



## MEETING NOTES

<b>PROJECT:</b>	23982-23929 I-70 West Vail Pass Safety and Operations Improvements
<b>PURPOSE:</b>	Design Exception Meeting #2
<b>DATE HELD:</b>	June 21, 2021
<b>LOCATION:</b>	Online Google Meet Meeting
<b>ATTENDING:</b>	John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Matt Figgs, CDOT Region 3 Patrick Chavez, CDOT, I-70 Corridor Operations Mark Bunnell, CDOT Region 3 Traffic Stephanie Gibson, FHWA Jeff Bellen, FHWA Ben Wilson, USACE Kristin Salamack, CDOT/USFWS Liaison Greg Hall, Town of Vail Chad Salli, Town of Vail Pete Wadden, Town of Vail Dick Cleveland, Town of Vail Kevin Sharkey, ECO Trails Robert Jacobs, Summit County Len Wright, PhD, ERWSD Larissa Read, ERWSD Siri Roman, ERWSD Shannon Anderson, Bicycle Colorado Mark Gutknecht, Kiewit Randal Lapsley, R S & H Jeb Sloan, R S & H Mary Jo Vobejda, Jacobs Loretta LaRiviere, Jacobs
<b>COPIES:</b>	Attendees

### SUMMARY OF DISCUSSION:

#### 1. Goal & Meeting Purpose

- a. Mary Jo explained our goal for today's meeting is to discuss and agree on a path forward for the design exception at the lower truck ramp for finishing slopes that are greater than 2.5:1.
- b. The I-70 Design Criteria were developed several years ago, and we strive to meet the criteria on every project, but it is not always possible. That is why design exceptions are allowed. Today we are focusing on #1.

*Design exceptions may assist a designer in finding a transportation solution that balances impacts to scenic, historic, and culturally or environmentally sensitive areas while still providing for safety and mobility...*

1. ***Complementing surrounding physical characteristics***
2. *Enhancing safety*
3. *Increasing capacity*
4. *Reducing costs*

5. *Protecting the environment*
  6. Preserving historic and scenic elements
  7. *Interfacing with multiple modes of transportation*
  8. *Utilizing new technology or innovative approaches*
  9. *Doing the right thing*
- c. Mary Jo said the criteria states that cut and fill areas will not have slopes that exceed 2.5:1 (horizontal to vertical) and the disturbance area will be fully contained within areas of historic or current disturbance if no centerline change occurs.

A design exception is needed at the Lower Truck Ramp because the existing slopes are approximately 2.1 and there is a concrete barrier that defines the edge of the escape ramp. Approximately 1'-3' of the barrier would be exposed for about 65' if we use a 2.5:1 slope. We will end up with a huge disturbance area if we continue to chase that slope.

Our goal is a design exception that allows the use of slopes 2.5:1 to create a slope that fits into the adjacent landform, looks natural, sustains vegetation and is maintainable.

Our justification for the design exception is we want to create a natural looking slope that is sustainable and will revegetate. We also want to screen the barrier as much as possible so as not to take away from the natural look.

Mary Jo presented the three options:

- 1) Use boulders with a 2.5:1 to 2.1 slope to limit exposed barriers. There are some places above the boulders would likely be steeper than 2.5:1. The boulders will be obtained from the construction site. It is not a continuous boulder wall so you may see the barrier in between the rocks.
- 2) Use a 2.5:1 slope resulting in up to 3' of exposed barrier
- 3) Use varying slopes from 2.5:1 and as steep as 1.3:1 to eliminate exposed barriers. This steep slope could be difficult for vegetation to get started

With options 1 and 2 exposed barriers could be screened with boulders and vegetation and we will also color the barrier so that instead of concrete grey it is more of a brown tone.

With all options we will have the landscape architect (LA) create a plan for the rough grading which will be for the entire slope. The LA will also use undulating slopes, vegetation, boulders, and other natural materials in the plan. The LA will also be involved in the final grading and will be on site as the boulders are placed.

- d. Karen clarified this would not change the wall above the truck ramp, just the small area between the truck ramp and I-70. We would include in the construction contract the requirement for a 2.5:1 slope with scattered boulders which could be adjusted in the field as needed.

- e. Karen said this is a small area to request a design exception but it's good to start the conversation about the challenges our designers are running into in other areas on the Pass where the existing slopes are greater than 2.1. There may need to be a balance in the slopes, maybe from 1.8:1 or 2.1 in some areas and still use some boulders to make this blend the best we can.
  - f. Karen said the truck ramp is the first project and a lot of these design principles are going to carry throughout the project so we're really trying to be cognizant of what this looks like from I-70. Do we want to try to integrate random boulders in some areas that are steeper and hide the barrier or do we want to show the barrier?
1. Greg said your design exception requests to allow slopes greater than 2.5 and be maintainable. Do we want to define the maximum slope?

Mary Jo said she likes including a maximum slope quite a bit. When the I-70 design criteria guidance was being put together, every time we drove up the mountain corridor we were looking at the Central City Parkway which is one of the biggest scars that has ever been left on this corridor and we wanted to think about when the ultimate look would be. It took years before anything started to grow on it because the slopes are too steep. The idea of a maximum slope could give us more assurance that we could get vegetation to establish itself.

2. Greg asked what do you consider maintainable? He said he thinks you have the right approach to build it and see what it looks like when it's all done.

Karen said vegetation on Vail Pass is more grasses and we want to be able to hold grasses not just sage brush or something like in the Post Boulevard area. My preference for this site would be to go as steep at 2.1, scatter the boulders so we can get some pockets and a little bit more undulation so it's not a steep slope. I guess the question for the group is, is it important to hide the barrier?

Mary Jo said there will always be a LA involved and there is always a landscape plan. Those are required in the Design Criteria and Aesthetic Guidelines.

3. Greg asked how much grading and blending do you need to do to match it in? He assumes the exposed barrier would be tinted. Once it's all done and sitting back and looking at it. 68' or 65', blending a little bit more and you end up with 20' of two-foot exposed barrier.
4. Stephanie asked if the barrier will be a painted or is it tinted all the way through?

Matt said the barrier is stained, not tinted all the way through.

Karen said when you look at the area now from I-70 looking up the truck ramp there is a barrier there now and the grass grows right up to it. The biggest difference in our case is you there will be the rock sculpted wall in this area..

5. Stephanie said she doesn't have strong feelings either way however she does like the idea of undulating because just flat slopes with grass is not a natural thing in this area. She also agrees with the need for a maximum slope because otherwise it's hard for maintenance to get vegetation to grow. And it will be harder to get NPDS permit cleared because you have to have a certain

amount of vegetation grown before you can get close out the permit. Growing the vegetation is important for visual and also to avoid erosion. It would be better in the long run for the creek which I know is a major issue.

6. Dick said he agrees with both Stephanie and Greg. Very often trying to hide things ends up making it more obvious so he is less concerned with seeing a small section of the barrier and having a more natural complementary slope that allows grasses to grow and reduces erosion. If that is the direction you're going so he would be totally supportive of those options.
7. Shannon asked if having boulders up there make it more dangerous for the truck drivers because they may hit them?

Karen said the trucks would be coming off I-70 onto the truck ramp and there is a barrier to protect them from the slope. The boulders would be on the other side of that barrier. It's up on the hillside and pretty far from I-70, outside of the clear zone where a car can run off and recover

8. Greg said probably the biggest success factor for getting steeper slopes vegetated is soil preparation. Getting the jute mat down and seeding it at the right time right before the monsoons. After a year or two can you go back and reseed the spots that are a little bit bare. The rockfall berm before Vail Mountain School is around 2.1 it took us two times but the second time it finally started to revegetate.

Karen said we will be reseeding it for revegetation, but we are doing a landscaping phase for the whole project and will come back here and potentially add some more landscaping near the end of the project. It makes sense to do that all at once. We will have a lot of opportunity to reseed.

Matt said they are looking at seeding in late fall to make sure we get the best opportunity for growth on that slope. The seed is put down and it hibernates and freezes over the winter and comes back really strong in the spring when the snow starts melting. There are a lot more amendments that we are adding to our topsoil spec than we normally would to try to help facilitate seed growth.

- a. Karen said it seems that people feel pretty comfortable establishing a maximum slope that is somewhere between 1.8 and 2.1 and allowing for some adjustment by the LA in the field. She said she also heard that it is not as important to hide the barrier and it's okay for barrier to be visible if that offers more flexibility in having a more natural looking slope that is more well established with vegetation. This is really helpful for us because we weren't sure how important that was. I think this makes a lot of sense to me from an environmental perspective as well as aesthetics.
- b. Mary Jo said we will add the maximum slope to the design exception before presenting it to the PLT for concurrence. There were no other comments or objections with letting the designers move ahead with slopes that are greater than 2.5:1 and following the plan of the LA.

Mary Jo noted there will be other locations with slopes greater than 2.5:1. This is happening the recreation trail in some locations.



## 2. Future Design Exceptions

a. Mary Jo said there are other design exceptions we are working on and will be presenting to you in a future meeting:

- Reduction of the median width vertically or horizontally.
- Retaining wall heights. The design criteria state no retaining walls above the roadway platform will be greater than 12'. There are retaining walls that are higher than that but then they're directed to be put underneath the highway so that the drivers don't see them.
- Disturbance areas greater than historic disturbance or 40'. There are some places that we're probably going to exceed that a little bit. We are not looking at going outside of the Environmental Assessment limits at this moment, but if this changes we would take the appropriate steps to get clearance.

1. Greg asked if you expect to have all the design exceptions reviewed before the FIR meeting?

Karen said the plan right now is we have our FIR in September and a lot of the design exceptions are related to the roadway alignment that is not going to finish design until the end of 2022. However, we need to make sure we determine where the roadway is going to be for the wildlife crossings. Some potential design exceptions require more work to fully understand them before we will be ready to present to you.