



I-70 Bakerville to Eisenhower-Johnson Memorial Tunnels (EJMT) Westbound Auxiliary Lane Technical Team (TT) Meeting #2

Meeting Summary

November 3, 2022, 2:00 PM - 4:00 PM

In Person and Virtual Meeting

1. Welcome and Agenda Review

Mandy Whorton/Peak Consulting Group welcomed the group, and did a roll call of participants:

- Ben Davis, CDOT
- Francesca Tordonato, CDOT
- Maria Rocken, CDOT
- Christiana Lacombe, CDOT
- Shannon Mero, CDOT
- Kristin Salamack, USFWS
- Carrie DeJiacomo, Ulteig
- Angy Casamento, Ulteig
- Lindsey Wickman, Ulteig
- Brian Dabling, FHWA
- Nora Kern, DRCOG
- Margaret Bowes, I-70 Coalition
- Rob Goodell, Ski Loveland
- Nicole Malandri, United States Forest Service (USFS)
- Sandy Beazley, HDR
- Mandy Whorton, Peak Consulting Group
- Loretta LaRiviere, Peak Consulting Group

1. Welcome and Meeting Purpose

Mandy Whorton (Peak Consulting Group) reviewed the agenda and thanked everyone for attending. The presentation from the meeting is attached to these notes for reference.

Mandy said the primary purpose of today's meeting is to continue to go through the CSS 6-Step Process. At our last meeting we defined our desired outcomes, the Context Statement and Core Values. Today we will focus on our evaluation criteria.

2. Design Update

Carrie DeJiacomo (Ulteig) said the design team has been working on:

- Aerial survey is complete and survey ground shots are in process. The survey should be processed and available by the end of the year. Utility locates have been completed. Some challenges have been encountered with utilities in the median as well as confirming the US Forest Service easement.
- Pavement cores and soil samples are in progress and have been taken throughout the roadway as well as existing shoulders to support future widening.



- Inspection of existing conditions of bridges and culverts has been completed to aid in the existing conditions report.
- The traffic team is wrapping up future traffic forecast volumes and traffic modeling should be completed within a few weeks.
- Currently working on conceptual layouts using aerial views and old LIDAR, which is not as accurate as the new survey information we will get towards the end of the year. These conceptual layouts will help determine the best options for such things as the beginning and end of the auxiliary lane and the potential impacts.

3. Review and Confirm Context Statement and Core Values

Context Statement

The TT reviewed the draft Context Statement which has incorporated the comments received from the first PLT & TT meetings. There were no further comments.

Core Values

The Core Values are based on the Programmatic Environmental Impact Statement Core Values for the I-70 Mountain Corridor. At our last TT Meeting we all agreed these were relevant to this project.

- Safety
- Mobility and Accessibility
- Implementability
- Community
- Environment
- Engineering Criteria & Aesthetics
- Sustainability
- Historic Context
- Decision Making

4. Critical Issues and Evaluation Criteria

The Critical Issues are specific to the project area. The Technical Team will evaluate our alternatives against these critical issues to ensure our design is taking into account items of importance related to the Core Values we have identified. Some examples of the critical issues are:

- Conflicts with slow moving vehicles
- Chain station location and safety
- Wildlife connectivity
- Fen wetlands on south side of I-70
- Historic context of communities
- Maintenance
- Compatibility with AGS
- Construction impacts to businesses
- Recreation access and (over) use
- Parking around Loveland Ski area



Next, each Critical Issue was reviewed in more detail.

Safety Critical Issues

- Emergency operations
- Chain Stations
- Hazardous Materials - freight
- Safety of traveling public
- Loveland interchange

Additional comments:

- Vehicle/Wildlife collisions and debris on highway should be added to the safety critical issues.
- The addition of formalized parking at Herman Gulch, Bakerville, and Loveland interchanges where, currently informal parking occurs along the on and off ramps, were discussed.
- Informal parking on the shoulders and ramps throughout the project area are used for recreational access. This could also be an accessibility issue. The informal parking/recreational use should be considered when determining placement of wildlife fencing.
- Rob Goodell (Loveland Ski Area) expressed some concerns regarding relocating the Loveland interchange and if it becomes a full stop without a merge lane. Currently the interchange allows for free flow movement for WB off traffic. There is a need for adequate accel/decel lanes especially for hazmat vehicles. The I-70 westbound exit is more of an issue than the I-70 eastbound exit.
- There is also an issue when Loveland Pass is closed and passenger/commercial vehicles miss the closed sign and exit at US 6. When this occurs, the vehicles utilized the Loveland Ski Area parking lots to turn around. Adding additional signage noting that the Loveland Pass is closed is of interest to CDOT and Loveland Ski Area. Signage is beneficial but it may be helpful to evaluate where the closure gate is located.
- USFS noted that CDOT typically communicates avalanche mitigation 24 hours in advance, which is appreciated.

Mobility and Accessibility Critical Issues

- Traffic Operations
- Freight Operations
- Traffic Conflicts
- Local Access
- Truck Parking
- Geotechnical Hazards
- Advanced Guideway System (AGS)



Additional Comments:

- Snow removal/storage needs to be considered in the shoulder width.
- The design should maximize shoulder widths for emergency access and to keep traffic moving. People parking on the shoulders limits their use.
- Pegasus (ski busing service) should be consulted about their plans for future operations and it should be taken into consideration in our design.
- Loveland Ski Area participates in Snowstang (ski busing service), but the current number of buses in service now do not affect mobility. The bus drops off skiers at Loveland Ski Area and then parks for the day at the EJMT east portal parking lot. An increase in bus service could trigger parking issues.
- Formalize parking on the north side to better serve buses and backcountry users is desirable.

Implementability Critical Issues

- Constructability
- Construction Impacts

Additional Comments:

- Consider “early action” projects to have a better chance of getting grant funding.
- Chain stations may be eligible for a specific separate funding source.
- Obtaining full support from all stakeholders increases the likelihood of funding.
- Project phasing should be considered for projects that can serve an independent utility and can be implemented early.
- Need to consider the timing of projects because of the limited construction season.

Community Critical Issues

- Protection of Recreational Resources
- Recreation Access
- Wayfinding and Signage

Additional Comments:

- Formalized parking could increase the number of recreational users.
- There should be communication outreach and explore potential partnership opportunities with user groups such as VOC, CFI and winter sports enthusiasts.

Environment Critical Issues

- Scenic Quality
- Wildlife Protection (Trout, Lynx, etc.)



- Water Quality
- Air Quality and Greenhouse Gases (GHGs)
- Noise

Additional Comments:

- Consider general forest health: trees impacted by deicers, fire risk, and fuel reductions.

Engineering Criteria & Aesthetics Critical Issues

- Aesthetics Guidance and Design Criteria
- Design Considerations

Additional Comments:

- CDOT has guidelines for the chain stations and the existing stations mostly follow them. Modifications to chain stations could create issues if moved within close proximity to wildlife crossings due to lighting.
- Need adequate accel/decel lanes at the chain station entrances and exits.
- Structure replacement could result in aesthetic improvements as the existing structures do not follow all established I-70 corridor aesthetics guidelines.
- There are sight distance concerns on the westbound approach to EJMT.
- There are landslide concerns on the north side of I-70 near the westbound bore of the EJMT and should be avoided.
- FHWA would prefer to minimize the number of design variances.
- Design evaluations should look at the benefits and any technical challenges. Considerations should be taken for the best design instead of just going with the standard.

Sustainability Critical Issues

- Sustainability
- Resiliency

Additional Comments:

- Resiliency was not an identified Core Value in the PEIS, but it has become a common consideration. This includes resiliency for wildfires, flooding, avalanches, and rockslides.

Historic Context Critical Issues

- Historic context will be considered in design.

Additional Comments:



- There could be opportunities for educational/interpretive signage to honor the history of the area at formalized parking areas, such as the Wichita State Football team plane crash.

Decision Making Critical Issues

- Adhere to Past Agreements
- Partnerships with user groups, Great Outdoors Colorado

Additional Discussion:

Mandy asked the TT how involved they would like to be going forward. We had originally intended to meet monthly where the team would have a chance to look at each element independently. However, Mandy asked if the group would prefer to wait and have the design further along and look at everything at once.

The group agreed it would be more beneficial for the project team to come up with more defined concepts for the TT to consider. In addition, to have identified areas of the project where there's not a clear recommendation or different constraints have been identified. It's difficult to balance the considerations without additional discussion with the TT about what is important. The TT members often have expertise that the CDOT team doesn't, so we want to make sure their input is being received, particularly around the environmental and community non-engineering decisions. We need to ensure that we have the correct expertise to determine if design options fail to meet, meet, or exceed expectations/needs.

- Major project elements for decision making:
 - Alignment
 - Structures
 - Interchange
 - Wildlife crossings

The team discussed the use of pros/cons and decision matrices to help weigh/compare design options. Overall, the group appears to prefer matrices with the use of color coding. Color coding is an easier way to visualize the comparison between options. The matrices and supporting information should be provided to the TT at a minimum of 2 weeks prior to the meeting for additional review time.

5. Next Steps

SWEEP and ALIVE Meetings are scheduled for next week.

The design schedule, CSS Process flow chart, and meeting minutes will be sent out in approximately a week.



COLORADO

Department of Transportation

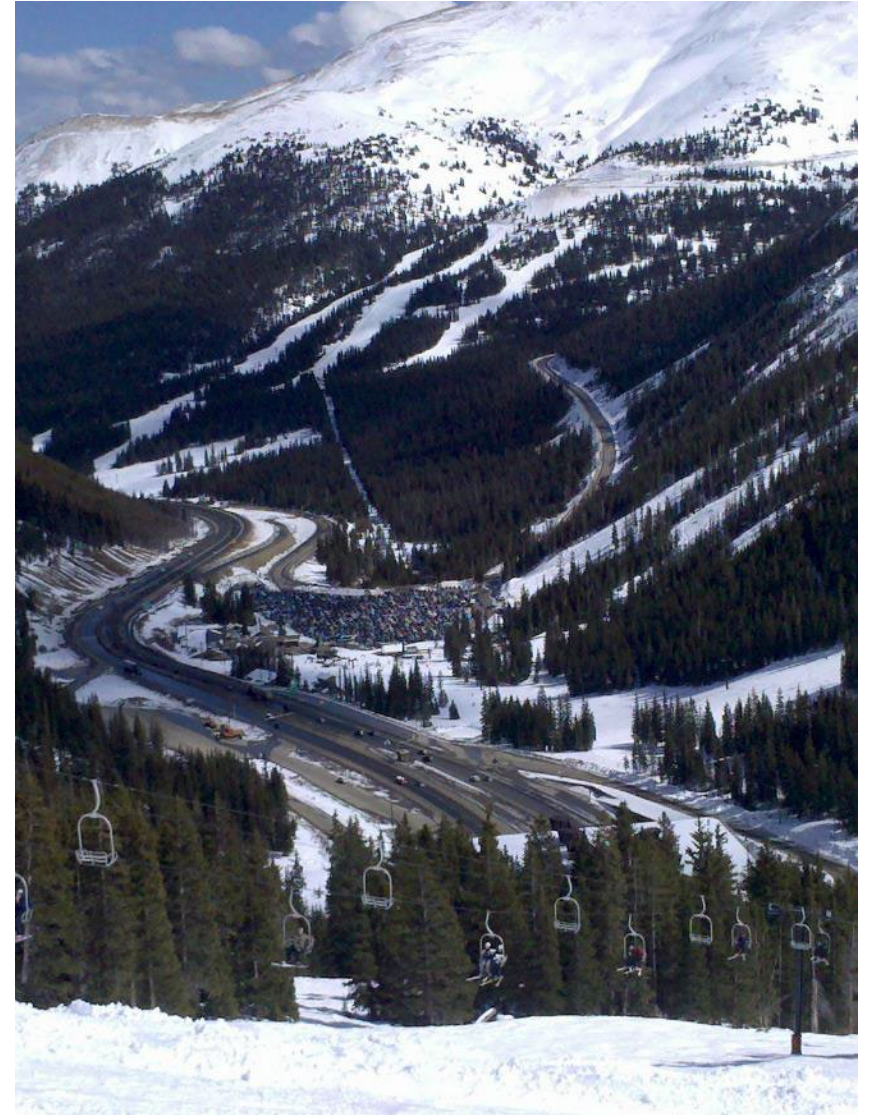
Westbound Bakerville to EJMT Auxiliary Lane

TT Meeting #2

November 3, 2022



- Welcome and Meeting Purpose
- Design Update
- Review and Confirm Context Statement and Core Values
- Critical Issues
- Evaluation Criteria
- Next Steps







Context Statement

The I-70 Mountain corridor is a magnificent, scenic place in close proximity to the Denver Metro area. Human elements are woven through breathtaking natural features. The integration of these diverse elements has occurred over the course of time. The corridor is a recreational destination for the world, a route for interstate and local commerce and a unique place to live. I-70 is also federally designated as a high priority corridor, a significant part of the defense network, a major east/west continental corridor and a major economic corridor for Colorado. For many local communities along the corridor, I-70 is the lifeline, primary access and only connection to other communities.

Current I-70 roadway geometry is constrained with narrow shoulders and tight curves that impact safety, mobility, accessibility and capacity for travelers and residents.

In a manner that respects the unique environmental, historic, community and recreational resources in Clear Creek County, Westbound improvements are needed to lessen delays caused by peak period volumes.

* As modified by WB PPSL PLT and TT

Core Values

- Safety
- Mobility & Accessibility
- Implementability
- Community
- Environment
- Engineering Criteria & Aesthetic Guidelines
- Sustainability
- Historic Context
- Decision Making

Critical Issues

- Emergency response / incident management
- Safety of traveling public
- Geometric problems
- Traffic operations
- Local access
- Reliability
- Blends with future modes (AGS, Greenway)
- Roadway network connectivity
- Constructability
- Construction impacts
- Fiscally responsible costs
- Recreation access and facilities
- Supports private development
- Supports local businesses
- Tourism and economy
- Water wells
- Livability
- Clear Creek / fishery
- Wildlife habitat and movement
- Mining
- Erosion / water quality
- Landslide protection
- Balance design using CSS Guidance
- Aesthetics
- Geometric standards
- Maintenance
- Significant archaeological site
- Known historic properties
- Adherence to ROD, MOU and Design Speed Study

Evaluation Criteria

1. Accommodates emergency access and response?
2. Addresses safety of the traveling public and the community?
3. Improves mobility and reliability?
4. Improves traffic operations at interchanges?
5. Blends or does not preclude other modes (AGS, Greenway)?
6. Minimizes construction efforts?
7. Creates infrastructure investments that are reasonable to construct and provide the best value for their life cycle, function and purpose?
8. Supports / enhances recreation access and facilities?
9. Supports private development and economic development opportunities?
10. Enhances tourism and the economy?
11. Protects / enhances wildlife?
12. Protects Clear Creek, its fishery resource and water quality, including wells?
13. Minimizes conflicts with geologic hazards?
14. Meets I-70 Design Criteria and Aesthetic Guidance?
15. Minimizes effort and cost to maintain?
16. Protects historic and archaeological resources?
17. Adheres to ROD and Design Speed Study?
18. Consistency with Clear Creek County Visioning?



The Bakerville to Eisenhower-Johnson Memorial Tunnels (EJMT) is a critical westbound connection along the I-70 Mountain Corridor, including access to the westbound entrance of the EJMT – the highest vehicular tunnel in the world – and essential infrastructure for the movement of people and goods that are crucial to the economic vitality of local communities and the state. However, steep grades, roadside terrain, high traffic volumes, and extreme weather events make I-70 within the project area a challenge to travel and maintain.

At an elevation of more than 11,000 feet, the project is located within the geographic area of the I-70 Mountain Corridor defined as the Crest of the Rockies, an aesthetic delineation that reflects the dramatic views of peaks and valleys, steep topography, lush alpine vegetation, rocky hillsides, waterways, and renowned ski resorts. Visitors from around the world come to enjoy world-class skiing at the Loveland Ski Area and recreate in the Arapaho-Roosevelt National Forest, the third busiest National Forest in the United States. The project area also provides access to high quality hiking trails, including the Grays and Torreys Peak trail, an alpine loop on the continental divide that leads to the two fourteeners and affords spectacular views of the area.

The highway traverses Clear Creek County in an area that is abundant in natural resources. Clear Creek parallels the project area to the south, and adjacent public lands support healthy wildlife populations and a fragile alpine/subalpine ecosystem with unique characteristics that support irreplaceable resources such as fen wetlands.

As a critical freight corridor, there are no alternate routes for heavy vehicles (trucks, buses, and recreational vehicles) traveling east-west in and through Colorado. Conflicts between heavy commercial freight vehicles and passenger vehicles traveling at substantially higher speeds create safety problems and operational issues, particularly in this steep approach to EJMT. Truck operations and safety are especially challenged in winter months with chain up/down requirements and slow travel that can extend hours of service for long-haul truckers with no safe rest or parking areas. Hazmat restrictions at EJMT and weather closures of Loveland Pass further complicate efficient freight movement through the project area.

Highway improvements are needed to facilitate smooth, safe, and efficient transportation. The improvements should be designed and constructed in a manner that preserves a sense of place, respects the unique environmental conditions within the project area, and reflects stakeholder values related to aesthetics, community, and the experience for commerce, residents, and visitors.





- SAFETY
- MOBILITY AND ACCESSIBILITY
- IMPLEMENTABILITY
- COMMUNITY
- ENVIRONMENT
- ENGINEERING CRITERIA & AESTHETICS
- SUSTAINABILITY
- HISTORIC CONTEXT
- DECISION MAKING





CRITICAL ISSUES

- Help to establish criteria
- Used to ensure that decisions made, and alternatives selected, support the Core Values and desired outcomes and actions
- Allows Recommendations to reflect the stated outcomes and project goals

EXAMPLES

- Conflicts with slow moving vehicles
- Wildlife connectivity
- Fen wetlands
- Historic context of communities
- Maintenance
- Compatibility with AGS
- Construction impacts to businesses
- Recreation access and (over)use
- Chain station location and safety



CRITICAL ISSUES

- Emergency Operations
- Chain Stations
- Hazardous Materials Freight
- Safety of Traveling Public
- Loveland Interchange

EVALUATION QUESTIONS

Does the alternative....

- Accommodate emergency access and response?
- Address safety of traveling public and community?
- Address truck safety during all seasons?
- Address potential hazardous materials incidents/spills?
- Improve traffic operations at interchange?



CRITICAL ISSUES

- Traffic Operations
- Freight Operations
- Traffic Conflicts
- Local Access
- Truck Parking
- Geotechnical Hazards
- Advanced Guideway System (AGS)

EVALUATION QUESTIONS

Does the alternative....

- Remove conflicts with slow moving vehicles?
- Support ease of freight movements?
- Improve reliability?
- Improve local accessibility at interchange?
- Accommodate truck parking?
- Accommodate AGS?
- Reduce impacts from geotechnical hazards?



CRITICAL ISSUES

- Constructability
- Construction Impacts



Westbound PPSL Construction

EVALUATION QUESTIONS

Does the alternative....

- Create infrastructure investments that are reasonable to construct and provide the best value for their life cycle, function, and purpose?
- Minimize construction impacts to the community and traveling public?



CRITICAL ISSUES

- Protection of Recreation Resources
- Recreation Access
- Wayfinding and Signage



Bakerville-Loveland Trail

EVALUATION QUESTIONS

Does the alternative....

- Protect recreation resources?
- Support/enhance quality recreation access and facilities by meeting local/regional standards/objectives?
- Ensure that highway improvements and recreation facilities act in concert and support expanded recreation opportunities?
- Improve wayfinding?



CRITICAL ISSUES

- Scenic Quality
- Wildlife Protection
- Water Quality
- Air Quality and Greenhouse Gases (GHGs)
- Noise



Canada Lynx



Clear Creek

EVALUATION QUESTIONS

Does the alternative....

- Protect Clear Creek as a fishery resource and its water quality?
- Protect/enhance wildlife habitat and movement?
- Minimize impacts to viewsheds?
- Provide opportunities to reduce GHG emissions during construction and during operations?
- Protect air quality during construction and during operations?
- Minimize noise impacts?



CRITICAL ISSUES

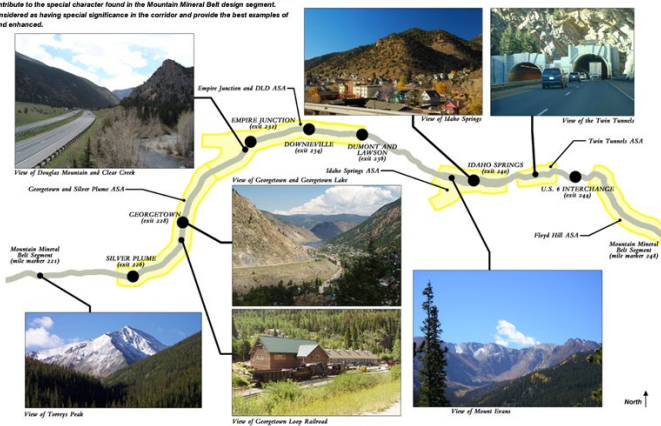
- Aesthetics
- Design Considerations

EVALUATION QUESTIONS

- Does the alternative....
- Meet the I-70 Aesthetics Guidance?
 - Meet the I-70 Design Criteria or minimize the number of exceptions needed?

MOUNTAIN MINERAL BELT design segment
FEATURES OF SPECIAL SIGNIFICANCE MAP

This diagram describes unique and important views, landscape features, recreational points, cultural/historic elements, and roadway facilities that contribute to the special character found in the Mountain Mineral Belt design segment. These elements should be considered as having special significance in the corridor and provide the best examples of the context to be preserved and enhanced.



I-70 Mountain Corridor Design Criteria

Overview:

The following overarching principles apply to the entire I-70 Mountain Corridor. These principles are supported by the Aesthetic Guidance, which is divided into Design Segments and which presents specific objectives and strategies. The principles are provided to the future managers and designers of transportation facilities within the corridor to guide the desired outcomes of individual projects.

A. Corridor Design Character

Elegantly engineered transportation facilities will reflect function, simplicity, and integrated design throughout the corridor. The landscape under, adjacent to, and beyond the structures supporting transportation facilities shall be rugged, organic, and made of natural materials. Designers will not attempt to make facilities falsely appear natural with the application of materials. The linkage of land and transportation features will be visualized as a single design effort, rendering a cohesive quality to the entire corridor. The geometry of the road should maintain a continuous flow and fit existing land forms.

B. Integrated and Complete Design

All facilities included in a project -- whether primary or auxiliary to the function of the corridor -- will be identified, programmed, and conceptually designed prior to completion of 30% design. This will include consideration of the entire construction disturbance zone. A comprehensive design is necessary in order to plan for all construction disturbances and create an integrated, sustainable corridor that accounts for each project. Aesthetic objectives and functionality are optimized when all elements are included in the design at inception. Integrated design includes considerations such as drainage and hydrology, water quality, wildlife crossings, rock cuts, life cycle costs, and long-term maintenance.

C. Partnerships to Create the Corridor

Corridor design will include consideration of a buffer and transition area between transportation facilities and community-oriented land uses. The landscape planting, earthwork, structural solutions, and location of the transportation facilities need to be fully examined in order to avoid potential visual and scenic impacts, buffer highway noise, and preserve community character and patterns. Road and trail connections and multi-modal travel corridor opportunities should be considered. Reinforcement of alternative methods of travel such as pedestrian and biking paths should be incorporated and coordinated with community and recreational planning efforts.



CRITICAL ISSUES

- Sustainability
- Resiliency



EVALUATION QUESTIONS

Does the alternative....

- Include resiliency items to address flooding, wildfires, and geological events?
- Meet the needs of the present without compromising the future?



CRITICAL ISSUES

- Historic Context



Bakerville camps - 1860s

EVALUATION QUESTIONS

Does the alternative....

- Protect historic and archaeological resources?



CRITICAL ISSUES

- Adhere to Past Agreements
- Partnerships



EVALUATION QUESTIONS

Does the alternative....

- Adhere to the previous plans, studies, and agreements?
- Provide partnering opportunities?