



MEETING NOTES

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| PROJECT: | 23982-23929 I-70 West Vail Pass Safety and Operations Improvements |
| PURPOSE: | Technical Team (TT) Meeting #14 |
| DATE HELD: | March 15, 2021 |
| LOCATION: | Online Google Meet Meeting |
| ATTENDING: | John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Matt Figgs, CDOT Region 3 Rob Beck, CDOT Region 3 Carole Huey, US Forest Service Patrick Chavez, I-70 Mountain Corridor Greg Hall, Town of Vail Dick Cleveland, Town of Vail Pete Wadden, Town of Vail Ben Wilson, USACE Larissa Read, Consultant to ERWSD Devin Duval, DNR Taylor Elm, DNR Shannon Anderson, Bicycle Colorado Stephanie Gibson, FHWA Jeff Bellen, FHWA Tracy Sakaguchi, Colorado Motor Carriers Association Jim Thomsen, Kiewit Mark Gutknecht, Kiewit Randal Lapsley, R S & H Brian Hearn, R S & H Clint Krajnik, R S & H Mary Jo Vobejda, Jacobs 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. Mary Jo reviewed the purpose and goals for today's meeting:
 - Review project progress to confirm design direction
 - ITF Updates
 - INFRA Grant CAP 1 Update
 - INFRA Grant Projects in Design
 - Bridge Refinement Update

Mary Jo said we hope by the end of today's meeting you will be able to provide additional feedback and support in the direction with our design work.

2. Review of work completed since the Last Technical Team (TT) Meeting



- a. Mary Jo said the 106/Aesthetics ITF Meeting #4 was held on March 1st. Topics of discussions and comments included:
 - i. The Curved Panel Wall Aesthetics Memo was reviewed and will be updated based on comments. Suggestions were offered on what might be a design that would be more reflective of the existing walls. The members want to ensure the modern interpretation of the walls meets the EA, PA, and FONSI commitments.
 - ii. Information is needed in the Aesthetic Guidelines regarding the different types of walls and where to use them.
 - iii. The next steps are to submit the updated memo to Lisa Schoch, CDOT's historian who will start the review process with SHPO and the consulting parties.
 - iv. Landscaping techniques successful in the Mountain Corridor were discussed and the Aesthetics' team is looking into those for inclusion in the Aesthetic Guidelines.
 - v. Five sections of the Aesthetic Guidelines outline and format that relate to the Lower Truck Ramp was reviewed. Input was gathered on the sections:
 - Introduction
 - 03 Structures
 - 06 Color
 - 07 Earthwork
 - 09 Landscaping
 - 19 Construction Material Management
 - vi. The 106/Aesthetic Project team will be developing the rest of the Aesthetic Guidelines sections for anticipated review in July.
- b. The Design team has started working toward refinements for:
 - Truck Escape Ramps. We reviewed this at the last technical team meeting.
 - Recreation Trail design
 - Roadway alignment
 - Bridge Phasing
 - Research on the anti-icing system
 - Highway closure system
- c. The Emergency Services ITF #2 has been scheduled for March 29th.
- d. We are preparing for the PLT Meeting #8 on March 26th.
- e. Preparing for April ALIVE ITF and SWEEP ITF meetings

3. INFRA Grant Project Update

- a. Karen said the CAP 1 scope hasn't changed since we met last month. It includes the lower truck ramp at MM 182 and the highway closure system improvements at the top and bottom of the Pass. These projects will have FOR (90% design review meeting) at the end of the month and construction will begin this summer and finish in summer 2022.
- b. Karen noted construction will continue through 2024. The CSS process will continue through construction.



- c. Karen said the Lower Truck Ramp design team continues to work on refinements for straightening out the curve. The biggest development in the last month is trying to figure out the wall height and alignment. The Aesthetic Guideline for walls will influence the wall height and alignment.
- d. Work is starting on the landscaping for the Lower Tuck Ramp using the draft Aesthetic Guidelines.
- e. The spill containment system design is almost complete, it includes a robust concrete tub under the ramp to collect any hazmat spills.
- f. The highway closure system design continues as it was presented at our meeting last month.
- g. Based on information gathered from the TT on the Recreation Trail Scope Specific at our last meeting and the alignment refinements are being reviewed for impacts to wildlife and wetlands. The plan is to present the completed matrix and the recommended trail alignment to the TT in a month or two. It could be the alignment that was in the EA, but the design team is looking closely at improving the constructability and integration with existing terrain.
- h. TT input was gathered on the roadway phasing Scope Specific Differentiating Criteria matrix which includes maintaining traffic, minimizing the number of lane switches. Kiewit is providing lot of input on ways to stage the construction that may be more efficient. Also, where to store materials and how to provide safe traffic control.

4. Bridge Refinement

- a. Karen said we are refining the bridge concept design that was laid out in the EA. She said we would briefly review the Bridge Refinement Matrix which we sent to you prior to today's meeting. She said there is so much information in the matrix that we will highlight the major points today and what differentiates one refinement from another. We consider this work to be a refinement to the concept design in the EA, not new alternatives.
- b. Karen said we are replacing the eastbound bridge MM 185.3 as part of the INFRA Grant Project. It is a pretty large bridge, about 800' long and it is just west of the narrows, right near the upper truck ramp. This is also the location where the recreation path crosses under I-70.
- c. Karen pointed out in the EA design we were planning to realign the recreation path and the eastbound bridge alignment pretty significantly. The proposed bridge in the EA was pretty far offline and quite close to Black Gore Creek. This is an area that we want to focus on again, post EA, to refine the design to really make sure we can optimize the location of this structure.
- d. Karen said there are pros and cons to each alignment: The criteria considered in each refinement were:
 - Roadway curve geometry



- Crash reduction factors (this wasn't too much of a differentiator between the three refinements)
 - Design standards were met for all three
 - Traffic operation impacts
 - Would any require a design exception or aesthetic considerations?
 - Forest or wetland impacts
 - How much distance were we able to keep to the creek centerline?
 - How did they affect the recreation trail?
 - Construction duration and impacts to the traveling public
 - Overall estimated cost
 - General ease of access
 - Bridge length and wall square footage
- e. Karen explained the three different refinements the design team considered:
- i. **Alignment #1: Match Existing West Abutment.** This would put the bridge close to the existing location. We would smooth out the curve and it would overlap with the existing bridge. There are a lot of complexities with this option because it would have to be built in several construction phases. We would also have to temporarily widen the westbound bridge by 19' to accommodate the eastbound traffic and then shift eastbound traffic back onto the built portion of the bridge.
 - ii. **Alignment #2: Offline Single-Phase Bridge.** This is similar to the proposed bridge in the EA, but it's shifted as far north as possible without overlapping the existing bridge. This bridge is far enough away from the existing structure so that we can keep traffic on the existing bridge and not have to divert traffic to the westbound bridge while we build it. It is also further away from the creek. The curve will be flattened to meet the safety improvement requirements.
 - iii. **Alignment #3: Two Phase Bridge.** This is a hybrid of Alignment #1 & #2. We would overlap a small portion of the new bridge with the existing bridge in one spot. This would get more distance from the creek. We would keep eastbound traffic on the existing structure until enough of the new bridge is built to then move traffic over to the portion of the new structure while we demo some of the existing structure. This alignment is much more complex because it requires a lot more traffic shifting due and because of not completing demolition of the existing bridge all at once. Randal added there are a lot of complexities with this design once you start looking at taking away portions of existing structures and trying to phase in a new bridge. Any construction phasing that tears out portions of bridges while trying to maintain other portions becomes more complicated.
- f. Karen said we ended up choosing Alignment #2 which is the Offline Single-Phase Bridge for the following reasons:
- Reduces schedule risk significantly by building the bridge offline

- Least complex design and construction with no need to modify existing structures or tie into a previously constructed bridge phase
- Maintain traffic without having significant traffic impacts. We don't have to move traffic around which causes confusion and sometimes safety challenges.
- Increased safety during construction mostly with full lane and shoulder widths. The other alignments require narrower lanes and shoulders for long periods of time. They would have 11' lanes with 2' shoulders potentially over a winter which was something we wanted to avoid on Vail Pass. This option allows us to keep traffic on the existing eastbound structure until the new structure is built. There will be very minimal time periods when we have a reduced lane, if at all. This is really important since we are looking to improve safety on the Pass, not only for the long term but we want to make sure we don't compromise safety during construction
- Gain distance away from the creek. For the portion that is close to the creek we are looking for ways to mitigate impacts to the creek during snow removal by putting up a little taller barrier on the bridge and integrating some snow fence.
- Minimizes trail closures during construction
- Opportunity for additional cost reduction

1. Dick said he appreciates that fact that we've moved the bridge slightly away from Black Gore Creek by 18 feet. Judging by the deposits of sand under the existing bridge over the lifetime, and the throw distance during snow removal operations, it seems, without significant modifications or walls to keep sand from going over the bridge rail, that we risk inundating Black Gore Creek with traction sand. I want to make sure that Black Gore Creek is protected because it is a water source for Vail Valley and Eagle River Water and Sanitation District from Black Lakes. Accumulation of sand would destroy that creek. The water district will be watching this very closely.

Karen said she understands, and the team talked a lot about this issue. The EA had the bridge right on top of the creek which was closer and for a longer distance. We tried to optimize the distance from the creek as much as we possibly could. There is about 150' where we are pretty close to the creek. As is standard CDOT practice at any creek or river crossing, we are going to put up a snow fence to try to limit how much snow is cast over. The bridge will also have a taller barrier. We felt like this alignment was the best solution among all the things we are trying to balance.

The other thing that is good is improved access down under the bridge so we can pick up the existing sand piles, which will be a great improvement, and we will be able to clean up future sand. This will be in the SCAP improvements. In our Maintenance Manual we are going to ask CDOT maintenance crews to minimize snow cast on the structure, if possible



- g. Karen said we will be coming back to you in the next few months with the other Scope Specific Differentiating Criteria that we showed earlier for the recreation trail and the roadway phasing. These matrices are helping figure out ways to refine refinement approaches and ensure we are achieving all the Core Values.

5. INFRA Grant Design and Construction Schedule

- a. Karen said the schedule hasn't changed since we last met. Package One is progressing towards FIR/FOR in May. We held a scoping meeting for the remainder of the project last week and are now progressing on design for the entire project. There will be a small portion of the construction starting this summer and construction of all of the INFRA Grant projects will continue through 2024.
- b. We are planning on holding a virtual public meeting around June to provide information for the construction that will begin this summer.
- c. Mary Jo said there were some minor adjustments to the CSS meetings. The Aesthetics Meeting was held in March so that changed their next meeting date.
- d. Invitations have been sent for TT meetings in June, July, August, and September.

6. Next Steps

- a. Mary Jo noted the next steps are to:
- b. Continue design on Construction Package #1 with Truck Escape Ramp and Closure System toward final design in May with construction starting in July.
- c. Continue preliminary design on Packages #2, 3, and 4 for 30% design review (FIR) meeting in September 2021
- d. Present updates to the Recreation Trail refinements in April or May
- e. Continue ITF meetings toward their final deliverables and provide you updates.
- f. The next PLT Meeting is Friday, March 26th. We will present your recommendation for acceptance of the Tiered Walls Design Exception. Most of you are on the PLT but if you aren't and would like to attend the meeting to voice your support, please send an email to the West Vail Pass account cdot_wvailpassauxlanes@state.co.us and we will send you the invitation.