



MEETING NOTES

PROJECT:	23982-23929 I-70 West Vail Pass Safety and Operations Improvements
PURPOSE:	Project Leadership Team (PLT) Meeting #10
DATE HELD:	November 12, 2021
LOCATION:	Online Google Meet Meeting
ATTENDING:	John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Rob Beck, CDOT Region 3 Program Engineer Kane Schneider, CDOT Region 3 Maintenance Zane Znamenacek, CDOT Region 3 Traffic Program Engineer Matt Figgs, CDOT Region 3 Pete Wadden, Town of Vail Dick Cleveland, Town of Vail Tracy Sakaguchi, Colorado Motor Carriers Randal Lapsley, R S & H Jim Clarke, Jacobs Mary Jo Vobejda, Jacobs Loretta LaRiviere, Jacobs
COPIES:	Attendees

SUMMARY OF DISCUSSION:

1. Introductions & Meeting Purpose

- a. Karen began the meeting by introducing the PLT attendees' names and organizations.

2. Agenda Review and Meeting Goal

- a. Mary Jo said the goal of the meeting is to:
Provide updates on the project, review stakeholders feedback on the design, and discuss ongoing process for project success
- b. Mary Jo noted today's agenda topics are:
Work completed since the last PLT Meeting
Update to construction packages
Ongoing work
Using ITF Guidance and Design Exceptions
INFRA schedule update
Process to use as we move through construction
Next Steps

3. Work Completed Since the Last PLT Meeting

- a. Mary Jo said there has been a lot of work and meetings since we last met in August.
 - Groundbreaking – August 25th



- ALIVE ITF Meeting #5 – September 13th. This was the last meeting of the ITF and the guidance and methodology are being incorporated as the design moves forward.
- SWEEP ITF Meeting #5 – September 16th. This ITF work is ongoing
- TT Field Trip – September 27th
- SWEEP Field Trip – September 27th
- Revising Aesthetic Guidelines has been completed and it is now ready to be submitted to SHPO and the consulting parties.
- FIR Design meeting for INFRA project – September 28th
- TT Meeting #21 – October 25th

4. Update on Construction Packages

- a. Mary Jo said as design continues, the construction packages adjust to new survey information, new design techniques, and the input from the contractor.
- b. Approval from the EOC to remove the anti-icing system.

John said as part of the INFRA Grant submittal, we put in an anti-icing system on a bridge structure that was about a mile outside of where we were adding the third lane. We had two thoughts for doing this; the target dollar amount didn't allow us to bring that third lane further down the hill and we really wanted to improve the last bit of the steep area. It was innovative and helped our INFRA Grant benefit cost ratio. However, since we put this system in the grant, the companies who specialize in this product have whittled down to just one company. It is pricey if you want them to design it and then you have to get an annual maintenance contract and they will only provide the annual maintenance which is their guarantee on the product for five years.

The state has struggled with the reliability and the cost to maintain these systems. It consists of a holding tank for mag chloride, a pump, and a system to spray the bridge deck. The system sprays the bridge deck when an automatic sensor detects moisture and temperature conditions predictive of ice forming. But the problem there is that we are just isolating one spot with mag chloride. If a lot of cars track over it before we get up there to cover the entire road with mag chloride, it eventually moves the icy spot from being on the bridge to a little further up the hill. With all these things combined and the maintenance headache, we decided to remove the anti-icing system from the grant and are proposing to substitute a new bridge.

The original project only had one bridge which was the eastbound bridge F-12-AS. This is also a safety improvement for the project because the existing bridge design speed is rated at 45 mph and we are improving that by increasing the radius to 65 mph curve. Now we are proposing to add a new bridge F-12-AT. By smoothing out the radius, we are adding an additional safety benefit and we can calculate we will have crash reductions.

John said the new bridge will have a 6% superelevation, which is a significant improvement over the existing bridge which has an 8% superelevation. CDOT's standard now is a maximum 6% superelevation on all of our highways. Studies

show anything over 6%, especially with ice and inclement weather, you can actually start seeing crashes on inside of curves.

The process was we prepare a letter to the Secretary of Transportation requesting he sign off on the substitution.

c. Approval to add the WB bridge at MP 185.

John said the original EA had a 1300' long bridge built to the south of the existing bridge. This allowed it to be build offline of existing traffic. Maintaining traffic is one of the state's higher expenses on any construction project.

One of the downsides of this 1300' long bridge is that it put it right on top of Black Gore Creek and it also made it harder to fix the bike path at that curve. We really didn't have a solution for mitigation of Black Gore Creek other than the sediment collection improvements we are making on Vail Pass.

The biggest benefit to moving this bridge to the north and adding the second bridge is the construction process. We can build the westbound bridge first and then we tear down the existing westbound bridge, put the traffic on the new westbound bridge. Now we can build the eastbound bridge in between the two bridges. This moves the final alignment as far away as possible from Black Gore Creek. So, we swapped out one 1300' long bridge for two bridges that are about 600' long. We do have some extra cost because we are putting a cut wall into the hill.

One surprise we found by the westbound cut wall was a fen. A fen is a wetland that has been slowly created over thousands of years and has special soil qualities that are challenging to recreate. We have to relocate the recreation path because it was proposed to go right through the fen. We now have a great option to avoid the fen.

1. Dick asked if the two new bridges will be constructed concurrently or sequentially or a combination.

Matt said they will be constructed sequentially and that was why we were able to move them to their new position because we have to build them in a specific sequential order.

d. CDOT recommendation for the Concrete Curved Panel Wall design

Karen said we have come to you before with decisions we made for the scallop walls we are building in the future. I think that most of us know the Aesthetic Guidelines state that if we are going to put in a wall that is visible from I-70, it would have to be a scallop wall.

Initially we thought the best balance for all of our core values in terms of environmental footprint, cost, and maintenance, was a modified scallop, which is a scallop that wasn't quite as deep. We had thought there was a certain space between the wall tiers that we have to match. What we learned, with a lot of one-on-one conversations with Greg Hall, was the walls that are out there now have quite a bit of variability in the tier width and so what we could do a more condensed tier width. This means there was no longer a difference in the environment footprint, just a

difference in cost. We have gone back to committing to install a curved panel walls that will have the same depth of scallop as the existing walls

5. Ongoing Work

- a. Environmental compliance tracking on Construction Package #1. This will happen on every construction package.
- b. Matt is carrying on with the Emergency Management coordination between the contractor and all of the first responders in the area. Not only are they working on Construction Package #1, and they are starting to do their planning for Construction Package #2.
- c. Website updates for Construction Package #1 and email update notices on are going out.
- d. The SWEEP ITF reviewed major sections of the Sediment Control Action Plan (SCAP) and the Maintenance Manual and the team is working on responses to comments. This work is ongoing and will continue as the Maintenance Manual is responding to the design and capturing what there is and what will be built.

6. Using ITF Guidance and Design Exceptions

Mary Jo noted the TT has recommended two Design Exceptions.

The Design Exception process is:

- Review the Design Exception Criteria with the Technical Team
- Review each Design Exception with graphics, benefits, and possible mitigation
- Present the Design Exception Statement
- Discussed and gain the TT endorsement

The two Criteria we have been using for all of the Design Exceptions are complementing surrounding physical characteristics and protecting the environment. It is easy to imagine what is happening here, the slopes are steeper than the design criteria recommendation. You can chase those slopes forever, you can create little sliver slopes when you try to meet the standard and all those things in one way or another are likely to impact the environment. Either we go farther and disturb more land, or we end up with slopes that don't really stabilize themselves.

- a. Cut Wall Slopes at MP 185 Design Exception

Randal said the tiered walls that we are looking at in these areas and if we went to a flatter slope, we would actually increase the wall height in a number of areas. There is a 2.1 max slope in this area. Part of the reason we asked for this exception is to minimize the wall heights in these areas. Again, we have tiered walls in here as part of the CSS guidance for these locations. We're looking at how we can get vegetation to grow and maintain on these slopes. The design allows us to create snow storage areas in the sediment removal area on the bottom while minimizing the disturbance of the footprint.



Mary Jo reviewed the recommendation endorsed by the Technical Team:

Use slopes ranging from 2.5:1 to 1.8:1 as directed by the project Landscape Architect and engineers to create a slope that fits into the adjacent landform, looks natural, sustains vegetation and is maintainable.

1. Dick asked if the PLT needs to make a recommendation to approve this Design Exception?

Mary Jo said the TT makes the recommendation, your job is to confirm that we followed the process. The design is going forward using this, we just want to make sure you see what we are doing and that it fits into your expectations of how CSS works and is being implemented. It is more of a check on process than the design at this point.

The PLT had no objections to the process and approve the recommendation.

b. Recreation Trail Design Exception

The recreation trail currently has about 12 locations where they don't meet the slope requirements. The number could increase as the trail design continues to have fewer conflicts with wetlands and trees. About 30% of the slopes being proposed will be at 2.1 along the recreation trail. If we go to 2.5:1, we are going to create almost twice as many walls. We are primarily doing these at approaches to bridges or between the trail and I-70. You can imagine as we get closer to I-70, it is harder and harder to keep a more shallow slope of 2.5:1.

If you had the slope at 2.5:1, it comes further and further out just to meet the existing grade, so you create more and more disturbance area. Not only does it come out further, but it also goes further along the trail.

Mary Jo said we are not doing this because it is the cheaper and easier way to do it. We are doing this because we really believe we are going to get a better product. Where we can, we will use the standard of 2.5:1 slopes. Where it is onerous or causes greater damage or disturbance, we are going to use this Design Exception.

1. Dick asked in the areas where we have the steeper slopes, do you have to do additional sediment control or debris control or additional gutters along the trail to prevent debris on the trail.

John said on the previous slide it showed spray on mulch which we wouldn't use. We would use biodegradable erosion control blankets so we would have that extra measure to help the grass grow on the steeper slopes and we have had great success in getting the grass to grow there.

In this case, where we have the 2.1 there are little rills that form on the steep slopes just because of the runoff from I-70. Here we are making an effort with the new lane to capture that water and are going to manage the water from the road which then has an influence on the bike path. The bike path, in these areas with the steeper grades, is going to see less water that gets to the



path now. We have some drainage features on the recreation trail so in areas where we are closer to I-70, we have taken steps to manage it much better than it is managed now

Randal said there is a ditch at the bottom and that will help avoid any sediment getting directly on the path and then we are looking at all the ways we can take the water that is running in those ditches and put it through some sediment containment pieces or run it through natural vegetation to diminish the sediment load.

Mitigation measures proposed and shown to the TT are:

- Boulders to break up slope with random placement and act as stabilizing forces
- Use logs and stumps to reflect natural conditions
- Plant a tree mixture of diverse sizes
- Landscaping using native ecosystem species, mat groundcovers and spray on blankets, bonded fiber matrix to insure at the steeper 2.1 slopes to revegetate the slopes

The recommendation endorsed by the TT is the same as the Cut Wall Slope Design Exception:

Use slopes ranging from 2.5:1 to 1.8:1 as directed by the project Landscape Architect to create a slope that fits into the adjacent landform, looks natural, sustains vegetation and is maintainable.

The PLT had no objections to the process and approve the recommendation.

7. ITF Task Force Guidance

Mary Jo reviewed the ITF process:

FONSI directed the formation of the Aesthetic, ALIVE and SWEEP Issue Task Forces

Each ITF laid out their methodology and deliverables: Aesthetic Guidelines, ALIVE Memo and the SCAP and Maintenance Manual

Additional topographic and wetlands surveys were completed. That has made a difference. John mentioned there was a fen that was identified and is now affecting the design. The ITFs provide an optimum recommendation and those are put into the design and the balance starts to occur.

- a. Aesthetic Guidelines in Construction Package #1
 - Refined the design to minimize the visibility of the truck ramp parallel to I-70
 - Utilized the aesthetic guidelines to design the sculpted shotcrete wall to mimic the natural rock in the area and allow the truck ramp to better blend in the surroundings
 - Utilized more natural grading above the truck ramp to allow it to blend into the natural surroundings



- b. Aesthetic Guidance for the wall at MP 187
 - Use Aesthetic Guidance to balance the eastbound fill walls with the westbound cut walls at MP 187
 - Optimized westbound cut wall to limit height to 2-10' tiers
 - We continue to look to reduce the size of the walls and make them look as natural as possible. The Aesthetic Guidelines have really helped our designer focus on keeping these as Context Sensitive as we can.
 - c. ALIVE ITF methodology affecting locations and types
 - New locations for medium-small mammal crossings to maximize access to suitable wildlife habitat
 - Optimizing large mammal crossings in context of roadway design, cost, and construction phasing.
 - Design guidance recommends structure characteristics, needed cover, drainage requirements, and human/recreation proximity
 - d. SWEEP approaches to reduce sediment introduced into the creek
 - EA configuration of the eastbound bridge shifted east toward Black Gore Creek
 - Sediment ponds and implementation of maintenance
 - Final design shifts bridge away from Black Gore Creek
 - Design reduces forest impacts
 - Larger trail offset creates additional greenspace between I-70 and trail
- 8. New Survey Data**
- Updated topographic and wetland mapping resulted in recreation trail alignment changes
- Adjusted the trail bridge location to minimize temporary wetland impacts
- Adjusted the recreation trail alignment based on the updated wetlands which:
- Reduced walls
 - Better earthwork balance
 - Reduced impacts to large trees
 - More cost-effective design
 - Wetland mapping results in recreation trail realignment of southern bridge (~MP186.4)

9. INFRA Schedule Update

- a. The addition of the second bridge adds an additional year to construction.
- b. Karen said there are four construction packages shown on the schedule but there will be more than four packages. We have been asked to not increase our contractor's contract amount. We will be delivering some of this work with a different contractor in order to create more opportunities for competitive bidding and let other contractors have a chance to bid on this work. We will know more next time we meet on what will be included in the new contract.

- c. The Aesthetic Guidance and ALIVE ITF work is complete. The SWEEP ITF will have two more meetings and the Emergency Management Services ITF will meet early in 2021 and they will continue to meet on a regular basis throughout construction.

10. Process Through Construction

- a. Karen said we were originally going to keep just the PLT going through construction. The TT has said they also want to be involved through construction so we will combine the two when the design is completed later next year. The combined meetings will be on a quarterly basis to coincide with construction package milestones.

The PLT is supportive of combining the TT & PLT when the design is complete.

- b. Mary Jo said part of the CSS process is the feedback loop. Part of that is your responsibility to help us stay on track as we move forward. CSS recommends a survey of stakeholder to see if the process is meeting their needs and it is your role to insure we are continuing to do. At the end of the EA and before we started this design work we sent a survey out to everyone who had been involved in the development of the EA and the FONSI. We used that feedback and altered our process. Do you have any feedback about how this has been going? Is there anything we should change as we go further into design and construction? What are your feelings about an annual survey or perhaps a survey that happens at the end of each design process? The project team feels there should be some sort of feedback as we move into construction sometime in the next year and the process starts to change.

Dick and Tracy said they support doing a survey and now seems to be a logical time because it would give you information for future projects on what works and doesn't work.

11. Next Steps

TT Meeting #22 – November 15th - Recreation trail design refinements and adjustments based on new survey info

TT Meeting #23 – December 20th. We will ask the TT on Monday if we should cancel this meeting given the proximity to the holidays

SWEEP ITF Meeting #7 – TBD

EMS ITF Meeting – Early 2022

TT Meeting #24 – January 24, 2022

1. Dick asked is the work that is being done on the truck ramp and traffic control proceeding according to schedule?

Matt said the truck ramp will be opened by Thanksgiving. The westbound closure system at the top of the Pass will do some preliminary conduit and prep work this year due to the long lead time for the electronic VMS signs and the cantilever arms. We will resume work in the spring and intend to be on schedule.



Matt said they have a construction pre-activity meeting on Monday to start planning the opening of the truck ramp and he will follow up with Tracy with specific information for the trucking community on the opening. There will also be a press release.