



APPENDIX A2
CONTEXT SENSITIVE SOLUTIONS

APPENDIX A2

CONTEXT SENSITIVE SOLUTIONS

March 2020

By David Evans and Associates, Inc.

INTRODUCTION AND BACKGROUND

The stakeholder outreach for the West Vail Pass Auxiliary Lanes Environmental Assessment (EA) was guided by the Colorado Department of Transportation’s (CDOT) I-70 Mountain Corridor Context Sensitive Solutions (CSS) process. The Federal Highway Administration (FHWA) defines CSS as “a collaborative, interdisciplinary decision-making process and design approach that involves all stakeholders to develop a transportation facility that fits its physical setting”.

A specific CSS process for the I-70 Mountain Corridor (C-470 to Glenwood Springs) was created as a way to engage and solicit feedback from stakeholders for projects on the I-70 Mountain Corridor. All CDOT projects on the I-70 Mountain Corridor are required to follow the process throughout each phase of a project, including the planning, National Environmental Policy Act (NEPA), design, construction, and maintenance. The CSS process consists of six steps within each phase of a project, described below in **Figure 1**.

Figure 1. Six Steps of the CSS Process



The following memo describes the CSS process as applied to the I-70 West Vail Pass Auxiliary Lanes EA project (Project).



PROJECT TEAMS

PROJECT LEADERSHIP TEAM

One of the first steps in the CSS process is to form a Project Leadership Team (PLT). The PLT is a collaborative stakeholder team that leads the project, champions CSS, and enables decision-making. The PLT does not make the final selection or necessarily endorse the project recommendations but instead ensures that the recommendation is developed in an open, collaborative process and follows the process outlined for all projects on the I-70 Mountain Corridor.

Roles and responsibilities include the following:

- Identify all relevant materials for the project, discuss surrounding context, establish project goals, and identify the actions and decisions needed to reach those goals. These elements will be documented in a Context Statement for the project.
- Determine the teams needed to reach the project outcomes and will identify the members needed for each team.
- Ensure that the CSS Guidance, the Context Statement, the Core Values, and the 6-Step Process are integrated into the project.
- Review and endorse required CSS elements such as the Project Work Plan and associated Project Schedule, Context Map Reviews, the Stakeholder Involvement Plan, and the Public Information Plan.
- Approve the project-specific decision-making process for its project including the Stakeholder Involvement Plan and the Public Information Plan.
- Bring together decision makers and facilitate solutions or approaches to keep the project moving forward.

PLT members included:

- Karen Berdoulay, Resident Engineer, CDOT Region 3
- Dave Cesark, Planning and Environmental Manager, CDOT Region 3
- Patrick Chavez, I-70 Joint Operation Area, CDOT Region 3
- John David, Maintenance, CDOT Region 3
- Chuck Decker, Maintenance, CDOT Region 3
- Michael Goolsby, Maintenance, CDOT Region 3
- John Kronholm, Project Manager, CDOT Region 3
- Randy McIntosh, Maintenance, CDOT Region 3
- Martha Miller, Program Engineer, CDOT Region 3
- Tracy Sakaguchi, Colorado Motor Carriers Association
- Joel Barnett, FHWA
- Jeff Bellen, FHWA
- Stephanie Gibson, FHWA
- Ben Gerdes, Eagle County



- Tom Gosiorowski, Summit County
- Greg Hall, Town of Vail
- Dick Cleveland, Representing Vail Town Council
- Matt Klein, U.S. Forest Service (USFS)

TECHNICAL TEAM

A Technical Team (TT) was also formed to work through the technical decision-making process. The TT is composed of experts in the Core Values relevant to the project goals. TT membership includes representatives from:

- Cities and towns within the project limits,
- Counties encompassed by the project limits,
- Non-governmental organizations relevant to the project goals, and
- Federal and state agencies with responsibilities relevant to the project.

The roles and responsibilities of the TT include:

- Assure that local context is defined and integrated into the project,
- Recommend and guide methodologies involving data collection, criteria, and analysis,
- Support and provide insight with respect to community and agency issues and regulations,
- Assist in evaluating, selecting, and refining alternatives and options, and
- Coordinate and communicate with respective agencies.

TT members included:

- Local/Regional Agencies
 - » Captain Richard Duran, Colorado State Patrol
 - » Captain Jared Rapp, Colorado State Patrol
 - » Ben Gerdes, Eagle County
 - » Siri Roman, Eagle River Water & Sanitation District
 - » Jon Stavney, Northwest Colorado Council of Governments
 - » Tom Gosiorowski, Summit County
 - » Greg Hall, Town of Vail & I-70 Coalition
 - » Pete Wadden, Town of Vail Environmental
 - » Tom Kassmel, Town of Vail
- Resource Agencies
 - » Bill Andree, Colorado Parks and Wildlife
 - » Michelle Cowardin, Colorado Parks and Wildlife
 - » Devin Duval, Colorado Parks and Wildlife
 - » Taylor Elm, Colorado Parks and Wildlife
 - » Craig Wescoatt, Colorado Parks and Wildlife
 - » Joel Barnett, FHWA



- » Jeff Bellen, FHWA
- » Stephanie Gibson, FHWA
- » Matthew Montgomery, U.S. Army Corps of Engineers
- » Susan Nall, U.S. Army Corps of Engineers
- » Benjamin Wilson, U.S. Army Corps of Engineers
- » Alison Deans Michael, U.S. Fish and Wildlife (for information only)
- » Matt Klein, USFS
- Trail Recreation
 - » Shannon Anderson, Bicycle Colorado
 - » Scott Jones, Colorado Snowmobile Association
 - » Kevin Sharkey, ECO Trails
- Business/Industry Representatives
 - » Tracy Sakaguchi, Colorado Motor Carriers Association
 - » Alison Wadey, Vail Chamber and Business Association
- CDOT
 - » Karen Berdoulay, Resident Engineer, CDOT Region 3
 - » Patrick Chavez, I-70 Joint Operation Area, CDOT Region 3
 - » John Kronholm, Project Manager, CDOT Region 3
 - » Dave Cesark, Environmental and Planning Manager, CDOT Region 3
 - » Randy McIntosh, Maintenance, CDOT Region 3
 - » Chuck Decker, Maintenance, CDOT Region 3
 - » Martha Miller, Program Engineer, CDOT Region 3

ISSUE TASK FORCES

Issue Task Forces (ITFs) were formed to study and provide feedback on specific topics critical to the Project. Members of the ITFs includes stakeholder representatives with relevant expertise, members of the consultant team, CDOT, and FHWA. The following lists the ITFs that were formed for the project, a brief description of the ITF, and organizations/jurisdictions, in addition to CDOT and FHWA, that were invited to be part of the ITF:

- Stream and Wetland Ecological Enhancement Program (SWEEP)- ensured that this EA fulfilled the responsibilities set forth in the SWEEP Memorandum of Understanding (MOU), which focuses on enhancing stream and wetland ecology in the I-70 Mountain Corridor.
 - » Colorado Department of Public Health and Environment
 - » Colorado Trout Unlimited
 - » Colorado Parks and Wildlife
 - » Eagle County
 - » Eagle River Watershed Council
 - » Eagle River Water and Sanitation District
 - » Environmental Protection Agency



- » Town of Vail
- » US Army Corps of Engineers
- » USFS
- » US Fish and Wildlife Service (USFWS)
- A Landscape-Level Inventory of Valued Ecosystem Components (ALIVE) - established to fulfill the commitments set forth in the ALIVE MOU of identifying mitigation and conservation measures during Tier 2 processes that could reduce animal-vehicle collisions and increase habitat connectivity for terrestrial and aquatic species.
 - » Colorado Parks and Wildlife
 - » Eagle County
 - » ECO-resolutions
 - » Rocky Mountain Wild
 - » Town of Vail
 - » USFS
 - » USFWS
- Section 106 (cultural resources)- responsible for applying the conditions set forth in the I-70 Mountain Corridor Programmatic Agreement among the consulting parties involving Section 106 of the National Historic Preservation Act.
 - » Breckenridge Heritage Alliance
 - » Colorado Preservation Inc.
 - » Eagle County Historical Society
 - » History Colorado
 - » National Park Service
 - » State Historic Preservation Officer (SHPO)
 - » Summit County Historical Society
 - » Summit County Preservation Commission
 - » Town of Breckenridge Planning Commission
 - » Town of Breckenridge
 - » Town of Vail Design Review Board
 - » USFS
- Emergency Service Providers (ESP)- Provided input and recommendations regarding emergency response and access as it relates to the study area, alternatives, and the Proposed Action.
 - » Colorado Motor Carriers Association
 - » Colorado State Patrol
 - » Eagle County Emergency Management
 - » Eagle County Paramedic Services
 - » Eagle County Sheriff's Office



- » Eagle River Fire Protection District
- » Summit Fire and Emergency Medical Services Authority
- » Town of Vail Fire & Emergency Services
- » Town of Vail Police Department
- Recreation- Provided input and recommendations regarding potential temporary and permanent impacts to recreation facilities, including the relocation of the Vail Pass Recreation Trail.
 - » Bicycle Colorado
 - » Colorado Snowmobile Association
 - » Colorado Mountain Club
 - » ECO Trails
 - » Nova Guides
 - » USFS
 - » Vail Chamber and Business Association
 - » Vail Powder Guides

MEETINGS AND TEAM COORDINATION

As agreed upon in their respective chartering agreements, the PLT and TT members met in-person at project milestones to discuss various topics and issues needed to enable decision making, with the exception of TT meeting 9, which was held by phone due to weather. All meeting notes from PLT, TT, and ITF meetings are included in **Appendix A**. The PLT, TT, and ITF meeting dates and topics can be found in **Tables 1-3**.

Table 1. PLT Meetings

DATE	MEETING	TOPIC
July 27, 2017	PLT meeting #1	Context Statement, Values, and Vision
January 17, 2018	PLT meeting #2	Context Statement, Values, and Vision; Chartering; Purpose and Need
August 27, 2018	PLT meeting #3	CSS Process Review
December 3, 2019	PLT meeting #4	CSS Design Exception Discussion
March 5, 2020	PLT meeting #5	CSS Design Exception Discussion/ Public Noise Meeting Debrief



Table 2. TT Meetings

DATE	MEETING	TOPIC
February 7, 2018	TT meeting #1	Context Statement, Values, & Vision; Chartering
March 7, 2018	TT meeting #2	Alternatives Process; Traffic and Safety
March 21, 2018	TT meeting #3	Constructability Issues
April 4, 2018	TT meeting #4	East Vail Design Issues; Trail Relocation
June 26, 2018	TT meeting #5	Screening Criteria and Draft Alternatives
August 27, 2018	TT meeting #6	Level 1 Screening Results
October 23, 2018	TT meeting #7	Refine Recommended Alternatives; Design Options Discussion
May 8, 2019	TT meeting #8	Proposed Action & Design Options
February 6, 2020	TT meeting #9	CSS Design Exception Discussion
August 12, 2020	TT meeting #10/PLT #6	Summary of EA Impacts and Mitigation

Table 3. ITF Meetings

DATE	MEETING	TOPIC
March 28, 2018	ESP Meeting #1	Existing Conditions/ Issues
April 18, 2018	ALIVE Meeting #1	MOU/ LIZ Review
May 16, 2018	SWEEP Meeting #1	MOU/Implementation Matrix Review
May 30, 2018	Section 106 Meeting #1	APE and Methodology
November 6, 2018	Recreation Meeting #1	Trail Realignment/ Recreation Impacts
December 14, 2018	ALIVE Meeting #2	Connectivity and Trail Alignment Review
February 8, 2019	ESP Meeting #2	Proposed Action
February 11, 2019	SWEEP Meeting #2	Project-Specific Implementation Matrix
October 30, 2019	Section 106 Meeting #2	Effects and Mitigation



CONTEXT STATEMENT, CORE VALUES, AND SUCCESS CRITERIA

The PLT developed a Context Statement and Core Values for the project, which were presented to the TT for their review, feedback, and endorsement. The Context Statement and Core Values helped to frame the unique context of the Project as well as the concerns and values to be considered during the EA and future decision-making.

CONTEXT STATEMENT

A Context Statement seeks to capture in words the special qualities and attributes that define a place as unique. It should capture in words that which was true fifty years ago and that which must be considered during the development of improvements in order to sustain truth in those same words for fifty years to come. The following Context Statement was prepared by the PLT for the Project:

I-70 is Colorado's only east-west Interstate, providing a critical interstate economic link for the country. It also provides the only direct route between the Front Range and western Colorado. Area residents and visitors travel the corridor to access growing mountain communities, as well as local and regional recreational opportunities. Vail Pass is rich in natural beauty and unique environmental, wildlife, historic, and recreational resources.

The I-70 corridor over Vail Pass has a natural scenic beauty and dramatic views as it winds through U.S. Forest Service land. The corridor is recognized as a nationally and exceptionally significant feature of the federal interstate highway system due to its early implementation of context sensitive design, integrating a modern transportation facility with the surrounding natural environment. This section of highway is considered a historic resource due to these elements.

The steep grades, roadside terrain, and extreme weather events make I-70 over Vail Pass a challenging mountain pass to travel and maintain. Conflicts between vehicles traveling at substantially different speeds create safety problems and operational issues. Transportation improvements must preserve the natural beauty and unique resources in the corridor while improving safety and the travel experience for commerce, residents and visitors.

CORE VALUES

A Core Value describes something of significant importance to stakeholders -- something they respect and will work to protect and preserve. Core Values can be considered as goals for the project and they should influence decisions and choices made along the project corridor. The following Core Values were developed by the PLT for the Project:

- **Safety** – Improve and maintain a safe travel corridor by minimizing crashes and mitigating other safety concerns
- **Operations** – Address roadway operations to improve travel reliability for all road users with a modern highway system
- **Corridor Character and Aesthetics** – Maintain the surrounding wilderness and visual and historic resources of the project corridor and minimize impacts to nearby residents and businesses

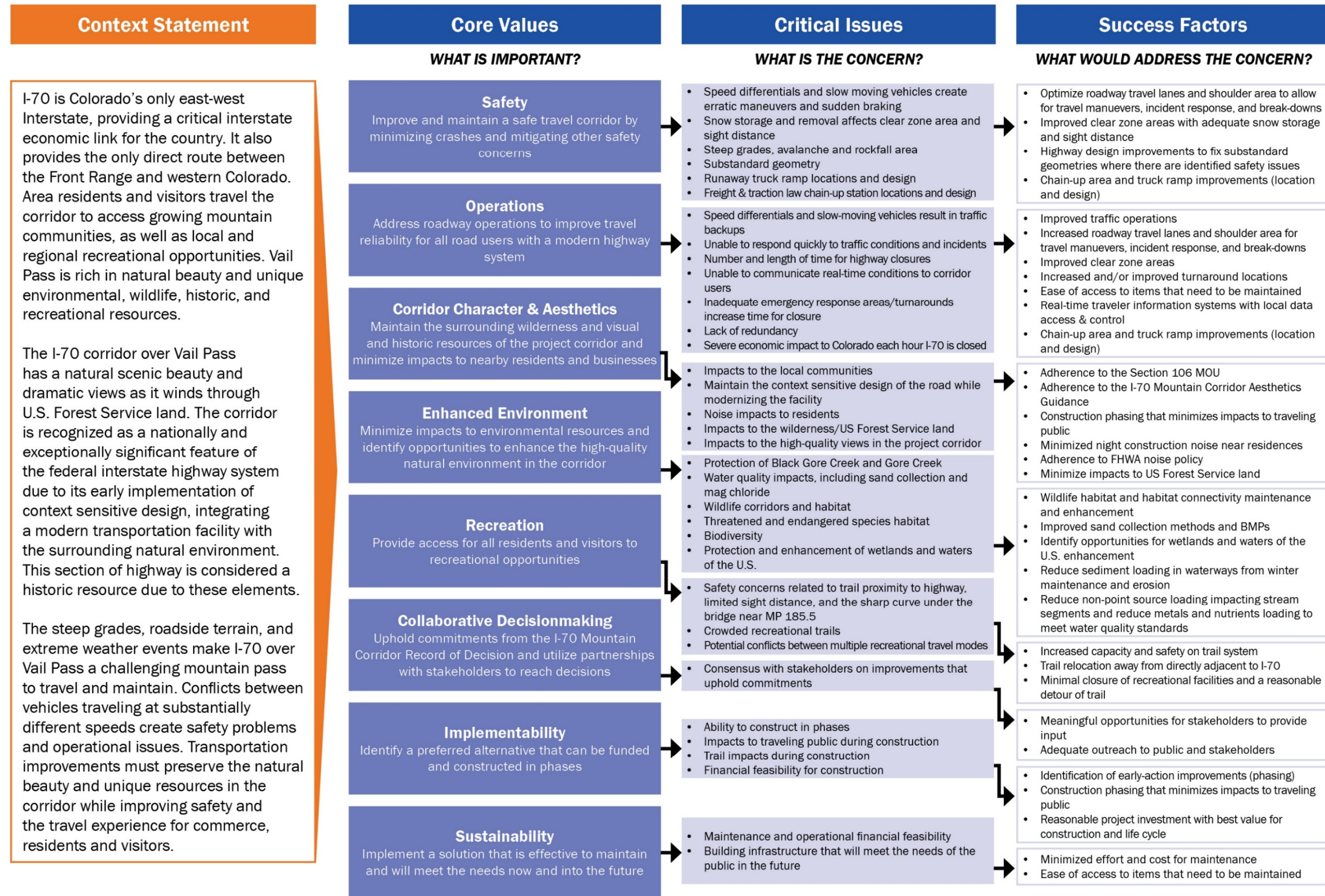


- **Enhanced Environment** – Minimize impacts to environmental resources and identify opportunities to enhance the high-quality natural environment in the corridor
- **Recreation** – Provide access for residents and visitors to recreational opportunities
- **Collaborative Decisionmaking** – Uphold commitments from the I-70 Mountain Corridor Record of Decision and utilize partnerships with stakeholders to reach decisions
- **Implementability** – Identify a preferred alternative that can be funded and constructed in phases
- **Sustainability** – Implement a solution that is effective to maintain and will meet the needs now and into the future

SUCCESS CRITERIA

Before screening criteria, design concepts, and potential solutions were developed, the project team prepared a list of critical issues and success factors for each Core Value. The critical issues represent the key concerns for each Core Value and the success factors identify how to address those critical issues. **Figure 2** provides the critical issues and associated success factors for each Core Value.

Figure 2. Success Factors Flowchart





ALTERNATIVES DEVELOPMENT

The purpose of the alternatives evaluation was to determine if each alternative meets the Purpose and Need, to compare how well each alternative meets the Purpose and Need, compare how well each alternative would perform, and identify what potential impacts each alternative would have in order to choose a Preferred Alternative. Throughout the alternatives development and screening process, the PLT and TT provided feedback on the screening criteria, draft alternatives, and screening results, as noted in **Tables 1 and 2**. Members of the PLT were included as TT members as well, so all of meeting materials and notes from the TT meetings were distributed to the PLT. The Level 1 screening results were presented at TT meeting #6, which was held directly following PLT meeting #3. In addition to the Programmatic Environmental Impact Statement recommendation of adding eastbound (EB) and westbound (WB) auxiliary lanes, additional alternatives were developed based on purpose and need data, such as high crash rates on curves, and stakeholder input. These alternatives were refined through input from the TT and subsequently evaluated against project-specific screening criteria. The following five alternatives were evaluated (see the I-70 West Vail Pass Auxiliary Lanes Alternatives Evaluation Technical Memo for additional details):

- No Action
- Existing Two Lanes with Curve Modifications and Intelligent Transportation System (ITS) Improvements
- Auxiliary Lanes with Full Shoulders, Curve Modifications, and ITS Improvements
- Existing Two Lanes and Operational Lanes with Curve Modifications and ITS Improvements
- Auxiliary Lanes with WB I-70 Realignment, Curve Modifications, and ITS Improvements

SCREENING RESULTS

After the first level of screening, it was determined that only one of the five alternatives fully met the Purpose and Need, based on the applied screening criteria. This information was presented at TT meeting #6 for feedback. The additional Core Values criteria were not considered fatal flaws and did not prevent any alternatives from potentially moving forward into further evaluation. The Auxiliary Lanes with Full Shoulders, Curve Modifications, and ITS Improvements alternative was recommended as the Preferred Alternative, since the screening showed that it is the only alternative that will improve safety and operations based on the Purpose and Need screening criteria. Further alternative screening was not needed to identify the Preferred Alternative.

DESIGN OPTIONS CONSIDERATIONS

Once the Preferred Alternative was selected, the project team evaluated numerous design options for incorporation into the Preferred Alternative based on the project's Core Values. Design options relating to chain-up stations, emergency truck ramps, emergency turnarounds, truck parking, pull-off areas, water quality, wildlife crossings, and the Vail Pass Recreation Trail relocation were developed and discussed at two of the TT meetings and at the appropriate ITF meetings, as listed in **Tables 2 and 3**. The Vail Pass Recreation Trail relocation options were presented for feedback at TT #7, ALIVE ITF meeting #2, SWEEP ITF meeting #2, and the Recreation ITF meeting. Input from the ITF meetings were presented to the TT at meeting #8 for feedback. In addition, the initial design options discussed at TT meeting #7 were presented in relation to the Core Values.



The Core Values and associated considerations used to evaluate and determine the design options, as applicable, were as follows:

- Safety
 - » Chain stations
 - » Emergency truck ramps
 - » Year-round emergency access
 - » Avalanche mitigation
- Operations
 - » Traveler information systems
- Corridor Character and Aesthetics
 - » Impacts to traveling public during construction
 - » I-70 Mountain Corridor Aesthetic Guidance
 - » Original I-70 Vail Pass design and construction context (i.e. integration of the road with the surrounding landscape)
 - » Impacts to historic properties
- Enhanced Environment
 - » Water quality impacts sand collection methods and best management practices
 - » Protection of Black Gore Creek and Gore Creek
 - » Terrestrial and aquatic habitat connectivity and enhancements
- Recreation
 - » Capacity and safety of trail
 - » Trail location in relation to I-70
 - » Closures to recreational facilities during construction
- Sustainability
- Maintenance and operational financial feasibility

PROPOSED ACTION

The Proposed Action will add a 12-foot auxiliary lane, both EB and WB, for 10 miles from approximately the East Vail exit (mile post (MP) 180) to the Vail Pass Rest Area exit (MP 190). Existing lanes will be maintained at 12 feet and the shoulders will be widened to a minimum of 6 feet for inside shoulders and maintained at 10 feet for outside shoulders. All existing curves will be modified as needed to meet current federal design standards.

ITS equipment will also be installed along the I-70 project corridor, consistent with recent study recommendations. Additional variable message signs (VMSs) will be installed at key locations to warn drivers of upcoming curves, grades, and incidents. Additional variable speed limit signs will be installed to manage driver speeds to conditions. Automated lane closure signage will be installed approaching the East Vail exit on EB I-70 and approaching the WB I-70 Vail Pass Rest Area exit to quickly and efficiently close lanes when needed.



Additional elements of the Proposed Action include:

- The Vail Pass Recreation Trail will be directly impacted by the addition of the I-70 auxiliary lane and therefore relocated for approximately two miles from MP 185 to MP 187.
- Existing emergency truck ramps, located at approximately MP 182.2 and 185.5, will be upgraded to current design standards.
- Six wildlife underpasses and wildlife fencing will be constructed throughout the corridor.
- Additional capacity will be added to the existing commercial truck parking area at the top of Vail Pass.
- Widened shoulders (minimum of eight feet of additional width beyond the 10' shoulder) at multiple locations to accommodate emergency pull-offs, emergency truck parking, and staging for tow trucks.
- Improved median emergency turnaround locations to accommodate emergency and maintenance vehicle turnaround maneuvers.
- Improved chain station located at approximately MP 182.5 with additional parking, signage, lighting, and separation from the I-70 mainline.
- Avalanche protection located at approximately MP 186.

The Proposed Action and associated design options were created and refined through input from the PLT, TT, and ITFs. **Table 4** lists the Success Factors from **Figure 2** and provides a brief description of how these items are being addressed through the Proposed Action and associated mitigation in the EA.



Table 4. Success Factors

CORE VALUE	SUCCESS FACTOR	HOW PROJECT IS ADDRESSING THE SUCCESS FACTOR
Safety	Optimize roadway travel lanes and shoulder area to allow for travel maneuvers, incident response, and breakdowns	The addition of auxiliary lanes and widened shoulders (minimum of eight feet of additional width beyond the 10' shoulder) throughout the corridor will provide additional areas for incident response and vehicles to pull off the highway during emergencies.
	Improved clear zone areas with adequate snow storage and sight distance	The addition of the auxiliary lane will provide for additional snow storage. Some snow events are large enough that the shoulders fill with snow and sight distance is limited; the auxiliary lane will provide for additional sight distance if the shoulders fill with snow. During final design, CDOT will review areas of existing roadside barrier to see if it can be removed to provide for better snow storage and sight distance.
	Highway design improvements to fix substandard geometries where there are identified safety issues	All substandard curves and shoulders will be brought up to design standards as part of the Proposed Action.
	Chain-up area and truck ramp improvements (location and design)	Improvements to the chain station near MP 183 and improvements to both emergency truck ramps are included in Proposed Action.
Operations	Improved traffic operations	The addition of auxiliary lanes will improve operations on West Vail Pass (see Transportation Resources Technical Memo).
	Increased roadway travel lanes and shoulder area for travel maneuvers, incident response, and break-downs	The addition of auxiliary lanes and widened outside shoulders (minimum of eight feet of additional width beyond the 10' shoulder in select locations) throughout the corridor will provide additional areas for incident response and vehicles to pull off the highway during emergencies. The widening of the inside shoulders from 4' to 6' will allow for additional room for vehicle correction maneuvers.
	Improved clear zone areas	The design effort will be challenged with this success factor as improving the clear zone areas by removing roadside barriers can conflict with other competing success factors to minimize disturbance and proximity to Black Gore Creek.



CORE VALUE	SUCCESS FACTOR	HOW PROJECT IS ADDRESSING THE SUCCESS FACTOR
	Increased and/or improved turnaround locations	Existing turnaround locations were analyzed and recommendations made as part of the Proposed Action for improved median emergency turnaround locations.
	Ease of access to items that need to be maintained	Improved turnaround locations will allow better access for maintenance. As part of the Sediment Control Action Plan (SCAP) update during final design, a maintenance manual for CDOT maintenance will be created for water quality control measures. The SCAP will also evaluate access to areas that are currently challenging for maintenance to access and clean, such as areas under existing bridges.
	Real-time traveler information systems with local data access & control	ITS equipment, including VMS, is included in the Proposed Action to allow real-time communication, including closures, with travelers.
	Chain-up area and truck ramp improvements (location and design)	Improvements to the chain station near MP 183 and improvements to both emergency truck ramps are included in Proposed Action.
Corridor Character & Aesthetics	Adherence to the Section 106 MOU	The Section 106 process was followed, per the MOU, and as mitigation for adverse effects, a context study of Vail Pass was completed and project- specific aesthetic guidance will be created during final design.
	Adherence to the I-70 Mountain Corridor Aesthetics Guidance	The Project Visual Impact Assessment incorporated the I-70 Mountain Corridor Aesthetics Guidance into the visual analysis and recommendations.
	Construction phasing that minimizing impacts to traveling public	The Proposed Action was designed to allow phased construction that allows adherence to CDOT's lane closure policy, minimizing impacts to the traveling public.
	Minimized night construction noise near residences	This is included as a mitigation measure in the EA, which will be implemented during construction.
	Adherence to FHWA noise policy	The noise study (see Traffic Noise Technical Report) for the Project followed FHWA and CDOT guidelines.
	Minimize impacts to US Forest Service land	The conceptual design of the Proposed Action was refined to minimize impacts to U.S. Forest Service (USFS) land while balancing the Core Values and CSS design criteria. Additional design refinement will occur during final design.



CORE VALUE	SUCCESS FACTOR	HOW PROJECT IS ADDRESSING THE SUCCESS FACTOR
Enhanced Environment	Wildlife habitat and habitat connectivity maintenance and enhancement	In addition to maintaining current connectivity under bridges, six wildlife underpasses and wildlife fencing are included as part of the Proposed Action.
	Improved sand collection methods and BMPs	A menu of water quality control measures was developed and will be refined during final design as part of the Black Gore Creek Sediment Control Action Plan (SCAP) update (see <i>I-70 West Vail Pass Auxiliary Lanes Water Resources Technical Memorandum</i>) in partnership with the SWEEP ITF.
	Identify opportunities for wetlands and waters of the US enhancement	The <i>I-70 West Vail Pass Auxiliary Lanes Wetlands Technical Memorandum</i> identifies locations for future wetland/waters of the US enhancement opportunities.
	Reduce sediment loading in waterways from winter maintenance and erosion	A menu of water quality control measures was developed and will be refined during final design as part of the Black Gore Creek SCAP update (see <i>I-70 West Vail Pass Auxiliary Lanes Water Resources Technical Memorandum</i>) in partnership with the SWEEP ITF.
	Reduce non-point source loading impacting stream segments and reduce metals and nutrient loading to meet water quality standards	A menu of water quality control measures was developed and will be refined during final design as part of the Black Gore Creek SCAP update (see <i>I-70 West Vail Pass Auxiliary Lanes Water Resources Technical Memorandum</i>) in partnership with the SWEEP ITF.
Recreation	Increased capacity and safety on trail system	The relocated portion of the Vail Pass Recreation Trail will be wider than existing and sight distance will be improved with better trail geometry. Additional safety measures can be integrated into the recreation path, such as courtesy signage and pullout areas as determined during final design.
	Trail relocation away from directly adjacent to I-70	Approximately two miles of the Vail Pass Recreation Trail will be relocated away from I-70 with either additional vertical or horizontal separation
	Minimal closure of recreational facilities and a reasonable detour of trail	The EA commits to minimizing closures of recreational facilities during construction and early coordination with the USFS regarding potential closures.



CORE VALUE	SUCCESS FACTOR	HOW PROJECT IS ADDRESSING THE SUCCESS FACTOR
Collaborative Decision-making	Meaningful opportunities for stakeholders to provide input	In addition to the CSS meetings, four public meetings were held during the EA; three for general project updates and one regarding potential noise impacts. CDOT also conducted a survey on the Vail Pass Recreation Trail, collected input at the Town of Vail Community Meetings, and held additional meetings with the Town of Vail, USFS, and Colorado Parks & Wildlife (CPW) regarding the project. CDOT has committed to the continuation of the stakeholder process through the design effort.
	Adequate outreach to public and stakeholders	See previous row.
Implementability	Identification of early-action improvements (phasing)	Early smaller improvements can be implemented as funding allows. The State plans to phase the improvements and currently has \$20M for design and construction of an Early Action package to improve safety and operations on the Pass.
	Construction phasing that minimizes impacts to traveling public	The Proposed Action was designed to allow phased construction that allows adherence to CDOT's lane closure policy, minimizing impacts to the traveling public.
	Reasonable project investment with best value for construction and life cycle	CDOT will review the benefits of safety and operational improvements throughout the design process and work to implement safety and cost effective operationally driven improvements identified that meet the purpose and need of the EA.
Sustainability	Minimized effort and cost for maintenance	CDOT Region 3 will coordinate with CDOT Maintenance for optimization of the maintainability of implemented improvements on the pass, including SCAP features and bridge structures.
	Ease of access to items that need to be maintained	Improved turnaround locations will allow better access for maintenance. As part of the SCAP update during final design, a maintenance manual for CDOT maintenance will be created for water quality control measures.



CSS DESIGN EXCEPTION PROCESS

As part of the CSS process development, CDOT established criteria to address the unique characteristics of the I-70 Mountain Corridor:

- Design speed
- Alignment
- Slope cut and fill
- Disturbance
- Rock cut
- Bridge structures
- Sound attenuation

In addition, the I-70 Mountain Corridor CSS Team developed aesthetic guidance for four design segments of I-70 within the Mountain Corridor based on the unique characteristics of each segment. Within the design segments, additional areas called “Areas of Special Attention” that have multiple or unique issues were identified. The Project falls with the “Crest of the Rockies” design segment and the Top of Vail Pass Area of Special Attention. All projects on the I-70 Mountain Corridor are required to meet the CSS design criteria during the Life Cycle Phase 2, Project Development. For projects within an Area of Special Attention, CDOT must request design criteria exceptions for the Proposed Action during Life Cycle Phase 2, due to the complexity of the issues involved. Exceptions from the criteria may be justified based on the following:

- Complementing surrounding physical characteristics
- Enhancing safety
- Increasing capacity
- Reducing costs
- Protecting the environment
- Preserving historic and scenic elements
- Interfacing with multiple modes of transportation
- Utilizing new technology or innovative approaches
- Doing the right thing

The project team considered the safety and operational benefits of the addition of the auxiliary lanes and the curve modifications on I-70 against the CSS design criteria (**Table 3**; additional information can be found in **Appendix B**). Given the existing topography, there will be significant cuts, fills, and walls required to construct the auxiliary lane. If I-70 was completely realigned to avoid large cuts and fills, it could not remain in its current location and disturbance would greatly increase above and beyond the existing roadway footprint. The Proposed Action has been designed at a conceptual level, which is appropriate for a NEPA analysis to assess impacts and mitigation. This design will be refined during the final design phase of the project to further balance safety and impacts.

During PLT meeting #4, at which CDOT presented the initial design exception requests, the PLT requested that CDOT meet with the TT to obtain additional feedback regarding the design exceptions. Feedback from the TT on these exception requests was provided to the PLT at meeting #5. CDOT committed to creating a CSS Design Criteria Exception ITF during final design to further examine and refine the design criteria exceptions. The PLT concurred with this approach and commitment from CDOT. The ITF will be multidisciplinary and will consist, at a minimum, of members with expertise in the following disciplines, similar to the existing Project TT: engineering, wildlife, water quality, recreation, freight, aesthetics, and representatives from CDOT, USFS, and FHWA.



Table 3. Design Criteria

DESIGN CRITERIA	DETAILS	DOES PROPOSED ACTION MEET THE CRITERIA?
Design Speed	For I-70, 65 MPH design speed.	Yes
	For Advanced Guideway System (AGS), dependent on technology.	N/A AGS is not included as part of the Proposed Action; however, the Proposed Action does not preclude the hybrid AGS alignment.
Alignment	Eastbound highway lanes, WB highway lanes, and the AGS will be designed as separate, independent alignments.	Yes
	The three alignments will maintain no less than the existing median width or create a clear zone that does not require a guard rail or barrier.	No Several medians in the corridor are decreasing in width.
	No loss of existing vertical separation of highway lanes will occur in any section.	Yes
Slope Cut and Fill	Limits of physical disturbance shall be less than 40 vertical feet from the top of the pavement or rail platform to the farthest edge of cut or fill.	No There are areas where the limits of physical disturbance exceed 40 vertical feet from the pavement to the limits of earthwork.
	Cut and fill embankment will not exceed a slope of 2.5:1 (H:V).	Yes
	All roadway retaining walls over 12' in height will be installed below the elevation of the roadway.	No There are several cut walls that exceed 12 feet in height
Disturbance	Construction will be fully contained with areas of historic or current disturbance if no centerline change occurs.	Yes Based on the concept design.
	New alignments must be consistent with Design Criteria for slope cut and fill.	No The slope cut and fill exceptions also apply in areas of realignment.



DESIGN CRITERIA	DETAILS	DOES PROPOSED ACTION MEET THE CRITERIA?
Rock Cut	A geotechnical analysis report will be completed and reviewed prior to any proposal to create rock cuts for an alignment.	Yes A geotechnical investigation will be completed as part of final design.
	If rock cuts are required, naturalized custom cuts methods are required. Rock cuts shall be constructed using scatter blasting techniques and provide for adequate rockfall area at the base.	Yes The only major rock cut is at emergency truck ramp at MP 185.5. Rock sculpting will be included as part of final design.
Bridge Structures	Bridge structures will not utilize slope paving techniques and will require a closed-end abutment design with a minimum vertical height of 8', measured below the bridge girder.	Yes
	Bridge embankments shall be 2.5:1 maximum.	Yes
Sound Attenuation	Sound buffering and attenuation will be designed in conjunction with the horizontal and vertical alignment to eliminate the need for noise mitigation.	Yes The existing noise wall in East Vail will remain. Draft results from the noise analysis indicate a wall is feasible and reasonable on the north side of I-70 for Pitkin Creek Condominiums. Details of the mitigation will be determined during final design and will follow the design criteria.
	Mitigation, if required, will integrate landforms, landscape planting buffers, and walls.	



ITF IMPLEMENTATION AND RECOMMENDATIONS

As required by the I-70 Mountain Corridor CSS process and PEIS commitments, CDOT implemented the required coordination in the SWEEP and ALIVE MOUs and Section 106 Programmatic Agreement (PA) during the respective ITF meetings. CDOT also created ITFs to address recreation and emergency service response/access, as these topics required additional technical input and feedback. As activities in the corridor move from corridor planning to project development to project design and beyond, the outcomes from the previous phase become inputs for the subsequent phase. This approach is consistent with the Life Cycle Phases and 6-Step Process in the CSS Guidance for the I-70 Mountain Corridor. The following are summaries of the required ITFs required for all I-70 Mountain Corridor projects.

SWEEP IMPLEMENTATION

The SWEEP implementation matrix, created for all phases of I-70 Mountain Corridor projects, was expanded to identify project-specific inputs, considerations, and outcomes during the EA process (**Appendix B**). These inputs, considerations, and outcomes were developed through input from the SWEEP ITF and refined throughout the EA process. The *I-70 West Vail Pass Auxiliary Lanes Water Resources and Wetlands Technical Memoranda* provide additional information regarding project commitments. As part of the SWEEP ITF, the following recommendations were made for implementation during final design and construction:

- Prior to beginning preliminary design on any phase of the project that will construct new impervious surface (e.g. shoulders, auxiliary lanes), the SCAP update process will begin, including reconvening the SWEEP ITF from this EA. In addition to including previously completed water quality improvements from the previous SCAP, the SCAP update will include the following tasks:
 - » Site visits with the SWEEP ITF, CDOT Maintenance, and wetland and wildlife specialists to identify specific opportunities and constraints relating to specific areas of concern and opportunities for enhancement.
 - » Hydraulic and hydrology analysis
 - » Creation of a maintenance manual for application of winter roadway maintenance materials and maintenance of structural control measures for use by CDOT Maintenance
 - » Identification of project-specific conveyance and treatment control measures, including sediment basins (Zone 1)
 - » Identification of additional projects that are outside the scope of the I-70 West Vail Pass Auxiliary Lanes project (Zones 2 and 3)
 - » Identification of partnerships between stakeholders for future water quality improvement projects.
- During final design, the menu of control measures developed as part of the SWEEP ITF will be refined and constructed. The menu of control measures can be found in Table 4 of the *I-70 West Vail Pass Auxiliary Lanes Water Quality Technical Memorandum*.



ALIVE IMPLEMENTATION

The ALIVE implementation matrix was used to guide discussions regarding aquatic and terrestrial wildlife during the ALIVE ITF meetings. The ALIVE ITF agreed to utilize the 2011 Linkage Interference Zones, as refined in A Regional Ecosystem Framework for Terrestrial and Aquatic Wildlife along the I-70 Mountain Corridor in Colorado as a starting point for discussions regarding project-specific recommendations. The recommendations from the 2011 above-mentioned report were updated based on additional project-specific surveys and input from the ALIVE ITF and include the construction of six new wildlife crossing structures (underpasses) constructed between MP 185.0 and 191.5 and wildlife fencing on both sides of the highway throughout the study area to prevent wildlife-vehicle collisions and guide animals to crossing structures. The recommendations are provided in **Appendix C** and further documented in the *I-70 West Vail Pass Auxiliary Lanes Biological Assessment* and the *I-70 West Vail Pass Auxiliary Lanes Biological Evaluation*.

SECTION 106 ITF

The I-70 Mountain Corridor Section 106 PA outlines Section 106 compliance requirements for all Tier 2 Mountain Corridor projects, including allowing for ITF review of the Area of Potential Effect (APE), eligibility determinations, and finding of effects. The ITF meetings allowed members to provide input on the APE and how the Proposed Action would affect the historic and archaeological resources in the APE, in particular the I-70 Vail Pass Historic District. The ITF also discussed the relationship between the Section 106 process and the Visual Impact Assessment (VIA), which was conducted for the Project. The finding of an adverse effect to I-70 Vail Pass and impacts identified in the VIA resulted in the recommendation to create an Aesthetics Issue Task Force (ITF) during final design of the project. This ITF will be responsible for developing project-specific aesthetic guidance that builds on the existing *Memorandum of Understanding between the Bureau of Land Management, The Colorado Department of Transportation, The Federal Highway Administration and the US Department of Agriculture, Forest Service Rocky Mountain Region* and Crest of the Rockies Aesthetic Guidance and incorporates the historic context of West Vail Pass. The guidance will include, but is not limited to aesthetic treatments for structures, materials, colors, planting, site grading forms, and maintenance recommendations.

CSS IN FINAL DESIGN AND CONSTRUCTION

As the project moves into final design and construction, the CSS process will continue through each future project phase, including final design and construction. The PLT, TT, and ITFs will be utilized in each project phase and membership will be revisited at project phase to confirm that the membership of each group is appropriate based on the phase and expertise required. During final design, the SWEEP and ALIVE ITFs will continue and additional ITFs for CSS Design Criteria Exceptions and Aesthetic Guidance will be created.



APPENDIX A

PROJECT LEADERSHIP TEAM, TECHNICAL TEAM, AND ISSUE TASK FORCE MEETING NOTES



PROJECT LEADERSHIP TEAM MEETING NOTES



FINAL MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Project Leadership Team (PLT) Meeting #1
DATE HELD:	July 27, 2017
LOCATION:	CDOT Gypsum Maintenance Facility
ATTENDING:	Martha Miller, CDOT Region 3 Program Engineer Karen Berdoulay, CDOT Region 3 Resident Engineer Mike Vanderhoof, CDOT Region 3 Planning and Environmental Manager John Kronholm, CDOT Region 3 Project Manager Andy Garcia, CDOT Region 3 Maintenance Joel Barnett, FHWA Stephanie Gibson, FHWA (phone) Matt Klein, US Forest Service (phone) Ben Gerdes, Eagle County Greg Hall, Town of Vail Tracy Sakaguchi, Colorado Motor Carriers Association Don Connors, Amec Foster Wheeler Leah Langerman, David Evans and Associates Public Involvement Coordinator Kara Swanson, David Evans and Associates, Environmental Task Lead
COPIES:	PLT Members, Attendees

SUMMARY OF DISCUSSION:

(Please Note: Action items are shown in ***bold italics***.)

1. Project Background

- a. Mike provided background on the I-70 Mountain Corridor 2011 Programmatic Environmental Impact Statement (PEIS) and Record of Decision. The PEIS is a Tier 1 document, which is a high-level environmental document that extended on I-70 from C-470 to Glenwood Springs. CDOT looked at solutions for the whole corridor and identified a preferred alternative (PA). In this stretch from mileposts (MP) 180-190, identified a need for auxiliary lanes, both eastbound and westbound to deal with the difference between fast and slow vehicles.
- b. At the same time, CDOT was working on an Environmental Assessment (EA) for auxiliary lanes and did some high level environmental analysis for most of the resources. Due to funding and other decisions, the project was halted in 2009. A fair amount of information from that effort will be used during the current study.
- c. CDOT is now beginning a template EA process which will make more detailed decisions to better define the auxiliary lanes (location, width etc.), and will include more detailed environmental studies. USFS has been invited to be a cooperating agency. USFWS and Corps will also be invited to be cooperating agencies. Scoping will begin soon.

2. Current Project Scope

- a. This project extends from the east side of Vail to the top of Vail Pass, MP 180 East Vail Interchange to MP 190 Interchange. There are several challenges, including 16 bridges



(mostly steel and concrete) and 10-mile Canyon Recreational Trail. The trail is outside the highway envelope for the first five miles, but also is directly adjacent to I-70 in some locations. There are significant landslides in the area. I-70 is a nationally significant highway.

- b. This is the first segment to go through the National Environmental Policy Act (NEPA) after NEPA was passed. The process had a lot of community involvement, which created intentional focus on wildlife movement, rock cuts, revegetation, color/type of barrier, etc.
 - i. **Stephanie requested a copy of the original NEPA document from the 70s. John will send it to her.**
- c. The Crest of the Rockies aesthetic guidelines will be used. There are layers of laws, decisions and agreements that will apply to this project.
- d. Don discussed the previous Purpose and Need (P&N). Mike provided input on NEPA and stated that we're working on P&N for this project now.
- e. Don provided the existing safety and operational overview (see slides).
- f. Auxiliary lanes would primarily be for slow moving vehicles, rather than to address congestion like in other places.
- g. **Determine how many times/how often each runaway truck ramp is used.**
 - i. Andy noted the lower ramp was used Monday.
 - ii. Patrick Chavez keeps all ramp use info in a spreadsheet, and has several years of data.
- h. Patrick Chavez is CDOT's I-70 corridor operations manager. He sets up meetings on Fridays about the upcoming weekend, including discussion of weather, events, and heat maps from previous years. He is essentially the commander of the corridor on the weekends. He has team that sits at the tunnels to monitor traffic. Once accidents on Vail Pass take a lane during a winter storm, the highway can be completely closed. During summer, if a lane closes sometimes the pass will be kept open if road conditions are dry. This results in more frequent but shorter closures now, compared to past management strategies. Often traffic will be stopped at MP 180 or 184.
 - i. Five years ago management of I-70 was handled by Region 1. Then, CDOT started taking more of a corridor approach. Patrick has a lot of information that could be used to identify problems.
- i. Sometimes Vail Pass closes because of events at the Eisenhower tunnel, to avoid stacking traffic in Summit County. This is important to note when stating closure numbers. The number indicates the broader corridor management.
- j. The I-70 Coalition created a draft corridor project priority list. Vail Pass ranked after Floyd Hill, #3 on the list. **Martha will try to get a copy.**

3. I-70 Mountain Corridor Context Sensitive Solutions (CSS)

- a. CSS is a collaborative process, and it is important we have an interdisciplinary team working on this project. I-70 mountain corridor guidelines provide a process for decision-making. One of the responsibilities of the Project Leadership Team (PLT) is to be stewards of the CSS process. The six-step approach was described (see slide). We are currently in the first step of the process and are working to get all of the stakeholders on board.
- b. The PLT will help execute the CSS process. PLT responsibilities include enabling decision-making throughout. Martha noted that the PLT will meet regularly. The PLT doesn't make decisions, such as choosing which alternative to move forward with. Instead, this group



- will bring info back to others in their agency and ensure the established process is being followed.
- c. Potential PLT members were listed on screen, and discussion occurred about any changes or additions. It is important to keep in mind that technical team (TT) and issue task forces (ITF) will also be formed and discussed later in this meeting.
 - i. The group agreed that Patrick or someone from CDOT's I-70 Joint Operation Area (JOA) should be included on the PLT.
 - ii. Martha got an email from Margaret Bowes stating that the I-70 Coalition wants to be involved. The I-70 Coalition is a group of local governments and private sector companies that was gathered during the PEIS. Greg is part of the Coalition on the technical side and agreed adding an I-70 Coalition member would provide important perspective. During the PEIS, the Coalition's collaborative effort pushed the decision in the ROD.
 - iii. PLT members agreed Summit County should be added to the PLT (invite Thad Knoll, Assistant County Manager and Intermountain TPR Chair). Greg clarified that the I-70 Coalition isn't meant to represent individual towns, so they wouldn't speak for Summit County.
 - iv. Discussed including private citizens on the PLT. Mike has already been contacted by East Vail about noise. Members of the business community were included on the Vail Underpass project PLT, but that was a much more focused study area. It will be difficult to keep the PLT small, as the CSS process advises, while covering all individual neighborhoods or interests. All PLT meetings will be open to the public to provide transparency. Martha recommended that since this is a ten-mile corridor, it is best to continue without inviting private citizens for now. If people express an interest in joining and not just observing, then we should confirm they are an organization's chosen representative and require a commitment from them.
 - v. ***Involving elected officials was discussed. Other projects have had elected officials on the PLT. Ben and Greg will ask their elected officials how they want to be involved. Summit County will also be asked how they want their elected officials involved.***
 - vi. Ben and Greg agreed they are probably the appropriate PLT representatives from Eagle County and Town of Vail. Others in their agencies can be involved in the TT and ITFs as appropriate.
 - d. The TT will be comprised of technical experts in various topics related to core values. Potential issues for discussion at TT meetings were listed. An agenda will be sent to TT members prior to each meeting to outline the planned discussion topics and allow TT members to attend the meetings of interest to them.
 - e. ITFs will be formed to handle issues that require more detail, discussion, and specialists. Each TT agency should provide a list of their specialists that should be invited to ITFs, once they are formed.
 - f. A project web page will be created.
 - g. ***Future PLT meetings should be held in Vail. Leah will coordinate with Greg about future meeting locations. There can be video conferencing.***
 - h. Public meetings could be held at the golf course clubhouse, the library and town hall are free meeting spaces.



Roundtable discussion of: “This project will be successful if...”

- i. Leah: If we use a collaborative approach that allows for stakeholders and the general public to have meaningful involvement early and throughout the project.
- j. Don: If this project gets built and the traveling public doesn’t notice much. If it doesn’t make national news. “Minimize impacts to traveling public”.
- k. John: If there’s a reduction in crashes and safety.
- l. Martha: If we see the project funded. If we include technology and innovation. And everything else that’s been said.
- m. Mike: If we minimize and mitigate for environmental impacts including cultural, natural, and visual resources. If we adhere to guidelines.
- n. Tracy: If we have safety, mobility, and improved operations for everyone.
- o. Joel: If we demonstrate conscientious decision regarding environmental impacts, and improve safety and operations.
- p. Andy: If the needs are met, goals are attained, and objectives are met.
- q. Karen: Echoed a lot what’s been said. Also, if we enhance recreational resources through the area and improve access to recreational assets.
- r. Ben: If we build on the success of the existing project with CSS, but at the same time make improvements to safety, operations and environmental. Also, if the project includes innovation.
- s. Greg: If we enhance environmental – wildlife, noise, water quality, visual – everyone should be proud to be part of the project. Personally, when there’s not traffic, driving Vail Pass can be relaxing. Visual is so important. And don’t preclude the ultimate vision for the I-70 corridor from the PEIS.
- t. Matt: If there is continued close coordination between CDOT and USFS on an ultimate solution that minimizes impacts to USFS land while improving safety.

4. Context Statement

- a. The context statement captures in words the unique qualities of this corridor. It should be inspiring and help guide the project. It is high-level, big picture. A brainstorming session was conducted to list PLT member ideas regarding thoughts that should be included in the context statement.
 - i. Scenic beauty
 - ii. Recreation opportunities - cover both the link and what’s in the corridor - campground, trail heads, 10-mile recreation trail
 - iii. Environmental aesthetics of how it was built
 - iv. History of corridor
 - v. Context sensitive design
 - vi. Major east-west corridor for freight, limited access to communities around there
 - vii. One of the main east-west corridors in the US
 - viii. Important to commerce, important to local communities- destination to resort, medical, freight, getting groceries through. Life-blood of Colorado.
 - ix. When it closes it impacts other communities
 - x. Difficult corridor to construct



- xi. Crest of the Rockies - don't have a lot of grades until you hit that section. Weather issues change quickly.
- xii. Operations are a lot different, as is maintenance.
- xiii. Rich environmental resources, wildlife, migration corridors, Black Gore Creek-impaired stream system.
- xiv. Extreme weather
- xv. USFS land
- xvi. High-elevation mountain pass, 7% grades or higher, atypically steep
- xvii. Visually pleasing (from the road, the road itself)
- xviii. It is a historic resource and there are prehistoric resources in area
- xix. Original I-70 was going to go over Buffalo Pass. Citizens were against it and it created Eagle's Nest wilderness. Buffalo Pass would have been a shorter route.
- xx. Implement technology to help balance impacts
- xxi. Blessing and curse for Vail - connects them but it's noisy and visually impactful. Idling trucks.

5. Core Values

- a. Core project values describe things of significant importance to stakeholders. Things that will be respected and that we will all work to protect and preserve. PLT members brainstormed the following list of core values:
 - i. Safety
 - ii. Aesthetics
 - iii. Historic context
 - iv. Collaborative decision making (such as on noise walls issue in Vail)
 - v. Enhanced environment
 - vi. Constructability/Implementability
 - vii. Commitment
 - viii. Mobility (travel reliability, operations, maintenance)
 - ix. Connectivity (recreational, bicyclists, pedestrians)
 - x. Sustainability (maintenance, could capture SCAP here)
 - xi. Balance impacts (tradeoffs and balancing (e.g. noise wall vs. visual))
 - xii. Community character (wilderness and Town of Vail)
 - xiii. Modern system

6. Critical Issues

- a. PLT members brainstormed the issues they see as most critical for this project. These issues will be tied to the core values, and should answer the question "what is the concern?" for each core value.
 - i. Noise
 - ii. Safety (truck ramps, speed differentials, slow moving vehicles, hazmat doesn't chain up before they hit snow because of spark factor [usually not snow Vail at chain up]).
 - iii. Pavement preservation
 - iv. Enhance chain-up and chain-down stations



- v. Utilization of technology (communicate with trucks and all users, data management)
- vi. Between MP 184-189 the shoulder is barely wide enough to pull over
- vii. Safe havens for turnarounds
- viii. Snow removal and storage
- ix. Sand collection and cleanup
- x. Lack of redundancy (in alternate routes and in existing lanes)
- xi. Trail proximity to road results in user safety issues, constructability issues, enhancement opportunities
- xii. Westbound avalanche area (if we widen we won't be able to put berm in)
- xiii. Rockfall area
- xiv. Wildlife connectivity/corridors/habitat
- xv. Threatened and endangered species habitat
- xvi. Water quality
- xvii. Emergency response
- xviii. MP 189-182 has substandard alignment (design speed is less than 65 mph)
- xix. Bridges (financial feasibility)
- xx. Travel times are unpredictable

7. Other Teams

- a. TT meetings will start after public scoping.
- b. Some TT members were suggested, including Colorado State Patrol, Eagle River Watershed, and snowmobile and bike groups.
- c. The Eagle Interchange project found that it is important for each specialty to hear what is happening with other resources.
- d. ***PLT members should send suggested TT members and their contact information to Leah prior to the next PLT meeting.***
- e. An Executive Leadership Team should be formed. Potential members could include:
 - i. Dave Eller – CDOT RTD
 - ii. Mike Lewis – CDOT Deputy Executive Director
 - iii. Kathy Hall – CDOT Transportation Commissioner
 - iv. Aaron Mayville – USFS District Ranger
 - v. John Cater (Division Administrator), Alicia Nolan (Assistant Division Administrator), or Shaun Cutting (R3 Program Delivery Team Leader) – FHWA
 - vi. Jill Ryan – Eagle County Commissioner
 - vii. Elected official or Town Manager – Vail

8. Communication and Operating Guidelines

- a. John Kronholm is the main CDOT contact for the project. He is out of the country for the next three weeks. While he is out, Karen Berdoulay should be copied on messages.

9. Next PLT Meeting

- a. September 18, 9:00 AM – noon



- b. Karen will send the invitation.*
- c. Leah will work with Greg to find a meeting location/room.*



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Project Leadership Team (PLT) Meeting #2
DATE HELD:	January 17, 2018
LOCATION:	Town of Vail, 1309 Elkhorn Drive
ATTENDING:	<p>PLT Members:</p> <ul style="list-style-type: none"> Joel Barnett, FHWA Stephanie Gibson, FHWA (by phone) John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Dave Cesark, Planning and Environmental Manager, CDOT Region 3 Randy McIntosh CDOT Region 3 Maintenance Matt Klein, US Forest Service (by phone) Ben Gerdes, Eagle County (by phone) Tom Gosiorowski, Summit County Greg Hall, Town of Vail Dick Cleveland, Representing Vail Town Council Tracy Sakaguchi, Colorado Motor Carriers Association Don Connors, Consultant Project Manager, Amec Foster Wheeler Leah Langerman, Consultant Public and Stakeholder Involvement Coordinator, David Evans and Associates Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates <p>Others in Attendance:</p> <ul style="list-style-type: none"> Matt Figgs, CDOT Region 3 David Singer, Environmental Program Manager, CDOT Headquarters (by phone) JJ Wierema, Consultant Roadway Designer, Amec Foster Wheeler Tammie Smith, CDOT Region 3 Environmental
COPIES:	PLT Members, Attendees

SUMMARY OF DISCUSSION:

(Please Note: Action items are shown in ***bold italics***.)

1. Introductions

- a. The group did introductions and John presented the goal of the meeting which was to endorse the process of the project and ensure that CSS was being followed.

2. Work Plan and Public Involvement Plan Review

- a. Don walked through the work plan slides in the presentation (attached to these notes).
- b. Don spoke about the desired outcomes of the project including adding auxiliary lanes from mile post (MP) 180 to 190 on I-70, improve safety and operations, minimize environmental impacts, implement the Black Gore Creek sediment plan, meet the commitments of the I-70 Mountain Corridor PEIS, and complete the template Environmental Assessment (EA) and FIR plans (30% design) by early 2020.



- i. Leah asked if other outcomes were desired by the project's PLT.
 - ii. Tom mentioned that the desire to reduce construction impacts to the traveling public should be a desired outcome due to the history of impacts from road work on I-70 over Vail Pass in previous years. As this project will span multiple years, this should be an added desired outcome. The group agreed that this is a good addition to the list.
 - iii. Greg suggested that the goal should not just be to minimize environmental impacts, but improve upon past impacts from previous projects. The group agreed to add this to the list.
 - iv. Karen recommended that the implementation of the Black Gore Creek sediment plan should include refinements to that plan as needed as the plan is at least 10 years old. This will be added.
 - v. Stephanie asked to change the statement "template EA" to just "EA."
 - c. Don explained the list of documents (inputs) that are being incorporated into the project that the team will follow.
 - i. Don requested PLT members send any other relevant documents not listed in the presentation to the design team.
 - 1) Don stated that the project staff has a copy of the original Vail Pass EIS and can send it to anyone who would like. It. ***Don will send the original Vail Pass EIS to Stephanie for her records.***
 - d. Don went over the project schedule and key milestones that will take place between now and the EA decision document/(Field Inspection Review (FIR) 30% design milestone in early 2020.
 - e. The alternatives analysis process was covered next and how different alternatives for adding auxiliary lanes will be screened and then developed into a preferred alternative.
 - i. Greg asked how an advanced guideway system (AGS) template would not be precluded from a preferred alternative. Don explained that the I-70 Mountain Corridor PEIS shows that an AGS cannot be precluded by projects, and while this project will not include an alignment for a potential future AGS, it will not preclude it either.
 - 1) David S. mentioned that the key is that a future AGS would have to react to this project's ultimate build out as there are too many alignments to consider with a future AGS alignment. However, this project to not preclude an AGS.
 - f. Leah talked about the different project teams that will be assembled for the project. The project staff includes FHWA, CDOT, and consultant Staff
 - i. The PLT will plan to have four meetings in total. Its role is to ensure that the project is following the process.
 - ii. The Technical Team (TT) is composed of technical experts. Seven meetings are currently planned with the TT.
 - iii. The Issue Task Forces (ITFs) will be part of the project as well. Three of them are required (Section 106, SWEEP, and ALIVE), but the project staff wanted to add another ITF composed of emergency service providers as they will be able to provide insight and guidance on how to improve the operations and safety of I-70 over Vail Pass.



- g. Leah showed the slide with contact information for certain lead project staff. She asked that any media questions on the project be directed to Tracy Trulove, R3 Public Information Officer (PIO).
- h. She then covered other agencies that the project is coordinating with. FHWA has invited three other federal agencies to be cooperating agencies but has not received anything back from them yet.
- i. Leah spoke to the public information principles that the project team will adhere to in providing stakeholder and public information regarding the project.
 - i. A project website, hosted by CDOT, will be established soon (the link will be sent to the PLT group once it is active).
 - ii. Public comments received from public meetings or via other methods will be compiled and presented to the PLT in future meetings.
 - iii. Three public meetings will be held, including a public scoping meeting projected to be in late February (the first of the three public meetings).
 - iv. Trail intercept surveys will be completed later in the process from trail uses on the 10-Mile Canyon recreation trail.
 - v. Mailers will be sent to East Vail residents, email lists will be compiled, and the project staff will work with CDOT and local Public Information Officers (PIOs) to cast a wide net for providing information to the public.
 - vi. A text for information service is being explored as well.

3. Purpose and Need Review

- a. Kara talked about the Purpose & Need (P&N) component of the EA.
 - i. The P&N in the presentation has not been endorsed by FHWA yet.
- b. Kara spoke to the P&N statements. The factors include safety concerns and operation issues.
 - i. Stephanie asked why eastbound and westbound are being specifically stated rather than I-70 generally. Kara responded that Mike Vanderhoof (the previous CDOT Region 3 Environmental lead) had asked that those directions be added to the purpose statement. Tracy mentioned that she liked that both directions were mentioned as only the west side of Vail Pass is being considered and it might be confusing if both directions of travel aren't mentioned. Tom added that as public perception is this is a climbing lane project, keeping both eastbound and westbound shows that this is more than a climbing lane.
 - ii. Tom stated that the weather (chain/traction laws) and snow removal operations are such a big component of the project that they should be added to the P&N statement. Kara explained that details like that (where supported by data) will be included in the "need" discussion in the P&N section of the EA.
 - iii. Stephanie suggested changing the Need statement to start off with the fact the I-70 Mountain Corridor PEIS recommended a project to address safety and operations. She also added that auxiliary lanes should not be mentioned as the National Environmental Policy Act (NEPA) should not pre-determine a solution. John stated that since the PEIS recommended auxiliary lanes, it was included in the Need statement. Stephanie responded that the needs from the PEIS should be added rather than the solution. Kara stated that the project team would revise the Need statement to reflect this.



- 1) Tom asked if solutions other than auxiliary lanes are going to have to be considered now. Stephanie stated that while the PEIS recommended auxiliary lanes as the solution, that isn't the only solution that should be looked at. Don mentioned that roadway geometry and Intelligent Transportation Systems (ITS) components will also be reviewed, so auxiliary lanes will only be a component of the solution.
- iv. Greg stated that safety and operations aren't the only "issues" along the corridor as there are aspects like environmental and wildlife.
 - 1) John responded that the P&N for the project is highway related, the project is not being generated because of environmental or wildlife. Those other items will be addressed as they are in the core values of the project, but are not a part of the P&N.
- v. Tracy asked if specific mentions of trucks could be removed as other large vehicles (RVs, campers, boats, etc.) also contribute to the differential speeds. These mentions will be changed to recognize slow moving vehicles are not solely trucks.
- vi. Tom asked about how wildlife movement along the corridor plays into the P&N statement.
 - 1) Kara mentioned that to be in the Purpose & Need statement, there would have to be a documented safety issue from wildlife collisions. John added that it will be reviewed as part of the project (via the ALIVE ITF), but the wildlife collisions along the Vail Pass corridor are actually lower than many other areas of I-70. The group agreed this would be a good approach.
- vii. Leah stated that the project staff will make revisions to the P&N statement to capture this discussion. It will be provided for PLT review and concurrence prior to the public scoping meeting.**

4. Review of Draft CSS Material

- a. Kara covered the draft Context Statement based on input and discussion from the PLT Meeting #1 (covered in the meeting handouts – attached).
 - i. Stephanie asked to move the second paragraph to be first in order to mention the statewide importance of I-70 before being location specific. This was agreed upon by the group.
 - ii. Tom stated that the I-70 corridor is more than connecting ski resorts to the front range. The group discussed that it is a freight corridor, critical interstate commerce route, and provides links to the western slope.
 - iii. Stephanie asked to add the word "historic" when describing the corridor in the current first paragraph as I-70 itself (not just Vail Pass) is considered historic.
- b. Kara then talked about the draft Core Values that were put together from the PLT Meeting #1 discussion.
 - i. Stephanie asked to add the historic considerations as a specific Core Value, but then agreed that it can be covered in other values, as long as it is included.
 - ii. Greg asked where the economic significance of I-70 fits into the Core Values as the corridor is the life blood of many communities in the state.
 - 1) The group discussed that it makes the most sense to add it to the Context Statement as it is such a significant issue. CDOT has assigned a value of \$800,000 of economic loss per hour to the economy of Colorado for when I-70 is closed on Vail Pass. If this issue is placed in the Context Statement,



- improved operations and reduced closure times can be the measure for this issue.
- iii. Stephanie asked to add the goal of reducing closures on Vail Pass to the list of Critical Issues. Last year Vail Pass was closed for 177 hours.
- c. The Critical Issues were then reviewed. These are the concerns related to each of the Core Values.
- i. Greg asked if made sense to highlight all wildlife and not just threatened and endangered species. Wildlife will be added as a separate bullet to capture the change.
 - ii. Tom stated that substandard alignment should be changed to substandard geometry. This change was agreed upon.
 - iii. Stephanie asked what an emergency response area is defined as. Leah stated that this refers to when I-70 is closed and emergency response vehicles do not have the room to maneuver. This leads to safety closures in both directions of I-70 to allow emergency response vehicles to travel the wrong direction on I-70 so they can respond to an incident. To clarify this need more, this will be changed to emergency response access.
 - iv. Stephanie stated that the operational challenges are not very well identified in the current Critical Issues. She suggested this idea be expanded on more. The project staff will look at how this may be accomplished.
 - v. Stephanie asked that the section on capacity be reduced as it is not a Core Value for this specific project. The group discussed that while the capacity is not a Core Value, as the safety and operations improve on I-70, the capacity will naturally improve. The group decided to look further at whether this should be a Core Value or simply removed.
 - vi. Kara asked if aesthetics of the corridor (not just the landscape views, but the views of the bridges and the highway) should be a critical issue. David S. suggested adding keeping with the CSS requirements of the corridor as a Success Factor for this issue.
- d. Success Factors were discussed. The slideshow presentation showed some examples Success Factors that could be added to address critical issues. The Success Factors will be drafted by the project staff based on input from the PLT.
- i. Tom mentioned that the theme of the examples is a good start and should be continued. One that he recommended adding was the reduction in crashes along I-70. He also mentioned that another one could be improving the aggregate travel speed for all users on Vail Pass.
 - ii. Greg asked how CDOT's RoadX effort and connected vehicles in the future come into consideration on the project. Dick mentioned that there is a current inability to communicate current conditions on the pass and that communication should be enhanced with this project. Stephanie stated that other projects have talked about "near term technology" and "long term technology" in their EAs. The current technology is easy to discuss as it already exists, but the longer term is more difficult as it is too hard to predict what it will be and the EA should not preclude anything that hasn't been invented yet. The group discussed that this project would be a perfect candidate for emerging technology (specifically the Panasonic pilots), but it may need to be a separate project that ties into this project. ***Karen will talk to Peter Kozinski, CDOT RoadX Director, to see how this project may tie into their efforts.***



- iii. Greg also asked how the potential for CDOT to issue more Code 16s (Passenger Vehicle Chain Laws) plays into the project. The existing truck chain stations would not be an option for passenger vehicles and this issue should be addressed by the project.
- iv. Dick talked about how noise issues and mitigation would play into this project as it has always been an important issue to locals in the Town of Vail. It was decided to move the noise item in Critical Issues to a separate bullet.
- v. Leah asked that in the interest of time, PLT members email her any other Success Factors that should be considered as the project staff drafts these factors. ***PLT members will email any other Success Factors for consideration to Leah.***
- e. ***The Context Statement, Core Values, Critical Issues, and Success Factors will be revised to capture this discussion and then sent out to the PLT.***

5. Technical Team Members

- a. Leah talked about the proposed Technical Team (TT), its purpose and responsibilities, and the draft list of individuals on the TT, as shown on the attached handout. To keep the PLT informed, PLT members would be copied on all TT correspondence and invitations, but not expected to go to the meetings, although they are welcome to attend and participate. The group agreed this was a good approach.
 - i. Stephanie asked if TT members would be responsible for reviewing technical reports generated during the EA process. David S. stated that this was not typical, but TT members will contribute to what goes in those reports. This will be removed from the TT member responsibilities.
 - ii. Leah presented the proposed TT meeting discussion topics to the group for review. Since each TT member would not be an expert in each discussion topic, the project staff would send an agenda and proposed topic to the entire TT group and each member would decide whether to attend the specific TT meeting.
- b. The proposed TT member list was reviewed and changes were recommended by the PLT. ***These changes will be incorporated into the updated TT list and sent out to the PLT.***
 - i. Greg asked if emergency service providers should be added to the list since they respond to Vail Pass incidents. Dick stated it would be important that they be added to the TT member list. Leah agreed with the importance of emergency service provider input, but noted that it may be more appropriate to respect their time by holding separate meetings (ITFs) with them, in order to focus on items relevant to them. On previous projects, this has been a successful approach that has increased their involvement. Due to his past involvement, Capt. Duran will be kept on the TT list, and a separate ITF to engage other emergency service providers will be assembled. This approach was agreed upon.
 - ii. Karen stated that the project staff struggled with refining the draft list to include as many groups and individuals as possible, but not make the group too large to function well.
 - 1) The group discussed that the common approach is for the towns and local agencies to have one TT representative, and that member would decide to bring other specialty members of their agency to specific TT meetings as needed.
 - a) David S. suggested that rather than inviting more people to the TT meetings, hold more ITFs to capture specific topics. Greg still asked to



have the Town of Vail's environmental lead officially on the TT list and then have the flexibility to bring technical experts as needed.

- iii. A suggestion was made to move some of the specific environmental groups from the TT list to the ITF lists. David S. added that on previous projects, this was done and those ITF meetings were summarized to the TTs so their issues can be more directly addressed.
 - 1) Tom suggested that a good approach would be to identify ITF members and reach out with a project introduction and invitation to participate in the ITFs to these individuals early in the process (and note that ITFs will convene a few months later). The group agreed that this would be a good approach.
 - a) The group discussed different ITFs and which representatives listed on the draft TT list should be moved to an ITF so their areas of focus could be better discussed.
 - b) It was discussed if the ski resorts listed should be kept as TT members, or if they should be engaged via public meetings or specific stakeholder outreach. The group decided that specific outreach would be a better approach rather than having them be a part of the TT.
 - c) The project staff recommended that providing the local PIOs with information from the TTs, rather than having them be on the TT, would be a good approach. Summit & Eagle Counties and Town Of Vail agreed to this.
 - iv. Leah suggested that in the interest of time, PLT members send their suggestions for specific members to ITFs to her.
- c. ***An updated TT member list and ITF list with members will be drafted and sent to the PLT.***

6. PLT Charter Agreement Review

- a. Leah reviewed the PLT Charter.
 - i. ***The Context Statement, Core Values and Critical Issues will be revised as discussed previously and included in the Charter.***
- b. Leah asked if there were any recommended changes to the PLT members listed in the Charter.
 - i. Tom Gosiorowski will replace Thadd Knoll for Summit County.
 - ii. Andy Garcia will be replaced with Randy McIntosh for Michael Goolsby's alternate.
- c. Leah discussed the expectations of PLT members, as well as the roles and responsibilities of each PLT member (as laid out in the CSS guidelines and discussed at PLT Meeting #1). The group approved to what was listed.
- d. Greg asked if there would be an Executive Oversight Committee from CDOT as mentioned at PLT Meeting #1.
 - i. Karen stated that there will be an Executive Oversight Committee and that the member list is being drafted currently. The proposed list currently only contains CDOT upper management and no local elected officials. The intent would be to keep CDOT management apprised of the project and future funding needs. ***The PLT will be presented with the Executive Oversight Committee member list once it is finalized.***



- e. Leah covered the Team Performance Assessment which listed performance measures to ensure the success of the team. These draft measures were approved by the PLT and will be incorporated into the final Charter.
- f. Leah spoke to the remaining items on the Charter and asked for any additions to.
 - i. Stephanie suggested adding a statement about making decisions to the Discussions and Deliberations section. All decisions should be documented thoroughly as to why each decision was made. This will also be highlighted in the Meeting Summaries section.
 - ii. Greg asked about email communication protocol and whether the whole PLT should be included or just the project staff.
 - 1) The group decided that the Email Communication section should show that important discussions should be sent to the entire PLT group.
 - iii. The group discussed the Public Coordination section of the charter.
 - 1) There was discussion about how to handle public comments at the PLT meetings if members of the public attend.
 - 2) Stephanie recommended that while PLT meetings not be specifically advertised (as that is not the right avenue for public comment), if the public asks to come to the meetings that would be allowed (PLT meetings would not be closed-door).
 - 3) After discussing the public comment idea, the group decided that rather than having time at the end of each PLT meeting giving the public time to comment, that in the interest of time the public can attend PLT meetings and then submit comments to the project staff that the PLT can then review outside of the meetings.
 - 4) Advertising PLT and TT meeting dates/times/locations was discussed. The group decided that this process should be consistent with what is done for the CDOT Floyd Hill project. [Subsequent to the meeting, it was determined that PLT and TT meeting dates are not advertised, but notes from the meetings are posted to the project web page.]
 - 5) The group decided for both PLT & TT meetings, the meeting times and locations will be advertised following the Floyd Hill project's method.; the public is welcome to observe meeting proceedings and public comment/question period will not be allowed during these meetings .
 - 6) ***The procedures for public participation and comment in the PLT meetings will be added to the PLT Charter.***
 - iv. The group approved of the criteria listed that will be used by the PLT to measure the project's success with the following revision:
 - 1) Change the second bullet to read: Was the project consistent with the recommendations from the I-70 Mountain Corridor PEIS?
- g. ***The Charter will be revised and sent to PLT members for signature by Leah.***

7. Schedule and Next Steps

- a. **DECISION POINT:** The PLT gave consensus that the process of the project is acceptable (endorsed) and the project can move forward.
- b. The project schedule and next steps of the project were presented by Leah.



- i. Documents reviewed today will be revised and sent to PLT members with the notes from this meeting.
- ii. Invitations for TT participation will be extended and the first TT meeting will be scheduled [2/7/18, 1-4pm, Miller Ranch Community Center, Edwards].
- iii. An agency scoping meeting will be held mid-February.
- iv. Public Meeting #1 is tentatively scheduled for 2/22 [now confirmed for 2/22/18 at Donovan Pavilion].
- v. PLT Meeting #3 will be held in late summer 2018.

8. Other Items

- a. It was asked if a shared drive will be set up for the PLT.
 - i. ***A Google Drive folder will be set up for the project and shared with the PLT for shared documents.***



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Project Leadership Team Meeting #3
DATE HELD:	August 27, 2018
LOCATION:	Miller Ranch Community Center, 25 Mill Loft Road, Edwards, CO
ATTENDING:	Joel Barnett, FHWA Martha Miller, Program Engineer, CDOT Region 3 John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 David Cesark, Environmental Manager, CDOT Region 3 David Singer, CDOT Environmental Section Manager Randy McIntosh, CDOT Maintenance Patrick Chavez, Program Manager, CDOT HQ Drew Stewart, Design Team, CDOT Region 3 Matt Klein, US Forest Service (Late) Ben Gerdes, Eagle County Dick Cleveland, Representing Vail Town Council Tracy Sakaguchi, Colorado Motor Carriers Association Tom Gosiorowski, Summit County Don Connors, Wood Stacy Tschuor, David Evans & Associates Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates
COPIES:	Attendees

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. Karen Berdoulay did introductions, covered the agenda, and described actions taken.
- b. Karen discussed past meetings of the PLT that covered:
 - i. Developing scope of the process
 - ii. Topics to cover in public meetings
 - iii. Developed screening criteria
- c. Karen stated the purpose of the meeting was to discuss and endorse the process.
 - i. Dick Cleveland discussed the public meeting scheduled in November and expected many people would not attend due to the timing. It would be worth considering a reschedule for December or January.
- d. Karen discussed other various groups that have been met with through the process (SWEEP, ALIVE, etc)

2. Six Steps of CSS

- a. Kara introduced the steps of the Process
 - i. Define Outcomes
 - ii. Endorse the process
 1. TT meetings and PLTs are held to get endorsement.
 2. Purpose and Need statement identified
 - iii. Establish Criteria
 1. Multiple iterations to address stakeholders' needs and wants.



- iv. Develop alternatives and options
 - 1. Brainstorming from TT meetings
 - v. Evaluate, Select, and Refine Alternatives
 - 1. Where do we go from here?
 - 2. Next Steps
 - 3. Looking at environmental impacts
 - b. Dick identified a mistake in the teams labeling of Vail Pass recreation trail. It has been labeled as Tenmile Creek Recreation area which is incorrect. Kara said the team would look into it.
 - i. Karen thought it would be helpful to understand Level 1 vs Level 2 screening. Level 1 is a high level, big picture analysis meant to find fatal flaws in alternatives. Level 2 is a comparative analysis between alternatives that pass through Level 1 screening.
 - a. Kara introduced the success factor flow chart and mentioned that there was a request from stakeholders to add water quality- related Core Values. She asked how the PLT felt about adding additional language to the Critical Issues and Success Factors instead of editing the Core Values.
 - ii. Karen mentioned the difficulty in adding items late in during the CSS because the team does not want to backtrack or corrupt the process.
 - iii. Kara suggesting adding it to the critical issues in the environmental section.
 - 1. Dave Cesark supported the idea
 - 2. Karen mentioned that water quality is covered in the SWEEP MOU.
 - 3. Dick mentioned the importance of covering the water quality because it affects the entire valley, but feels it has been addressed.
 - b. Joel brought up that ITS systems is not an aesthetic issue and is already covered in the operations section.
 - iv. Martha mentioned that Greg Hall from TOV might have brought up that it could be in both sections in a previous PLT meeting.
 - v. Dick said the signs impact on aesthetics was brought up last meeting, and to consider removing it from the aesthetics section but note why it was removed.
 - c. Martha asked if a lot of representative were missing from the current meeting.
 - vi. Greg Hall and Matt Klein were not present (although Matt arrived late).
 - vii. Martha was concerned that this could cause backtracking if stakeholders were not getting a chance to voice their opinions.
 - d. Kara confirmed that there was consensus with discussed changes.
 - viii. No objections.
- 3. Public Meeting Plan**
- a. Kara discussed what the expectation is for the upcoming meetings
 - i. Martha asked if the team would not push the scheduled date past mid-December
 - ii. Martha noted that the ballot issues could affect the public meeting if it comes after the election.
 - iii. Martha stated that it is possible that only some of the initiatives could pass, and then added some background on the ballot initiatives:
 - 1. One initiative discusses spending money in a 3-year period and this will affect the CDOT staff workload.
 - 2. This project is included in that initiative
 - iv. Martha said she would not like it to be delayed into January.



- v. Dick mentioned that December is difficult due to Christmas time, which puts additional stress on a resort town like Vail. He suggested a compromise of mid-December
- vi. Tom said he thinks it is a good compromise, but people need the opportunity to comment on the project. Making the schedule date accessible for a large group of the public would cut down on the number of comments since the team could address more of the concerns directly at the meetings.
- vii. Dick thinks mid-December would get many second home owners in attendance.
- viii. Karen outlined the steps for the team moving forward ahead of the public meeting.
- ix. Tom asked if there could be a spring PLT meeting as an update before the NEPA process got started for the EA.
 - 1. Karen thought there could be a review of public comments for the PLT.
 - 2. Karen added that an update newsletter would be a good way to spread information.
- b. Karen reiterated that the project is on the ballot initiative list
 - 1. Martha added that it is on 2 of the ballot measures
 - a. Ballot 153 for \$255M
 - b. There is a second initiative that has project on for \$190M
 - 2. Martha said she is not sure how that would all pay out if both pass.
 - 3. Tom asked if there were different scopes for each initiative.
 - 4. Martha responded that because we are at conceptual design, it is very hard to project how the money would be spent.
 - a. Money may need to be spend on priority parts of the project.
 - b. Karen added that we are working to figure out what the priorities are. I.E. climbing lane in eastbound direction, curve corrections, etc.



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Project Leadership Team (PLT) Meeting #4
DATE HELD:	December 3, 2019
LOCATION:	Avon Branch Library, 200 Benchmark Rd, Avon, CO
ATTENDING:	John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Vanessa Henderson, I-70 Environmental Manager, CDOT Jeff Bellen, FHWA Matt Klein, US Forest Service Ben Gerdes, Eagle County Dick Cleveland, Representing Vail Town Council Tracy Sakaguchi, Colorado Motor Carriers Association Greg Hall, Town of Vail Tom Gosiorowski, Summit County JJ Wierema, Wood Leah Langerman, David Evans and Associates Kara Swanson, David Evans and Associates
COPIES:	PLT Members

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. After a round of self-introductions, Kara reviewed the agenda.

2. Actions Since Last PLT Meeting

- a. Kara described actions taken since the last PLT meeting:
 - i. Conducted alternatives screening
 - ii. Developed screening criteria
 - iii. Defined “alternatives” vs. “design options”
 - iv. Met with Technical Team (TT) three times (PLT received invites, materials, and notes)
 - v. Met with Issue Task Forces (ITFs)
 - 1. ALIVE – December 2018
 - 2. SWEEP – February 2019
 - 3. Section 106 – November 2019
 - 4. Emergency Services – February 2019
 - 5. Recreation – November 2018
 - vi. Held second public meeting – December 2018

3. Alternatives Evaluation

- a. Kara reviewed the alternatives evaluation process and results.
- b. The screening criteria and the alternatives evaluation process were reviewed by the TT. Two levels of screening were initially planned.
- c. Level 1 criteria addressed the Purpose and Need (safety and operations) and some Core Values.



- d. Level 2 criteria brought in consideration of additional Core Values and was meant to be comparative between alternatives.
- e. Level 1 Alternatives
 - i. No Action
 - ii. Alternative 1 – Existing Two Lanes with Curve Modifications and Intelligent Transportation Systems (ITS) Improvements
 - iii. Alternative 2 – Auxiliary Lanes with Full Shoulders, Curve Modifications, and ITS Improvements (Recommended by the I-70 Mountain Corridor Programmatic Environmental Impact Statement)
 - iv. Alternative 3 – Existing Two Lanes and Operational Lanes with Curve Modifications and ITS Improvements (operational lane would function as a shoulder most of the time, but could be an operational lane when needed)
 - v. Alternative 4 – Auxiliary Lanes with Westbound I-70 Realignment, Curve Modifications, and ITS Improvements
- f. Level 1 Screening Results
 - i. If an alternative didn't meet the Purpose and Need (answer was No for safety or operations questions) then it was eliminated. Core Values weren't considered fatal flaws, but provided additional consideration.
 - ii. The result for the collaborative decision-making question for Alternative 4 changed from No to Yes since the last time the PLT saw this (in TT #8 materials), but this didn't change the screening results. The 2011 ROD identified the I-70 corridor as the general location for improvements. The slight realignment that would be part of the alternative still falls within the existing general I-70 corridor, so it is compliant with the ROD.
 - iii. Level 1 resulted in a Preferred Alternative: Alternative 2 - Auxiliary Lanes with Full Shoulders, Curve Modifications and ITS Improvements. This includes the following improvements:
 - 1. Add a third lane both eastbound and westbound (MP 180-190)
 - 2. Curve geometry improvements
 - 3. ITS improvements: variable message signs, variable speed limit signs, automated closures
 - 4. Improve truck ramps, truck parking, and chain stations
 - 5. Trail improvements where impacted
 - 6. Wildlife crossing improvements
 - 7. Sediment collection improvements
 - iv. The study area was extended a bit in the westbound direction (from MP 190 to MP 191.5) to accommodate placement of a VMS near the top of the pass.

4. Design Options

- a. Some design options are also included in the Preferred Alternative but not shown on the Preferred Alternative graphic.
 - i. Chain Station: Chain station at approximately MP 183 will be improved with additional parking, signage, lighting, and separation from the I-70 mainline.
 - ii. Emergency Truck Ramps: Two existing truck ramps, located at approximately MP 182.2 and 185.5, will be upgraded to current design standards.
 - iii. Emergency Turnarounds: Improved median emergency turnaround locations included to accommodate emergency and maintenance turnaround maneuvers.



- iv. Truck Parking: Additional capacity added to the existing commercial truck parking area at the top of Vail Pass.
- v. Pull-Off Areas: Widened shoulders (minimum of eight feet of additional width beyond the 10' shoulder) included at multiple locations to accommodate emergency pull-offs, emergency truck parking, and staging for tow trucks.
- vi. Water Quality: Conveyance and treatment water quality BMPs will be implemented and determined during final design.
 - 1. Will provide a menu of options that was chosen from BMPs specifically for the pass. The SWEEP ITF, TT and PLT will have a chance to give more input during design.
- vii. Wildlife Crossings: Six wildlife underpasses and wildlife fencing will be constructed throughout the corridor.
 - 1. At the last TT meeting CDOT stated that the Environmental Assessment (EA) will commit to the number and approximate location of wildlife underpasses, and will note the target species for each location. Based on additional conversations with CDOT's wildlife specialist the EA will now identify the target species and a small to medium, or large underpass, based on FHWA's report on wildlife crossing design. The EA won't specify exact dimensions for each underpass, but will reference the minimum dimensions in the FHWA report. This level of detail in the EA is needed in order for agency representatives to be able to review the recommendations.
 - 2. Tom asked if all of the underpasses are new. Kara confirmed the six are all new.
 - 3. Greg asked about the wildlife crossing on other side of Vail Pass. Karen noted on the east side there will still be an overpass (at MP 192), as a separate project. It only crosses WB I-70, so it is a shorter structure. An overpass didn't work well within our project area because of safety concerns related to shading, snow drifts, and driver expectancy. It didn't fit the Purpose and Need to negatively impact safety and operations for a wildlife overpass, so underpasses were chosen instead.
 - 4. Greg noted that it seems the underpasses should be "the bigger the better" to accommodate all animals. Karen explained that we are referencing the FHWA handbook for small to medium, and large species. Some smaller animals actually prefer and feel more comfortable with a smaller underpass.
 - 5. Greg would like the underpasses to be context sensitive and fit the landscape.
 - 6. Tom asked how many underpasses are planned of each size. Karen noted that the team did a survey of where species travel in the area. The locations were chosen and based on where the animals migrate. There are two large underpasses.
 - 7. Tom asked if wildlife fencing is included the length of the project. Kara confirmed that this is included.
- viii. Trail Relocation: Vail Pass Recreation Trail will be relocated for approximately two miles from MP 185 to MP 187 due to direct impacts from the addition of the I-70 auxiliary lane.



- ix. Avalanche Protection: Avalanche protection will be installed on the inside of the curve located near MP 186.
 1. Tom asked what the protection will be. John noted that passive avalanche fences in this area will be recommended. Tom noted that it takes a long time to clean up the avalanches in this area, so he agreed passive fencing and not something triggering avalanches would be best here.

5. Trail Realignment

- a. JJ presented the trail realignment decision-making process and recommendations. This was a collaborative process, where feedback was solicited and received from the general public, trail users, TT and ITFs to determine what is most important to them. Competing criteria were balanced to develop and evaluate alignments for the trail.
- b. Three different alignments were developed: one stays close to I-70, one crosses the creek and stays on the far side of the creek, and another has four creek crossings.
- c. The recommended alignment is a hybrid of the three, which avoids as many tree stands as possible and only crosses the creek twice.
 - i. At the last TT meeting there was a lot of discussion about a 0.3 mile section of the trail. After the meeting, CDOT and FHWA decided on an alignment for this section that will be included in the EA.
 - ii. Greg mentioned it seems the trail is a lot closer to the creek than 100 feet. JJ verified that is true. Given the topography and balancing all of the criteria that was the best.
 - iii. Greg thought the blue line was the creek, not an alignment. JJ confirmed the blue line is one of the alignments and the creek isn't drawn.
 - iv. **ACTION:** Add creek on trail alignment graphics.
- d. Tom asked if there are any segments with cut and fill. JJ replied yes, but we attempted to have only one or the other in a given location.
- e. Trail construction
 - i. Matt asked if the EA is going to address timing of phasing of trail construction to minimize impact to trail businesses. Kara noted that there is a social resources report that looks at the economic impacts that includes documentation of these things. The goal is to minimize any closure or impacts to those businesses as much as possible.
 - ii. JJ noted most of the trail construction could be done offline and could be done before the roadway reconstruction. There have been discussions of trying to reconstruct the impacted portion of the trail before the auxiliary lane construction, but phasing has not yet been determined.
 - iii. Matt asked if there has been any consideration of using a portion of the trail right-of-way for construction staging. Karen noted that it wouldn't be used for staging; the trail would only be closed for constructability or safety if needed. Kara noted that it can be written into future contract documents that contractors can't use trail for staging.
 - iv. Greg requested that the EA state the trail should be designed in a way to minimize repeated closures. Karen isn't sure CDOT can commit fully to this, due to some portion of the trail still being close to I-70.
 - v. Greg asked if there are any seasonal restrictions for construction. It is important to recognize that detours can be very impactful to those commuting through this trail; it is not all recreational use. Karen noted that



we can restrict days of work, have some places designated as “walk your bike” for a short area, and other accommodations can also be considered.

- f. Greg mentioned that e-bikes could possibly be allowed on the trail in the future. He asked if the team considered that e-bikes may need to be accommodated with this design.
 - i. Karen noted that the trail is proposed to be 11 – 14-foot wide. The flexibility in that width is important for reasons like this (to consider conditions and information known at the time of construction). No other aspects of the design would need to change to accommodate e-bikes.
 - ii. Dick noted that it seems they will eventually be allowed and it will result in a greater number of users.
- g. Tom noted that we may need to consider passing conditions on the bike path. He suggested we consider making some sections even wider than planned to better accommodate passing. The longer, straight sections could be candidates for this.
 - i. Greg suggested considering two lanes going uphill, one going down.
 - ii. Tom thought maybe passing lanes would be more useful in the downhill direction than uphill. Dick agreed with this.
 - iii. Karen committed to investigate passing lanes on the trail during final design.

6. Design Criteria

- a. Kara introduced the design criteria topic. A memo and CSS Criteria Exceptions plan set were provided in the handout that will be used for this discussion. There are certain design criteria required on the I-70 Mountain Corridor. This area falls within an Area of Special Attention, which is why CDOT is bringing this before the PLT during NEPA. There are some spot locations where some of these criteria may not be able to be met; these will be reviewed today. According to the CSS process, the PLT’s general consensus regarding these design exceptions is needed (during this meeting) to move forward.
- b. Vanessa noted that every I-70 Mountain Corridor project has had some approved design exceptions. For example, the Twin Tunnels project had to build walls on the creek side and the WB Peak Period Should Lanes project had to move into the median.
- c. JJ noted that is impossible to meet all criteria, because there are always situations where they conflict with each other.
- d. Alignment
 - i. Advanced Guideway System (AGS)
 - 1. Greg asked that the AGS alignment be discussed and shown to the TT and PLT.
 - 2. Karen noted that the team prepared a graphic showing how the AGS alignment works with this Preferred Alternative. It was sent to Greg since he is the one who requested the info.
 - 3. **ACTION:** Karen offered to share the AGS graphic.
 - 4. John explained the background of the AGS alignment. An AGS feasibility study was done in 2014 that looked at 3 or 4 AGS alignments. They eliminated one that matched the I-70 alignment because the train would be too slow. The favorite alignment (not Preferred Alternative) would travel quickly to Copper, then travel on a slower alignment through Vail Pass. For the most part, the AGS tried to stay in I-70 ROW, but there are several tunnels that are 50-60 feet above the creek. In general, the favorite alignment is so far



from I-70 through the West Vail Pass project area that it would be very challenging for the auxiliary lanes project to preclude the AGS. Vanessa noted that precluding the AGS alignment is much more of a concern in other mountain corridor locations, but not on Vail Pass.

5. **ACTION:** Vanessa recommended changing the AGS column to say “Not precluded” instead of N/A.
- ii. Median Width
1. Greg noted that the alignment should not seem urban. To ask to reduce the median width for everywhere shown in red seems excessive.
 2. JJ explained that the red shading is more focused on the length. Even though it is shown all filled in red, it doesn’t mean that we plan to widen into the entire median. In some cases it may only be a few feet.
 3. **ACTION:** Vanessa suggested the PLT needs a graphic that shows the median width that would be impacted (more detail than is currently shown).
 4. Tom recommended showing a toe of slope or daylight line to better see where the impact area is. Tom believes that where the median is already narrow, the median doesn’t have much value. If there is only a 25-foot-wide existing median, then it wouldn’t matter to narrow to no median in that area, and then maybe we’d get more glare screening. There are already many segments where glare is a problem that aren’t being addressed.
 5. **ACTION:** Tom asked to see cross sections to be able to see the vertical. Karen noted that we aren’t at that level of design yet, but some high-level information about the layout can be shown. Could note the difference in vertical between westbound lanes, median and eastbound lanes.
- iii. PLT Design Exception Approval
1. Greg stated he feels uncomfortable blessing the design exceptions at this point. He is surprised that the CSS process calls for the PLT to bless this. Vanessa stated that this is intended for the PLT to understand the concepts and the balance of the Core Values. Karen noted that as we go into final design the PLT will continue to be involved and give input.
 2. Tom is personally comfortable with median narrowing where it is best to do. If pushing to outside ruins a well done cut-slope, then it makes sense to widen to median. The devil is in the details, so it is hard to say for sure without knowing more. He is not sure how the PLT is supposed to bless the concept plan.
 3. Vanessa acknowledged that more information needs to be sent to this group before a decision can be made.
 4. Greg noted that it is strange to ask this PLT (majority non-technical/engineer/environmental group members) for this kind of input. There are many others that could give input on this, especially the TT.
 5. Vanessa noted that in other Region 1 projects design criteria exceptions are reviewed by TT first.
 6. Kara noted that the TT hasn’t had this exact presentation, but they have been involved in discussions related to impacts and mitigation.



John noted we have reviewed the alignment, proposed limits of disturbance, walls locations, and mentioned design exceptions will be needed to the TT.

7. Tom expects that the design team and TT has looked at this in more detail than the PLT. He wants to hear that the TT believes these design exceptions are the best we can do.
 8. John mentioned that a report documenting the variables will be done next as part of this project.
 9. Kara noted that all we are asking for is consensus on these design exceptions, based on 5% design, in order to continue moving forward. The intent of the CSS process is that the TT and PLTs will continue to be involved in decision making as more detail becomes available.
 10. Tom reviewed an example near the top of the pass maintenance facility where it is hard to concur until further information is available. What is the impact on that median (changing landscape, trees lost, etc.) if walls aren't being used to minimize impacts of grading? It seems there is a more advanced level of design on the walls, so how do we not understand the limits of disturbance? JJ noted that toes can be shown. Tom asked that all walls are shown.
 11. **ACTION:** On the CSS Criteria Exceptions design plans, show all walls and highlight those higher than 12-feet tall, add toes and limits of disturbance.
 12. Kara noted that this Preferred Alternative has undergone a lot of tweaks to take criteria, Core Values, phasing, and impacts to the public in consideration, based on TT feedback.
 13. Tom noted that the struggle for transportation funding leads us to chase cheap. Let's try to get the best project and make sure we aren't choosing improvements based on cost versus the best solution. Decisions will be somewhat based on cost, because if this becomes a \$1B project, then cost will need to be considered. There must be some internal understanding of cost of meeting criteria or not, which should be shown for the TT and PLT. We can't afford to build this anyway under current funding realities.
 14. Dick suggested that we build the equivalent of a Glenwood Canyon project. This isn't a typical project in a typical area.
 15. Karen emphasized that the team has not approached this from a cost perspective from day one. This is a \$700M project. Cost has not been the driving factor for these variance decisions. Perhaps the "story" of how we came to request these exceptions hasn't been explained in enough detail to make everyone comfortable.
 16. **ACTION:** A TT meeting will be added and held in the next couple months to go over the design exception requests in much more detail, with more detail provided for the conversation.
 17. Karen asked if holding a TT and PLT on the same day would work. Tom agreed.
 18. JJ noted that generally if impacts are reduced it will be less costly as well.
- e. Slope Cut and Fill



- i. Greg asked how to name walls between two different roadway alignments. What is considered cut or fill? When there is a terraced wall, is that considered one wall or a series of walls?
 - ii. Tom asked what the max height of walls is that exceed 12 feet. JJ noted it could be more on the order of 40 feet, especially in the narrows.
 - f. Sound Attenuation
 - i. Dick asked if there is a project noise report that can be shared. There are a lot of members of the public waiting to know if a noise wall will be built as part of this project.
 - ii. Kara explained that information will be included in the EA for public review. At that time, a small group meeting for residents interested in this could be held.
 - iii. Dick noted that this issue will stall the entire project if it is not handled well. People see this as the project that will finally be their salvation (provide a noise wall).
 - iv. Karen explained that all TT members will get the EA and all associated tech memos during the public review period. This can't be shared until CDOT and FHWA complete their reviews, which would then be the time of public review.
 - v. Greg noted that Town of Vail has done their own noise study (completed by Hankard Environmental) which showed that the noise for some East Vail residents is over the threshold. If this project's noise study results are different then there will be a challenge by the Town.
 - vi. ACTION: Kara offered to share the noise study methodology memo done by Illingworth and Rodkin with the PLT.
 - vii. ACTION: Kara requested that Greg share the Town's noise study report with the project team.
 - viii. Ben suggested we note similarities and differences from the Town's noise study. It is good to explain assumptions and explaining why there may be differences.

7. CSS Process

- a. Kara explained that we are now in Step 6 of the CSS process - finalize documentation and evaluation process.
 - i. Greg mentioned that this is a big project. This and Floyd Hill are the two largest Mountain Corridor projects. It seems like there have been long stretches without people hearing anything about the decisions being made.
 - ii. Kara noted that we have always planned a TT meeting to review what is in the EA before it is released so there is a heads up on the impacts and mitigation.
 - iii. Ben asked if it would be beneficial to have elected officials invited to the last TT meeting. Karen explained that she just presented to the TPR, which included elected officials.
 - iv. Leah suggested that elected official presentations could be made for each agency during the 30-day public review period, since the information shared during those presentations would be the results of the EA, which shouldn't be made public until CDOT and FHWA review is complete.
 - v. Greg requested public review be longer than 30 days. Vanessa noted that an agency can request the comment period to be extended to 45 days, but that has to be for a specific reason and can't be submitted until day 1 of the



comment period. That request would need to be reviewed and approved by CDOT and FHWA.

- vi. ACTION: Kara noted we can send an update newsletter to the public in the gap of time without a public meeting.

8. Schedule

- a. Kara reviewed the schedule for EA review and release:
 - i. Draft EA to CDOT Region 3: March 2020
 - ii. Revised EA to CDOT HQ: April 2020
 - iii. Revised EA to FHWA and USFS: May 2020
 - iv. Public Review of EA: July 2020
 - v. Public Meeting: July 2020
 - vi. Decision Document: Fall 2020
- b. Karen added that a TT meeting to review design criteria will be held soon, per the earlier discussion during this meeting.
- c. Kara explained that the TT meeting prior to the EA release can be held during the CDOT and FHWA review time. It can be done before FHWA gets the EA for review, even though the information will still be considered “draft”.
- d. Tom noted that people are very worried about multiple impacts, especially in East Vail. Some people believe that I-70 will be cantilevered over their homes. He cautioned that we don’t underestimate the comments and concern that we will hear from the public. He asked if there is benefit of a small group meeting with East Vail in addition to the public meeting.
 - i. Karen agreed we will talk to East Vail about draft recommendations related to noise in spring 2020. Can use this to alleviate some concerns.
 - ii. Leah suggested that the residents meeting not be restricted to a small group, but instead be a focused meeting open to everyone. It would be clearly advertised as focused on noise impacts in East Vail. She suggested the meeting be advertised by the Town and through an email blast to the entire project mailing list, and that attendance not be restricted. It would be helpful to have a specific meeting for this topic, so it doesn’t take away from a Town Council meeting or from the project’s general public meeting that will be held during the EA’s 30-day public review period. Leah has used meetings like this successfully on other projects to clear up misconceptions, share information, and give people a forum to provide their noise-specific input.
 - iii. Greg and Dick agreed with this approach and estimated 20 – 50 people interested in East Vail noise would attend.
 - iv. ACTION: Plan East Vail noise impacts public meeting.
- e. Greg asked if the Eagle River Watershed Council’s issues have been worked out. Karen said we’ve met with them multiple times, but there are things that CDOT doesn’t mitigate for and can’t be addressed within this project. They have asked for CDOT to do adaptive management, where modifications are made to the road as needed to make sure that water quality stays at a certain level. CDOT can’t commit to quality of water that is impacted by many other things besides the roadway. Vanessa noted that we only mitigate for CDOT impacts, not impacts by others.

9. Phasing of Improvements

- a. Karen explained the phasing and funding of improvements.
- b. Phasing



- i. The team is looking at phases that could be built as funding becomes available. The hope is that these phases would involve stand-alone improvements that each have their own benefit for the cost and would not be throw-away.
 - ii. The auxiliary lanes could be built in phases (for example, they could be built from MP 184 uphill in the eastbound direction). The auxiliary lanes can't be built in short/two-mile segments.
 - iii. A menu of options for phased improvements has been created and the team is developing crash reduction factors for each of them.
 - c. Funding
 - i. Have a \$4.5 M freight grant with \$2.5 M match.
 - ii. This project is on the SB 267 list in years 3 - 4 for \$13.5M. Have to build by 2023 or 2024.
 - iii. Trying to use that as seed money for an INFRA Grant which could be \$25M.
 - iv. Also looking for FASTER Safety money.
 - d. John stated that two early action items will move forward before any projects are delivered: 1) Updating the Sediment Control Action Plan (SCAP) (trying to get that going now), and 2) Developing Vail Pass aesthetic guidelines. The SCAP effort will be significant and may take approximately nine months.
 - i. Greg noted that the SCAP may need to go beyond sediment, to cover other pollutants.
 - ii. Karen noted it would be for the top two miles of Gore Creek as well as Black Gore Creek. There is a menu of SWEEP items that will be looked and can be shared.
 - iii. Kara explained that as we get into additional design more than just sediment can be considered.



REVISED MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Project Leadership Team (PLT) Meeting #5
DATE HELD:	March 5, 2020
LOCATION:	Avon Branch Library
ATTENDING:	John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Martha Miller, Program Engineer, CDOT Region 3 David Cesark, Environmental Manager, CDOT Region 3 Vanessa Henderson, I-70 Environmental Manager, CDOT Jeff Belen, FHWA Matt Klein, US Forest Service Greg Hall, Town of Vail Dick Cleveland, Vail Community Ben Gerdes, Eagle County Stephanie Gibson, FHWA Tracy Sakaguchi, Colorado Motor Carriers Association Kara Swanson, Consultant Environmental Task Lead, David Evans & Associates JJ Weirema, Wood Matt Figgs, CDOT Region 3
COPIES:	Attendees

SUMMARY OF DISCUSSION:

1. Introductions & Meeting Purpose

- a. After a round of self-introductions, Karen kicked off the purpose of the meeting.
 - i. She spoke on how at the last PLT meeting, the Project Team heard that they should hold a noise update with residents of East Vail, as well as hold a Technical Team (TT) on the design exception request. The Project Team accomplished those tasks and is back to the PLT to give an update on both.

2. CSS Design Exceptions

a. Intent of CSS Design Exception Request Timing

- i. Karen laid out why the Project Team is asking for the design exceptions at this stage in the project. In the I-70 PEIS, it is stated that designated Areas of Special Attention need to have the CSS design exceptions looked at during the planning stage, which the West Vail Pass Aux Lanes project is in.
 - 1. The project won't be able to finalize any design exception during the planning phase, but they do need to be looked at now.
 - 2. Karen added that the group spent a lot of time at the TT meeting talking about the ramifications of the exceptions, and realized that it was not an appropriate time to finalize the design exception decisions.
 - 3. Karen expressed the Project Team's gratefulness that the PLT sent the Team back to the TT as it revealed how complex and difficult it is to make the exact decisions at this time.
 - 4. She stated that CDOT is committing to a design exception Issue Task Force (ITF) that will further look at specific exceptions during the final design process.



b. Technical Team Feedback

- i. Kara walked the PLT through the summarized comments from the TT that were sent out to the PLT group prior to the meeting.
 1. She stated that from a high level, most of the discussion was on the level of design for each exception.
 2. CDOT had received follow-up emails from the US Forest Service (USFS) and Colorado Parks & Wildlife (CPW) that were also summarized in the comments.
 - a. Matt K agreed that the USFS felt the exceptions as presented were balanced and minimized impacts to USFS lands. The USFS will leave it to others to evaluate the exceptions from an engineering perspective, but they are good with what was presented from a resource perspective.
 - b. Kara stated that CPW agreed that minimizing impacts to natural resources and Black Gore Creek were the right approach in all of the design exceptions being requested.
- ii. Stephanie added that the commitment CDOT has made to the design exception ITF through the design process is the appropriate way to handle the situation.
- iii. Greg stated that since this project is at a lower level of design at this stage compared to other CDOT projects, he wonders why parts of the corridor seem to be handled differently.
 1. Vanessa responded that the Floyd Hill project is not being handled much differently than the West Vail Pass Aux Lanes project. Many other CDOT projects are done under Categorical Exclusions rather than Environmental Assessments (EAs), so they are at a much higher level of design at early stages compared to this project.
 - a. She added that the Floyd Hill project has not gone through the design exception process yet and is going to a 20% level of design.
 2. Martha added that the Floyd Hill project is still looking at alternatives and that the two projects have run a bit differently, but this project wanted to focus on identifying Goals and Critical Success Factors before wading too much into design.
 3. Stephanie added that level of complexity of the project and availability of construction funding also leads to differences as to how projects are approached and how much conceptual work needs to take place before final design can occur. A project like Floyd Hill has a lot more conceptual work that is needed. It might be good for future projects to state the level of design that is needed for the EA with the PLT up front so the PLT knows what to expect at the beginning of the process.
 4. Vanessa concurred that the process isn't the same for each project because each project is so different, but the Project Team is on the right page for where this project is currently.
 5. Martha agreed that the small level of funding that was available at the beginning of the project made the Project Team focus more on the conceptual level and the EA rather than progressing too much in design.

c. Updates to CSS Design Exception Drawings and Memo

- i. Kara walked the PLT through the updates to the visual exception drawings that came from the TT meeting.
 1. She noted that CDOT added clarifications to the drawings: the dimensions are not as precise as last presented due to the low level of design, and there



are notes on what items will be determined in final design. The Advanced Guideway System (AGS) alignment is also shown, as well as the approximate existing median widths & proposed wildlife underpasses.

- ii. Kara stated that the design exception memo now has additional comments on purpose and intent, incorporating feedback from the TT (especially in regards to committing to the design ITF). Not much in the tables were changed except for providing existing median widths and making design dimensions approximate.
 1. Karen added that a lot of the general comments from the TT were captured in the updates, but specific design decisions will be made later in final design
 - a. Stephanie wanted clarification that the ITF commitment was stated in the memo.
 - b. The Project Team confirmed that it is included.
 2. Greg pointed out that the Project Team will still need to do the ITF for aesthetic guidance and wondered if that was mentioned in the memo?
 - a. JJ stated yes, it is mentioned on page 5 of the memo.
 3. Greg asked for clarification on when the Project Team goes to the visual exception ITF during final design, can the dimensions in the drawings shown today change?
 - a. Karen responded yes, that's the goal of the ITF. The Project Team will be able to dive into each specific area with the ITF and there won't be constraints on what can change. The Project Team may have to revisit the EA if limits of construction change, which is common for a project of this size at this level of design.
 - b. John added that the maps provided at today's PLT really identify locations that exceptions exist, and the exact details will have to be decided in the future ITF. Those decisions will have to integrate with the aesthetic guidance that is developed.
- iii. **CSS Design Exception ITF Commitment**
 1. Karen asked if the PLT agreed to the ITF commitment and the memo as shown.
 - a. Greg stated that as long as that ITF is done for the whole corridor and not for individual segments.
 - b. Stephanie responded that the SCAP and Aesthetic ITFs will have to be done for the whole corridor, but design exceptions are better evaluated project by project [location by location] as construction funds are available, with the understanding of how those exceptions may affect others adjacent to the phase undergoing design
 - c. Greg agreed that while the Project Team is punting the decision, it will need to balance how far to punt it.
 - d. Martha added that as construction funding levels change, the Project Team doesn't know moving forward how much construction will be done, so there needs to be some flexibility as to how the Project Team tackles the corridor.
 - e. Greg noted that it is important that we commit to items like the SCAP being completed for the whole corridor regardless of financial budgets.
 - f. Kara pointed out that the EA is legally binding and includes a commitment to do the SCAP for the whole corridor.
 - g. Dave stated that design exceptions are normal and that every project will have exceptions.



- the public EA meeting in early fall, and will hopefully have a signed decision document by end of 2020.
- ii. Karen added that CDOT has also applied for a \$140M INFRA grant, which the Project Team will hear about in the summer. The project for this grant would include an auxiliary lane eastbound (EB) from mile marker (MM) 185 to MM 190, curve smoothing at MMs 186 & 188, signing, Variable Speed Limit signs, relocating the bike path, reconstructing the lower truck ramp, an automatic closure system, wildlife fence and crossings, select shoulder widening, and replacement of one bridge at MM 185 (which is Bridge Enterprise [BE] eligible).
 1. Martha commented that the BE bridge helped provide a large state match for the grant. CDOT is asking for \$60M of Federal funding, so there is a large state portion that is contingent on getting the INFRA grant.
 2. Karen mentioned that the Project Team developed a Benefit Cost Analysis (BCA) for the grant which was 1.75; a very good number.
 3. Dick asked if CDOT is awarded the grant, what would the schedule be?
 - a. Karen responded that CDOT committed to starting construction in 2022 with 3 years of construction.
 - iii. Karen stated that the Project Team has also completed the Project Delivery Selection Matrix (PDSM) for this portion of the corridor (the \$140M project), and was just approved to move forward with the Construction Manager/General Contractor (CMGC) delivery method.
 1. Greg commented that he doesn't want to shortchange the design timeline for the sake of getting something on the ground for the grant.
 2. Karen responded that CDOT is looking at a year timeline for each of those specialty ITFs. Also, CMGC will help deliver multiple construction packages to break off easier items to do in 2022 and give more time for design. She agreed with Greg on his statement though.
 3. Martha added that the Project Team was pushed hard to start construction in 2022 by management. The Team will start efforts before the EA to make sure there is enough time for those ITF groups as CDOT does not want to rush them.
 - iv. Karen stated that the Project Team is also applying for a \$50M BUILD grant. The scope of that project is still being fully determined, but it probably won't have any auxiliary lanes as they are very expensive. That grant application will be submitted in May.
 1. She added that if neither grant is awarded, CDOT still has \$16-\$17M for construction. The Project Team doesn't have a scope for that size project yet, but CDOT will be building something on that pass in the near future.
 - a. Greg asked if CDOT submitted any other INFRA grants.
 - b. Karen responded no, Vail Pass was the only CDOT project submitted.
 2. Karen thanked the PLT as many in the room helped write or get letters of local support for the INFRA grant.
 - a. Dave added that CDOT is only picking West Vail Pass for the INFRA grant, and that shows that CDOT is prioritizing the project.
 - b. Karen mentioned that the high BCA shows that this is a valuable project to invest in.
 - c. Martha pointed out that the Team compared West Vail Pass to Straight Creek in grant (which has longer sustained high grades) and how it has less crashes because of the 3rd lane, even with nearly 50% more traffic. CDOT didn't want the application dismissed because I-



- 70 is a mountain pass and there could be a false perception that you can't do anything to fix it.
- d. Kara mentioned the Team also focused on the economic benefits of the project.
3. Stephanie stated that she hasn't seen the application, but on the comparison to Straight Creek, will that be in the EA as part of the justification for this project? It may be helpful to show that it's not standard for an interstate pass to have this level of issues.
 - a. The Project Team thought that was a great idea. That comparison has been mentioned at public meetings, but not in the EA. It will be added.
 - b. Stephanie pointed out that comparison can help against the argument that there's nothing you can do on a pass because closures are all due to weather. The Team heard a few comments as such at the noise meeting, so it will be good to put in the EA.
 4. Greg mentioned that for the BUILD grant, Vail Fire just did a presentation to Vail Town Council about the expected increase in responses on West Vail Pass. That may be good data to add to that grant application.
- v. Greg stated that it may be good to change the nomenclature with these funding scenarios to state that the money is not just for construction but also for design and the ITFs.
 1. Karen replied that is a good distinction. The Project Team is committed on exactly what Greg is stating and will use that suggestion when presenting about the project going forward.
 - vi. Greg asked that the NEPA process needs to be finished in 2 years, how does that apply to the next stages as construction funding becomes available?
 1. Stephanie responded that the next steps after the signed decision document are different than the NEPA process we are in and doesn't have same timelines. Only Environmental Impact Statements (EISs) that started after 2016 have timeline requirements, so that wouldn't affect the West Vail Pass project. The next stages still should be done as timely as possible though.
 - vii. Karen mentioned that if the Project Team doesn't host meetings for a while, newsletters will be sent to the PLT to give updates.
 - viii. Martha asked when will next PLT be?
 1. Kara responded that the next TT meeting will be right after the EA is completed and prior to the public meeting, then a PLT meeting would be held at the end of the project to debrief on the CSS process during the EA process. The PLT will continue to meet during final design.
 - ix. Stephanie asked for the design exception process, is there anything in the memo that defines membership of the ITF? It might be helpful to define who would be a part of that ITF as a minimum.
 1. Greg agreed with this clarification
 2. The Project Team felt this was a good comment and will add that to the memo.
 - x. Greg asked for more explanation as to how the Crest of the Rockies requirements and the historic aesthetic guidelines that will be specifically developed for this project correspond.
 1. John replied that the Project Team is not starting over with the aesthetic guidelines as Vail Pass already has very good guidelines. The Team will take the existing guidelines and update them based on the historic context.



- a. Kara added that the Crest of the Rockies guidelines were based on the federal lands MOU. The Project Team will have to work through the design exception ITF to make sure that those two things don't conflict.
 2. Greg added that it might be worthwhile to explain in the EA what the development of the aesthetic guidelines will produce.
 - a. Kara responded that information will be in the visual tech memo so the public can comment on.
- xi. Greg asked if the reassessment of the PEIS would affect the guidelines the Project Team is developing?
 1. Vanessa commented that it possibly could, but that is unknown at this time.
- xii. Dave informed the PLT that CDOT has also received funding to redo the rest area at the top of Vail Pass. This is a different funding source, and a different process and project, but it is exciting to know that will be done as it is the busiest rest area in the state
 1. John mentioned that the Rest Area Project Team will be going through a very similar CSS process as this project has.
 2. Dave added that CDOT is working closely with USFS on the coordination with the recreation area that is next to the rest area.
 - a. Matt K mentioned that the USFS has appreciated that effort.



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Technical Team (TT) Meeting #10/PLT Meeting #6
DATE HELD:	August 12, 2020
LOCATION:	Online Zoom Meeting
ATTENDING:	<p>John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Kristin Salamack, CDOT USFWS Liaison Emmalee Blender, CDOT Region 3 Traffic Tom Gosiorowski, Summit County Dick Cleveland, Town of Vail Scott Jones, Colorado Snowmobile Association Kristen Gray Bertuglia, Town of Vail Ben Gerdes, Eagle County David Cesark, Environmental Manager, CDOT Region 3 Vanessa Henderson, I-70 Environmental Manager, CDOT Greg Hall, Town of Vail Pete Wadden, Town of Vail Larissa Read, Consultant to ERWSD Michelle Cowardin, Colorado Parks & Wildlife Shannon Anderson, Bicycle Colorado Kevin Sharkey, ECO Trails Stephanie Gibson, FHWA Tracy Sakaguchi, Colorado Motor Carriers Association Kara Swanson, Consultant Environmental Task Lead, David Evans & Associates JJ Wierema, Wood Matt Figgs, CDOT Region 3</p>
COPIES:	PLT and TT Member and Attendees

SUMMARY OF DISCUSSION:

1. Introductions & Meeting Purpose

- a. Karen reviewed Zoom meeting attendees and reviewed the agenda.
- b. The purpose of the meeting is to review EA findings and next steps in advance of the public review period.

2. EA Overview

- a. A PowerPoint presentation was used to review progress and findings (see attached). Additional discussion is included in these notes.
- b. Noise - Greg Hall asked if berms or barriers can be used rather than walls in some locations to help with noise. Vanessa noted that those types of things can't be considered noise mitigation, but they could possibly be added to the project, if applicable, and could provide incidental noise reduction benefits. Greg would like that added into the EA. Karen stated that it is not appropriate to include additional noise mitigation in the document as it does not meet federal guidelines.
- c. Under Historic Resources mitigation, Greg pointed out that it says "Create Aesthetic Guidance". He asked if we will be following that guidance as well. Kara noted this is a summary and yes, the guidance will be followed during design and construction.



d. Water Quality - Greg noted there is a lot of commitment to sediment, but how is Gore Creek listed/discussed? Black Gore is listed as impaired for sediment, but Gore Creek is only listed for macroinvertebrates. Kara noted that the EA focuses on the accumulation of sediment. John added that Gore Creek isn't listed as 303d impaired in the limits of the project. Pete agreed, but noted it is important to keep in mind that the listed sections of Gore Creek are downstream. Is there any potential to address other pollutants such as mag chloride, etc. Kara explained that CDOT has created a menu control measures that convey and treat water and have identified areas where we can restore wetlands that would also help as secondary water quality treatment. Karen noted that the WQ Tech Memo is very comprehensive and identifies all of the common pollutants and then which ones the project would address.

i. Pete corrected there are two locations of Gore Creek that are 303d listed for macroinvertebrates within the corridor.

Updated: There is one section of Gore Creek, from the confluence of Black Gore Creek to the confluence with the Eagle River, that is listed provisionally for Aquatic Life Usage.

ii. John stated that CDOT is not treating water specifically for mag chloride.

iii. Greg asked that the WQ section talks about the listing status.

iv. Vanessa noted macroinvertebrates are also discussed in the biological resources section.

v. USFS monitors about 4 – 6 sites. Eagle River Watershed Council may know more.

e. Wetlands - Loveland Ski Area expansion stopped short due to fens- is that possible on this project? Can we avoid impacts? Kara stated that some of the fens are very close to the road but all efforts will be made during design to first avoid, and then minimize, impacts to them.

f. Greg - There needs to be a section in the EA that describes how the project doesn't preclude the AGS and that maybe that would be included in the transportation report appendix.

g. Larissa asked - new NEPA CEQ guidance starts in Sept. Is FHWA going to be using this guidance? Will we see reference to direct, indirect, and cumulative impacts?

i. Stephanie noted that this document was written under existing guidance. HQ hasn't provided guidance on proposed changes and FHWA is not proposing any changes to the EA. Won't see direct and indirect because that isn't the way Colorado does it. There is a section of cumulative impacts in this EA.

h. Construction mitigation - Tracy noted CMCA's concern with rerouting and detours during construction. There are limited reroutes for commercial vehicles so need to be clear on that. This is a hazmat route- Tracey asked if construction will reroute require variance for transport of hazmat onto another route.

i. Construction - Shannon noted that Two Elk Trail connects to another trailhead off of US 24. There is a traverse over a wall and you can't easily turn around and go back up. She asked how CDOT will notify trail users of that before they come down. She mentioned that there is a place at the top where sign could be placed to warn riders to not go down toward I-70.



- i. Matt noted that during design, the Recreation ITF will discuss all of the closure issues and this information is very helpful. Contractor will participate in the ITF.
- j. Construction – Greg noted that some places where Big Horn Road closures are discussed is actually a USFS Road. Columbine Drive is listed under recreation but it is also a neighborhood road.
 - i. John explained that the mention of Big Horn Road was referring to the section that goes under I-70.
- k. Construction – The Two Elk Trail won't be impacted in INFRA scope, but the recreation trail will be relocated as part of the INFRA project.
- l. CSS Commitments – Greg noted that the Aesthetics ITF advises before the Design Criteria ITF. Seems like should initiate aesthetics first and then that could help guide design exceptions.
 - i. John noted the EA doesn't commit to the order the meetings happens, but the concept now is to parallel both efforts with final results reported to each other. CDOT wouldn't build anything that requires aesthetic review before completing the aesthetic guidance. This will be an iterative feedback process.

3. Next Steps and INFRA Grant

- a. EA public review
 - i. Dick noted the Vail Library is open 8 hours per day and reservations are not required- it would be a good place to have a copy.
 - ii. ERWSD was hoping for extension to 45 days review, due to all of the extensive tech reports. FHWA requires an official request sent to CDOT with reasoning.
 - iii. Greg noted it would be good to have a few copies available in the Town offices. The Town Clerk may be able to keep that.
 - iv. Stephanie noted that the public engagement for the EA shouldn't be called a meeting.
- b. INFRA Grant Improvements
 - i. Tom asked if the descent lane was more of a safety issue – as he remembered. So how do we explain why the climbing lane was chosen to be included in this instead?
 - 1. Karen noted that this was a data exercise, because the uphill lane has a major benefit by reducing crashes and travel reliability with less closures. That showed a very large benefit – in order to get the grant needed to maximize safety and operational improvements and show a good cost/benefit ratio.
 - ii. Greg thought that the Intermountain TPR committed \$80M.
 - 1. Karen said that during CDOT's recent planning projects a new list of projects was developed. As part of that effort, TPRs were asked to assign potential funding to each priority as if there was a funding stream that would continue like SB 267 and it was like the year 5 – 10 list for SB 267. This exercise resulted in a list with some larger funding for Vail Pass. The current funding match came from other



- projects in the Region to fund West Vail Pass. Not sure if years 5 – 10 will happen. \$33.5 is from years 1 – 4.
- iii. Wildlife underpasses will be constructed under EB and WB. The final decision hasn't been made yet if it will be built wide enough to accommodate third lane– need to figure out if it makes sense to make it extra long to accommodate future widening.
 - iv. Karen described the order of how things will happen: CDOT committed to some construction next year. Need to maintain commitment to holding all of the ITFs. CDOT looked at which parts of the scope could be done first that isn't tied to triggering major impacts (possibly de-icing, signage). Will have three packages for construction. There is a separate paving package not part of this INFRA grant. First package May 2021, second May 2022, third done by Dec. 2022.
 - v. Bringing on design team and contractor and design work will start in the next month.
 1. Have selected design team. Expect to have contractor on board in Oct or Nov.
 2. RS&H is prime design. Prime environmental is Jacobs. Julia Kintsch wildlife. Holly Huyck with Pinyon is SCAP lead. MaryJo Vobejda with Jacobs will be CSS lead. Diane Yates is Jacobs' aesthetics lead.
 - vi. The improvements will be delivered in multiple packages.
 - vii. Greg – what happens years down the road, the conditions of the approval are long-term commitment. What is the penalty for not maintaining commitments for ongoing maintenance after project is completed?
 1. Karen noted commitments are project related, not long-term. CDOT will track mitigations and how they were met during construction.
 2. Greg noted that stakeholders have expressed concern about maintenance of items– what if control measures are put in and then not maintained. Or if the contractor seeds but doesn't make sure that areas are revegetated, etc.
 3. Stephanie noted CDOT Environmental Programs Branch continually works on making sure WQ control measures are working in perpetuity. For vegetation, there are requirements before permits can be closed out – have to reach at least 70% of pre-construction vegetation before permit is closed. Including something else in the EA isn't going to help.
 4. Kara noted this is a CDOT maintenance issue, larger than this project.
 5. Larissa asked for clarity for the stakeholders about chain of responsibility for things that go into the future.
 6. Stephanie suggested adding something at beginning of mitigation section saying CDOT is responsible for making sure long-term mitigation elements are kept in good repair. Facilities are owned and operated by CDOT. FHWA can't force that maintenance.
 7. Tom asked if CDOT would commit to maintaining specific mitigation features, beyond what EPB already does. Would like to express in this document that CDOT is committed to long-term maintenance,



monitoring in perpetuity. A lot of frustration from local communities and public because mitigation is initially installed by CDOT but then stops working because it isn't maintained by CDOT.

8. John noted this could have statewide implications and would need to be taken to leadership and further discussed with FHWA. Karen asked that this should be submitted at a comment during formal comment period and CDOT will start doing homework behind the scenes.
- viii. Tom congratulated the team on the progress and receiving the grant.

DRAFT



TECHNICAL TEAM MEETING NOTES



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Technical Team (TT) Meeting #1
DATE HELD:	February 7, 2018
LOCATION:	Miller Ranch Community Center, 0025 Mill Loft Road, Edwards
ATTENDING:	TT Members: Joel Barnett, FHWA Stephanie Gibson, FHWA John Kronholm, Project Manager, CDOT Region 3 Martha Miller, Program Engineer, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Drew Stewart, CDOT Region 3 Pete Wadden, Town of Vail Tom Kassmel, Town of Vail Greg Hall, Town of Vail JJ Wierema, Consultant Roadway Designer, Amec Foster Wheeler Ben Gerdes, Eagle County Greg Hall, Town of Vail Dick Cleveland, Representing Vail Town Council Jon Stavney, Northwest Colorado Council of Governments Tracy Sakaguchi, Colorado Motor Carriers Association Don Connors, Consultant Project Manager, Amec Foster Wheeler Leah Langerman, Consultant Public and Stakeholder Involvement Coordinator, David Evans and Associates Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates Bill Andree, Colorado Parks and Wildlife Craig Wescoatt, Colorado Parks and Wildlife Siri Roman, ERWSD Matt Montgomery, USACE Kevin Sharkey, ECO Trails Scott Jones, Colorado Snowmobile Association By Phone; Lisa Lloyd, EPA
COPIES:	PLT Members, Attendees



SUMMARY OF DISCUSSION:

Project Background

- a. The history of the project was discussed.
 - i. I-70 Mountain Corridor PEIS recommendations included auxiliary lanes on Vail Pass.
 - ii. 2007 Environmental Assessment – the purpose being to improve safety of Vail Pass, work halted in 2007.
- b. The presentation focused on the current project and the desire to improve safety and operations.
 - i. Crash data was discussed, and much of the pass has a LOSS of IV – which indicates a high potential for crash reduction.
 - 1) Crash type - WB crashes were generally fixed object – suggests people are having trouble staying in the driving lane. EB crashes were generally sideswipe, which suggests speed differentials.
 - ii. Operational issues were reviewed, including; geometric challenges, truck volumes, and speed differentials.
 - 1) It was noted that truck volumes make up 10.8% of the total volume of traffic, and that there are two truck escape ramps in the project, which were used 15 times in one year.
 - a) Greg wanted to see data extrapolated for trucks.
 - b) Tracy clarified that truck use is lower during peak (under 1%).
 - 2) Figures for closures on the pass was discussed.
 - a) 44 heavy tows needed in winter 2017.
 - b) Pass closed for 177 hours in 2016 due to crashes, weather.
 - 3) Martha brought up that closures for maintenance should be added.
 - 4) Tracy would like to know data of trucks using runaway ramps – which ones are being used and how often?
 - 5) Discussion: How many hours is the pass closed for avalanche control?
 - a) John mentioned it is tracked by maintenance.
 - b) Don said it was included in the 177 hours.
 - 6) Siri asked what percentage of crashes involve trucks?
 - a) John said it is included in the safety assessment details.
 - b) Don mentioned that next meeting will cover those details.
 - 7) Bill asked how are you planning to handle snow storage?
 - a) John said that will be covered in the alternatives analysis.

Purpose and Need Review

- a. The Purpose focuses on what expectations are for project (improve safety and operations), The Need is supported by data and addresses why project was started (safety concerns and operations due to geometric challenges and inconsistent speeds).
 - i. Dick said he is concerned about the operational challenges and wants to make sure they are addressed thoroughly.
 - 1) Martha reinforced that it is a goal of this project.



- ii. Martha commented on the project need, that the safety aspects are as important as the slow travel times.
- iii. Bill is concerned that increased speeds will lead to higher crashes, and expects that the additional lane will result in increased speeds.
 - 1) John agreed that there will be issues with trucks and cars sharing middle lane, but noted a study showing that adding a lane has led to a 20% reduction in crashes on other projects.
- iv. Stephanie thinks that the term mobility needs to be more defined in the need statement. What aspects of mobility are being addressed? It can mean different things to different people. **Kara will add the definition to the P&N.**

Work Plan – including the strategy to involve the TT in making recommendation for the project

- a. The desired outcomes were discussed.
 - i. Karen commented that CDOT’s current funding will get us through the EA process, not further.
- b. Project Inputs – the various studies and reports used to develop project plan.
 - i. Greg commented that project should include the original plan and vision from Vail Pass construction (1973) and how the context was a consideration. **Kara agreed to include this on the “Background” display board at the public meeting.**
 - ii. Stephanie suggested adding a slide about 1970s project to address original plan.
 - 1) Martha agreed, noting the original concept to cut through directly from Silverthorne.
 - 2) Greg commented there was a wildlife element that went into bridge construction (noting the wildlife underpasses).
- c. Schedule and Milestones
 - i. John commented that we will add Issue Task Force (ITF) meetings to discuss more details, and mentioned some of the items they will be covering.
 - 1) Martha talked about strategy to get project done despite funding shortcomings. The process will identify construction funds and there are grants that we can pursue, including freight money.
 - 2) Karen noted that this project has been identified as one of the top 5 in the State by CDOT.
- d. Alternatives Analysis
 - i. Greg asked how an Advanced Guideway System (rail) will be included in process, as this was one of the preferred alternatives from the Mountain Corridor PEIS.

Stakeholder and Project Teams

- a. Project Teams – discussed the individual teams and how they relate: PLT to TT to ITF
 - i. The required ITF meetings were listed, with the addition of the first optional meeting to be added.
 - 1) SWEEP (streams, wetlands, water quality)
 - 2) ALIVE (wildlife)
 - 3) Section 106 (historic)
 - 4) Adding Emergency Services Provider ITF



- b. How information about the project is going to be disseminated to concerned parties was discussed.
 - i. Other agencies (locals, federal...) are being involved in the project teams.
 - ii. The project team plans to hold elected officials briefings to update local stakeholders.
 - iii. Public meetings will be held to brief local residents and gather their input. The importance of clear concise messaging was emphasized.
 - 1) The first public meeting (scoping) is planned to be held on Feb. 22. The meeting is being advertised with postcards to East Vail property owners, email blast to project mailing list, web page, news releases, CDOT social media.
 - 2) Two other public meetings will be held later in the project.
 - a) Karen commented this is the minimum required to get to EA decision document. There will likely be more public meetings in future phases.
 - 3) Trail intercept surveys – taking surveys in the field from users.
 - a) Stephanie asked if there will be outreach to snowmobilers.
 - Leah commented that it might be done electronically due to challenges in contacting that group on the trail.
 - b) Joel asked if the plan to capture information would represent travelling public.
 - CDOT staff noted that multiple methods are being planned to cover a sizable representation.
 - c) Dick noted majority of project land is in USFS and has concerns that they need to be involved so efforts move forward (USFS not in attendance at this meeting).
 - John assured Dick that Matt Klein is involved and may not be at the meeting due to a redundancy with the PLT meeting that Matt attended.
 - d) Greg thought it could be good to explain any easement issues that the public would be concerned about.
 - e) Dick noted that bike path will most likely move to FS land and they need to be involved.
 - f) Greg concerned about how the project might impact the roadway (I-70) leading up to MP180. Would the scope of the project need to change and would this impact the schedule?
 - Martha addressed that constraints need to be identified. Karen reiterated.
 - Greg noted the chain station may be impacted but it is outside the scope
 - Karen said we could address those problems in other projects but the problems specific to this project extend from MP 180-190.



Review of Draft CSS Materials

- a. Context Statement – based on I-70 Mountain Corridor Context Statement.
 - i. Stephanie noted that her previous comments were not addressed. The description of the corridor character does not address the natural setting (on USFS land) and the historic quality of I-70 on Vail Pass.
 - 1) **Kara said the team will address this.**
 - ii. Stephanie asked where the success factors came from.
 - 1) Leah mentioned they came from PLT meeting.
 - iii. Discussion whether more clarification is needed to define I-70 as the only East-West Interstate. **Decision was made to not change anything other than capitalizing “interstate”.**
 - iv. Scott brought up the importance of emphasizing access points to the recreational areas. Currently they are identified more as trails.
 - v. Kevin added natural environment should be preserved.
 - vi. Bill added wildlife corridors should be preserved.
 - 1) John noted that it mentioned “enhancing” natural environment.
 - 2) Bill thinks wildlife needs to be addressed specifically.
- b. Core Values – importance to stakeholders
 - i. [Enhanced Environment] Craig has concerns about how the enhancement of the environment is going to be achieved.
 - 1) Karen brought up methods that it could be achieved – noted sand removal.
 - ii. [Enhanced Environment] Kevin thought that trails needed to be moved to a different core value.
 - iii. Leah asked if there were any values needed to be added
 - 1) Stephanie thought recreation should be added as a core value. She noted that it doesn’t fit in the other values, and is a critical component for I-70.
 - a) Scott noted that it is partially addressed in connectivity but not completely.
 - 2) Bill noted that endangered species should be addressed as well as water quality.
Decision: “Recreation” will be added as a core value. All recreation-related critical issues will be moved to this new core value.
- c. Critical Issues – aspects of core values that are being addressed.
 - i. [Safety] Martha brought up safety should include sight distance issues, and shadowing. **Kara agreed to add sight distance.**
 - ii. [Safety] Kevin wanted to add trail concerns in safety. He said that commercial operations are putting more people on the pass and e-bikes are adding another element to safety. The team thought it might be better added to the recreation core value.
 - iii. [Safety] Craig asked if headlight blindness has been considered for safety?
 - 1) John said the glare screen wasn’t originally added when the barrier was installed so wildlife could cross the road. However, there have been successful installations in other locations since then.
 - 2) Martha noted that there has been environmental push back on glare screens, but some opportunities existing to add in critical areas.



- 3) Dick mentioned that we may be getting too detailed.
- iv. [Enhanced Environment] Siri thought Black Gore Creek should be mentioned for impacts to aquatic wildlife (macroinvertebrates).
 - 1) John thought we could address in water quality for Black Gore Creek and note it in efforts for sand removal. This section of Black Gore Creek isn't impaired for macroinvertebrates.
- d. Success Factors – describe what would address the issues.
 - i. Kara asked if any factors should be added or addressed.
 - 1) Karen suggested rewording shoulder area adding “to allow for”.
 - 2) Craig suggested adding to improved clear zone, a snow storage element.
 - a) Leah recommended wording, “with adequate snow storage.” **The group agreed to add this.**
 - ii. [Safety] Leah asked Tracy about the “truck ramp improvements” wording
 - 1) Tracy was OK with it.
 - iii. [Safety] John brought up how the chain station should be handled.
 - 1) Tracy noted it belongs under safety and operations.
 - iv. [Corridor Character] Tom noted noise complaints would be an issue and highway noise should be addressed as a whole (currently only addressed for night construction noise).
 - 1) Dick followed up that future iterations for work on the pass will most likely include required noise study.
 - 2) Martha noted that Summit County follows federal guidelines with respect to noise studies.
 - 3) Dick suggested looking at the Simba Run guidance from underpass project.
 - 4) **Kara agreed to add text about compliance with FHWA noise regulations.**
 - v. [Operations] Dick mentioned traction law should be included under operation.
 - 1) Stephanie mentioned that CDOT can't enforce traction law. This falls to Colorado State Patrol.
 - 2) Dick thinks it's a part of the solution for the operational problems in the winter.
 - 3) Stephanie asked if we need to look at installing a chain up area for passenger vehicles.
 - 4) John thought it will come up in the ITF meetings.
 - 5) Karen noted that the success factors can be adjusted later in the process. She thought it should be added as a topic for future TT meetings and we can cover it then.
 - 6) Dick said messaging for when traction law is in effect can be vague and that should be addressed for pass operations.
 - 7) Kevin thought a measure of success could be compliance to traction law.
 - 8) Stephanie noted that this is a construction project and tying the success to compliance to a law might not make sense.
 - 9) Dick thought that success is measured in number of closures, and it wouldn't make sense to widen the road and not enhance traction messaging.



- 10) Tom said it would be good to track which accidents are caused by traction problems.
 - 11) Don noted that not all the crash data can determine traction issues.
 - 12) Dick believed that CDOT is tracking traction problems.
 - 13) **Kara said that the project team can talk to the consultant traffic engineer, Stacy Tschuor, to find out what data we have.**
- vi. [Enhanced Environment] Scott wanted to bring up an issue with recreation trails on the pass, the cross country ski trail impede on the ROW.
 - vii. [Safety] Kevin would like to see increased capacity and safety on trail system. The project should enhance the user experience. **The team agreed to add this to the new core value for recreation.**
 - viii. [Connectivity] Tom thought that recreation could be removed from connectivity. He feels like connecting recreation users has been addressed in operations and safety.
 - ix. [Operations] Joel commented on real time data system. What does it mean?
 - 1) John defined it as an ITS solution.
 - 2) Martha believes this is a RoadX issue.
 - 3) Kara thought it was a maintenance issue brought up by Randy during the PLT meeting.
 - 4) Martha thinks it is a I-70 Corridor Operational issue that wouldn't get addressed with this project, since it wouldn't make sense to add another TMC (there are currently TMCs at the tunnel and in Golden).
 - x. [Connectivity] Stephanie asked if the connectivity issues are covered under operations. She suggested eliminating connectivity to reduce redundancy. **The team agreed, and thought that the messaging might need development.**
Decision: Remove "Connectivity".
 - xi. [Connectivity] Tom thought that RoadX deserves mentioning.
 - 1) John thought this should replace real time data system.
 - xii. [Aesthetics] Ben noted that aesthetics could be moved/combined to different category (corridor character suggested).
 - 1) Stephanie commented that the character is open forest land and Vail does not define it. She thought the factors should reflect this, and noted the original intent of the builders was to capture context of surroundings.
 - 2) Bill thought that success factors are missing the wilderness element.
 - 3) **Corridor Character and Aesthetics Core Values, Critical Issues and Success Factors will be combined.**
 - 4) **Kara agreed to review the document in its entirety and make sure wilderness is carried throughout the flow chart.**
 - xiii. [Enhanced Environment] Bill thought that a success factor for wildlife would be a reduction in road kill.
 - 1) Don noted that 5% of crashes attributed to wildlife, so roadkill is not much of an existing issue.
 - 2) Stephanie mentioned that the percentage would likely increase if you could capture unreported strikes.



- xiv. [Collaborative Decisionmaking] Tom thought that “meaningful opportunities for stakeholders to provide input” could be augmented with “meaningful outreach”.
The team agreed to edit this.
- xv. [Implementability] Karen noted that “impacts to the travelling public” could include a few words about noise. This is included under Corridor Character.
- xvi. [Implementability] Stephanie suggested combining items 1 & 3 (phasing).
 - 1) John agrees they are redundant. **This change will be made.**
- xvii. [Implementability] Scott would like to change “minimal closure of trail” to include all recreational facilities.

Technical Team Charter Review (only items that had discussion are included here)

- i. Membership
 - 1) CDOT & FHWA main agencies
 - 2) Involving others to ensure all needs are met
 - a) John mentioned that Alison Michael will participate in the ITF meetings but does not need to be on TT.
 - b) Bill wants to add Craig from CPW to the permanent list (attending).
 - c) Leah confirmed that Pete will be a representative for Town of Vail, and Tom will stay in the loop to sit in for Greg.
- ii. Attendance
 - 1) Topics will be sent out prior to meetings, so members can attend those needed.
 - 2) Weather – please inform team if you cannot make it. Meeting can be rescheduled if many can’t attend. School closures will cause a meeting to be rescheduled.
- iii. Team Performance Assessment – ways to ensure team is successful.
 - 1) Karen mentioned that expectations should be clear so they can be carried out.
 - 2) Stephanie wanted to make sure that information is sent with enough time in advance of meetings so there is time to review.
- iv. Consensus building process
 - 1) Email will be used as the primary way to communicate, and team members should add “21685 WVP Aux Lanes” to subject line for tracking purposes.
 - 2) John is main contact for the entire team.
- v. Meeting Notes
 - 1) Notes will be sent after meeting for review and finalized after a week review period.
- vi. Public Coordination
 - 1) TT meetings are open to the public but not publicized. Public can observe but not comment during TT meetings.
 - 2) Final TT meeting notes will be uploaded to project web page for public view.
 - 3) John mentioned that one-on-one meetings can be offered for any public stakeholder group that is interested in more involvement. (For example, an HOA affected by the project).



- vii. Communication with other organizations.
 - 1) Discussion: keep TT meeting size manageable by allowing a representative from each agency.
- viii. Constituent Communication
 - 1) Members should not speak publicly for the entire group.
 - 2) Information with group should be shared two-ways. TT meetings are for sharing information, not strictly as an information gathering source.
- ix. Measuring success
 - 1) Stephanie added a goal – having an implementable solution.

2. Schedule and Next Steps (3:50 – 4:00 PM)

- a. Incorporate comments
- b. ITF invitations
- c. Agency Scoping 2/12 1:30-300
- d. Public Meeting 2/22 4:30-6;30
- e. TT meeting #2 3/7 1:00 – 4:00



21685 West Vail Pass Auxiliary Lanes
Technical Team Meeting #2 Final Meeting Minutes
March 7, 2018
Miller Ranch Community Center, 25 Mill Loft Road, Edwards, CO

Action Items are shown in bold italics.

1. Attendees

- a. TT Members in Attendance
 - i. Joel Barnett, FHWA
 - ii. Martha Miller, Program Engineer, CDOT Region 3
 - iii. John Kronholm, Project Manager, CDOT Region 3
 - iv. Karen Berdoulay, Resident Engineer, CDOT Region 3
 - v. Matt Klein, US Forest Service (by phone)
 - vi. Ben Gerdes, Eagle County
 - vii. Greg Hall, Town of Vail
 - viii. Dick Cleveland, Representing Vail Town Council
 - ix. Tracy Sakaguchi, Colorado Motor Carriers Association
 - x. Kevin Sharkey, ECO Trails
 - xi. Matt Montgomery, US Army Corp of Engineers
 - xii. Craig Wescoatt, Colorado Parks & Wildlife
 - xiii. Michelle Cowardin, Colorado Parks & Wildlife (by phone)
 - xiv. John Stavney, NWCCOG
 - xv. Richard Duran, Colorado State Patrol
 - xvi. Scott Jones, Colorado Snowmobile Association
 - xvii. Siri Roman, ERWSD
 - xviii. Don Connors, Consultant Project Manager, Amec Foster Wheeler
 - xix. Leah Langerman, Consultant Public and Stakeholder Involvement Coordinator, David Evans and Associates
 - xx. Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates
 - xxi. Craig Davis, Vail Fire
- b. Others in Attendance
 - i. Matt Figgs, CDOT Region 3
 - ii. JJ Wierema, Consultant Roadway Designer, Amec Foster Wheeler
 - iii. Stacy Tschour, David Evans and Associates
- c. Introductions & Agenda
 - i. The group did introductions and John presented items that have occurred since the last Technical Team (TT) Meeting.
 - 1. An agency scoping meeting was held with various federal and state agencies, and a public open house was held in Vail.
 - 2. The project team has also been invited to present at the Town of Vail's upcoming Community Meeting on March 13th.
 - ii. John presented the topic for this TT meeting which was to discuss the pros and cons of different lane and shoulder widths for future improvements.



1. Emergency service providers were invited to this TT for their input, but many of them could not make the meeting. There is a scheduled Issue Task Force (ITF) meeting with those personnel to hear their input on this topic.
 - iii. The agenda for today's meeting was presented.
 - iv. The Project Staff asked if the group received the meeting invite, agenda, and presentation materials.
 1. ***The Town of Vail may have not had all their staff on the list. The Project Staff will follow up to make sure all pertinent Town of Vail personnel are on the email distribution list.***
2. **Wrap Up from TT #1**
 - a. The meeting notes from TT #1 and the Success Factors Flow Chart was sent out to the TT prior to the meeting.
 - i. Following TT #1, only one comment was received from ECO Trails regarding additional safety details for the bike trail.
 - ii. The group agreed that the meeting notes and flow chart successfully captured what was presented and discussed at TT #1.
 - b. The Chartering Agreement was also updated and finalized based on TT #1.
 - i. Bicycle Colorado was contacted about their interest to be a part of this TT and they declined, so they were removed from the TT list.
 1. ECO Trails asked if they could reach out to Bicycle Colorado for their consultation on items and the project team agreed that would be appropriate
 - ii. There are still attempts to reach out to the Summit County Chamber of Commerce to see if they would like to be a part of the TT for future meetings.
 - iii. The Charter Agreement was passed around to the group for signatures.
 1. ***The Project Staff will send a copy of the signed Charter Agreement to the TT.***
 2. The Chartering Agreement and Success Factors Flow chart are part of the I-70 Mountain Corridor CSS process for CDOT.
3. **Alternative and Design Option Process**
 - a. The upcoming TT topics were presented to the group for TT's #2, #3, & #4
 - i. The purpose of the TT meetings is for the project team to receive feedback and insight on different design considerations, not to reach consensus on design details
 - ii. Several ITFs will be held over the coming months as well to get into more detail on specific topics
 - b. Kara talked about the difference between an Alternative and a Design Option
 - i. Alternatives will be screened in a formal process against the Core Values
 - ii. Design Options don't go through the formal process, but will be discussed in the group and informally screened against the Core Values
 - c. The overall schedule of the project was presented and the TT and ITF meetings were highlighted
4. **Detailed Safety and Traffic Operations Discussion**
 - a. Stacy presented detailed safety and traffic data from the West Vail Pass corridor



- i. The top 60 busiest days of the year are all during the summer, with Sundays being typically the busiest day of the week (especially eastbound [EB]) and Friday being the busiest day of the week for westbound (WB)
- ii. Average truck volume is ~11% daily, but it is lower on the peak days
- iii. The term Level of Service (LOS) was described as a nationally recognized definition of delays, density and speed along a corridor and is rated on an A-F scale, with A being best and F being worst (A = free flow, C = traffic is around you but no impact to speed, D= beginning of friction, E = starts of noticeable delays, F = failing conditions)
- iv. It was asked if project specific traffic counts were generated or if CDOT's automatic counter was the only counter used
 1. Stacy replied that specific counters were used and then compared to CDOT's auto counter (the data did correlate)
- v. Another question was asked on if trucks are separately counted and then incorporated into the LOS calculation
 1. Stacy replied that all of that data is counted and included in the rating
- b. The emergency truck ramp usage was shown to the group for the past 3 years
 - i. Those ramps have been used 24 times in the past 3 years
- c. Stacy then presented a series of slides on closures on Vail Pass from CDOT's traffic safety report
 - i. Most of the closures occur during the winter months
 1. 2016 data shows a spike in closures resulting from a bad winter weather year
 - ii. Partial closure (i.e. lane closures but not full closure of I-70) data was also presented to the group
 1. Trend shows average duration per closure has gone down on average from 2014 to 2017
 2. John Kronholm added that CDOT does not include data on planned road closures in this material, just emergency closures
 3. John Stavney commented that he has noticed CDOT has been improving at not doing road work on weekends and holidays the past year
- d. Information on crash locations by milepost was presented to the group. The data shows some areas of higher crash frequency that may be associated with curves, grades, and/or bridges.
 - i. Greg asked if that data was separated between EB & WB directions
 1. Stacy replied that it was in the safety report, but the graph in the slideshow does not show it broken out
 - ii. Stacy stated that the crashes along the corridor primarily occur with icy and/or snowy pavement conditions
 1. Most crashes are in the WB direction, but there are some areas with more crashes in the EB direction
 - iii. Trucks are involved in a higher percentage of crashes from Mile Marker (MM) 182-182.5
 1. Tracy asked if the trucks were at fault for those crashes
 - a. Stacy replied that the safety report does not denote fault in crash data, so that is unknown



2. Capt. Duran stated that the MM 182 area is near the truck ramp and that the truck ramp design is not up to standard and many trucks miss the ramp and crash in this area

5. Roadway Lane and Shoulder Widths

- a. JJ presented the existing roadway conditions of the corridor including the layout of the interstate (i.e. wall in median, bifurcated, etc.), as well as the existing lane and shoulder widths
- b. The goal of the project team in developing design options is to balance safety, cost, and impacts with any improvements to the interstate
 - i. JJ showed a table of potential crash reduction factors which gives data on average national crash reduction factors per number of lanes, lane width, and shoulder width
 1. This data is a national average and not specific to the location of Vail Pass, and that data is not additive if multiple factors are combined in a future design. This data will be used as a guideline and more specific crash reduction factors will be determined as the design progresses
 - ii. JJ showed some slides that show widening and how that would lead to impacts with a larger footprint along the corridor
 1. Several questions were asked by the group about the difference between what the project team characterized as major vs minor widening
 - a. John Kronholm said that adding a third 12' lane would be considered major, but the project team wanted to look at minor widening (i.e. add 12' lane but shrink shoulders) for a comparison. No definitive widths have been determined yet.
 2. Craig asked how much of the corridor is constricted to where major widening would have significant impacts
 - a. The project team replied that most of the corridor is constrained by the terrain
 - b. If a smaller footprint is constructed, the crash reduction factors are lessened, but a bigger footprint leads to more impact and most cost
 3. Karen stated that there are many competing interests and the project team's desire is to gather feedback on those issues so a roadway template for I-70 can be decided.
 - a. Joel asked why the EA couldn't clear a standard roadway template for maximum impacts and then any design options that are less impact would be a benefit and lessen impacts. Why not clear the standard template and then used practical design to refine template with during design process?
 - i. JJ stated that the standard template may vary in different locations due to multiple factors and that the project team wants to understand the varying widths that would be acceptable to the TT
 - ii. Kara also said CDOT wants stakeholder input on this process



- b. Scott added that while wider lanes and shoulders lead to more safety, would that lead to more roadside parking leading to an unsafe condition.
 - i. Per law, FHWA does not allow access off the interstate (drivers can be ticketed for parking on I-70). While roadside parking currently takes place along the corridor, it is an illegal practice
 - ii. State Patrol is typically not ticketing those pulled off of the roadway, only those who are physically on the shoulder
 - iii. Greg asked if the Forest Service easement did not have an access control line and thus did not prevent accessing the forest from I-70
 - 1. John K. was not aware of any provision that would allow that
 - iv. Martha stated that CDOT Region 3 Traffic has expressed interest in addressing this issue
- iii. JJ then talked about the cost considerations of widening. This particularly comes into play at the bridges that are difficult and expensive to widen
- c. JJ stated the starting point for the project is based on the I-70 Mountain Corridor PEIS which stated an auxiliary lane needs to be added in each direction
 - i. The current roadway width as well as the standards for lane width and shoulders were shown to the group
 - 1. Those standards are not set and are variable in different locations
 - ii. Greg asked if the PEIS had a recommended design speed and if the standard widths were from the recommended speed
 - 1. The PEIS recommended a 65-mph design speed. The standard widths do take that speed into account, but also have other factors such as terrain, lane usage, etc. The standards are more for road classification (i.e. interstate, local, etc.), not just the speed of the road
 - 2. John K. stated that CDOT HQ commissioned a speed study to follow up the PEIS and that's where the design speed was set
 - iii. Craig asked if the bridges were pinch points and the standard width can't be obtained, what other options are there
 - 1. Karen stated that CDOT could replace those bridges with a new bridge with a bigger width. That does mean more cost and impacts, but a safer condition.
 - 2. The project team doesn't have a direction on what to do with the bridges yet and wants input from the TT before making a decision
 - iv. Martha stated that shoulder widths give the most impact in safety reduction per the table. She stated her experience recently on the east coast on a highway with wide shoulders that pinch down at the bridges was a safety hazard in the area. She encouraged the TT to look at other roads they drive and compare them to what design options are out there.
 - v. Craig stated that it is important that the wildlife passages under the current bridges remain in place. Any changes to the bridges or location could increase



- vehicle/animal collisions or severely deteriorate the amount of wildlife in the area
- vi. John added that as of now, with the narrow shoulders, when a truck breaks down, CSP & Maintenance will have to close a lane rather than just close the shoulder.
 - vii. Greg stated that if bridges have to be reconstructed, one of the sister bridges should be wide enough to handle 2 lanes in each direction for construction phasing
 - 1. Karen added that a future TT meeting will talk about construction phasing
 - viii. John S. added that for driver feel, changing pavement widths (from wide to narrow at bridges) distracts drivers. He asked if CDOT would narrow leading up to a bridge to give a driver a narrow feeling prior to getting on a bridge on a curve rather than just widening the bridge
 - 1. The project team stated that is a good idea worth looking at
 - 2. John S. added if there was opportunity to pilot a few options (low cost, ITS, signage, etc.) in winter conditions to improve the safety
 - a. Karen replied that construction funding is not identified currently, so no opportunity currently, but could add to an early package if funding comes in waves
 - ix. Capt Duran added that while the crash data doesn't always show crashes on the bridge, the bridges do cause many crashes (constriction and ice). Keeping narrow bridges would keep an unsafe condition. In his opinion the wider and straighter the road, the safe. ITS solutions to help manage traffic will also be a big benefit (not just at the top, but along the whole corridor – VMS boards, lane usage, closure points, etc.)

6. Alignment Corrections

- a. JJ presented on areas of poor existing roadway geometry and examples of what corrections could be made and what impacts they would have
 - i. There is correlation between substandard geometry and peak crash rates in areas. The project team wants to focus on correcting the geometry in these areas of correlation, not in the entire corridor
 - ii. The Narrows (MM 186) was specifically highlighted. Stacy added that this is one of a few locations along the corridor where there is a significant area of summer crashes (not just winter crashes). Don added that this is a compound curve which adds to the difficulty of driving in that location.
 - iii. John Stavney asked how future technology (i.e. V2I & V2V) will improve safety along the corridor especially in areas of substandard geometry
 - 1. John Kronholm replied that while emerging and future technology will improve safety, it can't be practically incorporated into the project at this time
 - 2. John Stavney asked if a tunnel option could be considered especially if it eliminates maintenance (snow and ice removal)
 - a. John Kronholm stated that while tunnels would not solve every issue, there could be an option to construct tunnels in a few locations. There are grade and technical challenges to installing a tunnel that have to be looked at



- b. At the Narrows specifically, with the amount of shade that currently existing on the road, JJ calculated that CDOT would have to remove around 1 million cubic yards of dirt to be able to get direct sunshine on roadway by 11am
 - iv. JJ showed a potential geometry fix at the Narrows location – this is one design and not a recommended alternative, but shown to demonstrate an order of magnitude of impacts in one specific area.
 - 1. Total re-alignments may not be required, just adjustments.
 - 2. The grades cannot necessarily be changed in many areas as a correction in one location would require designers to chase that change along the corridor where the grade is already at the maximum percentage
- b. John K stated that the group will talk about pros and cons related to lane & shoulder widths and alignment corrections
 - i. Siri asked if the LOS presented was the average or just during the peak times
 - 1. The LOS was just during the peaks, not the average
 - ii. Greg asked if traffic forecasting would be done so that this large investment would handle future capacity
 - 1. Stacy stated forecasting would be done
- c. Leah asked what items CDOT should consider in regards to lane widths along the corridor, especially with the Core Values in mind
 - i. Greg asked if the data from Straight Creek was looked at and compared to for alternatives for Vail Pass
 - 1. Stacy replied that the data will be looked at when developing alternatives and specific crash reduction factors for Vail Pass will be developed
 - ii. Craig asked what the minimum roadway section at the bridges could be implemented with minimal widening
 - 1. 1.5' shoulders with three 11' lanes could be done by adding a small amount to the bridges
 - 2. Traffic engineers' initial look at this configuration stated that this would lead to an increase in crashes at the bridges.
 - iii. John Stavney stated that total roadway width is more important than specific lane or shoulder widths as drivers cut lanes on curves, and in the winter drivers drive wherever clear pavement is available during snow storms
 - 1. Capt Duran concurred. If any lane could be reduced in width, the right lane would be the one to reduce as it is the slower lane. Higher speed lanes should be wider
 - a. The differential speed between middle and right lane is low (i.e. A truck passing another truck) but between the left and middle lanes, that differential is high (i.e. a car and passing a truck)
 - 2. Tracy asked to keep 12' lanes for the right lane for trucks. If a reduced lane width for the right lane is considered, a wider shoulder should be included to compensate for the reduced lane width
 - iv. It was asked if there are any studies about driver perception and safety reductions on 11' vs 12' lanes
 - 1. The project team replied that adding a lane has a greater impact than specific lane widths



2. The group discussed the pros and cons of 11' vs 12'
- v. John Stavney asked what CDOT's standpoint was on wider shoulders and trucks using those as climbing lanes
 1. John Kronholm stated "soft" data (data that is not empirically derived) shows 7 trucks per day break down in the summer in the uphill direction, and need that shoulder for breakdowns. In winter, as soon as a truck breaks down, all bets are off as to where that truck goes
 2. Dick said that shoulder width is the important because of snow storage. Narrow shoulders lead to less room to store snow, effectively making corridor narrower
 3. The general consensus was that a wider shoulder is more important than 11' or 12' lanes
- vi. Greg asked that lane widths be evaluated against emerging technology (i.e. the Arrivo test track – if it needs 12' or 13', it would be short sighted to go with a non-standard narrow template)
- vii. John Stavney cautioned that a broad scoped widening across the corridor may not be the best thing as it could increase overall speed. This is not a congestion project, but rather a safety and traffic operations project. Maybe only widening in specific areas would be needed
 1. Dick stated that operational changes would be needed to better maintain the shoulder in the winter rather than install wider lanes or a 3rd lane. He surmised that it was more cost effective to improve maintenance rather than build your way out of an issue.
 - a. Stacy replied that it may help in short term, but would not improve long term safety and traffic operations
- viii. Craig Davis stated with a 10' shoulder, a fire truck could drive up the shoulder in the case of a closure. Any narrower and a fire truck would not fit. Access for emergency services and tow trucks is a big challenge currently
 1. More width would increase the reliability of emergency response. Heavy tow trucks would probably need that same width as emergency responders
 2. Ben asked where the benefit of width diminishes on the shoulder
 - a. Craig replied greater than 12' would not be helpful
- ix. John Stavney asked if lighting was considered a safety improvement
 1. Capt Duran agreed that lighting on bad curves and in shaded areas helps crash rates
 2. John Kronholm responded that the project team will look at lighting
 3. Colorado Parks and Wildlife was asked if lighting affects the wildlife. Craig stated it does impact wildlife, but in areas like the Narrows with no animal crossings it may not be an impact. A review of this should be site specific.
- x. Greg stated sediment and sediment control should be considered in the roadway width discussion. More width means more area for sediment and that wider area will need to be considered in controlling the sediment
 1. Snow storage needs to be considered with something like a linear shoulder drainage system



2. Craig Davis asked where the drainage flows to? If a semi with chemicals spills, the outfall of that spill needs to be known. Craig stated that hazmat spills are a common issue on the pass
 - a. John Kronholm stated this should be discussed further in the SWEEP ITF as it is a good point of consideration
- xi. John Kronholm asked how much difference the width of the inside shoulder would make for emergency services
 1. The consensus was that the insider shoulder width wasn't as important as long as a wider outside shoulder was in place
 2. Wider than 6' actually reduces safety and increases crashes
 3. It was asked if the inside shoulder could be widened only on curves where drivers turn into that insider shoulder (so not widen in the whole corridor, but specific locations only) – and the project team stated that it can be considered
 - a. John Kronholm stated that correcting substandard geometry may mean larger insider shoulders would be needed regardless
 4. Stacy asked if the inside or outside shoulder would be more important to focus on
 - a. The group consensus was that it is more important to put width on the outside shoulder rather than on the inside
 5. Don asked if traffic data showed crashes on the insider shoulder and if there was opportunity to be location specific in insider shoulder width improvements
 - a. Stacy said yes in locations, but it will need to be looked at when determining corridor specific crash reduction factors
 - b. Capt Duran said Vail Pass is unique and 2' wider on the inside won't make a big difference. Other corrections would be better than a wider insider shoulder with the most important being outside shoulder width
 - c. Don added that not all of the corridor has concrete barrier on insider shoulder. Widening in those locations would be easier
- xii. Karen asked if there would be a difference in widths between uphill and downhill directions (mainly for summer considerations)
 1. Capt Duran stated added width to the insider shoulder downhill won't help. Extra width to the outside is better. The group agreed
- xiii. John Kronholm stated that CDOT's heavy tow program stages tow trucks to get the break downs off the road. The heavy tow will get the breakdown to a location where the road can be opened, then it is up to the driver to get down the pass later
 1. Capt Duran stated that an extra wide area (i.e. a safe haven) for heavy tow drop offs would be very beneficial (especially with an emergency turnaround at that location) and would improve response time and reduce closures
- xiv. Capt Duran asked if chain stations will be looked at with this project
 1. John Kronholm replied that it will be looked at as it is within the project limits, and especially if a lane is added impacting the chain station



2. Capt Duran said a wider chain up area, lights, and variable speed limit signs would help in this area
- xv. JJ asked if a narrow shoulder on the bridges would be tolerable (this would be for the entire bottom half of corridor as to not have variable widths)
 1. The group agreed this would be a bad idea and to keep the width on shoulder through the entire corridor is important
 2. Martha pointed out that Glenwood Canyon is a good example of a narrow shoulder and the safety concerns and hazards in the canyon would be carried over to Vail Pass.
- xvi. Greg asked what the minimal typical section in the PEIS was for Vail Pass
 1. **The project team did not know off hand and will need to look at this.**
 2. John Kronholm stated that any width less than the standard would need a design variance from FHWA
- xvii. JJ asked if there were any areas not identified in the alignment slides that should be looked at other than what was already identified
 1. Scott stated that having some place to get broken down vehicles off the road entirely (not just on shoulder) is very important for safety. The Rest Area could be used as a resource as a place of refuge
 - a. John Kronholm replied that the rest area was not looked at initially with the scope of the project, but this should be considered as this is a good point
 - b. Martha wanted to ensure this didn't become scope creep as there is statewide effort to look at rest areas. This should be compared to that effort and not overlap with it
 - c. Tracy added most CMVs use facilities just west of the rest area as it is too hard to get a truck into the rest area
 - i. Capt Duran stated CSP has had to send resources to Rest Area to help with stuck vehicles because it doesn't operate well
- xviii. Greg stated that the project team should evaluate where the widening will take place to prevent large fill slopes and bigger impacts

7. Next Steps

- a. Leah presented the next steps for the TT meetings
 - i. TT #3 is in 2 weeks and will talk about constructability
 - ii. TT #4 will talk about recreation and noise walls
 1. Those meeting invitations have been sent out to TT already
- b. ITFs will be in April and May, with the Emergency Services ITF at end of March
 - i. The Project Team will make sure invitation for Emergency Service ITF has been sent out
- c. **The Project Team will compile the pros and cons, the meeting minutes, and the signed charter and send out to team**
- d. Leah asked if it there was enough time to review documents if they are sent out the Friday before a Wednesday meeting?
 - i. The group agreed that was enough time
- e. Karen asked if the group felt they received enough information from project team prior to this meeting
 - i. The group agreed there was enough information sent



- f. Craig asked how the public open house went
 - i. Karen stated most comments received were in favor of the project. The project team is still compiling comments from the public and will send out to TT at future date.
 - ii. A lot of comments were received about wildlife concerns and protecting wildlife on the pass
 - iii. Greg stated that the Town of Vail was disappointed in the amount of notice for the public open house and would like to see more effort to notify public for future open houses
 - 1. Project team stated they will review their efforts on notification but followed the typical outreach process CDOT has for these open houses. The project team will work with the Town to help get information out in the future
 - 2. Greg stated that the Town's Community Meeting is a good opportunity to get more information out to next week (the project team will be in attendance)
 - 3. The project team is also looking at other public meetings to go to and still accepting public comments for next several months



Summary of Pros & Cons Discussion – Flip chart notes

WIDTH	PROS	CONS
Lane Width		
Narrower		<ul style="list-style-type: none"> • Passing more difficult for passenger vehicles • Possibly precluding future technology • Would require FHWA variance
Outside Shoulder		
Wider	<ul style="list-style-type: none"> • Better safety on curves • More snow storage • Room for pulling over/breakdowns • More emergency response area whether they drive on shoulder or down middle of travel lanes (fire truck fits in 10') • Heavy tows need 10' – Extra wide safe haven for tow drop-offs at top desired 	
Narrower		<ul style="list-style-type: none"> • Less snow storage could result in loss of a travel lane during breakdown • Less room for sediment collection/drainage facility • Less room for pull-overs/breakdowns
Narrower on bottom (6' from 186-180)		<ul style="list-style-type: none"> • Trucks already have issues in this area and could get worse <ul style="list-style-type: none"> • Need to have room for them to cool brakes or increase hazard • Make conditions even worse in an area already of great concern • Could require FHWA variance
Inside Shoulder		
Wider	<ul style="list-style-type: none"> • More snow storage • Moderate/increased potential for crash reduction • Better for safety on curves 	<ul style="list-style-type: none"> • Traffic could feel like they can pull over on inside • Can't see shoulder area in winter/snow anyway • Could take width from outside shoulder



Overall Template - What's important?

- Overall width geometry feel – driver comfort
- Could reduce #3 lane (slower) to 11'
 - CMCA would like standard width or if reduced lane need wide outside shoulder
- Most benefit could come from shoulder
- Not precluding future technology
- Lighting in shaded curves/problem areas
- Drainage and shoulder need to work together
- Outside shoulder seems to be most needed/used
- Exploring methods beyond only widening shoulders to improve safety (incorporate slope of roadway, variable speeds)
- Increasing width could impact wildlife and make crossings more difficult
- Consider amount of cut/fill needed and weigh impacts vs. benefits



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Technical Team (TT) Meeting #3
DATE HELD:	March 21, 2018
LOCATION:	Miller Ranch Community Center, 0025 Mill Loft Road, Edwards
ATTENDING:	<p>Joel Barnett, FHWA Matt Greer, FHWA Martha Miller, Program Engineer, CDOT Region 3 John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 David Caesark, Environmental Manager, CDOT Region 3 Matt Klein, US Forest Service (by phone) Ben Gerdes, Eagle County Greg Hall, Town of Vail Dick Cleveland, Representing Vail Town Council Tracy Sakaguchi, Colorado Motor Carriers Association Kevin Sharkey, ECO Trails Craig Wescoatt, Colorado Parks & Wildlife Bill Andre, Colorado Parks & Wildlife John Stavney, NWCCOG Richard Duran, Colorado State Patrol Scott Jones, Colorado Snowmobile Association Don Connors, Consultant Project Manager, Amec Foster Wheeler Leah Langerman, Consultant Public and Stakeholder Involvement Coordinator, David Evans and Associates Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates Matt Figgs, CDOT Region 3 JJ Wierema, Consultant Roadway Designer, Amec Foster Wheeler Stacy Tschuor, Consultant Traffic Task Lead, David Evans and Associates Julia Jung, Amec</p>
COPIES:	Attendees, Project Team

SUMMARY OF DISCUSSION:

1. Introductions & Agenda Review

- a. The group did introductions and John Kronholm gave an overview of the agenda and described actions taken since the last Technical Team (TT) meeting
 - i. CDOT attended the Town of Vail community meeting to provide information on the project
 - ii. John K had met with the Forest Service and the Colorado Snowmobile Association to talk about parking and recreation use at the Vail Pass Rest Area



- b. This TT meeting will cover the topic of constructability for the project
 - i. Karen added that while it may not seem like a typical TT topic, the constructability is so challenging that it might affect the alternatives that will be developed. The Project Team felt it was important enough to the alternative development to discuss with the TT.
 - 1. When a contractor is selected, their construction phasing may be different compared to the Project Team's thoughts, but the Project Team wants to gather as much information from the TT group prior to that point
 - ii. John K stated that for the development of the Environmental Assessment (EA), the toes of disturbance need to be determined, including any potential impacts from construction

2. Core Values

- a. Kara pointed the group to Core Values handout and reminded the TT that design options discussed today should be compared to those Core Values
- b. Martha added that CDOT has the ability to go to the Colorado Contractors Association (CCA) and invite contractors to perform a constructability review for this project
 - i. She added that there are also innovative contracting methods that bring a contractor on board during the design phase to give input on constructability, but as there are no identified construction funds at this point, the Project Team has elected to not use this route at this time
- c. Greg asked what the Floyd Hill & Westbound I-70 Peak Period Shoulder Lanes (PPSL) projects are doing for constructability
 - i. The Project Team replied that those projects are not far enough along to have determined their contracting method or a plan for constructability

3. Constructability Challenges

- a. Julia presented slides showing some of the unique constructability challenges for this project
 - i. These challenges include, but are not limited to, mountainous terrain, long curving bridges, landslides, sections of bifurcated interstate, close proximity to some houses in East Vail, steep slopes, rock cuts, the bike path, a short construction window due to winter weather, the potential for phased construction funding, traffic impacts, and potential environmental impacts
 - ii. Currently there are 23 retaining walls (23,515 LF total) on West Vail Pass today
 - 1. The concept for the scalloped walls developed by Frank Lloyd Wright
 - iii. There are also 16 bridges (8,350 LF total) on the pass
 - 1. She explained that there are two bridge structure types, steel box girder bridges and post-tensioned segmental concrete box bridges (which are uncommon in Colorado and do not lend themselves to doing phased construction at the bridges)



4. Traffic Impacts

- a. Stacy talked about potential traffic impacts of construction of West Vail Pass
 - i. She mentioned that the Project Team is looking at the CDOT Region 3 Lane Closure Strategy for guidance on allowable lane closures during the summer season (as construction can't really take place during the winter)
 - 1. The Lane Closure Strategy has tight restrictions on West Vail Pass due to heavy traffic volumes, especially during the weekend
 - 2. There are allowances for variances to the Lane Closure Strategy, but the Project Team would need to show how those impacts would make construction safer or significantly reduce cost to be considered
 - ii. The construction capacity on West Vail Pass is 800 vehicles/hour/lane (compared to 1100 veh/hr/ln on other stretches of the I-70 Mountain Corridor, and 1600 veh/hr/ln on areas on the Front Range. On the Front Range, when no construction is going on, that capacity is 2200-2600 veh/hr/ln, and for normal conditions on West Vail Pass, 1800-2000 veh/hr/ln is the capacity)
 - 1. Dick asked for clarification on if only evening closures are allowed on the pass per the Lane Closure Strategy
 - a. Martha mentioned that while the strategy does show this, other recent projects have carefully looked at this to determine if variances were needed to allow lane closures during the day but still limit the traffic impacts.
 - b. Stacy added that a lot of traffic analysis will be needed if a variance will be pursued for this project
 - 2. Stacy presented the average summer traffic volumes for both eastbound (EB) and westbound (WB) weekdays and weekends in comparison to the 800 veh/hr/ln construction capacity spoken of earlier
 - a. Weekends for both directions are over that threshold which would develop large delays and queues during construction
 - 3. Greg asked what the traffic Level of Service (LOS) was for the 800 veh/hr/ln condition
 - a. Stacy stated that was a LOS E (full capacity of the lane). That calculation does take into consideration live construction next to traffic
 - 4. Matt Greer asked what the percentage of trucks was
 - a. Stacy said that it is 11%. She added that the 800 veh/hr/ln value is passenger car equivalents and does not take trucks into consideration (although there is a very low volume of trucks on weekends per the current traffic data)

5. Construction Options (General)

- a. JJ showed a roadway cross section from the CDOT Roadway Design Guide for the minimum detour cross section during construction (Two-11' lanes with 2' shoulders)



- i. The Project Team's intent is to meet this standard during construction on West Vail Pass and to provide emergency pullouts at intermittent levels
 - ii. He highlighted that the bridges will be focused on in detail at this meeting as they present bigger challenges in regards to constructability, but the constructability of the entire corridor needs to be considered as well
 - b. JJ presented a few concepts for constructing next to the existing retaining walls
 - i. John Stavney asked if soil nails could be installed under existing roadway for cut wall locations
 - 1. JJ replied that has not yet been determined, but a lot of the existing walls are tieback walls that go back into the roadway and will have to be considered in relation to the installation of potential soil nails
 - ii. Greg asked if geotechnical investigations have taken place and if there were areas of greater concern for building walls that others
 - 1. Martha replied that it is too early in the process to know that
 - c. JJ asked for input on emergency pullouts and the potential detour section
 - i. Commander Duran stated it was imperative to have those for breakdowns
 - ii. Greg mentioned that the Project Team could use data on current common breakdown areas to help determine good locations for those pullouts
 - iii. John S asked if part of the construction contract could include staging and utilizing tow trucks to help with breakdowns
 - 1. Martha replied that could be an option
 - iv. Dick asked what the length of the construction zones could be for this project
 - 1. John K replied CDOT has tried to limit lengths on work zones closures
 - 2. Karen offered that the Project Team will look at the length of zones and where they are as the Project Team doesn't want to have multiple zones that open up and close back down
 - 3. Matt Figgs stated that shorter work zones is a challenge because this is a long corridor project and longer closures result in greater production in construction (and reduced overall durations), but potentially bigger delays to traffic
 - 4. Commander Duran added that there should be available data on common breakdown locations and that there will probably need to be oversize/overweight restrictions as those could significantly impact traffic during construction if reduced lanes or lane widths are in place
 - a. CDOT can restrict those and send them a different route
 - b. Karen added that CDOT will try to keep at least one truck ramp open at all times during construction

6. Construction Options

- a. JJ then talked about specific constructability concepts at the bridges. These applied to the roadway as well, but focused on the bridges for the purpose of this discussion



- i. Greg mentioned that the PEIS has guidance on permanent retaining wall heights and aesthetics that may impact constructability and should be looked at

b. Option 1: One Lane in Each Direction

- i. JJ presented this concept. Both directions of travel are in one lane on one side of I-70. It is similar to what was done on I-70 in Eagle Vail the past few years, or on the Vail Underpass project in 2016
- ii. A contractor could overbuild the first permanent bridge to get four lanes for reconstruction of second bridge (~6-8' more than what would initially be built would be needed to accomplish this)
- iii. Martha added that each bridge will need to be specifically looked at as some bridges might work well with this option, but others are more difficult and would not work as well. She encouraged the team to not just look at the whole corridor with the same constructability approach but to keep it flexible at each location depending on the constraints for that unique structure
- iv. John K added that this option would not follow the Lane Closure Strategy as it would lead to a permanent lane closure for the duration of that bridge's construction
 1. This would lead to very long traffic backups, especially on the weekends (potentially hours' worth of delays)
 2. As there are 16 bridges on West Vail Pass, if only one bridge is built at time, this could be a high impact for a long duration
 3. This would be a smaller environmental footprint however
- v. Stacy showed that initial traffic projections show large queues and delays (most part of every day would be over capacity, sometimes up to two times over the capacity (i.e. 10-15 mile queues and lack of emergency response due to backups) for first phase
 1. Lesser impacts for second phase of this as the first bridge would be overbuilt, allowing for 2-lanes in each direction
- vi. JJ presented an initial pros & cons list generated by the Project Team
 1. This concept generally has a smaller footprint, but has greater impacts to traffic
 2. Bill stated that construction over wildlife passages (the bridges) will prevent wildlife from moving underneath it. Also, this option would increase traffic on Shrine Pass and Highways 91 & 24
 3. Martha pointed to the Glenwood Canyon rockfall incident a few years back which significantly impacted secondary roads while I-70 was closed for many days as an example of what could happen under this option
 4. Greg asked if there were times of the year that construction could take place that would be more beneficial to the wildlife
 - a. The Colorado Parks & Wildlife team replied that summer is a bad time for wildlife which is unfortunately the best time to build
 - b. John K added that allowable work hours is a good topic that Project Team will need to discuss at a future date



- c. Bill added that the project may need to balance high impacts to wildlife for a shorter duration versus lesser impacts for longer duration. He would prefer to see a shorter duration and greater impact
 - d. Commander Duran added that he would like to see 24/7 construction to get project completed as fast as possible
 - c. **Option 2: One lane Westbound and Two Lanes Eastbound**
 - i. JJ presented the concept for the next option that adds some width to the existing bridges to get three lanes on them during the first bridge replacement. Once the first bridge is replaced, the widened bridge would be demolished and replaced with a new structure.
 - 1. Matt G added that there were some issues during the initial construction of those bridges and that additional post tensioning was required for some of them. He was nervous to add more dead loads to those structures and stated it may not even be possible
 - a. Julia stated the Project Team did a preliminary review of the bridges and that there may be strength issues with widening some of the structures. This will need to be looked at further
 - b. Greg asked if there was any ability to widen on a permanent basis (rather than just temporary)
 - i. Julia added that the Project Team could look at this, but it would lead to a much narrower roadway section than what the group preferred at the last TT meeting
 - ii. JJ showed that similar to Option 1, the first bridge could be overbuilt to accommodate four lanes while the sister bridge is built
 - iii. Stacy covered the potential traffic impacts from this option
 - 1. The EB traffic situation improves from Option 1, but there are still delays in peak periods in addition to safety concerns with narrow lanes.
 - 2. The WB direction handles only one lane of travel better than the EB direction, but this option would still lead to major delays WB
 - 3. Greg asked if a traffic reduction factor could be applied as people would avoid Vail Pass and go a different route
 - a. The group discussed that this might be possible, but there may be no basis for reliably reducing traffic volumes that can be depended on during design
 - 4. Commander Duran asked if it was possible to change which direction of I-70 was one lane depending on time of day
 - a. Matt F said it is possible using a zipper lane concept but very expensive to do
 - iv. JJ covered the initial pros and cons for this option
 - 1. Craig added that the same wildlife concerns for Option 1 would apply to this option



2. Bill added that major planning for emergency response would be needed as it would be very difficult to get emergency vehicles up the pass when large delays were present
 - a. He suggested that the bike path could be used for response
 3. Karen reminded team to compare any pros and cons to the project's Core Values
 4. John S asked if candlesticks rather than barrier could be used to save cost and help with switching lanes each day
 - a. The Project Team replied that this would be a big safety concern with the steep grades and expressed a big hesitation to go that way. Fatalities have occurred in Glenwood Canyon under similar traffic control setups (which is an area with relatively flat grades)
 - b. The feasibility of a zipper lane was discussed further. The group decided it was worth looking at due to duration and cost of the project, but the project would need to work out the safety and traffic impacts from such an operation
 5. Commander Duran added that significant coordination will be needed for transporting patients and medical supplies (such as blood) as they would be stuck in traffic queues
 - a. David added that there will be an Emergency Services Issue Task Force (ITF) next week that will discuss this further
- d. **Option 3: Temporary bridges**
- i. JJ presented the concept for building temporary bridges next to the existing bridges and then rebuilding the permanent bridge in place
 1. This option is difficult in some locations as median crossovers are not possible in all locations
 - ii. Stacy introduced the potential traffic impacts from this option. Generally there will be minor to moderate impacts, but a better condition than Options 1 or 2 would lead to
 - iii. John S noted that this doesn't work well for longer or curved bridges
 - iv. Craig asked if temporary walls would be needed for some locations
 1. JJ replied that some areas would only require temporary fill, but some locations would need temporary walls. That will be determined in the final design process
 - v. JJ presented some initial pros and cons for this option
 1. This concept works better just for bridge construction but doesn't necessarily work as well for the entire corridor
- e. **Option 4: Permanent Realignment at Bridges**
- i. JJ presented the concept for building new permanent bridges on a new alignment adjacent to the existing bridges
 1. Some existing bridges are on substandard geometry and need realignment anyways, so this would be a good opportunity to utilize this method in those locations
 2. This option leads to several potentials for building the second of the sister bridges



3. Matt G stated that total bridge lengths might increase with this option
 - ii. Stacy presented the potential traffic impacts from this option. Generally it would be similar to Option #3
 - iii. JJ presented the initial pros and cons generated by the Project Team
 1. The group discussed the realignment opportunities at different locations. This would have to be individually reviewed during design
 2. Dick asked how many of the existing bridges needed some sort of geometric realignment
 - a. JJ replied that 2 pairs of structures need geometric fixes, and that 2 or 3 others would lend themselves to permanent realignment
 3. Matt F added that this option would need to be done in conjunction with Option #3 as permanent relocation doesn't work well in straight sections of the interstate
 4. Commander. Duran added this option works better for emergency services
 5. Matt G added that this option would affect the bottom truck ramp and that it would need to be rebuilt
 6. Kevin added the trail may be impacted in different areas from this option which would increase the cost of the project
 7. Greg asked if it was possible to re-use the substructure on certain bridges
 - a. Julia replied that this will be looked at by the Project Team for consideration
 - b. She added that it could lead to a shortened lifespan of a bridge if elements of the existing structure are re-used. The cost of new bridge construction keeps this option under consideration
 8. JJ added that to widen the existing bridges (if it is structurally possible), would need to get traffic completely off the structure to do that work regardless
- f. **Option 5: Old US 6 as a detour**
- i. JJ presented the option to use old US 6 as a detour route for the lower half of the pass and avoid seven of the pairs of bridges
 1. The old US 6 alignment is currently being used as the bike path. A temporary bike path would need to be constructed for this option (which may even become a permanent bike path)
 2. The furthest west bridges in East Vail would still need a bypass
 3. Improvements to the old US 6 would be needed to bring it up to acceptable detour design standards
 - a. Old US 6 meets a 25 mph design speed, the Project Team assumed a 45 mph speed for this option



- b. Straightening of the old highway would be necessary in some locations as the current geometry doesn't meet the 45 mph proposed design speed
 4. The detour would also impact the existing truck ramps
 - a. Dick added that the old US 6 alignment was very dangerous in some sections before I-70 was built and should be looked at closer to ensure a safe section would be implemented
 5. JJ then showed a 3D model of the concept of the US 6 alignment as a detour (he clarified that this was not a final design, just a concept)
 - a. He showed that there is a potential for areas of major fill. The project would need to consider temporary shoring walls during the design process to limit the extents of any potential fill.
 - b. Greg added that the wilderness boundary is not too far away from the old US 6 and will need to be identified for this option
 - c. Dick asked what would happen to that detour after construction is completed
 - i. Greg added that all the work for the temporary bike path should just be done permanently for the cost, then considerations of what happens to the detour would need to be discussed
 - ii. Dick added this option would present major wildlife impacts
 - d. John S stated maybe the bike path could be closed to prevent another footprint on the pass
 - i. Greg added that there are areas that need a relocated bike path anyways, so the entire corridor should be evaluated if the old US 6 is used for traffic as a detour
- ii. Stacy presented the potential traffic impacts with this option
 1. EB would not be majorly impacted as traffic would be driving on existing alignment for reconstruction of WB, then on the WB alignment for the reconstruction of the EB direction
 2. WB traffic would have minor to moderate impacts with reduced shoulders, an increased safety concern, and the potential for difficult emergency response
 3. Scott asked if the grade of the detour would be steeper than current grades on I-70
 - a. JJ replied that it would be no steeper than existing
 4. Martha asked if this detour could be improved to a 65 mph alignment and just made the permanent alignment of WB I-70
 - a. John S added that he agreed as a detour is "throw-away" costs, while a permanent realignment would not be
 - b. Karen added that the Project Team has looked at this and it is planned to be presented on at a future TT meeting.



5. Kevin asked if the detour option could be done in smaller sections rather than for the entire five mile lower half of the corridor
 - a. JJ replied this is an option that could be looked at during design
6. Greg asked if the 25 mph curve at the bottom of the old US 6 could be kept as there is parking and a campground in that area
 - a. He added that big fills across a creek section (even with drainage culverts) is bad for riparian habitat
 - b. Dick stated the Project Team should look at the PEIS to see if adding a third highway scar is in the intent of the PEIS
7. Don added that the lower two bridges may need to be looked at as a separate item as there are unique constructability challenges with the hillside and the East Vail neighborhood
8. John K asked if the Project Team had compared the impacts of doing all temporary or permanent realignment at the bridges vs the impacts from the potential US 6 detour.
 - a. JJ replied that hasn't been looked at. The US 6 detour would have significant impacts, but the general widening of I-70 and temporary or permanent bridges also have impacts.
9. Bill asked if the detour was all in a fill section or if there were any cuts
 - a. JJ replied that he showed a preliminary design so the earthwork isn't balanced yet, but there would be both cut and fill sections
10. Don added that while utilizing old US 6 may have the biggest impacts, it doesn't cross Black Gore Creek in any locations, which is a benefit for that alignment
11. Matt G added that this option would present concerns with shading as the old US 6 sits in the shade in many areas
 - a. John K added that traffic would have to be put back on I-70 for the winter as the detour doesn't work well for snowplowing operations
12. John S responded that this option could minimize the overall duration of the project which would be a major benefit
 - a. Karen added that this option lends itself to phased construction if funding isn't all available at one time
13. John K asked if CPW had any comments on this option
 - a. Bill added that running a potential detour all the way to East Vail (rather than ending it where the old US 6 currently ends) has a huge impact. Along the old US 6, he felt that impacts could be balanced, but the initial cuts and fills shown seem significant for only a temporary use.
 - b. He added that if that alignment would become permanent I-70, it would reduce the sediment thrown into Black Gore Creek. There is the potential to also have a better bike path alignment with this option



- c. Martha asked what the impacts would be to wildlife for this option
 - i. Bill replied that there are some places (small creeks) where the project could do temporary bridges or box culverts (at 30' spans) to provide a minimal amount of connectivity for wildlife. The overall timeframe of impact of the project would be a big consideration too
- 14. Dick added that he felt that some sort of bike path needs to be in place during construction and that it can't be closed. His opinion is that this option could provide an opportunity to create a better bike path that is more user friendly and more aesthetically pleasing. Coordination with the Forest Service needs to be done though
 - a. John K responded that the next TT will focus on recreation and the bike path and the Project Team will continue coordination with the Forest Service that has already started
 - b. John S added that the bike path is an economic benefit to the Town of Vail and impacts will need to be considered
 - c. The group discussed balancing the impacts of a long duration project and with a smaller footprint with a faster duration and a bigger footprint.
 - d. Karen added that the Core Values will need to be looked at and weighed with each option and there will be a give and take to balance those with overall duration and cost of the project
- 15. John S added there could be 3 options for the bike path – close it, keep it on the US 6 detour and separate it from traffic with barrier, or do a temporary or permanent relocation
 - a. A new alignment would present a bigger impact to wildlife. John S asked if it would be acceptable to have a lesser experience on the bike path with some of these options if it meant a lesser impact to wildlife
 - i. Dick responded that there will be a lessened experience no matter what, but the bike path can't be closed
- 16. Tracy asked how the runaway truck ramps will be affected (especially with the US 6 detour option) and stated that a constantly changing alignment with temporary or permanent bridges (especially downhill) would be cons for truckers
 - a. John K replied that the Project Team's goal would be to have two ramps open at all times during construction (either temporary or permanent ramps)
 - b. Tracy responded t that the ultimate configuration should be improved compared to existing
 - c. Commander Duran added that there could also be locations of other truck slow down infrastructure (such as sand barrels), not just ramps, to reduce added impacts to the corridor



- i. From his perspective, the US 6 detour would be beneficial from an emergency response and traffic congestion view
 - ii. He added that the project could also leave that US 6 after the project as an alternate route for emergency services to use when there are closures on I-70 in the future
17. Greg added that depending on when construction funding comes for this project and if it comes in phases, the Project Team will need to change the construction phasing selected. This needs to be reviewed location by location and by amount of construction funding received
18. Matt Klein added that the Forest Service has given at least 6 outfitter permits to companies to use that bike path that get 35-40 paying customers per day
 - a. The Forest Service wants the Project Team to make sure these local business are not impacted by a closure of bike path
19. Karen asked if Option 1 could be removed by the TT based on the Core Values
 - a. Greg added this option might make sense for one bridge at a time (especially small bridges with shorter allowed duration) and shouldn't be eliminated – the group agreed
20. John K added that the construction phasing will be considered in the project's pursuit of funding
 - a. Karen added that this project is on funding lists for varying amounts but for big amounts. The goal would not be to do one bridge at a time over several years, but to get a large portion of the project completed with each chunk of funding
21. Craig asked what the percentage of total cost was for the lower half of the project (where the bridges are located)
 - a. Don responded that the Project Team took a very initial look at it and the bottom half is much more expensive than upper half
 - b. Craig replied that if funding challenges don't allow the bottom half to be completed all at once, this would be a greater impact and is not preferred
22. Dick stated the primary problem has been EB lately and asked if EB would be the first direction built
 - a. Karen replied that the vast majority of crashes are in the WB direction, so that may need to be built first. There has not been a decision though as to what portion of the project would be constructed first if construction funding was phased.
 - b. Stacy concurred with this crash data and noted that except in a few locations, more crashes occur WB than in the EB direction



23. John S stated that whatever phasing option that maximize safety and traffic operations should be the one that is selected (as that is stated Purpose and Need of project)
 - a. The group had a discussion of the definition of traffic operations on West Vail Pass. The project's goal is to improve traffic operations, not how the pass is operated by maintenance
 - b. Kevin stated the traffic operations in construction should be considered
 - c. Karen reiterated that Core Values need to be looked at for these different options
24. Joel stated that some of the options present constraints (including 4f, historic impacts to old US 6, and wetland concerns for example) that would have to be further evaluated by the Project Team
25. Commander. Duran asked what the traffic would look like in the winter during construction and if it would be opened back to two lanes in each direction
 - a. John K added that he sees winter traffic needing two lanes + full shoulders for plowing and operations
26. Greg asked if there are concerns on how bridges get demolished with what is below the bridges (i.e. East Vail residents, creeks, etc.) and does that push the project towards widening the bridges or one of the construction phasing options presented
 - a. Julia recognized there are concerns with the demolition phase, especially with the high stress tendons in the concrete bridges. The Project Team had looked at the opportunity to add a girder line next to the existing bridges for widening, but that is a big "maybe" from a structural analysis perspective as well
 - b. Greg asked if the roadway template is reduced, would it present opportunities for widening bridges instead of replacing them
 - i. JJ replied that this could happen with a narrow template, but that the feedback from TT #2 was generally against having a narrow roadway template
27. Bill stated that on Vail pass, it snows in May and September (not just during the "typical" winter months). Bad weather needs to be considered as the construction window is shorter and if there is concrete barrier the whole length of the corridor, there is nowhere for CDOT Maintenance to put snow
 - a. The group agreed that this needs to be considered
28. Greg stated local workforce housing is an issue as there is a shorting on available housing, so a large construction crew could impact the local housing shortage
29. John S asked if there are historic considerations on I-70 itself
 - a. Kara said that there is and that the Project Team is looking at those considerations



7. Next Steps and Wrap Up

- a. John K wrapped up the meeting and highlighted the next two project meetings
 - i. The Emergency Services ITF will be held next week (3/28/18)
 - ii. TT #4 regarding the bike path, recreation, residential and noise will be in two weeks (4/4/18)

8. Comment Received After the Meeting

- a. One comment from Alison Wadey of the Vail Chamber & Business Association was received after the meeting. Alison wanted to share that the Vail Chamber feels the old US 6 detour option would be a big downfall for Vail businesses as many of them rely on summer bike rentals and do very big business with those rentals and tours. Most of those businesses direct guests up to Vail Pass and many visitors do not want to bike off road and want something more user friendly. This option could impact summer sales tax numbers and summer rental shops.



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Technical Team (TT) Meeting #4
DATE HELD:	April 4, 2018
LOCATION:	Town of Edwards, 0025 Mill Loft Road
ATTENDING:	<p>Joel Barnett, FHWA</p> <p>Martha Miller, Program Engineer, CDOT Region 3</p> <p>John Kronholm, Project Manager, CDOT Region 3</p> <p>Karen Berdoulay, Resident Engineer, CDOT Region 3</p> <p>David Cesark, Environmental Manager, CDOT Region 3</p> <p>Matt Klein, US Forest Service (by phone)</p> <p>Ben Gerdes, Eagle County</p> <p>Greg Hall, Town of Vail</p> <p>Dick Cleveland, Representing Vail Town Council</p> <p>Tracy Sakaguchi, Colorado Motor Carriers Association</p> <p>Kevin Sharkey, ECO Trails</p> <p>John Stavney, NWCCOG</p> <p>Michelle Cowardin, Colorado Parks & Wildlife</p> <p>Sam Massman, US Forest Service</p> <p>Siri Roman, Eagle River Water & Sanitation District</p> <p>Shannon Anderson, Bicycle Colorado</p> <p>Alison Wadey, Vail Chamber & Business Association</p> <p>Pete Wadden, Town of Vail</p> <p>Scott Jones, Colorado Snowmobile Association</p> <p>Don Connors, Consultant Project Manager, Amec Foster Wheeler/Wood</p> <p>Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates</p> <p>Matt Figgs, CDOT Region 3</p> <p>JJ Wierema, Consultant Roadway Designer, Amec Foster Wheeler/Wood</p>
COPIES:	TT Members, PLT Members, Attendees

Action items are shown in bold italics

SUMMARY OF DISCUSSION:

1. Introductions & Agenda Review

- a. John Kronholm did introductions, covered the agenda, and described actions taken since the last Technical Team (TT) meeting and gave an update to the schedule and where TT #4 falls along the Environmental Assessment (EA) schedule
 - i. TT #4 will be the last meeting until mid-late June, where the Project Team will bring a list of alternatives that will be further evaluated
 - ii. There are still three Issue Task Force (ITF) meetings upcoming (*ALIVE*, *SWEEP*, and *Historic 106*) prior to the development of the alternatives



- iii. The Project Team held an Emergency Services ITF with attendees from several agencies
 - 1. John summarized the important points of that discussion at that meeting. The Project Team received feedback on their recommendations for the final alternative as well as for during construction
- iv. John K also informed the team that further discussions on utilizing US 6 as a detour options were held with FHWA
 - 1. Per Federal standards (4f regulations), the Project Team would need to prove that it is feasible and prudent to use the US 6 alignment as it is a 4f facility. This option has been eliminated as there are feasible and prudent constructability options that would not use US 6 as a detour.
- v. Greg asked how the alternatives impact the future Advanced Guideway System (AGS) alignment? He felt this is a question the Project Team should pursue as the PEIS stated future projects can not preclude an alignment of the AGS
 - 1. John replied that the Project Team will do more research on this and make sure it is included in the alternative discussion
 - 2. Tracy added that the Floyd Hill TT discussed showing a future AGS alignment as part of their alternatives in order to show that each alternative does not preclude an alignment. She added that that Project Team is not studying the location of the AGS, but making sure it is not precluded in the alternative development

2. Core Values

- a. JJ reminded the TT group of the Core Values and that all design options should be screened through these Core Values

3. Design Challenges in East Vail

- a. JJ explained some of the initial design challenges that exist for the section of West Vail Pass in East Vail including the close proximity to residences, bridges, landslides, walls, and campground and trail access
 - i. The intent of the project is to start the new auxiliary lane at the Eastbound (EB) on-ramp at the Mile Marker (MM) 180 interchange.
 - ii. JJ showed an example template of the auxiliary lane in East Vail and the potential impacts from that sample alignment
 - 1. Greg stated that the Town of Vail has talked to CDOT about the safety of the EB on-ramp at the MM 180 interchange and asked if the merge area would be looked at or taken away with the addition of the auxiliary lane
 - a. Don replied that the auxiliary lane should take the merge away, improving the safety of this on-ramp merge (the on-ramp would feed directly into the auxiliary lane, removing the need for a merge area)
 - 2. Greg asked if Pitkin creek was identified crossing underneath I-70. There is trail parking and a trailhead there that will need to be



considered by the Project Team as this was not identified in the slide. There was another creek on a secondary slide that was not identified. **The Project Team will be sure to ID all natural resources/waterways in the alternative analysis**

- iii. JJ also showed the concept of adding a 3rd lane could be done by constructing to the north so as not to push the interstate closer to the residences in East Vail
 1. This is just one concept and others could be considered, but it represents the initial thinking of Project Team
 2. JJ asked the TT for other considerations for East Vail
 - a. Greg pointed out there are a lot of springs coming out of the northern hillside that will need to be considered
- iv. JJ then spoke to the first major curves at the east end of East Vail. The EB bridge has substandard geometry, and both EB & Westbound (WB) directions have a high crash rate in that area.
 1. There is the potential to realign both of the bridges to improve the roadway geometry and build the bridges offline for constructability.
 2. There is also an option to realign the US 6 road underneath to shorten the span of the EB bridge
 3. JJ stated that this work could potentially be done within existing Right-of-Way (ROW) limits
 - a. Greg replied that the ROW of old highway 6 in this area may be the Town of Vail's and not CDOT's anymore, so there still would be ROW impacts with a realignment of this road
 - b. Greg asked where the path formally started compared to the roadway in relation to these structures and if this area will be considered as part of the 4f analysis?
 - i. John K replied that where the section of US 6 was deeded to Town of Vail could be where the start of that trail could start
 - ii. Sam stated the Forest Service considered the gate past the campground the start of the path
 - iii. Kara added that even a facility that is used for vehicular travel but is designated as a recreational path would be considered a 4f resource
 - iv. Joel stated that the Project Team will need to firmly establish these boundaries
 - v. The group discussed how exactly to determine this as it is not straightforward. **The Project Team will need to do more research to determine these limits**

4. Noise

- a. Kara stated that she had sent out the noise work plan for the TT's review ahead of the meeting. This work plan covers the noise study plan in far more detail than will be covered during this TT meeting



- i. The workplan has been approved by CDOT. It identified receptors for measurements that will be taken by the Project Team
- ii. John K asked how it was determined where those measurements would be taken
 1. Kara replied that it is within 500 feet of interstate as beyond that the measurements do not help with the noise model
- iii. The Project Team will take measurements after the snow melts later in the spring to create the noise model
 1. A preferred alternative can then be put into the model (as well as a no decision alternative) to see what noise impacts will result
- b. Kara covered how the Project Team will determine if an alternative has a noise impact
 - i. Greg clarified that it would take an increase of 10 decibels (dBs) over the threshold to trigger impacts and potential mitigation
 - ii. Kara added that if an impact is determined, noise mitigation has to be determined to be reasonable and feasible. If it is determined to be both, a vote of the benefitting receptors who have a choice to approve or deny it will take place
 - iii. John Stavney asked if anecdotal opinions of the East Vail residents can be considered (especially if there is a big desire for noise mitigation) but the data doesn't back up the need for a study
 1. Kara replied from the FHWA standards, mitigation would not be required if data doesn't support the need for it
 2. Martha added that noise policies for CDOT have changed over the past few years. This project has triggered a noise study so it will be studied
 3. Greg asked if the noise study does not meet the 10 dB increase threshold with the current traffic volumes, could the Project Team compare projected traffic to the volumes outlined in the original I-70 Environmental Impact Statement (EIS)
 - a. Joel replied that the East Vail neighborhoods came after the interstate, therefore the threshold wouldn't be retroactive
 - b. Greg added that noise will be a big issue for East Vail residents as there is a large group of residents that will want mitigation
 - c. Martha stated that her suggestion will be to further research these considerations to make sure the right policies are being followed
 - d. Karen added that it is important that the Project Team knows the plan of action and gets buy-in from the TT so it is very clear what the requirements and thresholds will be based upon
 - e. ***Kara will dig into the old EIS to see how noise was covered.***
 - f. Joel added that the Project Team will not go back and revisit the noise levels for the 1974 EIS. The Project Team will look at noise levels currently and build the model off of today's levels and the projections from today



- g. Kara added the Project Team's noise specialist will be heavily involved with the process.
- h. Greg stated the I-70 Mountain Corridor Programmatic EIS (PEIS) wanted to address "taking care of past sins" with the initial construction of the interstate and improve upon past environmental impacts in any future projects
- i. John S stated that this is going to be a very big topic as this project continues to be in the public more and the Project Team needs a solid plan on how this will be handled
- j. Martha asked if there are any projects on the I-70 corridor that have been successful using federal funds to construct noise mitigation where the thresholds are not met
 - i. The TT did not have any examples of this scenario
- k. David asked if the noise study will make projections into the future for consideration
 - i. Joel responded that those projections will be made using an established methodology.
 - ii. Kara added the Project Team has a traffic engineer that will determine those traffic projections (based on current volumes and growth factors) and feed those to the noise specialists (i.e. noise specialists will not do traffic projections)
- l. Kara added that it is good for the Project Team to know what was done as part of the original EIS and any other noise studies that have been completed with noise studies. FHWA concurred to this approach

5. Trail

- a. JJ presented some statistics on the trail usage on the Vail Pass trail from fall 2014 to fall 2015
 - i. There were about 40,000 bikes total, and 3,500 bikes/day on peak usage days in the summer
 - 1. Greg asked if the counter was on the actual trail or on US 6 while it was still the roadway
 - 2. Kara replied it was on the trail at MM 185.3 which is close to where the trail crosses under I-70 on the old 20 feet wide section
- b. JJ talked about the guidelines from the Crest of the Rockies trail segment
 - i. He reminded the group that this project is not a trail project and the scope of work is not to improve the trail, but it will be reconstructed where it is impacted by the roadway construction
- c. JJ covered some different trail design criteria parameters from AASHTO (the American Associate of State Highway & Transportation Officials)
 - i. He added it will be difficult to hit the maximum grade requirements as the maximum existing grade on the trail is over 10% currently vs a 5% maximum in the AASHTO design requirements



- d. JJ spoke to the two main sections of the trail for the purposes of this meeting. The lower section of trail is the old US 6 and is 20 feet wide, while the upper section of trail refers to the section that is 10 feet wide
- e. The lower trail will be impacted in some locations, but not very much (especially since using US 6 as a detour was eliminated due to 4f considerations). JJ showed one such area of impact and gave an example of how the Project Team could mitigate the impacts prior to roadway construction and ensure the trail is open during construction
 - i. Greg asked if any mitigation would be built back to 20 feet wide
 - ii. JJ replied that the Project Team will be looking at this, and 4f requirements state the trail would need to go back as good as or better than it was, so it probably will be 20 feet wide
 - iii. John S asked how the section of trail under the bridge will be handled during construction
 - 1. Sam added that the Two Elks trail will need to be looked at for this same consideration as it also crosses under a bridge
 - 2. John K added the Project Team's intent is to minimize closures of trail
 - 3. Matt Figgs added that as the future structure type is still unknown, the exact impacts to the trail is unknown, but Project Team will look at this in design
 - 4. Greg added that the old US 6 does get used for heavy tows or emergency access, so it needs to stay at 20 feet wide
- f. JJ then focused on the upper section of trail. It varies from attached to the interstate to on the sideslope to totally separated from the interstate. Not all of the upper trail will be impacted by roadway widening, but most of it will be
 - i. JJ presented 5 different examples of what could be done to the upper trail where it is impacted
 - 1. Place adjacent to I-70
 - a. This is not a popular design idea
 - b. Dick added that this makes it subject to washout and there will be significant sand and water treatment that will be needed with this option
 - c. Martha added that the sand and drainage considerations will be needed to be evaluated for the entire corridor
 - d. Karen stated that this is a con for long term maintenance
 - e. John S added that a pro for this option would be that it could help in the collection of traction sand, although it is not the best option for bikers. Another positive would be the smaller environmental footprint
 - i. Karen added that sediment collection could be improved with a paved section next to the interstate, but it could present an unsafe situation for bikers.
 - f. Dick added that the current segment of trail adjacent to I-70 is used by breakdown vehicles so a concrete barrier would be necessary



- c. Greg asked if the Project Team talked about the trail with the Emergency Service ITF, especially in regards to their rescue for users down the slope on the 10 foot section of the trail, and if there was a preference on width for their access
 - i. John K replied the Project Team did discuss the trail being potentially used as a detour (which has sense been eliminated from consideration), but this question was not brought up with that ITF
- d. Scott added that there is a significant amount of traffic that mistakenly uses the MM 190 off-ramp (especially recreation users), so terminating a 3rd lane at the off ramp may add to the confusion
 - i. John S added that as that section is still uphill and trucks would be in that lane, the Project Team should consider taking the 3rd lane under the underpass (similar to WB I-70 at Floyd Hill). The same issue wouldn't exist for the WB direction at the bottom of the corridor at MM 180, but it needs to be evaluated here
- e. Pete asked how close the toe of slope comes to Gore Creek
 - i. JJ wasn't sure as it was too early in design to determine this. A wall may be needed at that toe to keep the fill out of the creek
- f. Karen added that from past experience, it is hard to revegetate those steep slopes
- g. Sam added that it is more desirable the further away a user gets from the road as it leads to a more enjoyable experience
- h. Michelle added the impacts to wildlife will need to be looked at as this is not a wilderness experience for the user, so the Team shouldn't feel the need to push the trail too far to the south
- i. Greg added there could be an option to hold the south edge of the interstate and widen entirely to the north, reducing any impacts to the trail at all
- j. John S added that there are sections of the fill slopes that have never revegetated due to traction sand and there are gullies and washouts down sections of the existing slope. The goal should be to eliminate areas of revegetation where possible to prevent this in the future state
 - i. Karen replied that the Project Team wants a better drainage and traction sand collection system, so the need to revegetate wouldn't be a fatal flaw
- k. Sam asked if this option would help with traction sand removal
 - i. Karen added her goal is to get a traction sand capture system closer to the interstate so the trail would not be needed for sand removal



- ii. Greg added that a lot of sand does get thrown far away from road, so containment right at road may not capture all the sand and secondary containment may be needed
- 3. Use of Retaining Walls
 - a. There are various possibilities on the location of the trail in this option (notch trail into sideslope, retain fillslope from widening and leave trail in place, etc.)
 - b. John S added that having a wall next to the trail gives a negative biker experience (similar to Glenwood Canyon)
 - i. Martha added that this option is also a safety concern with a narrow width and handlebars next to walls
 - ii. The TT group discussed the closeness of the walls in Glenwood Canyon and how that would not be safe and feel uncomfortable on West Vail Pass (especially with the very steep grades). A wider path or a shoulder with more separation from a wall would be needed.
 - 1. The steep grades on West Vail Pass lead to high speeds downhill. That direction of travel would be closest to the potential wall. This could result in a fast rider passing others by moving into the riding space of the slow moving uphill rider
 - iii. Dick added that there is a segment between Grand Junction and Fruita where there is a wall adjacent to a new trail. There is more separation and a better user feel than Glenwood Canyon, but it is still not a great user experience
 - iv. Greg asked if the Team could install a mid-slope wall
 - 1. JJ replied it is possible and could be looked at
 - v. Scott added that snow removal next to the walls needs to be considered as this could be very difficult. Width would be needed for plowing and snow storage.
 - c. Michelle added that a wall option may be an impedence to wildlife passage
- 4. North or South of Black Gore Creek (2 options discussed together)
 - a. This option would relocate the trail closer to the bottom of the valley and close to Black Gore Creek
 - b. John S stated this is a bigger disturbance to existing green areas
 - c. Pete added that although it is a better user experience, it would have a bigger impact to the creek. If this option is selected, the Team might as well move it to the south side of the creek to make it the best user experience. He thought



- any option next to the creek would impact it negatively as users will go down to it, let dog investigate it, etc.
- d. Greg added that while the Project Team wouldn't want to impact riparian area, it could enhance it in ways with this option
 - e. Michelle added that Colorado Parks & Wildlife (CPW) would want to further evaluate the wildlife impacts from this option. It would not just be for disturbance of pristine areas, but for impacting movement of animals in area
 - f. John S added that it would be worth for the Project Team to look at if the benefits of improving the riparian habitat by sand removal and if it would be a big enough benefit to the creek that it would outweigh negative impacts by moving the trail closer to the creek
 - i. Greg stated that there are sections of sand that are significantly impacting the creek so this may be a good evaluation to perform
 - ii. He also stated that a best alignment may need to cross the creek in a couple of places as the design is done as the Project Team may not be able to just pick one side of the creek and stay on it
 - iii. John K replied that this will need to be looked at during the alternative development
 - g. Siri added that the Project Team needs to make design decisions keeping the Core Values in mind. This consideration is critical as it may not be possible to come up with just one answer for the whole corridor, but it might be a combination of options. These specific design locations should be developed with those Core Values in mind
 - h. Sam asked if the Project Team would add a Purpose & Need statement for the bike path as it could help steer design decisions for the path. He also encouraged the Project Team to see what zone of the Forest Plan this path falls under and what the Forest Plan describes as goals for this area if the relocation gets outside existing ROW lines.
 - i. John K informed the group that as this is not a trail project, a separate Purpose & Need will not be developed, but the Core Values will be used to weigh the pros and cons of the design options for sections of trail impacted by interstate widening
 - i. Joel added that the trail will not be an alternative to meet the Purpose & Need of the Environmental Assessment (EA) document, it will be a net benefit that comes out of the result of adding a 3rd lane (a mitigation as a result of work that meets the Purpose & Need)
 - i. He added that the Team doesn't want to run into fatal flaws when determining the trail realignment, and needs to make sure this meets Core Values and not



- contrast with the Forest Plan, but it is not the Purpose & Need of this project
- j. John S added that there is a lot of work that has been done independently by groups such as the Forest Service and ERWSD to improve the health of the creek, and this project's design options will be weighed against those local efforts
 - k. Scott added that the Forest Plan appears to show the trail as designated for motorized use
 - l. Greg added that as recreation is an economic driver, the environmental impacts can't be the only thing considered in the alignment of the trail, especially with the apparent Forest Service designation of the use of this area
 - m. John S asked if moving the trail would be a selling point and could open up recreation opportunities with a better user experience and then could open up more winter use of the trail
 - i. Pete added that added recreation would be a larger environmental impact
 - ii. Sam added that a changed use pattern could impact lynx in the area
 - n. Shannon stated that she feels this option could be a beautiful user experience
 - o. Michelle asked if flooding of the trail could take place in this option
 - i. JJ replied that flooding and damage to the trail and debris lodging under potential bridges could all occur
 - ii. Don added a bridge could be designed to clear flood elevations, and bridges may be cheaper than large and long walls.
 - iii. John K added that the cost of walls will be a big consideration
 - p. JJ added that placing the trail next to the creek may make it harder to chase the grade back to the existing trails tie-ins, maybe even increasing the amount of disturbance from this option

6. Recreation

- a. Kara showed a slide identifying the recreation resources in the corridor. At the past TT meeting, FHWA mentioned that recreation resources need to be looked at for impacts and mitigation as part of the NEPA process
 - i. She added that the old US 6 is considered a historic resource in addition to a recreational facility
 - 1. More research is going into this as it was a transportation facility. It is an identified historic 4f resources and the Project Team is still determining if it is a recreational 4f facility.
 - 2. Kevin asked if the trail could be relocated if it was a historic 4f facility but not a recreational 4f facility



- a. Kara replied it is easier to relocate if it is just a historical 4f facility than if it was a 4f recreational facility
 3. Sam asked if the trail is designated as a recreational facility as part of the Vail Pass recreational area, then would it automatically be a 4f recreation facility. ***Sam will send the boundaries of this designated recreational area to the Project Team for their review.***
- b. Kara discussed what 4f designations require of a project impacting those resources as shown in the slides for this section.
 - i. She also covered the definitions of feasible and prudent in regards to the relocation of a 4f facility and how those definitions helped guide the Project Team to eliminate the use of old US 6 as a detour
 - ii. There will be a historic 4f evaluation of I-70 as that is considered historic as well
- c. John K asked group if there was any other discussion wanted in regards to recreation as part of this TT meeting
 - i. Scott stated he has appreciated CDOT's and Forest Service's field meeting to discuss recreation further. He would like to see images of potential impacts of the 3rd lane at the top of the pass
 - ii. Sam added that the primary portal to recreation on Vail Pass is at the MM 190 interchange and the Forest Service, CDOT, and ERWSD share these facilities for roadway users, rest area users, and recreation users.
 1. Users of the winter recreation area has doubled in past few years to 50,000 users and the Forest Service has seen some similarities to the growth and use of the Hanging Lake exit and trailhead in Glenwood Canyon. He stated there are opportunities for this project to design parking areas and traffic flow for the recreation and rest area that will be an improvement
 2. John S added that the recreation use of Vail Pass from Redcliff using Shrine Pass road is a big economic benefit to the Town of Redcliff and should be considered. This town doesn't have many economic drivers, but the winter use of the pass is one of their bigger drivers
 - iii. Scott said users have stated that the recreational use of the pass was not thought out when the original alignment of I-70 was constructed. This could be an opportunity to improve upon mistakes of the past
 - iv. John S added that there are areas that hunters park (mostly on the east side of Vail Pass, but some on west side too) and it is a significant recreation use that should be considered
 1. Greg added that those areas that are good for parking would be good staging areas in construction and then could be improved upon for safer parking for hunters
 2. John S added that State Patrol (CSP) doesn't enforce parking restrictions for those hunters
 3. Joel added that FHWA does not approve of vehicles parking off of and accessing recreation via the interstate



- v. Michelle stated that the Forest Service should decide if they want to improve recreational areas on the pass, increasing users of this area, and if the resource can handle the increased use
 - 1. Sam replied that the Forest Service doesn't know what their standpoint on this is yet. The Forest Service doesn't want to lose parking and would like to improve the flow of traffic between recreation users and rest area users, but Sam didn't feel the Forest Service is at the point to make a determination as to how they'd like to see the recreation use of this area change
 - 2. Karen added that the Project Team's challenge for this project is that there is a stated Purpose & Need for the project, and although there are issues all around the project that the project will touch, there are constraints as to what this project can accomplish. These other improvements could be accomplished either via a parallel project or future projects
 - a. Greg added there are opportunities with strategic construction staging areas that could be cleaned up and translated into recreation opportunities
 - b. John K replied this is a good point as temporary construction impacts will need to be evaluated as part of the NEPA process
- vi. Scott stated that for the overall magnitude of cost of the project, a small investment of funding to the interchange could make vast recreation impacts
- vii. John S asked if the Forest Service could use the opportunity of this project to look for additional parking opportunities or study the parking flows or change how users access the forest
 - 1. Sam replied it could be looked at and the Forest Service will have to determine if this is a priority, especially if there is an opportunity to include improvements as part of this project. They could do user studies in the area similar to what is taking place at the Maroon Bells

7. Next Steps

- a. Greg asked if the Project Team would consider planning a field trip to the pass to look at specific issues, especially as alternatives are developed
 - i. The Project Team replied that this is a good idea and should be considered
- b. John K added that there are 3 ITFs upcoming and the Project Team is not planning to present to the TT until the Level 1 alternative screening (before alternatives are ranked).
 - i. Karen added there will be a second stage of alternative screening where those alternatives are ranked, then Project Team will go back to TT after the Level 2 screening
- c. Greg asked how involved CDOT Maintenance has been with the process and how the Project Team has been receiving their input
 - i. John K added that although they work for CDOT, they are a major stakeholder as they maintain the pass. The Project Team has invited them to



- be a part of TT and has independently reached out to talk to them and receive their input
- d. Tracy asked if alternatives will include designs on runaway truck ramps and any potential improvements on those
 - i. John K replied that there will be design options presented, but the preferred alternative will not be a final design. The Project Team has received a lot of feedback on the issues at those ramps and they will be covered as part of the alternatives and design option discussions
 - ii. Kara added that the EA will address how the existing ramps would be impacted and locations of potential ramps would be part of the EA document
 - e. Michelle asked if the Project Team has a master calendar that could be shared especially with the upcoming ITFs, and if CPW could have access to that
 - i. ***The Project Team replied that they will look at what can be done to make sure whole group has all of the upcoming meetings on their calendars***
 - f. Karen asked the group if there were any other topics the Project Team should vet with the TT prior to developing the alternatives
 - i. John S stated that tunneling should be considered as it hasn't really been discussed at the TT meetings. Not just shorter segments of tunnels, but big picture opportunities to eliminate the pass (in whole or in portion) with a tunnel. There could be big benefits to safety and maintenance costs with a long tunnel
 1. John K replied that there was a big picture study with the original Vail Pass EIS that included tunneling options. Those options were eliminated due to the wilderness boundaries in this area
 2. Kara added that the PEIS looked at areas of tunneling and that Vail Pass was not considered
 3. Greg asked if a developer or contractor proposed building a tunnel from Dowd Junction to MM 184 (or somewhere else just East of the Town of Vail) would the Project Team not preclude building that tunnel with the preferred alternative. These discussions have taken place in the past so they could be a real possibility in the future in his opinion
 - a. John K stated that the Project Team would handle this just like on any other project with private development opportunities and it would not be considered as part of the alternative development
 - ii. Sam asked if wildlife crossings (and specifically an overpass) will be discussed
 1. John stated the last study identified the best location of that overpass at MM 192.3 (outside project limits), but the ALIVE ITF will discuss wildlife permeability
 2. Michelle concurred with John's comment



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Technical Team Meeting #5
DATE HELD:	June 26, 2018
LOCATION:	Miller Ranch Community Center, 25 Mill Loft Road, Edwards, CO
ATTENDING:	<p>Joel Barnett, FHWA Martha Miller, Program Engineer, CDOT Region 3 John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 David Cesark, Environmental Manager, CDOT Region 3 Matt Klein, US Forest Service Ben Gerdes, Eagle County Greg Hall, Town of Vail Dick Cleveland, Representing Vail Town Council Tracy Sakaguchi, Colorado Motor Carriers Association Kevin Sharkey, ECO Trails Jon Stavney, NWCOG Michelle Cowardin, Colorado Parks & Wildlife Shannon Anderson, Bicycle Colorado Pete Wadden, Town of Vail Bill Andre, Colorado Parks & Wildlife Diane Johnson, Eagle River Water & Sanitation District (ERWSD) Bob Weaver, Leonard Rice Engineers (on behalf of ERWSD) Richard Duran, Colorado State Patrol Kristen Bertuglia, Town of Vail Environmental Sustainability Manager Emmalee Blender, CDOT Region 3 Traffic David Singer, CDOT Environmental Section Manager Scott Jones, Colorado Snowmobile Association Don Connors, Wood Stacy Tschuor, David Evans and Associates Leah Langerman, David Evans and Associates Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates Matt Figgs, CDOT Region 3 JJ Wierema, Consultant Roadway Designer, Wood</p>
COPIES:	Attendees, TT Members

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. John Kronholm did introductions, covered the agenda, and described actions taken since the last Technical Team (TT) meeting
 - i. 4/12/18 – I-70 Coalition meeting
 - 1. Martha stated that she gave the Coalition an update on the status of the project and the CSS process that was taking place
 - ii. 4.14.18 – ALIVE Issue Task Force (ITF) which sets the foundation for wildlife permeability mitigation
 - iii. 5/16/18 – SWEEP ITF which sets the foundation for mitigation efforts for sediment management and aquatic species



- iv. 6/2/18 – Historic 106 ITF discussed process for Section 106 per the PA
- b. Leah talked about the goals of today’s meeting which is to review and finalize Level 1 and Level 2 screening criteria, and to present and gather feedback on the draft alternatives. She pointed out that the TT would not be screening alternatives at the meeting.

2. Review Purpose & Need and Core Values

- a. Leah highlighted the Purpose & Need of this project, which is to improve safety and traffic operations on West Vail Pass due to the needs presented on the pass
 - i. She spoke to several of the specific safety and traffic operation concerns along the corridor including a high number of crashes, severe speed differentials, steep grades, and tight curves
 - ii. She pointed the group to the Success Factors flow chart which includes the Core Values that were established earlier on in the project. The Core Values are being considered in each of the 6 steps along this Context Sensitive Solutions (CSS) process.
 - 1. The project is currently in Step #4 where alternatives are being developed and eventually screened

3. Alternatives Screening Process and Criteria

- a. Kara pointed the group to the Draft Alternative Screening Process memo that was handed out to the group, as well as two Alternatives Screening and NEPA Process graphics that have been presented to the public at meetings for this project.
- b. Kara spoke to the overall process of the alternative screening
 - i. The Project Team developed Level 1 criteria based on Purpose & Need and fatal flaw
 - ii. Level 2 is a comparative analysis between alternatives that pass through Level 1 screening
 - iii. She highlighted that initially the Project Team had more criteria listed but removed some of them as they either could not distinguish between alternatives, were better covered as a design option, or would be included in the project no matter what alternative was selected
 - iv. The Project Team had to pick out a reasonable range of alternatives
 - 1. The guideline for a “reasonable range” is projects that could be implemented and are feasible. The I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS) also serves as guidance for developing the reasonable range of alternatives. While the guidance is typically for EISs, this project is conducting a thorough analysis of potential alternatives based on feedback from stakeholders.
 - v. Once the alternatives are determined and the screening criteria finalized, alternatives are screened through Level 1 to Level 2
 - 1. The next TT meeting will talk about results of the Level 1 screening
 - vi. Level 2 screening will then take place and a public meeting will occur to give the public a chance to look at the alternatives being screened before the draft preferred alternative is revealed
 - vii. Design option considerations will then be reviewed prior to the release of the draft recommended alternative as those decisions need to be made before that draft recommended alternative is released



1. The Project Team will go back to the ITF groups to talk about specific design options that pertain to them during this process
- viii. Greg asked if the original Vail Pass design could be considered reasonable when it was originally done. The cost for the current project needs to be considered, but there is a unique character to the West side of Vail Pass that was accomplished during the original construction project
 1. Dick added that to the same point in Glenwood Canyon, by constraining an overall price, that project would never have been built. It is more important to build a context sensitive solution to the corridor rather than making reasonableness and cost the ultimate decider. He would like to see the same level of care for the environment and setting that went into the Glenwood Canyon Project for this project
 2. Kara replied that Level 2 screening has a concept cost estimate criteria, but that is not the sole determining factor
 3. Joel added that there is a balance to this as there could be a solution that is so expensive that it will never get built
 4. Martha added that CDOT has a good track record of recent projects in the area that balance the different Core Values and utilize the CSS process to build the best project for the setting. At the same time, the solution cannot be so expensive as it will never be built
- ix. Bob asked how the comments that were provided by ERWSD on both the screening and Core Values will be incorporated into today's meeting
 1. Kara responded that today's meeting will focus on the screening criteria comments (from ERWSD as well as from the rest of the group) and that the Core Values will be covered at the next TT/Project Leadership Team (PLT) meeting as those should be addressed separately. The Project Team felt that none of the screening criteria would be substantially adjusted by the comments on the Core Values
 2. Bob asked to clarify if the screening would still take place based upon the draft screening criteria that was sent out prior to comments being received
 - a. Karen replied that the Project Team will not move forward with screening alternatives until after today's meeting where the criteria will be discussed
 - b. Kara pointed the TT to the screening criteria comment matrix handout
- c. Kara then walked the TT group through the Level 1 screening criteria. These items are based on Purpose & Need and are fatal flaws.
 - i. She added that some of the Core Values and Success Factors were more appropriate for the design option screening as the Level 1 & Level 2 are more high level criteria
 - ii. Based on ERWSD's comments, one Level 1 criteria for implementability could be added to the criteria that will be screened
 - iii. She highlighted that after the Project Team screens the alternatives through Level 1, the Project Team will go back to the TT to present the results before moving to Level 2



- iv. Martha clarified that the first level of screening is big picture fatal flaw screening to look at alternatives that have big enough differences between alternatives
- v. David Singer stated that he felt the updates to the Level 1 screening were good for the evolution of the project to help make the alternative the best it can be
- vi. JJ asked if alternatives will be eliminated from consideration if they receive a “No” answer to any of the Level 1 criteria
 - 1. Stacy replied that for the operations category, if one answers no, it may not be screened out, but for many of the other ones as they are fatal flaw, they would probably be screened out (as that alternative wouldn’t meet Purpose & Need)
 - 2. Kara added that there are refinements that could be made to the alternatives to pass them along, and some alternatives may get passed down as design options within a bigger alternative
- vii. Bob stated that the way ERWSD sees phased implementation may be different than how the Project Team views it. No matter what alternative is selected, it probably will be constructed in phases as it would be too expensive to build at once. But ERWSD sees this criteria as the Project Team would only address the most serious safety and operation issues first, then have a period of time to evaluate the effectiveness of how that phase of construction meets the Purpose & Need (an adaptive management approach). Refinements and modifications to the preferred alternative can then be made on the subsequent phases
 - 1. Kara stated that depending on how the funding is determined, the Project Team wants to have an alternative that can be built in phases and hits the needs that are highest in the earlier phases of construction
 - 2. Martha added that for instance there are areas that could be addressed in a first phase of construction where two curves have high crash rates and where there are high spin out rates, but CDOT needs to follow the CSS process to not pre-determine the solution
 - 3. Karen interjected that she didn’t feel the TT was on the same page regarding this criteria and wanted to makes sure the TT was on the same page leaving the meeting. The group agreed that not everyone was on the same page and to discuss this issue further.
 - 4. Martha stated that as money is phased and the project will be too, after a first phase was constructed if there was a huge increase in safety and operations on the Pass, further improvements may not be done as there would be no momentum for them, but no formal Memorandum of Understanding (MOU) would be written that would bind CDOT to stop building further phases of the preferred alternative until re-evaluations are conducted
 - 5. Stacy stated that there is a gap in the consensus on adaptive management vs phased projects. The Project Team has talked about still building the full alternative, but building them in separate phases as funding is available vs not proceeding with further phases depending on the outcome of initial phases as in an adaptive management approach.



6. Diane stated that as funding and phasing is an issue, there be a natural pause between phases to evaluate if the first improvements have worked to improve safety and operations and if any negatives have resulted (i.e. water quality has decreased). Does the full alternative need to be construction simply because all of the funding is identified?
7. Karen asked if this question needs to be answered today, or should the alternative be selected and then this discussion takes place
8. Greg added that the PEIS was a 50-year vision, so the term “adaptive management” was put in as conditions will change over those 50 years. There were checkpoints put into PEIS to perform status checks and there are collaborative efforts right now to look at that, especially with changes in technology, population, the economy, as well as CDOT’s operational improvements since the original PEIS was written. The I-70 Peak Period Shoulder Lane (PPSL) project is a good example of adaptive management
 - a. Kara added that the PPSL project was a capacity project (meant to be a temporary capacity solution) until the ultimate solution is built
 - b. David S concurred that PPSL is the example of adaptive mitigation management, has proved to be effective so far, and has given CDOT and stakeholders confidence to do a PPSL in the westbound (WB) direction and improve upon what was designed eastbound (EB). But for the Project Team, if the actual build was less than the preferred alternative, that is a more difficult question to answer at this time
 - c. Bill stated that so far, environmental and wildlife issues will be addressed as money comes up, so he is concerned that if this approach is taken that if one section is improved and wildlife is in a second phase that never gets done, those specific issues wouldn’t be improved. He highlighted that they need to be considered for each phase and not done later as they would never take place with no future funding
 - i. Bob agreed with Bill’s statement
 - d. John stated that the project will be naturally phased, and once money is determined, the most logical first phase needs to be implemented, and per the ALIVE and SWEEP MOUs, the Project Team will need to mitigate as it goes and not come back later and do it
 - e. Kara added that the preferred alternative will be committed to the CSS process and many of these questions will be ironed out as it progresses along the process
9. Stacy asked if all the construction money was found at once, would the TT want to see the whole alternative built or for just phases with reevaluations conducted (i.e. will the preferred alternative have to be implemented with adaptive management in mind, or if we got all money would we build the whole thing?)?



- a. Jon stated that the Project Team isn't talking about listing metrics and then reevaluating alternatives after a period of time
 - b. Stacy stated that so far that has been the approach the Project Team has taken, but if the TT feels this needs to be changed that should be stated now before the screening takes place
 - c. Greg stated that if the TT does its job right, it will have selected an alternative that addresses all of the concerns to the best intent and not have to go back and redo alternative selection or refinement
 - i. Martha gave an example of another project that did go through a reevaluation as conditions changed between NEPA and construction, and it became pertinent that the reevaluation should take place
 - d. Don added that while the Project Team may have not looked at the phasing in the same way as Bob, the Project Team will still need to determine how to get most bang for its buck and will naturally reevaluate subsequent phases
 - e. Stacy stated that the difference is "can" the alternative be built in phases or does the alternative "have to" be built in phases
10. Scott added that he felt phases would be determined by geography, but as the project progresses phase to phase, design options such as water quality or recreation could be readdressed and corrections could be made as money for the next phase is available
- a. Kara stated that there is an opportunity in the ITFs to focus in on this
 - b. Scott felt that from his perspective, he was nervous if the construction funding all came at once
- viii. Kara asked for other comments on the Level 1 screening criteria
1. Greg stated that there should be a criteria for water quality in Level 1 as it is just as important as wildlife
 - a. Kara replied that she didn't feel that the alternatives were developed enough to use this criteria in Level 1, it fits much better as a design option
 2. Bill added that wildlife should be broken out into multiple sections to highlight aquatic wildlife and terrestrial wildlife
 - a. Kara asked for good criteria language that could help evaluate these different issues
 - b. Bill stated that he wasn't exactly sure how to phrase it, but any criteria should maintain or enhance habitat for these multiple categories (terrestrial and aquatic habitat)
 - c. Kara stated the enhancement is hard to determine at this point and the designs have to be further vetted to determine enhancements. That evaluation would fit better in a Level 2 or design option criteria
 - d. Don added that the Level 1 criteria was only major fatal flaws



- e. Martha added that the Project Team could add another criteria that would consider those other criteria being discussed
 - f. Bill stated that there are three Level 1 criteria on operations, there should be more on enhanced environment
 - g. John said that those could be added to meet water quality, wildlife habitat, and aquatic resources
 3. Scott stated its important to add more detail to the Collaborative Decision Making Criteria that adds more meat than was shown on the Success Factors flow chart
 - a. David Singer stated that collaborative decision making Core Value is captured in the CSS charter agreement
 - b. Kara asked for ideas on how this criteria could have more detail
 - c. Scott wasn't sure, but wanted to have more meat on this criteria to make sure what the stakeholders are bringing to the table is being discussed in evaluating the alternatives
 - d. Greg suggested "is project consistent with Record of Decision (ROD) and project Core Values?"
 - e. Don added that this bullet for the ROD is for the I-70 Mountain Corridor PEIS ROD, but a second criteria of is it consistent with Core Values could be added
 - f. Dave Cesark suggested that the TT should look at the Level 2 and Design Options criteria to see the bigger picture without getting bogged down into the details of the Level 1 criteria
 - d. Kara pointed to the TT to the handout on AASHTO's alternative screening recommendation and discussed how that will play into alternative screening. The document states that the project shouldn't have criteria so detailed that it could screen out good alternatives
 - i. Dave C added that the project is only at 5% design, and as the TT members are all experts in their field, the Project Team doesn't have as much detail yet as many of the TT members would want to see. The Project Team can't answer a lot of detailed questions at this point with the current design
 - ii. Kara pointed the group to the ERWSD comments on the Level 2 screening criteria. The Project Team felt there wasn't enough details at the Level 2 screening design to include their comments in Level 2 and would be better addressed in a future SWEEP ITF after the preferred recommended alternative is known. A Level 2 criteria on impacts to waters of the US can be added (for acreage or linear foot of impact) as that can be better evaluated at Level 2
 - iii. John added that he didn't see wildlife mentioned at the Level 2 and asked if there was a comparative analysis could be added for wildlife
 1. Bill added it should be wildlife and habitat impacts and mitigation opportunities
 2. John asked if there was a balance between performance measures and mitigation measures laid out in ALIVE and SWEEP – i.e. how much do you get into the mitigation laid out in those MOUs versus including it in the screening criteria.



3. Kara stated that the Project Team will have specific details for the ALIVE and SWEEP ITFs as the alternatives progress
4. John felt Level 2 was light on environmental criteria and asked if a criterion could be an opportunity to improve habitat
- iv. Greg asked why safety & operations are not called out as Core Values as those are Core Values too
 1. Kara replied those should be listed as Purpose & Need and then Additional Core Values should be the heading for the remaining criteria
 2. Pete asked how the Project Team determined which one of the Core Values were added to the Level 2 criteria
 3. Kara responded that it was based on what could be compared to one another as well as ones that were heard a lot from the public
- v. Greg added that there should be one on character and aesthetics as some alternatives will be more impactful than others
- vi. Kristen asked if habitat and wildlife will be added back in
 1. Kara replied that criteria for wildlife, habitat, and aesthetics can be added
 2. JJ asked how the Project Team could compare the aesthetic question
 - a. Kara replied that it could be a qualitative analysis rather than a quantitative
 - b. The group discussed how this criteria speaks to the view shed of corridor and not the Crest of the Rockies aesthetic guidelines (as those guidelines aren't even followed today and may not be able to be followed as the design progresses). The design wouldn't be far enough along at Level 2 to determine all of the aesthetics and if it follows CSS guidelines
 3. Bill asked if some of the additional criteria being discussed today should be added for the benefit of the public process. During the screening, the Project Team can state that not enough information is available to answer the question, so at least the public knows the Project Team is considering it
 4. Jon stated the Success Factors lays many of those things out and could be presented to the public
 5. Stacy added that the Project Team could come up with good criteria that would have some information to present to the public. It may not be very detailed at this point, but could at least have more information than "unknown"
 6. Kara stated that the Project Team could work on not just presenting the screening criteria to the public, but showing the Success Factors and explaining that not being in the screening criteria doesn't mean the Project Team won't address that issue
 - a. Leah added this could help so people don't look at a list and forget that other important issues are captured in the Success Factors
 - b. Kevin added that adhering to the Success Factors flow chart could be added to the screening memo
 - c. Joel pointed out it was already in there



- d. Kara added it could be further highlighted and discussed in the memo
- e. Kara then presented the design option considerations criteria to the group. She stated that the project will be at a 10-15% design level at the end of the Environmental Assessment (EA) process, so many of the specific issues need to be captured at the ITFs as they will be dealt with after the EA in the design and permitting process
 - i. Diane stated for consistency's sake, the enhanced environment criteria should be expanded in the same way as the Level 1 and Level 2 screening
 - ii. The Project Team did receive some comments on this from both ERWSD and Dick which are captured in the comment matrix
 - iii. Greg suggested that the aesthetic criteria should hone more in on the specific aesthetics of the West Vail Pass corridor rather than the broader I-70 Mountain Corridor Aesthetic Guidance
 - iv. Leah stated the Project Team will add all of the comments from today's meeting into the response matrix and sent out to the TT for review

4. Draft Alternatives Review

- a. Leah pointed the TT group to the draft alternative handout which describes the 6 draft alternatives that the Project Team developed
- b. JJ presented the titles of the 6 different alternatives, then dove into more detail for each of alternative
 - i. **No Action**
 - 1. The baseline alternative which is a part of all NEPA processes to compare the action alternatives to
 - ii. **Curve Modifications & ITS Improvements**
 - 1. JJ presented this alternative to the group, which includes correcting substandard curves with high crash rates and installing ITS equipment along the corridor. The Project Team felt that the substandard curves with bad geometry and high crashes that have been presented to the TT in the past need to be addressed. The cross section of the road would match the existing section. The realigned curves would be designed to meet current standards and the ITS improvements along corridor would be installed to address safety and traffic operation issues
 - a. Commander Duran asked what ITS improvements meant
 - i. JJ replied that ITS stands for Intelligent Transportation System and it includes items such as Variable Speed Limit signs, overhead VMS boards, and more closure points using technology
 - b. Jon stated that this may address safety issues but not operations as the roadway will be the same width as it is today
 - c. JJ pointed out that this option is included in the other alternatives as each one of them would improve geometry and install ITS equipment
 - iii. **Auxiliary Lanes with Reduced Shoulders**
 - 1. JJ presented this alternative which includes 3 lanes in each direction of I-70 and narrow shoulders. The reason the Project Team is



considering it as its own alternative is that it could allow the Project Team to widen 5 of the 8 sets of sister bridges (the other 3 sets would need to be replaced as they are on curves that would be realigned). This alternative would only add 6' to the existing cross section

iv. **Auxiliary Lanes width Full Shoulders**

1. JJ presented this alternative, which includes 3 lanes in each direction with a 6' wide inside shoulder and a 10' wide outside shoulder. This would add 14' to the existing cross section. All of the existing bridges would likely be replaced in this option

v. **Operational Lanes with Reduced Shoulders**

1. JJ presented this alternative, which would add the 3rd lane in each direction and one of the lanes would be considered operational (not tolled). This alternative would match the cross section of alternative #3 (Auxiliary Lanes with Reduced Shoulders). The operational lane would only be open when needed and be used as a shoulder at all other times.
 - a. Shannon asked what the crash rate on the EB PPSL was as that is a very narrow section as a comparison
 - i. Stacy replied that the requested data is unknown at this time, but this alternative would operate different than PPSL as the 3rd lane plus shoulder would be 16' wide total (12' lane with 4' shoulder) as compared to a narrower cross-section on PPSL
 - b. Greg asked if the operational lane is for slow moving vehicles at non peak times or fast moving at peak times
 - i. Stacy stated that is still yet to be determined. It would be not for capacity issues though, but open when it is needed for safety and operations
 - c. Comm. Duran asked where the lane would be located
 - i. Stacy stated that it would be in the far right lane and not on the left like EB PPSL
 - ii. Karen added that this alternative was developed as the Project Team looked at the narrow shoulder alternative and saw that it was a substandard cross section. This alternative was birthed out of that narrow width in order to increase the shoulder width at times the operational lane is not needed.
 - d. Dick asked if this alternative would save the bridges like the narrow alternative
 - i. The Project Team replied it would be same cross section as narrow shoulder alternative
 - ii. John added that there is still no guarantee that all of the bridges could be saved even with the narrow template due to existing conditions of bridges
 - e. Jon added that the overhead ITS system with overhead arrows would be a good thing to have no matter what alternative was selected as preferred
 - i. Stacy added it could be added to any alternative



1. John replied that Region 3 Staff Traffic has been involved on the project so far and that the Project Team can continue to run these alternatives past them
- c. Pete asked if there was a way to combine alternatives 3 & 4 (Full verses Reduced Shoulders) and consider them for different sections of the road
 - i. Kara replied there is an opportunity to carry some alternatives through as options (not as the recommended alternative)
 - ii. Stacy elaborated that after Level 1 there is a chance to refine alternatives and change how they are presented (i.e. full shoulders for the corridor except at bridges)
- d. Jon asked where the water impacts for each option come into this process as the alternatives look at the cross section and not necessarily outside of it
 - i. John replied that he didn't feel any of the alternatives precluded the ability to meet the ALIVE or SWEEP MOUs
 - ii. Kara added that during the design refinement process, there is more opportunity to look further at these issues to help enhance the environment
 - iii. Bob added that avoidance, not mitigation, should be the first consideration. Minimization of impacts should be the next effort, then mitigation should be the final attempt taken. For water quality, he felt there is enough information on where best management practices could be implemented for the current roadway template, and for the proposed alternatives, there may not be room to put in water quality improvements and the forest may be impacted. Design and alignment tweaks may be needed early on (even during screening) to have an alternative avoid and minimize adverse impacts
 1. John responded that this level of design is not done at the Level 1 & Level 2 screening stage. There will be opportunities once the preferred recommended alternative is selected to make those tweaks and ensure those water quality considerations are incorporated into the project rather than designed as an afterthought
 2. Karen added that the alternative selection process is very high level for 10 miles, and the design refinement process is the opportunity to hone in more specifically on these design options



the Project Team can go back and add more information to that screening

- g. Matt Klein asked how many alternatives would be standing at the end of the Level 2 screening
 - i. Kara replied the No Action and the preferred recommended alternative will make it through Level 2 screening
 - ii. Matt K clarified that the screening isn't the full detailed analysis of the alternative, but that detailed analysis will only be applied to the no action and preferred alternative
 - iii. John added that Matt had a good point on this as there will be a lot of design refinements that take place after the preferred alternative is identified.

5. Next Steps and Wrap Up

- a. Kara presented the next steps for the project
 - i. The Project Team will meet and finalize the Level 1 draft screening criteria, then send to the group in advance of the TT #6 meeting scheduled for July 18. Once the criteria are final, the Project Team will screen the Level 1 alternatives, also to be presented at the next TT meeting.



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Technical Team Meeting #6
DATE HELD:	August 27, 2018
LOCATION:	Miller Ranch Community Center, 25 Mill Loft Road, Edwards, CO
ATTENDING:	<p>Joel Barnett, FHWA Martha Miller, Program Engineer, CDOT Region 3 John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 David Cesark, Environmental Manager, CDOT Region 3 Patrick Chavez, Program Manager, CDOT HQ Randy McIntosh, CDOT Maintenance Drew Stewart, Design Team, CDOT Region 3 Matt Klein, US Forest Service Ben Gerdes, Eagle County Dick Cleveland, Representing Vail Town Council Tracy Sakaguchi, Colorado Motor Carriers Association Alison Michael, FWS Shannon Anderson, Bicycle Colorado Pete Wadden, Town of Vail Chad Salli, TOV Engineering Taylor Elm, Colorado Parks & Wildlife Michelle Cowardin, Colorado Parks & Wildlife Siri Roman, Eagle River Water & Sanitation District (ERWSD) Larissa Read, SE Group on behalf of ERWSD Richard Duran, Colorado State Patrol Emmalee Blender, CDOT Region 3 Traffic Ken Harbert, CDOT Region 3 Traffic David Singer, CDOT Environmental Section Manager Scott Jones, Colorado Snowmobile Association Don Connors, Wood Stacy Tschuor, David Evans & Associates Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates</p>
COPIES:	Attendees

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. Kara Swanson did introductions, covered the agenda, and described actions taken since the last Technical Team (TT) meeting
- b. Meeting Purpose and Goals
 - i. Ensure that the team has an understanding of the process
 - ii. Recap of Process
 1. The charter has been signed and adhered to.
 2. The Purpose and Need will be refined through the process
 3. The team reviews the proposed alternatives
 4. The team has been gathering information for environmental, water quality and public input issues.



5. Update: John and Leah gathered trail user information by handing out surveys in the field
6. There will be another public meeting for input on design options.
7. There will be future opportunities during design and construction for additional CSS processes and input.

2. Draft Alternatives Review

- a. Kara introduced alternatives
- b. There were six alternatives presented at the last Technical Team meeting. Kara provided an update on what had changed since then.
 - i. **No Action**
 - ii. **Curve Modifications & ITS Improvements**
 1. This will include current 2 lane configuration
 - iii. **Auxiliary Lanes with Reduced Shoulders**
 1. This alternative was eliminated but full shoulder alternative was redefined to include reduced shoulders when needed
 2. Karen added that there would be criteria that would implement reduced shoulders and they could not be added to the project without further input from the team.
 - iv. **Auxiliary Lanes with Full Shoulders**
 1. Includes 3 full width lanes with standard shoulders.
 - v. **Operational Lanes with Reduced Shoulders**
 1. Includes 2 full lanes with a 16' shoulder that could be utilized as an additional lane with a 4' shoulder when needed for operations.
 - vi. **Westbound I-70 Realignment**
 1. Complete westbound realignment of I-70

3. Level 1 Screening Results

- a. Stacy described the Level 1 screening results.
 - i. **Purpose and Need Criteria (Level 1)**
 1. The team discovered fatal flaws in the alternatives by answering the following questions:
 2. Safety – Does the alternative reduce crashes?
 3. Operations
 - a. Does alternative improve flow?
 - b. Does the alternative reduce full closures?
 - c. Does alternative help emergency response?
 4. Enhanced Environment
 - a. Does the alternative maintain (or improve) existing wildlife connectivity
 - b. Does the alternative include a trail relocation?
 5. Collaborative Decision Making
 - a. Is the alternative consistent with the ROD
 - b. Siri asked if the alternative needs to match the ROD recommendations.
 - i. Kara said the team is trying to continue the process started with the ROD



- ii. Karen did not want to just follow guidance from the ROD, but confirm that the ROD follows the decision from the CSS process.
 - iii. Kara said that if any alternative had failed the screening in only one area that would be a trigger to investigate the problem but not eliminate the alternative.
 - 6. Larissa asked if the team could elaborate on the enhanced environment connectivity criteria and why the criteria say “maintain” when the Core Value includes “enhance”.
 - a. Kara stated that maintaining existing wildlife connectivity through the corridor is the bare minimum the project wants to meet - the team is committed also providing enhancements as the preferred alternative is refined.
 - ii. **Results**
 - 1. Stacy reviewed results from the screening (see screening matrix).
 - 2. **No Action (Retained as baseline)**
 - a. Dick asked about the trail relocation if it was necessary for it to be moved. Is it an eliminating criteria?
 - 3. **Curve Modifications & ITS Improvements (Eliminated)**
 - a. Does not meet purpose and need.
 - b. Inconsistent with the ROD.
 - 4. **Auxiliary Lanes with Full Shoulders (Retained)**
 - a. Siri said that public is concerned that 3 lanes would increase driver’s speed.
 - i. Stacy stated that crashes along corridor are mainly related to lack of recovery area, particularly during weather events. Those that are not are related to speed differential with slow-moving vehicles due to the curves and the grades. 3 lanes will allow for more room to recover and to maneuver around slower vehicles, enhancing safety.
 - b. Michelle said wildlife connectivity is not being maintained between MM185-190.
 - i. Kara confirmed that the majority of the current connectivity is maintained through enhancing the existing bridge locations.
 - ii. Karen emphasized that CDOT and FHWA is committed to maintaining or enhancing natural environment in this area.
 - iii. Kara discussed that upper pass connectivity could be discussed as a design option for the level 2 process.
 - iv. Michelle would like to see this added as a success factor.
 - v. Dick said that connectivity should be a “no” for this alternative since it isn’t maintained for the upper section.
 - vi. David Singer asked if this criterion is being addressed sufficiently for a Level 1 screening and needs to be



looked at as a design option further along in the process.

- vii. Kara suggested adding a note that only existing connection paths were considered.
- viii. Karen noted that we haven't advanced design to that point just yet and don't have those answers at this point. She suggested following the original criteria that the existing connectivity will be maintained.
- ix. Dick said with 6 lanes to cross (as opposed to the existing 4) wildlife connectivity would be impacted
- x. Stacy said that the criteria could be changed with a note that the upper pass will require additional mitigation to satisfy the requirement.
- xi. Karen agreed.
- xii. Dick noted that if crash data is analyzed, it could be non-issue due to low number of interactions
- xiii. John confirmed that this is one of the lowest areas in the state for wildlife interactions.

5. Operational Lanes with Curve Modifications (Eliminated)

- a. Does not meet purpose and need
- b. Inconsistent with the ROD
- c. Discussion
 - i. Scott asked does the recreation core value include the rest area or does it only concern the path?
 - ii. Stacy said that the criterion only included the bike path and the rest area is not included.
 - iii. Dick asked about how the project would end at the top of the pass (how the lanes would shift from 3 to 2)?
 - iv. Stacy confirmed that the project would drop the extra lane at the rest area exit ramp.

6. Westbound I-70 Realignment (Eliminated)

- a. Does not meet purpose and need
 - i. Does not allow for emergency response
 - ii. Does not maintain wildlife connectivity.
- b. Inconsistent with the ROD
- c. Emmalee asked about the automated closure concept. She is concerned that the technology is not available for a full automated closure.
- d. Stacy said the project is planning for when the technology is available. Currently this would be the lane open/closed signage similar to those installed on US 36.

7. More comments

- a. Dick said that Black Gore Creek is specifically mentioned in the success factors and we should add Gore Creek as well.

4. Next Steps for Alternatives

- a. Level 2 Screening



- i. There will not be a Level 2 screening since a preferred alternative has already been identified.
 - ii. The design option process will continue to evaluate constraints and potential mitigation.
- b. Design Options Considerations
 - i. Kara said the core values will have impacts on the options considered and that the Level 2 criteria would still be used in the design option considerations.
 - ii. Next TT meeting (TT#7) will consider options.
- c. Discussion
 - i. Michelle noted that ALIVE has one meeting scheduled and wondered if that would be enough to reach goals of the ALIVE group.
 - ii. John said ideally we would cover the pertinent issues with one meeting.
 - iii. Karen asked what the goals are. Ideally, we want to end with solutions, or identify areas that need to be considered. We have discussed this as a team and what level of design will we be at when these meetings take place.
 - iv. Martha added that other wildlife work is going on in the area and this is driving how the process will go. However, we are trying to balance input and design.
 - v. Karen noted this is the time for the CSS and EA processes and design will come after. We will have ongoing discussion about these issues in design.
 - vi. Michelle noted that due to retirements, she and Taylor will be taking on a lot of the work for CPW.

5. Core Values Review

- a. Kara introduced the topic by noting feedback from stakeholders that the Core Values could use additions and changes regarding water quality and sustainability.
 - i. The project team suggested not editing the Core Values, but instead adding additional critical issues and success factors regarding water quality/resources.
 - ii. PLT agreed with suggested edits.
 - iii. Siri suggested a more active statement on the water quality process rather than “identify opportunities for partnerships”.
 - iv. Dick reiterated the addition of Gore Creek.
 - v. Martha mentioned the minimized night construction noise impacts, and questioned it as a success factor.
 - 1. Kara answered this is a topic that is still not tightly defined at this point in the process.
 - 2. Martha was concerned that this would conflict with the R3 lane closure strategy (LCS).
 - 3. Karen agreed that the LCS would be an issue with night work.
 - vi. Larissa had concerns that the water quality construction might conflict with wildlife connectivity.
 - 1. John answered that there are MOUs in place that dictate, as you construct, you mitigate.
 - 2. Martha discussed that the use of US 6 as a detour would impact connectivity for up to 2 years, but CPW had noted they would be OK with that at the previous ALIVE meeting.



- vii. Emmalee asked if the corridor maintenance was being considered as a success factor.
 - 1. Karen noted that Randy is being involved through the process.

6. Schedule and Wrap Up



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Technical Team Meeting #7
DATE HELD:	October 23, 2018
LOCATION:	Avon Public Library, 200 Benchmark Road, Avon, CO 81620
ATTENDING:	<p>Joel Barnett, FHWA John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 David Caesark, Environmental Manager, CDOT Region 3 Stephanie Gibson, FHWA Tracy Sakaguchi, Colorado Motor Carriers Association Scott Jones, Colorado Snowmobile Association Michelle Cowardin, Colorado Parks & Wildlife Taylor Elm, Colorado Parks & Wildlife Tom Gosiorowski, Summit County Dick Cleveland, Vail Community Mark Bunnell, CDOT Region 3 Traffic Emmalee Blender, CDOT Region 3 Traffic Martha Miller, Program Engineer, CDOT Region 3 Kevin Sharkey, ECO Trails Allison Michael, CDOT Environmental Greg Hall, Town of Vail Tom Kassmel, Town of Vail Larissa Read, Consultant to ERWSD Adam Bianchi, USFS Len Wright, ERWSD Pete Wadden, Town of Vail Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates JJ Wierema, Wood Tyler Bowman, Wood Matt Figgs, CDOT Region 3</p>
COPIES:	Attendees

Action items are shown in ***Bold Italics***

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. The group did introductions and Kara presented an outline of the agenda
- b. Kara also walked through the purpose of this meeting which was to update to the Technical Team (TT) as to the progress to date and to gather feedback on the Proposed Action alignment and design option considerations.

2. Work Completed since TT #6 and Next Steps

- a. Kara went over the progress that has occurred since TT #6
 - i. The Project Team held a design workshop to start laying out different design options after the Proposed Action was identified.



- ii. Held a meeting with the US Forest Service (USFS) to provide an update on progress to date and receive feedback
 - iii. The Project Team is in progress on wildlife data compilation and recommendations
 - iv. The Project Team is in progress on initial water quality recommendations to bring to the SWEEP Issue Task Force (ITF)
 - v. The Project Team is in progress on preliminary wetland delineation. The field work is complete, and the Team will have mapped boundaries for the upcoming public meeting
- b. Kara then talked about where the project is headed after today's meeting. This meeting will be high level, but the details will be dived into with several upcoming ITF meetings.
- i. Kara told the TT group that if they have specialists that would like to attend one of the listed ITF meetings to let the Project Team know so they can be added to the invitation list
 - 1. The dates and subjects of the ITFs were then presented to the group
 - ii. After the ITF groups, the final alignment refinements will be made taking the discussions of those meetings into consideration
 - iii. Greg asked what the Project Team is doing with noise at this point
 - 1. Kara responded that the existing measurements have been taken and the noise model is being worked on pending the final alignment
 - 2. Tom G asked what the extents of the noise study were
 - a. Kara responded that it was sensitive receptors including homes, schools, campgrounds, trails, etc. plus 500 feet

3. Purpose and Need

- a. Kara informed the group that the initial alignment was originally developed with the Purpose & Need in mind. From there, the Project Team is doing an iterative process to look at the design options, all while going back to the Purpose & Need for the project
 - i. Kara presented the Purpose & Need as a reminder to the group

4. Design Option Discussion

- a. Kara spoke to the plan for today's meeting which was to provide a status to the Project Team's progress, as well as provide guidance on the appropriate timing of feedback based on the development of the design options
 - i. Some design options are not vetted yet and will be compiled and presented at later ITF meetings
 - ii. The Project Team has also compiled the comments from past Project Leadership Team (PLT), TT, & ITF meetings and are tracking those



comments as design options are being vetted. The Project Team will present some common comments today, but does have a larger spreadsheet of all comments to date

b. Overall Alignment – East Vail, Creek, Geologic Considerations

- i. Tyler presented the comments that the Project Team has received to date on the overall alignment of I-70
- ii. He then presented some design considerations that the Project Team applied to the initial alignment that has been given to the TT including using a design speed of 65 MPH, improving safety and operations, holding the north or south edge of pavement where feasible, improving geometry and sight distance where possible, and seven new bridges built completely off-line for constructability and safety reasons.
 1. Greg asked if the Project Team holds an edge of pavement, would the team still look at water quality and other issues even though that slope wouldn't be constructed on
 - a. The Project Team responded that it would be looked at. John added that the water quality specifically would not be designed as an afterthought but designed for the whole corridor with this project
 - i. He added that there will be competing interests and tradeoffs that will need to be made on many of the design options
 2. Tyler added that there is not much opportunity to lower the grade of the roadway
 - a. Stephanie asked what steepest grade is
 - i. Tyler responded that it is 7.1% but team is trying to get that below 7%
 3. Larissa asked what would happen to the nine bridges that are not getting realigned
 - a. Karen responded that they will be rebuilt in place, but a detour bridge can be provided adjacent to it during construction
- iii. Kara then presented the comments heard from the TT and public meetings regarding East Vail
- iv. Tyler then walked the TT through the alignment starting at the Mile Marker (MM) 180 exit and the start and termination of the lanes in that location
 1. Greg asked what the lines on the plan sheets meant



- a. Tyler replied that some are toes of slope, the pink line is the Right-of-Way (ROW) boundary, salmon is the existing edge of pavement, and green is new walls
2. In East Vail, the south edge of pavement is being held initially to keep the interstate from getting any closer to the residents. Some walls are needed to ensure this takes place
 - a. Greg mentioned that the area next to the existing noise wall has a wider shoulder for snow storage that should remain
 - b. He also added that there is a historic water wheel on Pitkin Creek that needs to be saved
3. Tyler walked the team through the pair of bridges at MM 181. Only one bridge is proposed to be realigned as the residents are close to the south bridge. The Project Team could do a median crossover and use the old westbound (WB) bridge for eastbound (EB) traffic while the EB bridge is built. The project will need to keep the bridge to span the landslide that is in this area. There will also be significant walls for this location
 - a. Tom G asked about the existing box culvert for the access road to Columbine Drive that crosses west of the MM 181 bridges and what the condition of the box is
 - i. Tyler said the Project Team has a note of it, but hasn't investigated its condition yet as part of the project.
 - ii. John added that the Project Team will need to look at this further, but the challenges of reconstructing it would involve opening up I-70
 - iii. Tom G added that it may be a good time to fix it with this project as doing it in the future with 6 lanes of traffic will be much harder
 - b. Greg mentioned that there are some sections of ROW that may need to be double checked as they may not be the most up to date
 - i. ***The Project Team will look at the ROW files to ensure it has the most up to date boundaries***
4. Tyler explained that the Project Team is trying to keep away from impacting the existing large tiered walls with the alignment
 - a. Stephanie asked what will happen to the walls that are avoided
 - b. Tyler replied that the Project Team wants to keep them, but they need to be investigated from a structural capacity standpoint first



There is also an avalanche chute at MM 183.3, but it has to be a very significant snow year for that to slide

- ii. Karen remarked that is a good question the Project Team will need to look at
- iii. Greg asked if a rock/avalanche shed will be looked at to keep roadway closer to cliff face at the Narrows and reduce the impacts towards the creek
 - 1. Martha added that is another good consideration the Project Team can look at further

c. Chain Stations, Truck Ramps, Truck Parking

- i. Tyler presented the general comments the Project Team has received to date regarding chain stations
 - 1. The group discussed the two stations within the project limits and how CDOT uses the MM 184 location to enact chain law higher on the pass and not at MM 182, even though the chain station at MM 182 is much better than the one at MM 184. This needs to be looked at in consideration to how the pass is operated if the station at MM 184 needs to be used more
 - a. Tracy added the grades at MM 184 will need to be flattened as it is too steep currently. It would be best to make it bigger and add lighting too
 - i. Tyler replied that the Project Team will consider that moving forward
 - b. John added that CDOT Maintenance feels the stations are important for the operation of the pass and would like to keep them and add more signage
 - c. Tracy replied that signage needs to be evaluated as it can cause trucks to immediately pull over and chain on the shoulder if incorrectly worded/located
 - 2. Michelle added that the existing chain stations are not on the 11"x17" handouts and would like to see them
- ii. Tyler spoke to the general comments heard on the truck ramps to date. Safety is the #1 concern on both existing truck ramps. He then showed the location of the two existing truck ramps. Both currently curve and need to be straightened out.
 - 1. Tyler highlighted one ramp specifically and the challenges in designing it to make it straighter but not be too impactful to the surrounding environment. New ramps would still need some sort of barrier at the end (i.e. barrels) as there is not enough room for a full



length ramp. There is a maintenance cost for barriers as they need to be replaced when ramp is used

2. Tracy added that wreckers need to be able to access the ramps too
 3. Karen added that Project Team took a holistic look at the pass to see if there were better locations for these ramps and did not really see any spots that would be better than the two existing locations.
 4. Emmalee added that she can provide more data on the ramps and different studies on them to date
 5. Tracy asked if the data she has access to includes the data from Colorado State Patrol (CSP) as it is sometimes different than CDOT's
 - a. Greg added that Vail Fire might have good data too
 6. Karen said that the truck ramps will also be further discussed at the Emergency Services ITF
- iii. Tyler presented on the issue of truck parking and the comments the Project Team has received to date on parking along the West Vail Pass corridor
1. He pointed to one area the Project Team has looked at in detail at MM 189 EB where there is an existing parking area with bathrooms. The Project Team is looking at widening in this location to provide more parking, but will need to look further at other areas and whether its designated as overnight parking or incident parking
 2. Tracy asked if additional lighting will be there
 - a. Tyler responded that the Project Team will look at this
 - b. Michelle added that lighting will have to be brought to the ALIVE ITF for considerations
 3. Adam asked if the parking would be widened to the south
 - a. Tyler replied that the toe of slope would not move further south

d. Walls

- i. Tyler talked a bit more about the walls on the pass. He reiterated what Karen spoke to earlier about the three categories the Project Team is putting existing walls in (impact, no impact, potential impact). Where possible, the Team is trying to tie the new roadway into existing tiered walls to save them. The current design requires over 20 new walls
 1. Greg asked about how headlight glare from opposing directions of traffic will be handled
 - a. Tyler replied that there is only two miles where this would be a consideration as both directions of the interstate are at the same grade



- g. John added that the Project Team has an upcoming meeting with all the existing utility providers on West Vail Pass. The project will also need to improve the electric infrastructure, so this is the right time to have this conversation about expanded cell coverage

f. Corridor Character and Aesthetics

- i. Kara spoke to how the Project Team has received many comments about how important the existing character and view sheds of the corridor are and how they need to be considered when designing the alternative. There is also the Crest of the Rockies Aesthetic guidance to consider
 - 1. The Project Team is doing a visual impact assessment as part of the NEPA process, but will also incorporate the Crest of the Rockies Aesthetic guidance. The Team is also building a visual impact 3D model to better look at the visual effects. There will be both hand and digital renderings as part of the NEPA process moving forward
 - 2. The Project Team will also hold meeting with the USFS to talk more about this topic
 - 3. Larissa asked if some of this model would be available to show at the public meeting in December to give the public and idea of what the Project Team is considering
 - a. Kara replied that the Team can consider this, although there still needs to be more work with stakeholders and FHWA
 - b. Karen added that if it is not shown at public meeting #2, the Team will definitely show it at public meeting #3

g. Enhanced Environment

i. Water Quality

- 1. Kara spoke to the comments received on water quality to date. She mentioned the Project Team has a lot more comments than what was received and can hand those out at the SWEEP ITF
- 2. She explained the process for SWEEP recommendations the Project Team is taking which is to review all the comments and data, review the implementation matrix, draft a memo with the proposed recommendations that will be sent out ahead of the SWEEP ITF, then discuss those recommendations at the ITF meeting.
 - a. Those specific recommendations will be compared to the original SWEEP MOU and will be sent out well ahead of the SWEEP ITF to allow members to review ahead of the meeting
 - b. Larissa asked if the intent of the project was to lessen the amount of traction sand and mag-chloride used on the pass even through the amount of pavement is increasing by 50%



- more time monitoring parking than the backcountry in this area. If the future 3rd lane terminates on the ramp, there could be more traffic impacts to this parking area
- c. Martha replied that CDOT can pull the traffic data and feels this is more like the parking issue at Hanging Lake. The USFS took the lead on determining a solution on this area
 - d. Scott stated that the use of this area is capped and cannot go beyond the current approved levels at Vail Pass. He is not talking about increasing capacity, but the current drawings are on top of the parking area and he feels it will be impacted
 - e. Dick tried to clarify this question on if the new proposed ramp alignment will make the congestion issue worse
 - i. Scott replied yes, this is his concern
 - f. Adam added that the parking area is part of the bike path, but in the winter time it is effectively a parking lot as the path is closed at the lakes. There is a confluence of recreational users (both motorized and non-motorized), rest area users, and truckers. If the USFS doesn't operate the parking, people will park on the ramps. His biggest concern is that if the third lane is ended on the ramp, it will create a safety hazard
 - g. Tom G added that dropping the lane on an upgrade is a traffic weaving issue the Project Team will need to look at
 - h. Martha responded that this is something the Project Team can look at and if the merge can take place past the bridge.
 - i. Mark concurred with this approach
 - i. Karen added the Project Team isn't sure what else to do at the intersection of the ramps and access roads.
 - i. Dave C added it seems like its its own separate Environmental Assessment (EA) to evaluated this. The Team can look at moving where the lane drop is located with this project though
 - j. Michelle added if the drop is just past the bridge, the weaving of vehicles with semis and trucks with trailers will need to be evaluated
 - k. Kara stated that the Project Team will look at the safety and operational considerations of where the drop lane is
 - l. Emmalee added if an automatic closure system is installed at MM 190 for WB traffic, those gates would direct traffic over



- the MM 190 overpass bridge to EB on-ramp that would get more traffic.
- m. Adam added that because of that configuration, ambulances sometimes can't access the exit and the USFS has to call in flight for life quite often. He understands this issue is outside of the scope of this project, but feels that existing area needs to be reconfigured
 - n. Karen responded that she feels it's important to continue this conversation outside of the project as it needs to be further discussed, but not part of the scope on this project
 - o. Greg added that if you move the trail away from the interstate, there could be more demand to the trail in the winter with skiers and fat tire bikes
 - p. Kara pointed the TT to the Trail/Recreation ITF that will go into more detail on this topic
- iii. Tyler walked through the three initial alignments for the trail that the Project Team has developed. These are only for areas where the trail is being impacted (from ~MM 185.5 to 187.5)
- 1. Michelle asked if there are tiered walls proposed to get the trail next to I-70
 - a. Tyler replied yes, at Narrows there would have to be tiered walls
 - 2. Karen added that the Project Team will spend a whole meeting at the Trail ITF to discuss the trail in more detail. The trail will also be presented on at the SWEEP and ALIVE ITFs
 - 3. Greg asked what the horizontal separation between I-70 and bike path next to interstate is proposed to be
 - a. Tyler replied there is a minimum of 20' of horizontal separation
 - 4. Michelle asked if there was a trail design expert that is part of the Project Team as there are a lot of nuances to consider
 - a. Kara responded that the Team has engineers, but also has a bike & trail planner as part of Team. She added the alignments shown are very conceptual at this point, but the Team will take a holistic approach to designing it
 - b. Michelle asked how many creek crossings are in each alignment
 - i. Tyler referred the group to the alignment. The blue has zero crossings, the pink has four, and the orange has two



5. Greg stated that wildlife wants to access a water source and a trail on the other side of the creek will be a barrier to them accessing the creek
 - a. Michelle seconded this concern and stated that CPW has stated their concerns with the location of the trail south of Black Gore Creek
 - b. Kara responded that this is a good example of competing interests on this project. The Team will be hearing all of these issues at different ITFs and will have to take a holistic approach to designing and not just from a wildlife or bike user standpoint
6. Greg asked if the bike path be a source of sediment collection as a last resort to help trap sand
7. Tom G then asked if the 20' horizontal buffer be widened?
 - a. Tyler responded that the USFS has requested the trail to be at least 100 feet from the creek, so the alignment can't go more than 20' from the interstate or it will be encroaching on that requested distance
 - b. Michelle added it would be good to evaluate if going closer to the creek but staying on north side of creek may be better
8. Greg asked where would wildlife fence be in regards to the trail.
 - a. The Project Team responded that it will need to look further at this
9. Karen stated that the Project Team wants to get the TT in support of the process as there are so many factors to consider. She asked for input as to whether the trail should be presented at all three ITFs as previously discussed or if it should be presented at only the Trail/Recreation ITF
10. Tom G asked if there was a list of design criteria for the path. Not just AASHTO criteria, but for other impacts like how far from stream, how many times to cross creek, etc. He recommended those factors are presented to the ITFs and let to let them prioritize the criteria to weigh the best alignment as there are so many factors. The Team may even need to segment the criteria by location
 - a. Kara replied that this is a great way to look at it. The Project Team can format the presentation of the trail that way to better facilitate the discussion on this moving forward
 - i. John concurred this may be the best way to reach a compromise on the final alignment



- b. Michelle mentioned the roadway wildlife crossing structures and how that final design looks also needs to be part of the criteria as that has a substantial impact
 - i. John responded that all of those factors will be considered
 - c. Kara added that the Project Team needs to hear the feedback and critical issues to then partner with FHWA and the USFS to make the decision on the alignment
11. Greg asked if the public meeting show all 3 alignments
- a. Karen stated that the overall desire is to show the public the roadway alignment as that hasn't been shown to them yet
 - b. Kara added that the Team will also show the process as to how the Project Team will make decisions
 - c. Greg asked how will the public be allowed to comment on these critical issues then
 - d. Kara replied that the Project Team is still in initial stages of developing the plan for the public meeting, but this is good feedback on how to receive feedback on these issues and the Project Team can look at creative ways to generate feedback on critical issues
 - e. Scott stated that he has seen public meetings before where if there isn't enough design data to present to the public, there can be a lot of negative feedback. He encouraged the Team to do their homework prior to the public meeting
12. Scott asked how long the three ITFs will be
- a. Karen replied that they are planned for three hours each, but the Team is not trying to make decisions at those meetings as the deciding agencies are CDOT, FHWA, and the USFS. The Project Team will be open to holding more meetings as needed though
13. Emmalee asked if creek crossing bridges would need to support a fire truck as CDOT typically requires
- a. John replied that this is a design detail that needs to be discussed later on
14. Larissa suggested that the TT members want to help get information out to their stakeholders and the public they interact with, but don't want to be in violation of the intent of the TT charter which is to make sure the TT all pushes the same information. She asked that as soon as a public meeting flyer is available to send to TT, the Project Team do so to allow TT member to send out



- a. Project Team responded that this is good feedback
- iv. Kara then presented other recreation feedback that has been received for consideration. The Project Team will discuss these further at the Trail/Recreation ITF
- i. **Other?**
 - i. Karen added that while many topics are going to ITFs, the overall alignment is not. Asked the TT for feedback over the next few weeks for comments on the alignment that was shown to the group
 - 1. Michelle asked for a drawing of the three trail alignments
 - 2. Greg asked if the Project Team can show areas where the grade is changing
 - 3. Greg asked if this design would change if all passenger cars were required to chain up
 - a. John replied that it would not because of the operational component of the project's Purpose & Need
 - b. Greg then asked if the project would need more chain up areas. If anything, the Team could identify potential future chain up areas and clear them with this project. He pointed to examples in California on this requirement
 - i. Dick added that he feels it's the cheapest way to prevent winter closures by requiring chains on passenger vehicles rather than spending millions of dollars on the pass
 - ii. Martha stated that the Project Team can get CDOT's policy team involved to investigate this more and if requiring passenger vehicles to chain up is moving forward. There are still other issues on the pass like speed differentials and substandard geometry that need to be addressed and not just chains on all vehicles
 - 1. Tom G stated he thought it was a good idea to check with policy on this. Many stakeholders along the corridor are curious about the direction this is heading as it hasn't been clear to date. It may not necessarily be a design issue for this project, but it is a very relevant issue that could play into this and should be evaluated



- iii. Martha added that she drove on Donner pass in California recently and noticed there is a check station to look at chains for all vehicles
- iv. Greg stated the Team should maybe take a larger look at chain up stations along the pass
- v. Tracy added that she has a big concern in mixing CMVs with passenger vehicles while chaining as it is very dangerous. The Team may have to look at adding new chain up stations instead, as well as the enforcement and mainline speed reduction in areas of chain stations
- vi. Karen stated there are Variable Speed Limit (VSL) signs at the existing chain station, but the issue is enforcement
 - 1. The group discussed that those speeds can't be enforced at this point
 - 2. Emmalee stated there's a big process to make variable speed limits enforceable along with MUTCD standards
 - 3. Karen added that the Team will continue to talk about this at the Emergency Services ITF as many comments received were in support of VSLs

5. Schedule and Wrap Up

- a. Kara asked for any follow-up comments on alignment and process by Nov 23rd
 - i. Greg asked for the Advanced Guideway System (AGS) alignment to be sent to Project Team ahead of the comment due date
- b. Karen thanked group for their feedback today and involvement in today's meetings



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Technical Team Meeting #8
DATE HELD:	May 8, 2019
LOCATION:	Avon Branch Library, 200 Benchmark Rd, Avon, CO
ATTENDING:	<p>Joel Barnett, FHWA John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 David Cesark, Environmental Manager, CDOT Region 3 Drew Stewart, Design Team, CDOT Region 3 Matt Klein, US Forest Service Ben Gerdes, Eagle County Dick Cleveland, Representing Vail Town Council Tracy Sakaguchi, Colorado Motor Carriers Association Pete Wadden, Town of Vail Greg Hall, Town of Vail Michelle Cowardin, Colorado Parks & Wildlife Len Wright, Eagle River Water & Sanitation District (ERWSD) Benjamin Wilson, USACE Stephanie Gibson, FHWA Richard Duran, Colorado State Patrol Kevin Sharkey, Eco Trails Eagle County Kelly Russo, Colorado Parks and Wildlife Scott Jones, Colorado Snowmobile Association Tyler Bowman, Wood Stacy Tschuor, David Evans & Associates Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates</p>
COPIES:	Attendees

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. Kara Swanson did introductions, covered the agenda, and described actions taken since the last Technical Team (TT) meeting.
- b. Reviewed purpose and need
- c. Tyler Bowman presented updated current proposed action design plans and described minor improvements to curves and adjustments to the roadway to minimize impacts.

2. Design Option Considerations

- a. Chain stations/Truck Ramps
 - i. Variable speed limits will assist trucks in/out of chain stations
 - ii. Plans call for more signs and lights for visibility
 - iii. Chain station at MM183 is was not used this winter as it created a hazard.
 1. High grade leading to it and limited parking creates issues on I-70 with trucks either stuck on the mainline grade approaching it or trucks double-parking at the chain station to avoid stopping on the steep grade.



2. Another chain area at MM184, but not used because it is not developed enough (no lights, not obvious pullout) and was considered a hazard by maintenance.
3. These upper chain stations are used more during the shoulder seasons when the snow line is higher.
4. No decision has been made on plans for upper chain stations, but considering:
 - a. Improving MM 183 area – adding more capacity would be needed to fit more trucks off the mainline to eliminate the hazard
 - b. Larger shoulder areas along the EB lanes that function as chain station for just hazmat vehicles that need to chain up past the chain station at 178
 - c. Tracy Sakaguchi would rather double the capacity at MM183 and keep it as a formal chain station with signs and lighting
 - i. Capt Richard Duran mentioned that the MM184 chain station has issue with maintenance. Snow removal is currently not sufficient, but could be useful if it were improved with an increase to capacity.
 - d. Tracy is worried about the wide shoulder option because trucks tend to use a lighted developed area more than basic pullouts.
 - e. John Kronholm mentioned the problem with maintenance at MM 184 is location of the wall. There is nowhere to push snow.
 - f. Capt Duran mentioned it would be good to keep the upper pullout for overflow. Tracy agreed.
 - g. John said that it probably wouldn't be improved with lights and signs, but could still be kept as a wider shoulder for a safer pullout.
 - h. Karen asked how much the MM 183 area would be used.
 - i. Capt Duran said it would be very beneficial to get the hazmat vehicles out of the town chain up area.
 - i. Tracy said that the additional capacity is needed for overflow, but matching the capacity of the MM 178 area is not absolutely necessary.
- iv. Improve truck pullout areas and parking at the top of pass
 1. Locations along uphill and downhill were identified for widened shoulders for truck pullout areas prior to large uphill grades and for downhill hot brake areas.
 2. Improving the truck parking layout at the existing truck parking EB prior to the rest area would allow trucks to take a break before driving downhill grades
 3. Tracy and Capt Duran agreed that this would be helpful.
- v. Truck Ramps
 1. Currently design is substandard due to curves not designed for posted speed.
 2. Design improvements include straightening the runaway truck ramps



3. Tracy asked what other safety improvements are being considered
 - a. Tyler responded that options are being looked at, however, there are maintenance issues to consider
 - b. Tyler mentioned that there will be some sort of catch system planned for the top of the ramp, could involve barrels or nets.
4. Dave Cesark was concern that studies show most trucks losing their brakes are driven by inexperienced drivers or drivers with no experience driving in the mountains. He asked Tracy if she has any input for educating these drivers.
 - a. Tracy agreed education is needed and that CMCA is looking at ways to do this.
 - b. Dick Cleveland asked if CDOT will start tracking information about ramp usage.
 - i. John responded that there is a grant in place for a study with CDOT and that we are also tracking the information and it is presented monthly at the I-70 Mountain Corridor Meetings. He also mentioned that there is a hot-brake map being developed.
 - ii. Stephanie Gibson asked how the data is collected
 1. Tracy responded that trucks pulled over with smoking brakes or trucks that have used the truck ramps are being recorded.
 - iii. Greg Hall asked if there had been an infrared (IR) camera installed.
 1. Tracy confirmed that there are Weigh-in-Motion (WIM) monitors as well as IR cameras, however there have been maintenance issues keeping them working.
 - iv. Dick asked if the Floyd Hill downhill warning signs had made any difference in truck issues
 1. Stacy said there have been reports of an initial difference in crashes involving trucks but eventually returned to prior operation.
- vi. Emergency access
 1. Wider shoulders will be planned to allow vehicles to get to incidents.
 - a. Tracy asked if you lose shoulder room due to snow storage how would the responders get up the pass.
 - i. John responded that it is a problem, particularly at the top of the pass, but we eventually try to clear it with snow blowers or other heavy equipment.
 - ii. Snow plows can throw snow about 15 feet behind barrier and a snow blower throws snow about 30-40 feet. These distances are being considered with the design.
 2. Emergency response during construction will be addressed with phasing and intermittent pullouts
 3. Improved turn around areas
 - a. Widen specific turnarounds for truck access.



- b. Currently 6 turn around areas, planning on 5 with improvements.
 - c. Increase signing to discourage public use.
 - b. Corridor Character and Aesthetics
 - i. Working on an existing conditions report and identifying the users for impact decisions.
 - ii. Greg asked about the revegetation plan
 - 1. Kara responded that the Crest of the Rockies plan includes guidelines for revegetation, as do CDOT standard specifications.
 - iii. Dave asked about if there was any feedback on the facility look, specifically how important was the color of the GR.
 - 1. Greg said Vail only uses brown
 - 2. Matt Klein said that USFS supports only using types that blend into the background. Dick agreed. POST MEEETING: Joel sent language from the Federal Lands/FWHA IGA regarding aesthetics of guardrail and cable rail.
 - c. Enhanced Environment & Water Quality
 - i. Following guidance from the NEPA analysis
 - ii. Greg commented snow removal plans and water quality need to be reviewed together, and needs to be addressed with the maintenance crew.
 - 1. Kara responded that there has been a mitigation menu developed and maintenance was involved in the development of those options.
 - 2. Kara stated that the ITF groups will be involved at the beginning of design and construction to make sure the mitigation intent is being carried out.
 - iii. Kara presented the implementation plan
 - 1. The Sediment Control Action Plan (SCAP) update will be a part of the process and will be completed prior to final design of the first project phase.
 - 2. Dick mentioned that a maintenance plan should be a part of the SCAP because that is usually what gets dropped
 - a. Stephanie mentioned that it is a constant struggle with other areas in the state
 - b. John mentioned that CDOT is actively meeting with the Black Gore Creek steering committee to cover these issues.
 - d. Wildlife Enhancements
 - i. Kara stated that in addition to the second ALIVE ITF meeting, additional coordination was conducted with USFS and CPS. These groups discussed various options for wildlife – underpasses, fencing, glare screens...
 - ii. The EA will commit to the number and approximate location of underpasses and will include the target species for each location. The reason for not including exact underpass dimensions is because funding has not been identified, construction is at least several years away, and conditions may change by the time final design occurs.
 - 1. Team suggests reconvening the ALIVE ITF prior to construction to reevaluate recommendations.
 - a. Michelle asked if structure size was not identified at this point



- vii. Pete Wadden mentioned the environmental benefits to keeping the trail near the highway and the concern that the matrix seemed to prioritize user experience (human factors) over the environmental criteria.
- viii. Karen said that the challenge is that the other options have poor ratings for the environmental criteria, so the hybrid option brought the criteria up to fair. The criteria were not weighted to prioritize one Core Value over another.
- ix. Dick brought up that there are technical aspects to building the trail that will be used to mitigate the environmental impacts and is satisfied that the hybrid option is best solution for this point in the design process.
- x. Greg brought up that with Option 1, as it moves further from the interstate, it encroaches on the creek (toward the 100' buffer) and impacts a timber stand
 - 1. Michelle was asking about the timber stand that is being avoided because it didn't seem very large. Avoiding that timber stand in the challenging 0.3-mile segment may not be needed.
 - a. Kara said it was avoided as a part of an effort to balance environmental concerns.
- xi. Stephanie suggested tabling the final decision on the alignment for this short segment (0.3 mile) until the project is further in design. The EA can be completed with the specific alignment within this small area not determined, noting that more design is needed to figure it out. Later design and mitigation techniques may reveal solutions to minimize impacts.
 - 1. John was concerned that we could not complete the EA without final decisions. Stephanie said that the EA could be completed with a final alignment for a small section.
 - 2. Stephanie mentioned that pushing to omit options now might preclude a best option in final design.
- xii. Michelle questioned how much the user experience is improved.
 - 1. Kevin Sharkey responded that all options make the trail better, but his biggest concern was Option 1 would create the biggest construction impacts and closures.
- xiii. Michelle had varying concerns on the walls, mostly where a wall was adjacent to an I-70 wildlife crossing. However, her largest concerns were wetland and water quality impacts.
- xiv. Kevin asked if water impacts could be mitigated with the hybrid design would that be acceptable?
 - 1. Greg said that if wetlands were spanned by bridges, it would help to make this design more acceptable,
 - 2. Michelle wanted to run the concept pass CPW biologists.
- xv. Dick brought up that the offline option could be built easier in advance of the highway resulting in improved phasing
- xvi. Benjamin Wilson asked if the funding for the trail was distinct from the road?
 - 1. Karen said while we don't have funding for any of the project, they would likely not be separated.
 - 2. Benjamin pointed out that a lack of funding would most likely not be used as a limiting factor in mitigating some of these impacts. The



trail is a very small portion of the overall funding, so it would be difficult to argue that avoidance is not possible due to cost.

3. Stephanie noted that moving the highway would make it difficult to separate out the costs.
 4. Kara noted that as funding is identified pieces could get separated, (i.e. there could be funds to rebuild the trail but not the road immediately).
 5. Matt asked if the path would be built before the road
 - a. John said that would be ideal but the phasing would be reevaluated closer to construction.
- xvii. John noted that the stakeholder input for the trail would continue as the project proceeds.

3. Level 2 Screening

- a. Level 2 was not used since the preferred alternative came out of the level 1 screening. However, the level 2 screening criteria was used to refine design options and address issues.
- b. Kara stepped through the Level 2 criteria and the status of each analysis.
 - i. Stacy noted that the safety analysis of the proposed action is in process. There may be minor changes as the evaluation considers the corridor design refinements and traffic forecasts. The initial preliminary draft results show a potential 35-45% corridor wide crash reduction with the proposed action, compared to the no action condition.
- c. There was more discussion about not committing fully to one option on the trail alternatives.
 - i. Michelle has mixed feelings about not getting to one option for the trail alignment. The group has been working together for a long time and leaving it open would push it down the road, maybe to new people who may not have as good a background on the project.
 - ii. It would only be left open in the limited, short (0.3-mile) area. It would not have to be kept totally open, but could be defined as one of the two options (Option 1 or the hybrid).
 - iii. Making the decision later may open up more details related to mitigation and opportunities.
 - iv. Greg asked if those design details should just be worked out now?
 1. Karen said that would require more survey and more detailed design, which is too costly and would open up issues if it is only done for this small area. It is better to complete those refinements and design details with the next steps of the projects.
- d. Greg asked about the AGS alignment and if the project team has shown that it isn't precluded, as required with the PEIS.
 - i. He asked if the design shows that there are larger walls or footprint that makes the AGS more cost-prohibitive.
 - ii. CDOT responded that they are committed to showing the AGS alignment with the Proposed Action in the EA and that it is not being precluded.

4. Wrap Up

- a. Kara asked for final comments on the materials within 2 weeks (by May 24th).



- b. After comments received and addressed, the proposed action will be considered final to proceed with the environmental impact analyses.
- c. There will be one more public meeting during the 30-day EA review period. The intent is to meet with the TT prior to the public meeting.
- d. Greg asked what the shelf life of an EA is.
 - i. Stephanie responded that there is no shelf life. EAs will be reevaluated for the projects that move forward to compensate for changing conditions.
- e. Len asked how we know that the mitigation for water quality is actually mitigating the impacts from the road (i.e. if we aren't monitoring the effluent from the BMPs, how do we know it's working?) Stephanie explained that because the project is only at 5 percent design, it is not possible to provide specific detailed mitigation and that FHWA (and CDOT) is prohibited by regulation from starting final design of a project during NEPA. The mitigation identified will be more process-based, explaining how the details will be worked out in coordination with the relevant stakeholders once we have more design detail to look at the specifics for the mitigation/treatment of the water that will be coming off the roadway. CDOT will be able to use the latest and greatest technology at the time, and not be locked into a specific type of mitigation which might become outdated.

Subsequent to the meeting, Matt Klein provided USFS comments related to the meeting, which are summarized below:

- Regarding the bike path alignment, we understand that when it comes to the design and alignment of the bike path, there are competing considerations that must be balanced. None of the design options are ideal for all Forest resources.
- Consequently, it is our position that the alignment closest to the highway itself provides long-term benefits (i.e. avoidance of crossings of Black Gore Creek; avoidance of impediments to wildlife accessing the creek) that outweigh the costs (i.e. longer construction times impacting public recreation and outfitter businesses; less-than-ideal user experience for less than one mile; use of tree stands adjacent to the highway).
- Regarding Gore Creek campground, we request as much advance notice as possible of its closing, for two reasons: One, so that we can notify the public that this very popular campground will be closed and unavailable for reservations/use. Two, so that we may plan our own infrastructure improvements to this campground during its forced closure (assuming such campground enhancement work would be compatible with CDOT's concurrent highway work).
- Regarding the hiking trails (Two Elk, Gore Creek), we request that closures of the trailheads be minimized (if unavoidable) and dates provided with as much advance notice as possible.
- Regarding Vail Pass Winter Recreation Area (VPWRA) parking at Exit 190, we cannot accept any net loss of parking for the general public, including and especially roadside parking along Black Lakes Road for snowmobile trailers. Please ensure that there is sufficient storage/accumulation space for plowed snow along the eastbound shoulder near Exit 190 so that such snow will not encroach upon this essential parking area.
 - Due to limited recreational parking in the winter, CDOT must avoid using Black Lakes Road as a location for equipment/material staging or work crew parking.
 - Additionally, it would be greatly appreciated if CDOT could provide improved signage and road striping along the access roads at Exit 190, in order to minimize the number of motorists who mistakenly enter the already-crowded VPWRA parking area when trying to find CDOT's highway rest area.



- Regarding water quality and protection of aquatic species, we generally agree with other comments already received stating that water quality measures for Black Gore Creek should be an integral part of the project design, and we stand ready to discuss any additional land use needs that may arise from the planning of additional or enhanced water conveyance structures or water treatment traps/basins.
- Regarding wildlife protection, we are pleased to see that no fewer than six new underpasses of various sizes are planned, and that these underpasses will be designed based on the best science available at the time of design. Additionally, we strongly encourage the inclusion of any design features which will keep human activities away from the wildlife underpasses.
 - Wildlife fencing should be integrated into the highway design so as to effectively channel wildlife species toward underpasses. Accumulation of plowed snow should be monitored and (if necessary) maintained so that wildlife cannot use accumulated snow banks to climb over fencing in winter.
- Regarding noxious weed / invasives minimization, during construction all heavy equipment must be visually inspected for plant matter and thoroughly cleaned of all organic materials before entering the work site. This is a simple but effective practice for halting the propagation of invasive plant species.

Subsequent to the meeting, Michelle Cowardin provided CPW comments related to the designs presented during the meeting, which are summarized below:

- CPW is largely supportive of the design put forth by CDOT including the trail alignment option depicted and the proposed new wildlife-crossing locations. Following are CPW's comments and concerns for the West Vail Pass Auxiliary Lane Project:
 - The wall construction along the proposed trail at the Polk Creek intersection of I-70 (~mile marker 185.2) under the existing span bridge is of concern for impeding wildlife movement. CPW recommends keeping the wall height as low as possible and providing breaks in the wall for wildlife to move through. Wall heights of 8 feet or higher measured from a distance 4 feet from the wall to include slope would be a barrier to large ungulate movement and smaller mammals.
 - Historically, opportunistic parking by hunters to access the forest has occurred along the upper reach of the project area. Loss of this access is of concern to CPW.
 - CPW believes the crossing of Black Gore Creek between the 186 and 186.5 will have a negative impact on wildlife, wildlife habitat and aquatic ecosystems. There will be no new impacts if the trail is maintained between the highway and the creek. By crossing the creek, you are increasing containment to the water and providing easy access to habitat currently not disturbed on the south side of the creek. The trail would have to cut through a small clump of trees if it is moved to the north side of the creek; however these trees provide very limited habitat to wildlife and is not as valuable as the undisturbed area on the south side of the trail.
 - Realignment of the trail to locations further from the Interstate and the existing trail location will impact wildlife by increasing the area of influence of human disturbance. This disturbance and impact is further exacerbated by placement of the trail in previously undisturbed or impacted areas. The indirect impacts from human disturbance using the trail will be greater than the actual direct impact from the realignment.
 - CPW is pleased that CDOT has planned for no fewer than six new wildlife-crossing structures. We realize that the exact dimensions will be determined during the



design phase. The size of some of the structures should allow for large ungulates such as moose, deer, and elk to cross. Other structures should be designed for forested carnivores such as black bear, mountain lion and lynx. In addition, some adaptations to the crossing structures may be beneficial for smaller mammals such as pine martens and weasels.

- Attention to wall design especially near the entrance of crossing structures is important. Walls should not be designed that would impede or limit wildlife movement around the structures (see wall design at the 187.8). In addition, human activity should be discouraged at or near the wildlife crossing structures.
- CPW would support the wildlife-crossings being overpasses, underpasses or span bridges based on future research, funding and the ALIVE team recommendations.



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Technical Team (TT) Meeting #9
DATE HELD:	February 6, 2020
LOCATION:	Online Zoom Meeting
ATTENDING:	<p>John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Martha Miller, Program Engineer, CDOT Region 3 David Cesark, Environmental Manager, CDOT Region 3 Mark Bunnell, CDOT Region 3 Traffic Vanessa Henderson, I-70 Environmental Manager, CDOT Matt Klein, US Forest Service Greg Hall, Town of Vail Pete Wadden, Town of Vail Larissa Read, Consultant to ERWSD Michelle Cowardin, Colorado Parks & Wildlife Devin Duval, Colorado Parks & Wildlife Shannon Anderson, Bicycle Colorado Kevin Sharkey, ECO Trails Benjamin Wilson, USACE Stephanie Gibson, FHWA Tracy Sakaguchi, Colorado Motor Carriers Association Kara Swanson, Consultant Environmental Task Lead, David Evans & Associates JJ Weirema, Wood Tyler Bowman, Wood Matt Figgs, CDOT Region 3</p>
COPIES:	Attendees

SUMMARY OF DISCUSSION:

1. Introductions & Meeting Purpose

- a. After a round of self-introductions, Kara covered the purpose of the meeting.
 - i. Kara then pointed the group to the memo and drawings for reference for today’s meeting. She added that there was an updated memo that was sent out today with one small change in Table 1.
- b. Kara laid out the intent of today’s TT meeting which was:
 - i. Clarifying that nothing in the proposed action has changed and the design options all the same, this meeting is part of the Context Sensitive Solutions (CSS) process. Because the project area is part of the I-70 Mountain Corridor, specific engineering design criteria apply
 - ii. Not every element of the project can meet every design criterion, so this meeting will lay out exceptions being requested to the TT. The concerns and suggestions mentioned during today’s discussion will be taken to the next Project Leadership Team (PLT) meeting



2. Background

- a. Kara pointed to the CSS design criteria in the memo that was sent out ahead of the meeting and highlighted the justifications that are allowed when a project cannot meet the criteria
 - i. Some justifications are not used for this project's considerations
 1. Capacity was not considered because this not a capacity project
 2. Cost was also not considered. While there is a cost difference for some of the options, the Project Team did not consider it for the intent of these exceptions
 - ii. For each exception that is identified, the Project Team looked at what would need to be done to meet the criteria, then laid out what those impacts are, and compared that to existing design of I-70
- b. Kara then briefly discussed Table 1 in memo which covers the broad categories of exceptions that would be allowed and highlighted the three that this project show as necessary:
 - i. Alignment – Existing Median Width
 - ii. Slope Cut and Fill - Disturbance
 - iii. Slope Cut and Fill – Retaining Walls
- c. Kara also pointed out that the sound attenuation results have changed since last time the TT met
 - i. A sound wall has been determined to be reasonable and feasible in one area, but all of the details of the potential sound wall can meet the visual guidelines, so no exception is being requested.

3. Exceptions

- a. Kara walked through each exception in Table 2 in the memo. She asked for feedback from the TT as she went through each one.
- b. **Median Exception #1** – Kara pointed to the location of this design exception and noted that the median decreases by a maximum of 14 feet.
 - i. Kara stated that the Project Team wanted to hold south edge of pavement in order to not disturb Bighorn Road. To maintain the existing median width, the project would have to widen to the south, and the Project Team didn't want to impact Bighorn Road and homes in East Vail & have private property acquisition
 - ii. She then walked through the justifications laid out in the memo. For this, and all other exceptions, the Project Team wanted to keep the intent of the original design
 1. Stephanie stated that there is data on how much each median is decreasing, but not the existing widths of each median
 2. The Project Team started looking at that data and provided for each wall during the meeting.
 3. Greg asked to see the width that remains, not just how much we're taking away
 - iii. JJ stated that the project could widen to outside instead of into the median, but a wall would be needed that would be visible the homes on the south side of I-70. He also added that the existing median is about 300 feet wide



1. Greg replied that the design criteria guidance states that projects should have walls on the downhill fill slope and then landscape to hide the wall.
 - a. Karen asked if this criterion was about keeping the existing median width or on having a minimum median width
 - i. Vanessa answered that it is not about total median width, just whether a decrease in the existing width is needed
 - b. Greg stated that by decreasing the existing median width, vegetation would be lost which was the historic visual sight. This would be opposed to widening to the south and proving disturbance to Bighorn Road and the residents in East Vail
 - c. John added that pulling the interstate south also impacts the curve into the bridge just to the east of this location. Taking all the variables into account, this is the design that the Project Team came up with
 - d. Greg replied that a 300-foot existing median looks good, but wants to see if that 300-foot median is completely disturbed or just marginally disturbed by construction on this project. If the project could not have an exception by adding a wall to the south side of I-70, that may be preferable.
 - e. John added that the Project Team wanted to meet the promise to homeowners of holding the south edge of pavement as much as possible
 - f. Greg pointed out that the bridge to the east moves further south, so which homeowners do we protect? He also asked if the median will be landscaped.
 - i. John –replied yes, the median will be landscaped. He added that the Project Team is just looking for general feedback today, not necessarily making each of the specific design decisions
2. Greg finalized his comment for this location in that he would like the Project Team to look at balancing cuts and fills in this area to reduce the median reduction.

c. Median Exception #2

- i. JJ pointed out that the existing median in this location is 280 feet wide
- ii. Kara walked through that Project Team is realigning this curve to correct geometry and build the bridge offline during construction to not impact the public. If the project met the design criteria in this location, westbound (WB) I-70 would instead need to realign to the north, impacting wetlands, the campground, and the truck ramp (which would have to move further north, causing more disturbance, and walls over 12 feet which would create more exceptions).
 1. Greg stated that the Advanced Guideway System (AGS) is not shown on the drawings and that it would be nice to see the alignment on these sheets rather than look at different drawings.



2. Greg added that he thinks there should be an Issue Task Force (ITF) that looks at landscaping and walls and the details behind these exceptions
 - a. Karen replied that it is tricky to balance how much detail the Project Team goes into at this level during the Environmental Assessment (EA) as the project is just at about a 10% design level. The Project Team will come back to during design to refine these details and can do an ITF at that point.
 - b. Vanessa agreed that this is how the process has been done in past at CDOT. Typically, the landscaping and wall plans are brought back to the TT & ITF through CSS during the design phase
 - c. Kara added that because the corridor is also historic, CDOT will develop project specific guidance for visual requirements that will be done prior to final design work and will guide the design of walls and landscaping
 - d. Greg replied that it seems like the current design is significantly changing the visual nature of the corridor with these exceptions. He asked if having the PLT sign off on these exceptions means there is blanket approval to do these exceptions and not follow visual requirements?
 - i. John replied that some level of design that went into this and the Project Team has been trying to balance all the of pros and cons in each area. There are tall walls in some areas, but there are other issues that arise if the interstate was moved in a different direction to avoid the exceptions being shown.
 - e. Martha asked if the 79-foot-tall wall in this same area was tiered or one wall? She also asked on what was the purpose for this meeting, to establish toes for the EA. That wall is nearly an 8 story tall wall.
 - i. JJ replied that it is a tiered wall. The Project Team will develop visual criteria of the walls throughout the design process
 - ii. Greg asked what's the tallest tiered wall today existing?
 1. John replied that the existing wall at MM 183 is very large and the Project Team can look at how tall it is.
3. Karen asked what should the Project Team be approving at this stage in the process? The Project Team will still be developing an aesthetic guideline for the corridor that will govern the final design. It seems like we may be ahead of ourselves without that guideline. The Project Team is currently trying to figure out toes and limits for the EA. She stated that Greg has great questions, but it is hard to answer them at this stage of design, and it's hard to ask the TT to



grant exceptions at this stage without the aesthetic guidelines in place

- a. Vanessa replied that Greg's comments are good to incorporate into the exception so it's included moving forward. This isn't the only time CDOT has gone through this process at such a low level of design and in her experience, every project will revisit this topic as final design progresses.
- b. Greg stated that if that's the case and the Project Team wants these exceptions, it'd be best to advance the design further. Otherwise, the project will clear an area that's bigger than needed and may not need an exception. He asked if the TT could help write the aesthetic guidance?
- c. Vanessa pointed out that the aesthetic guidance document would be written before final design but not be part of the EA. She would expect that it would go through the TT for review and allow the TT to have input into it. An EA is high level, and as design progresses, the Project Team will have to revisit the EA. The Project Team is looking at impacts as best they can at this point, so it is tough to evaluate and ask for these exceptions now
- d. John added that the way the area of special attention in The Crest of Rockies is written, an EA design may not have any exceptions, except for areas of special attention which Vail Pass is one. Those areas of special attention allow for a Project Team to ask for exceptions during the EA process. It's a tough spot for the Project Team since in East Vail there has been a big attempt to not impact houses based on past commitments to the public
- e. Martha asked if the Project Team made this commitment at a 3-5% design level, why are we asking for a lot of exceptions based on a commitment made at such a low level of design?
- f. John feels the Project Team wouldn't be able to advance the design in East Vail without exceptions
- g. Karen pointed out that it is almost impossible to design with zero exceptions
 - i. Kara reiterated that statement
 - ii. Vanessa also agreed. The design guidelines were put in place as guidelines, not hard and fast rules because they were done at a Tier 1 level
- h. Kara brought the group back to the balancing act the project is trying to accomplish - is acquiring private Right-of-Way (ROW) more important than taller walls and narrower median?
- i. John added that he thinks the Project Team is moving through process the correct way. He wants this feedback to take back to the PLT for each exception.



- j. Greg stated that the PLT asked for more detail on the exceptions. He expected to see more cross sections for the walls and isn't sure if the PLT will have enough information to evaluate if a steeper slope that's landscaped is better than walls. With no cross-sections to show the differences, and the Project Team asking for an exception that gives the go-ahead to continue in design with the exceptions listed, he feels the group should be weighing design options at this point instead. That's why an ITF on this issue would be good before getting the exceptions.
- k. Martha replied that the Project Team started this process with a limited budget for the size of the EA and has been trying to spend the bulk of the resources on the EA and CSS process and less on the actual design. The Project Team tried to keep a high level view of design in order to complete the EA. For this process, is it best to note the areas that the design needs to progress and then revisit them later on?
- l. John added that per NEPA guidelines, the Team can't advance the design past a certain level. He asked if the Team could make a commitment in the EA for certain locations to revisit the exception so the Project Team doesn't progress too far in design and tie that into the visual assessment. There is a need to balance NEPA policy with the current level of design, the CSS process, and forward progress on the project
- m. JJ asked that in the interest of the outcome of the meeting, should the Project Team document that TT has a concern with tall walls, and then would CDOT be willing to present options on how to address concerns in the future?
- n. Vanessa stated that the Project Team should document all the concerns and then keep moving through each exception.
 - i. John agreed and wanted to get comments on all areas of exceptions asked

d. Wall Exception #1

- i. JJ stated that the design model shows walls as 30-foot-tall tiers with a 15-foot setback, then the next tier. This initial design was based on previous projects, not on the aesthetic guidelines for the corridor, just to have some data to put into the model.
 - 1. Greg clarified if a wall is less than 30 feet tall that there are no tiers in this current design
 - a. JJ confirmed Greg's statement was true
- ii. Kara walked the group through this exception. A potential cut slope (2.5:1) would be over 500 feet long. The proposed action would need to follow the Crest of Rockies and project specific visual guidance that is determined for building taller walls if any are constructed
- iii. Greg stated that even a 30-foot tier is a tall wall and thinks there's a balance between a cut slope and a vertical wall. Many of the forests in this area



haven't been well maintained for many years, so it may not necessarily be a requirement to save trees because they might be dead. He added that there is a Wilderness boundary close by, so it will be good to check if a 500 foot cut slope would cross that boundary.

e. Wall Exception #2

- i. Kara described this exception to the group. This wall prevents impacts to the existing rock outcroppings in the median
 1. Greg asked if the project could do a rock cut instead of a wall?
 2. JJ replied that with no geotechnical data, he's not sure if there is enough rock to cut into
 3. John added that the Project Team can make a note to explore this as a rock cut during design once geotechnical data is available
 4. Greg commented that a rock cut would look much nicer than a wall

f. Wall Exception #3

- i. Kara described this exception to the group. To make the truck ramp useful and safe, a cut into the hillside is required. A wall protects the recreation path and reduces a large cut slope from being needed
 1. Greg stated that he felt moving a bike path is easier than moving other elements of project. He asked if there is a way to balance and reduce the size of the wall and move the bike path some.
 2. Greg then asked if the current aesthetic guidance states projects can only cut slopes, how does that work when a wall would be needed instead?
 - a. Stephanie replied that it is almost impossible to not have exceptions on a project like this and it would be hard to see where the aesthetic guidance would say only 100% slopes would be allowed. She agrees that she would like to see as few walls as possible, so the question is whether the group wants to figure out all the details right now, or focus on the tradeoffs at this point and show what exceptions would be triggered if each of these exceptions weren't in place (i.e. document that we show one exception instead of many others instead)
 - b. Martha agreed with Stephanie. At these locations, the Project Team can show there is going to be an exception no matter what (either tall cut slope or a wall), but it's too early to say which one is more extreme or impactful
 - c. Karen stated that she is willing to say that the Project Team will go back to each one of the exceptions in each one of these locations with an ITF during final design to revisit.
 - d. Greg asked the group if 3 minor exceptions are less impactful than one major exception
 - e. Kara replied that the Project Team tried to show in memo how not doing one of the exceptions would trigger other exceptions.



g. Wall Exception #4

- i. Kara described this exception to the TT. This exception is part of the chain station that is being improved and the slope on south side would be over 100 feet tall if there was no wall in place
 1. Greg asked if the chain station was designed as 2 lanes and if so, is the 2 lanes for safety or capacity?
 - a. John responded that the chain station is 3 lanes with a lane in middle and parking on either side of that through lane. The purpose of 2 rows of parking is for safety. There is not enough capacity at existing chain station and trucks get stuck on the hill waiting to get into the chain station, creating an operational issue. By separating the new chain station from I-70, it also provides a safety benefit to truckers.
 - b. Greg stated that it would be great to do this, but are there other alternatives that wouldn't present the need for a wall like removing the separation
 - c. Martha added that she feels strongly about the separation for safety. The capacity of the chain station can be looked at further, but there is a significant safety need to pull the chain station further from the interstate
 - d. Greg replied that he is just trying to think of different questions that people will ask. It may be a need for the Project Team to look at tiering all walls
 - e. Karen stated that this exception is so early in design that what was presented was just to establish toes. The Project Team will look at the detail of the walls later on in the process
 - f. Kara added that the Team is simply looking at whether there is a wall or a large cut slope at this time in process. She reiterated that the Team will look at details of wall later in process

h. Wall Exception #5

- i. Kara described that this wall keeps I-70 from being closer to Black Gore Creek, and prevents median exception #3 from becoming bigger
 1. No comments from TT

i. Median Exception #3

- i. Existing roadway is already close together, either open or has barrier in middle (where median is open, warrants a barrier). Widening to north to meet median requirements would impact wetlands and Black Gore Creek. The existing median is 40 feet wide. Widening to the south would require a wall on the south side of the interstate
 1. Greg pointed out that the existing median will be reduced in half with this exception. It seems like there could be an option to cantilever the interstate or to balance it with a wall



2. Stephanie responded that the Glenwood Canyon type cantilever look may not meet historical context of Vail Pass by putting something defining another historic property in a new location
3. Greg said that reducing median would also change the character.
4. John clarified that the Project Team could look at moving the interstate closer to the creek with a cut wall and balance that with a narrower median
5. Karen stated that this was a great example of something that can be fine-tuned by the ITF during final design
6. Stephanie added that part of challenge of this process is whether it is better to preserve the forest around the roadway or the greenspace between the directions of interstate
7. Larissa asked what the impacts to Black Gore Creek would be with this exception
 - a. John responded that the current exception would make the space between directions of the interstate narrower to not get closer to Black Gore Creek. Not having exception would make I-70 get closer
8. Pete added that he likes reducing the overall footprint of I-70 where possible to benefit wetlands and waterways
 - a. Larissa agreed with Pete's comment

j. Wall Exception #6

- i. Kara described that this exception was put in place to help correct geometry of I-70, facilitate bridge construction, protect Black Gore Creek, protect the recreation trail from relocation, and not have 80 foot cut wall
 1. Greg asked if TT members could send in comments after meeting?
 - a. Kara responded yes

k. Median Exception #4

- i. Kara described that the existing median in this area is narrow and has a barrier. This exception wouldn't introduce a new barrier, but would make the median narrower. Widening to south would impact the trail that is beyond the area of trail relocation. Widening to the north would impact the forested area or cause a wall on north side of I-70. A narrower profile is also better for the wildlife underpass in this area, as those should be shorter for better usage
 1. JJ clarified that the existing median width is about 55 feet wide
 2. Greg asked as the Project Team progresses to final design, will the group put together aesthetic guidelines for individual segments or for the entire corridor?
 - a. John replied that the Project Team will look at the entire corridor
 - b. Kara reiterated John's statement
 - c. Greg then asked when that process would take place
 - d. John responded that it will be done in conjunction with final design and that the Project Team wouldn't be able to finalize



any design until the guidance is done to sure all design meets that guidance

l. Wall Exception #7

- i. Kara described this exception is for a curve modification in this area that pushes I-70 to the north. A wall prevents a very large cut slope in a heavily forested area. If the alignment shifted south, there would be trail impacts and that alignment shift would also impact two other adjacent curves, causing additional impacts in those other locations
 - 1. Greg asked if there was a balance to where the design could disturb up to the tree line and reduce the height of the wall?
 - a. Karen responded that the Project Team can look at this as design is moved forward.

m. Disturbance Exception #1

- i. Kara described that the cut slope for this exception prevents the need for a wall. The project will revegetate the area and make it look like other nearby existing cut slopes
 - 1. No comments from the TT on this exception

n. Median Exception #5

- i. Kara described that this exception is in the area between the CDOT maintenance shed on the north side of I-70, and the truck parking area, Black Lakes, and trail on the south side. To maintain the existing median width, the Team would need to impact either one of these sides of the interstate and the features on that side. Widening to the north would impact the acceleration lanes to the maintenance shed leading to more conflicts with CDOT maintenance personnel. Widening to the south would get closer to the Black Lakes, and impact the trail and parking in winter
 - 1. Greg asked if the Project Team could add the locations of the wildlife underpasses to these maps?
 - a. Kara responded that could be done
 - 2. Greg added that it looks like the existing median is full of trees and asked if they get impacted and if there was a balance in the widening both north and south? Maybe it would be best to construct a maximum sized downhill wall to show how that would reduce the impacts to the median

4. Closing

- a. Kara asked the TT group if there were any other comments or concerns
 - i. John asked TT members to send any additional comments to the Project Team by Feb 12th, prior to the scheduled PLT.
 - ii. Stephanie stated that the Project Team needs to be careful of the specificity of changes that talks about a higher level of design than we have (i.e. show a 79-foot-tall wall, but we know final design may change some). Need some sort of height parameters, but can't get too specific at this time
 - 1. The Project Team felt this is a good comment and will look at that
 - 2. John added that the Project Team would like to meet with FHWA and CDOT environmental and look at how what was discussed today relates to the PEIS and how it will be reported to the PLT.



- iii. Shannon stated her concerned for the Vail Pass Recreation Trail where it shares same platform as the Black Lakes Roadway/parking. She would like a dedicated bike lane to remove cyclists from that roadway.
 1. John responded that he will follow up outside of the context of this meeting with Shannon
- iv. Larissa asked when specific mitigation would be written up and available for review. She would like an update at some future point as to when the mitigation details will be available.
 1. John replied that the implementation of the SCAP update and the aesthetic design guidelines will be done in conjunction and before any final design is complete. They both will be done after the EA, but the Project is committing to doing those in the EA
 2. Karen added that the Project does have committed construction dollars (a small amount) and is likely to do some sort of project in 2022 or 2023. CDOT is using this as seed money for pursuing grants. The Team will proceed with a few items including the SCAP update and aesthetic guidelines later this year, then proceed with design on whatever construction project is funded. She also pointed out that the SCAP and aesthetic guidelines will be for the entire corridor.
 3. Larissa asked where does establishment of BMPs take place?
 - a. Kara responded that the Team has a BMP menu (framework) that came out of the SWEEP ITF. As final design takes place and through the continued CSS effort, the Team will work to pick specific BMPs for specific areas and coordinate with the ITFs
 - b. Larissa stated that she is looking forward to having input into exact BMPs. She asked to have the BMP menu sent to her
 - c. Kara stated that she will send the SWEEP packet from the last SWEEP ITF to Larissa

5. Additional Comments Received After the Technical Team Meeting

a. Matt Klein – US Forest Service

John / Kara:

Thank you for conducting a very informative TT meeting today (Zoom conference call) regarding suggested exceptions to the Mountain Corridor engineering design criteria.

I would like to offer my comments/feedback via this email, since conversation during the conference call was quite robust, with many folks voicing a lot of questions and opinions.

It was good to see that CDOT is suggesting the exceptions we discussed today largely for the specific reason of minimizing impacts to adjacent natural resources. The justifications provided for each proposed exception clearly explain that, were the exception not granted, the alternative would likely impose greater



impact on adjacent resources than the exception, including impacts on resources within the National Forest.

Two examples come to mind from today's conference call: One, the proposed exceptions to retaining wall dimensions seem to make sense, since the alternative to retaining walls would be cut slopes that extend several hundred feet into adjacent Forest land, and would likely require significant vegetation removal and earthwork recontouring. Two, the proposed exceptions to median dimensions also seem to make sense, since the alternative to narrower medians is a widening of the highway towards the outside of the right-of-way, which would further encroach upon (and perhaps adversely impact) Black Gore Creek and other adjacent natural resources such as a wildlife habitat.

Therefore, I don't think we will have any objections to the exceptions proposed today.

On another note, I would be remiss if I did not take this opportunity to once again emphasize that our interests in this project continue to focus on a highway design that minimizes adverse impacts to [a] wildlife (through effective fencing and properly designed underpasses), [b] water quality (through protection of Black Gore Creek, associated wetlands, and sediment ponds), [c] recreation (through preservation of adequate winter parking at Vail Pass, and close communication on any planned impacts/closures to the Vail Bike Path and Gore Creek Campground), and [d] visual aesthetics (through design/coloring of guard rails, retaining wall, and barriers, as agreed to in the 2016 CDOT-Federal lands MOU). As a cooperating agency, we look forward to future opportunities for our staff specialists to review the draft NEPA documents and design plans.

Finally, would it be possible for us to obtain GIS shapefiles and or GoogleEarth KMZ files of the proposed exceptions, proposed wildlife underpasses, etc.? The design drawings in pdf are great, but they are of limited utility when it comes to comparing proposed design features against our own data for existing resource conditions.

Please let me know if you have any questions. Thank you again for a very illuminating meeting today.

b. Devin Duval – Colorado Parks & Wildlife

John and Cinnamon,

After speaking with Michelle and following the 2/6 phone call, we wanted to pass along the following comments/recommendations and questions:

- Depict where the wildlife crossing structures are in relation to exemptions.
- No fencing construction east of MP 186 without prior completion of the wildlife crossing structures.
- Are there any proposed walls that occur on the creek side of the recreation path?
- For exemptions involving reducing median near Gore Creek: Minimize footprint of road and maximize distance from the road to the creek.



ISSUE TASK FORCE MEETING NOTES



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	ALIVE Issue Task Force (ITF) Meeting #1
DATE HELD:	April 18, 2018
LOCATION:	Miller Ranch Community Center, 25 Mill Loft Road, Edwards, CO
ATTENDING:	<p>Joel Barnett, FHWA</p> <p>Martha Miller, Program Engineer, CDOT Region 3</p> <p>John Kronholm, Project Manager, CDOT Region 3</p> <p>Karen Berdoulay, Resident Engineer, CDOT Region 3</p> <p>David Caesark, Environmental Manager, CDOT Region 3</p> <p>Jeff Peterson, CDOT</p> <p>Paige Singer, Rocky Mountain Wild</p> <p>Alison Deans Michael, USFWS, Colorado Field Office</p> <p>David Singer, CDOT</p> <p>Jonathan Lowsky, Colorado Wildlife Science</p> <p>Mark Hablitzell, Town of Vail</p> <p>Julia Kintsch, ECO-Resolutions</p> <p>Cinnamon Levi-Flinn, Biologist, CDOT Regions 3</p> <p>Craig Wescoatt, Colorado Parks & Wildlife</p> <p>Bill Andre, Colorado Parks & Wildlife</p> <p>Jen Prusse, US Forest Service</p> <p>Greg Hall, Town of Vail</p> <p>Don Connors, Consultant Project Manager, Amec Foster Wheeler/Wood</p> <p>Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates</p> <p>Matt Figgs, CDOT Region 3</p>
COPIES:	Attendees

SUMMARY OF DISCUSSION:

(Please Note: Action items are shown in ***bold italics.***)

1. Introductions & Agenda Review

- a. John did introductions, covered the agenda, and talked briefly about the purpose of today’s meeting, which is to discuss wildlife on the West Vail Pass corridor and receive input from the members of the ALIVE (A Landscape Level Inventory of Valued Ecosystem Components) Issue Task Force (ITF).

2. Agenda and Goals

- a. John covered the agenda and discussed the goals of today’s meeting

3. Project Background

- a. John discussed the background of the project including highlighting the I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS), the



recommendations from the PEIS (including stipulations in the ALIVE Memorandum of Understanding [MOU]), the Tier 2 NEPA process, and the past 2007 Environmental Assessment (EA) for the West Vail Pass area

- i. He explained that this project is the Tier 2 NEPA process as it address site specific details for West Vail Pass
- ii. Don added that the PEIS identified the auxiliary lanes for safety purposes, not for capacity

4. CSS Process/ITF Responsibilities

- a. John outlined the Context Sensitive Solutions (CSS) process that the Project Team is following for this project and what stage the project is at in the process
 - i. The Project Team has gathered information from the Technical Team (TT) that is being considered for the development of alternatives that will then be screened through a screening process
 - ii. He also highlighted the Success Factors that the Project Team, in conjunction with the Project Leadership Team (PLT) and TT, have developed. The specific Core Values that have been established for the project were also discussed.
- b. John covered the roles and responsibilities of the various ITF groups which come directly from CDOT's CSS guidance. There are other roles and responsibilities that are a part of the ALIVE MOU that will be covered later in the presentation
 - i. He explained that the intent of an ITF is to focus on a specific issue
 - ii. David Singer added that this ALIVE ITF is comprised of experts for this specific issue, and the results of this discussion will then be reported to the TT which is comprised of a broader diversity of backgrounds and expertise

5. Current Project

- a. John discussed the limits of the West Vail Pass Auxiliary Lanes project and talked to some of the unique characteristics along the corridor.
 - i. The elevation of West Vail Pass summits at 10,603 feet
 - ii. There are several sections of steep grades which are at 7%
 - iii. There are areas of substandard roadway geometry with some compound curves that were designed for a 55 mph speed limit (the current speed limit is 65 mph)
 - iv. There are 23 different retaining walls totaling 23,515 linear feet
 - v. There are 16 bridges that make up 1.6 miles of the corridor
 - vi. The Vail Pass/Tenmile Canyon National Recreation Trail sits in the corridor. This paved bike trail gets 39,000 annual users with a peak daily count of 3,500 users
 - vii. West Vail Pass is the access point for the Vail Pass Winter Recreation area which saw 56,000 users in the 2016/17 winter season



- viii. There are numerous wetlands and waters of the US in or near the corridor including Black Gore Creek. There is also considerable wildlife activity in the lower five miles of the corridor.
 - ix. There is a Sediment Control Action Plan for Black Gore Creek that another ITF will discuss implementing
 - x. The West Vail Pass corridor is subject to Section 106 of the National Historic Preservation Act as it is a nationally and exceptionally significant feature of the federal interstate system. West Vail Pass was one of the first highways to purposefully sculpt cut-and-fill slopes to fit in its unique setting, as well as being one of the first to use precast and cast-in-place segmental bridges.
 - xi. 80% of the project is within the White River National Forest
 - xii. 20% of the project runs through the residential portion of east Vail
 - xiii. The weather on the west side of the pass is a challenge as this side routinely sees more snow than the east side of the pass
- b. John talked about the topography and layout of the interstate on the corridor with sections that are barrier separated, have a retaining wall in the median, open in the median, and bifurcated.
- c. He then covered the Purpose & Need of the project which is to improve the safety and traffic operations for both eastbound (EB) & westbound (WB) directions of West Vail Pass
- i. He highlighted several specific safety and traffic operations issues that exist on the pass that have necessitated this project
 - ii. He talked about the Level of Service of Safety (LOSS), which compares West Vail Pass to all rural, mountainous 4-lane divided highways. The safety assessment that was completed for this project showed that every section of West Vail Pass has a moderate to high potential for crash reduction. Improvements made to the corridor have the potential to significantly reduce crashes on the interstate as this section of highway is significantly worse than other similar sections.
 - iii. David S asked why the bridges are a specific crash problem
 - 1. John replied that the bridges ice over and some of them are on substandard curves, which lead to a lot of crashes
 - iv. Joel asked what the red circles on the crash chart on Slide 26 represented as there are other peaks in the chart
 - 1. John replied that those areas are where the high crash rate corresponds to substandard geometry
- d. John covered the crash distribution by type from 2014 to 2016. He highlighted that only 5.4% of crashes over that timeframe that are officially recorded (i.e. they cause property damage and/or injuries) are from wildlife collisions
- i. He highlighted the specific wildlife crash data on the West Vail Pass corridor. Most of the collisions occur on the lower half of the corridor where it is most permeable (with the 8 pairs of sister bridges). Very few collisions occur on



the upper half of the pass where there is nearly no permeability. The East side of Vail Pass has a similar amount of crashes as the lower half of West Vail Pass.

- ii. Most animal collisions are in dry and dark conditions, in the WB direction, and with deer
 1. Bill added that it's important to note that these are only crash numbers that are reported to State Patrol (CSP). Vehicles that hit animals and drive away are not shown in this data and would add a significant amount of hits
 2. John showed a graph of data collected from a different source (CDOT's Road Kill Report where maintenance reported dead animals on the side of the interstate)
 - a. The trends generally stays the same as CSP's data except with a spike at MM 190
 3. Greg added that Vail Police has data on animal hits from MM 180-182 that would be available if needed
 - a. Bill replied that Colorado Parks & Wildlife's (CPW's) reports show two to three times the amount of bear hits than CDOT or CSP due to their mandatory reporting of bear kills
 - i. He added there are studies that may show as little as 30% of animals that are hit on the interstate are reported
 - b. Dave Cesark asked if CPW has a dataset they could give to the Project Team
 - i. Bill replied CPW has good data on bears, lions, and moose, but not on other animals.
 - ii. ***The Project Team will reach out to Bill to gather their wildlife crash data***
 4. Julia added that some of the half-mileposts are missing, so some data may be incorporated in a 1 mile data point, showing an artificial spike at that location possibly
 - a. She added that the bridge at MM 182.5 does have an opening underneath, but it is over a large, steep gorge that doesn't allow for animal permeability. Not every bridge can be considered permeable due to the terrain in the area.
 5. Greg asked if the CDOT Road Kill Report noted direction of travel
 - a. John replied that CDOT's Road Kill Report does not note direction, but CSP's crash data does
 - i. The group noted that the WB direction is where the traffic moves the fastest on the steep downhill areas and may be the reason there are more animal-vehicle collisions in that direction



6. ALIVE MOU Review

- a. David S talked about the ALIVE MOU background
 - i. He said that the interstate has always been a barrier for wildlife, and an ALIVE committee was formed to work on making sure this barrier issue did not get worse with future improvements
 - ii. The intent was to go beyond the bare minimum to improve wildlife conditions and permeability with projects
 - iii. It also established roles and responsibilities noted below:
 - 1. CDOT/FHWA: integrate the ALIVE process into Tier 2 projects and create design criteria so projects don't prevent improving permeability
 - 2. BLM/US Forest Service: be aware of the ALIVE requirements as they perform their land management functions
 - 3. US Fish & Wildlife Service (USFWS): Champion the protection of streams and aquatic life on projects
 - 4. CPW: cooperation, consultation, data sharing, monitoring, and promoting mitigation measures on projects

7. LIZ Review – 2003 and 2011

- a. David S spoke to the Linkage Interference Zones (LIZs) that were identified as part of the ALIVE process along the I-70 Mountain Corridor
 - i. In the 2003 study, 13 LIZs were identified along the corridor.
 - 1. Recommendations for improvement were also made at specific Mile Markers (MMs), including for sections of West Vail Pass
 - ii. In 2011, the PEIS Record of Decision adopted the ALIVE MOU and further refined the LIZs
 - 1. CDOT wanted to bolster the original findings and have a more data driven method to update the LIZs which lead to 13 zones becoming 7, and the actual mileage of LIZs was reduced as well
 - 2. The specific MM recommendations were also refined with this update, and an implementation matrix was created to help projects think about how to advance ALIVE efforts
 - iii. Bill added that there is probably 50% less animal populations in Eagle County compared to when the original LIZs were created, so it is hard to compare recent data with this older data
 - 1. John asked if there was data to back this statement up
 - 2. Bill stated CPW does have this and can supply that to CDOT if needed

8. ALIVE Implementation Matrix Review

- a. Kara referred the group to the ALIVE implementation matrix handout for this section of the presentation. The West Vail Pass project is currently in the Project Development phase on that matrix.



- i. She highlighted the different considerations that the Project Team will be looking at as alternatives are developed, as well as the desired outcomes and products that will come out of this effort. She pointed out that the project is working through the NEPA and EA phase and is not jumping to final design

9. Current Surveys and Data

- a. Jonathan talked about the different background data sources that the Project Team will be referring to as alternatives and design options are being developed.
 - i. He added that deer are the best indicator of hits along the corridor and may be focused on
 - ii. There will be a lot of communication from the Project Team to the different agencies as this data is being collected
- b. He also discussed some of the field work that has been done to date and the remaining surveys that are still to be completed
 - i. Bill asked why boreal toads are being surveyed as their common habitat is outside of the project limits
 - 1. Jonathan replied that while their breeding habitat is outside of those limits, not enough is known about adult habitat, so the project team thought it'd be good to survey for them
 - ii. Bill asked if peregrines will be surveyed
 - 1. Jonathan said they have not been surveyed yet, but they can. He added that in his work with CPW, lynx will be looked at but not wolverine
 - 2. Alison added that the USFWS & CPW has good lynx data
 - iii. Jen asked if the accipiter survey results were positive
 - 1. Jonathan replied that it was not positive
 - iv. Bill asked what distance off roadway was for these surveys
 - 1. Jonathan said the team looked 250 feet from the edge of the roadway
 - v. Greg asked why the survey didn't go down to MM 180 and stopped at the Gore Creek campground
 - 1. Jonathan replied that every time they went out, there were too many people and dogs for any wildlife to really be west of the campground, and no activity was noticed in the winter. Once he got further uphill, he started to notice a lot of animal sign

10. Discussion

a. LIZ and Aquatic Recommendations

- i. Kara presented the current LIZ & Aquatic recommendations from the 2011 ALIVE update and asked to hear feedback from the ITF on what the Project Team should be considering while considering alternatives and design options
- ii. She covered LIZ G (MM 180.9-182.1)



1. These recommendations are focused on coordination with the East Vail neighborhoods and includes fencing removal and concentrating human activity
 2. Bill stated that the fence near MM 181 has been down for many years for an elk that was moving through that area. The fence wasn't long enough to begin with
 - a. He added that mule deer, bighorn sheep, & lion should be added to the secondary target species, and that leopard frogs haven't ever been found in Eagle County
 3. Alison added that the Project Team should consider wildlife movement while some of the SCAP features are being designed. As sediment ponds with standing water next to the interstate attract animals, this could draw wildlife closer to the road and increasing the risk that they get hit
 - a. Several in the group concurred with this statement and encouraged the Project Team to consider this
 - b. John replied that the values of many concepts may conflict and coordination will be vital In order to come up with the best improvements with the Core Values in mind
 - c. Bill added that depending on where fence goes and where the ponds are, if a pond is on the proper side of the interstate it could be a benefit to keep animals from crossing the road. Coordination between the Project Team and the ITF to review items like this will be needed as the project progresses
 4. John added that this LIZ does not specifically address wildlife fence and asked the ITF for their thoughts on this potential feature
 - a. Julia said that fencing should be on the table for this segment especially since many of the wildlife crashes take place in this area
 - b. Greg pointed out that the trails in this area don't undergo seasonal closures, so humans are there year round
 - c. Jonathan added that the high recreation usage in this area may cause deer and other wildlife to cross the interstate to avoid human interaction
- iii. John next covered the recommendations specified for LIZ H (MM 182.9-188.1). The recommendations here include maintaining connectivity in the western portion of the LIZ and adding permeability for the eastern portion of LIZ, as well as fencing additions
1. John asked the ITF group about the MM 183 culvert and if this should be removed as recommended



- a. Julia stated that all of these recommendations from the 2011 report should be reconsidered and reanalyzed in light of new data and knowledge.
2. John asked about the next four recommendations which cover fencing between bridges to direct wildlife to cross under those structures and not on the interstate
 - a. Bill stated that the biggest problem with fencing is that it has to be maintained (especially with snow, people trying to get through it, and vehicle crashes). He suggested that a more permanent wall would be better for the pass than traditional wildlife fencing
 - b. Craig added that any break in a wall/fence would be the spot an animal will cross. Continuous fencing between those bridges is very important. He added that when holes are created in a fence and they get through, animals are not good at getting back on the other side of the fence
 - c. Bill said that there is not much movement in the winter, but when snow removal operations take place, the location of the fence will be critical. Depending on how close the fence is to the road, plowing operations could pile snow next to and around the fence, allowing animals to get over it.
 - i. He added that the project may not need a 6-8 foot tall concrete wall, but maybe a concrete barrier with 4 foot fence on top of it would be sufficient
 - d. Craig added there is good research on high tensile strength fence that may work on top of a barrier.
 - e. Julia said that WASHDOT did a study on fence in high snowfall areas that Project Team can refer to
 - f. John replied that the maintenance of the fence will be an issue and the Project Team will need to consider it. There is also snowcat operations that take place, so working with CDOT Maintenance on developing this solution will be critical
3. Greg added that glare screen on the median barrier can be an issue as small animals can't get over it
 - a. Martha replied that there is a safety issue with glare and glare screen could be strategically placed in areas to significantly improve safety on sections of West Vail Pass. This will need to be done in comparison with animal crossings
 - b. Bill added that the glare screen in Dowd that has segments of shorter heights that allow for animals to get over the barrier and he feels those have been successful



- c. John stated that a recent CDOT safety assessment for the Dowd Junction area showed there was a 30% decrease in crashes from installation of new pavement and the taller glare screen
 - d. Bill said that fencing and culverts underneath the roadway to keep animals from getting onto interstate while still allowing passage underneath is important. If installed properly, glare screen wouldn't be as much of an issue
 4. John highlighted the recommendation for MM 186.5 which was to construct a wildlife underpass, and at MM 187.4 which was to construct a wildlife overpass
 - a. Don asked if there was an official rule for implementation of recommendations from the 2011 report (i.e. "must a crossing be put in?") as there are different recommendations from different LIZs and other subsequent wildlife reports
 - i. David S stated that for this project, as it is a Tier 2 of the I-70 Mountain Corridor PEIS, the ALIVE MOU will require the project to take a hard look at these 2011 LIZ recommendations. Projects should run those recommendations through Core Values and Success Factors to see if they are good for the overall benefit of the project
 - ii. Greg asked if the MM 187.4 location was where the ARC design competition was for several years ago. The ITF group replied that it was the location.
 - iii. Bill added that a previous recommendation to install an overpass at MM 188 gave guidance that the location could be +/- ½ mile from that mile marker. MM 188 was selected because 2 lynx were hit there, but the recommendation allowed for flexibility to select the best location that could be built the cheapest. The ARC competition selected the MM 187.4 location for the completion as it was best location for a structure for wildlife that had a projected cheaper cost.
 - b. John said that while there are these recommendations for an overpass and underpass structure, the animal crash data is lowest in this area. He asked how the crash data could support either of the recommended structures.
 - i. Bill replied that for 7-8 months of the year it is winter on the upper half of the pass and that deer & elk won't cross in this area during winter conditions, so that could be a big cause of the low crash data. For Threatened and Endangered species, the question is how many need to be killed on the highway before its



- worth installing one of the recommended structures, especially when the state is trying to restart a lynx population
- ii. Kara asked when lynx hits happened
 1. Paige replied that the first was in July of 1999 and the other one was in May of 2004
 - c. John asked if an overpass would be for smaller animals too or if its needed only for bigger animals
 - i. Bill thought that any money spent on a structure should be for greatest amount of animals and not restricted to size
 - ii. Craig said that he thought animals will use it if it is build. As the interstate is a barrier, they don't cross and don't get hit (as the data shows), but an overpass would provide the ability to cross. Animal populations are rapidly declining and the cost of an overpass is expensive, but all this needs to be considered
 - iii. Bill added that there aren't a lot of crossing locations along the entire I-70 mountain corridor for wildlife, so a major crossing here could be a huge benefit
 - d. John asked if animals would cross over a structure on a day to day basis or if it would be more for migration
 - i. Bill surmised it would be more seasonal for migration
 - ii. Julia said that the upper half of the pass is summer range and agreed that movement would be seasonal
 - e. Jen said that there is a Forest Plan document that states additional highway crossings are recommended when highway improvements are made
 - i. ***Jen will send this document to the Project Team***
 - f. Bill said that there needs to be some sort of structure on upper part of pass for animals to cross over. It doesn't necessarily need to be an overpass or on the West side of Vail Pass, but something is needed
 - g. Greg asked if a shed for snow/rock/avalanches that is designed in combination with an animal overpass could be considered. The group discussed the feasibility of this briefly
 - h. Julia said that while the crash data is low, the upper section of interstate is a huge barrier. This location is different than State Highway 9 as animals don't cross the interstate every day but more in migratory patterns. The West Vail Pass corridor should be looked at uniquely as wildlife numbers



will be much lower than other areas of the state, but there is significant ecological value to adding permeability on the upper half of pass

- i. John responded that the Purpose & Need of this project is for safety and traffic operations, but the ALIVE MOU notes that CDOT needs to go above and beyond to address wildlife permeability.
- i. John asked the ITF if they felt an overpass or underpass would be better
 - i. Julia replied that it depends on how long and wide the overpass would be, and that it might be more expensive to do an underpass. The goal should be to get multiple species across a structure and not just target one kind
 1. Don added that the topography of the upper half of the pass doesn't lend itself to an underpass
 2. John said the Project Team hasn't studied whether a certain option would be better and is only gathering information today
 - ii. Alison said that the goal was to get lynx across the interstate when this effort initially started for an overpass. There is not much data that shows lynx will use an underpass, so an overpass would be better
 1. David S asked what adding a 3rd lane would do to lynx and if that would further the need for an overpass
 2. Alison responded that it already is a barrier and a Section 7 process should look at if improvements of lynx movements across the highway can be made
 3. Kara added that whatever alternative is picked, the permeability will need to be considered
 4. Greg added that the PEIS requires this evaluation
 5. Paige said West Vail Pass is one of the higher priorities for lynx (#2 statewide) for the Lynx in Lieu Fee Priority List (an advanced mitigation program)
 - a. David S informed the group that this list exists to take the impacts to lynx from several small projects across the



state and mitigate in one location.
West Vail Pass is the second highest
priority as a location for this larger
mitigation

- j. Bill stated that when a 3rd lane is added in both directions, the path that an animal needs to cross is much longer and barrier effect will be even worse.
 - i. He was not sure if the solution has to be an overpass as that may not work on the pass, but maybe an underpass works better. The Project Team should really evaluate the best solution and not have a predetermined answer
- 5. Martha asked about the 2013 recommendation to build an overpass on the East Side of Vail Pass and how that works with this potential West Vail Pass location
 - a. Bill said he's not sure CDOT would need 2 overpasses
 - b. Julia said the next LIZ study wanted an overpass on the east side of Vail Pass, but that was a separate LIZ and a separate recommendation. For West Vail Pass, an overpass is challenging and human activity in the West Vail Pass recreation area has increased (impacting lynx habitat), so more animals may be moving on the east side of the pass. There is still a lot of value on the west side, but it might be that shifts in movement require one on the east side. She added that a past geotechnical survey in 2009 didn't find bedrock at the MM 187.4 location which could be a challenge for building an overpass
 - c. Martha asked if the ARC competition moved their location to the east side of the pass.
 - i. Julia responded that it did not, but Rocky Mountain Wild in conjunction with CDOT Region 1 looked at this topic and recommended the east side as the first location of an overpass
 - ii. Bill said that the east side overpass may be challenging as Copper Mountain wants to expand and encroach towards the area where the overpass is recommended. West Vail Pass has recreation though that impacts wildlife herds
 - iii. John added that while bedrock wasn't found, that doesn't mean the project couldn't build a bridge, but that it would be more challenging. He also stated that the geotechnical drilling found remnants of an ancient glacier at the MM 187.4 location.



- d. John said the report from 2013 ruled out the MM 187.4 crossing as the east side crossing was the most effective location for an overpass.
 - i. David said that this report was to identify wildlife enhancements that could be go through Tier 2 process on its own (i.e. not with another larger project), but it didn't preclude or eliminate other recommendations from past LIZs.
- 6. John asked if an underpass that snowplows could drive through in winter would be acceptable (i.e. animals would cross under during summer)
 - a. Julia said fox and coyote would need it for winter use.
 - b. Bill said the box would need to be big enough to have an asphalt substrate and a dirt substrate. It couldn't only be a paved bottom as animals wouldn't want to use it. Very few animals would use it in the winter (fox, coyote, lynx, pine martin). It would be better than no mitigation, but not the most desirable
 - c. Julia asked if the maintenance underpass at Straight Creek was used year round and if the one on West Vail Pass would then have a maintenance seasonal restriction
 - i. The ITF group discussed this could be a challenge
 - d. Jen said if a box comes close to the bike path, recreation users could be explore it and make user-created trails
 - i. Greg added that there are sections of the bike path that will need to be rebuilt, so this ALIVE ITF could provide good insight on a potential location
- iv. John then presented the aquatic recommendations in the LIZ reports
 - 1. The recommendation for the culvert at MM 180 said to keep this location as a fish barrier. CDOT has recently completed a project (with CPW input) to line this culvert and keep it as barrier
 - 2. The recommendation for the MM 180.6 location was to replace the existing culvert with a 3 sided box
 - a. John said this was rebuilt in an Emergency Repair project but it still could be fish barrier
 - b. Bill said he was not too worried about fish, he would spend money on the upper part of the pass rather than on the lower half
 - c. Julia said work was done with CPW to look at aquatic resources and provide recommendations, but it wasn't a huge priority to improve aquatic passage. Many of the other recommendations are to maintain the creeks at the existing bridges



- d. The ITF group agreed that the MM 180.6 location wouldn't need improvements
 3. The recommendation for the MM 183 location was to remove the existing culvert
 - a. The ITF group discussed where this location was and the conditions of the culver. It was decided that further investigation will be needed on it
 - i. Julia added it will probably be a low priority. She added that these recommendations show where known fish barriers are and whether they should remain or be removed
 - b. The group then discussed that some of this discussion can be deferred to the SWEEP meeting. The ALIVE MOU does talk about aquatic recommendations, but this will be discussed again at the upcoming SWEEP ITF meeting
 4. The recommendation for the MM 183.3 location was to improve fish passage
 - a. Bill said the Project Team needs to look at this and see if there are fisheries upstream and if it is really needed
 5. The group decided to not discuss more of the recommendations and then focus more on it at the SWEEP ITF
- b. Design Options**
 - i. Kara stated that the previous 4 TT meetings talked about design options that will lead into alternative developments and highlighted what was discussed at those TT meetings
 - ii. Don covered some details on the content that was discussed at the TT meetings including roadway template, construction phasing options, and trail options
 1. The bridges may need to be replaced on realignments of the interstate, the trail may need to be relocated where impacted (especially on the upper ½ of West Vail Pass), and roadway widening widths have been discussed
 2. The Project Team is developing criteria from the TT & ITF meetings to screen the alternatives that are developed
 3. Bill asked what the definition of “near the creek” is for trail relocation
 - a. The Project Team didn't know at this point in the project. Kara said this was a higher level discussion at a TT meeting and the exact distance to the riparian area was not discussed
 4. David S asked if wildlife had an impact on any of the options
 - a. Don said the use of old US 6 as a detour considered this as many of the crossings would be eliminated as no bridges



would be needed to install this detour. This design option was eliminated for 4f recreation issues too.

- b. Martha said the Project Team's challenge is to take input from all of the stakeholders and come up with the recommended alternative that best fits all of the input received so far

11. Schedule and Next Steps

- a. Kara covered the project schedule. The project is currently developing Purpose & Need criteria for the Level 1 screening, then will further develop that criteria for the Level 2 screening. The Project Team will come back to the ALIVE ITF during the Level 2 screening process
 - i. She added that the next ALIVE ITF presentation will show the results of the Level 1 screening and what alternatives moved onto the Level 2 screening. This will be done before the recommended preferred alternative is identified
 - ii. John asked group if the ITFs will be before the Level 2 analysis or as that second level screening is taking place. He wanted clarification as the goal is to have only one more ALIVE ITF meeting before the recommended alternative is identified
 - 1. Bill said this topic is too complicated and that one meeting may not be enough to fully discuss the mitigation
 - a. John said he hoped it could be done in one meeting and may need to be looked at and addressed as the project progresses
- b. Greg added that there is a potential for noise walls in East Vail and asked how that impacts wildlife
 - i. Bill replied that a noise wall would prevent crossings and could be tied to the wildlife fence for a continuous barrier and push animals underneath the bridges
- c. Bill stated that he felt it would be counterproductive to get the bike path too close to the stream as it could add impacts and sediment to Black Gore Creek. The pedestrian bridges could narrow the creek and allow for beavers to dam them up and create big issues. He felt the design should stay well out of riparian areas and try not to cross the creek. Impacting riparian areas could go against some of the Core Values of the project
 - i. Greg said that there are pros and cons to moving the path closer to creek. It could help to clean sediment out of creek and provide a better user experience, but it would impact the riparian area and potentially increase winter activity next to creek as well as affect emergency response for incidents on trail. There is a lot to be considered in looking at trial realignments
 - ii. Jen said that the Forest plan has guidance on permanent trails in lynx habitat
 - 1. ***Jen will send this to Project Team***



- iii. Julia said that in other areas in Colorado, trails are closed in the winter due to the lynx habitat and asked if this could be done for the Vail Pass trail
 1. Jen replied that it is feasible and the Forest Service would be able to enact this as they manage recreation use of the trail



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	ALIVE Issue Task Force Meeting #2
DATE HELD:	December 14, 2018
LOCATION:	Miller Ranch Community Center
ATTENDING:	John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 David Cesark, CDOT Jeff Peterson, CDOT Drew Stewart, CDOT Cinnamon Levi-Flinn, CDOT Environmental Matt Klein, US Forest Service Alison Deans Michael, USFWS Paige Singer, Rocky Mountain Wild Michelle Cowardin, Colorado Parks & Wildlife Taylor Elm, Colorado Parks & Wildlife Pete Wadden, TOV Kristen Bertuglia, Vail Dick Cleveland, Representing Vail Town Council and EcoTrails Jonathan Lowsky, Colorado Wildlife Science Leah Langerman, Public Involvement Coordinator, David Evans and Associates Kara Swanson, Environmental Task Lead, David Evans and Associates Tyler Bowman, Engineer, Wood
COPIES:	Attendees, ALIVE ITF Members

Action items are shown in ***Bold Italics***

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. The group did introductions and Kara presented an outline of the agenda.

2. Brief Overview

- a. Kara reviewed the Issue Task Force (ALIVE) roles and responsibilities, Purpose and Need, recap of ALIVE meeting #1, and work completed to date on the project (see PowerPoint presentation).

3. Wildlife Connectivity Comments

- a. Kara noted that a summary of stakeholder comments from all sources and meetings regarding wildlife connectivity is in the presentation and handout packet.

4. Wildlife Connectivity Recommendations

- a. A multidisciplinary report was completed in 2011, as part of the PEIS. This looked at linkage interference zones (LIZs) for I-70 from C-470 to Glenwood Springs. These have been fine-tuned and made more realistic since. Jonathan Lowsky reviewed the



- ii. At the upper end of the project area, mule deer and elk are not target species for crossing structures. There is no reason for these animals to move perpendicular to the highway at this section; it's all summer range. Mule deer and elk often follow drainage patterns. The upper area of the project has no major drainages running perpendicular. Deer typically cross lower, crossing below MP 186.
 - iii. Lynx do exist in the upper portion of the project area. Studies in Banff have shown that lynx readily use underpasses. Lynx shown to prefer crossing where their habitat approaches the roadway.
 - iv. Michelle Cowardin noted that Craig sent an email last night and has changed position – now believes the underpass structures should be larger.
 - v. John stated that State Patrol records two animal collisions per year in the upper portion of the pass. A recommended 150' overpass would cause more than the two accidents per year due to icing and shading. This is one of the areas with the highest crashes (peak at 187.5) already.
 - vi. Karen noted that CDOT doesn't want to impact safety on the roadway and go against the project Purpose and Need. This is why more underpasses would be a better balance for connectivity and safety.
- h. MP 186.9
- i. Michelle suggested that bigger is better for crossing structures.
 - ii. Julia Kintsch sent an email and recommends six-foot instead of four-foot diameter underpasses for medium to small species and substantially larger structures for large animal crossings at 187.4 & 188.3 sites. The project team is looking into making these changes and plans to follow this recommendation where possible (constructability will be considered).
 - iii. A small PVC pipe within the culvert has been shown to help encourage smaller animals such as martens to go through the larger culverts.
 - iv. John noted that the locations shown on the map and matrix are approximate, and will be adjusted slightly during final design as needed, and refined throughout the process.
- i. MP 187.4
- i. This is one of the largest crossings proposed. Julia and Michelle have suggested an even larger size.
 - ii. Elk is a species that is reluctant to use new crossing structures. Some have been shown that it takes elk three to five years to adopt underpasses. This is one of the reasons to consider even larger structures to help the elk and deer be more willing to use them.
 - iii. Michelle noted there is an underpass that is 42' wide and 14' high on SH 9 across two lanes of traffic. Four years later elk are still hesitant to use it, and deer are also slightly hesitant. The 211 is 14' tall and 16' wide and under six



lanes (this is a different purpose, by Eisenhower, but team members could go look at the size).

- iv. Jonathan pointed out that moose have been seen in CDOT video using crossing structures. So there may be another species to consider.
- v. Michelle brought up preference for a 14'x80' arch underpass (not a box culvert).
 - 1. Deer prefer larger structures according to Michelle.
 - 2. Typically takes animals 5 years to adopt smaller box structures.
 - 3. Jonathan noted that the team is continuing to study to ensure that what gets constructed get used by animals.
- vi. Michelle noted she is glad to see the team taking into consideration Julia's comments.
- j. MP 187.8
 - i. A small underpass is proposed here. There is a lot of small animal activity here. Research shows lynx like to cross in this area where suitable habitat (indicated by presence of prey such as snowshoe hares and pine squirrels) is located on both sides of the highway. They also prefer natural crossings where streams intersect roads.
- k. MP 188.3
 - i. This is the largest structure proposed.
 - ii. This should be large to accommodate elk if they choose to use it. There is no elk collision evidence to suggest that a problem exists. Although no current evidence of elk crossing activity in this area, they may once suitable crossing structure is placed. May not be crossing in area because of I-70 as barrier.
 - iii. Julia recommended a 16' x 80' arch with vegetation because there is research showing elk prefer to use arches for underpasses.
- l. MP 188.7
 - i. A 4-6' structure is recommended for small to medium animals. Julia recommended 6-foot.
 - ii. Adding structure to the substrate will improve the use.
 - iii. Studies show that a smaller adjacent pipe would improve use.
 - iv. Adding vegetation on either side will also improve use.
- m. Entire Project Area
 - i. Research has been shown that shelves installed within any existing drainage structures crossing the highway would be used by small mammals such as mice, voles, etc.



- ii. Will be examining improving bat habitat under existing bridges, as recommended in the 2011 study.
- iii. Vail Pass accumulates more snow than Banff. The Banff study has been used a lot as reference, so this needs to be kept in mind. Snow may block some structure openings if using Banff guidance. The team is considering designing the structures long enough so the openings extend away from the road and they don't get blocked by plow casting.
- iv. Michelle recommended a lynx crossing between the interchange at 190 and the sand shed. John noted that the project team looked at this. In general, the topography isn't friendly for this, but there is a potential for one spot south of the truck parking. It could be two separate culverts with an opening in the median.
- v. Michelle obtained lynx data from John Squires from 2010-2011. There are two females and two males that had a lot of movement on the west side. Successful female cross at 189.7. This is what spurred Michelle's recommendation for the lynx crossing at the top of the pass.
- vi. Michelle questioned if culvert at 188.6-188.7 was part of the original discussion? Yes. Michelle noted this should also be enlarged because this will likely fill with snow in winter. The 4x4' should be made 6x6' or 8x8'.
- vii. Michelle noted that Julia suggested for larger structures (especially 188.4) will need barriers to prohibit snowmobiles from using the structures (a barrier such as concrete bollards, which allows animals but not snowmobiles). John suggested additional signage could be paired with this. Michelle suggested the signage will be ignored. Jeff noted that snowmobilers use muddy pass crossing and signs have not deterred them. John suggested this should be taken into account in the detailed final design phase.
- viii. John asked if there is a reason snowmobiles aren't allowed to go past Black Lakes. Dick Cleveland noted that it is part of travel management plan to prohibit them. Michelle suggested it was because of wildlife.
- ix. Jonathan noted that skiers coming down East Vail chutes at MP 183 diminish the benefits of the wildlife crossing there.
 - x. Kristen asked if there is a big difference in effectiveness between underpasses and overpasses. Jonathan noted that there is evidence that overpasses are great for larger animals since they are more willing to use them. However, underpasses are also used by all of those species. The target species in this area aren't really the ungulates. In this area it seems more beneficial for more underpasses than one or two large overpasses.
- xi. Kristen asked how to mitigate for snow plow casting. John said Julia recommended 80' wide underpasses. John noted this would mean a bridge in those locations. At 187.4, for instance, this is one of the highest accident locations already. Building a bridge here would add another ice hazard on the roadway. There are some variables to consider before recommendations



are finalized. There are some locations where the roadway dips down, where there could be an opportunity to build a bridge and flatten the roadway.

- xii. Michelle noted that the CO 9 overpasses were never planned to accommodate big horn sheep, but they do use it. So, even though big horn sheep are not expected to cross I-70 on Vail Pass, they may use a crossing if it is provided. CPW released big horn in Gore range that are moving east.
- xiii. Michelle commented that 22,000 mule deer crossings were documented using the CO 9 five underpasses and two overpasses in a three-year period. Not migratory, but building a larger structure to encourage more crossing would improve the situation. She agreed with recommendation for more underpass structures.
- xiv. Jonathan showed tables from the Banff study to show that WVP target species used both overpass and underpasses. Banff study of five - 23' wide by 12' tall structures at 190' in length had a 76% success rate of deer using structure. No studies have yet to report a structure as 100% effective, as either an overpass or underpass

5. Aquatic Recommendations

- a. CPW strongly believes fish barriers at Pitkin, Miller, and Polk Creek need to be maintained and/or improved to protect upstream cutthroat trout conservation population.
- b. The 2011 recommendation was to use culverts to restore streams flowing below bridges.
- c. Jonathan and Kendall agreed that the threat of the contamination from mag chloride, petro chemicals, sand, etc. supersedes the recommendation to pull culverts to improve aquatic habitat.
- d. Michelle noted that pipes are not CPW's preferred improvement. They create a barrier for animals to cross the stream. In areas where there is an open stream, there isn't a need to cover it because the pollution and plow casting can enter anywhere else along the stream. This could also cause maintenance problems. She suggested maybe sediment traps could be more useful.
- e. The biggest thing will be to maintain and repair fish barriers.

6. Trail Realignment Options

- a. John reviewed comments received regarding trail alignments (see PowerPoint). Highlights include:
 - i. Need to fix sight distance and radius of curve near 185.2.
 - ii. Kevin Sharkey with Eco Trails has provided a lot of feedback, including a recommendation to widen trail to 14-feet where possible.
 - iii. Shared sentiment has been to keep the trail away from the creek.



- iv. Add etiquette signs to encourage good interactions (passing lane mentality).
- v. Need to keep trail open during construction.
- vi. Karen noted that all of the ITF and public feedback is being considered and incorporated and will be shared at Technical Team (TT) meeting #8.
- b. Karen emphasized that the trail challenges are balancing the recreational needs with environmental, and the team is looking at it from many avenues.
- c. Michelle asked how sediment is considered in the trail design. John noted that there has been discussion to strategically locate the trail between the creek and the highway, add a concrete pan to collect the sediment. However, this is not yet decided and could create a safety issue on the trail. More investigation is needed and this will be discussed with the SWEEP ITF.
- d. Trail alignments were reviewed by Tyler Bowman (see PowerPoint slide).
 - i. All three options have pros and cons, and more investigation is needed before a decision can be made. All involve moving the portion of the trail that is currently adjacent to the highway, and all tie into the same places at either end.
 - ii. Mid slope – closest to existing.
 - 1. Constructability challenges of building a trail near the existing
 - 2. Less environmental impact
 - iii. Intermediate – hybrid of the existing and across the creek.
 - iv. Creek – crossing to the after side of the creek.
 - 1. More environmental impacts
- e. Jonathan reviewed the trail alignment option matrix. He noted that his comments are from a wildlife perspective only, which is a viewpoint that can typically be in conflict with user experience perspective.
 - i. From wildlife perspective, it is best to keep trail where it currently exists.
 - ii. Largest wildlife concerns are where the trail relocation will cut through wildlife habitat and threaten integrity of Black Gore Creek aquatic habitat. Also, walls are a concern.
 - iii. A 3,675 long wall is proposed with a maximum height of 23', around MP 186.
 - 1. Michelle noted that even 4-6' tall wall is a barrier.
 - 2. John noted the wall would get even taller if the trail is widened beyond the 10' that is assumed on the plans currently.
 - iv. Jonathan noted Option 2 may cause more problems because it goes through the forested habitat and crosses Black Gore Creek.
 - v. Michelle noted that there is a possibility to limit walls and limit crossings of the creek by using a hybrid alignment.



- vi. Jonathan noted that between MP 186 and 187 there isn't as large of a wildlife presence.
- vii. Jonathan summarized that overall from a wildlife perspective, the best course of action would be to avoid forest fragmentation, avoid disturbance of wildlife habitat, stay close to highway as possible, and avoid introducing another area of influence to wildlife habitat.
- viii. Michelle said where MP 187 begins, would want to have the trail converge sooner to avoid more wall.
- ix. Dick Cleveland can't support the trail as proposed due to potential impacts to water quality and animals. He suggested that this trail should be elevated similar to Glenwood Canyon, built on a very narrow footprint, put on whatever route works best for everyone else. It would reduce cutting forest, increase ability for all animals to cross area, cross avalanche chutes with minimal impact, span creeks without touching creek banks or riparian areas. It could be built all in advance and not disrupt trail use. Moving trail from ROW gives additional 50' of area for sediment control. If the trail was elevated there would no human impact. From a maintenance standpoint, it would require little to no maintenance (no roots pushing, no sedimentation). This would be a continuous bridge viaduct.
 - 1. Michelle will think about how this will affect wildlife.
 - 2. Would need a rail and would need to be aesthetically pleasing.
 - 3. Jonathan noted that building the trail over the habitat may not have much benefit, because it is the presence of humans at all that has impact on many species.
 - 4. Michelle and Jonathan thought it would reduce impact to water quality, but may not benefit wildlife as much.
 - 5. Jeff noted that if the viaduct is cheaper than the huge walls, and there isn't a difference in a certain location wildlife-wise, maybe go with the viaduct.
 - 6. Michelle noted the visual impacts from I-70 will also need to be considered.
 - 7. Jonathan noted walls are barriers to all non-avian species.
 - 8. John noted the raised viaduct could be used as another tool to dovetail with the other options in a combined solution.
- x. Michelle noted Option 3 is very hard for Parks and Wildlife to support.
- xii. John noted most of Vail Pass is not built on bedrock, it is on moving alluvial soil.
- xiii. Michelle noted on page 21 -22 wall will have minimal impacts to wildlife, as long as pink line is brought up to blue line before it gets to the crossing structure.



- xiii. Michelle also suggested stream crossings should be limited. This will help limit human contamination of streams.
- xiv. John noted people sometimes swim, fish and picnic at Basin of Last Resort (page 10).
- xv. Jonathan noted that all wildlife species use riparian areas, and riparian habitat is the most important habitat. Plant and wildlife diversity along Black Gore Creek is thriving and we should avoid disturbing it.
- xvi. Kara noted also need to consider this as a contributing feature in the historic district.

7. Next Steps for Trail Alignment

- a. SWEEP meeting moved to end of January.
- b. Additional USFS coordination.
- c. Final recommendation will be presented at TT #8 in late February.

8. Upcoming Schedule

- a. Design will be refined over the next month based on TT and ITF feedback.
- b. CDOT and FHWA will make design decisions.
- c. Next TT meeting in Feb/March 2019.
- d. Decision document is expected in early 2020.
- e. No final design or construction funding yet.
- f. ***ACTION: ITF members should send any additional comments on today's information by January 4th.***

9. Wildlife Fencing Along Highway

- a. Michelle questioned if with snow loads, should a higher fence be used (from 8 – 10 feet).
- b. Jonathan noted that powder snow is different than sun-hardened snow or snow plow spray.
- c. Paige Singer asked if there will be issues with maintenance to the fence in this area with so much snow.
- d. ***ACTION: Alison Deans Michael will send information on CDOT Region 1 and Region 5 mesh/grates to Jonathan.***
- e. Michelle noted that CPW would like to keep disturbance through entire project as small and narrow as possible, and not impacting any areas that could be avoided.

10. Additional Comments Received After Meeting

- a. Jen Prusse feels strongly that Options 2 & 3 retaining walls will be an impediment to wildlife. Especially Option 3, since it could impede wildlife from accessing water source.



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Emergency Service Providers Issue Task Force (ITF) Meeting #1
DATE HELD:	March 28, 2018
LOCATION:	Miller Ranch Community Center, 0025 Mill Loft Road, Edwards
ATTENDING:	<p>Joel Barnett, FHWA</p> <p>John Kronholm, Project Manager, CDOT Region 3</p> <p>Karen Berdoulay, Resident Engineer, CDOT Region 3</p> <p>Matt Figgs, CDOT Region 3</p> <p>Julia Jung, AMEC Foster Wheeler</p> <p>Mark Novak, Vail Fire (by phone)</p> <p>Ryan Parker, Colorado State Patrol</p> <p>Gary Curmode, Summit County Fire (by phone)</p> <p>Jim Bradford, Eagle County Paramedic Services</p> <p>Barry Smith, Eagle County Emergency Manager</p> <p>Craig Davis, Vail Fire</p> <p>Matt Westenfelder, Eagle County Sherriff's Office</p> <p>Dwight Henninger, Chief of Police, Town of Vail</p> <p>Karl Bauer, Eagle River Fire</p>
COPIES:	Attendees, Project Team

Action items are shown in bold italics

SUMMARY OF DISCUSSION:

1. Introductions & Agenda Review

- a. John gave an overview on the project and the group did introductions

2. Project Background

- a. John presented a brief project background and presented the goal of this meeting which was to get background on:
 - i. How Emergency Service providers operate pass
 - ii. Insights to improvements from the Emergency Service provider viewpoint
 - iii. Anything the project can do to make pass better
- b. John gave an overview of the history of why this project is being planned, and the steps on how the Project Team got to where we are today
 - i. Part of the process is engaging a Project Leadership Team (PLT), technical experts via a Technical Team (TT), and specific Issue Task Force groups (ITFs) to help develop alternatives as part of the NEPA process
 - ii. John gave an overview on the limits of the project as well as the proposed scope
 - iii. Dwight asked if there was any funding for the project currently
 - 1. John responded that there is no funding currently, but the project is on several lists for funding. The Project Team has funding for the



NEPA phase of the project to develop a preferred alternative (which is anticipated for completion early 2020)

2. Karen added that even if construction funding was available, it will be several years before construction would start to allow a design to take place
3. Jim asked if the project had finalized an alternative already or if that was still being done.
 - a. John responded that the Master I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS) recommended a 3rd lane on West Vail Pass. This project will implement that, but will still be looking at other options through the alternative development
 - b. He added that this project won't change how the project is operated (or maintained), but it will impact infrastructure related to traffic operations
- iv. John added that the Project Team has already met with CDOT Maintenance, Colorado State Patrol (CSP) via Capt. Duran to receive initial feedback.

3. Brainstorming Discussions about Safety and Operations

- a. John asked a list of questions to the ITF group which are shown below **in bold**.
- b. **How do you respond to crashes and what changes would help?**
 - i. Ryan responded that it depends on whether it is in the eastbound (EB) or westbound (WB) direction. He asked if it was known how the project will be constructed and if both EB & WB will be built simultaneously or separately
 1. John responded that it is unknown, especially with funding uncertainties
 2. Ryan said with good road conditions, a standard response may shut down the interstate at Mile Marker (MM) 190 for WB traffic depending on the crash – this allows other Emergency Services to turn around at the exit at MM 189 and respond in the WB direction
 - a. Anything EB, because of the steep grades, will be responded to from Vail. It also depends on what type of crash it is. Sometimes CSP will try to move it out of the way. If it is a fatality, CSP will close pass down and open alternate routes (Highways 91 & 24 from Copper Mountain to Minturn through Leadville).
 - b. He added that if traffic is run head to head in construction (in 1-lane in each direction), this would be a huge impact to how the pass is responded to due to the amount of traffic, reduced speeds, and the very nature on how they respond to incidents on the pass
 - i. If 1-lane is closed in each direction but traffic is not run head to head (i.e. on the current alignment of I-70), this would be a better situation as they could use the shoulder or other areas, but many of the same challenges would exist in this scenario.
 - ii. The overall length of project (10 miles) a challenge. Construction will affect traffic and emergency



response not just on the pass, but from Frisco to
Glenwood Springs

3. Ryan asked about the potential to use old US 6 for WB traffic
 - a. John said it is a consideration at this time
 - b. Ryan replied that would help, but it would still be a challenge – similar to when I-70 was built through Glenwood Canyon and traffic ran on one deck while the other direction was completed
- ii. John gave a brief overview of the constructability options that the Project Team presented at the last TT meeting
 1. Option 1: 1-lane head-to-head traffic. This is an option that could be considered for shorter segments (i.e. one bridge at a time) but is difficult for a long corridor project
 2. Option 2: 1-lane WB and 2-lanes EB. This option works okay during the week but not as well on the weekends due to traffic volumes
 3. Options 3 & 4: 2 lanes both directions via temporary bridges or permanent bridge realignments. This option would allow for more lanes for traffic but would still have a reduced section (2' shoulders + two 11' lanes) in both directions. These options work well for a long corridor project
 4. Option 5: Old US 6 as a WB detour alignment
- iii. John asked if there were limited shoulders during construction and there is a crash, how would that affect the Emergency Service response. He added that there would be concrete barrier lining the shoulders in many areas
 1. Ryan responded that Emergency Service partners like to take a lane +1. If crash is on the inside shoulder right now, they would take the shoulder + the right lane. In construction, they would probably take one lane for sure. Providers don't want to create secondary crashes from their response.
 2. John asked if the response for the WB direction would be the same as today using the emergency crossover at MM 189
 - a. Ryan agreed that the emergency crossover needs to be open during construction, or else they might have to determine if a trooper from Frisco needs to respond to traffic incidents
 - b. Providers may need to charge traffic (if the road is confirmed to be closed) as sometimes happens currently in situations. There will be a lot to determine when final construction phasing gets determined as to the exact plan for emergency response.
- iv. Karen asked about how often emergency pullouts should be spaced to be of benefit to emergency response
 1. Ryan responded that the traveling public uses pullouts too so they may not always be open for Emergency Service providers. They would be helpful, especially as a location to get a disabled vehicle to, but it wouldn't solve all the issues



- v. Karen asked if Ryan felt confident that if the project added a 3rd lane, if it would reduce the amount of full closures of the interstate due to the lane + 1 response strategy
 - 1. Ryan replied CSP felt confident it would reduce full closures due to experience on Straight Creek (I-70 between Silverthorne and the Eisenhower Tunnel)
 - 2. He added that the bridge at MM 185 really needs to be improved for the EB direction is a problem area.
 - a. During bad weather, trucks can stack up 3 wide and block any response, so Emergency Service responders have to charge traffic many times to respond to an incident
 - b. Karen pointed out that on Project Team's initial assessment of crashes compared to the existing roadway geometry, those bridges don't show up as trouble areas. The Project Team will need to look at this location further
 - c. Dwight added that it's not crashes that are the problem in this location, its spinouts due to the steep grade and the bridge when the roads are icy.
 - d. John stated that the Project Team may not be able to get rid of a bridge, but can smooth out the geometry of the bridge
 - e. Ryan stated that while there are signs that say semis must stay in right lane, when one vehicles spins out, the next one tries to pass on the left and then many times gets stuck, closing the road and requiring heavy tows to respond from Frisco and charge traffic.
 - i. Emergency Responders will close the interstate at MM 184 & then at MM 180. Tows trucks will use the emergency turnaround at MM 187 to cross from WB to EB, charge traffic to respond to the spinouts at MM 185, they pull those trucks to MM 186. CSP will then have to back the traffic that's stopped at the spinouts down to a location where they can get traction, get them going up the pass, have CDOT Maintenance plow the road, then open the interstate back up at MM 180.
 - ii. CSP is currently working with CDOT Maintenance on this type of response. In their experience, it is easier to shut the whole pass down than to work on smaller segments
 - iii. Ryan added in his opinion, this is the biggest problem on the pass
 - 3. Ryan then asked if construction would take place in the winter
 - a. Karen replied that Project Team's goal is not to have any construction take place during the winter
- vi. Craig added how Vail Fire responds to incidents on the pass
 - 1. There are crashes which CSP spoke to, but Vail Fire also responds to medical situations and car fires



- a. He stated that Vail Fire has to consider the forest in the case of car fires as there could be a forest fire that spreads if a car fire isn't put out quickly
- b. They also have hazmat responses (usually from rollovers) that present issues to the traveling public & the environment
- c. If only 2 lanes & small shoulders exist in construction, that would present a huge challenge for response as both lanes could be blocked as people have no shoulder to pull onto during an incident, creating a gridlock situation.
 - i. In his assessment, Summit County Fire would need to come help in this gridlocked scenario
 - ii. Vail Fire can charge traffic, but it is very unsafe and not desirable unless there is concrete confirmation at the incident site that there is stopped traffic and there is no possibility the traffic sneaks through the closure
- d. For a fire, if there is no shoulders and the work zone is lined with concrete barrier, a semi fire would cause that traffic right at the incident to have to flee on foot as there would be nowhere to go in a vehicle
- e. He stated the normal response for a crash is a single engine with a possible chief response, and an ambulance
 - i. Fatalities or bigger incidents will get an additional engine and maybe some more resources
 - ii. Sometimes a fire truck from Copper Mountain responds if the crash is above MM 187 as they can have a quicker response time
 - iii. If it is a serious incident, the potential delay from queued traffic in construction could be detrimental to a successful outcome
 - iv. He added that the project needs a place to put folks in order to get emergency response up the pass to respond to an incident and that a shoulder doesn't guarantee that Emergency Services can get there depending on incident
 - v. He recommended a strong operational plan with all Emergency Service providers and Summit County during construction
- vii. Ryan added that an out-of-the-box idea is to meter traffic at MMs 180 or 190 during construction & let 100 vehicles go at a time using lights at those exits
 1. He stated that it would be easier to respond to an incident with only 100 vehicles going up the pass at a time. The goal with this idea would be to protect life
- viii. Jim added that they transport patients from the Western Slope to Denver on many occasions. Most of the time the patient isn't critical, but if they are, added delays in construction could impact those patients



1. If there is a way to get an ambulance through construction around traffic, that would help the patient's health
 2. Karen added that it's a good point that would need to go into an operations plan
- ix. Craig stated that project should incorporate money into the budget for expanded courtesy patrol that already operates on the pass
 1. This could help give better data to Emergency Service providers, let them know if they really need to respond (sometime there are minor crashes with no injuries that do not require response)
 2. Courtesy Patrol also helps with flat tires and vehicles that run out of gas. They can respond quicker to incidents that aren't critical than Emergency Service providers can
 3. Ryan added those could be staged in the potential emergency pullouts
- x. Dwight asked if goal of this ITF meeting was to talk about how Emergency Service response works right now, how it would work in construction (and issues related to that), or how it would operate in a future setting with 3 lanes
 1. John stated the Project Team would like input on all three considerations. The Project Team needs to know the issues that exist right now as well as during construction as it does affect the alternatives that will be developed, but also needed feedback on the alternatives themselves.
- xi. Karl asked the Project Team to look at the affect that construction during this project would have on Highways 24 & 91
 1. The average driver may not want to use that as an alternate route, but average trucker might. That route does not have good capacity and could present a big issue to public safety
 2. There is bad radio coverage along that route, difficult geometry, steep grades, a long response time, and very narrow in places
 3. John stated that the detour via Highways 24 & 91 is 45 minutes extra compared to traveling over Vail Pass, so it is very likely that if heavy congestion exists during construction that travelers' GPS will lead them that way
 4. Barry added that Shrine Pass may also get used too
- c. **What are the pros and cons of a standard roadway section versus a reduced section?**
 - i. John stated the standard template would have a 10' outside shoulder after comments from Vail Fire at TT Meeting #2 in order to get a fire truck up the shoulder
 1. John stated that CDOT will also look at a minimal section with smaller shoulders (i.e. a 2' inside shoulder and 6' outside shoulder) as it would only add 6' in width to each direction of travel. This reduced section might save some of the existing bridges and reduce the amount of construction and total cost for entire project. It could be similar to Straight Creek



- ii. Dwight responded that a minimal section would reduce the benefits of value of added a 3rd lane
 - 1. A truck would block the shoulder and part of the right lane in a spinout or breakdown
- iii. Ryan asked what would be outside of the 6' shoulder (a retaining wall, dirt, guardrail, etc.)
 - 1. John replied it could be various conditions depending on the location
 - 2. Ryan said if a small shoulder was constructed, it would be tough to push snow over barrier, so it would pile up on that shoulder. Any crashes or breakdowns would then occur in a lane and Emergency Service responders would have to close that lane + 1 more
- iv. Matt Westenfelder added that a minimal section would not give them any room as they would hang out into the right lane for the initial response and not have any protection. This section could be very dangerous for Emergency Service providers
 - 1. Karen asked how that works on Straight Creek as there is a 6' shoulder on I-70 in that location
 - 2. Ryan replied that in many places there is a dirt shoulder for traffic to move over off the road on Straight Creek. In Glenwood Canyon (another location with a narrow shoulder), CSP won't stop if they don't need to as the shoulder is too narrow and response is dangerous. They will take traffic to the next exit instead.
- v. Karen asked with a minimal section, how would emergency response close lanes for traffic
 - 1. Ryan said that the shoulder + the right lane would take place for an incident on the right side of the road. An incident in the left lane would shut road completely as responders would need to move the incident to right shoulder, then open up the left lane (or two)
 - a. A minimal section would not help for the initial response as that responder would be both on the narrow shoulder and in the lane while traffic control is getting set up
- vi. Barry stated that as this project is the long term solution to the issues on the corridor, variable speed limit signs should be installed as part of the work so when there is a crash or inclement weather, CDOT can lower the speed limit
- vii. Ryan asked what the cost from minimal section to a standard section would be
 - 1. Karen replied the Project Team is working on those cost estimates right now and developing crash reduction performance metrics related to those different sections. The goal is to understand the performance of different widths of roadway with quantitative data
- viii. Dwight stated that widening bridges with narrow shoulders to save on bridge costs may be acceptable as Emergency Services would only need to get through traffic stuck on bridge as long as the rest of the corridor was wider
 - 1. Ryan concurred. He added that a wider shoulder on the bridges to match the rest of the corridor would be best, but a narrow shoulder on the bridges could work



- ix. Gary stated that although the minimal section would save a lot of money in construction, in a permanent configuration the extra pavement is very valuable for staging heavy tow and for fire truck response. He has had an engine hit in the past on the pass (Summit County Fire parks their engine about 1/4 mile ahead of a crash to protect the state troopers, tow trucks and ambulances at a crash site)
 - 1. His stance is that the extra pavement width would be safer for Emergency Service response
- x. John stated that the final section hasn't been picked but is still being developed
 - 1. Karen added that many factors go into evaluation of the alternatives including environmental impacts, bike path usage and impacts, sediment control, etc.
 - 2. Karl said that while his agency (Eagle River Fire) doesn't respond much on the pass, the ability to respond and protection of those responders is very important in his view and encourage the Project Team to weigh it heavily when evaluating alternatives
 - 3. In his opinion, there is nothing more dangerous than firefighters being out on the interstate. Many times Eagle River Fire will use 2 engines to block traffic to protect their personnel.
 - 4. Vail Fire concurred with this standpoint
- d. **We are considering realigning the roadway slightly to eliminate substandard curves at high crash spots. Do you think this will help?**
 - i. John showed some areas the Project Team is looking at realigning (areas with substandard geometry and a high crash rate) and asked if there were other areas to consider
 - ii. Ryan stated MM 185.5 EB needs major improvements (not because of crashes, but due to spinouts)
 - 1. He added that MM 186-187.5 WB has a lot of rollovers which requires CSP to shut down the pass at MM 190
 - a. Much of the crash data in past few years in this area is from frost heaves. He stated that CDOT's last project fixed the frost heaves but there are still poor curves in that area
 - 2. One additional location would be MM 182-182.5 WB as it has a lot of rollovers, especially with trucks and hazmat spills
 - a. Karen added that the Project Team will look at improving truck ramps with this project
 - b. Ryan replied the truck ramps should be a straight shot and not a turn to the right as they are currently
 - iii. Dwight asked if some technology existed to prevent trucks from rolling (whether it be super-elevations on the road or taller median barrier walls)
 - 1. Karen responded that super-elevations up to 8% are commonly used but she was not sure what was existing on West Vail Pass. She added that this was an interesting concept to look at
 - 2. Dwight added that some trucks will run against the guardrail in center median as a last resort, so the area between sister bridges



- needs to be protected as trucks riding that rail could go into the canyon between bridges
- iv. John asked what the cause of crashes the Project Team has noted WB at MM 187.5 would be
 1. Ryan said that from MM 190 to 189 is a climb, transitioning into a steep downhill with a small curve to the left. He has seen a lot of drivers lose their breaks and not be able to stop
 - a. He added that it would be good to “cut the top of the pass off” at sand shed as it acts like the crest of a roller coaster
 - b. A lot of out of state drivers don’t know how to drive slower to weather conditions
 2. Craig stated more signage to warn people of curves or steep grades (like in Glenwood Canyon) would help significantly
 - a. John replied that the Project Team will look at this
 - v. Craig asked if the speed limit could be looked at to be reduced and if that would help reduce crashes
 1. John and Joel explained the federal standards on how to set speed limits and how that would not allow CDOT to arbitrarily set a speed limit
 2. John added that the I-70 Mountain Corridor Speed Study set the speed limit at 65mph for West Vail Pass
 3. Karen asked how variable speed limits work and if they are advisory or regulatory
 - a. Joel responded that the variable signs are regulatory (are black and white)
 - b. Karen asked what the rules are to drop the speed limits with those variable signs
 - c. Joel replied that Glenwood Canyon is doing this and it’s an operational valuation. Speeds can only be dropped by a certain amount depending on the condition. He recommended looking at that operational plan for a basis on how it could be done on West Vail Pass
 - d. Vail Fire strongly recommended that variable speed limit signs be added to the project as that will be the biggest factor to prevent crashes in poor conditions and secondary crashes when closures do occur on the pass
 - e. Dwight asked what a 5-10 mph reduction of the speed limit would do for crashes in inclement weather
 - i. Ryan replied that he felt it would help, especially for WB traffic coming off the crest at the top of the pass
 - ii. Dwight added it probably wouldn’t change habits of local drivers, but would for cross country drivers
 - iii. Mark added that on Donner Pass in California, they drop speed limits regularly to 25mph during chain law



1. He added that the locals usually drive slower than the out of state drivers
- f. Gary concurred with Vail Fire's standpoint on variable speeds in inclement weather
- g. Dwight added that the Town's crash data at MM 178 at the existing chain station shows a reduction in those crashes after the variable speed limits were installed
- h. Karen stated 70% of crashes on West Vail Pass are during inclement weather
4. Vail Fire asked if the Project Team had Town of Vail crash data.
 - a. John asked to have that data sent to them so the consultant traffic engineer could look at the data
 - b. ***The Project Team will reach out to the Town of Vail to obtain their crash data for I-70.***
- e. **Where would you like to see chain-up stations, or would you like to see any additional chain up stations?**
 - i. John reminded group that project limits are MMs 180 to 190
 - ii. Dwight suggested removing the chain stations at both MM 182 & 184 as they are on a grade, are confusing to Emergency Services & truck drivers depending on where chain law starts, and many trucks get stuck at them
 1. Ryan agreed. He stated that for the chain stations on Donner Pass, California added chain checkers that won't allow trucks up the pass if they don't have proper chains. CSP can't respond to issues on the pass when they are stuck at the MM 178 chain station
 2. Dwight added this may not be for the project to solve that issue, but it is a very good comment
 - a. He added that he felt the chain up station at MM 178 works well, its just difficult to manage because it is so big
 - b. Karen added there is a future CDOT project to help truckers better find spaces in that chain station which will hopefully help with the management of that station during inclement weather
- f. **Tell us where emergency crossovers would be effective.**
 - i. Ryan stated that the more of those the Project Team adds, the more the public would use them and that could cause more issues than benefit. He felt it was best to keep the same number as there are today
 - ii. Craig added that there isn't a lot of room to add more crossovers that would safely allow a pumper truck to turn around
 - iii. Ryan said the crossover at MM 184 is good. The one at MM 185 at bridge needs to be eliminated as it is unsafe and troopers have run off road there and don't use it much
 1. He added that the traveling public has used the one at MM 185 to turn around resulting in T-bone crashes
- g. **How can we best accommodate heavy-tow staging?**
 - i. Dwight stated that there is very little heavy tow staging on the West Side of Vail Pass currently



- ii. Ryan said local tows come from down valley in Eagle County and do stage on the pass, but can be an hour away at times
 - 1. He also added that the heavy tow program only pulls trucks out of the way per their agreement with CDOT. Ryan would like them moved to the top of the pass as a secondary tow is still needed when they are only moved out of the way.
 - 2. He added an enhanced heavy tow program and an area to stage them in would be great
 - 3. Dwight added that MM 185 would be a good place to stage heavy tows
 - 4. Ryan said many times heavy tows will take trucks to MM 186, and sometimes to the truck restrooms at MM 189. Those could be good spots to add more pavement for towing trucks to
 - a. Dwight said snow is in the way at these locations during the winter and there may not be much room
 - b. Jim added they have a lot of medical responses at the MM 189 truck parking
- h. **What would you like to see for Variable Message Signs (VMS) and ITS?**
 - i. Barry reconfirmed adding variable speed limit signs is a must
 - ii. Dwight said extra cameras are very beneficial. More VMSs are good, but there needs to be a way to improve the messaging and timing of that messaging. He has seen that it can be difficult to get messages on boards in a timely manner
 - iii. Barry said some of the cameras (possibly halos) do better in snowstorms than others, so this should be considered.
 - iv. Karen asked if there are enough VMS boards on West Vail Pass currently.
 - 1. Dwight said there are not enough boards. The project wouldn't need to install only large boards, but he felt the pass needed more
 - 2. Joel asked if the small VMS at MM 187 was effective
 - a. Ryan didn't have any data, but felt it most generally helped in poor conditions
 - b. Joel asked if Ryan noticed a change in human behavior due to that VMS
 - i. Ryan said sometimes that can help, especially in dry conditions as people speed in that area
 - v. Dwight said that the use of technology would be beneficial to the project
 - 1. The group discussed different efforts known in CDOT and across the country on potential technology that could be incorporated if it is worked out by the time the project goes to construction
- i. **What do you think about glare screens?**
 - i. John explained that most of typical barrier CDOT installs allows headlights to shine above it and that glare screens would make the barrier higher and block headlights from the opposite direction of travel.
 - ii. Barry stated that a lot of the pass has elevation differences and not need glare screening



1. Julia added that at the public open house for this project, the Project Team heard several comments from public that adding glare screens is desirable
- iii. Dwight added that there are sections where vehicles (especially semis) overturn over the barrier, so he felt it would be more beneficial to raise the height of the barrier in those locations rather than spend money on glare screen for headlights the entire length of the corridor
- j. **If you could only access a crash on a detour from the top or bottom, with narrow shoulders, how long of a detour would be acceptable?**
 - i. John asked if temporary emergency crossovers would be beneficial in a condition like this.
 - ii. Ryan replied that for WB traffic, because of the steep grades and sharp curves, the only safe way to respond to crashes would be to close the interstate WB at MM 190. Traffic control or temporary stop lights at MM 190 or 189 would be a huge help in his opinion. The use of technology could stop traffic immediately and instead of putting resources out (plow trucks, CSP, etc.) to close the interstate, CDOT could use a light
 1. Matt W. added this could be tied into a VMS board to alert traffic to an upcoming closure and why the interstate is closed
 2. Barry said this would be good to do permanently and not just temporarily during construction
 3. John responded that there is a CDOT study right now to look at doing something like this using a sign to close the pass during crashes. He didn't know if this project would incorporate this permanent signing as there is this separate effort, but the Project Team could definitely look at doing this temporarily during construction
 - a. Matt W. added it would be beneficial to have this at least in construction
 - b. Ryan added this closure system should be done at MM 189 to capture traffic from the on-ramp at the MM 190 exit so those WB travelers don't sneak through a closure.
 - i. He thought a temporary utilization of this would be beneficial, but he would like to do it permanently
 - ii. Karen added that she hopes that something like this would be done prior to this project, but if not it could look at with this project
 - iii. Dwight added if it works well, it should be looked at for EB traffic at MM 180 as well
- k. Dwight asked if the EB on-ramp at MM 180 would be fixed as it is a dangerous merge and has bad geometry
 - i. Project Team replied that it will be looked at for improvements
 - ii. Karen added that there is a low crash rate in this area, but the Project Team wants to look at this on-ramp and fix the geometry there
 - iii. There may be less crashes, because drivers feel uncomfortable and slow down.
- l. Dwight added that noise impacts to East Vail residents should be considered as traffic noise is impactful to those residents



- i. The Project Team replied that noise is being looked at as part of the project and there will be a noise study for the project to look if mitigation is appropriate
- m. Matt W. asked how long construction could take
 - i. John replied that since construction funding is unknown the construction schedule is unknown at this time
 - ii. Karen added that CDOT has opportunities for innovative contracting to help find opportunities to speed up construction, but that is unknown at this time
- n. John asked if using US 6 as a detour would be a fatal flaw for Emergency Service response (as the detour would be 2' shoulders + two 12' lanes)
 - i. Karen added this would not be used in the winter months
 - ii. Dwight asked if this would use Bighorn Rd or come back onto interstate prior to MM 180
 - 1. John replied it would be back on I-70 near the campground
 - iii. The group discussed that it could be doable from their standpoint, but they wanted to see input from the Project Team to know if it works from a constructability standpoint
 - iv. Craig stated that if this option is used and there is only one way in and one way out (at locations the detour would tie into interstate), it is not desirable as response may need to be via charging traffic. He felt the safety concerns of this response technique outweighed the benefit of using US 6 as a detour route
 - 1. Matt W. added that if a stoplight with closure points was added, this could help stop traffic to improve any Emergency Service response
 - 2. Dwight added that it depends on the benefit to the construction schedule and amount of impacts to traffic that would result
 - 3. Ryan added that it may be a lot of extra money and time and may not be cost effective



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Emergency Services
DATE HELD:	February 8, 2019
LOCATION:	Avon Library
ATTENDING:	John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Drew Stewart, Designer, CDOT Region 3 Tracy Sakaguchi, Colorado Motor Carriers Association Dana Erpelding, Eagle County Emergency Management Tyler Bowman, Wood Stacy Tschuor, David Evans and Associates Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates ** There was a power outage in Summit County -12° day and Emergency Services were busy
COPIES:	Attendees

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. Desire of ITF is to get feedback for emergency issues on project.
 - i. FHWA & CDOT will have final say on design elements.
 - ii. Recap of project and process
 - iii. Proposed action to add auxiliary lanes and ITS upgrades.
 - iv. Design workshop addressed details of project.

2. Emergency Services Elements

- a. East Vail On-Ramp
 - i. Currently has an inadequate acceleration length
 - ii. The addition of a third lane will address
- b. 10' minimum shoulder was requested to allow emergency vehicles to operate
- c. 10' minimum shoulders on bridges
 - i. John brought up the possibility of wider (12') on some of the problem bridges.
 - 1. Trucks have a hard time using the 10' shoulder next to a bridge rail when broken down.
- d. Wide shoulder leads to parking on the interstate
 - i. Will install "no parking" signs
- e. Issues with steep grades and curves
 - i. The addition of a third lane and curve modifications will help with traffic flow impacts of slower traffic on steep grades and curves
 - ii. John noted that the pullout areas in the plans need to be refined.
 - iii. EB MM184 is an area being considered for improvements
 - iv. WB before and after bridge in the narrows
- f. Chain station improvements
 - i. 2 chain stations with improved lighting and signage



1. MM183 is one area
 2. Tracy asked if this area will have separation from I-70 mainline
 3. Tyler responded that the geometry would probably not allow for it
 - a. Would require acceleration/deceleration lanes which would be difficult to fit in this stretch.
 4. Plan considered will focus on better improvements to lower chain station with widening and lighting. Could leave the upper chain up area as a widened shoulder but not have it signed or provide improvements.
 5. Tracy would like to see a way to reduce speed limits when chains are required to make over all safety improved around slow moving trucks
 6. John noted that there is a plan for VSL signs around the chain stations.
 7. Tracy mentioned the chain station west of Georgetown gets used more than the Georgetown chain up due to size and lighting.
- g. Passenger chain stations separate from trucks
- i. Not being addressed due to CDOT not enforcing the policy at this time
- h. Turnaround improvements
- i. Tyler mentioned the east Vail turnaround will be replaced as-is
 - ii. MM182 – widen existing crossover and maintain width for bigger rigs
 - iii. MM184.1 – widen existing crossover and widen median to allow for trucks to turn around during shut down
 - iv. MM184.5 – remove turnaround – grade issues between roads
 - v. MM185.1 – replace with minor improvements
 - vi. MM185.7 – needed to access the runaway truck ramp, but not ideal due to poor sight distance.
 - vii. MM187.4 – proposed to remove due to sight distance issues
 - viii. MM189.3 – will remain
- i. Top of pass - Improve EB truck parking area, WB pull-off is also CDOT maintenance shed and there are issues with allowing formal parking area (will remain an unofficial parking area as is now)
- j. Improve runaway truck ramps by straightening them
- i. Tracy asked if other improvements are being made (lighting)
 - ii. Tyler said the standards for construction are established for these improvements
 - iii. John mentioned that lighting is a problem for wildlife, so we need to check on the environmental requirements
- k. Concern that additional lane will increase speeds
- i. Additional lane will allow drivers to pass slower vehicles, so overall average speeds will increase, but design speed of the highway remains the same.
- l. Concern over lane drop at top of pass will cause problems
- i. Signage will give advance warning
- m. Glare screen not needed for entire corridor
- i. Glare screen on top of barrier only designed where needed, with a focus more on the top of the pass then lower down
- n. Additional roadway lighting for safety
- i. John mentioned that environmental considerations would impact adding more lighting



- o. Need for responder communication, this project will discuss the possibility of the addition of cell towers
 - p. ITS improvements
 - i. Plans moving forward.
 - ii. John noted that communication would improve closure process.
- 3. Q&A**
- a. Tracy asked if CSP currently turns trucks around
 - i. John said they currently stage trucks in the upper chain station, but the turnaround is not big enough for trucks to use
 - ii. Maintenance has asked to have the ability to turn trucks around
 - iii. Tracy noted that turnaround for trucks is not typical, but makes sense when they would be sitting for more than 4 hours



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Section 106 Issue Task Force Meeting #1
DATE HELD:	May 30, 2018
LOCATION:	Summit County Library, 37 Peak One Drive, Frisco, CO 80443
ATTENDING:	<p>Joel Barnett, FHWA</p> <p>John Kronholm, Project Manager, CDOT Region 3</p> <p>David Caesark, Planning & Environmental Manager, CDOT Region 3 (by phone)</p> <p>Tom Fuller, US Forest Service</p> <p>Jason O'Brian, History Colorado (OAHP)</p> <p>Jennifer Orrigo Charles, Colorado Preservation, Inc.</p> <p>Lisa Schoch, HQ Historian, CDOT</p> <p>Don Connors, Consultant Project Manager, Wood</p> <p>Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates</p> <p>Dianna Litvak, Historian, Mead & Hunt</p> <p>Matt Figgs, CDOT Region 3</p>
COPIES:	Attendees

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. John did introductions, covered the agenda, and talked briefly about the purpose of today's meeting, which is to provide the Section 106 Issue Task Force (ITF) members with an understanding of the project to-date, gather feedback on the Area of Potential Effect (APE), and gather feedback on proposed resources and methodology.

2. Project Background and Overview

- a. John discussed the background of the project including highlighting the I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS), the recommendations from the PEIS (including stipulations in the Section 106 Programmatic Agreement [PA]) the Tier 2 NEPA process, and the past 2007 Environmental Assessment (EA) for the West Vail Pass area
 - i. He explained that this project is the Tier 2 NEPA process as it addresses site specific details for West Vail Pass, alignments, costs, and potential mitigation measures
 - ii. He also highlighted that the 2007 EA focused solely on safety, which the current Purpose & Need focuses on both safety and traffic operations.

3. CSS Process/ITF Responsibilities

- a. John outlined the Context Sensitive Solutions (CSS) process that the Project Team is following for this project and what stage the project is at in the process



- i. The Project Team has gathered information from the Technical Team (TT) that is being considered for the development of alternatives that will then be screened through a two-level screening process
- ii. He also highlighted the Core Values that the Project Team, in conjunction with the Project Leadership Team (PLT) and TT, have developed.
 - 1. Kara referred the group to the handout with the Core Values and Success Factors in more detail.
 - 2. Lisa mentioned that from a historic standpoint, the Corridor Character & Aesthetics Core Values are the ones that are most important to the Section 106 process. She added that the CSS process is not specific to only Section 106 though.

4. Current Project and Existing Conditions

- a. John discussed the limits of the West Vail Pass Auxiliary Lanes project (Mile Marker [MM] 180 to 190) and talked to some of the unique characteristics along the corridor.
 - i. The elevation of West Vail Pass summits at 10,603 feet
 - ii. There are several sections of steep grades which are at 7 to 7.4%
 - iii. There are areas of substandard roadway geometry with some compound curves that were designed for a 55 mph speed limit (the current speed limit is 65 mph).
 - iv. There are 23 different retaining walls totaling 23,515 linear feet
 - v. There are 16 bridges that make up 1.6 miles of the corridor
 - vi. The Vail Pass/Tenmile Canyon National Recreation Trail sits in the corridor. This paved bike trail gets 39,000 annual users with a peak daily count of 3,500 users
 - vii. West Vail Pass is the access point for the Vail Pass Winter Recreation area which saw 56,000 users in the 2016/17 winter season
 - viii. There are numerous wetlands and waters of the US in or near the corridor including Black Gore Creek. There is also considerable wildlife activity in the lower five miles of the corridor.
 - ix. There is a Sediment Control Action Plan for Black Gore Creek that another ITF will discuss implementing
 - x. The West Vail Pass corridor is subject to Section 106 of the National Historic Preservation Act as it is a nationally and exceptionally significant feature of the federal interstate system. West Vail Pass was one of the first highways to purposefully sculpt cut-and-fill slopes to fit in its unique setting, as well as being one of the first to use precast and cast-in-place segmental bridges.
 - xi. 80% of the project is within the White River National Forest
 - xii. 20% of the project runs through the residential portion of east Vail
 - xiii. The weather on the west side of the pass is a challenge as this side routinely sees more snow than the east side of the pass



- b. John then covered the Purpose & Need of the project which is to improve the safety and traffic operations for both eastbound (EB) & westbound (WB) directions of West Vail Pass
 - i. He highlighted several specific safety and traffic operations issues that exist on the pass that have necessitated this project
- c. John then talked about the Level of Service of Safety (LOSS), which compares West Vail Pass to all rural, mountainous 4-lane divided highways in the State of Colorado. The safety assessment that was completed for this project showed that every section of West Vail Pass has a moderate to high potential for crash reduction. Improvements made to the corridor have the potential to significantly reduce crashes on the interstate as this section of highway is significantly worse than other similar sections.
 - i. John highlighted that I-70 on West Vail Pass sees about 22,000 vehicles per day
 - ii. Dianna asked how this section of I-70 compares to other areas of I-70.
 1. John responded that he wasn't sure of the entire range that it is compared to as he wasn't sure where I-70 was officially classified as mountainous. CDOT is awaiting more information on what specific areas of I-70 the LOSS values are being compared to. He did highlight that the LOSS compares the West side of Vail Pass to other mountainous areas.
 2. Joel stated that there is not a large number of miles of interstate in the State of Colorado that is classified as rural, mountainous 4-lane divided highway, so the LOSS comparison may not be the best data to present as there is not a large pool to compare to
 3. Kara replied that the Project Team does have other traffic data that has been compiled that also show spikes in crashes on West Vail Pass
 4. Joel added that he felt the LOSS graph is meant to give a statistical reliability that improvements made would actually reduce crashes. The severe weather on the pass is not depicted in the LOSS and may not represent the Purpose & Need of the project properly.
 5. The group talked about how additional comparisons to other sections of interstate in other states may be needed.
 6. Kara said that the Project Team is continuing to work on traffic and safety data and reports to provide more information as the preferred alternative is looked at
 7. Tom added that the average ski area snow totals (Vail Mountain compared to Copper Mountain) show a significantly more snow on the West side of the pass which would correlate to the higher crash rates



5. Section 106 PA Review

- a. Lisa gave a brief history of the Section 106 PA that was created during the Tier 1 PEIS process. Most of the projects CDOT has completed under the Tier 2 process have been in Clear Creek County. The West Vail Pass project will be one of the first Tier 2 projects outside of Clear Creek County
 - i. The PA establishes how Section 106 will be handled for Tier 2 projects (historic properties will be identified for a specific project area). It will be handled as Section 106 is typically handled by CDOT but with a few additional requirements for up-front survey work and determining historic contexts for corridors.
 - ii. She added that West Vail Pass was identified as historically significant by FHWA in 2006 for its construction in the context of the environment.
 - iii. She pointed to the slide which identified the signatories of the PA, but added that there were several groups that were concurring parties and involved in the process but did not sign the PA. Most of the project will be inside Eagle County with a small segment that crosses into Summit County.
 - iv. Lisa stated that during the 2007 EA for West Vail Pass, the corridor tied to the historic nature of the ski areas. This may become more important over time
- b. Lisa then highlighted the Tier 2 principles that are part of the Section 106 PA.
 - i. The PA also addresses adverse affects and the types of mitigation that will be considered is also talked about
 - ii. She added that the APE was another critical component of the development PA. The PEIS gave a general APE boundary, but each Tier 2 project will specifically develop its own APE. Part of today's meeting will listen for inputs on this project specific APE boundary.
 - iii. Tom added that the archeology of Vail Pass is one of his concerns and can't be forgotten about
 1. Kara stated that the Project Team has staff that is looking at the archeology for the corridor.
 - iv. John asked if there was anything in the PEIS that talked about the up-front mitigation for West Vail Pass.
 1. Lisa replied that there wasn't anything specifically mentioned for the West Vail Pass corridor, but the principles in the PA will help guide the EA process for this project.
 2. The Project Team is working on compiling the historical/archeological data for the corridor
 - a. Tom stated that the Forest Service may have some data to send to the Project Team that he will look for. There is an old wagon road in the corridor that he has studied before that is west of the pass



6. Draft APE Review

- a. Dianna spoke about the Draft APE work that will take place for this project. She pointed the group to the handout which shows the Draft APE boundaries. She highlighted that this is a draft and doesn't necessarily follow the ROW lines although it will for the most part. She wanted to share this with the group and discuss it before it is finalized. APEs can change as a project progresses, but based on what is known to date, the handout shows the current best guess for boundaries.
 - i. This APE will look at anything that is 45 years or older and will include areas by Bighorn Road. Potential improvements will probably not impact those residents, but it will still be surveyed as part of the project.
 - ii. The final APE will identify historic resources that are discovered during the survey work or were previously known. She highlighted that the bridges on the interstate are considered historic as well as they were a unique construction method
 - iii. She stated that many of the historic properties have been upgraded over time and don't look like the original structure, but they will still be looked at.
 - iv. Vail was founded in 1962, so the founding of Vail, the ski resort, and the draw of the interstate will be considered as part of the historic reporting for this project
 - v. Old US 6, Vail Pass (surveyed up to MM 195) will be included in the APE
 1. Lisa added the bridges will be considered as contributing features
 2. Dianna replied that normally bridges would be considered specific historic features, but since the roadway is historic, they will be identified as contributing or non-contributing
 - vi. Vail Pass was one of the first instances in the US where the environmental context was considered. That led to the contours and curves, the type of walls, and type of bridges that were installed to minimize impacts to the environment
 1. The Project Team is assuming the highway should be listed as nationally registered even though it is less than 50 years old as it meets many other requirements for the register
 - vii. The historic survey work will start next week
 1. Tom added the old wagon road actually is near the APE by Bighorn, so this will need to be considered further as the survey work progresses. There is a lot of information to still learn about this old road and its exact alignment is still not completely known. It doesn't show up on any old maps though. He asked the Project Team to look at this and see what their opinion is on whether it is a ditch or is in fact an old wagon road
 - a. The group discussed that there was some farming/ranching in the area, so there is a potential it could have been an irrigation ditch off of Bighorn Creek



2. Tom added the oldest house in Vail is just outside of the APE boundaries. He pointed out the location to the Project Team so it can be considered. There are other old structures that should be mapped and can be looked at as the survey work takes place

7. Survey Methodology

- a. Dianna stated that the Project Team is already far into the research and planning for this corridor. The Team hasn't found much information for West Vail Pass yet, but what has been found has been enough to get started. Two historians will also visit local libraries, CDOT facilities, and other areas to gather data and do research.
 - i. A Program Engineer for CDOT (Richard Prozins) who built Vail Pass wrote a lot of history on the Pass while it was being built, so there is a lot of information from him to pull from.
- b. Dianna added that the Project Team will be mapping notable features for research. The finalized APE will be sent to the team, the completed field survey will be sent out by mid-September, and then a site form will be completed sent out to the ITF group.
 - i. Tom asked if the Project Team is using LIDAR
 1. Dianna replied that the Project Team is not planning on using it currently
 - ii. Lisa said that the Project Team will ask the ITF group to identify extra areas to be included in the APE boundaries that will have a direct impact on the project. Locations that are close by but won't be impacted (including noise and visual impacts) shouldn't be in the APE boundaries
 - iii. John asked why part of the MM 190 on-ramp was not included in the APE boundaries
 1. Dianna replied that it should be included and can be revised
 - iv. Don asked how the lines were drawn
 1. Dianna stated the roadway designer on the Project Team drew them in. She was not sure how they were initially determined, but they will be smoothed out and revised as the work progresses
- c. Dianna added that some additional documentation work will be done during the survey work for both properties and the highway corridor
 - i. The Project Team will define what contributes and what doesn't contribute
 - ii. Jason asked if there was any history that has stood out so far in the research as the context is being determined
 1. Dianna replied that items like why CDOT contracted with Frank Lloyd Wright's team for the design of the retaining walls is interesting. Some of the wildlife, stream work, and sediment pond work was cutting edge at the time and the initial construction won several environmental awards. There is more to consider on the pass than just the bridges



- iii. John asked how some of the historical findings may affect the design of the preferred alternative
 - 1. Dianna replied that the CSS process will be a guiding principle. It doesn't mean that the Project Team can't reconstruct items like walls or bridges, but the same effort that was put into the original design (especially considering the context of the corridor) should be put into any items that will be reconstructed.
 - 2. She added that the project was originally surveyed via horseback. That is another example of how unique the construction of the pass was. The original project team also did a campout between the engineers and environmental groups to come to terms with building a highway in the context of the environment.
 - a. Lisa has a picture of personnel on horseback on the road grade while it was being built.

8. Schedule and Next Steps

- a. Kara presented the project's schedule to the ITF group. The screening criteria for the alternatives, as well as the reasonable range of alternatives are currently being developed.
 - i. She highlighted that the preferred alternative will be identified in the fall of 2018. The Project Team will revisit the ITF group after that time in September or October.
 - ii. Future work will need to be done to refine the recommended alternative and look more specifically at design options
 - iii. Lisa asked how many submittals on the 106 will be required
 - 1. Dianna replied there will probably be two submittals (eligibility will be first)
 - 2. Lisa concurred with this approach
 - iv. Kara also pointed out that the EA is expected to be completed (including public review and comment) in early 2020
 - v. John added that there is no identified construction funding at this time, and no money for design (the only money the project has is for the EA currently). The project is on several lists to receive both design and construction funding that the Project Team is waiting to hear the results on.
 - 1. He added that if design funds are found, the design would not progress past the FIR level (30% design)
 - vi. Lisa mentioned that several other consulting parties were invited to be a part of this ITF group and declined. These groups will continued to be included in review of documentations and future meetings even though they didn't attend today's meeting.
 - 1. Tom asked if the Town of Vail had a historian. The group was unsure if they did.



2. Jason stated that there is so much history with the ski resort in Vail that there is a lot to consider in regards to that
3. John asked if the Project Team did enough to reach out to those other consulting parties that did not attend today
 - a. Kara replied that adequate work was done to reach out.
 - b. Lisa stated that there are some groups that aren't interested in participating and will be removed from the list if they request.
 - c. The group discussed ways to reach out more parties to make sure that as many individuals as possible are invited to be a part of the process.
4. Tom stated that the Southern Ute Tribes will be visiting later this summer and he is considering having them look at the Vail Pass area
 - a. John replied that he thinks Tribe consultation is a required part of the process for this project.
 - b. Lisa stated that Dan Jepson with CDOT HQ is Tribal Consultation.
 - c. Tom added there are prehistoric sites within the APE but all except at the top of Vail Pass are not eligible
5. Don asked if the bridges make the highway historic or not
 - a. Dianna added that the bridges are one of the contributing factors to the historic determination, but not the sole reason.
 - b. Don asked if only certain types of bridges are contributing
 - i. Dianna replied that will need to be determined as the survey work progresses
 - ii. Lisa added that whether they are contributing or not doesn't change that the bridges are eligible. The Project Team will have to work through that fact during the documentation process.
6. Dianna added that the Project Team is fortunate as some of the personnel who worked on the original construction project are still around and can be consulted.
7. Dianna asked Jennifer if she had any other consulting parties that the Project Team could reach out to
 - a. Jen stated that she can look and see if she knows of any to invite.
 - b. Jason stated that the Project Team needs to make sure to make a good faith effort to reach out and ensure folks have an opportunity to comment so they aren't upset when construction starts and they feel they didn't get an opportunity to contribute.



REVISED MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Section 106 Issue Task Force Meeting #2
DATE HELD:	October 30, 2019
LOCATION:	Conference Call
ATTENDING:	John Kronholm, Karen Berdoulay, Lisa Schoch, Dan Jepson (CDOT) Stephanie Gibson (FHWA) Jason O'Brien (SHPO) Chris Kulick (Town of Breckenridge) Dianna Litvak (Mead & Hunt) Kara Swanson (David Evans and Associates, Inc.)
COPIES:	Attendees and all Section 106 ITF members

SUMMARY OF DISCUSSION:

1. Project Update

- a. Kara provided a project update using a presentation. (see PowerPoint)

2. Historic Section 106 Review/Update

- a. Sent out the determination of eligibility and finding of effects documentation to the State Historic Preservation Office (SHPO) and consulting parties (Lisa listed out consulting parties).
- b. SHPO concurred with determination of an adverse effect to the Vail Pass historic district. We will likely submit additional information as it become available regarding visual impacts and mitigation. Jason- visual impacts would be really good information for additional potential mitigation for historic. The latest submittal for consulting parties was on October 16. The 30 day review period will be up in mid-November.
- c. Lisa will be notifying the Advisory Council on Historic Preservation (ACHP) of adverse effect finding.

3. Mitigation Discussion

- a. Lisa stated that the completed Vail Pass context study will be included as mitigation for the adverse effects and that we will be doing a supplement to the Programmatic Agreement (PA) for mitigation. It's essentially a mini-Memorandum of Agreement (MOA) and we still have to notify ACHP. This was the approach the Twin Tunnels projects used.
- b. Jason stated that he isn't familiar with the supplement process. Lisa said that the idea is that it's like an MOA- identifying additional or new mitigation. It still gets circulated to the consulting parties. It's a way to consistently tie each Mountain Corridor project back to the original PA.
- c. Another creative mitigation approach was mentioned- the Twin Tunnels projects also tried a radio broadcast about the history of an area. The I-70 Mountain Corridor



Programmatic Environmental Impact Statement (PEIS) Tier 1 mitigation included context, etc. and we've completed most of the upfront mitigation. Tier 2 mitigation wasn't defined in the PEIS/Record of Decision (ROD).

- d. The question of should we discuss other mitigation measures given this is such an important resource was asked and if CDOT has other ideas for mitigation. Lisa stated that we talked about the design and construction piece and how we design the project to fit with the original intent of the roadway design. The Vail Pass Context Study outlines what contributes to the corridor context and fulfills the requirements for mitigation but could do more during final design regarding aesthetics.
- e. John- it seems like the visual and historic mitigation are directly related. Lisa- yes, for example, designing/constructing understated bridges that mimic the original intent/design.
- f. Dianna- in the PA supplement, how would this be codified? Lisa said the Twin Tunnels PA supplement was a good example. We will want to make sure the PA supplement doesn't expire before construction. Will want to implement those elements in a timely fashion, but we need to know a little more about what we're doing in order to capture it in agreement.
- g. Crest of the Rockies aesthetics guidelines need to be incorporated into the mitigation.

4. Visual Resources Discussion

- a. Kara presented proposed impact locations. Stephanie and Jason said they look good. Lisa explained the new visual guidelines and the Area of Visual Effect (AVE) vs. Area of Potential Effect (APE). The intent is to use the data from the Visual Impact Assessment (VIA) but it does not replace anything in Section 106.

5. Archaeology Update

- a. The work that was done in 2007 on a previous iteration of the project is going to be used for our submittal. Tom Fuller and Lindsey Johansson are good with that approach, based on Dan's conversations with them.
- b. Updated file search and went out in the field on October 17th to look at previously recorded sites, at least two of which were destroyed during original interstate construction in the 1970's. Only one eligible site- the Vail Pass Camp at the rest area, which won't be impacted during construction. Requesting concurrence with a finding of "No Historic Properties Affected"- CDOT will submit everything next week to SHPO.

6. Project Schedule

- a. Jason asked if the public outreach for the Environmental Assessment (EA) was also being used as the public outreach for the Section 106 process. Lisa and Stephanie clarified that typically the consulting party outreach serves as the public outreach for CDOT projects. There will be an additional opportunity to highlight some of the findings at the final public meeting. The Vail Pass highway segment is the primary



historic resource- people are catching up with the idea that transportation resources can be historic.

- b. Kara to work with Lisa and Dianna on times that work to meet with Will to incorporate historic considerations into the Visual Impact Assessment.
- c. Lisa- CDOT has completed visual assessments in the past that have looked at viewsheds, but have not used official VIA data before to help inform the Section 106 mitigation With Glenwood and Vail – how do you identify those components with the historic process? Region 1 did consultation on US 6 and SH 119 for the tunnel, but that project is a little different because it's narrower and the viewsheds aren't as expansive. Was helpful to show the pertinent viewsheds- what can you see? The VIA became a tool to help inform 106. How does the historic corridor relate to the visual assessment? The VIA identifies user groups- drivers, trail users, residents, etc. Some user groups may not related to the historic portion and the VIA includes more information than just those areas related to historic resources.



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	SWEEP Issue Task Force (ITF) Meeting #1
DATE HELD:	May 16, 2018
LOCATION:	CDOT Gypsum Maintenance Yard, 10519 Highway 6, Gypsum, CO
ATTENDING:	<p>Joel Barnett, FHWA</p> <p>John Kronholm, Project Manager, CDOT Region 3</p> <p>Karen Berdoulay, Resident Engineer, CDOT Region 3</p> <p>David Cesark, Environmental Manager, CDOT Region 3</p> <p>Jennifer Klaetsch, Environmental Unit, CDOT Region 3</p> <p>Paula Durkin, Environmental Unit, CDOT Region 3</p> <p>Becky Pierce, Statewide Wetlands Program Manager CDOT</p> <p>Matt Klein, Realty Specialist US Forest Service</p> <p>Matt Grove, Fish Biologist US Forest Service</p> <p>Andy Herb, Alpine Eco</p> <p>Siri Roman, Eagle River Water & Sanitation District</p> <p>Bill Andree, Colorado Parks & Wildlife</p> <p>Caroline Byus, Leonard Rice Engineers, on behalf of Eagle River Water & Sanitation District</p> <p>Lisa Lloyd, EPA</p> <p>Seth Mason, Leonard Rice Engineers, on behalf of Eagle River Water & Sanitation District</p> <p>Pete Wadden, Town of Vail</p> <p>Bob Weaver, Leonard Rice Engineers, on behalf of Eagle River Water & Sanitation District</p> <p>Taylor Elm, Colorado Parks & Wildlife</p> <p>Don Connors, Consultant Project Manager, Wood</p> <p>John Loranger, Wood</p> <p>Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates</p> <p>Matt Figgs, CDOT Region 3</p>
COPIES:	Attendees

SUMMARY OF DISCUSSION:

(Please Note: Action items are shown in ***bold italics***.)

1. Introductions & Agenda

- a. John Kronholm did introductions, covered the agenda, and talked briefly about the purpose of today's meeting, which is to provide SWEEP (Stream and Wetland Ecological Enhancement Program) Issue Task Force (ITF) members with an understanding of the project to-date, gather feedback on existing conditions and the current Black Gore Creek Sediment Control Action Plan (SCAP), and to gather input on mitigation and protection opportunities.



2. Project Background and Overview

- a. John K discussed the background of the project including highlighting the I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS), the recommendations from the PEIS (including stipulations in the SWEEP Memorandum of Understanding [MOU]), the Tier 2 NEPA process, and the past 2007 Environmental Assessment (EA) for the West Vail Pass area
 - i. He explained that this project is the Tier 2 NEPA process as it addresses site specific details for West Vail Pass, alignments, costs, and potential mitigation measures
 - ii. He also highlighted that the 2007 EA focused solely on safety, which the current Purpose & Need focuses on both safety and traffic operations.

3. CSS Process/ITF Responsibilities

- a. John K outlined the Context Sensitive Solutions (CSS) process that the Project Team is following for this project and what stage the project is at in the process
 - i. The Project Team has gathered information from the Technical Team (TT) that is being considered for the development of alternatives that will then be screened through a two-level screening process
 - ii. He also highlighted the Core Values that the Project Team, in conjunction with the Project Leadership Team (PLT) and TT, have developed.
 - iii. Kara pointed the ITF group to the handout which included more details on the Core Values as well as the Success Factors.
- b. John K covered the roles and responsibilities of the various ITF groups which come directly from CDOT's CSS guidance.
 - i. He explained that the intent of an ITF is to focus on a specific issue and make recommendations back to the Project Team and TT.

4. Current Project

- a. John K discussed the limits of the West Vail Pass Auxiliary Lanes project (Mile Marker [MM] 180 to 190) and talked to some of the unique characteristics along the corridor.
 - i. The elevation of West Vail Pass summits at 10,603 feet
 - ii. There are several sections of steep grades which are at 7 to 7.4%
 - iii. There are areas of substandard roadway geometry with some compound curves that were designed for a 55 mph speed limit (the current speed limit is 65 mph).
 - iv. There are 23 different retaining walls totaling 23,515 linear feet
 - v. There are 16 bridges that make up 1.6 miles of the corridor
 - vi. The Vail Pass/Tenmile Canyon National Recreation Trail sits in the corridor. This paved bike trail gets 39,000 annual users with a peak daily count of 3,500 users



- vii. West Vail Pass is the access point for the Vail Pass Winter Recreation area which saw 56,000 users in the 2016/17 winter season
 - viii. There are numerous wetlands and waters of the US in or near the corridor including Black Gore Creek. There is also considerable wildlife activity in the lower five miles of the corridor.
 - ix. There is a Sediment Control Action Plan for Black Gore Creek that another ITF will discuss implementing
 - x. The West Vail Pass corridor is subject to Section 106 of the National Historic Preservation Act as it is a nationally and exceptionally significant feature of the federal interstate system. West Vail Pass was one of the first highways to purposefully sculpt cut-and-fill slopes to fit in its unique setting, as well as being one of the first to use precast and cast-in-place segmental bridges.
 - xi. 80% of the project is within the White River National Forest
 - xii. 20% of the project runs through the residential portion of east Vail
 - xiii. The weather on the west side of the pass is a challenge as this side routinely sees more snow than the east side of the pass
- b. John K then covered the Purpose & Need of the project which is to improve the safety and traffic operations for both eastbound (EB) & westbound (WB) directions of West Vail Pass
- i. He highlighted several specific safety and traffic operations issues that exist on the pass that have necessitated this project
 - ii. Siri asked if there is an economic impact that has been determined for closures on I-70
 - 1. David replied that CDOT is using \$1 Million per hour of economic impact when I-70 is closed.
 - 2. John K stated that the original amount CDOT had used historically (\$800,000/hour of closure) was based on when mountain resorts were open. More work has gone into trying to determine an overall number that includes impacts to freight, drivers, and other businesses.
 - 3. Don added that there was over 200 hours of closure on Vail Pass over the past three years.
 - 4. Joel asked if all of those closures were during hours when resorts were open.
 - a. John K replied that CDOT hasn't determined that yet. More work could go into determining an exact economic impact closures on West Vail Pass has if it is deemed necessary.
- c. John K then talked about the Level of Service of Safety (LOSS), which compares West Vail Pass to all rural, mountainous 4-lane divided highways. The safety assessment that was completed for this project showed that every section of West Vail Pass has a moderate to high potential for crash reduction. Improvements made to the



corridor have the potential to significantly reduce crashes on the interstate as this section of highway is significantly worse than other similar sections.

- i. John K highlighted that I-70 on West Vail Pass sees about 22,000 vehicles per day
- ii. Joel asked how many miles of 4-lane divided highway were used statewide for a comparison.
 1. John K stated that it is all 4-lane divided highways in the state, but isn't sure how many miles that is.
 2. Joel then asked how many of those miles are above 9,000 feet in elevation.
 3. ***John K stated the Project Team can look at these requests and determine those numbers.***

5. SWEEP MOU and Implementation Matrix Review

- a. Becky presented on a brief history on the SWEEP effort which began in 2001. She added that she was one of the authors of the SWEEP MOU.
 - i. She stated that SWEEP is a program developed out of the PEIS to avoid or minimize environmental issues
 - ii. The SWEEP effort included biologists, hydrologists, water quality experts, community representatives, and other potentially-affected parties. Three major drainages were covered in the entire PEIS corridor.
 - iii. The parties (signatories) to the SWEEP MOU are CDOT, Federal Highway Administration (FHWA), US Fish & Wildlife Service (USFWS), the Bureau of Land Management (BLM), Colorado Parks & Wildlife (CPW), the Forest Service (USFS), Clear Creek County, the Clear Creek Watershed Foundation, the Upper Clear Creek Watershed Association, and Colorado Trout Unlimited
 1. US Army Corps of Engineers representatives, EPA, the Colorado Watershed Association, and the Eagle River Watershed Association were all part of the effort as well but did not sign the MOU.
- b. Becky then talked about what is in the SWEEP MOU
 - i. It is an MOU that defined parties and their roles and responsibilities
 - ii. It identified and recommended appropriate mitigation strategies, applied to all parties (not just CDOT and FHWA) to allow all of the stakeholders to gather together and contribute to potential solutions on projects, and identified primary issues of concern (including water quality, natural habitat, and information)
 1. She highlighted that not all of the issues in water quality in the overall SWEEP MOU may come up as they had to do with mining and mine tailings
 2. Lisa asked for clarification on what the information gathering requirement in the MOU was about



- a. Becky replied it was a big effort to gather information (mapping, best practices, etc.) to ensure future mistakes weren't made along the corridor.
- iii. Becky then stated that there is an implementation matrix that outlines the 3 issues of concerns with associated inputs, considerations, and outcomes for each phase of a project
 1. Kara referred the ITF group to one of the handouts which is a specific implementation matrix for this project
- iv. John K asked if there was an expectation to come up with a new SCAP for Black Gore Creek as many of the existing water quality features may be wiped out with this project
 1. Bob added that the SCAP was developed by a consultant to CDOT (Clear Creek Consultants), but that the SCAP was never fully implemented. It looked at sediment issues on the corridor (Zone 1), the problems that had occurred over time between the corridor & Black Gore Creek (Zone 2), and the impacts on Black Gore Creek (Zone 3). The SCAP only focused on sediment control on the interstate and had a recommended program of \$20M, and would never be fully completed without a large I-70 project.
 2. Eagle River Water & Sanitation District (ERWSD) and Eagle River Watershed Council did work to generate funds (\$1M) to do interim improvements to Zones 2 & 3.
 3. He added that the SCAP was a guide for these improvements, but was never finished. He stated that the sediment control and management strategy needs to be added in the planning/design of the project, not as an afterthought or as a later mitigation measure and encouraged the Project Team to address water quality issues that are problematic along I-70.
 - a. John K replied that the Project Team has the opportunity to make these improvements and will look at designing them into the roadway and not include them as an afterthought.

6. SWEEP Implementation Matrix Discussion

a. Water Quality

- i. John L stated that his goal was to ask the group for input on if the SCAP's recommendations met the objectives that were originally determined, what the costs and benefits were for each strategy, and what revisions may need to be added in the SCAP
- ii. **Sediment – Black Gore Creek SCAP**
 1. John L presented some background on the development on the Black Gore Creek SCAP and talked about some of the proposed recommendations that came out of the SCAP (4 implementation scenarios)



2. He covered the 4 implementation scenarios that came out of the SCAP
 - a. The Baseline-Existing Maintenance Program which basically maintained the amount of sediment removal that took place on the pass
 - b. The Enhanced Maintenance Program which did not add any new control structures, but added \$500k annually to enhance sediment removal
 - c. The Large Capital Construction & Enhanced Maintenance Program which included all of the elements of scenario #2 plus \$20M in capital improvement projects for sediment control structures
 - d. The Prioritized Capital Construction & Enhanced Maintenance Program which included all of the elements of scenario #2 plus \$4M in annual capital improvements
 3. John L talked about a few of the projects that had been completed since the completion of the SCAP. 67 permanent BMPs have been constructed since the 2002 implementation of the SCAP. He stated the Project Team will continue to look at what has been completed and what remaining items are not implemented.
 - a. He also added that CDOT has increased its annual maintenance budget by about \$250k per year
- iii. **303(d) Listing**
1. John L added that Black Gore Creek is listed under Section 303(d) of the Clean Water Act
 - a. Matt Grove added that Black Gore Creek is not listed for macroinvertebrates but it is monitored
 - b. Caroline added that one portion of Black Gore Creek is still listed as 303(d) for macroinvertebrates (the upper portion)
 - c. Matt G added that he didn't believe it was listed but is still on the M&E list. Siri added that the M&E list is still very important.
 - d. Karen asked for clarification for what the M&E list was
 - i. Matt G replied that it is a classification that isn't bad enough to be listed on 303(d), but does have pollutant concerns and is therefore monitored
- iv. Kara asked if there were any other questions for mitigation or implementation that needed to be covered by the ITF
1. Bill stated that some of the discussions surrounding the original SCAP was to add concrete barrier and additional paving to trap sediment and give a location for sediment to be cleaned, but this installation could be a barrier to wildlife trying to cross the



- interstate. He added that the location of the sediment ponds is important too as those can attract wildlife. If they are on the interstate side of a wildlife fence, could draw animals to I-70
- a. John K added that CDOT Maintenance needs to weigh in on those locations and how easy they will be to access and clean
 - b. John L stated the Project Team can work with the ITF group during design to makes sure these different concerns are all balanced and considered
2. Siri stated that CDOT Maintenance manages snow much differently than how it was done in 2002 when the SCAP was completed. The Project Team should look at how it is operated now and update the recommendations of the old SCAP
 3. Seth asked if it is worth working with CDOT Maintenance to look at the operational recommendations in the SCAP and add onto those old recommendations with new practices and new technologies
 - a. John L agreed that there is an opportunity to do this
 - b. John M added that CDOT Maintenance uses technology in their application of product on the roads, so there is some opportunity to look at this. Maintenance doesn't want to waste material under their new practices
 - c. John L stated that the Project Team is still in early development of work on this issue and will reach out to the ITF members as questions arise
 4. Siri added that in her perspective, on the scale of a \$500M project, spending money to update the SCAP within the limits of the project is very worth it as a whole new look should be given to the corridor
 - a. Bob concurred with this recommendation
 - b. Jen also concurred as just an update to the 2002 SCAP would not be relevant with a large change to the corridor as part of this project. She added that Maintenance will need to be at the table for this effort
 5. Seth asked for the timeline for construction of this project
 - a. John K replied that there is no identified construction funding at this time, only money for EA effort. The EA is expected to be completed in early 2020. The project is on a potential ballot measure list for \$225M which would allow the project to move into design and some phase of construction in a few years.
 - b. Seth asked that if there is significant uncertainty on when or if this project gets done, would be worth just an update to the SCAP and not re-doing it. If there is a high chance it will be constructed in the next 5-10 years, it would be best to do a new SCAP now



- c. Karen added that if the Project Team gets design funds to get to FIR (CDOT's 30% design level), it would make sense to do a new SCAP, even if construction funding isn't identified yet. CDOT has identified this project as one of the top 5 projects in the state. Several potential funding scenarios exist that will continue to develop in the upcoming future.
6. Bob asked how the identification of the alternative for this project works with the Tier 1 PEIS as it has already identified a 3rd lane
 - a. Karen replied that the TT is working through this question right now and whether there are multiple alternatives or if there are only design options for 1 alternative (adding a 3rd lane). The Project Team and FHWA are working closely to develop this. She added that the Project Team hasn't looked at the level of effort for generating new reports (such as a new SCAP) but is looking to the ITF groups for guidance
7. Siri added that a new water quality management plan needs to be generated for the whole corridor including the Black Lakes and not just Black Gore Creek
 - a. Bob stated that certain areas on the corridor were difficult to determine how to install mitigation measures that could be maintained, so the alternatives for sediment control were limited by the footprint of the highway. The strategy for managing sediment and keeping it from leaving the roadway should be looked at as alternatives are developed so that the same issue doesn't arise with a new footprint.
 - i. Karen replied that the Project Team is looking at screening criteria for sediment control and maintenance, so all of the Core Values will be considered as alternatives are scored.
 - ii. John K added that there may be opportunities to improve maintenance access as the alternatives and design progress for this project. They can be determined in conjunction with design and not installed as an afterthought
 - iii. Karen highlighted the schedule the Project Team handed out to the ITF group. The refinement of the preferred recommended alternative would be the time the Project Team starts to dive into the details of looking at specific improvements and will look to the ITF for guidance on these.
8. Bob asked what the Level 1 screening will cover
 - a. Kara stated that the Project Team is still determining the alternatives right now that will be screened, but the Level 1 criteria will be applied to the alternatives. Design options



will also be determined later and compared to the Core Values

- b. John stated that once the preferred alternative is identified, the mitigation measures will be looked at through the different ITF groups
 - c. Bob asked if the impacts for each alternatives would be the same or not
 - i. Kara replied that not necessarily, it depends on what alternatives come out and are screened
 - d. Siri asked if an alternative to focus on fixing geometry and widening shoulders while keeping I-70 as a 4-lane interstate could be its own alternative
 - i. Karen replied it could be an option. The Project Team is discussing whether to approach this in light of the PEIS as the TIER 1 decision recommended adding the 3rd lane. The Project Team is looking at whether going back and changing the recommended improvement from the PEIS should be considered as an alternative as this is a Tier 2 decision to the PEIS's Record of Decision. This could also be a standalone phase of a larger project
 - ii. Siri asked for clarification on the difference between the Tier 1 and Tier 2 effort
 - iii. Joel stated that the Tier 1 effort defined a recommended suite of improvements for the I-70 Mountain Corridor. Tier 2 projects would be built upon that and may not implement the Tier 1 decision, but those projects can't preclude the Tier 1 decision
 - iv. Lisa stated the Project Team could segment the project to have different solutions in different areas to try and minimize impacts
9. Seth asked what the SWEEP ITF will help the Project Team accomplish with this meeting today
- a. Kara stated that the intent of this meeting is to provide the SWEEP ITF group with the project background and then gather information to consider in moving forward with the project

b. Natural Habitat

i. Wetlands Protection

1. Andy talked about the wetlands work the Project Team is planning on accomplishing as a part of the project. The Project Team is working with the CDOT Region 3 Environmental unit, the Colorado Natural Heritage Program (which completed general wetland and



fen mapping within 500 feet of the edge of interstate, but not outside of the Right-Of-Way), Colorado Parks and Wildlife, as well as using the data set from PEIS. He asked the ITF group for more data or information they may have that was not listed.

- a. He explained the work completed by the Project Team to date as well as the identified work that will take place in the future. Field work will start this July to map wetlands. That mapping will be done both by field work and by aerial mapping. The Project Team will be conservative in its look and will include more areas in the mapping limits than potentially needed. When permits need to be pulled for design and construction in the future, those limits will then be further refined.
 - b. Fens will also be mapped and more closely examined.
2. Andy then presented some of the wetlands criteria on the implementation matrix that the Project Team will be attempting to answer
- a. He stated whether the project is subject to the US Army Corps of Engineers Merger Agreement is still being determined. Although the US Army Corp of Engineers was not at this SWEEP ITF, the Project Team is still working with them
 - b. Lisa stated that in light of the Trump Administration's effort to streamline the NEPA process, she recommends that all of the information needed for a permit or for the merger agreement should be complied so the Project Team doesn't have to go back and re-do work. Involve the US Army Corps of Engineers early on so their requirements don't impact the selection of the preferred alternative
 - i. Andy added that the US Army Corps of Engineers' and NEPA's definition of environment is different, so the Project Team will make sure they are included
 - c. Becky added that the US Army Corp of Engineers doesn't decided whether the project will enter into a merger agreement; it will be FHWA (with concurrence of CDOT). The merger agreement is being re-written right now after EPA and the US Fish & Wildlife Service conduct a final review. She stated that other state DOTs use the merger agreement much more than CDOT does, but CDOT should look at using it more, especially when there is more than one alternative or one alternative with many design options. It will prevent the Project Team from having to back track
 - i. Andy added that depending on the alternative, a permit may not even be needed.



- ii. Kara added that further conversations will be needed to determine the potential future permit strategy for this project
- iii. Andy said the Project Team is taking the conservative approach by assuming an individual permit is needed right now and can always not go down that route if it is determined that the permit is not needed.
 - 1. The goal of the Project Team would be to avoid wetlands first, minimize impacts second, then mitigate lastly. He added that the ITF group could provide the Project Team data on wetland sites that have been degraded and could be restored as part of this project
- d. Matt G asked if the Project Team's survey will include any potential realignment of the bike path
 - i. Andy replied that yes it will
 - ii. Kara added that the original study limits may not go down all the way to the creek, so if any design options impact areas outside of the original limits, the Project Team will need to go back out to re-map
- e. Paula stated that there are many areas below Black Lakes that have a lot of sediment in that should be looked at. These could be good potential mitigation areas for the project
 - i. Bill asked how that could be considered mitigation as that is fixing an old problem from the original construction of the interstate
- 3. Bob asked if this project will require an amendment to the Highway Easement Deed FHWA has with the Forest Service
 - a. Karen added the Project Team doesn't know at this time.
 - b. Don added the road probably will stay inside boundaries of easement, but bike path may not.
 - c. Bob wanted the Project Team to look at whether the highway was in a Special Use Permit or in an easement
 - i. ***The Project Team will confirm whether I-70 sits in an easement or under a Special Use Permit***
- ii. **Aquatic Special Status Species**
 - 1. Matt G talked about the list of Threatened & Endangered aquatic species the Forest Service has identified as a potential to be in the project limits



- a. He added that the Greenback Cutthroat Trout doesn't exist in the Black Gore Creek watershed (the Greenback in the creek is not a genetically pure species)
2. Kara showed the questions from the implementation matrix that the Project Team will work through
 - a. Matt G spoke to some potential outcomes
 - i. This project is not a good candidate for enhancing the recovery effort, but the Team will work with CPW
 - ii. Fish barriers do exist and could be looked at for enhancement or removals if necessary
 - iii. Black Gore Creek primarily is full of non-native fish species or brook trout
 - b. Bill added that there are fish barriers for Pitkin and Booth Creeks, but CPW would potentially look at sites of future recovery and would like to keep the barriers in place
3. Andy presented the recommendations for the aquatic connectivity that were originally established in the ALIVE Linkage Interference Zone (LIZ) report. These recommendations are site specific along the corridor and were discussed among the ITF group.
 - a. Matt G stated that any work that has to do with fish passage has to go through the Forest Service's hydrologist for 100-year flood elevations
 - b. Bill added that CPW wouldn't want to remove any barriers (even ones that exist naturally) as it is tougher to put one in than it is to later pull one out. This would allow for sections of creek to do future habitat recovery efforts
4. Bill stated that the unknown tributary at MM 183 may be Timber Creek
 - a. John K hasn't found this location in the field and isn't sure why CDOT would install a culvert for the creek underneath a bridge
 - b. Matt G stated this may not be Timber Creek (as it shows up later on the list); it could be part of the sediment basin
 - c. ***John K will try to find this location and send pictures to members of SWEEP ITF for their review on the ALIVE recommendation***

iii. Aquatic Species Recreation

1. Kara talked about the question on the implementation matrix for recreation regarding aquatic species
 - a. Bill stated that the Gold Medal Water designation is below the project limits, so the project wouldn't have a special designation segment within the limits



2. Bob asked how the use of Black Lakes for fishing applies to this matrix (as ERWSD does a lot of stocking of those lakes via agreement with the Department of Natural Resources & CPW). He stated that the accumulation of sediment in those lakes has been problematic over time and remains an issue of concern. The sediment control measures that are implemented with the project should include protection of Black Lakes too
3. Bill added that restoring vehicle access to Black Lakes #2 would be beneficial as well to provide more recreation access
 - a. John K stated that this may be an issue between CPW and the USFS & ERWSD and may not be a part of this project. This project will only mitigate those recreational facilities that are impacted and not provide additional access or parking

c. Information (Research Needs)

- i. Kara showed the questions from the implementation matrix for this category that the Project Team will need to answer
 1. Seth asked why the first question is limited to aquatic vegetation
 - a. Andy replied that this probably relates to wetland vegetation
 - b. Matt G added that there is a lot of data on macroinvertebrates and fisheries, so missing areas would include vegetation
 - c. Andy asked if anyone in group had data on magnesium chloride and sand impacts on aquatic vegetation
 - i. Seth replied there is research from CU on this that the Project Team may be able to obtain
 2. Matt G said that there is not much published literature on the effect of mag-chloride on aquatic bugs. This should be considered as CDOT has been using more mag-chloride and less sand without knowing the effects on aquatic life. The Forest Service has seen a slight decrease in bug populations over the past 5 years. Abandoning sand because of sediment issues may not be the best solution because of the potential effects of the mag-chloride
 - a. Seth added there is an effort with Eagle River Watershed to answer the second question right now. He recommended the Project Team to go back to Clear Creek Consultants to get the data that was generated with the original studies and asked if it could be shared with ERWSD
 - b. Bob added that he felt CDOT collected data on monitoring requirements for Black Gore Creek in addition to what Clear Creek Consultants did
 - c. Jen added that monitoring is ongoing but nothing additional outside MS4 areas is taking place and Black Gore Creek is not designated as MS4



- d. Bob stated that the ERWSD collects macroinvertebrates and water chemistry data above mouth of Black Gore Creek and on Main Gore Creek and has seen that macroinvertebrates scores are significantly lower in Black Gore Creek than at those other locations. He feels the reason for those lower scores is due to lower bug densities from sediment impacts and mag-chloride. He can share the data with the Project Team.
 - i. Siri stated that there is a Black Gore Creek steering committee that is looking at starting to sample bugs
 - ii. Bob said he would greatly appreciate the opportunity to review the data that is used to establish the baseline criteria of the health of Black Gore Creek.
- 3. Seth asked how the Project Team will answer the matrix implementation questions
 - a. Kara replied that the questions were for entire I-70 Mountain Corridor. The Project Team needs to ask if the particular questions are applicable first, and then if they are, is there an opportunity to gather data to answer the question
 - b. Seth added that there is an opportunity to coordinate with other groups that are asking similar questions
 - c. Andy said that there is a good opportunity for data sharing with this project
 - d. Kara added there are some concurrent efforts that members of ITF can work together on
 - e. Siri stated that it may be good to have a member of the Project Team present at the Black Gore Creek steering committee
 - f. ***SWEEP ITF Members agreed to share data/information as it is collected***

d. Design Options

- i. John K stated that the bike path design options are complicated with all of the pros and cons to weigh with user experience, safety, aquatic/riparian impacts, wildlife impacts, etc.
 - 1. The Project Team would like to do another ITF specific to the bike path and have varying stakeholders provide input on where this relocated path could go. The Project Team will set this up at a later date and reach out to the necessary stakeholders
- ii. Don talked about several design options that the Project Team has talked through with the TT including the roadway template width, construction phasing, and trail relocation options



7. Schedule and Next Steps

- a. John K presented the overall EA schedule. He highlighted the EA is expected to be completed in early 2020, the preferred recommended alternative will be identified in the fall of 2018, and alternative refinements and environmental reports will take place from fall 2018 to mid-2019.
 - i. If design funds are obtained by CDOT, an effort towards FIR will be taken, but the project can't progress past FIR until the EA is signed.
 - ii. Kara added that the Project Team will come back to this ITF group in the early fall after the preferred recommended alternative is identified.
 - iii. Karen stated that as part of the EA process, the commitment to re-do the SCAP could be agreed upon, but that would need to take place after the recommended alternative is identified. She doesn't feel the work needs to take place right now, but the Project Team could commit to doing it
 1. Bob asked when the Project Team would start doing more detailed design work
 - a. Karen replied design funding is needed first, but that it wouldn't start until early 2019 at the earliest
 2. Bob asked what level of design is done when the preferred alternative is recommended
 - a. Karen replied it would be very high level (i.e. 5-10%). She added the Project Team will make sure to have the right timing for redoing the SCAP to make sure it makes sense
 - b. John K added the limits of disturbance for design and construction need to be established with the EA, and the proposed mitigations will needed to be looked at as well
 - c. Kara said the design is going to be an iterative process with the different ITF groups
- b. Siri asked if some specific metrics for preserving or enhancing water quality as part of the project could be added to the Success Factors (this could also be done for other Core Values like safety, etc.). Stipulations could be added to the project that would require measurements in the future that if the metrics aren't met, it would trigger a set of required actions by CDOT
 - i. Karen replied that she wasn't sure if CDOT had done this broader commitment on other projects and would want to look more into this.
 - ii. Joel stated that he felt Success Factors don't measure 10 years down the road, but are meant to look at what is designed. It is not typically within the scope of work to tie future metrics to projects
 - iii. Bob disagreed with this view as agencies like Forest Service & US Army Corp of Engineers often require follow up monitoring after large projects to make sure metrics have been met and then required follow up mitigation if those metrics aren't met



- iv. Paula added it depends on the permit type and who writes EA. The Forest Service is not writing the EA for this project as in the examples given
 - v. Kara added that it is tricky when trying to determine this in an EA. The Project Team could commit to something like producing a new SCAP but not necessarily future metrics
 - vi. Joel felt that the Success Factors are for the CSS work on the EA, not a measure for after construction
 - vii. Bill responded that he felt this would go against the MOUs signed as part of the PEIS. If construction takes place and the stream gets worse, the SWEEP MOU wouldn't have been met
 - 1. Joel felt that concern would be better identified in an MOU rather than in the Success Factors
 - viii. John K asked the group to table this discussion and allow the Project Team to look further into it and then discuss at next SWEEP ITF. He did ask for some specific measurements that could be considered to be included in some metric that CDOT would look into.
 - 1. The group discussed that reading through the SWEEP MOU to see what is included in that document would help the ITF group determined potential measurements
 - 2. ***Kara will send the SWEEP MOU to the ITF***
 - ix. Bob added Enhanced Environment is one of the Core Values and encouraged the Project Team the stand behind that Core Values
 - 1. John K added he felt this effort would be part of the Success Factors, but would more likely be a part of a permit or an MOU
 - x. Matt G said that since the Forest Service isn't doing the NEPA, the EA process will be a bit different than the stipulations that they would typically outline. His hope is that the Project Team will put the effort to maintain or improve sediment removal efforts
 - 1. If the efforts are not improved or maintained, he felt it may kick this EA to an EIS, but it doesn't appear the Project Team desires to go down that road.
 - xi. Kara said that when the design options are being reviewed, the Core Values will be used extensively in looking at the options
 - xii. Joel added that FHWA's expectation is that the NEPA and CSS process is strictly followed for this project. He felt that this is a good project and the process is being followed with good stakeholder involvement so far.
- c. Karen thanked the group for their time and effort and contributions to today's meeting.



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	SWEEP Issue Task Force Meeting #2
DATE HELD:	February 11, 2019
LOCATION:	Avon Library
ATTENDING:	Andy Herb, Alpine Eco Dave Cesark, Environmental Lead, CDOT Region 3 Paula Durkin, CDOT Region 3 Jen Klaetsch, CDOT Region 3 John Kronholm, Project Manager, CDOT Region 3 Becky Pierce, CDOT Devin Duval, Colorado Parks and Wildlife Taylor Elm, Colorado Parks and Wildlife Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates Siri Roman, Eagle River Water and Sanitation District Caroline Byus, Consultant for Eagle River Water and Sanitation District Larissa Read, Consultant for Eagle River Water and Sanitation District Pete Wadden, Town of Vail Matt Klein, USFS Brad Bettag, Wood
COPIES:	SWEEP ITF Members

SUMMARY OF DISCUSSION:

1. Introductions & Agenda

- a. Kara apologized that this meeting has been rescheduled three times in an attempt to better accommodate ITF member schedules and the weather, but still some are unable to attend today.
- b. Karen offered one-on-one meetings with any ITF member requesting additional discussion.
- c. Kara reviewed the agenda. Will discuss how SWEEP ties into future parts of the project.
- d. Meeting goals- everything presented today ties back to the implementation matrix from the MOU

2. General Project Information

- a. ITF Responsibilities
 - i. Recommendations to take back to PLT – decisions lie with CDOT and FHWA – identify mitigation and enhancements
- b. Project Purpose & Need
 - i. Purpose and Need is to improve safety and operations on West Vail Pass
- c. Recap SWEEP Meeting #1
 - i. Introduction to the project, CSS, SWEEP MOU, - this was prior to field work or proposed action, reviewed list of background data sources, used to refine data work.
- d. Project Status



- i. Kara described the alternatives screening process.
 1. Criteria for Level 1 screening was based on Purpose and Need (P&N), if any alternative answered “no” to safety and operations questions, it was eliminated as CDOT cannot carry forward an alternative that does not meet P&N, other than the No Action. ,
 2. There were also criteria based on Core Values, but only ones that could easily be answered as “yes” or “no” since Level 1 is not a comparative analysis between alternatives and we didn’t have enough information to answer “yes” or “no” for most of the Core Values. However, understanding that the Core Values are extremely important, many of them were used to develop the Level 2 criteria.
 3. After Level 1, only one action alternative met the P&N, which was the auxiliary lanes with curve and ITS improvements alternative. Because of that, the criteria from the Level 2 screening will actually be considered during the impact and mitigation assessment for the EA.
 4. After the Proposed Action was identified, there was an internal design team workshop and to start incorporating design options such as wildlife crossings, water quality, recreation path realignment, etc.
 5. The team also met with CPW and USFS to discuss wildlife and the trail.
- ii. Caroline – when will you complete the EA? Kara – public can submit comments at any time, looking towards the end of the year for the EA. There will be a 30 day time period for public comment on the EA,
- iii. Caroline – regarding public comments, how do the comments fit into the final report? Kara- the comments are included in the decision document,
- iv. Larissa – will there be a draft and final EA? Kara – no, only the final EA for review and comment. Any changes would be included in the decision document.
- e. Stakeholder Comments Summary
 - i. Kara went through the slide –conversations and involvement of ITF will still happen as the project moves forward and into design

3. Sediment Management Implementation Flow Chart

- a. The flow chart focuses on sediment management – water resources tech memo happens during the EA – this all feeds into the EA and decision document, blue box first and then move into the green box, will incorporate both project specific and other mitigation measures outside of the project
- b. John – this EA will commit to re-doing the SCAP as part of the design process

4. Project-Specific SWEEP Implementation Matrix

- a. Talks about how we are addressing each one of these categories
- b. Sediment Management
 - i. Brad reviewed the matrix. There are a lot of limits to what we can incorporate due to space. Developing maintenance manuals for BMPs. Continued monitoring in basin.



- ii. 2002 SCAP project review – numerous SCAP recommendations have been implemented in the time since the 2002 SCAP. Those that are marked “complete” are green, partially complete are yellow. There were instances where certain BMPs were recommended but something else was implemented. Corridor has not been static. There has been noticeable improvement since 2002. Some things that have been implemented haven’t been structural- better equipment and training, shoulder cleaning, increased use of deicing elements other than sand, etc.
- iii. Not all recommended improvements have been implemented. What’s next? Low-hanging fruit have been implemented. A lot of the additional BMPs would be good to implement with large project construction. Opportunities for BMPs to be installed when traffic is being diverted. Since 2002 there has been a lot innovations in BMP technologies. Project team has been looking at other states and SCAPs for ideas.
- iv. Taylor- are the “green” BMPs still going to work with the proposed action? Brad- if the BMP will be impacted by the alignment, we will have to replace or mitigate for it.
- v. Siri- what level of detail will be in the EA vs. what will come later? The concepts will be identified in the EA but will not specifically where items will go because we’re only at conceptual design. At the decision document we will describe the intent.
- vi. Don’t make water quality an afterthought- input from stakeholders will continue throughout the EA process.
- vii. Funding? CDOT is trying for a freight grant. Will look at phasing for other funding options. Can’t be funded solely from asset funding. There are other funding options out there, but need to have a phasing plan in place. The project will be assessing impacts and mitigation as a project as a whole and not be identified piecemeal. This corridor is #1 for crashes per volume of traffic in the state.
- viii. Pete- back to the alternatives- we looked at several different options of alternatives. Did they consider other options such as traction law enforcement, carpooling, etc. We had a PEIS, which identified a preferred alternative. The PEIS identified and implemented non-structural measures for the I-70 Corridor. We took it a step beyond that and analyzed additional alternatives. A TDM type alternative wouldn’t have necessarily helped with safety.
- ix. Brad described project-specific BMPs. Will describe locations the type of BMPs that may be useful at that location. The BMP menu will allow the designers to pick and choose BMPs based on intent, site constraints, etc.
- x. USFS- have any of the BMPs in the menu been previously installed from the 2002 SCAP? Yes, some have, others have been used on other projects. These have also been vetted with CDOT maintenance in terms of ease of maintenance. Type D WQ inlet- Brad discussed the pros of them. But may not be good because of the volume of sediment. Karen- we compiled BMPs we know work well and others we found through research.
- xi. The goal isn’t necessarily to fill in everything from the 2002 SCAP but to create a new one that looks at feasibility of the previous recommendations, changes in roadway alignment and what’s feasible.



- xii. When does the analysis occur for sediment loading? When does modeling occur? Usually there will be initial examination during the alignment. There are also very specific requirements for the technical report for the EA that can be found in CDOT's NEPA manual.
 - xiii. How will this project enhance the environment? Proactive rather than reactive. Instead of a band-aid, it's a holistic approach. From a wetland perspective, there are opportunities for wetland enhancement. Looking at areas where we can enhance wetlands. We have the opportunity to be proactive. Can attract wildlife and have them use the underpasses.
 - xiv. In terms of the sediment impacts in the future- are you trying to capture 100%? It's always the goal, but can't guarantee anything. We will try as best as possible to capture everything but there may be areas we miss. We need to honor where we are in the process. Andy- also talking about redundancy- not just going to drop an inlet in. There will be secondary and tertiary opportunities as well- veg swales, riparian enhancement.
 - xv. Siri- thinks there should be adaptive management. The ERWSD wants it documented well. Less interested in what we're implementing but focused more on the intent of the mitigation measure. Let's focus on the science- what can we achieve? Would like to see defined goals.
 - xvi. Larissa- when would the SCAP update happen? A little more definition of the timeline of when the SCAP will happen.
 - xvii. John- some of the items for the SCAP update may be outside the scope of this project. Monitoring the stream would be one of those. This project will implement the construction of physical features within the project limits and does not pay for other items, such as monitoring. Monitoring has already been put into place by the State since 2001 and is on-going.
 - xviii. Martha- Collaborative Effort ensures that the PEIS is followed.
 - xix. Karen- how has CDOT's approach been in the past? Jen- Straight Creek-TMDL was done right after the SCAP was completed. Committed to 25% of sand pick-up. Continue to track that and just revisited past numbers. Varies year to year – lots of variables. Have been talking to maintenance about the variances.
 - xx. Karen- will need to talk as an organization on how we can commit to meeting our goals. Can we even commit to a certain level of chlorides?
 - xxi. Siri- structures only work as well as they're maintained. Could you look at averages for goals? The board talked about it last month. They really want to have a monitoring approach- doesn't matter how it happens, just that we work together to do it.
 - xxii. Larissa- monitoring is integral. A FONSI needs to be truly a FONSI. They need more confidence in what "no significant impact" means since FHWA doesn't have a standard for what significant is.
- c. Section 303(d)
- i. Brad reviewed 303d listing for BGC. BGC has been delisted from 303d for Macroinvertebrates, but is still listed as M&E. The stretch of BGC above Miller Creek has also been delisted from 303d for sediment. The lower portion remains 303d listed for sediment. We are specifically targeting sedimentation impacts and that we are addressing those concerns with this project.



- ii. Siri- Dave Reece is sampling macroinvertebrates. New data is available linking macro to mag chloride. Siri would be happy to have Dave present to the project team.
- d. Wetlands Protection
 - i. Andy presented an update on the wetland information. Andy conducted field work this past summer/fall. All mapped wetlands are shown on the handout maps. Wetlands were mapped based on hydrophytic vegetation and hydrology, not soils. When we are ready to permit, they will be officially delineated. Andy also recorded wetland type, classification, water source, stressor, photos, and mapped them. Each wetland was given a score – A, B, C, D. there are some “A” wetlands. A lot of other “B” ones. Ones close to the road are “D” as they are primarily created by roadway runoff.
 - ii. Where are the high-functioning wetlands and what do they mean to the project? They will be color-coded on maps but the only way to determine if there are fens/peatlands is to check soil, which will be done in 2019.
 - iii. Larissa- will wetlands be analyzed in the EA? Yes.
- e. Maps
 - i. A couple highlights- MM 182. Wetland study area is the green line. There may appear to be truncated but it’s just because of the study area. MP 184- there are some big wetlands above Timber Creek. As you travel up the pass, MP 187- large wetland complexes along Black Gore Creek and more and more wetlands as you go higher in elevation. Andy has identified wetland enhancement/mitigation opportunities, which can be included in the EA. The actual mitigation package will be done when it’s time to permit the project.
 - ii. Will do the soil confirmation for fens after the snow is gone.
 - iii. USFS and CNHP both did fen studies, we have that data.
 - iv. Generally, wetlands closer to the road are lower quality and stormwater fed, with a few exceptions. Creeks and tributaries hold a lot of restoration/enhancement opportunities.
- f. Special-Status Aquatic Species
 - i. Jonathan Lowsky is our biologist and has been talking to Kendall with CPW and the USFS. The USFS doesn’t recognize any special status species in this area. CPW does recognize native cutthroats in some tributaries. Our recommendations are to maintain the existing fish barriers. There are other tributaries near 183 – at the ALIVE meeting we discussed whether we should remove the culverts and restore the tributaries or keep the culverts in place. The decision was made to keep everything in place because an open channel could fill with sediment.
 - ii. * Follow up with Jonathan on the toads. There is a beaver pond/wetland area there too. The pond is outside of the project limits.
 - iii. Caroline- how far west does the project start? East Vail. 180-190. Another concern is the potential for accidents/spills for hazardous materials. How does that factor in to this project? Karen: We haven’t looked at it yet. Martha: The responsible party (trucking company) is responsible for the impacts. We are looking at improving truck ramps.
 - iv. Existing BMPs could be improved to help reduce the hazmat reaching the creeks. Existing BMPS have helped collect hazmat spills, an example is the



- hydrochloric acid spill at MP 183 that a sediment pond helped to capture and prevent the spill from spreading.
- g. Aquatic Species as a Recreational Resource
 - i. Pete – gold medal fisheries are downstream (5 miles). Impairments start in East Vail. It’s been worse in Gold Medal section. East Vail area – there is a very definite impact to macroinvertebrates. Could be close proximity to highway. More pavement along with other impacts cause issues in the creek. In that area, the highway is primary land use and there is concern about macroinvertebrates.
 - ii. Siri- The downstream Gold Medal Fishery should be considered. Thinks it should at least be acknowledged as an input. She thinks that if we have enhancements from the project that it would directly improve that area too.
 - iii. Martha- macroinvertebrates goes down near East Vail to the wastewater treatment plant?
 - iv. Vail tends to deemphasize impacts from I-70 since residents don’t have much control over that.
 - v. Siri - Impacts to the Gold Medal stream are from urbanization of Vail
 - h. Information and Research Needs
 - i. Jen presented the water quality monitoring reports for Black Gore Creek- what’s measured and when. CDOT has been monitoring BGC since 2001 and issues reports every 3 years.
 - ii. Connectivity and chloride are measured year round. Turbidity probes are used in high run-off times.
 - iii. With suspended sediments there is a correlation to erosion. Phosphorus was also found to be high. Highway runoff is dominated by chlorides. Sodium chloride is high as well as mag chloride. This data has been shared with other groups and the consultant will summarize the 18 years of data and share it.
 - iv. Siri- for mag chloride- are there proprietary ingredients? Jen- had talked to maintenance but they haven’t gotten the MSDS sheets yet. We can try to get those again. Pete- Chris Kobesach- CSU- worked with CDOT and got the slurry to do his tests and the impact of that product on water quality.
 - v. Siri- take the wet effluent and test that. Kara requested that ERWSD send any results they may have.
 - vi. Jen- the “ice-slicer” mixed with sand is also used, which is proprietary.
 - i. Trail Discussion
 - i. *send out the 11x17s of the trail relocation maps and the detailed matrix. Add sections that are within 100 feet of the creeks.
 - ii. The end result will likely be a hybrid of the alignments shown today. John reviewed the three different alignments. Least impactful one is likely the one between the current road and the creek. The stretch that we’re impacting is 2.5/3 miles of the trail. We will leave the rest of the trail where it is currently. Feedback we’re looking for is for concerns regarding locations of trail realignment.
 - iii. Pete- minimize creek crossings – there is more potential for people to use the creek. User experience is important but keeping it on the same side as the road and use walls or barriers to separate the trail from the road.



- iv. Taylor- crossings and wetland impacts are a concern – should minimize the trail paralleling the creek through wetlands. Try to make crossings perpendicular instead. Will talk to Kendall after this as well.
- v. Devin- sediment accumulation on path that could run off is a concern. Should mitigate the runoff from the path.
- vi. Pete- might be opportunities to also capture sediment from path. Karen- yes, we've been discussing that.
- vii. USFS – have you looked at how potential walls could interact with wildlife crossings? Yes, these areas were identified and moved where appropriate.
- viii. Andy- most of the orange alignment is not in wetlands with the exception of higher up.

5. Schedule and Next Steps

- a. Matt- please let the USFS know if we do have any data needs.



MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	Recreation Issue Task Force Meeting #1
DATE HELD:	November 6, 2018
LOCATION:	Avon Public Library, 200 Benchmark Road, Avon, CO 81620
ATTENDING:	John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 Scott Jones, Colorado Snowmobile Association Dick Cleveland, Vail Community Kevin Sharkey, Eagle County Trails Matt Klien, US Forest Service Robert Rodriguez, US Forest Service Ben Bartosz, Vail Pass Task Force Steve Patel, Nova Guides & Vail Pass Task Force Alan Clubb, CDOT Special Events Shannon Anderson, Bicycle Colorado Paula Peterson, US Forest Service Greg Caretto, Nova Guides Lee Moosburger, Colorado Mountain Club Kara Swanson, Consultant Environmental Task Lead, David Evans and Associates Hannah Polow, Transportation Planner, David Evans and Associates Tyler Bowman, Wood Matt Figgs, CDOT Region 3
COPIES:	Attendees

Actions items are shown in italic bold

SUMMARY OF DISCUSSION:

1. Introductions

- a. The group did introductions for the first Recreation Issue Task Force (ITF) meeting for the West Vail Pass Auxiliary Lanes project.

2. Agenda

- a. Kara discussed the agenda for today as well as the goals for today’s meeting which is to provide ITF members with an understanding of the project to date, gather feedback on proposed trail alignments, and discuss other recreational area design option considerations.

3. Project Background and Overview

- a. Kara gave a background of the project. This is Tier 2 NEPA project from the I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS) which identified auxiliary lanes for West Vail Pass from Mile Markers (MM) 180-190.
- b. She then discussed what this project has done to as part of the Environmental Assessment (EA) that is being worked on. The Project Team has developed Core Values and a vision for the corridor which the Project Team refers back to when



making decisions, a project Purpose & Need, alternative screening criteria, draft alternatives, conducted Level 1 screening (where the draft preferred alternative was identified of auxiliary lanes with full shoulders with curve and ITS improvements), conducted a Project Team design workshop, conducted an on-site trail survey, and met with the US Forest Service (USFS) to discuss the draft proposed recommended alternative.

- i. She discussed that the Project Team only conducted Level 1 screening because only 1 alternative made it through the screening process, so Level 2 screening was not needed. The Project Team has then moved into working through different design options to refine the recommended alternative
 - ii. She added that the USFS is a cooperating agency for this EA as 80% of the project is on Forest Service property through the Highway Easement Deed
 - iii. She pointed to the project website for meeting minutes and more information on the background and progress of the project to date
 1. <https://www.codot.gov/projects/I-70-West-Vail-Auxiliary-Lanes>
- c. Kara spoke to the Purpose & Need of the project which is to improve the safety and operations on Eastbound (EB) & Westbound (WB) I-70 on West Vail Pass. She also pointed to some of the specific issues seen on the pass that have led to developing this project.

4. ITF Responsibilities

- a. John stated that later in the presentation there will be a discussion regarding the winter recreation on the pass. There is also an upcoming CDOT/USFS meeting, and then a subsequent meeting with the winter recreation stakeholders on November 16th to discuss the issues that Scott has brought up to the Project Team regarding winter recreation
- b. Kara spoke to the roles and responsibilities of the ITF for this project. The ITF's role is to work through elements of the identified issue and then provide recommendations to be taken to the Project Leadership Team (PLT), Technical Team (TT), and Project Team
 - i. The ITF is comprised of experts for the specific issue being discussed at that particular ITF meeting.
 - ii. She also pointed out that the ultimate decision making on the project resides with CDOT and FHWA
- c. Kara added that the trail concepts and the discussion held today will be presented to the wildlife (ALIVE) and water quality (SWEEP) ITFs as those issues are involved with any trail relocation work

5. Trail Survey Results

- a. Hannah presented the results of the on-site bike trail survey that was conducted on 8/25/18 at the west trailhead for the Vail Pass Recreation Path. She highlighted a



few of the biggest findings from that survey, but then pointed to the entire survey results which were provided to the ITF in the handouts.

- i. She highlighted the user demographics (where they were from and what they use the trail for). Most people were from in state and most use it for cycling. Some users use the trail for other purposes such as walking
 - ii. She pointed to the reasons users like the existing trail which include the scenery and ease of access, as well as what improvements users would like to see which include moving the trail away from I-70, having a physical separation from I-70, more sediment removal, and a wider trail and/or passing lanes.
- b. Hannah then summarized the statements from the trail user survey as well as the TT and USFS meetings regarding the trail. She pointed out that many of the comments received may conflict with each other (i.e. don't move closer to Black Gore Creek but move further away from I-70), so compromises and solutions will need to be formulated within these various constraints
- i. Shannon asked if users commented on the number of guides who drop people at the top of the pass and what the reaction was
 1. Hannah said yes there were responses on this and the responses were mixed. Many were excited for the extra users and the economic benefit of these users, but others were worried about those users not following the rules of the trails and creating dangerous situations
 2. Shannon asked if extra educational signage for bike ethics were installed, who would do that
 - a. Karen replied that CDOT may be able to do that but would have to work with the USFS on it
 - b. Robert added that the USFS has those types of signs in different areas and the project could look at doing something similar to that
 - ii. Shannon then asked if there were any comments on e-bikes
 1. Hannah stated that there were no comments, but the survey group did see some e-bikes on the trail during the survey
 2. John added that while there were no specific comments, there were general comments on differential speeds and the safety hazard created by that issue
 3. Paula said that on per the current Eagle/Holy Cross District travel management plan, motorized vehicles are not allowed in this area so e-bikes aren't supposed to be on this section of trail. It doesn't matter whether it's an electric motor on a bike, the trail would have to designate that as motorized to allow e-bikes



4. Alan responded that the trail was originally built with highway user funds, so with that type of funding e-bikes have a right to be on the trail. There will need to be a discussion on whether those e-bikes are allowed in the future
 5. Kevin added that the e-bike issue is very difficult. The ECO Trail committee has been discussing it and there are tough implications of keeping them off the trail. The project may need to look at solutions for allowing them as it is hard to enforce a ban of e-bikes
- iii. Ben asked the Project Team if they have been able to estimate an annual usage of the trail
1. Hannah replied yes, and it is represented in the survey handout on page 4. Most people use it in the summer and a breakdown is provided
 2. Karen added that CDOT also has data from a previous count that has the overall use of the trail. This older data shows 39,000 annual users with a max daily use of 3,500. ***The Project Team will provide the exact counts and dates of those counts to the ITF members.***
 3. Ben surmised that there is similar, if not higher use of the winter recreation area at the top of the pass in the winter months

6. Trail Alignments Review

- a. Tyler spoke to the section of trail that is being realigned as part of this project. This is only for the section of trail that is being impacted by the roadway widening as the Purpose & Need of the project is not to re-do the trail.
- b. Tyler stated that the Project Team has looked at some options for what to do with the 2-miles of path that are being relocated from about MM 185.5 to 187.5. The proposed alignments have been initially designed at 10 feet wide.
 - i. Three options have initially been developed by the Project Team and those alignments are included in the handouts to the ITF. Option 1 stays close to the realigned I-70, Option 2 crosses onto either side of Black Gore Creek and is close to I-70 in some areas and on the opposite site of Black Gore Creek for others, and Option 3 stays south of Black Gore Creek except for 2 crossing locations.
- c. The Project Team presented a table of pros and cons of each of those alignments as well as design and safety criteria that are part of those options as compared to the existing trail
 - i. Tyler presented design details for all 3 alignments vs. the existing trail. All 3 options have flatter overall grades than existing, but still some steep sections



1. Shannon pointed out that all three options are steeper than the steepest part of the existing trail and asked how long those sections are
 2. Tyler replied that while this is true, it is only for a shorter distance (only 300-400 feet). The existing trail is extra steep for about 1500 feet
- ii. Tyler presented on the design details regarding retaining walls. He noted that there is only one existing wall today. With the proposed wider roadway, there will need to be additional walls for all three options. The largest amount of square footage of wall exists with Option 1, while the most amount of walls exists with Option 2.
1. John added that fill walls are required for all three options which would create a drop-off over the trail. Those walls would require a barrier for the safety of the users
 2. Paula noted that a trail that has a barrier rides narrower due to the shy distance users have to that barrier
- iii. Tyler presented on the wildlife concerns for the different alignments. Option 1 would be very similar to what currently exists on the trail, while Option 3 would have the largest impacts to wildlife due to the trail being between wildlife and their water source at Black Gore Creek, as well as walls next to the trail
- iv. Tyler then presented on the potential for creek impacts for each option. He explained that the USFS requested the trail stay 100 feet away from Black Gore Creek.
1. For Option 1, there are no crossings of Black Gore Creek and 2,000 feet of path within 100 feet of Black Gore Creek
 2. For Option 2, there are four crossings of Black Gore Creek and 2,700 feet of path within 100 feet of the creek. This option can also eliminate the existing Polk Creek crossing prior to the trail crossing underneath I-70.
 3. For Option 3, there are two crossings of Black Gore Creek and 1,250 feet of path within 100 feet of the creek. This option will also be able to eliminate the existing Polk Creek crossing prior to crossing underneath I-70.
 4. Shannon stated that she felt while there are creek crossings with Option 2 & Option 3, the view for the users would be much better than next to the interstate
 5. Kevin asked to talk about the geometry of Option 1 where it crosses underneath I-70 as it appears to be a sharp curve that is very close to Black Gore Creek



- a. Tyler state that the Project Team could tweak that alignment to provide more sight distance around the sharp curve
 - b. John pointed the ITF group to the trail alignment handout for an example of what the trail would look like for the different options in relation to I-70 and Black Gore Creek as some of the walls are shown
 - c. Shannon asked if Option 3 is more impactful than the other alignments?
 - i. Tyler replied that yes it is as that option would move the entire 2 miles of bike path south of Black Gore Creek.
- v. John stated that the goal for today's meeting would be to walk away with the concepts for the design of the trail to move forward, as well as to receive feedback on what factors may be the most important to consider in the final alignment. The Project Team will have to weigh wildlife concerns, creek impacts, user experience, etc., in order to make a final decision on the alignment of the relocated trail segment.
1. Shannon stated that the Project Team will also have to consider noise due to the trail's proximity to I-70. When the trail is close to traffic, it is hard to hear due to the noise and become a safety concern to users
 - a. Tyler pointed out that the proposed trail alignments next to I-70 are set lower than the roadway so the rider would be below the grade of the interstate and there wouldn't be as much noise
 - b. Ben pointed out this would be similar to the Glenwood Canyon bike trail
 2. Kevin added that if the trail is far enough below I-70, it could be a very nice user experience if the rider can't see I-70 traffic and have a lot of the noise blocked. The Project Team could define a minimum change in elevation from I-70 to the trail to keep that positive user experience
 - a. The Project Team agreed this could be a good concept
 3. Shannon stated that the Team will have to consider the width of the trail and the shy distance if there is a wall on one side and a rail on the other
 - a. Kevin added that there is a 3 foot shy distance standard from walls or barriers for ECO Trails. Two feet may have to be reasonable for this case due to the amount of impacts and cost. The trail is heavily used so having a wider path would



- be a huge benefit to this section, especially with differential speeds and the increasing popularity of e-bikes
- i. Tyler replied that the Project Team has looked at doing some stretches of 14-foot wide trail
 - b. Alan added that with the heavy use of the trail, the wider platform would better accommodate the special events and varying user groups. He feels that people would be happier with a wider trail
 - c. Scott commented that the wider and flatter the trail is made, the more desirable this section could be for winter use. No one uses it currently as it is right next to I-70 in several sections. Moving it below I-70 could present a significant recreational opportunity
 - d. John added that the USFS doesn't officially close the trail in the winter
 - e. Dick commented that it's just impractical and dangerous to use the current trail in the winter as it's right next to I-70. He hopes to see the new alignment closed still in the winter due to the impacts to wildlife that increased use would bring
4. Dick then stated that the Project Team needs to consider maintenance with whatever alignment is designed and make sure that the erosion of the slope and trail that takes place today does not take place in the future
 5. Paula mentioned that in the current USFS travel management plan, mountain bikes are restricted from May 21 to Nov 22 on the Eagle/Holy Cross Ranger District, so fat tire bikes would not be allowed during winter months. Winter fat tire biking still needs to be analyzed for the district. To consider a change to the existing travel management plan, an EA would need to be done.
 6. Dick stated that he has never noticed any snowmobile use on this path and asked the group if they felt the same way
 - a. Ben replied has seen snowmobile use, but it is very rare.
 - b. Scott added that it is not a very desirable area to use a snowmobile
 - c. Paula commented that this area is not open to winter motorized use
 - d. Karen asked the ITF if users could cross country ski
 - i. Paula replied that it is allowed and many people do
 - e. John asked if the trail became more friendly to winter recreation users, what activities would be allowed



- a. Shannon replied that she would like to see data or studies that show what impacts Option 2 & Option 3 would have to wildlife
- b. Kara added that in this area there is limited wildlife connectivity due to no bridges existing on the interstate. With the discussions of more wildlife permeability being added to the interstate as part of this project, the Team will need to present these alignments to ALIVE to get their feedback on how these relate to those potential crossings
- c. Scott added that there is a difference in a wildlife barrier presented by a path on a flat grade versus a wall on the trail
- d. Karen asked Dick to clarify if he was more concerned about the barriers to wildlife or if making the trail more user friendly would increase the use of the path and impact wildlife
 - i. Dick replied that he is concerned about both scenarios.
 - ii. John stated that the initial major wildlife crossing locations the Project Team is looking at are outside of the location of this path relocation for the most part. Walls between Black Gore Creek and I-70 would be less of an impact to wildlife as that barrier is already in place and major structures could help with making sure any alignment doesn't become a bigger impact to the wildlife.
 - iii. Matt K added that this discussion shows why it is so important to take the trail alignments to ALIVE and SWEEP groups to answer some of these questions in order to help the Project Team make informed decisions. This is important to the USFS as a cooperating agency on this EA
 - iv. Karen comment that the Team was going to have the different specialists at this ITF, but was requested to bring the alignment of the trail to the ALIVE and SWEEP groups so ITF members didn't have to go to multiple meetings. She added that it is great to hear these different concerns and viewpoints from this group as it is what the Project Team was hoping to hear to make an informed decision
- e. Scott stated that from a purely recreational standpoint, Option 2 or Option 3 are the best. Is that the best solution to the trail alignment though? He was not sure as that still



needs to be considered after talking to the other specialists. If wildlife is not using these areas now, he surmised the public could gain recreational experience in this area. But if there is a lot of wildlife, that would be the bigger concern than opening more areas to recreation.

- iii. Karen asked the ITF group if there was any other information they needed to go back to their stakeholders to review the different alignments. The Project Team will add the locations of proposed walls for the trail to the plans and send back out to the group
 1. Paula replied that a typical photo or mockup of what a wall might look like next to the trail would be beneficial
 - a. John stated that the Project Team can look for a similar section of trail that has wall and handrail
 2. Kevin would like to see some more typical sections throughout the corridor
- iv. Tyler then presented a 3D model of the three alignments to the ITF group which better showed the cuts and fills and walls for the alignment options
 1. Alan asked what the widths are of the alignments were as shown
 - a. Tyler replied that it is 10 feet wide with 1 foot shoulder and 2 foot buffer from any walls
 - b. Alan then asked if there were any constraints from preventing the path from being wider
 - i. John replied that cost is a big consideration
 - ii. Karen added that there are other impacts like deforestation that could be constraints
 2. Ben commented that while it doesn't make a difference in the summer, there are some areas where Option 3 goes through that are in mapped avalanche paths where there have been deaths before. If this area is used in the winter, that has to be considered
 3. John added that if the path is between Black Gore Creek and I-70, the user experience could be impacted in areas with the rider next to walls and rail, but there could be a better user experience with Option 2 & Option 3. Those options would have the biggest impacts however.
- v. Kara asked for any other opinions on the trail from the ITF group
 1. Ben asked if there is a potential elevation change of the interstate through the narrows



- a. Tyler responded that the Project Team has tried to keep the elevation of the road generally the same for constructability and to lessen the broader impacts of a flatter alignment
 2. Ben asked if there is an opportunity to have a path similar to Glenwood Canyon where the interstate overhangs the path rather than just next to a vertical wall
 - a. Karen replied that there are opportunities the Project Team can look at, but there also challenges with more snow on West Vail Pass and potential sedimentation issues
 3. Ben asked for a 10-foot wide finished path, how much width of forest would have to be cut to accommodate the trail
 - a. Tyler replied that probably 14-16 feet would be needed to allow for a shoulder on each side of the trail. The design option table handout does have a linear feet of impact to forested areas, so someone could multiply that by this width for a total area of impact
- e. Kara said the Project Team will send out updated plan sheets to the ITF, the comparison table with some adjustments to present more information based on today's meeting and send that out. The Project Team then requests that the ITF members use that additional info to provide comments
 - i. Karen stated that the Project Team will also present the minutes from the ALIVE and SWEEP ITFs to this group
 - ii. Shannon asked when the summary of all the comments on the trail be presented
 1. Kara replied that they would be presented at Technical Team Meeting #8 which is not scheduled yet, but will probably be held in February
 - iii. Shannon asked when this project would be built
 1. Karen stated that there is no identified construction funding for this project at this time. The project is included on both Proposition 109 & 110 lists for a portion of the total construction funding, so if either one of those pass there will be construction funding. The construction project would not start for a few years even in this scenario as the EA would need to be completed and design would need to take place
 - iv. Paula stated that there are other recreation considerations in this area including the Two Elks Trail. The Forest Service is also working with the Air Force on replacing a bridge on the Two Elks Trail in 2021. Air Force Academy engineering students are working on designing several bridges for the USFS in different areas in the state. The USFS would need access for that project, so it is something for the Project Team to be aware of.



1. She added that the USFS also has the Gore Creek campground that is on the reservation system and is the highest occupancy campground on the Eagle/Holy Cross district. This campground can be reserved nearly a year in advance. Planning for any impacts or closures to this campground would have to be done well in advance for reservation considerations and for the concessionaire that operates that campground.
2. Kara mentioned the presentation will get to other recreational considerations later on

7. Vail Pass Winter Recreation Area

- a. John stated the Project Team is meeting with the USFS tomorrow (11/7/18) to discuss the concerns of the winter recreation area that Scott has brought up. The Team will then have a meeting with the USFS, Scott, and Ben to talk through these concerns more
 - i. Scott wanted to add that the Project Team needs to look at potential increased winter demand in an area that is already limited with finite resources
 - ii. Paula added that there is not much parking at both end of the trails and that should be looked at as well
 - iii. Scott stated that he is more comfortable putting fat tire bikes on paved trails rather than groomed backcountry snowmobile trails
 1. John asked if fat tire bikes use groomed trails
 2. Ben replied that yes they do, even though it's not allowed on the White River National Forest
 - iv. Tyler added that the Project Team is looking at different locations to drop the 3rd lane EB at the top of the pass due to concerns expressed on adding more traffic to the MM 190 exit where there are already circulation issues
- b. John presented the concept to expand the truck parking on EB I-70 at MM 189 to accommodate more trucks. This could help with the congestion issue at the Rest Area exit by removing trucks from that area as they would use this parking location rather than the rest area
 - i. Scott agreed that this idea makes a lot of sense. There would need some signage to inform truckers that the parking is available well in advance of the location. He is concerned though that project could build the best parking lot ever, but the congestion issue at the MM 190 exit would not go away.

8. Additional Recreational Considerations

- a. Tyler presented some comments received from the TT, USFS, and Stakeholder meetings on additional recreation considerations



- i. Karen stated that hunters and other users park on the shoulder of I-70 currently to access National Forest lands. This is an illegal practice and the Team would not consider that use for the design of this project
- ii. Alan asked what the rough construction schedule for this project was. He added that there are 6 or 7 major rides (with 2000+ riders) that use this trail annually so a lot of coordination will be needed to accommodate these rides? The USFS also has information on those major rides that can be provided
 1. Kara replied that the Project Team doesn't know the construction schedule at this time as there is no construction funding at this time. The Team can work those major ride considerations into the EA for mitigation measures though
 2. Karen added that the Project Team is trying to minimize closures to the trail. The Team will know more about impacts to the trail once an alignment is finalized as constructability options are different for each option. This work is likely an early part of the project in order to move the trail prior to moving the roadway
 3. Tyler stated that constructability was a consideration in the alignments that were developed
- iii. Shannon asked if the trail has to be open at all times or if that was just a project goal
 1. Kara replied that this falls under a Section 4f evaluation. That requirement doesn't say you can't close the trail, but there are a lot of factors that go into that decision. The Project Team is working with FHWA on this, but there are still a lot of other stakeholders to consider with this decision
 2. John reiterated the Project Team's goal to keep the trail open as much as possible with whatever alignment is selected
- iv. Matt K stated that it will be important to the USFS to have as much advanced notice as possible and stated that any closures don't just have impacts on individual recreation users, but real impacts to businesses that operate and use the pass from a recreation standpoint
 1. John replied that this is a detail that the Project Team will definitely coordinate moving forward once construction funds are received
 2. Kevin added that he feels he can already tell a magnitude of relative construction impacts for each alignment, and asked if the Project Team could add that to the table that is sent out to this groups as well as present to the other ITF groups
 3. Paula added that closures also don't prevent users from coming but pushes them to other locations that may be at or near capacity already



- v. Paula then added that the USFS also has outfitter guides that lead pack trips to Deluge and Gore Creek trails that use the trailhead off of Bighorn Road, so closures would impact those businesses as well. These are also access trails to the Eagles Nest Wilderness. She stated it is even more reason why the Project Team will need to continue to coordinate with the USFS as schedules and impacts evolve
 - 1. She stated that there is also a pro bike race that uses the path to the cul-de-sac before it crosses under I-70 in the past. There are also other foot races (marathons, ½ marathons, GoPro Games, etc.) that use the path that will need to be considered.

9. Schedule and Next Steps

- a. Kara presented the next steps on the trail alignment
 - i. The Project Team will refine the design over the next 3 months based on the TT and ITF feedback received. CDOT and FHWA will make the final design decisions that will be analyzed in the EA.
 - ii. She asked that any additional comments be received by November 23rd and can be sent to the project's email address
 - 1. John added that the Project Team will always accept comments, but is asking for that deadline to move forward



APPENDIX B

CSS DESIGN EXCEPTION MEMO AND PLANS



MEMORANDUM

Date: February 13, 2020

To: West Vail Pass Auxiliary Lanes Project Leadership Team

From: Colorado Department of Transportation, Region 3 Program East Engineering

Subject: Context Sensitive Solutions Design Criteria Review and Exception Request

Memo Purpose and Intent

The purpose of this memo is to review the I-70 Mountain Corridor Context Sensitive Solutions (CSS) engineering design criteria and provide feedback from the Technical Team (TT), as requested by the PLT, meeting on February 6, 2020 to the PLT on each criterion. Based on feedback received at the TT meeting, CDOT has committed to forming a design exception Issue Task Force (ITF) as part of the final design on the project. This ITF will provide input on design concepts to facilitate decisions regarding the areas where there are proposed CSS design exceptions. This commitment will be integrated into the final EA documentation. Hosting the ITF during the design phase allows for the proper integration of other considerations that are planned during the design phase such as the SCAP/SWEEP ITF, ALIVE, Aesthetic guidance with historical context and Visualization efforts rather than just a standalone topic.

The design for the West Vail Pass Auxiliary Lanes Proposed Action is at a conceptual level (approximately 10% design). As the project proceeds into final design, there will likely be minor design changes, some of which may be able to fully evaluate a balance of the all the criteria in some locations, not just the CSS Design Exceptions. The exceptions being requested are not final; CDOT will revisit the CSS design criteria during the final design process and will review the criteria with the TT and PLT again during that process. The PEIS states that alternatives may be refined in the Project Design Phase as part of this process. Approval of the exceptions during the Environmental Assessment (EA) phase of the project simply grants approval for CDOT to move forward with the Proposed Action at the conceptual level of design with the understanding that the criteria will be revisited as the project moves into final design. There has been no change to the Proposed Action; this is the next step in the CSS process and allows CDOT to move forward with the EA.



Introduction

CDOT developed the I-70 Mountain Corridor CSS process to facilitate an inclusive and multi-disciplinary stakeholder outreach and engagement process to develop and implement transportation solutions within the physical setting of the project area. As part of the CSS process development, criteria to address the unique characteristics of the I-70 Mountain Corridor:

- Design speed
- Alignment
- Slope cut and fill
- Disturbance
- Rock cut
- Bridge structures
- Sound attenuation

In addition, the I-70 Mountain Corridor CSS Team developed aesthetic guidance for four segments, called Areas of Special Attention, of I-70 within the Mountain Corridor based on the unique characteristics of each segment. The West Vail Pass Auxiliary Lanes project (Project) falls with the “Crest of the Rockies” design segment. All projects on the I-70 Mountain Corridor are required to meet the CSS design criteria during the Life Cycle Phase 2, Project Development. The West Vail Pass Auxiliary Lanes project is currently in the Project Development phase. For projects within an Area of Special Attention, CDOT must request design criteria exceptions for the Proposed Action during Life Cycle Phase 2, due to the complexity of the issues involved. Exceptions from the criteria may be justified based on the following:

- Complementing surrounding physical characteristics
- Enhancing safety
- Increasing capacity
- Reducing costs
- Protecting the environment
- Preserving historic and scenic elements
- Interfacing with multiple modes of transportation
- Utilizing new technology or innovative approaches
- Doing the right thing

The project team considered the safety and operational benefits of the addition of the auxiliary lanes and the curve modifications on I-70 against the CSS design criteria. Given the existing topography, there will be significant cuts, fills, and walls required to construct the auxiliary lane. If I-70 were completely re-aligned to avoid large cuts and fills, it could not remain in its current location and disturbance would greatly increase above and beyond the existing roadway footprint. The alignment, designed to approximately 10% level at this time, will be refined during the final design phase of the project to further balance safety and impacts. The TT and the PLT will continue to provide input to the Project design throughout the remainder of the Project Development Life Cycle Phase and into the Project Design Life Cycle Phase. Feedback from the TT on these exception requests is being provided to the PLT along with this memo to assess the pros and cons of the requested design exceptions.

It should be noted that in general, any option that reduces overall impacts will most likely reduce overall project costs. Project costs were not used as a primary factor in determining the alignment; improving safety and operations and minimizing the overall limits of disturbance and impacts to private property were the driving variables in the final alignment.



Table 1 presents the CSS design criteria categories, details of each criterion, and whether the Project’s Proposed Action meets the criterion. The bold text indicates criteria that will not be met or will only be partially met.

TABLE 1. CSS DESIGN CRITERIA WITH PROPOSED ACTION

DESIGN CRITERIA	DETAILS	DOES PROPOSED ACTION MEET THE CRITERIA?
Design Speed	For I-70, 65 MPH design speed.	Yes
	For Advanced Guideway System (AGS), dependent on technology.	N/A AGS is not included as part of the Proposed Action; however, the Proposed Action does not preclude the hybrid AGS alignment.
Alignment	Eastbound (EB) highway lanes, westbound (WB) highway lanes, and the AGS will be designed as separate, independent alignments.	Yes
	The three alignments will maintain no less than the existing median width or create a clear zone that does not require a guard rail or barrier.	No Several medians in the corridor are decreasing in width. (See Median Exceptions #1 - #5 in Table 2)
	No loss of existing vertical separation of highway lanes will occur in any section.	Yes
Slope Cut and Fill	Limits of physical disturbance shall be less than 40 vertical feet from the top of the pavement or rail platform to the farthest edge of cut or fill.	No There are areas where the limits of physical disturbance exceed 40 vertical feet from the pavement to the limits of earthwork. (See Disturbance Exception #1 in Table 2)
	Cut and fill embankment will not exceed a slope of 2.5H:1V (Horizontal:Vertical).	Yes
	All roadway retaining walls over 12 feet in height will be installed below the elevation of the roadway.	No There are several cut walls that exceed 12 feet in height (See Wall Exceptions #1 - #5 in Table 2)



DESIGN CRITERIA	DETAILS	DOES PROPOSED ACTION MEET THE CRITERIA?
Disturbance	Construction will be fully contained with areas of historic or current disturbance if no centerline change occurs.	Yes Based on the concept design.
	New alignments must be consistent with Design Criteria for slope cut and fill.	No The slope cut and fill exceptions also apply in areas of realignment. (See Slope Exception #1 in Table 2)
Rock Cut	A geotechnical analysis report will be completed and reviewed prior to any proposal to create rock cuts for an alignment.	Yes A geotechnical investigation will be completed as part of final design.
	If rock cuts are required, naturalized custom cuts methods are required. Rock cuts shall be constructed using scatter blasting techniques and provide for adequate rockfall area at the base.	Yes The only major rock cut is at emergency truck ramp at MP 185.5. Rock sculpting will be included as part of final design.
Bridge Structures	Bridge structures will not utilize slope paving techniques and will require a closed-end abutment design with a minimum vertical height of 8 feet, measured below the bridge girder.	Yes
	Bridge embankments shall be 2.5H:1V maximum.	Yes
Sound Attenuation	Sound buffering and attenuation will be designed in conjunction with the horizontal and vertical alignment to eliminate the need for noise mitigation. Mitigation, if required, will integrate landforms, landscape planting buffers, and walls.	Yes The existing noise wall in East Vail will remain, as will the lower height concrete barriers. Draft results from the noise analysis indicate a wall is feasible and reasonable on the north side of I-70 for Pitkin Creek Condominiums. Details of the mitigation will be determined during final design and will follow the design criteria.



Table 2 provides details about the specific CSS design criteria for which CDOT is requesting exceptions from the PLT. Table 2 is intended to be reviewed with the 11x17 drawings at the end of this document, which show the specific locations of the exception requests. The ID in Table 2 corresponds with the locations on the 11x17 drawings. The CDOT team asserts that the exceptions described below will improve safety and operations on I-70 West Vail Pass, while striving to meet the Project Core Values and maintain the context sensitive design of the corridor. Associated Core Values and Success Factors for the justifications are included where applicable.

These CSS criteria exceptions do not significantly affect wildlife connectivity as wildlife fencing is proposed for the limits of the project, directing wildlife to bridge crossings and proposed wildlife underpasses. All disturbed areas will be restored to blend with the existing landscape.

This project falls within an Area of Special Attention (Top of Vail Pass) located within the Crest of the Rockies Design Segment. Additionally, project-specific aesthetic guidelines that address the historic context of I-70 West Vail Pass will be developed to guide this project as it moves forward. These guidelines will help to mitigate impacts to historic and scenic elements and surrounding physical characteristics.

The dimensions provided below are approximate and are for information only. CDOT is proposing to initiate a design exceptions ITF during the design phase of the project for further discussion and stakeholder feedback on the dimensions and variance locations.



TABLE 2. CSS DESIGN CRITERIA REQUESTED EXCEPTIONS

DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
<p>Alignment</p> <p>The three alignments will maintain no less than the existing median width or create a clear zone that does not require a guard rail or barrier.</p>	<p>Median Exception #1</p> <p>(Existing median width is approximately 300 feet; median decreases by a maximum of 14 feet)</p> <p>Attachment Sheet 2 of 7</p>	<p>180.9 to 181.1 (EB)</p>	<p><u>Description:</u> In East Vail, including this area, most of the homes are south of I-70. To avoid impacting these homes, the Proposed Action maintains the existing south edge of pavement and all widening occurs to the north. Bighorn Road also runs to the south of I-70, providing the only access to some homes and the Gore Creek Campground. The existing median is wide and steep, with some rock outcroppings. In order to maintain the median width, the roadway would need to be widened to the outside on the north side of I-70.</p> <p><u>Complementing surrounding physical characteristics:</u> Realigning either to the outside or inside is generally within the corridor of the original context sensitive design and fits into the existing landscape.</p> <p><u>Enhancing safety:</u> There is no considerable difference in safety enhancements between widening to the inside or outside.</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p> <p><u>Reducing costs:</u> Cost was not used as a differentiator between realignment options.</p> <p><u>Protecting the environment:</u> There is no considerable difference in environmental impacts between the two options.</p> <p><u>Preserving historic and scenic elements:</u> The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource.</p> <p><u>Interfacing with multiple modes of transportation:</u> A change in median width does not preclude the AGS alignment, as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 right-of-way (ROW) was determined to be infeasible. There is no difference in impacts to bicyclists, pedestrians, busses, or shuttles.</p> <p><u>Utilizing new technology or innovative approaches:</u> There is no difference in utilization of new technology or innovative approaches between the two options.</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Doing the right thing:</u> If EB I-70 were widened to the outside, it would move closer to the homes in this area. Widening to the outside would require fill walls along the south edge of I-70, which would be visible from the homes to the south. If a wall were not constructed, the fill slope would require relocation of Bighorn Road, requiring permanent private property acquisition from homeowners. Core Value: Corridor Character & Aesthetics</p>
<p>Alignment (cont'd)</p> <p>The three alignments will maintain no less than the existing median width or create a clear zone that does not require a guard rail or barrier.</p>	<p>Median Exception #2 (Existing median width is approximately 280 feet; median decreases by a maximum of 30 feet)</p> <p>Attachment Sheet 2 of 7</p>	<p>181.5 - 182 (WB)</p>	<p><u>Description:</u> This curve will be realigned in order correct substandard existing geometry and build the new bridge offline while keeping I-70 open to traffic. The median in this area is very wide and has a few groves of aspens and pine trees. To meet the criterion, the road would need to be realigned to the outside (north) of the existing curve where there are trees, wetlands, the Gore Creek Campground, and the emergency truck ramp.</p> <p><u>Complementing surrounding physical characteristics:</u> Realigning the curve to the outside would impact the emergency truck ramp, causing it to extend further into the hillside, resulting in additional disturbance and exceptions for disturbance and walls over 12 feet. Core Values & Success Factors: Corridor Character & Aesthetics - minimize impacts to US Forest Service Land; Enhanced Environment</p> <p><u>Enhancing safety:</u> Increasing the radius of the curve will reduce crashes. Both options are improving safety. Core Value & Success Factor: Safety - highway design improvements to fix substandard geometries where there are identified safety issues</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p> <p><u>Reducing costs:</u> Cost was not used as a differentiator between realignment options.</p> <p><u>Protecting the environment:</u> Modifying the curve to the inside only affects one curve, whereas flattening the curve to the outside requires more extensive realignment and results in greater impacts. Realigning to the outside would increase the overall disturbance area and impact a larger area of wetlands. Core Values & Success Factors: Corridor Character & Aesthetics - minimize impacts to US Forest Service Land; Enhanced Environment</p> <p><u>Preserving historic and scenic elements:</u> The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. The outside alignment would also impact the existing hillside, forest, and wetlands. Core Value: Corridor Character & Aesthetics</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Interfacing with multiple modes of transportation:</u> A change in median width does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. Both options may require temporary construction impacts to bicyclists and pedestrians that utilize the recreation trails. There are no differences in impacts to busses or shuttles.</p> <p><u>Utilizing new technology or innovative approaches:</u> There is no difference in utilization of new technology or innovative approaches between the two options.</p> <p><u>Doing the right thing:</u> Building the bridge offline allows I-70 to remain open to traffic during construction, which minimizes impacts to the traveling public during construction.</p> <p>Core Value & Success Factor: Implementability – construction phasing that minimizes impacts to traveling public</p> <p>Realigning the curve to the outside would move the roadway closer to the campground and recreation area. Temporary recreation closures would be the same between options.</p> <p>Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Recreation</p>
<p>Alignment (cont'd)</p> <p>The three alignments will maintain no less than the existing median width or create a clear zone that does not require a guard rail or barrier.</p>	<p>Median Exception #3</p> <p>(Existing median width is approximately 35 feet; median width decreases by approximately 20 feet)</p> <p>Attachment Sheet 2-3 of 7</p>	<p>182 – 184 (EB & WB)</p>	<p><u>Description:</u> In this area the existing median is either open or has barrier and retaining walls. Where the median is open, it warrants barrier at its current width. Due to the steep terrain, expanding the median to create a clear zone would impact Black Gore Creek, wetlands, and the forest. Given the site constraints and safety considerations, barrier will be added to the median as required in this area. Since barrier will be required, widening to the median will reduce overall impacts. This stretch of I-70 is bounded by Black Gore Creek to the north and a steep uphill slope to the south. Widening to the south would require cut walls over 12 feet tall, which would also be a CSS criteria exception.</p> <p><u>Complementing surrounding physical characteristics:</u> Realigning either to the outside or inside is generally within the corridor of the original context sensitive design and fits into the existing landscape.</p> <p><u>Enhancing safety:</u> All options improve safety by implementing the Proposed Action. As discussed above, median barrier at this location will enhance safety while also minimizing impacts to the natural features around I-70. Core Value: Safety</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Reducing costs</u>: Cost was not used as a differentiator between median options.</p> <p><u>Protecting the environment</u>: Widening to the outside would increase the limits of disturbance, increase impacts to the forested area to the south, and move I-70 closer to Black Gore Creek to the north.</p> <p>Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment</p> <p><u>Preserving historic and scenic elements</u>: The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. Widening to the south would introduce additional walls, which would create a visual impact. The barrier required for the median narrowing will have a visual impact. All elements of the Proposed Action will be required to follow the Crest of the Rockies and project-specific aesthetic guidance that will be developed.</p> <p>Core Value: Corridor Character & Aesthetics</p> <p><u>Interfacing with multiple modes of transportation</u>: A change in median width does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There is no difference in impacts to bicyclists, pedestrians, busses, or shuttles.</p> <p><u>Utilizing new technology or innovative approaches</u>: There is no difference in utilization of new technology or innovative approaches between the options.</p> <p><u>Doing the right thing</u>: The median in the area is generally unvegetated and median barrier either already exists or should exist, whereas to either side of I-70 there are valuable natural and scenic elements. Preserving these elements by widening into the median is the right thing to do.</p> <p>Core Value & Success Factor – Corridor Character & Aesthetics - minimize impacts to US Forest Service land</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
<p>Alignment (cont'd)</p> <p>The three alignments will maintain no less than the existing median width or create a clear zone that does not require a guard rail or barrier.</p>	<p>Median Exception #4</p> <p>(Existing median width is approximately 60 feet; median decreases by a maximum of 30 feet)</p> <p>Attachment Sheet 5 of 7</p>	<p>186.3 - 187.1 (EB & WB)</p>	<p><u>Description:</u> From MP 186.3 to 186.9, the median has a short retaining wall, and there is barrier both directions. From MP 186.9 to 187.1, the median is more open and there is barrier only on the WB alignment.</p> <p>Since median barrier already exists in this area and surrounding it, the Proposed Action would not be introducing new barrier. Widening into the median here is consistent with the roadway geometry in the vicinity, which has median barrier and retaining walls.</p> <p>To the south, there is a long, steep fill slope with the Vail Pass Recreation Trail partway down the slope. Widening to the south would result in further impacts to the trail, as this is beyond the area of proposed trail relocation. To the north, there is a steep uphill forested area. Widening to the north would result in large areas of impacts to the forest, or an exception for wall height.</p> <p><u>Complementing surrounding physical characteristics:</u> Realigning either to the outside or inside is generally within the corridor of the original context sensitive design and fits into the existing landscape.</p> <p><u>Enhancing safety:</u> All options improve safety by implementing the Proposed Action.</p> <p>Core Value: Safety</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p> <p><u>Reducing costs:</u> Cost was not used as a differentiator between median options.</p> <p><u>Protecting the environment:</u> There is a proposed wildlife underpass at MP 187.3; narrowing the median minimizes the length of the underpass, maximizing the efficiency of passage. Widening to the north or south would increase the area of disturbance and impact the forested area to the north.</p> <p>Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment – wildlife habitat and habitat connectivity maintenance and enhancement.</p> <p><u>Preserving historic and scenic elements:</u> The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. Widening to the north would have more visual impacts due to impacts to the existing forest.</p> <p>Core Value: Corridor Character & Aesthetics</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Interfacing with multiple modes of transportation:</u> A change in median width does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There is no difference in impacts to busses or shuttles.</p> <p>If the roadway were widened to the south and the existing median width maintained, the roadway would impact the existing Vail Pass Recreation Trail, including bicyclists and pedestrians.</p> <p>Core Value: Recreation</p> <p><u>Utilizing new technology or innovative approaches:</u> There is no difference in utilization of new technology or innovative approaches between the options.</p> <p><u>Doing the right thing:</u> Widening to the outside at this location would result in more walls and greater overall impacts than widening into the median.</p> <p>Core Value & Success Factor: Corridor Character & Aesthetics – minimize impacts to US Forest Service land</p>
<p>Alignment (cont'd)</p> <p>The three alignments will maintain no less than the existing median width or create a clear zone that does not require a guard rail or barrier.</p>	<p>Median Exception #5 (Existing median width is approximately 120 feet; median decreases by a maximum of 25 feet)</p> <p>Attachment Sheet 7 of 7</p>	<p>188.9 – 189.7 (EB & WB)</p>	<p><u>Description:</u> The western portion of this steep median is unforested, but the eastern portion has a grove of coniferous trees. The CDOT maintenance shed is located on the north of I-70 and the truck parking area is located on the south. Both facilities have existing acceleration and deceleration lanes. Black Lake No. 1 and the Vail Pass Recreation Trail are south of I-70. The trail here is also a roadway that provides access to the Black Lakes and serves as a parking area during the winter. Widening to the outside on either the north or south side of I-70 would impact these different facilities.</p> <p><u>Complementing surrounding physical characteristics:</u> Realigning either to the outside or inside is generally within the corridor of the original context sensitive design and fits into the existing landscape.</p> <p><u>Enhancing safety:</u> All options improve safety by implementing the Proposed Action. Widening toward the maintenance shed would move the commercial vehicles travelling on I-70 closer to the maintenance vehicles and result in more conflict.</p> <p>Core Values: Safety</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p> <p><u>Reducing costs:</u> Cost was not used as a differentiator between median options.</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Protecting the environment</u>: Widening I-70 to the north would impact additional wetlands and forested areas and would require changes to the acceleration/deceleration lanes for the maintenance shed, increasing the overall area of disturbance. Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment</p> <p>Widening to the south would further push the truck parking toward Black Lake No. 1 and the forested buffer between the truck parking and Black Lake No. 1. Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment</p> <p><u>Preserving historic and scenic elements</u>: The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource.</p> <p><u>Interfacing with multiple modes of transportation</u>: A change in median width does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There is no difference in impacts to bicyclists, pedestrians, busses, or shuttles.</p> <p><u>Utilizing new technology or innovative approaches</u>: There is no difference in utilization of new technology or innovative approaches between the options.</p> <p><u>Doing the right thing</u>: Widening to the south reduces the vegetative buffer between I-70 and Black Lake No. 1. It also would reduce the amount of room available for snow storage between I-70 and the trail and could disrupt the parking during the winter. This was coordinated with the US Forest Service so that their recreational parking would not be impacted. Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment; Sustainability – minimized effort and cost for maintenance, ease of access to items that need to be maintained.</p> <p>There is a proposed wildlife underpass near MP 189.7, so keeping the roadway as narrow as possible will minimize the length of the crossing. Core Value & Success Factor: Enhanced Environment – wildlife habitat and habitat connectivity maintenance and enhancement.</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
<p>Slope Cut and Fill</p> <p>Limits of physical disturbance shall be less than 40 vertical feet from the top of the pavement or rail platform to the farthest edge of cut or fill.</p>	<p>Disturbance Exception #1</p> <p>Attachment Sheet 6 of 7</p>	<p>MP 188.4 (WB)</p>	<p><u>Description:</u> The hillside to the north of I-70 is an existing cut slope from the original construction. The cut slope has a few small trees on it. If a wall were constructed instead, it would be about 7 feet tall and about 500 feet long.</p> <p><u>Complementing surrounding physical characteristics:</u> This proposed slope will look like what exists now and maintain the intent of the original context sensitive design. Moreover, from MP 187.5 to MP 188.5, there are several other existing cut slopes that are like this one. Core Value: Corridor Character and Aesthetics</p> <p><u>Enhancing safety:</u> All options improve safety by implementing the Proposed Action. Core Value: Safety</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p> <p><u>Reducing costs:</u> Cost was not used as a differentiator between options.</p> <p><u>Protecting the environment:</u> The cut slope would impact more area than a wall, but the cut slope will be revegetated to match the existing landscape and graded to blend with the existing topography.</p> <p><u>Preserving historic and scenic elements:</u> The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. This cut slope will look like the original construction and maintain the intent of the original context sensitive design with landscaping and blended grading. All elements of the Proposed Action will be required to follow the Crest of the Rockies and project-specific aesthetic guidance that will be developed. Core Value: Corridor Character and Aesthetics</p> <p><u>Interfacing with multiple modes of transportation:</u> The cut slope does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There is no difference in impacts to bicyclists, pedestrians, busses, or shuttles.</p> <p><u>Utilizing new technology or innovative approaches:</u> There is no difference in utilization of new technology or innovative approaches between the options.</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Doing the right thing:</u> A wall needs long-term maintenance and will not blend in to the natural environment, whereas a cut slope does not need maintenance and can be shaped and revegetated to look natural.</p> <p>Core Value & Success Factor: Sustainability – minimized effort and cost for maintenance</p>
<p>Slope Cut and Fill (cont'd)</p> <p>All roadway retaining walls over 12 feet in height will be installed below the elevation of the roadway.</p>	<p>Wall Exception #1</p> <p>Length = 3,000 feet</p> <p>Maximum Height = approximately 80 feet</p> <p>Attachment Sheet 2 of 7</p>	<p>180.9 – 181.1 (WB)</p>	<p><u>Description:</u> In order to replace the bridges in East Vail while keeping I-70 open to traffic, WB I-70 must be realigned. As was mentioned before, in East Vail, most of the homes are south of I-70. To avoid impacting these homes, the Proposed Action maintains the existing south edge of pavement and all widening occurs to the north. There is a steep (1.4:1 - horizontal: vertical) uphill slope to the north of I-70 at this location. Without a wall, the cut slope would be over 500 feet tall.</p> <p><u>Complementing surrounding physical characteristics:</u> These tall cut walls will disturb much less area than a cut slope. Tall cut walls exist in this area, which were part of the original construction.</p> <p>Core Value & Success Factor: Corridor Character & Aesthetics – minimize impacts to US Forest Service land</p> <p><u>Enhancing safety:</u> All options improve safety by implementing the Proposed Action.</p> <p>Core Value: Safety</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p> <p><u>Reducing costs:</u> Cost was not used as a differentiator in wall versus slope options.</p> <p><u>Protecting the environment:</u> Both options would have an increased footprint from existing conditions, but the wall greatly reduces impacts compared to a 500-foot tall cut slope.</p> <p>Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment</p> <p><u>Preserving historic and scenic elements:</u> The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. The wall will have a visual impact, however introducing a taller cut slope would have a larger impact on the visual environment due to the extremely large cut that would occur into the hillside, including the removal of existing forest. All elements of the Proposed Action will be required to follow the Crest of the Rockies and project-specific aesthetic guidance that will be developed.</p> <p>Core Value: Corridor Character & Aesthetics</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Interfacing with multiple modes of transportation</u>: The proposed height of the wall does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There is no difference in impacts to bicyclists, pedestrians, busses, or shuttles.</p> <p><u>Utilizing new technology or innovative approaches</u>: There is no difference in utilization of new technology or innovative approaches between the two options.</p> <p><u>Doing the right thing</u>: Building the bridge offline allows I-70 to remain open to traffic during construction, which minimizes impacts to the traveling public during construction.</p> <p>Core Value & Success Factor: Implementability – construction phasing that minimizes impacts to traveling public</p> <p>Shifting the alignment to the north eliminates the need for permanent private property acquisition. Core Value: Corridor Character & Aesthetics</p>
<p>Slope Cut and Fill (cont'd)</p> <p>All roadway retaining walls over 12 feet in height will be installed below the elevation of the roadway.</p>	<p>Wall Exception #2</p> <p>Length = 570 feet</p> <p>Maximum Height = approximately 20 feet</p> <p>Attachment Sheet 2 of 7</p>	<p>181.4 (EB)</p>	<p><u>Description</u>: See Median Exception #1 for a description of the site location. This wall prevents impacts to the rock outcroppings in the median. If the wall was not constructed, the natural rock outcropping would be impacted and need to be reconstructed.</p> <p><u>Complementing surrounding physical characteristics</u>: Without this wall, the natural existing median would be completely reconstructed. Leaving the rock outcropping above the wall will complement the natural surroundings.</p> <p>Core Value & Success Factor: Corridor Character & Aesthetics - minimize impacts to US Forest Service land</p> <p><u>Enhancing safety</u>: All options improve safety by implementing the Proposed Action. Core Value: Safety</p> <p><u>Increasing capacity</u>: N/A. The project is not increasing capacity.</p> <p><u>Reducing costs</u>: Cost was not used as a differentiator in wall options.</p> <p><u>Protecting the environment</u>: Constructing a wall reduces the area of disturbance. Core Value & Success Factor: Corridor Character & Aesthetics - minimize impacts to US Forest Service land; Enhanced Environment</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Preserving historic and scenic elements:</u> The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. Introducing this wall will have an impact on the visual environment; however, this wall will preserve the existing rock outcropping in the median. All elements of the Proposed Action will be required to follow the Crest of the Rockies and project-specific aesthetic guidance that will be developed. Core Value & Success Factor: Corridor Character & Aesthetics</p> <p><u>Interfacing with multiple modes of transportation:</u> The proposed height of the wall does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There is no difference in impacts to bicyclists, pedestrians, busses, or shuttles.</p> <p><u>Utilizing new technology or innovative approaches:</u> There is no difference in utilization of new technology or innovative approaches between the two options.</p> <p><u>Doing the right thing:</u> The natural median and the rock outcropping were part of the original context sensitive design. This wall protects that natural element of the original design while also minimizing impacts to Bighorn Road and the homes to the south. Core Values: Corridor Character & Aesthetics</p>
<p>Slope Cut and Fill (cont'd) All roadway retaining walls over 12 feet in height will be installed below the elevation of the roadway.</p>	<p>Wall Exception #3 Length = 900 feet Maximum Height = approximately 40 feet Attachment Sheet 2 of 7</p>	<p>182 (WB emergency truck ramp)</p>	<p><u>Description:</u> This wall is adjacent to the emergency truck ramp at MP 182. Cutting into the hillside here is necessary to straighten out the truck ramp so it can meet current design criteria. The Vail Pass Recreation Trail is north of the truck ramp and is protected by this proposed wall. Without this wall, the cut slope would be over several hundred vertical feet tall.</p> <p><u>Complementing surrounding physical characteristics:</u> The wall will protect a natural, heavily forested slope and the Vail Pass Recreation Trail. Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Recreation</p> <p><u>Enhancing safety:</u> All options improve safety by implementing the Proposed Action. Core Values and Success Factors: Safety – chain-up area and truck ramp improvements</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p> <p><u>Reducing costs:</u> Cost was not used as a differentiator in wall options.</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Protecting the environment</u>: Constructing a wall at this height reduces disturbance to the forested area. Core Value & Success Factor: Corridor Character & Aesthetics – minimize impacts to US Forest Service land</p> <p><u>Preserving historic and scenic elements</u>: The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. Introducing this wall will have a larger impact on the visual environment. All elements of the Proposed Action will be required to follow the Crest of the Rockies and project-specific aesthetic guidance that will be developed. Core Value: Corridor Character & Aesthetics</p> <p><u>Interfacing with multiple modes of transportation</u>: The proposed height of the wall does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There are no differences in impacts to busses or shuttles.</p> <p>If the cut slope was constructed instead of the wall, the Vail Pass Recreation Trail would need to be relocated in this location and would temporarily impact bicyclists and pedestrians. Core Value: Recreation</p> <p><u>Utilizing new technology or innovative approaches</u>: There is no difference in utilization of new technology or innovative approaches between the two options.</p> <p><u>Doing the right thing</u>: Straightening out the truck ramp alignment will bring it up to current design standards and will make it safer. Constructing a tall wall to avoid acres of impacts to a heavily forested natural slope is the right thing to do. Core Value & Success Factor: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Safety - truck ramp improvements; Operations – truck ramp improvements</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
<p>Slope Cut and Fill (cont'd)</p> <p>All roadway retaining walls over 12 feet in height will be installed below the elevation of the roadway.</p>	<p>Wall Exception #4</p> <p>Length = 1,300 feet</p> <p>Maximum Height = approximately 20 feet</p> <p>Attachment Sheet 3 of 7</p>	<p>182.7 (EB chain up station)</p>	<p><u>Description:</u> The chain station at MP 182.7 is being widened to provide two lanes where truckers can chain up. There is a steep, forested hill to the south of the chain up station. Without the wall, the cut slope would be over 100 vertical feet tall and would impact acres of forest.</p> <p><u>Complementing surrounding physical characteristics:</u> The wall will protect a natural, heavily forested slope.</p> <p>Core Value & Success Factor: Corridor Character & Aesthetics – minimize impacts to US Forest Service land</p> <p><u>Enhancing safety:</u> All options improve safety by implementing the Proposed Action. Core Values: Safety</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p> <p><u>Reducing costs:</u> Cost was not used as a differentiator in wall options.</p> <p><u>Protecting the environment:</u> Constructing a wall at this height reduces disturbance to the forested area. Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment</p> <p><u>Preserving historic and scenic elements:</u> The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. Introducing this wall will have an impact on the visual environment, but this wall is protecting the existing forest. All elements of the Proposed Action will be required to follow the Crest of the Rockies and project-specific aesthetic guidance that will be developed. Core Value & Success Factors: Corridor Character & Aesthetics minimize impacts to US Forest Service land</p> <p><u>Interfacing with multiple modes of transportation:</u> The proposed height of the wall does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There is no difference in impacts to bicyclists, pedestrians, busses, or shuttles</p> <p><u>Utilizing new technology or innovative approaches:</u> There is no difference in utilization of new technology or innovative approaches between the two options.</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Doing the right thing:</u> Constructing a tall wall to avoid acres of impacts to a heavily forested natural slope is the right thing to do. Core Values: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment; Safety – chain-up area improvements; Operations – chain-up area improvements</p>
<p>Slope Cut and Fill (cont'd) All roadway retaining walls over 12 feet in height will be installed below the elevation of the roadway.</p>	<p>Wall Exception #5 Length = 660 feet Maximum Height = approximately 25 feet Attachment Sheet 3 of 7</p>	<p>184 (EB)</p>	<p><u>Description:</u> This part of the corridor is constrained, with Black Gore Creek on the north side of I-70 and steep forested grades on the south side with wetlands. Without this wall, the cut slope would be over 60 vertical feet and 150 feet wide. If EB I-70 were realigned to avoid the wall, it would extend Median Exception #3 and possibly move I-70 closer to Black Gore Creek</p> <p><u>Complementing surrounding physical characteristics:</u> The wall will protect a natural, heavily forested slope and wetlands. Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land and Enhanced Environment</p> <p><u>Enhancing safety:</u> All options improve safety by implementing the Proposed Action. Core Values: Safety</p> <p><u>Increasing capacity:</u> N/A. The project is not increasing capacity.</p> <p><u>Reducing costs:</u> Cost was not used as a differentiator in wall options.</p> <p><u>Protecting the environment:</u> Constructing a wall at this height reduces disturbance to the forested area. Constructing the wall at this height also minimizes additional widening toward Black Gore Creek. Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment – identify opportunities for wetlands and water of the US enhancement</p> <p><u>Preserving historic and scenic elements:</u> The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. Introducing a wall would have more of an impact on the visual environment, but it is protecting the existing forest. The cut slope would have more impacts to the existing forest. All elements of the Proposed Action will be required to follow the Crest of the Rockies and project-specific aesthetic guidance that will be developed. Core Value: Corridor Character & Aesthetics</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Interfacing with multiple modes of transportation</u>: The proposed height of the wall does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There is no difference in impacts to bicyclists, pedestrians, busses, or shuttles.</p> <p><u>Utilizing new technology or innovative approaches</u>: There is no difference in utilization of new technology or innovative approaches between the two options.</p> <p><u>Doing the right thing</u>: Constructing a tall wall to avoid acres of impacts to a heavily forested natural slope and wetlands is the right thing to do.</p> <p>Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment</p>
<p>Slope Cut and Fill (cont'd)</p> <p>All roadway retaining walls over 12 feet in height will be installed below the elevation of the roadway.</p>	<p>Wall Exception #6</p> <p><u>Wall 1 (184.5)</u>: Length = 1,000 feet Maximum Height = approximately 20 feet</p> <p><u>Wall 2 (185)</u>: Length = 1,030 feet Maximum Height = approximately 50 feet</p> <p>Attachment Sheet 4 of 7</p>	<p>184.5 to 185 (WB)</p>	<p><u>Description</u>: In order to replace these bridges while keeping I-70 open to traffic, I-70 must be realigned. The bridges at MP 185.1 must both be realigned to the outside, since the existing median is narrow. It is less impactful to realign the bridges at MP 184.7 to the north since the terrain drops off quickly to the south toward Black Gore Creek. To the north of I-70 is a steep uphill grade with the Vail Pass Recreation Trail on top. If a cut slope were built instead of this wall, the slope would be over 80 feet tall, which would be a disturbance exception, and the trail would be relocated further to the north.</p> <p><u>Complementing surrounding physical characteristics</u>: Without these walls, the cut slope would extend several hundred feet into the forested area north of the trail.</p> <p>Core Value & Success Factor: Corridor Character & Aesthetics – minimize impacts to US Forest Service land</p> <p><u>Enhancing safety</u>: All options improve safety by implementing the Proposed Action. Core Value: Safety</p> <p><u>Increasing capacity</u>: N/A. The project is not increasing capacity.</p> <p><u>Reducing costs</u>: Cost was not used as a differentiator in wall options.</p> <p><u>Protecting the environment</u>: Both options would have an increased footprint from existing conditions, but the wall greatly reduces impacts compared to a cut slope.</p> <p>Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to US Forest Service land; Enhanced Environment</p>



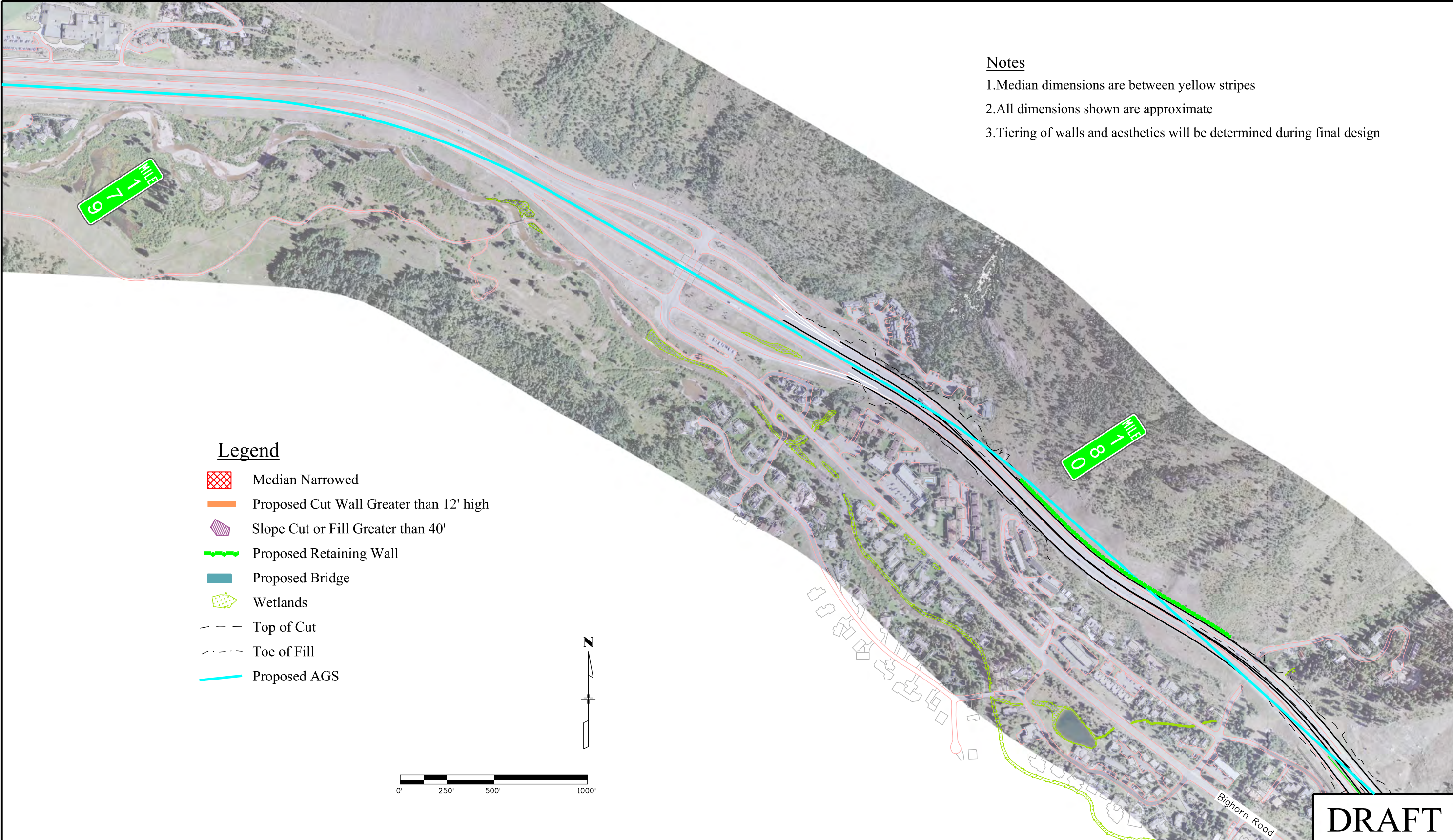
DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Preserving historic and scenic elements</u>: The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. Introducing a taller wall would have more of an impact on the visual environment, but the wall would limit forest impacts to the north of it. All elements of the Proposed Action will be required to follow the Crest of the Rockies and project-specific aesthetic guidance that will be developed.</p> <p>Core Values & Success Factors: Corridor Character & Aesthetics; Recreation</p> <p><u>Interfacing with multiple modes of transportation</u>: The proposed height of the wall does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible.</p> <p>If the cut slope was constructed instead of the wall, the Vail Pass Recreation Trail would need to be relocated in this location and would temporarily impact bicyclists and pedestrians. Core Value: Recreation</p> <p><u>Utilizing new technology or innovative approaches</u>: There is no difference in utilization of new technology or innovative approaches between the two options.</p> <p><u>Doing the right thing</u>: Building the bridges offline allows I-70 to remain open to traffic during construction, which minimizes impacts to the traveling public during construction. Core Value and Success Factor: Implementability – construction phasing that minimizes impacts to traveling public</p>
<p>Slope Cut and Fill (cont'd)</p> <p>All roadway retaining walls over 12 feet in height will be installed below the elevation of the roadway.</p>	<p>Wall Exception #7</p> <p>Length = 1,000 feet</p> <p>Maximum Height = approximately 40 feet</p> <p>Attachment Sheet 6 of 7</p>	<p>187.9 (WB)</p>	<p><u>Description</u>: The existing curve at this location is substandard and is one of the highest crash locations on the corridor. This curve is being modified so it will meet current standards. Modifying the curve pushes it to the north into the forested hill. The wall minimizes impacts to the forest north of I-70. If this wall were not constructed, the cut slope would be several hundred feet tall and would impact acres of the forest. Alternatively, the wall could be avoided by shifting the alignment south, but that would impact the trail and the two curves to either side of this one, increasing overall disturbance.</p> <p><u>Complementing surrounding physical characteristics</u>: The wall will protect a natural, heavily forested slope.</p> <p>Core Value & Success Factor: Corridor Character & Aesthetics – minimize impacts to US Forest Service land</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			<p><u>Enhancing safety</u>: All options improve safety by implementing the Proposed Action. Safety is enhanced by bringing this substandard curve up to current design standards. Core Value & Success Factor: Safety – highway design improvements to fix substandard geometries where there are identified safety issues.</p> <p><u>Increasing capacity</u>: N/A. The project is not increasing capacity.</p> <p><u>Reducing costs</u>: Cost was not used as a differentiator in wall options.</p> <p><u>Protecting the environment</u>: Without the wall, acres of forest would be impacted. If the alignment were shifted to the south, more length of I-70 would be affected and the roadway would be closer to the trail and Black Gore Creek. Core Values & Success Factors: Corridor Character & Aesthetics – minimize impacts to the US Forest Service land; Enhanced Environment</p> <p><u>Preserving historic and scenic elements</u>: The existing I-70 alignment and its associated design features are a historic resource; there is no difference between the options as they would all impact the resource. Introducing a wall would have more of an impact on the visual environment, but it is protecting the existing forest. The cut slope would have more impacts to the existing forest. All elements of the Proposed Action will be required to follow the Crest of the Rockies and project-specific aesthetic guidance that will be developed. Core Value: Corridor Character & Aesthetics</p> <p><u>Interfacing with multiple modes of transportation</u>: A change in median width does not preclude the AGS alignment as the existing highway alignment and median of I-70 are not substantially changed and the option to operate AGS solely in I-70 ROW was determined to be infeasible. There is no difference in impacts to busses, or shuttles.</p> <p>If the alignment were shifted to the south, the curve to the west of this one would have to be realigned such that it would impact the Vail Pass Recreation Trail and would have more temporary impacts to bicyclists and pedestrians. Core Value & Success Factor: Recreation</p> <p><u>Utilizing new technology or innovative approaches</u>: There is no difference in utilization of new technology or innovative approaches between the two options.</p> <p><u>Doing the right thing</u>: Constructing a tall wall to avoid acres of impacts to a heavily forested natural slope is the right thing to do.</p>



DESIGN CRITERIA	ID	MILE POST(S)	JUSTIFICATION FOR CRITERION EXCEPTION
			Core Values & Success Factors: Safety – highway design improvements to fix substandard geometries where there are identified safety issues; Corridor Character & Aesthetics – minimize impacts to the US Forest Service land

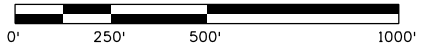


Notes

- 1. Median dimensions are between yellow stripes
- 2. All dimensions shown are approximate
- 3. Tiering of walls and aesthetics will be determined during final design

Legend

- Median Narrowed
- Proposed Cut Wall Greater than 12' high
- Slope Cut or Fill Greater than 40'
- Proposed Retaining Wall
- Proposed Bridge
- Wetlands
- Top of Cut
- Toe of Fill
- Proposed AGS



tyler.bowman 4:43:52 PM P:\Project\Transportation\CDDT R3\CDDT R3 VailPass\9.0 CADD\9.02 Design\Working\CP_21685DES_Medion Impact.dgn

DRAFT

Print Date: 2/12/2020		<table border="1"> <thead> <tr> <th colspan="3">Sheet Revisions</th> </tr> <tr> <th>Date:</th> <th>Comments</th> <th>Init.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			Sheet Revisions			Date:	Comments	Init.										<table border="1"> <tr> <td colspan="2">As Constructed</td> </tr> <tr> <td>No Revisions:</td> <td> </td> </tr> <tr> <td>Revised:</td> <td> </td> </tr> <tr> <td>Void:</td> <td> </td> </tr> </table>		As Constructed		No Revisions:		Revised:		Void:		<table border="1"> <tr> <td colspan="4">West Vail Pass CSS Criteria Exceptions</td> </tr> <tr> <td>Designer:</td> <td>TGB</td> <td>Structure</td> <td> </td> </tr> <tr> <td>Detailer:</td> <td>CEP</td> <td>Numbers</td> <td> </td> </tr> <tr> <td>Sheet Subset:</td> <td>CSS</td> <td>Subset Sheets:</td> <td>1 of 7</td> </tr> </table>			West Vail Pass CSS Criteria Exceptions				Designer:	TGB	Structure		Detailer:	CEP	Numbers		Sheet Subset:	CSS	Subset Sheets:	1 of 7	<table border="1"> <tr> <td colspan="2">Project No./Code</td> </tr> <tr> <td colspan="2">NHPP 0701-240</td> </tr> <tr> <td colspan="2">21685</td> </tr> <tr> <td colspan="2">Sheet Number</td> </tr> </table>		Project No./Code		NHPP 0701-240		21685		Sheet Number	
Sheet Revisions																																																										
Date:	Comments	Init.																																																								
As Constructed																																																										
No Revisions:																																																										
Revised:																																																										
Void:																																																										
West Vail Pass CSS Criteria Exceptions																																																										
Designer:	TGB	Structure																																																								
Detailer:	CEP	Numbers																																																								
Sheet Subset:	CSS	Subset Sheets:	1 of 7																																																							
Project No./Code																																																										
NHPP 0701-240																																																										
21685																																																										
Sheet Number																																																										
File Name: CP_21685DES_Medion Impact.dgn		<table border="1"> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>								<table border="1"> <tr> <td colspan="2">Colorado Department of Transportation</td> </tr> <tr> <td colspan="2">714 Grand Avenue</td> </tr> <tr> <td colspan="2">P.O. Box 298</td> </tr> <tr> <td colspan="2">Eagle, CO 81631</td> </tr> <tr> <td colspan="2">Phone: 970-328-6385 FAX: 970-328-2368</td> </tr> <tr> <td>Region 3</td> <td>KB</td> </tr> </table>		Colorado Department of Transportation		714 Grand Avenue		P.O. Box 298		Eagle, CO 81631		Phone: 970-328-6385 FAX: 970-328-2368		Region 3	KB	<table border="1"> <tr> <td colspan="2">Unit Information</td> </tr> <tr> <td>Horiz. Scale: 1:500</td> <td>Vert. Scale: As Noted</td> </tr> </table>		Unit Information		Horiz. Scale: 1:500	Vert. Scale: As Noted	<table border="1"> <tr> <td colspan="2">Colorado Center Tower 2</td> </tr> <tr> <td colspan="2">2000 S. Colorado Blvd Suite 2-1000</td> </tr> <tr> <td colspan="2">Denver, CO 80222</td> </tr> </table>		Colorado Center Tower 2		2000 S. Colorado Blvd Suite 2-1000		Denver, CO 80222		<table border="1"> <tr> <td colspan="2">wood.</td> </tr> </table>		wood.																		
Colorado Department of Transportation																																																										
714 Grand Avenue																																																										
P.O. Box 298																																																										
Eagle, CO 81631																																																										
Phone: 970-328-6385 FAX: 970-328-2368																																																										
Region 3	KB																																																									
Unit Information																																																										
Horiz. Scale: 1:500	Vert. Scale: As Noted																																																									
Colorado Center Tower 2																																																										
2000 S. Colorado Blvd Suite 2-1000																																																										
Denver, CO 80222																																																										
wood.																																																										

Notes

1. Median dimensions are between yellow stripes
2. All dimensions shown are approximate
3. Tiering of walls and aesthetics will be determined during final design



Median Exception #2

MP 181.5 to 182

Wetlands would be impacted without Median Exception #2

Median Exceptions #2 and #3 help minimize impacts to the emergency truck ramp

Median width decreases by 30'
Existing median width = 280'

AGS in tunnel

Proposed wall height in median = 20'
No existing wall

Median width decreases by 15'
Existing median width = 300'

Wall Exception #3

MP 182
Emergency Truck Ramp Wall

Proposed wall height = 40'
No existing wall

Wall Exception #2

MP 181.4

Wall Exception #1

MP 180.9 to 181.1

Proposed tiered wall height = 80'
Existing wall height = 15'

Median Exception #1

MP 180.9 to 181.1

Without Median Exception #1 this section of Bighorn Road would be impacted, or a wall would be needed.

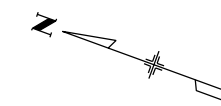
I-70 would move closer to the homes in this area.

Median Exception #3

MP 182 to 184
See next sheet

Legend

- Median Narrowed
- Proposed Cut Wall Greater than 12' high
- Slope Cut or Fill Greater than 40'
- Proposed Retaining Wall
- Proposed Bridge
- Wetlands
- Top of Cut
- Toe of Fill
- Proposed AGS



DRAFT

P:\Project\Transportation\CDDT R3\CDDT R3_Vail Pass\9.0 CADD\9.02 Design\Working\CP_21685DES_Median_Impact.dgn

Print Date: 2/12/2020
 File Name: CP_21685DES_Median Impact.dgn
 Horiz. Scale: 1:500 Vert. Scale: As Noted
 Unit Information
 Colorado Center Tower 2
 2000 S. Colorado Blvd Suite 2-1000
 Denver, CO 80222

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
 714 Grand Avenue
 P.O. Box 298
 Eagle, CO 81631
 Phone: 970-328-6385 FAX: 970-328-2368
 Region 3 KB

As Constructed
No Revisions:
Revised:
Void:

West Vail Pass CSS Criteria Exceptions			
Designer:	TGB	Structure Numbers	
Detailer:	CEP	Subset Sheets:	2 of 7
Sheet Subset:	CSS		

Project No./Code
NHPP 0701-240
21685
Sheet Number

Notes

1. Median dimensions are between yellow stripes
2. All dimensions shown are approximate
3. Tiering of walls and aesthetics will be determined during final design



Median Exception #3

MP 182 to 184

Wall Exception #5

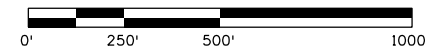
MP 184

Wall Exception #4

MP 182.7
Chain Station Wall

Legend

- Median Narrowed
- Proposed Cut Wall Greater than 12' high
- Slope Cut or Fill Greater than 40'
- Proposed Retaining Wall
- Proposed Bridge
- Wetlands
- Top of Cut
- Toe of Fill
- Proposed AGS



DRAFT

tyler.bowman 4:45:06 PM P:\Project\Transportation\CDOT R3\CDOT R3 VailPass\9.0 CADD\9.02 Design\Working\CP_21685DES_Median Impact.dgn

Print Date: 2/12/2020	
File Name: CP_21685DES_Median Impact.dgn	
Horiz. Scale: 1:500 Vert. Scale: As Noted	
Unit Information	
Colorado Center Tower 2 2000 S. Colorado Blvd Suite 2-1000 Denver, CO 80222	

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

714 Grand Avenue
P.O. Box 298
Eagle, CO 81631
Phone: 970-328-6385 FAX: 970-328-2368

Region 3 **KB**

As Constructed
No Revisions:
Revised:
Void:

West Vail Pass CSS Criteria Exceptions			
Designer:	TGB	Structure	
Detailer:	CEP	Numbers	
Sheet Subset:	CSS	Subset Sheets:	3 of 7

Project No./Code
NHPP 0701-240
21685
Sheet Number

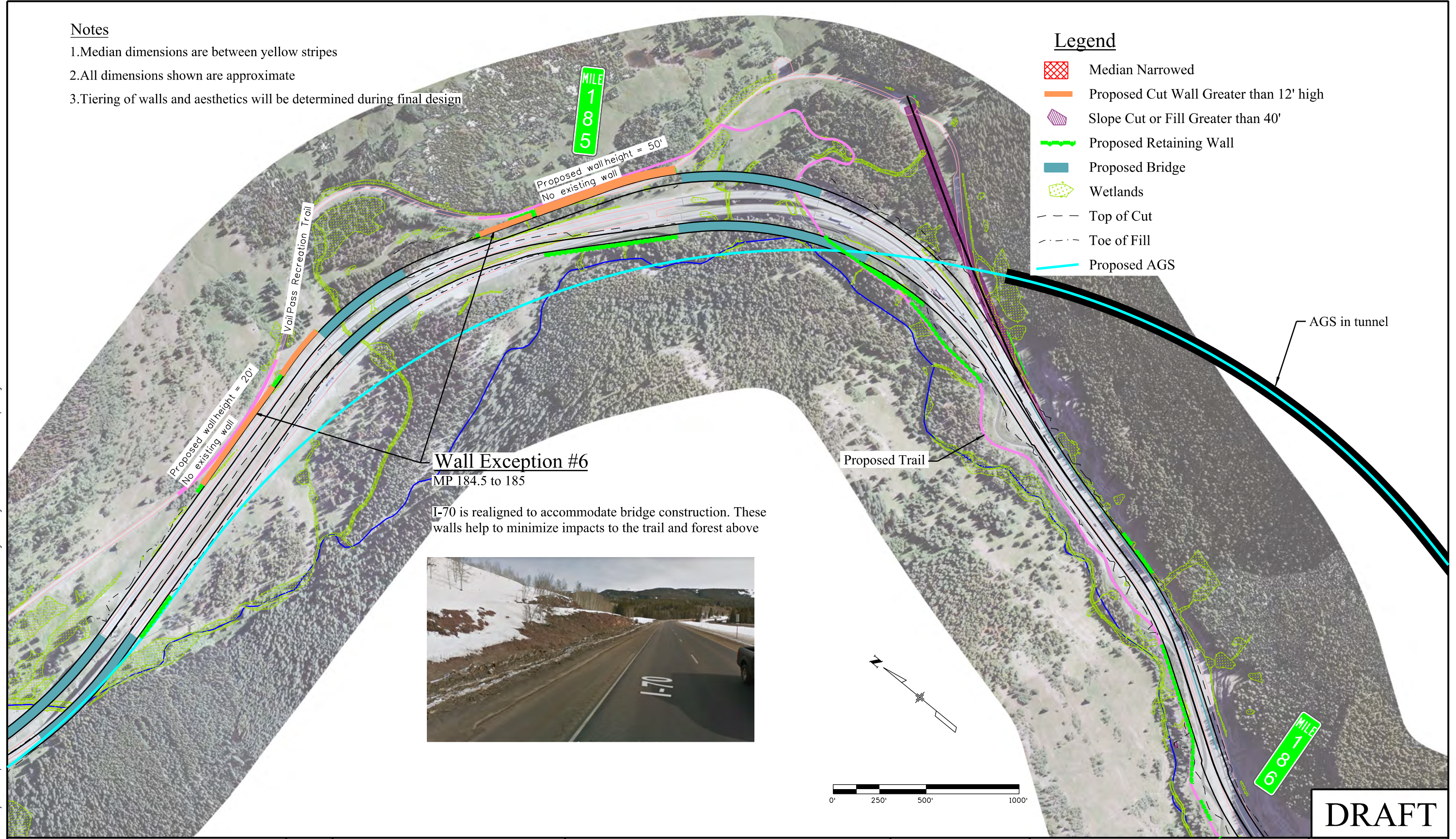
Notes

- 1. Median dimensions are between yellow stripes
- 2. All dimensions shown are approximate
- 3. Tiering of walls and aesthetics will be determined during final design

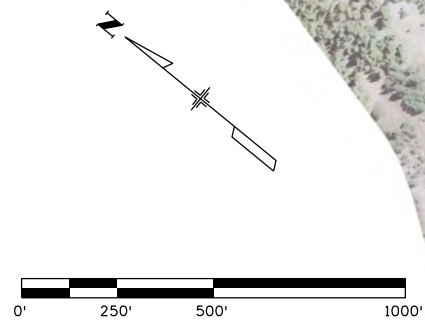
Legend

- Median Narrowed
- Proposed Cut Wall Greater than 12' high
- Slope Cut or Fill Greater than 40'
- Proposed Retaining Wall
- Proposed Bridge
- Wetlands
- Top of Cut
- Toe of Fill
- Proposed AGS

tyler.bowman 4:45:42 PM P:\Project\Transportation\CDOT R3\CDDT R3 Vail Pass\9.0 CADD\9.02 Design\Working\CP_21685DES_Median_Impact.dgn



Wall Exception #6
 MP 184.5 to 185
 I-70 is realigned to accommodate bridge construction. These walls help to minimize impacts to the trail and forest above



DRAFT

Print Date: 2/12/2020
File Name: CP_21685DES_Median_Impact.dgn
Horiz. Scale: 1:500 Vert. Scale: As Noted
Unit Information

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
 714 Grand Avenue
 P.O. Box 298
 Eagle, CO 81631
 Phone: 970-328-6385 FAX: 970-328-2368










Region 3 **KB**

As Constructed
No Revisions:
Revised:
Void:

West Vail Pass CSS Criteria Exceptions			
Designer:	TGB	Structure Numbers	
Detailer:	CEP		
Sheet Subset:	CSS	Subset Sheets:	4 of 7

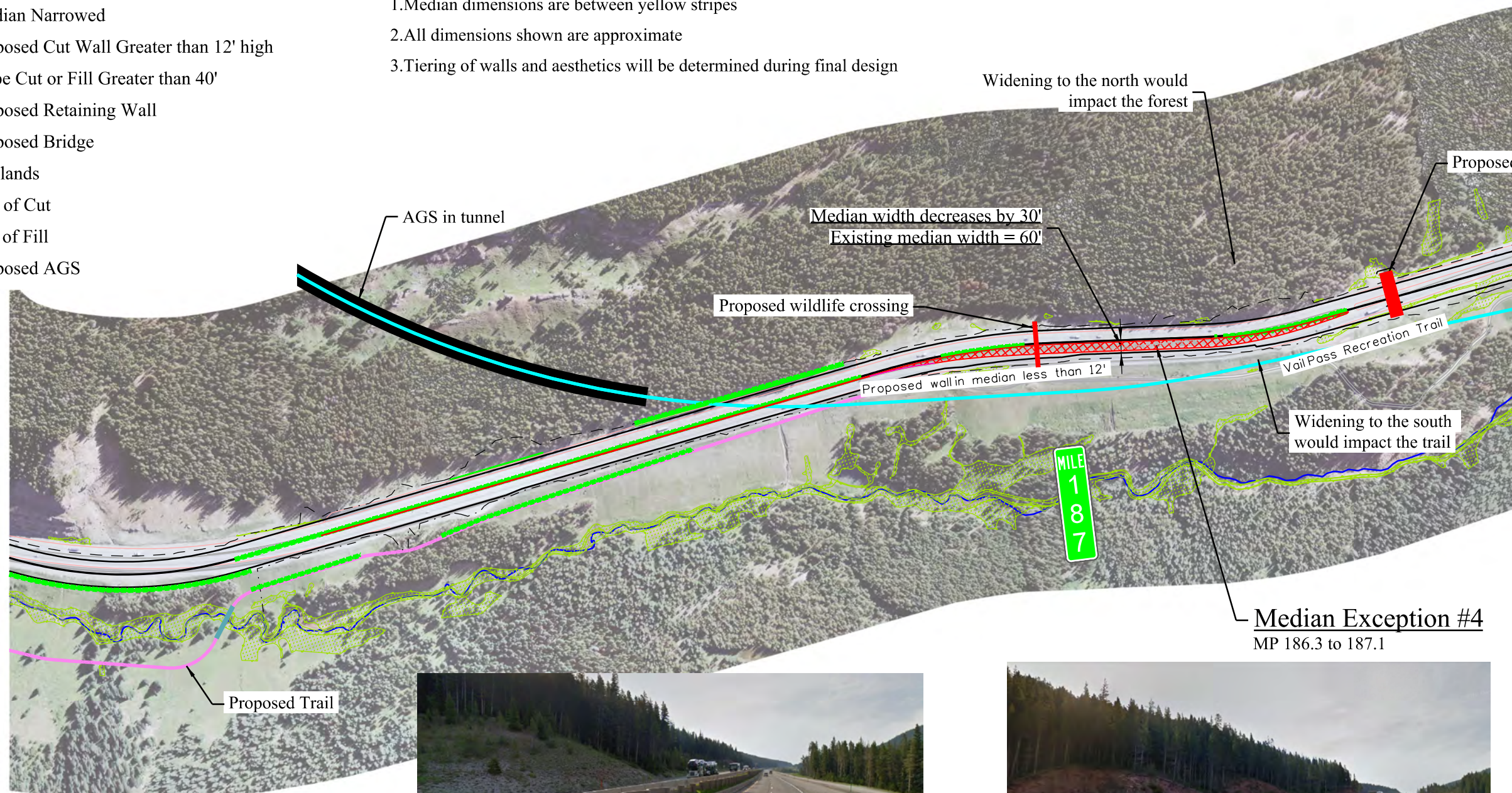
Project No./Code
NHPP 0701-240
21685
Sheet Number

Legend

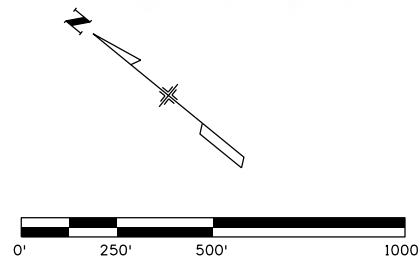
-  Median Narrowed
-  Proposed Cut Wall Greater than 12' high
-  Slope Cut or Fill Greater than 40'
-  Proposed Retaining Wall
-  Proposed Bridge
-  Wetlands
-  Top of Cut
-  Toe of Fill
-  Proposed AGS

Notes

1. Median dimensions are between yellow stripes
2. All dimensions shown are approximate
3. Tiering of walls and aesthetics will be determined during final design



Median Exception #4
MP 186.3 to 187.1



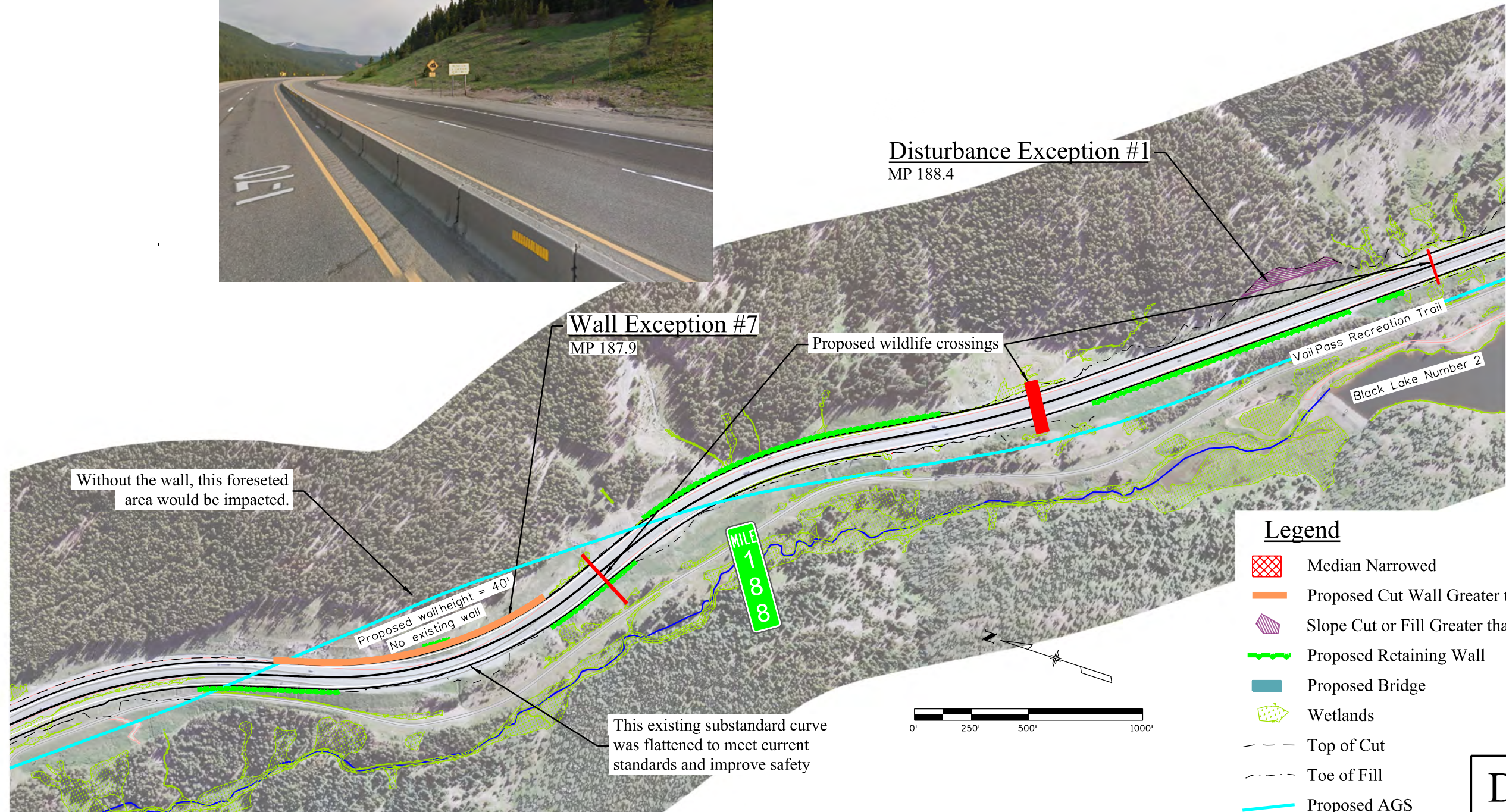
DRAFT

tyler.bowman 4:46:21 PM P:\Project\Transportation\CDDT R3\CDDT R3 VailPass\9.0 CADD\9.02 Design\Working\CP_21685DES_Median_Impact.dgn

<p>Print Date: 2/12/2020</p> <p>File Name: CP_21685DES_Median Impact.dgn</p> <p>Horiz. Scale: 1:500 Vert. Scale: As Noted</p> <p>Unit Information</p> <p>wood. Colorado Center Tower 2 2000 S. Colorado Blvd Suite 2-1000 Denver, CO 80222</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">Sheet Revisions</th> </tr> <tr> <th style="width: 15%;">Date:</th> <th style="width: 55%;">Comments</th> <th style="width: 30%;">Init.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Sheet Revisions			Date:	Comments	Init.										<p>Colorado Department of Transportation</p> <p> 714 Grand Avenue P.O. Box 298 Eagle, CO 81631 Phone: 970-328-6385 FAX: 970-328-2368</p> <p>Region 3 KB</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>As Constructed</th> </tr> <tr> <td>No Revisions:</td> </tr> <tr> <td>Revised:</td> </tr> <tr> <td>Void:</td> </tr> </table>	As Constructed	No Revisions:	Revised:	Void:	<p>West Vail Pass CSS Criteria Exceptions</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Designer:</td> <td>TGB</td> <td>Structure Numbers:</td> <td> </td> </tr> <tr> <td>Detailer:</td> <td>CEP</td> <td>Subset Sheets:</td> <td>5 of 7</td> </tr> </table>	Designer:	TGB	Structure Numbers:		Detailer:	CEP	Subset Sheets:	5 of 7	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Project No./Code</th> </tr> <tr> <td>NHPP 0701-240</td> </tr> <tr> <td>21685</td> </tr> <tr> <th>Sheet Number</th> </tr> </table>	Project No./Code	NHPP 0701-240	21685	Sheet Number
Sheet Revisions																																				
Date:	Comments	Init.																																		
As Constructed																																				
No Revisions:																																				
Revised:																																				
Void:																																				
Designer:	TGB	Structure Numbers:																																		
Detailer:	CEP	Subset Sheets:	5 of 7																																	
Project No./Code																																				
NHPP 0701-240																																				
21685																																				
Sheet Number																																				

Notes

1. Median dimensions are between yellow stripes
2. All dimensions shown are approximate
3. Tiering of walls and aesthetics will be determined during final design



DRAFT

tyler.bowman 4:46:50 PM P:\Project\Transportation\CDDT R3\CDDT R3 VailPass\9.0 CADD\9.02 Design\Working\CP_21685DES_Median_Impact.dgn

Print Date: 2/12/2020	
File Name: CP_21685DES_Median_Impact.dgn	
Horiz. Scale: 1:500	Vert. Scale: As Noted
Unit Information	
wood.	Colorado Center Tower 2 2000 S. Colorado Blvd Suite 2-1000 Denver, CO 80222

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

714 Grand Avenue
P.O. Box 298
Eagle, CO 81631
Phone: 970-328-6385 FAX: 970-328-2368

Region 3 **KB**

As Constructed
No Revisions:
Revised:
Void:

West Vail Pass CSS Criteria Exceptions			
Designer:	TGB	Structure Numbers	
Detailer:	CEP	Subset Sheets:	6 of 7
Sheet Subset:	CSS		

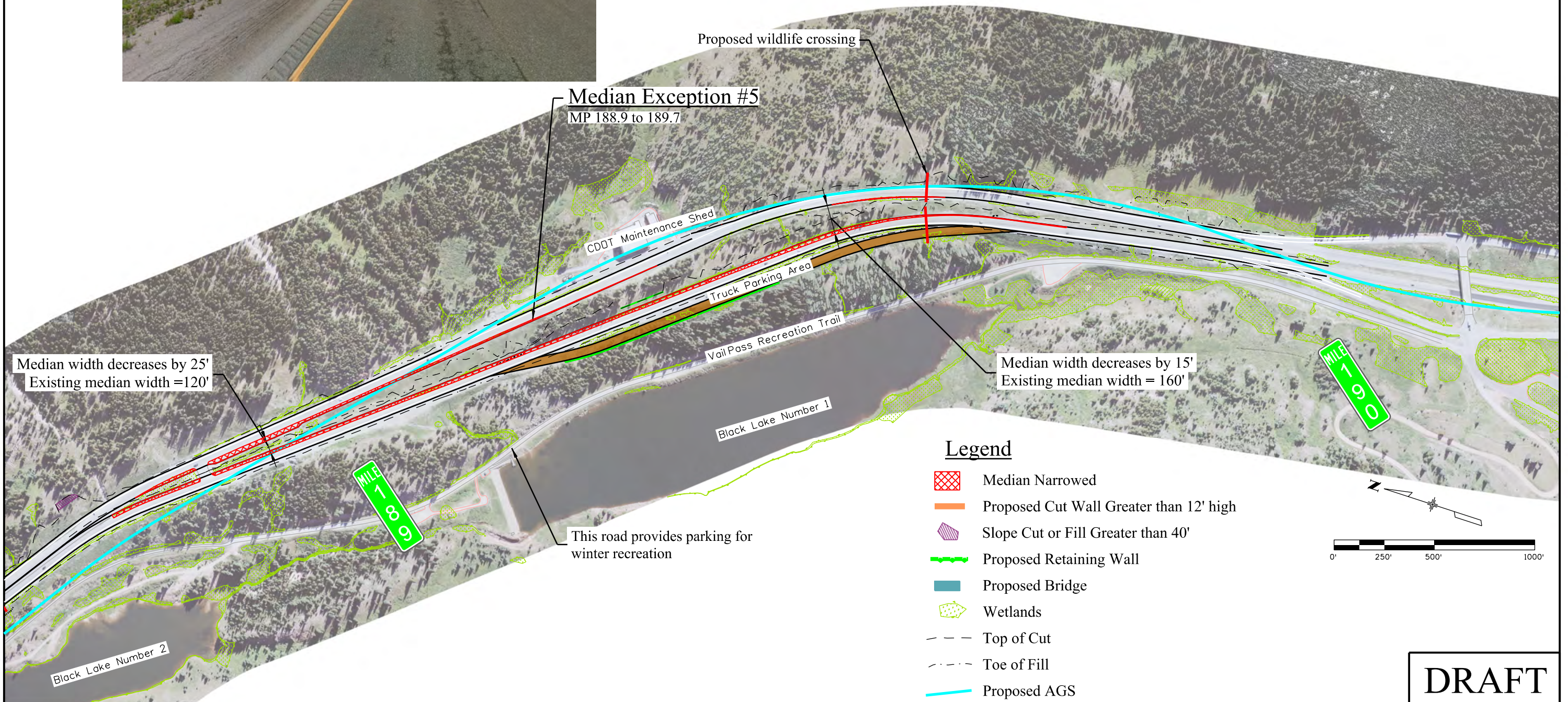
Project No./Code	NHPP 0701-240
	21685
Sheet Number	



Notes

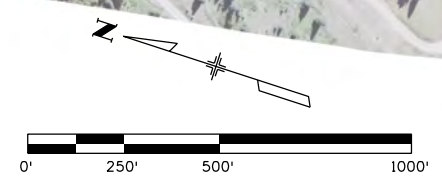
1. Median dimensions are between yellow stripes
2. All dimensions shown are approximate
3. Tiering of walls and aesthetics will be determined during final design

tyler.bowman 4:47:20 PM P:\Project\Transportation\CDOT R3\CDDT R3 VailPass\9.0 CADD\9.02 Design\Working\CP_21685DES_Median Impact.dgn



Legend

- Median Narrowed
- Proposed Cut Wall Greater than 12' high
- Slope Cut or Fill Greater than 40'
- Proposed Retaining Wall
- Proposed Bridge
- Wetlands
- Top of Cut
- Toe of Fill
- Proposed AGS



DRAFT

Print Date: 2/12/2020
File Name: CP_21685DES_Median Impact.dgn
Horiz. Scale: 1:500 Vert. Scale: As Noted
Unit Information
wood. Colorado Center Tower 2 2000 S. Colorado Blvd Suite 2-1000 Denver, CO 80222

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

714 Grand Avenue
P.O. Box 298
Eagle, CO 81631
Phone: 970-328-6385 FAX: 970-328-2368

Region 3 **KB**

As Constructed
No Revisions:
Revised:
Void:

West Vail Pass CSS Criteria Exceptions			
Designer:	TGB	Structure	
Detailer:	CEP	Numbers	
Sheet Subset:	CSS	Subset Sheets:	7 of 7

Project No./Code
NHPP 0701-240
21685
Sheet Number



APPENDIX C

SWEEP IMPLEMENTATION MATRIX



Table B-1. West Vail Pass Auxiliary Lanes Project – Specific SWEEP Implementation Matrix

WATER QUALITY	PROJECT DEVELOPMENT	WEST VAIL PASS AUXILIARY LANES EA PROJECT SPECIFIC-INFORMATION		
<p>Sediment Management OBJECTIVE: Reduce sediment loading in waterways from winter maintenance, erosion, and mine waste.</p> <p>APPLICABLE LAWS: Clean Water Act Section 303(d)</p>	<p>Inputs</p> <ul style="list-style-type: none"> Existing water quality monitoring programs Sediment Control Action Plans (SCAPs) Site specific assessments <p>Considerations</p> <ul style="list-style-type: none"> Does the existing SCAP provide strategies to avoid, minimize, or mitigate impact to meet the objective? What are the costs and benefits of each strategy? What revisions are needed for the SCAP? <p>Outcomes and Products</p> <ul style="list-style-type: none"> Revise or endorse SCAP Specific sediment management recommendations to meet the standards Identify site specific mitigation strategies Water Quality Management Plan 	<p>Inputs</p> <ul style="list-style-type: none"> Existing Water Quality Monitoring Program <ul style="list-style-type: none"> Eagle River Watershed Council WQMAP SCAPS <ul style="list-style-type: none"> 2002 Black Gore Creek SCAP 2002 Straight Creek SCAP 2013 Clear Creek SCAP Site-Specific Assessments <ul style="list-style-type: none"> Input from CDOT Region 3 Engineering and Maintenance Staff and Contractors 	<p>Considerations</p> <ul style="list-style-type: none"> Incorporation of lessons learned from previous SCAPs, other CDOT projects, and surrounding DOTs. Commitments and results from previous studies and reports. Feasibility of improvements outlined in previous SCAP. Impacts of Proposed Action 	<p>Outcomes and Products</p> <ul style="list-style-type: none"> Update SCAP during final design. Implementation of appropriate site-specific control measures to reduce sediment loading. Maintenance Manual for constructed control measures and maintenance procedures. Improved maintenance access where feasible.
<p>Clean Water Act, Section 303(d) OBJECTIVE: Reduce non-point source loading impacting stream segments and reduce metals and nutrients loading to meet water quality standards.</p> <p>APPLICABLE LAWS: Clean Water Act, CERCLA RCRA</p>	<p>Inputs</p> <ul style="list-style-type: none"> 303(d) list impairments by segment Gaining/losing segment <p>Considerations</p> <ul style="list-style-type: none"> What are the baseline vs event driven issues? <p>Outcomes and Products</p> <ul style="list-style-type: none"> Remediation strategies for specific segments Sampling Analysis Protocol (SAP) Initiate site specific consultation with permitting agencies 	<p>Inputs</p> <ul style="list-style-type: none"> Impairments as outlined on the 303d list Sources of loading TMDL requirements Monitoring data 	<p>Considerations</p> <ul style="list-style-type: none"> Impacts of existing control measures Sources of sediment loading Impacts from Zone 1 area only 	<p>Outcomes and Products</p> <ul style="list-style-type: none"> Implementation of appropriate site-specific control measures to reduce sediment loading Stabilization opportunities in areas impacted by construction



NATURAL HABITAT	PROJECT DEVELOPMENT	WEST VAIL PASS AUXILIARY LANES EA PROJECT SPECIFIC INFORMATION		
<p>Wetlands Protection OBJECTIVE: No net loss of wetlands function</p> <p>APPLICABLE LAWS: Clean Water Act Section 404 Executive Order 11990</p>	<p>Inputs</p> <ul style="list-style-type: none"> Wetland location inventory Site specific assessments Wetlands Functional Assessments Current guidance and regulations Coordination with U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA) <p>Considerations</p> <ul style="list-style-type: none"> Do unique or highly functioning wetlands exist in project areas? Will project be subject to USACE Merger Agreement? <p>Outcomes and Products</p> <ul style="list-style-type: none"> Site specific mitigation, preferably within the same watershed ROW acquisition Clean Water Act Permit or continued consultation 	<p>Inputs</p> <ul style="list-style-type: none"> Wetland Location Inventory <ul style="list-style-type: none"> Data sources: National Wetland Inventory / Colorado Natural Heritage Program (CNHP)/ West Vail Pass Environmental Assessment (2008) / I-70 Mountain Corridor Programmatic Environmental Impact Statement (2010) /CDOT Region 3 wetland staff and contractors Wetland field survey (summer/fall 2018): <ul style="list-style-type: none"> Based on hydrophytic vegetation and hydrology, no soils Utilized Western Mountains, Valleys, and Coast Region (USACE Regional Supplement) Site-specific Assessments <ul style="list-style-type: none"> In addition to mapping, the following was collected: <ul style="list-style-type: none"> Cowardin and hydrogeomorphic type Dominant vegetation, wetland hydrology indicators, main water source, ecological stressors observed, photographs Wetland Functional Assessments <ul style="list-style-type: none"> Conducted basic assessment using principles presented in FACWet Assigned letter grades for “Buffer and Landscape Context”, “Hydrology”, and “Abiotic and Biotic Habitat” Current Guidance and Regulations <ul style="list-style-type: none"> Section 404 of the Clean Water Act Executive Order 11990 Protection of Wetlands National Environmental Policy Act (NEPA) Rivers and Harbors Appropriation Act Transportation Equity Act for the 21st Century Department of Transportation Preservation of the Nation’s Wetlands Federal Highway Administration Mitigation of Impacts to Wetlands and Natural Habitat USACE Sacramento District 2017 Regional Conditions Coordination with USACE and USEPA <ul style="list-style-type: none"> Occurs at project SWEEP ITF and TT meetings 	<p>Considerations</p> <ul style="list-style-type: none"> <i>Unique or Highly Functioning Wetlands:</i> Based on field survey, the study area includes potential peat-lands, forested wetlands, high-gradient slope wetlands, beaver pond/wetland complexes, and other similar sites. Additional field survey (soil verification) in 2019 confirmed the presence of fens in the corridor. <i>Merger Agreement:</i> As the project is an EA and not an EIS, participation in the 404/NEPA Merger Agreement is optional. Separate meetings with the USACE are being conducted regarding project details and future coordination. 	<p>Outcomes and Products</p> <ul style="list-style-type: none"> I-70 West Vail Pass Auxiliary Lanes Wetland Technical Memorandum, which identifies all wetlands, potential impacts, and potential areas for wetland restoration within the project area. Since the EA is not advancing beyond conceptual design, a formal delineation and associated permitting will be conducted during final design.
<p>Aquatics Species with Special Status Designation Under State and Federal Rules OBJECTIVE: No further degradation to, and where possible improvement of, stream systems containing species of special designation</p> <p>APPLICABLE LAWS: Endangered Species Act, CPW Listing, Colorado SB 40</p>	<p>Inputs</p> <ul style="list-style-type: none"> Species habitat inventory Existing recovery efforts Section 7 consultation on special status species Coordination with CPW and U.S. Fish and Wildlife Service (USFWS) <p>Considerations</p> <ul style="list-style-type: none"> Does the CPW have special designation segments within the project area? <p>Outcomes and Products</p> <ul style="list-style-type: none"> Site specific mitigation strategies Partnerships Enhancement opportunities 	<p>Inputs</p> <ul style="list-style-type: none"> Species Habitat Inventory <ul style="list-style-type: none"> Three conservation streams with pure populations of Colorado River (Blue Lineage) cutthroat trout (SC) within the project area. Existing Recovery Efforts <ul style="list-style-type: none"> No formal recovery efforts. Barriers in place between confluence with Black Gore Creek & conservation streams to prevent migration of non- native brook and rainbow trout. Section 7 Consultation on Special Status Species <ul style="list-style-type: none"> Bonytail Chub (E), Colorado Pikeminnow (E), Greenback (Green Lineage) Cutthroat Trout (T), Humpback Chub (E), Razorback Sucker (E) identified via IPaC as species that “...may be affected by the proposed project.” None of these species occur within or adjacent to the project area. Coordination with CPW and USFWS <ul style="list-style-type: none"> Section 7 Consultation process started and an updated species list was generated on December 18, 2018 and again in December 2019. CPW has been consulted (DWMs, Terrestrial Biologist [Michelle Cowardin], Aquatic Biologist [Kendall Bakich]) throughout the planning process. 	<p>Considerations</p> <p>Listed Species</p> <ul style="list-style-type: none"> The BA documented a finding of “no effect” on greenback cutthroat trout. Colorado River (Blue Lineage) cutthroat (native to the Yampa and White) occur within 3 tributaries of Black Gore Creek. 	<p>Outcomes and Products</p> <ul style="list-style-type: none"> Water quality control measures will be further identified implemented during final design and construction to reduce non-point source pollution on Colorado River tributaries. Fish barriers between Black Gore Creek and conservation streams should be inspected and repaired/improved where necessary.



NATURAL HABITAT	PROJECT DEVELOPMENT	WEST VAIL PASS AUXILIARY LANES EA PROJECT SPECIFIC INFORMATION		
<p><u>Aquatic Species as a Recreational Resource</u> OBJECTIVE: Protect and improve aquatic systems as significant recreational resources</p>	<p><u>Inputs</u></p> <ul style="list-style-type: none"> Recreational resources inventory within corridor Project area stream designations Adopted local plans <p><u>Considerations</u></p> <ul style="list-style-type: none"> Does the CPW have special designation segments within the project area? <p><u>Outcomes and Products</u></p> <ul style="list-style-type: none"> Site specific mitigation strategies Partnerships Enhancement opportunities 	<p><u>Inputs</u></p> <ul style="list-style-type: none"> Black Lakes are accessible as recreation areas for fishing and are designated as a picnic site by the USFS. 	<p><u>Considerations</u></p> <ul style="list-style-type: none"> There are no special designated stream segments in the project area (Gold Medal Waters). 	<p><u>Outcomes and Products</u></p> <ul style="list-style-type: none"> Sediment control measures identified as part of the Project will help accumulation of sediment in the lakes and will be refined during the SCAP update process. Additional opportunities for enhancements through partnerships can be identified as well as during the SCAP update process.
<p><u>Information and Research Needs</u> OBJECTIVE: Identify and acquire information germane to watershed health</p>	<p><u>Inputs</u></p> <ul style="list-style-type: none"> Project specific data <p><u>Considerations</u></p> <ul style="list-style-type: none"> What are the environmental effects of winter sand/salt procedures on aquatic vegetation? Are there alternative processes that would better minimize sand/salt deposits in the vicinity of rivers and streams? <p><u>Outcomes and Products</u> Data collection and use</p>	<p><u>Inputs</u></p> <ul style="list-style-type: none"> Results from: Data Summary Report, I-70 Mountain Corridor Storm Event/ Snowmelt Water Quality Monitoring 2000-2016 Report is updated every three years. Five reports have been completed to date. 	<p><u>Considerations</u></p> <ul style="list-style-type: none"> The water quality parameters; specific conductance and turbidity have been determined to be directly related to I-70 highway runoff. 	<p><u>Outcomes and Products</u></p> <ul style="list-style-type: none"> Continued monitoring and sampling throughout the corridor as part of the I-70 Mountain Corridor Storm Event/ Snowmelt Water Quality Monitoring program.



APPENDIX D

ALIVE WILDLIFE CONNECTIVITY RECOMMENDATIONS



WILDLIFE CONNECTIVITY RECOMMENDATIONS

Recommendations from A Regional Ecosystem Framework Report									
Linkage Interference Zone (LIZ)	MP	2011 Recommendations	West Vail Pass Auxiliary Lanes Project Recommendations	Recommendation Justification	Structure	Existing / New	Target Species	Dimensions (WxH)	Notes
LIZ G	181	Structure spans natural habitat and offers an excellent passage beneath the interstate for all types of wildlife. However, the fencing surrounding the adjacent neighborhood prevents animals from accessing additional habitat to the south. Explore opportunities with the neighborhood to develop acceptable measures that would allow wildlife to access habitat on the south side of the neighborhood, completing the north-south connection on either side of I-70. If wildlife passage through or around neighborhood can be accommodated then install guide fencing to direct wildlife towards the structure.	Keep 2011 recommendations, with the exception of removing the fencing as it was removed by Town of Vail. Install guide fencing to direct wildlife to the structure.		Bridge	Existing	All		
	182	Concentrate human activity immediately around paved access road at west end of structure and implement measures to minimize human activity beneath the rest of the structure. Restore dirt lot/road with native vegetation cover. Requires coordination with local community and user groups to implement effective control measures and to educate the public on the importance of segregated wildlife/human uses at this location.	Keep 2011 recommendations but also important to create "wildlife only" area to increase wildlife use. Signage and perhaps fences may be necessary.	Additional signage recommended because domestic dogs are a problem at this crossing.	Bridge	Existing	All		
LIZ H	183	Remove culvert and restore stream channel through bridge structure. Complement structure with guide fencing to direct animals toward structure and discourage at-grade crossings. If the roadway footprint increases with future highway reconstruction, the span and height of the bridge should also be increased to compensate for the additional length that animals must travel under the bridge.	2011 recommendation still pertinent for bridges- If the roadway footprint increases with future highway reconstruction, the span and height of the bridge should also be increased to compensate for the additional length that animals must travel under the bridge. Culvert removal not recommended. Add vegetation at west side and coarse woody material to provide cover for smaller mammals. Create a wildlife lane to separate human and animal use. Complement structure with guide fencing to direct animals toward structure and discourage at-grade crossings.	Largely ineffective during the day in winter due to heavy use by backcountry skiers. Passage appears to be highly functional in the summer for the target species (The 2011 report recorded hundreds of pictures of Deer here).	Bridge	Existing	Small- to Mid-Size Mammals; Deer, Bears, Mtn. Lion.		
	184	Structure is highly functional for target species. Maintain connectivity at site. Complement structure with guide fencing to direct animals toward structure and discourage at-grade crossings.	Keep 2011 recommendations.	Structure is highly functional for target species.	Bridge	Existing	All		
	184.5	Structure is highly functional for target species. Maintain connectivity at site. Complement structure with guide fencing to direct animals toward structure and discourage at-grade crossings.	Keep 2011 recommendations.	Structure is highly functional for target species.	Bridge	Existing	All		
	185	Structure is highly functional for target species. Maintain connectivity at site. Complement structure with guide fencing to direct animals toward structure and discourage at-grade crossings.	Keep 2011 recommendations. The existing fish barrier will remain in place and will be improved and/or repaired if necessary.	Structure is highly functional for target species.	Bridge	Existing	All		
	185.5	Structure is highly functional for target species. Maintain connectivity at site. Complement structure with guide fencing to direct animals toward structure and discourage at-grade crossings	Keep 2011 recommendations. The existing fish barrier will remain in place and will be improved and/or repaired if necessary.	Structure is highly functional for target species.	Bridge	Existing	All		Avoid placing a bike trail alignment through structure. Trails substantially reduce the effectiveness as wildlife crossing. If trail is necessary, create a "wildlife lane" away from trail with rocks, coarse woody material to provide cover for smaller mammals. Long and/or high walls constructed for the trail perpendicular to the structure would also greatly reduce effectiveness.
	186.5	Construct wildlife arch at least 12'x24' suitable for elk, deer, lynx and small and mid-sized mammals (2004 LIZ recommendation).	Not recommended at this location. Relocate to 188.3 See new recommendations.						
	187.4	Construct wildlife overpass.	Overpass not recommended. See new recommendations.						

References: Barnum 2003 • Clevenger 2009 • Clevenger 2014 • Clevenger & Huijser 2011 • Connolly-Newman et al. 2013 • Clevenger 2014 • Crooks et al. 2008 • Gagnon et al. 2011 • Kintsch & Cramer 2011 • Kintsch et al. 2015 • Ruediger 2007 • Ruediger & Jacobson 2013



WILDLIFE CONNECTIVITY RECOMMENDATIONS

Additional / New Recommendations								
Linkage Interference Zone (LIZ)	MP	West Vail Pass Auxiliary Lanes Project Recommendations	Recommendation Justification	Structure	Existing / New	Target Species	Dimensions (WxH)	Notes
LIZ H	186.9	Construct small to medium sized mammal underpass.	The upper portion of the Study Area (approximately MP 186 through MP 191.5) does not have any structures that allow for unimpeded wildlife movement.	Small- to Medium-Sized Mammal Underpass – Box Culvert, Corrugated Steel Culvert.	New	Bobcat, Coyote, Fox, Marmot, Marten, Sm. Mammals, Snowshoe Hare, Weasels, etc.	1' to 6' diameter	Poor cover on both sides. Add vegetation on both sides. If the 6' size is used, a smaller pipe can be placed inside to allow safe passage of small(er) mammals.
	187.4	Construct large mammal underpass.	This location (MP 187 - 187.5) is one of the top three segments for numbers of crashes • Approaching this location in the westbound direction, there is a series of curves with a fairly large downgrade, which contribute to a significant cluster of crashes for westbound traffic in adverse weather conditions • An overpass at this elevation and level of snowpack may create additional motorist safety issues due to increased shading and icy and blowing snow conditions • A relatively wide overpass can reduce visibility for changing conditions in adverse weather, impacting driver safety • Large impacts to visual resources.	Large Mammal Underpass – Box Culvert or Multi-Plate Steel Arch (with pipes &/or coarse woody material placed to provide cover for small mammal movement).	New	Bear, Deer, Elk, Moose, Lion, Lynx	23' x 13' arch or 20' x 10' box	Forest habitat close to EOP on north not on south. Add vegetation on south side for cover.
	187.8	Construct small to medium sized mammal underpass.	Identified as crossing area by Barnum.	Small- to Medium-Sized Mammal Underpass – Box Culvert, Corrugated Steel Culvert.	New	Bobcat, Coyote, Fox, marmot, Marten, Sm. Mammals, Snowshoe Hare, Weasels, etc.	1' to 6' diameter	Poor cover on both sides. Add vegetation on both sides. If the 6' size is used, a smaller pipe can be placed inside to allow safe passage of small(er) mammals.
	188.3	Construct large mammal underpass	Winter track surveys found greatest occurrence of snowshoe hare in area. Photographic (SREP) & track (Barnum, CWS) indicate high level of summer & winter activity.	Large Mammal Underpass – Multi-plate Steel Arch, Concrete Box Culvert (with pipes &/or coarse woody materials placed to provide cover for small mammal movement).	New	Bear, Deer, Elk, Lynx, Moose.	23' x 13' arch or 20' x 10' box	Some vegetation between EOP and trail on EB side. Poor cover on WB side. Add vegetation on both sides.
	188.7	Construct small to medium sized mammal underpass.	The upper portion of the Study Area (approximately MP 186 through MP 191.5) does not have any structures that allow for unimpeded wildlife movement.	Small- to Medium-Sized Mammal Underpass – Box Culvert, Corrugated Steel Culvert.	New	Bobcat, Coyote, Fox, Marmot, Marten, Sm. Mammals, Snowshoe Hare, Weasels, etc.	1' to 6' diameter	Some vegetation approaching EOP on WB side. Vegetation on EB side could be adequate. Add vegetation if necessary depending on design.
Entire Project Area		Wildlife fencing to be installed on both sides of I-70 from west of 181 bridge to the top of the pass to prevent AVCs and guide animals to all of the crossing structures • Add small mammal shelf in drainage and stream crossing culverts wherever feasible • Maintain or install woody vegetation at either side of crossings for cover and light attenuation • Add features to bridges to promote day and night roosting for bats where appropriate. Install wildlife escape ramps throughout the project area to minimize snow loading in front of crossing structures. Place Coarse woody material and rocks at the entry and within each crossing structure to provide cover and promote use by smaller animals. Where site conditions allow, incorporate "wildlife lanes" within crossing structure intended for or that may otherwise be used by people.		Bridge				

2

References: Barnum 2003 • Clevenger 2009 • Clevenger 2014 • Clevenger & Huijser 2011 • Connolly-Newman et al. 2013 • Clevenger 2014 • Crooks et al. 2008 • Gagnon et al. 2011 • Kintsch & Cramer 2011 • Kintsch et al. 2015 • Ruediger 2007 • Ruediger & Jacobson 2013



WILDLIFE CONNECTIVITY RECOMMENDATIONS

Recommendations from A Regional Ecosystem Framework Report						
Waterbody	MP	2011 Recommendations	West Vail Pass Auxiliary Lanes Project Recommendations	Recommendation Justification	Target Species	Notes
Pitkin Creek	180	CPW maintains intentional barriers to protect upstream conservation population. Coordinate with CPW to determine if connectivity for other aquatic organisms is desirable at this location.	Maintain/repair fish barrier. Conservation stream - blue lineage (formerly Colorado River) cutthroats.		Native cutthroats.	
Bighorn Creek	180.6	Remove barrier at inlet and allow substrate to fill the bottom of the culvert and restore natural grade into inlet. Ultimately, replace culvert with large three-sided box, arch, open-bottomed pipe or embedded pipe culvert. Maintain a grade through the culvert that is consistent with upstream and downstream conditions. Construct features to mimic channel conditions through the culvert and improve fish passage. Coordinate with local municipality to ensure continued connectivity through downstream culvert.	Keep 2011 recommendations. Maintain/repair fish barrier. Conservation stream - blue lineage (formerly Colorado River) cutthroats.			
Gore Creek	182	Maintain connectivity at site including natural stream channel and stream banks.	Keep 2011 recommendations - keep open channel and improve if warranted.			
Black Gore Creek	182.5	Maintain connectivity at site including natural stream channel and stream banks.	Keep 2011 recommendations - keep open channel. Improvement not a priority.			
Unknown Tributary to Black Gore Creek	183	Remove culvert and restore stream channel through bridge structure at JP061.	Culvert removal not recommended. Any benefit from removing the culvert is offset by a greater impact to the stream due to contamination and sedimentation.	Clean water diversions and maintaining barriers may negate the two recommendations.		
Unknown Tributary to Black Gore Creek	183.3	Install shallow weir plates through culvert to reduce water velocities and add roughness. Ultimately, install a new, larger culvert to encompass the channel's bankfull width. Construct features that mimic channel conditions through the culvert and improve fish passage.	Further investigation regarding fishery and constructibility of 2011 recommendations.	Clean water diversions and maintaining barriers may negate the two recommendations.		
Timber Creek	184	Maintain connectivity at site including natural stream channel and stream banks.	Keep 2011 recommendations.			
Black Gore Creek	184.5	Maintain connectivity at site including natural stream channel and stream banks.	Keep 2011 recommendations.			
Miller Creek	185	Maintain connectivity at site including natural stream channel and stream banks.	Keep 2011 recommendations. Maintain/repair fish barrier. Conservation stream - blue lineage (formerly Colorado River) cutthroats.		Native cutthroats.	
Polk Creek	185.5	CPW maintains intentional barriers upstream to protect upstream fish population. Coordinate with CPW to determine if connectivity for other aquatic organisms is desirable at this road crossing location.	Keep 2011 recommendations. Maintain/repair fish barrier. Conservation stream - blue lineage (formerly Colorado River) cutthroats.		Native cutthroats.	

AQUATIC

3

References: Barnum 2003 • Clevenger 2009 • Clevenger 2014 • Clevenger & Huijser 2011 • Connolly-Newman et al. 2013 • Clevenger 2014 • Crooks et al. 2008 • Gagnon et al. 2011 • Kintsch & Cramer 2011 • Kintsch et al. 2015 • Ruediger 2007 • Ruediger & Jacobson 2013