramp farther to the west. At Loveland Valley, the lot closest to (east of) the building is used



for overflow parking first when the Basin lots are full. There's probably about 300 vehicles that would be making a left-hand turn to that lot. The lot located straight across from the proposed ramps holds approximately another 300 vehicles. When that lot is filled, the rest of the cars would be turning left to go to other lots farther east. Thus, the traffic from the ramps going straight into the parking lot is a smaller percentage than it might appear.

- Mandy asked Rob if having the longer merge lane to the west would help with Basin parking.

Rob said he thinks parking access would be about the same. It would help the flow of traffic in general as vehicles are also coming from the Valley heading to the Basin specifically, including buses that are moving passengers back and forth. Coming off I-70, he thinks the traffic would flow better with the larger merge opportunity.

- Ben asked Rob when the Basin lot gets full, do people end up driving over to the Basin and having to turn around and go back to the Valley to park?

Rob said that's correct. Loveland has a sign they put up at the "Y" when the Basin lot is full. On busy days, there is a person to direct them to go make that left hand turn to park at the Valley. Many people ignore that and must be circled through the Basin lots and then out one of the exits to return to the Valley to park.

- Carrie asked Rob if he sees a benefit in the traffic operations for 2C or 3C?

Rob said not significantly. He said 2C because of the tempering of speeds off I-70 westbound onto US 6 with the ramp radius, it's allowing for more negotiation around that curve. Traffic currently maintains speed around the existing S turn and are entering US 6 at high speeds. He is supportive of the reduction of speed and then the opportunity for a longer merge lane heading westbound. However, proceeding straight to make either a right or left-hand turn at that intersection does not amount to much change.

Lindsey said some of the other Core Values that have some differentiations are freight movement and travel time reliability. The improvement to local access may be smaller than originally thought due to the dividing of parking lots and the movements associated with them.

Reduced impacts to geotechnical hazards are not specific to Loveland's area but 1C fares better than the other two because we are staying along the existing alignment and not having to realign a structure.

For the Community core value, the team rated 2C and 3C as better because they enhance the quality of recreational access but may not necessarily be true based off our discussions, so that can be changed.

For noise impacts, 1C is rated better because with a buried structure there may be an opportunity to decrease the noise from the traveling public.



- Mandy said the ramp noise is not the controlling noise factor. I-70 traffic is going to be the controlling noise factor there so the reduction may not be perceptible.

1C and 2C both meet the criteria of “meeting the needs of the present without compromising the future.” They can accommodate future needs which have been identified in the PEIS, whereas 3C with a separated ramp from US 6 may be more of a challenge for future EB widening, which is why 3C is ranked lower.

For the Decision-Making core value options 2C and 3C may provide an opportunity to partner with Loveland Ski Area if the team is able to improve some operations at Loveland.

- Carrie said the design is currently based on old 2010-2012 LIDAR because survey is not complete. Once the team has the survey, everything will need to be validated to ensure the layout and the grades still match, and then the team would run the traffic numbers for options moving forward.
- Rob said compared to existing conditions, 1C and 2C don’t diminish or negatively affect Loveland Ski Area operations, and there are some inherent improvements. But he felt 3C, while it would have some improvements, would have a negative effect.
- Mandy asked if the negative effect is primarily because of the queuing in the peak period?

Rob said it would not just occur in the peak period. A moderate Sunday, not even a busy one, people do use US 6. It is not just Loveland ski traffic; people try to avoid driving through Silverthorne on I-70 by traveling over US 6.

- Carrie said this information has been very helpful to understand and assist us in evaluating these options. She asked Rob if there could be an improvement that has not been shown.

Rob remarked jokingly that US 6 could be closed in the wintertime so it's just an exit to Loveland ski area allowing for more terrain skiing.

- Carrie said the team will look at revisions to the matrix based off Rob’s input and try to incorporate them prior to sending it out to the Technical Team for the January meeting.

4. End of Auxiliary Lane Options

Mandy asked Lindsey if she could present the options for the end of the auxiliary lane on I-70 since Rob wasn’t at the Tech Team where they were discussed. Some of the options could potentially have impacts to the skier tunnel.

Lindsey said the design options looked at where the best location was to terminate the auxiliary lane: near the tunnel, before the curve approaching the tunnel, or after the curve.

Option 1B Tie in at Brake Check

The skier tunnel could be potentially impacted by widening for the auxiliary lane and the addition of a deceleration lane to exit at the brake check location in the approach to EJMT.



The tunnel may be extended or protected in place with this configuration. Through CDOT maintenance coordination, the team is aware that there is a pad for snow storage during plowing operations near the skier tunnel. Lindsey asked if drainage from the snow storage and EJMT operations hamper the skier tunnel operations by filling up the tunnel with snow and water?

- Rob said water in the tunnel has been a problem in the past but is not a persistent issue.

Option 2B Tie in on Tangent Segment Prior to Brake Check

Lindsey said this option would tie in before the skier tunnel so there would be no impact.

Option 3B End at Traffic Signal

Lindsey said this configuration widens I-70 over the skier tunnel with the auxiliary lane tying in at almost the last possible moment before EJMT. There is an existing overhead traffic signal where the auxiliary lane would end, and then the lane would taper in close to the entrance to EJMT. The impacts at the skier tunnel are similar to 1B.

- Rob said there's two things going on there. At the skier tunnel entrance there's also an access road that continues to the east. There is an area north of the paved area where CDOT does store snow.

Rob said the access dirt road to the east leads to Loveland's fresh water capture with a heated collection pond and building that serves to provide water to the entire Basin. The water flows underneath I-70 in a three-inch pipe to the east corner of the biggest building at the Basin on the south side of I-70. There is a spillway on the southside down to a culvert underneath the parking lot and into Clear Creek. If the skier tunnel is extended, which Loveland is not opposed to, Loveland will need to have a route up to maintain the building and the water capture pond.

- Lindsey asked if that access would have to be maintained year-round whether we impact the skier tunnel or not. The reason she is asking about all-season is because she is unfamiliar with how much snow gets stored at the entrance to the road or how high the pile of snow gets. She asked if the access is ever blocked by snow.

Rob said yes access is needed year-round. Currently, staff will park as close as they can and hike the remainder of the way up the access road. A large propane tank provides the heating source to keep the pond from freezing and the propane is replenished every summer. In addition, periodic maintenance is also needed in the area.

- Ben said it didn't look like it would be a problem to maintain the access. He sees a sign on Google Earth that says "No Snow Storage" on the paved area above the tunnel.
- Carrie said Mike Willard (CDOT Maintenance) mentioned that they store snow there. She said the team would check back with Maintenance on that to make sure we have a clear understanding of the use there.

Rob said he thinks the sign specifically means not to push any snow over near the edge of pavement as the skier tunnel is right down below that.



- Lindsey asked Rob if they have any drainage issues with the snow melting and going through the tunnel.

Rob said yes. There was a diversion at the parking lot that overflowed through the skier tunnel two springs ago and washed a lot of sediment to the south side of I-70 into wetlands and that was a concern for the Forest Service.

- Ben said it would be good to note in the option that's not impacting the skier tunnel that there's still an opportunity to make improvements to the drainage around the tunnel.
- Rob once again thanked the team for keeping Loveland up to speed and in the loop. He said the project is important to Loveland, and he was glad to continue to participate.

5. Next Steps

Mandy said we will be distributing the meeting notes from the last Tech Team meeting that goes into more detail about some of the considerations of both the beginning and the end of the auxiliary lane. Our next meeting will be January 13th and we will be looking at some of the widening options: widening to the north, widening toward the median, or opportunities to balance the widening between both in some locations. The Loveland interchange options will also be discussed with the full Tech Team. Following that, other design elements, such as the chain stations, will be looked at.

Lindsey said from comments we received from the past couple of Tech Team meetings, individuals would like to see what we are reviewing ahead of time. The Ulteig team is looking at both handouts and exhibits that can be emailed out as well as a video that you can listen to. Those will be sent out about two weeks prior to the next Tech Team meeting.

Action Items:

- Check with maintenance to understand the use of the area used for snow capture (Ulteig)
- Send out Tech Team materials for January 13th meeting (Peak/Ulteig)