



**MEETING SUMMARY**

**Westbound I-70 Mountain Corridor - Concept Development Process**

**Technical Team (TT) Meeting**

**Thursday, February 23, 2017**

**8:30 am – 12:30 pm**

**Location: Easter Seals at Rocky Mountain Village in Empire**

**Agenda**

**Meeting Purpose:** To review and provide feedback on (a) Segment 1 and Segment 2 Critical Issues, (b) Segment 1 Concepts and, (c) the Segment 1 Evaluation/Decisions Matrix.

<b>Time</b>	<b>Agenda Topic</b>
<b>8:30 am – 8:45 am</b>	<b>Welcome, Introductions and Agenda Review</b>
<b>8:45 am – 9:10 am</b>	<p><b>Review: Review of process and progress. Review highlights from 1.25.17 PLT Meeting.</b></p> <p>Desired Outcome: TT understands the process. TT understands key outcomes from the 1.25.17 PLT meeting.</p>
<b>9:10 am – 9:30 am</b>	<p><b>Review and Discussion: Discuss and confirm Segment 1 Critical Issues</b></p> <p>Desired Outcome: TT confirms Segment 1 Critical Issues and provides feedback.</p>
<b>9:30 am – 10:30 am</b>	<p><b>Presentation and Discussion: Presentation of Segment 1 concepts. TT provides feedback.</b></p> <p>Desired Outcome: TT understands the concepts developed by consultants and contractors. TT provides comment and feedback.</p>
<b>10:30 am – 10:40 am</b>	<b>Break</b>
<b>10:40 am – 11:40 pm</b>	<p><b>Review and Discussion: Segment 1 Evaluation/Decision Matrix presentation</b></p> <p>Desired Outcome: TT understands and provides feedback on the evaluation and decision matrix.</p>
<b>11:40 – 12:15 pm</b>	<p><b>Review and Discussion: Discuss Segment 2 Critical Issues.</b></p> <p>Desired Outcome: TT reviews Segment 2 Critical Issues and provides feedback.</p>
<b>12:15 pm – 12:30 pm</b>	<b>Next Steps, Public Meeting, Scheduling and Action Items</b>

## MEETING SUMMARY

### Welcome, Introductions and Agenda Review

Gina McAfee opened the meeting. Self-introductions followed. Gina reviewed the agenda. The group agreed to the agenda as presented and proceeded.

### Review of process and progress/review highlights from 1.25.17 PLT Meeting

- Gina noted that significant progress has been made since the last meeting. She pointed to the maps, concepts, and colored matrices hanging on the walls around the meeting room.
- Gina updated the group on the January 25 PLT meeting.
  - Some members of the PLT were concerned that the process is going too fast.
  - The PLT wanted to make sure there was adequate time to digest, organize, and understand the range of diverse critical issues and related context that has been identified.
  - The PLT also discussed and gave input on the plan for the March 14 public meeting.

### Discuss and confirm Segment 1 Critical Issues

- Segment 1 Critical Issues were identified and developed at the December and January TT and PLT meetings. These critical issues were used as a basis for concept development during the February 6 Engineering Contractor and Consultant working session. Gina went through the Critical Issues identified to this point:
  - 21 were related to safety.
  - 14 were related to mobility and access, concerns about pavement conditions, traffic flow around the interchanges.
  - Dropping the lane just past the crest of Floyd Hill is a huge issue for mobility.
  - Concerns about impacts to local traffic during construction and how to minimize and mitigate this impact.
  - Various environmental impact concerns include enhancing wildlife connectivity with an added lane, adhering to the ROD for Segment 1.
  - Concern about historic impacts.

- Clear Creek County noted that the commitment made by CDOT through an IGA to build out CR 314 from Exit 241 (between Floyd Hill and the Veterans Memorial Tunnel) needed to be added under Segment 1 “Community” Critical Issues. CDOT reaffirmed this agreement.
- **Comment:** From an alignment perspective, some of these have some issues in terms of what was shown in the ROD. **Response:** Gina noted that yes they did and we will talk about that when we get to the concept discussions. What we found out is that there is not one evaluation criterion that resulted in a concept not moving forward. There were a couple of concepts that we didn’t send out that were developed on February 6 that we are recommending not to go forward.

### Presentation of Segment 1 concepts

- **Gina pointed the group to the concept maps that were not advanced.**
  - The first concept not advanced was consistent with a concept in the PEIS to put I-70 in a tunnel south of the current alignment through the known landslide area so traffic could go 65 mph. The 65 MPH alignments were not recommended to be considered further during the Design Speed Study that was conducted last year.
  - The second concept not advanced goes north of I-70 and bypasses the current alignment on Floyd Hill. This option was dropped because it is similar to a parallel alternative option looked at in the PEIS, which was dropped out early in the PEIS process.
- Neither of these alternatives will be looked at again in the concept development process. However, the concept development process will document that the PLT and TT reviewed these documents to confirm and validate assumptions and whether previous findings had changed.
- **Steve Long described the different concepts that were advanced in this round. He explained that the** concept development process and the evaluation matrices function as a funnel. The concept development process is meant to get us to the middle of that funnel, not all the way to the bottom, which is at the point a proposed action is recommended. The funneling process requires PLT, TT, stakeholder and public input to drill down to a deeper level of detail that incorporates project context. Steve reviewed the process up to this point: At the January 18th TT meeting, TT members were instructed to look at Segment 1 topo plot maps and critical issues. TT members brainstormed and drew concepts and critical issues on the maps. The TT then discussed their drawings. Drawings and ideas included on-alignment, off-alignment, interchanges, habitat, historic, community and other related

issues. The PMT took the issues and concepts identified and put them into categories. The categories included: 1) off-alignment, 2) Floyd Hill, 3) Clear Creek, and 4) interchanges.

- On Feb 6, the Engineering Consultant and Contractor teams gathered and, with their expertise, provided some more detailed designs to the four categories listed above. —The teams did not keep the designs general and sketched what that might be; e.g. curves that work with the 55-mph design. After this group work, the teams took the initial drawings back to their offices and produced electronic drawings. The Engineering Consultants and Contractors produced almost 50 different alternatives. Although there were so many alternatives, they could be grouped at a high level appropriate for the concept development into three alignment groups and four interchange groups.
- Once the Engineers presented their 50 options, CDOT analyzed these options and broke them down into “bite-size” alternatives. This resulted in the alignment options that will be presented today. There was a strong emphasis on alignments that were located on the south side of I-70 and on the north side. Some of them also combined EB with WB. We grouped several of these together.
- We also did not go and do permutations of different typical sections (various widths, split vertical alignments, etc. as these will be evaluated in detail in subsequent NEPA efforts
- **Steve Long described the concepts.** The 11 x 17 size maps are “pure” concepts. The bigger maps are the “bite sized” concepts. The hope is that the TT will focus on the specific designs that differentiate the major concepts.

### Off Alignment Concepts

- Common theme of trying to get into the valley, which is a relatively flat area north of I-70. This concept options would take long bridges and has potential for tunnels.
- Steve showed a close-up of the off-alignment: westbound and eastbound being separated a bit, including shortening the bridges.
- Anything in grey on the map is a bridge or possibly a tunnel. Orange is eastbound and purple is westbound.

### Questions/Comments

- **Q:** Is it possible to construct both interchanges on all of these options? **A:** : This is impossible to answer because, at this point, that is too detailed. We are focused on higher level concepts right now, i.e. thematic sketches.
- **Q:** This was not considered in the PEIS. How long would it take to get environmental clearance on this? **A:** Some of these could be considered as a refinement to some of

the alternatives in the PEIS. If one of these is advanced to NEPA, we would need approval from FHWA. If it's a new alternative, it would be a long process, but it was not precluded in the PEIS.

- **Q:** Who owns the area just out of the right-of-way? **A:** The east side is Frye and the west side is the County's. North of Hidden Valley is a private property owner.

### North Alignment Concept

- There were many variations of the north alignment. One idea was a tunnel that ties back in to keep the existing westbound lane open.
- **Q:** Can you address the PEIS commitments through the Greenway and emergency access. Could both of these be addressed by these options? **A:** Yes, we believe so. The Greenway is on our evaluation matrix, as well as the emergency access.
- **Q:** How does design speed relate to the grade on eastbound? Because eastbound is downhill, it is important that speed is not compromised because people tend to go fast downhill. **A:** The intent was to hold at 6%, but it this wasn't possible, so portions of the design go into 7%.

### South Alignment Concept

- The south alignment was discussed. Option 3 was very structurally extensive and involves moving from side to side (from the south side to the north side). There is also a lot of bridging over Clear Creek.

### Interchange Concepts

- **Interchange Options:** reconfigure US 6 in existing condition, moving the US 6 interchange slightly east, closing the US 6 interchange and moving it to Hidden Valley, and closing the US 6 interchange and moving it to the top of Floyd Hill
- **Rebuilding/Reconfiguring the US 6 Interchange in its Current Location:** The group discussed how to make the existing US 6 interchange work by moving the ramps around in place. This option is very structurally extensive. There are many things to do to get all the movements to work effectively. If the intent is to meet design speed and make the connection, a lot of the environment will be displaced to make the existing interchange work.
  - Gina noted that there are many different types of interchanges (diamond, DDI, cloverleaf, etc.). But because the process is at a very high level at this point in the study, it is not the goal to choose a "best" interchange configuration for a particular location. That will be fully studied in the NEPA phase.

- Putting a full movement interchange at the bottom of Floyd Hill would require a lot of extremes. It is not recommended to put an interchange at the bottom of the hill.
- **Q:** Clear Creek County community representatives asked - From a community perspective for this visioning level, which of these alternatives provide full movement? That is what we are looking for. **A:** Of the concepts discussed so far, all would be full movement.
- Driving down US 6, it would be possible to get on a roundabout, which is a possible way to reconfigure some of the movements at US 6. From the roundabout, it is possible to enter onto the highway. This option would create a hub that all the interchanges could be connected to.
  - CMCA noted that the trucking industry would probably have a heartache with a roundabout. This would put restrictions on the trucking industry.
  - Another solution to truck traffic is may be an underground tunnel.
  - There is a need to be cautious about bike traffic. Roundabouts and bikes don't mix well and could create conflicts. .A note about a roundabout being a calming device. If you go into Pecos, the roundabout is not a calming device.
- For the bike community, noise at the US 6 interchange if it was rebuilt in the same location would be an issue from semis and other vehicles' noise. It would be too loud for bicyclists.
- When CDOT is clearing the roads after or during a snow storm, if it's too close to the bikeway, it becomes a safety issue for bike traffic. The Greenway in the US 6 area is going to be a significant route for bike traffic—to do a loop rather than just riding the canyon.
- It will be important to consider the rafting industry needs in all interchange options.
- **Closing the US 6 Interchange and moving it uphill.** Steve Long discussed the uphill movement of the interchange as the second option.
- **Closing the US 6 Interchange and moving it to Hidden Valley.** Steve Long discussed the Hidden Valley movement of the interchange. The focus of this conversation was on how the movements could be taken out of the canyon and moved west.
  - **Q:** Would anything that is in the Canyon need to go to the Hidden Valley interchange to go to I-70. **A:** Yes.
  - The WB traffic from Frye would use the frontage road to access WB I-70.

- **Closing the US 6 Interchange and moving the traffic to the top of Floyd Hill:** The group discussed how to combine the interchanges at the top of Floyd Hill. There were many common themes in the concepts developed around this idea.
  - Clear Creek County suggested that this reflects a high level neighborhood input. When Floyd Hill was closed, trucks were backed up. People near the fire station were waiting for two hours because they couldn't go a quarter mile to go to get home. This is a neighborhood issue.
    - The roundabout on the other side is not a bad idea, but this is a school bus area. Would we want kids in that area with all the truck traffic?

HDR affirmed that neighborhood input is essential as we get into the evaluation criteria. As this process continues to NEPA, there may be several permutations of the options being presented.

### Segment 1 Evaluation/Decision Matrix presentation

- Evaluation Criteria handouts were distributed to the group. The PMT drafted the criteria to determine whether concept options were flawed and would not be able to move forward to the NEPA process.
- Jonathan summarized the ranking shown on the decision matrix. The goal of the following discussion is to understand the TT's reaction and feedback on the matrices.

### Comments/Discussion

- A suggestion was raised to add a test whether an interchange option works with the I-70 alignment. If there is some fatal flaw to an alignment related to the interchange, it would be good to see that highlighted as a criterion.
- **Q:** Clear Creek County Do the interchange options address the three critical issues as identified by the PLT—safety, driver expectancy, and tourism driver expectancy. **A:** Yes.
- Gina stated that the consultant team is comparing these alignment concepts to each other and the interchange options to each other. When the consultant team looked at alignments, it was noted that the south alignment generally had more “white” – meaning these options were not responsive to the evaluation criteria. This was because these options had more potential conflicts with the Greenway, the least potential to capitalize on recreational access and facilities, more potential impacts with Clear Creek and its riparian resources, the most challenging geology, etc. when compared to the other alignment options.

- The **off-alignment** was more responsive to the criteria, more compatible with AGS, has minimal impact to the traveling public, supports the recreational activities and facilities that are important to the county.
- Holly Huyck Clear Creek Watershed Foundation asked what the basis is for wildlife connectivity. HDR replied there is more opportunity for wildlife to cross because it is a split vertical alignment., This is an expensive option with capital and maintenance cost issues.
- **Q:** A comment was raised regarding the evaluation criteria that includes the lifecycle costs and how is it being applied. How much would it cost to maintain? **A:** It is all subjective at this point. If it is built in the canyon with no need to work around traffic , maybe it would not be so expensive.
- It was noted that some evaluation criteria are going to have different weights. At some point in time, impacts to traffic may have more weight than cost.
  - HDR noted that with the NEPA process, FHWA lawyers have stated that using weights is not a legally defensible way to come to a decision. Therefore, we don't intend to apply weights. The evaluation documentation will discuss issues and advantages of different options. The key is to provide clear documentation related to how a decision has been made.
- **Q:** What happens to the existing highway if we do realign the highway? **A:** CDOT replied that the ROD allows for 6 lanes from Floyd Hill to the tunnel. If we abandon the existing I-70 in the lower end of the canyon, the highway would be repurposed.
- It was noted that the politics of the issue of a full interchange at the top of Floyd Hill is making the community upset. There are competing interests - everyone wants the westbound PPSL built because the traffic is awful, but the community is getting really tired of the traffic. They are really getting tired with the traffic. But at the same time, they don't want all the impacts.
- Gina discussed the **north alignment** option, which has less impact to Clear Creek, favorable geology and adheres to the ROD.
- Some of these alignments are really close to Clear Creek. The purpose of the matrix is to determine which concepts have more impacts. We are looking at a very high level at these alignments at this point and it is not yet determined whether any concept designs can be dropped out.
- CDR noted that the consultant team was not looking for the TT to provide any conclusions. At this point, the level of analysis needed to take this to the NEPA process is being



determined. If there are flaws in the concept design or evaluation criteria thinking, or anything that was missed, the PMT needs to hear this from the TT today.

- **Q:** Is truck traffic/operations reflected in the evaluation criteria?

CMCA also noted that under it needs to say “safety for all users of the corridor.” **A:** There is agreement that this should be included. Safety for all vehicles should include vertical and horizontal issues.

- **Q:** Does the matrix capture operational issues, e.g. places to chain up, places to pull off the road? **A:** We have “improve traffic operations” on the Decision Matrix.

**Q:** Should “improved traffic operations” go under intersections rather than alignment?

**A:** The north and south alignments are essentially what we have now—with 6% grade. It’s going from 6% to 5.5%. The curve cannot be at the bottom of the 6%. The off-alignment could potentially address those other issues better—but could result in an icy bridge.

- **Q:** Surprised that Criterion 3 would be equal for mobility and reliability. On the alignments with curves, there is a risk of vehicles sliding to the inside under icy conditions especially on bridges. There is a lot of differentiation. **A:** In general, the various concepts have similar lengths of structures. Tunnels could substitute for the bridges however the initial costs and maintenance costs are much greater.
- Interchanges need to be left open to set the alignment.
- John Muscatell noted that Clear Creek County went through the master planning process. (The Clear Creek Master Plan was just approved in January and can be viewed on the website.) It took a year to get the interchange at the top of Floyd Hill off the master plan.
  - Response: The matrix will be revised to *add consistency with 2017 master plan to the matrix.*
- Clear Creek County suggested the need to have a segment-specific aesthetic to be consistent with the Clear Creek Master Plan (not the visioning document).
- Clear Creek County noted that for water and sewer—they prefer for the economic development for sites to have access to county services.
- Regarding consistency with Greenway improvement, the second column seems to be the only option that works with the master plan.
- **Top of Floyd Hill.** There was a comment from Clear Creek County that some of the wording on the decision matrix should be revised for this option. Gina asked John Muscatell to give

specific recommendation as to how to revise the wording on the Decision Matrix. *John provided to Gina handwritten suggestions for the Decision Matrix.*

- A concern was raised by Tom Gosiorowski about one person (John Muscatell) rewording the decision matrix. How are we going to prevent one individual from revising an option to suit his need?
- John replied that what he suggested was 3 years' worth of work with the community. He is merely the messenger.

**Action Item.** Make changes to the decision matrix based on comments received today and distribute the revised matrices to the Technical Team for review. HDR/THK/CDR

- There were no comments regarding the **Hidden Valley West** option.
- **Slightly East.** Is there any way to get those as far downhill as possible? Traffic is trying to slow down and wait for all the traffic going uphill. *Response:* There is constructability issue with landslide.
- There were no comments on the **full movement at the current location** option.

## Discuss/confirm Segment 2 Critical Issues

- Jonathan pointed the group to the Segment 2 Issues handouts and asked the group to take 5 minutes to review and note things that are missing or want to highlight and discuss with the group today.

### Comments

- Clarify Item 1 (lack of corridor project management) under Safety: There are multiple construction efforts going on at the same time and a multi-project traffic management is needed to make sure the traveling public aware of any road closures.
- Clarify Item 5 (stop sign at Exit 239) under Safety: Exit 239 is way up the west end of Idaho Springs and there is no ramp there, so what is the problem at 239? The issue is mostly the eastbound off-ramp not having a stop sign, but it is really an intersection issue, not just a stop sign issue.
- The westbound off-ramp at 239 drops traffic into a residential area and there is concern in Idaho Springs about how that traffic interacts with the residential area. It is an awkward exit ramp and no exit sign at the off-ramp.
- At the 239 east bound off-ramp you are bringing in high traffic, so you have traffic coming down the ramp that doesn't stop into an area where vehicles are trying to merge into

traffic. Colorado Boulevard is angled in such a way that you can't see traffic coming from the east.

- There is issue with sight distance, speed, and traffic.
- For the eastbound on-ramp, there are narrow shoulders along that segment.
- Idaho Springs and Clear Creek County are a big consideration for this project, but the construction impacts from this kind of project go well beyond these two areas.
- Exit 240 is the main corridor to the National Forest—just a consideration to keep in mind. Sounds like there is already a study done, but this is a very big portal for the Clear Creek District.
- Mobility and Access—when the right-of-way for I-70 was originally established through Idaho Springs, ROW in some areas was not clearly defined. One question is related to Water Street – is that in CDOT ROW?
- Area just west of 240 where Water Wheel Park is—this area is very tight. Need to protect not just the park but city parking on the other side.
- Regarding groundwater contamination—there was a lot of mine shaft activity through Idaho Springs.

**Action:** Suggestion to contact Christine Bradley to get the latest mapping.

- Entrance ramp is short (eastbound on-ramp), is there a way to adjust the median one way or another to make it more comfortable for drivers? Eastbound on-ramp is not long enough. Yes, we will look at it.
- Maintenance of noise walls as well as signage. Signage is not adequate for the scenic byway. The problem is consistency with signage throughout the corridor, including I-70.

An example of signage inconsistency is with Exit 240. It says Mt. Evans exit but doesn't say that this is a historic district or that this is the main exit for Idaho Springs. Do we want to think about the east entrance to Idaho Springs as 241 and the west entrance as 239? Also, some of the signs are printed brown but then another sign next to them are not.

- CDOT suggested the County come up with a concept on how to coordinate signage consistency.

- Between 240 and 239, on the south side, there is currently a path that goes along the Forest Service property. Gina replied that, yes, compatibility with the Greenway plan is a consideration.
- There is visibility/sight distance problem at Exit 240/241 on the west end.
- For the historic context relook at commitments in the Section 106 Programmatic Agreement. There are some commitments to inventories in Idaho Springs.

### **Next Steps, Public Meeting, Scheduling, and Action Items**

- CDOT noted that the process for Segment 1 seemed to work very well and suggested rolling it over to Segment 2. This is a PPSL-type solution, do we want to go through the same process and continue? We don't really have alternatives, we are not going to split the alignment. Perhaps we need to just go to the contractors after this next TT meeting.
- A question was raised about the need on Segment 1 to make such a drastic change if we are only adding one lane, and why we can't we just add a lane in the Floyd Hill segment.

*Response:* It is because we need to blast the canyon to add 12 more feet of pavement, as well as address some of those sharp curves. The goal is to make it a 55 mph road. In terms of constructability, if we construct it, some of the big rock cut through the hill would take 6 months of blasting. So in terms of constructability, it's not going to be easy.

- From the PLT's perspective, we need to allow more time to pursue some of the issues. Suggest continuing the process as we did for Segment 1.
- A suggestion was raised about combining the PLT and Technical Team and meeting as one group to talk through all these things.
- There was a suggestion that since there are a number of constraints in this area, there are not many options. Maybe it would be good to see what the contractors and designers can come up with.

Clear Creek County agreed and suggested having the contractors come up with concepts, then the Technical Team meet again to review the concepts.

The group agreed to have the PMT develop concepts for Segment 2, bring the ideas to the Technical Team at the March 8 meeting, allow the Technical Team to review the ideas and then have an engineering contractors and consultants working session to look at other concepts for critical areas such as at US 40.

- Jonathan announced the public meeting coming up on March 14 at Clear Creek Recreation Center and asked the group to get the word out.

- The TT asked to include the project limit -- top of Floyd Hill and going to Empire Junction – to the flyer.
- **Action: CDR to update flyer. TT to distribute flyers.**
- Next PLT meeting is March 6 and next Technical Team meeting is on March 8.

## Attendees

See attached sign-in sheet.

## Action Items

Action	Responsible Parties
• Revise Decision Matrix and issues based on comments received	HDR/THK
• Distribute revised Decision Matrix and Critical Issues to Technical Team and PLT	CDR
• HDR to develop concepts for Segment 2	HDR
• Present Segment 2 concepts to Technical Team	CDOT?
• Convene Consultants and Contractors to develop concepts for Segment 3 critical issue areas	
• Confirm Segment 2 and 3 issues	CDR/HDR
• <b>Contact Christine Bradley for latest mapping information</b>	HDR
• Add project limits to project flyer	CDR
• Next PLT meeting: March 6	CDR
○ Distribute agenda and meeting materials	
• Next TT meeting: March 8	CDR
○ Distribute agenda and meeting materials	