MEETING NOTES

PROJECT:	23982-23929 I-70 West Vail Pass Safety and Operations Improvements
PURPOSE:	Technical Team (TT) Meeting #24
DATE HELD:	February 14, 2022
LOCATION:	Online Google Meet Meeting
ATTENDING:	Rob Beck, Program Engineer, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Matt Figgs, Project Manager, CDOT Region 3 Patrick Chavez, CDOT I-70 Corridor Operations Lisa Schoch, CDOT Historian James Proctor, CDOT Bridge Enterprise Captain Jared Rapp, Colorado State Patrol Stephanie Gibson, FHWA Jeff Bellen, FHWA Marcus Dreux, US Forest Service Michael Braudis, US Forest Service Jared Pierce, US Forest Service Greg Hall, Town of Vail Dick Cleveland, Town of Vail Chad Salli, Town of Vail Robert Jacobs, Summit County Kevin Sharkey, ECO Trails Devin Duval, DNR Kristin Salamack, USFWS CDOT Liaison Tracy Sakaguchi, CMCA Siri Roman, ERWSD Len Wright, PhD, ERWSD Larissa Read, ERWSD Shannon Anderson, Bicycle Colorado Randal Lapsley, R S & H Dan Logsdon, R S & H Mark Talvitie, R S & H Patti Miers, Goodbee & Associates Jim Clarke, Jacobs Loretta LaRiviere, Jacobs
COPIES:	Attendees

SUMMARY OF DISCUSSION:

1. **Introductions & Meeting Purpose**

   a. Karen introduced the attendees at today's meeting.

   b. Randal said our goal for this meeting is to provide you updates on EMS ITF Meeting #4, the landscaping approach, ITS, and the 2022 construction PIM plan.

2. **Review of Work Completed Since the Last Technical Team (TT) Meeting**

a. CP#2 FOR design meeting on January 31st to discuss and collect comments on the plans, specifications and we are now in the process of incorporating the comments into the plans.
b. EMS ITF Meeting #4 was on February 7th.

c. PLT Meeting #11 on February 11th. The PLT is meeting on a quarterly basis, so they received an update on activities over the past three months.

d. The Aesthetic documents have been completed and Lisa Schoch will submit them to the to the Consulting Parties.

3. Design Exceptions

a. Randal said the last time we met we requested a Design Exception for two walls that are over 12' tall at MP 185 & MP 187. We received feedback on the Design Exception memo. Questions and comments included:

- How will drainage be handled?
- What is the actual height of the walls?
- What is the length of walls over 12'?
- Confusing statement "rock sculpting was considered on the existing rock."

Randal explained the drainage will handled in a few different ways. First of all, the major offsite flows that are coming from the top of the nearby mountains will captured by the trail realignment that is happening in the area and then flows that get more immediately to the top of the walls, will be allowed to overflow over the top of the walls. We talked about the potential of having a pan back there but concluded that wouldn't really improve aesthetics or maintenance the way it does in many wall situations where we have a pan at the top.

b. Randal reviewed the Context for the Design Exception. He noted the text in red has been added to the memo in response to comments.

Walls are needed at I-70 MP 185 and MP 187, both of which are located above the I-70 roadway and, therefore, visible from I-70. The walls will be constructed as soil nailed walls. The I-70 Mountain Corridor Engineering Design Criteria includes design criteria that all roadway retaining walls over 12' in height will be installed below the elevation of the roadway. A design exception is proposed because the walls at MP185 and MP187 vary in height from 10' to 16'. ~~A design exception is proposed to exceed this height when the~~ .These walls are proposed to be faced with sculpted shotcrete ~~that~~ in order to better blend with the natural environment. The facing of these walls was carefully considered using the I-70 Mountain Corridor Design Criteria and the West Vail Pass Aesthetic Guidelines**.**

Process for the Design Exceptions - NO CHANGES TO THIS SECTION

The Aesthetic Guidelines Section 03 Transportation Support Structures state the following for wall designs. ***Each wall design will complement the historic Vail Pass wall aesthetics in a cohesive way but will be designed to meet site specific construction methods, safety improvements, and geotechnical conditions.***

To best blend the wall into the surrounding environment and to reduce the scale of the wall, planting areas and varied heights will be included to break up the length including connections to existing natural drainage. Other methods to break up the smooth face of the wall will be included such as deep relief in the sculpted pattern, larger sculpted features in the wall, and placing large, excavated boulders in front of the wall.

c. Randal reviewed the Wall at MP 185 Analysis and, again, the red text has been added in response to comments.

Walls at MP 185 were refined to minimize the total area and height of walls and avoid impact to a nearby FEN wetland. The alignment chosen reduced the overall wall height from the EA conceptual wall layout and minimizes the height of the wall above I-70 for the INFRA project. The design accommodates the future widening. With the new alignment, the walls vary from 10' to 16' in height. Approximately 52% of the wall length is over 12' in height.

Existing drainage patterns will generally be maintained at this wall location. The relocated US 6 Trail will intercept and channelize some offsite flows and convey them beyond the end of the wall to the west to drainage features under I-70. The existing drainage at the FEN location will be perpetuated under the Trail; flows from the FEN area will spill over the wall face and into the drainage swale/snow storage area adjacent to WB I-70.

Randal said at MP 185, there are different colors and striations, and we are trying hard to make this wall look as natural as possible given the location.

d. Randal reviewed the wall at MO 187 Design Analysis

Walls at MP 187 were refined to minimize the total area and height of the walls. Using the existing rock was considered at MP 187. The existing rock is not stable enough to ensure a long-term face without rock falls. This wall has a 13.5' maximum height and is 550' long, with approximately 9% of the wall over 12' in height.

The wall is following the falling topography from east to west. Water will be directed along the top and bottom of the wall and channeled into drainage features. If the natural drainage currently flows directly toward the road, the wall may be sculpted to allow water to fall over and down the face.

Randal said these elements will be incorporated into the Design Exception and we will reissue it.

1. Greg said when we discussed this wall Design Exception at the last TT meeting, we talked about potentially re-staining it because it could fade significantly over time, and I don't see that written in the Design Exception. Concrete does fade more than rock so is there a committed to that?

   Randal said almost any kind of wall has the potential to fade and to need maintenance over time. Certainly, we're trying to blend in with the existing geology that becomes even more critical. I think we can look at how to incorporate that, but I think the variance we are looking for is the height of the wall as opposed to the long-term maintenance. But I understand what your concern is.

2. Greg said in the PLT meeting we talked about if you can't retain a natural look over time, maybe it's better to go to something isn't natural. Obviously the scallop wall color has faded over the 40-50 years it's been up there but at least you expect

concrete to fade. The natural rock has been there for millions of years and still has significant colors.

Karen said she is not willing to commit to re-staining the walls. CDOT does not commit to that to any other wall in the state. The wall will look natural if we integrate multiple colors with the staining so it would all transition together and maybe even then consistently look better. The other thing to consider is that the scalloped wall can have a larger footprint than shotcrete walls with staggered benches which is really critical especially at the fen location. That was something we were trying to balance and like we said there are a lot of rock outcroppings in these areas, and we thought this was a better fit for the natural environment.

Patti said she doesn't know exactly how long it takes for integral concrete to fade. Obviously it will over time. The team played a lot with amount of color that was incorporated into the cement on the truck escape ramp, and we could put these walls in slightly darker initially knowing that it's going to fade out. Taking a look at accent colors and trying to make them really emphasize the variation and playing up the shadows helps a lot.

3. Greg said he thinks MP 187 is a much better fit for the sculpted shotcrete than maybe MP 185. The fen is in this area, but this wall will be in your face as you come down that curve.

   Karen said MP 185 is right next to the truck ramp so there is a rock face right there and then the 187 one is right next to the Narrows that has exposed rock face also. They are both within a ¼ mile of exposed rock outcroppings.

4. Jared asked if the benches are intended to be planted with vegetation of some kind and, are there other pockets to be incorporated into the wall in those areas?

   Patti said we weren't initially looking at putting trees or shrubs in there. The benches are only going be about 4' to 6' wide for the most part so we are definitely looking at grass and forbs in the benches.

   Jared said that's great and thinks those benches or other vegetation pockets will go a long way with breaking up that vertical face and minimizing the height of the wall. I think it will be a great look.

   Randal said we've talked about putting some boulders on the benches and maybe natural dirt areas to blend it in more with the natural topography.

5. Shannon asked if when said the drainage would be captured by the trail realignment, she just wants to make sure the trail isn't going to be covered with water and ice when the temperatures change.

Randal said no, it will be like the existing US 6 road where there is a ditch on the uphill side that capture water and directs it toward pipe locations that cross the existing roadway. We are looking at trying to maintain that same system. We're not trying to allow water to flow directly over the trail.

6. Jared said we've been talking about the design exception for two walls in this meeting and wanted to know if there will be other walls needing that exception for height? There's going to be quite an increase in walls over the existing condition. Is CDOT moving more towards the shotcrete look or is it going to be more of the scalloped or a mix of the two? If there is an increase in walls over the existing condition and those walls end up having a scalloped look it may result in having a more urban feeling and change the character.

   Karen said big picture, yes, we are adding more walls. We're adding infrastructure onto a platform that just accommodates the existing infrastructure right now. So, we're having to cut in some places to fit in the improvements. What we have been trying to do to meet the intent of the original construction is minimize the walls you see from the roadway and have more walls below the roadway. Right now, we're looking at shotcrete and scallop walls for the I-70 viewshed.

   Randal said it will be a combination and to your original concern, we are trying first to minimize the walls, and also trying to blend the walls in to make them look as natural as possible. The combination of all of those elements and where you see those walls will hopefully make it look less urban.

   Randal said along I-70 there are some existing scalloped panel walls between the east and westbound in the median areas and we are looking at replicating those walls in the locations where we need to continue with that historical element.

   Randal said there is a combination of wall types on the rec path. We have some around the abutment of the bridge that will be rock looking because of the form liner we are using. We have some that will ultimately have the cruciform paneled look and that is the same look that is on the existing path close to the bridges where the path curves and goes underneath the two I-70 bridges. And there will be shotcrete walls in other locations.

   Jared said he appreciates the extra thought and consideration going into this. It will be helpful in the long term. He definitely sees the benefits of replacing like for like such as, a wall that currently is scalloped, going with that kind of design. Also, if there is a need for putting in a wall where there is no wall, taking an extra look at that to see if there is a way to do it as naturally as possible. Will there be a time when you will know which wall type will be designed?

Randal said there are a lot of design done now for the current construction packages. Most of the other walls we have a sense of what those wall types will be for the funded INFRA Grant Project, not for everything in the EA. The unfunded part will be determined in the future.

Randal noted we also have the Aesthetic Guidelines which help guide our designers in how to look at the wall types and locations with the goal of aesthetics overall for the project in this stretch of I-70. We use those as a guiding document to determine the wall types.

Karen said if it would be helpful she can schedule a meeting with the design team to go over the wall types with him.

Jared said that may be good or maybe just send a simple graphic that shows the different wall types at the different locations.

7. Greg said historically it was intentional to build more of an engineered look than trying to do something with boulder or something like that. They really went to a lot of work to get it right and the historical piece is pretty significant. I think the team has worked really hard to weigh that. The Aesthetic Guidelines are for the entire project so it really sets the tone, and this team is going back and really tweaking it on the construction to do in even greater detail what will fit and not fit in. I-70 is designated as historic for how a roadway fits into a mountain landscape and it's the whole ten miles, not a specific wall or bridge.

4. CSS Survey

a. Randal said one of the other things that was completed since the last time we met was we compiled the CSS survey results. We received nine survey results back in from about 63 people, but not everybody answered all the questions so there are variations in some of the answers in terms of percentages.

We reviewed the results with the PLT on Friday and talked about them in a little more detail.

5. EMS ITF Meeting #4 Update

a. The Emergency Management ITF team met last Monday. Matt said the Emergency Management ITF Meeting was attended by Vail Fire and Police, the State Patrol, Eagle County Paramedics and Colorado Motor Carriers.

b. Our goal was to present our phasing for this upcoming season when we will be constructing the realigned section of the bike path. We are going to have the narrowed eastbound I-70 section with pullouts and then the 8' bike path with a barrier separation between I-70 and the bike path. That barrier will be pinned to make sure it doesn't move it does get hit.

c. The construction access road on the backside of the construction side of the trail will be used by providers to respond to incidents on the trail.

d. We also gave an update on our 2023-2024 I-70 work. The initial phasing is to widen westbound I-70 so that four lanes of traffic will fit on it. We will reconstruct eastbound lanes in 2023 and then we move the eastbound traffic onto the rebuilt westbound lanes.

e. There were some great comments about what the options were for emergency access the I-70 work especially because we are going to have drainage and wildlife crossing that will have large excavations and so we have to work a little harder to make sure there is access through the construction site when there are incidents in that I-70 section. We're going to keep working on that. We also received some comments on formalizing the communications during construction.

6. Landscaping Approach

a. Patti said as you can imagine, there are a lot of components involved with landscaping. One of the most important pieces is the plants themselves which take some forethought. We will be planting native species grown from seeds collected by USFS or will be transplanting some larger material that is actually from the site and in some cases we will be doing some nursery grown plant material.

b. The majority of replacements will be seedlings which are overplanted. This is something we discussed with the Forest Service. We are working with them in terms of their best practices for reforestation. The seedlings will primarily be installed on the cut and fill slopes that were previously forested and some other locations that seem appropriate.

c. The transplants and limited container materials will be placed more in the high visibility areas, along the rec path and in areas where we want to have some screening initially at some of the drainage features and also near the wildlife crossing entrances. We will be working with the biologist the appropriate plant material for the wildlife crossings.

d. Another really important thing for the success of the vegetation is the topsoil. We will be stockpiling it near the locations it is harvested and then protected until spread. There will be soil testing done prior to construction to check the nutrient levels and analysis of salts, pH, and organic content. A recommendation for amendments will be made based on that. A lot of the areas next to the highway have very high salt content so it is going to be a bit of a challenge to work with some of those soils.

e. Mulch from the cleared trees will be incorporated into upland topsoil. We will be chipping the trees as they're cleared. The mulch really helps to retain moisture for the topsoil. It's really good to incorporate as much as we can.

1. Stephanie asked if there is any concern about the mulch using up all the nitrogen as it decomposes.
   Patti said she doesn't think this is a huge concern. We have done this before on highway projects and it hasn't been a big problem.

Michael said it is always a concern but with too much carbon and nitrogen loading it sounds like our soil scientist has weighed in.

Patti said we are looking at spreading about a 1" layer of mulch and incorporating that into 12" of surface. So hopefully that will satisfy the need.

2. Marcus said you are removing a lot of the trees as well so there might not be a significant amount. Is it just the smaller trees, the slash, and the limbs we talking about?

   Patti said it would be the smaller trees and the slash primarily.

3. Marcus said he noticed the stump height would be 15". You could probably drop that down. A 15" stump could easily be cropped at 6" and would look a lot better in areas where we are leaving some stumps.

   Patti said she looked at some of the Forest Service details and saw smaller ones. Some of the photos from the historic I-70 installation have taller ones. If we do a range, would that be acceptable?

   Marcus said the lower we go, the better it will look. The contractors should be able to cut them pretty low and keep their saws out of the dirt.

4. Marcus asked about the stump root wads that are in grading areas, will they be mulched too?

   Patti said we haven't really talked a lot about the root wads yet. I know we will probably be looking at using them to really force the stabilization around the riparian areas and things like that. Not so much on the slopes.

5. Greg asked if there was a fire up there and is that why some of the stumps are taller and not necessarily from a logging or road building project.

   Marcus said he thinks it was both logging that was done over the snow and those are the stumps that are really old and about 6' high. And he believes a fire came through as well.

f. The wetland topsoil will be salvaged separately from the upland topsoil. We want to make sure we keep the wetland seeds and good biomass that comes with that stockpiled separately and placed in the restored wetland sites.

g. The landscaping will be accomplished in different phases. The first phase is the base layer for landscaping and will include:

   - Tree protection fencing/tagging prior to initial clearing
   - Slope molding/benching will occur once the initial grading has been done to blend the impacted slopes with adjacent landforms. Benches help with erosion control but also create pockets where vegetation gets a little more moisture and has a better chance for regrowth.

- Selective thinning will be done to create a more natural edge and foster the growth of younger trees
- Topsoil placement will be conducted along with the erosion control.
- Boulder and log installation will happen. This was done on the historic installation of I-70. They did a lot of logs, stumps, and things like that they put on the slopes to help blend in with adjacent environment. It takes away from the stark new slopes. But it will be done in a way that seems appropriate with the adjacent landscape conditions.
- Native seeding and slope protection will also be done.

h. Phase 2 is when the actual larger plant material goes in.

- Seedlings will be planted in 2025
- Transplants and container plants planted in 2024
- Wetland and SB 40 mitigation will happen in summer/fall of 2024

i. Phase 3 of the landscaping will be monitoring and replacements. We have to do monitoring of the wetlands obviously, and then going back through and taking a look at what's surviving and where there are problem areas that we need to fix.

Randal said it is worth noting that we have a number of different construction packages that are out there so some landscaping will be done as part of the construction packages and some will be done later. The things that could be done in conjunction with those packages could be respreading the topsoil and seeding.

Patti said that would be the Phase 1 work. Later we're doing the grading the benching, top soiling, the seeding and erosion control, tree protection, fencing, and tagging of trees that we want to maintain. CP #4 is when the planting will occur.

7. ITS Fiber Relocation

a. Dan said CDOT has existing phone fiber in the duct bank on the westbound shoulder of I-70. It is in a shallow trench (12”-24”) that is encased in concrete, this is shallower than a standard utility trench. This has led to several instances in the past of the line being exposed or being hit by guard rail installation. This has increased the number of splices which is obviously not ideal for a fiber backbone

b. As part of this project, we’re looking to put together a proposed utility corridor that would be better for the system. It would include some flexibility and the number of conduits in the area. Currently through the majority of the corridor there are either two 1 ¼” or two 2” conduits and one 4” conduit. There are full. Excel Energy utilizes the 4” conduit and CDOT ITS and Zayo Communications utilize each of the 2” conduits. With this project we will provide a spare conduit which will increase flexibility in the future.

c. There are a number of locations between MP 184.4 up to almost MP 189 that would be relocated as part of this project. Future projects can fill in a similar scenario outside of these limits. This would be a good start to hopefully getting these utilities in a better

location. Some of the benefits of this project includes a better fiber infrastructure, reducing the number of splices, and better fiber integrity throughout the corridor and getting it to a more standard depth. This proposes a 48" cover which is standard for CDOT utilities.

Matt said one thing we want to highlight is the project has two areas that we are impacting. One is the westbound bridge relocation, where we will be impacting that existing duct bank. Another is from 187 -188 through some of those curves and wildlife crossings. So, we're must relocate these. An exciting new development is we received $3.5M from the CDOT ITS group to fill in the gaps. So, we will have a much longer un-spliced length which will run from MP 184.7 to almost MP 189 in a completely new corridor. This is a big benefit as all who live in the mountain communities know, fiber infrastructure is so critical for so much of what we do. We feel this is a big positive for the project.

1. Michael said if it hasn't already been done, I think we need to meet with Diane and discuss getting the permitting authorization for this amended for the additional line and conduit going in.

   Dan said they had met with Carole Huey prior to her retirement, and thinks we have a plan in place to make sure this is coordinated with the Forest Service. He wants everyone to be up to speed as we work through the individual phases of the project.

2. Greg asked if there has been any discussion as you're talking about resiliency about ever putting in additional electrical conduits to connect the grid across Vail Pass. Right now, it is not connected. Holy Cross comes up and dead ends and Xcel comes the other way. I know we could use some additional conduit.

   Dan agreed there is an electrical gap, as you mentioned Holy Cross uphill terminus is right around MP 182 at the top of the development there and Xcel's currently comes down from over the top of Vail Pass and terminates around MP 186, close to the Narrows. This project is proposing to extend that electric service line to basically the extent of the project down to around MP 184.7 to try to reduce and minimize that gap for potential future uses but also power some proposed ITS devices through this segment.

8. Construction PIM Plan

Matt said one of the big things that we are working on is our public information plan for the upcoming season. The bike path reconstruction will be the major element of work and the westbound bridge will start later in the summer. That is being constructed entirely offline so our impacts from that reconstruction will be very minimal.

We will start our PIM with a live virtual open house in March or April. There will be a live presentation to talk about the upcoming season and people will be able to join in. We will record it and post it online for those who can join virtually.

A big part of the plan will be talking through the trail work and the detour. We feel the way the detour is set up it is going to work very seamlessly. Users will flow from the existing path up into the detour section for the 1 ½ miles and then be back on the existing path.

We will have in-field signage that is typical for any construction project. We will have a lot of virtual engagement with email blasts, using our website and targeted outreach. Some of that targeted outreach will include event organizers like the Copper Triangle, Triple Bypass and different events that are scheduled through the construction season. We have that list of events from the Forest Service. We will also be reaching out to outfitters who bring people to the top of the Pass to ride down.

We will be printing flyers and brochures and coordinate with both the local bike shops as well as other organizations. Our public information firm has had a lot of success in the past engaging with local shops and trail alliances because then they can repurpose our information and spread it on their social media accounts and put it in their newsletters.

The Forest Service has also kindly offered to repurpose any information we have, and we will make sure we also have targeted outreach to Bicycle Colorado. Repurposing is going to be a really big strategy that we need to use because you have stakeholders that would never come across our construction website.

At the trailheads there will be real estate type boxes where folks can grab a flyer with the contact information if they have questions and we're looking at putting QR codes on them because I know a lot of people may not necessarily grab the flyer, but they can take a picture with their phone, and it will take them to all the right information. There will also be some other signage on the trail.

As typical for our construction projects we're going to be doing weekly email blasts with information for anyone who is on our distribution lists to keep them up to date on construction and trying to incorporate some video updates of the work that is going on.

1. Shannon said she can help with apps and websites for outreach. Matt said he would send her a list of the ones they know of so far and would appreciate her input on others.

2. Marcus asked if you will be using the rec path alignment from the Vail Pass trailhead to get down the trail for the spring work for culverts and temporary creek crossings? CDOT usually plows out the rec path at some point and am thinking about the snowmobiler area and if there will be any impacts.

   Matt said the plan right now is to access off of I-70 in the area of the creek crossings to try to have less impacts than coming all the way from the top.

9. Next Steps

a. The next TT Meeting is March 14th

b. There will be a SWEEP Meeting scheduled for some time in April that will discuss the Maintenance Manual and the Map Book of SCAP improvements from MM 185-190. The

reason we delayed the review of this part of the Map Book is we are actually designing the improvements right now for the next construction package.

c. Karen said if anyone has an interest in learning more about topics we're working on, please let us know. We can have one on one meetings or have it as a topic at a future TT meeting. We're always open to hearing your feedback.

1. Greg asked if the Vail Pass Rest Area project is moving forward?

   Lisa said from the 106 perspective we have consulted on that project and are in the process of getting a draft MOA with the Forest Service for the adverse effects to the district. They are the lead agency for the 106 process. There is also an archeological site, Vail Pass Camp, which is part of the Rest Area. So, from the 106 perspective we are close.

   I know they wanted to go to construction this summer, but I don't know how that is going. There is now a nationwide 404 permit needed. I think the design is close to being finalized.

   Karen said she heard they may start construction in late summer or early fall. She will check in with Hope to get an update for this group.

   Lisa said she is also involved in the interpretive design plan and there is a lot of work going into what that is going to look like. Not just the historic, they are going to be doing an overall interpretive design plan for the interior and exterior of the building and that will all be shared with the 106 Consulting Parties to review.