



Purpose:	Project Leadership Team and Technical Team Combined Meeting		
Day:	Thursday	Date:	April 12, 2012

Location:	CDOT Traffic Operations Center, Golden, Trail Ridge Conference Room		
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Participants:

Project Leadership Team

Attendee	Representing	
Ben Acimovic	CDOT R 1	Y
Chuck Attardo	CDOT R 1	
Jim Bemelen	CDOT R 1	Y
Allan Brown	Atkins	Y
Tony DeVito	CDOT	Y
Angie Drumm	CDOT Local	Y
Janet Gerak	CDOT R 1	
Vanessa Henderson	CDOT EPB	Y
Randy Jensen	FHWA	Y

Attendee	Representing	
Gina McAfee	Jacobs	Y
Tim Mauck	Clear Creek Co.	Y
Jack Morgan	Idaho Springs	Y
Pat Noyes	Pat Noyes	Y
Kevin O'Malley	Clear Creek Co.	Y
David Singer	CDOT	Y
Melinda Urban	FHWA	Y
Mary Jo Vobedja	CH2M HILL	Y
Mandy Whorton	CH2M HILL	Y

Technical Team

Attendee	Representing	
Ben Acimovic	CDOT R 1	Y
Chuck Attardo	CDOT R 1	
Phyllis Adams	Upper CC Watershed Assn.	
Carol Anderson	EPA	Y
Rick Beck	Clear Creek Co Public Works	Y
Jim Bemelen	CDOT R 1	Y
Rena Brand	USACE	
Tom Breslin	Clear Creek Co.	Y
Allan Brown	Atkins	Y
Steve Cook	DRCOG	Y
Maria D'Andrea	Jefferson Co.	Y
Jim DiLeo	CDPHE	Y
Gary Frey	Colorado Trout Unlimited	

Attendee	Representing	
Gina McAfee	Jacobs	Y
Bill Macy	Idaho Springs	
Tm Mahoney	Kraemer	Y
Laura Meyer	Jacobs	Y
Alison Michael	USFWS	Y
Marc Morton	CDOT	Y
Cindy Neely	Clear Creek Co.	Y
Taro Nonaka	Kraemer/Obayashi	Y
Ty Petersburg	Colorado Parks & Wildlife	
Amy Pallante	SHPO	
Bob Quinlan	Jacobs	Y
Colleen Roberts	CH2M HILL	Y
Steve Rudy	DRCOG	Y

Attendee	Representing	
Janet Gerak	CDOT R 1	
Stephanie Gibson	FHWA	Y
Dan Gibbs	Summit County	
Dave Hattan	FHU	Y
Vanessa Henderson	CDOT EPB	Y
Matthew Hogan	Kraemer	Y
Nicolena Johnson	Clear Creek EMS	
Carol Kruse	USFS	Y
Darrell Liebno	Kraemer/Obayasai	Y
Jason Longsdorf	PB	Y

Attendee	Representing	
Tim Russ	EPA	Y
Jill Schlaefer	CDOT	Y
Kevin Shanks	THK	Y
Terrene Shendleman	CDOT	Y
Tom Schilling	Intermountain Corporate Affairs	
David Singer	CDOT	Y
Jo Ann Sorensen	Clear Creek Co.	Y
Francesca Tordonato	Jacobs	Y
Mary Jo Vobejda	CH2M HILL	Y
Mandy Whorton	CH2M HILL	Y

Welcome and Introductions

Jim Bemelen welcomed the group and self introductions were made.

Corridor Project Schedules and Updates

Frontage Road

Ben said he is clearing right-of-way and he still plans to go to advertisement on April 19. Jim Bemelen said the Xcel utility work is challenging because the lines are buried in the center of the road, but they are managing to accommodate the cyclists and pedestrians while the work is going on.

Other Studies

Jim said the AGS and Regional Connectivity projects have a combined schedule which will be posted on the website.

Environmental Assessment – Presentation of Impacts and Mitigation

Mandy went over the objectives of the presentation (attached). She explained the Twin Tunnels project is the first Tier 2 site specific project. Because the Twin Tunnels has been identified as a “specific highway improvement” it is not required to look at the parameters established for future highway capacity components of the Maximum Program of Improvements.

Mandy said an adaptive mitigation approach will be used which focuses on the components of the Proposed Action that cause impacts and clearly ties the mitigation to an activity and location. Now that the CMGC is on board, there may be new ideas on construction that may minimize the impacts.

Mandy said the EA is evaluating 20 social and environmental resource areas but in consideration of the time limits of the meeting, the presentation today will focus on those resources addressed by the Twin Tunnels Core Values. If there are questions or concerns

about the other resource areas those will be discussed. The EA Tech Memos will contain much more detailed information than is going to be reviewed during this presentation. Mandy turned the presentation over to Colleen Roberts to lead the discussion on Social Resource Impacts and Mitigation followed by Bob Quinlan who led the Natural Resource Impacts and Mitigation portion.

Transportation Impacts & Mitigation

Colleen said the Proposed Action would reduce average travel time between Georgetown and Floyd Hill by 27 minutes in year 2035 during congested periods, when compared to the No Action. It was clarified that this average travel time savings applies to both the managed lane and general purpose lane options. The managed lane would average about 3 minutes of additional travel time savings over the general purpose lanes in peak periods. Today's average travel time from Georgetown to Floyd Hill is 117 minutes, and on a peak Sunday in 2035, the No Build travel time is 135 minutes.

The managed lane would provide a reliable and sustainable travel option by insuring free flow of traffic through the project area. Even though the addition of a third lane would increase capacity through the tunnels and reduce travel times, congestion upstream would persist because there are only two lanes to the west of the project area.

In 2035, the Proposed Action is projected to decrease crashes by 20% to 35% when compared with the No Action Alternative.

During the detour operation, additional travel delays of 30 minutes to an hour would be expected during peak travel times (Sunday afternoons). Off-peak lane closures to the east and west of the detour may also cause inconvenience to travelers.

Stephanie Gibson said it is very important to be clear on whether the mitigation will be happening during construction or on opening day. Mandy agreed and said the EA will have two tables that will clearly define which are construction related and which are operations related.

Jack Morgan said there are many members of the community who are very concerned about damage to the Idaho Springs Sewer Plant on the west side of the Twin Tunnels from blasting and the potential for raw sewage to spill into Clear Creek. Matt Hogan (CMGC Contractor) said he knows it is an issue and the CMGC will take full responsibility. **Allan Brown said this can be a discussion topic at the CMGC meeting in Idaho Springs in May. He asked Jack to get him the names of people to invite to the meeting.**

Colleen said the mitigation for operations will include adequate striping, signage and lighting to provide safe travel conditions.

Construction mitigation includes planning lane closures for off-peak periods to reduce traveler inconvenience. Advance signage on I-70 for construction and public notice of delays are also planned. There will be coordination with emergency service providers, Colorado State Patrol and local police.

Jack Morgan inquired if any thought has been given to what would be done if blasting

fractures the west bore, collapsing both tunnels and the highway was closed for an indefinite amount of time. Ben said a project-specific incident management plan will be developed and implemented if needed to address unforeseen events, such as the unlikely failure of the westbound tunnel.

Air Quality Impacts & Mitigation

Colleen said from an operational standpoint, the air quality in Clear Creek would remain good with no violations of air quality standards. Future tailpipe emissions would decrease due to improved vehicle technology and would be lower under the Proposed Action than the No Action due to the decreased congestion. Re-entrained dust (PM₁₀) will increase proportionate to vehicle volumes but would not exceed standards. CDOT will monitor PM₁₀ during construction, but they are not required to do so.

During construction increased congestion on the highway and Frontage Road and the equipment used could temporarily increase vehicle emissions and affect air quality, but not to a point where any violations of standards would be expected.

Cindy Neely inquired if there are baseline air quality data available for Clear Creek. Jim DiLeo said Clear Creek County is not in a non-attainment area, and the Denver metro non-attainment boundary stops east of the county boundary. Jim said CDPHE has done Air Quality modeling for Clear Creek, and the models indicate air quality standards are unlikely to ever be exceeded in this area because the population is too low and traffic volumes are too low.

Jim DiLeo said CDOT has to obtain a Fugitive Dust permit from the CDPHE for any construction project, and it clearly outlines the parameters for when work would have to stop due to air quality concerns. **Cindy requested that this stated in the EA.**

Colleen said construction mitigation will include the implementation of a fugitive dust control plan and monitoring of PM₁₀ prior to and during tunnel blasting. If the PM₁₀ concentration alert threshold is exceeded, additional mitigation measures such as additional watering will be implemented. Jim noted that CDOT's commitment to installing monitors and conducting monitoring during tunnel blasting is voluntary and "above and beyond" what is required.

The CMGC will maintain their construction equipment in good working order and there will be a construction worker parking and transportation plan. Jack Morgan said Idaho Springs owns 10 acres west of the tunnel that could be used for parking for a staging area.

Cindy said the PEIS Air Quality mitigation states that PM_{2.5} will be monitored. Mandy said the PEIS stated PM_{2.5} monitoring would be considered for Tier 2 projects, depending on the site-specific conditions and proposals. Colleen stated that PM_{2.5} is not considered an issue for the Twin Tunnels project area during construction; PM_{2.5} emissions come primarily from diesel engines, and there is not an unusually high percentage of diesel trucks in the area. CDOT has committed to monitoring dust (PM₁₀), which is considered a greater potential concern due to dust emissions and re-entrained dust from tunnel blasting.

Colleen said operations mitigation will continue the ongoing practice of minimizing road

sanding.

Noise Impacts and Mitigation

Colleen said existing noise levels throughout the project area exceed Noise Abatement criteria. The Proposed Action will increase noise levels less than 3 dB – which is the point at which a noise increase is perceptible - beyond the existing conditions.

Noise walls are not reasonable or feasible in most locations due to the topography and distance of the receptors. A noise wall at the Scott Lancaster Memorial Bridge is reasonable and feasible under CDOT and FHWA criteria and was approved by Clear Creek County last month.

Noise from blasting operations will continue to be evaluated, and mitigation will likely be required.

Historic Property Impacts and Mitigation

The Area of Potential Effects (APE) was agreed to by the consulting parties in November. The signage for the managed lane has resulted in the need to go back to the consulting parties to discuss expansion of the APE to the west to include the required signage.

21 resources were recorded in the original APE. Of those, 7 are eligible for or listed on the National Register. At least three sites have been identified as being locally important but do not meet the National Register eligibility criteria. The determination of effects concluded that the Proposed Action has an Adverse Effect on the Twin Tunnels and No Adverse Effect on US 6/US 40. The remaining resources, including locally important resources, are not affected.

Colleen said mitigation will be documented in a Memorandum of Agreement (MOA) appending the Section 106 Programmatic Agreement (PA). This will be done in conjunction with the Consulting Parties, who will be invited to sign the MOA along with CDOT and FHWA. Specific mitigation will be detailed in the MOA and may include a variety of different options that were previously brainstormed by the Consulting Parties. CDOT will provide a draft MOA for review and discussion by Consulting Parties and the Colorado State Historic Preservation Office.

The construction staging areas are expected to be in the CDOT right-of-way and will be detailed in the MOA. Mandy explained that the EA would also include mitigation (fencing) to protect historic sites from damage during construction, as well as procedures for unexpected discovery of historic properties (e.g., buried historic rails) during construction.

Visual Impacts and Mitigation

Colleen said the tunnel is dominated by the natural features of the mountains, and there would be no reduction in visual quality due to the portal and roadway widening. The visual analysis considers the views of drivers, recreational users, and people who have views of the project from other locations. Recreational users in Clear Creek and cyclists and pedestrians on the Scott Lancaster Bridge will experience greater visual effects than motorists because their view duration is longer.

The design of portal face will be developed during the CMGC process and will adhere to the Aesthetic Design Guidelines.

The creek views would be impacted because the widened roadway and retaining walls will reduce the scenic and natural creek setting. The height of the walls depends on the width of the highway. The minimum roadway cross section (50 feet) was used for the visual simulations. **Stephanie suggested**

showing the maximum roadway cross section (56 feet) in the simulations so the EA shows the maximum level of impact.

Cindy Neely said she understood the retaining walls on I-70 would reflect the aesthetics of the Frontage Road fill walls. Jim Bemelen confirmed they will, but they may be built differently.

PLT members felt the gray concrete barrier shown on top of the retaining wall on I-70 in the simulation should be replaced with a guardrail allowing some transparency. David noted that it would be unlikely that CDOT would install the barrier rather than a guardrail but the simulations are intended to show the worst-case scenario while still following the I-70 Mountain Corridor Aesthetic Guidelines. Carol Kruse suggested showing the guardrail rather than the barrier if CDOT does not intend to build the barrier.

Cindy and JoAnn stated that revegetation along the creek bank would greatly enhance the visual experience for recreational users. Ben noted that CDOT will look at revegetating banks in areas where vegetation will grow. Cindy and JoAnn stated that they were not asking that CDOT fully revegetate rocky areas but that consideration be given to vegetation in locations that might support it.

Recreation Resource Impacts and Mitigation

Colleen said the Below Box Boating access on CR 314 near Hidden Valley would be permanently removed due to the curve modification on I-70. Eight other access points in the project area would remain. There would be a minor reduction of parking area at Kermitts trailhead and boating access due to the new water quality pond. As noted in Visual Impacts, the retaining walls would create impacts for Clear Creek river recreation users.

Temporary construction impacts will include detours and delays on the Scott Lancaster Bridge due to nearby construction. The game check area parking will be unavailable during use of the detour. There will also be temporary closures of 3 of the 9 river accesses along CR 314 during use of the detour, and periodic closures of Clear Creek and other access points during tunnel blasting, and retaining wall and bridge construction.

Mitigation during construction includes a temporary bike and pedestrian detour on CR 314 west of the Doghouse Rail Bridge. Bikes and pedestrians will have use of a barrier-separated 8-foot path adjacent to the detour west of the bridge.

There will be an anchored concrete barrier separating detour traffic from the Scott Lancaster Bridge. Pre-construction vibration analysis will be done at the bridge and vibration monitoring will be done during construction if needed.

Cindy Neely would like it specifically stated in the EA that CR 314 will be restored to the Phase 1 Frontage Road project condition and the Scott Lancaster Memorial Trail will be restored to the north side of CR 314.

Jack Morgan thanked CDOT for meeting with the cycling community to explain planned mitigation measures. He said he got a lot of positive feedback from them.

Colleen said river closures due to blasting and bridge construction will occur prior to June to avoid the rafting season. From June to Labor Day river closures will be from 8:00 pm to 8:00 am. CDOT will also develop a communication plan with the rafting companies to determine communication protocols for and creek closures during the rafting season. There will also be spotters along the creek to insure construction activities are stopped while boaters pass through the construction zone.

Construction areas near the water line will be fenced to prevent access by recreationalists. Trail and creek users will be kept away from the safety zone during the rock blasting. Matt said he is looking into how to stop them and is considering using a flagger during blasting. David Singer said some measures to stop trail users that are used on the Frontage Road construction this summer may work during construction of the tunnel.

Tim Mauck said Clear Creek County wants to make sure the EA documents state that the future trail under the new Hidden Valley Bridge will not be precluded as a potential future project.

Natural Resource Impacts and Mitigation

Water Resources/Water Quality Impacts and Mitigation

Bob Quinlan said there will be a permanent increase in the impervious surface of 3.1 to 3.6 acres depending on cross section selected. Increased pavement will increase the volume of runoff, sediment, chlorides and trace metals.

There will be no permanent stream channel impacts and it's unlikely that water quality standards will be exceeded in Clear Creek. Bob said based on sampling done from the tunnel coring, historic mine waste or mineralization is not expected, but if there is any found, water quality degradation is anticipated. **Cindy Neely said Clear Creek County has an extensive collection of mining maps and she encouraged CDOT to review the maps and include them in the impact assessment.**

Bob said construction mitigation will include removing or encapsulating all mineralized rock and implementing sediment control best management practices (BMPs). There will be a storm water management plan and water quality will be monitored before, during and after construction.

Bob said mitigation for operation and winter maintenance will be implemented in a site-specific Sediment Control Action Plan (SCAP). There will be water quality BMPs for ponds and sediment traps. Because this area is noted for hazardous spills two spill containment areas will be added.

Aquatic Resources and Mitigation

Bob said there are not permanent direct impacts to aquatic resources. There might be temporary impacts to the brown trout spawning areas and other aquatic species habitat due to increased sedimentation that could occur during construction.

Bob said prior to construction Colorado Parks and Wildlife will conduct a brown trout spawning survey this fall to identify spawning locations. Mitigation during construction will include temporary erosion and sediment control structures and monitoring water quality before, during and after construction.

Jim Bemelen said Jim Eussen's separate project to improve fish habitat in Clear Creek is considered an enhancement opportunity. Because the Twin Tunnels project is not expected to impact aquatic resources, the aquatic habitat project is not considered mitigation for the project.

Terrestrial Wildlife Impacts and Mitigation

Bob stated there will be a permanent loss of habitat along the highway of 5.7 to 6.2 acres, depending on the cross section selected. There is the potential for mortality of small mammals, birds and their predators. Big game migration corridors, winter range and concentration areas will not be permanently impacted.

There will be minimal removal of vegetation to construct a temporary fence along the north side of old US 40 to keep wildlife away from the detour while it is operational. This along with the construction could affect mammal movement and increase animal/vehicle collisions. Construction and blasting activities would temporarily displace wildlife.

Bob stated mitigation will include a nest survey prior to April 1st. Any inactive nests found will be removed.

Colorado Parks and Wildlife will place salt blocks on the north side of I-70 to keep sheep away during blasting.

Bob said permanent mitigation will improve the wildlife crossing under the new Hidden Valley bridge and the riparian trees and shrubs removed at the east portal will be replaced in accordance with Senate Bill 40 requirements.

Other permanent mitigation will be the removal of trees west of the west portal to improve driver visibility which will reduce animal/vehicle collisions. The existing barbed/woven wire fence between Clear Creek and the west portal will be replaced with a more wildlife friendly fence.

The concrete box culvert at MP 242 will be improved with a more natural bottom and better access for wildlife.

Questions and Comments

Allan Brown said he was incorrect in stating at the last meeting there would be new lighting in the project area. Existing lighting will be replaced but there will not be any additional lighting.

Carol Anderson said since this is the first time the group has heard about the impacts and mitigation, will there be an opportunity to provide comments beyond what was discussed today. Mandy Whorton said if you have comments that would make the EA a better document; she would like them within the week. The official impacts and mitigation will be in the EA and stakeholders and the public will have the opportunity to comment when it is released July 9th.

Jo Ann Sorensen said she recently received an email that the VMS signs would include information on the travel time to DIA. She thought that during construction it would be a good idea to put travel time information on a VMS sign west of the project. Ben agreed and said it would be added to the cumulative effects.

Future of PLT/TT

David Singer said the EA life cycle has ended and this is the final meeting for the Technical Team. The final design PLT will convene for a chartering meeting on April 20th. At that meeting new goals and objectives will be established and a new Technical Team will be identified. The next PLT meeting for the EA is May 10th to discuss the Public Hearing.

David said the tracking tools are in place to ensure all issues are addressed in the EA.

Mary Jo Vobejda said a survey to get feedback about the EA phase could be conducted and would be consistent with the continuous improvement of the CSS process.

Randy Jensen said this is a fast track EA from the FHWA perspective because they usually take 24 months. He thanked everyone for their commitment and participation to make improvements on the corridor.

Kevin O'Malley said this EA has been more difficult for the project team because it is different from others studies that have been done before. He complimented the team on doing it better than it's ever been done before and said the community will be better for the hard work.



I-70 Twin Tunnels Environmental Assessment Combined Project Leadership and Technical Team Meeting

Thursday, April 12, 2012

Golden Residency

9:00 am - 12:00 pm

1. Welcome and Introductions (Bemelen)

2. Corridor Project Schedules and Updates (Bemelen)
 - Combined Twin Tunnel and Frontage Road Schedule - available on the website
 - Frontage Road (Acimovic)

3. Environmental Assessment
 - Impacts and Mitigation

4. Next steps for the PLT and the Technical Team (Singer)

5. Next PLT Team May 10, 2012 (Bemelen)

Handouts

Summary of Impacts and Mitigations

www.coloradodot.info/projects/i70twintunnel

Date	Group	Purpose
May 10	PLT or Tech Team	Agenda To Be Determined
June	PLT	CMGC and Design Process Public Hearing
July 17	Public Hearing	

Presentation

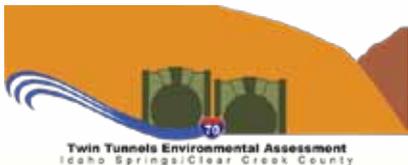
Twin Tunnels EA Social and Environmental Impacts and Mitigation

Project Leadership Team and
Technical Team
April 12, 2012



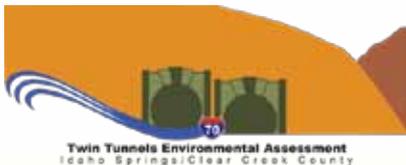
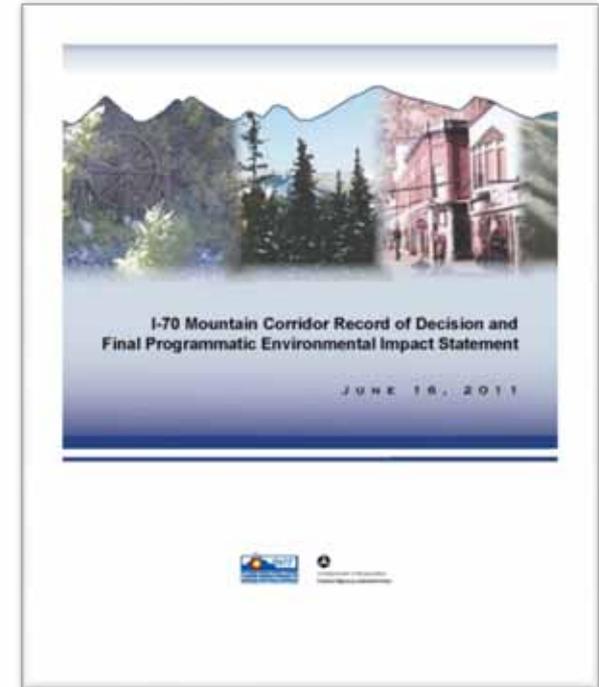
Objectives of Today's Presentation

- Provide an update on environmental analysis and coordination
- Review EA analysis of impacts and mitigation
 - » Tier 2 Considerations
 - » Site specific analysis including
 - Cross Section Variations
 - Operational Considerations
 - Construction Considerations
- Discuss EA process, impacts, and mitigation
- Review and discuss post-EA agreements and next steps



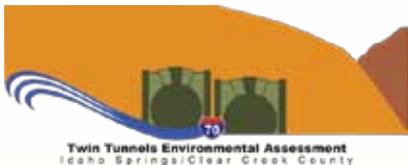
Overview

- Tier 2 process that relies on the PEIS for:
 - » Development of a proposed action consistent with PEIS Preferred Alternative
 - » Context for existing conditions and impacts
 - » Mitigation strategies
- Follows framework of PEIS agreements for CSS, SWEEP, ALIVE, Section 106
 - » Context and Core Values for Twin Tunnels project
 - » Issue Task Forces
 - » Compliance with MOUs and PA
- » Builds on past and current investment in the Corridor by PLT, Technical Team, and Issue Task Forces



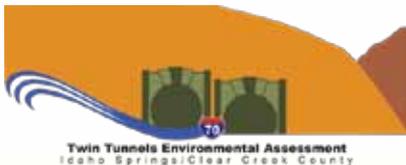
Twin Tunnels and PEIS Preferred Alternative

- Twin Tunnels improvements included in the Minimum Program of Improvements
 - » Six-lane component from Floyd Hill through the Twin Tunnels
 - » Curve safety improvements east of the Twin Tunnels
- Twin Tunnels identified as a “specific highway improvement” not subject to the parameters established for future highway capacity components of the Maximum Program of Improvements



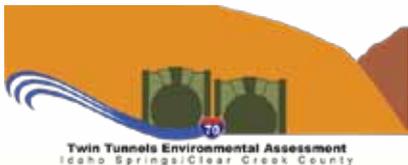
Tier 2 Processes Address Site-Specific Details

- Articulate site-specific context and core values
- Update and refine information
- Develop site-specific action and design
- Evaluate differences in benefits or impacts
- Develop appropriate mitigation based on mitigation strategies and comply with laws and agreements



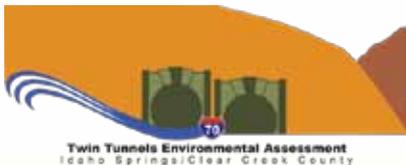
Adaptive Mitigation Approach

- Focus on components of Proposed Action that cause impacts
- Clearly ties mitigation to an activity and location
- Example:
 - » Activity: Use of detour route for interstate traffic
 - » Location: Old Hwy 40
 - » Impact: Temporary closure of game check area and trail for recreation
 - » Mitigation: Provide temporary trail detour along CR 314



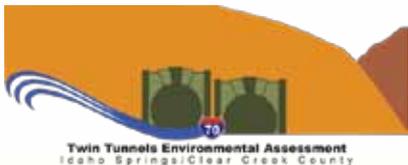
Twin Tunnels EA Evaluation

- Environmental Assessment evaluates 20 social and environmental resource areas
- Presentation focuses on core values and resources identified as key concerns
 - » Transportation (Safety / Mobility)
 - » Air Quality
 - » Noise
 - » Historic Properties
 - » Visual Resources (Gateway)
 - » Recreation (Clear Creek, Tourism, Community Facilities)
 - » Water Resources (Clear Creek)
 - » Aquatic Resources (Clear Creek)
 - » Wildlife
- Will address questions or input about other resources if there is interest



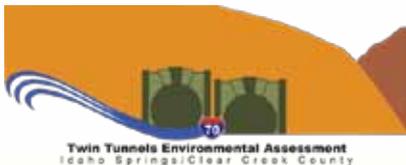
Transportation Impacts

- Proposed Action would reduce average travel time between Georgetown and Floyd Hill by 27 minutes (compared to No Action)
- During detour operation, additional travel delay of 30 minutes to an hour would be expected
- Off-peak lane closures (east and west of detour) may cause inconvenience to travelers



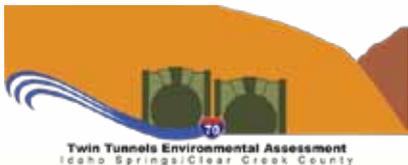
Transportation Impacts

- The managed lane would provide a reliable and sustainable travel option
- Crashes projected to decrease 20 to 35% when compared to the No Action Alternative



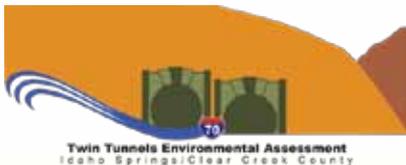
Transportation Mitigation

- Include adequate striping, signage, and lighting to provide safe travel conditions
- Planned off-peak lane closures to balance traveler convenience and construction needs
- Provide construction signage and public notice of delays
- Coordinate with emergency service providers, Colorado State Patrol, and local police
- Develop and implement project-specific incident management plan



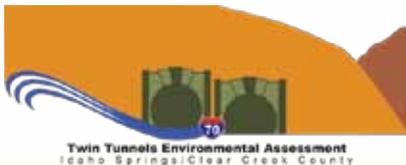
Air Quality Impacts

- Air quality in Clear Creek Valley would remain good, with no violations of any air quality standards
- Future tailpipe emissions would decrease due to vehicle technology and fuel improvements, and would be lower under Proposed Action than No Action due to decreased congestion
- Re-entrained dust (PM_{10}) increases proportionate to vehicle volumes but would not exceed standards
- Construction congestion and equipment would generate increased emissions



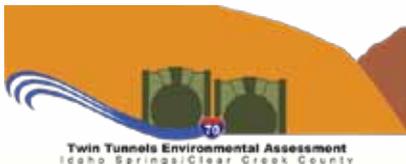
Air Quality Mitigation

- Construction mitigation
 - » Implement fugitive dust control plan
 - » Maintain construction equipment in good working order
 - » Monitor PM_{10} prior to and during tunnel blasting activities
 - Exceedance of concentration alert threshold will trigger additional dust mitigation measures
 - » Implement construction worker parking and transportation plan
- Operations mitigation
 - » Continue ongoing practice of minimizing road sanding



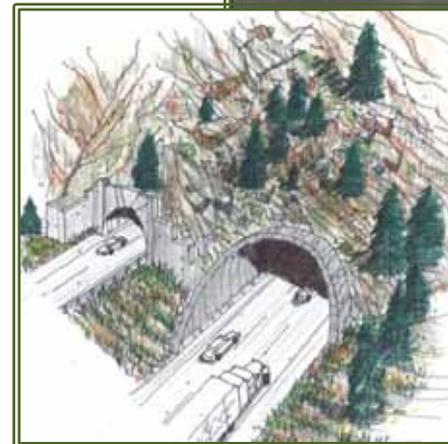
Noise Impacts and Mitigation

- Existing noise levels throughout project area exceed Noise Abatement Criteria
- Proposed Action would not noticeably increase noise levels beyond existing conditions (<3 dB increase)
- Mitigation examined because existing levels exceed Noise Abatement Criteria
 - » Noise walls not reasonable or feasible in most locations due to topography and distance of receptors
 - » Noise wall at Scott Lancaster Memorial Bridge would be reasonable and feasible and approved by Clear Creek County
- Continuing to evaluate noise from blasting operations; mitigation likely required



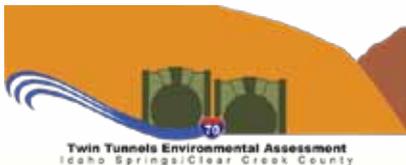
Historic Property Impacts

- Area of Potential Effects (APE) agreed upon with consulting parties in November
- 21 resources recorded within the APE
 - » 7 eligible for or listed on the National Register
 - » 3+ sites identified as locally important but do not meet National Register eligibility criteria
- Impacts/Effects
 - » 1 Adverse Effect – Twin Tunnels
 - » 1 No Adverse Effect – US 6/40
 - » All other properties, including locally important resources, not affected



Historic Property Mitigation

- Document mitigation in a Memorandum of Agreement (MOA), appending the Section 106 Programmatic Agreement (PA)
- Develop MOA in conjunction with Consulting Parties, who will be invited to sign the agreement with CDOT and FHWA



Historic Property Mitigation

- Specific mitigation will be detailed in the MOA
- Options discussed (brainstormed) include:
 - » Historic American Engineering Record (HAER) documentation
 - » Portal design option referencing the past / art deco style
 - » Salvage/display portal materials
 - » Interpretive Display, maybe at Game Check Area
 - » Interpretive plan (Corridorwide and/or Countywide)
 - » Access to historic sites during construction



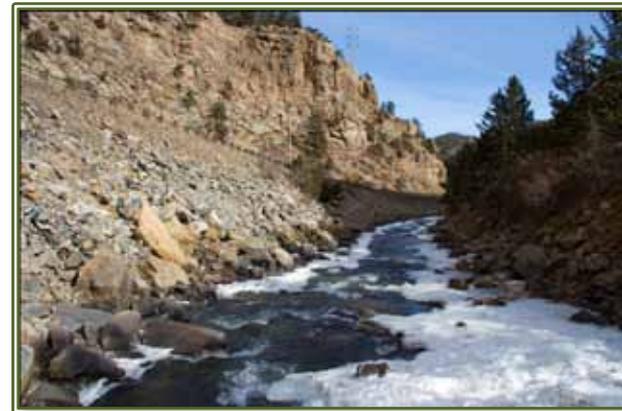
Visual Resource Impacts

- Tunnel View
 - » Dominated by natural features
 - » No noticeable reduction in visual quality from portal changes and roadway widening
 - » Portal face would adhere to CSS Aesthetic Design Guidelines



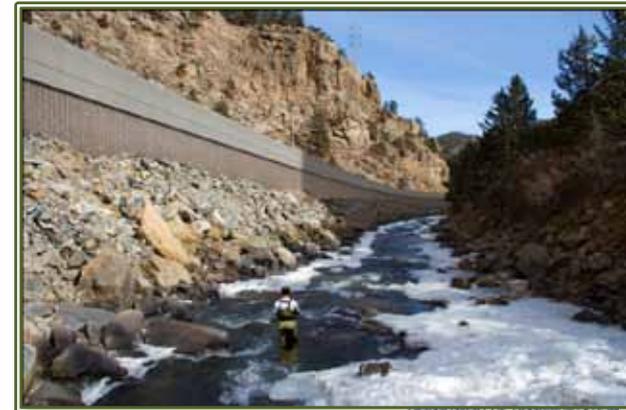
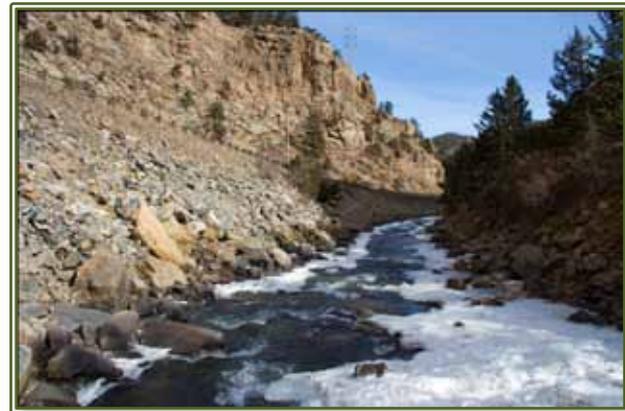
Visual Resource Impacts

- Creek Views. Widened roadway and retaining walls would:
 - » Reduce scenic and natural characteristics of creek setting
 - » Diminish view quality



Visual Resource Impacts

- Creek Views. Widened roadway and retaining walls would:
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Visual Resource Impacts

- Creek Views. Widened roadway and retaining walls would:
 - » Reduce scenic and natural characteristics of creek setting
 - » Diminish view quality







Visual Resource Impacts

- Median View West of Hidden Valley Curve
 - » Improved stopping sight distance around curve
 - » Maintains vertical separation between EB and WB lanes

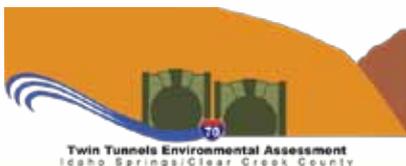


Visual Resource Impacts

- Based on FHWA Visual Analysis criteria, overall effects minor to moderate
 - » **Minor** effects: Additional signage for Managed Lane, new guardrails, retaining walls ≤ 5 feet tall, and bridge widening
 - » Do not block or impede scenic views or diminish visual character.
 - » **Moderate** effects: retaining walls 5 feet to 20 feet tall
 - » Noticeably contrast with visual setting and change a scenic view of value to adjacent recreational activities.
- Recreationalists in Clear Creek and on Scott Lancaster Memorial Trail experience greater visual effects than motorists since their view duration is longer

Visual Resource Mitigation

- Following aesthetic guidelines for the Mountain Mineral Belt minimizes visual effects of reconstructed highway elements:
 - » Bridges
 - » Retaining walls
 - » Tunnels
 - » Guardrails, barriers, and edge delineation
 - » Color selection and consistency
 - » Earthwork, embankment, and restoration of existing disturbance
 - » Landscape planting, revegetation, and topsoil management
- » CM/GC process will evaluate additional measures that could be included in final project design to further reduce moderate impacts



Recreation Resource Operation Impacts

- Removal of Below Box Boating Access on CR 314 near Hidden Valley (due to curve modification on I-70); eight other accesses in project area would remain
- Minor reduction in parking area at Kermitts trailhead/boating access (from WQ pond)
- Retaining walls create visual impacts for Clear Creek recreationalists



Recreation Resource Construction Impacts

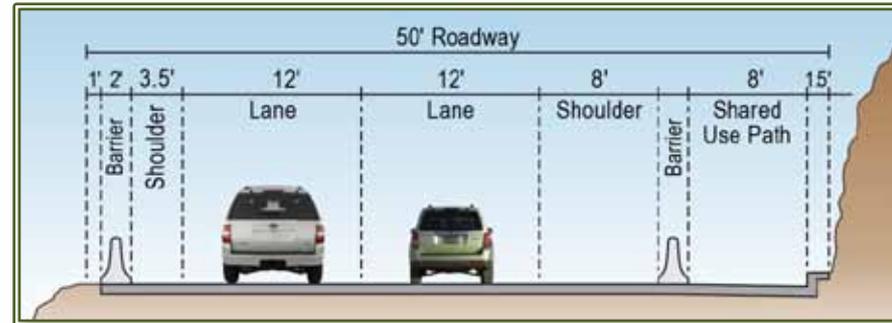
- Detours and delays on Scott Lancaster Memorial Trail
- Game check area parking unavailable
- Construction next to Scott Lancaster Memorial Bridge
- Temporary closure of three of nine river accesses along CR 314
- Periodic closures of Clear Creek and access points during tunnel blasting, retaining wall construction, bridge construction



Pedestrian/Bicycle Facility Mitigation

- Ped/bike use of travel lane on CR 314 east of Doghouse Rail Bridge during detour construction
- Temporary ped and bike detour on CR 314 west of Doghouse Rail Bridge

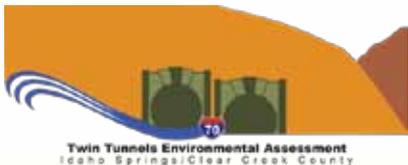
- Barrier-separated 8-foot-wide ped and bike path on CR 314 adjacent to detour route



- Anchored concrete barrier between Scott Lancaster Memorial Bridge and detour traffic
- Pre-construction vibration analysis at bridge and vibration monitoring if needed

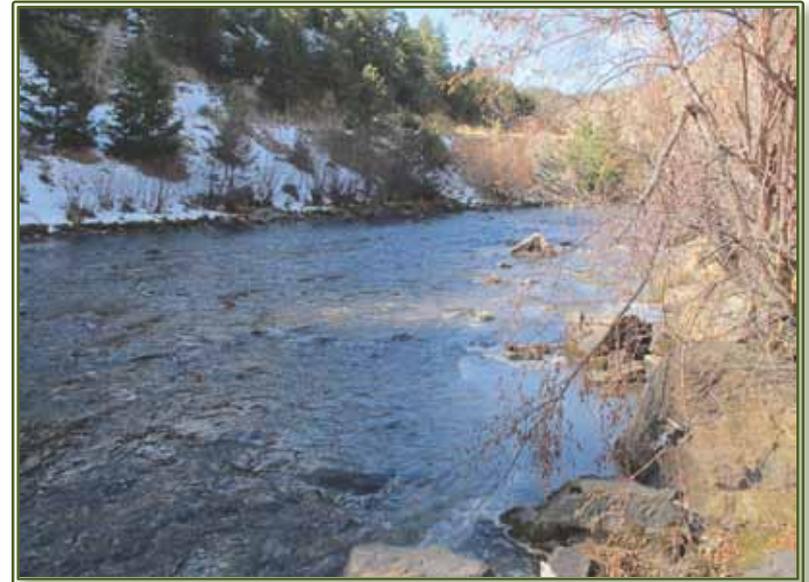
Clear Creek Recreation Mitigation

- » River closures due to tunnel blasting and bridge construction will occur prior to June to avoid peak rafting season
- » River closures from June to Labor Day will occur between 8pm and 8am to avoid effects to rafting
- » Fence off construction areas near water line to prevent access by recreationalists
- » Evacuate recreationalists from safety zone in vicinity of rock blasting
- » Develop communications plan with rafting companies regarding communication methods and timeframes for advance notice of creek closures
- » Spotters provided as needed, and construction activities stopped while boaters pass through construction zone



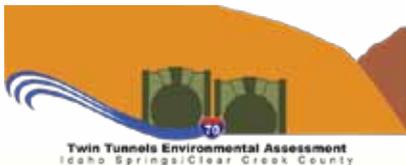
Water Resources/Water Quality Impacts

- Permanent increase in impervious surface of 3.1 to 3.6 acres depending on the cross section selected
- Increased pavement will increase volume of runoff, as well as sediment, nutrients, chlorides and trace metals
- No permanent stream channel impacts
- Unlikely to exceed water quality standards in Clear Creek
- No historic mine waste or mineralization anticipated to be encountered
- If historic mine waste material is encountered, water quality degradation is anticipated
- Temporary increases in erosion and sedimentation are anticipated during construction, greater with wider cross section



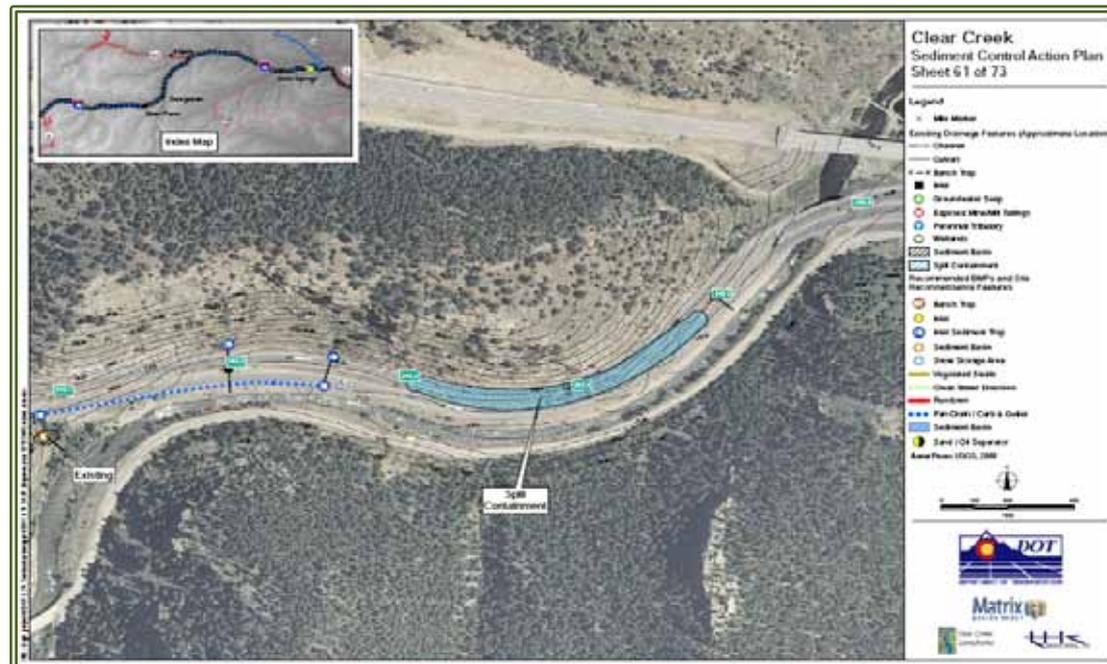
Water Resources/Water Quality Mitigation

- Remove or encapsulate all mineralized rock
- Implement sediment control best management practices (BMPs) during construction (temporary)
 - » Stormwater management plan
 - » Monitor water quality before, during, and after



Water Resources/Water Quality Mitigation

- » For operation and winter maintenance (permanent), implement site-specific components of Upper Clear Creek Sediment Control Action Plan
 - Water quality treatment BMPs (ponds, sediment traps)
 - Hazardous spill containment BMPs



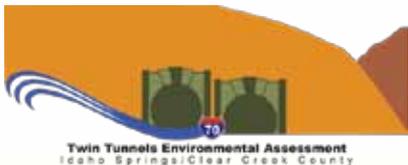
Aquatic Resources Impacts

- No permanent direct impacts to aquatic resources
- Sedimentation or temporary degradation of water quality could disturb brown trout spawning areas and aquatic species habitat



Aquatic Resource Mitigation

- Coordinate with Colorado Parks and Wildlife to conduct spawning survey during the fall of 2012
- Improve and protect water quality
 - » Implement temporary erosion and sediment control structures
 - » Install hazardous spill containment BMPs
 - » Monitor water quality before, during and after construction



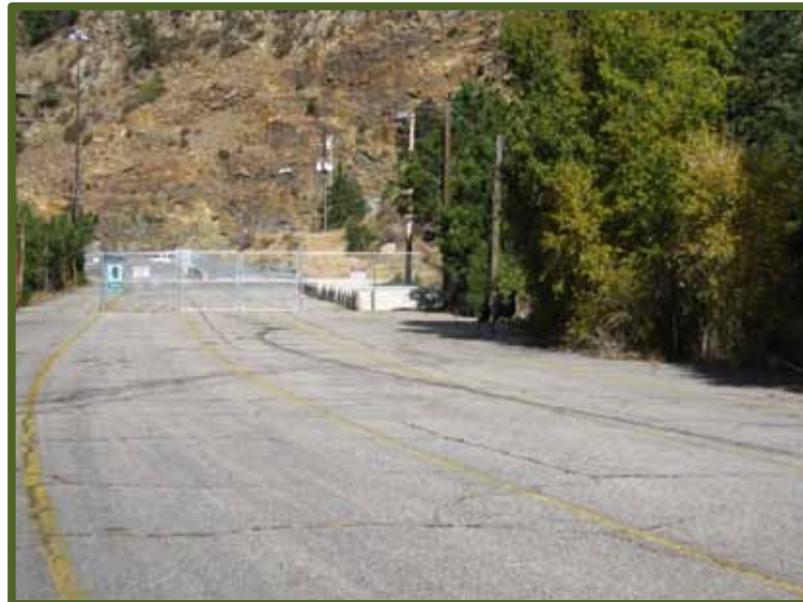
Terrestrial Wildlife Impacts

- Permanent loss of 5.7 to 6.2 acres of habitat along the highway, depending on cross section selected
- Potential direct mortality of some small mammals, birds and their predators
- No direct permanent impacts to big game migration corridors, critical winter range, or winter concentration areas
- Minimal removal of vegetation along the north side of the old US 40 for temporary fencing



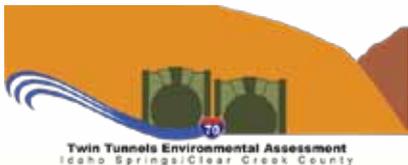
Terrestrial Wildlife Impacts (cont'd)

- Construction activity and vegetation removal could affect large and small mammal movement and increase animal/vehicle collisions
- Blasting and other construction activities would temporarily displace wildlife



Terrestrial Wildlife Mitigation

- Conduct a nest survey prior to construction
- Remove and replace riparian trees and shrubs in accordance with Senate Bill 40 requirements
- Construct a 10-foot-high temporary wildlife fence will be constructed along the north side of old US 40 during operation of the detour



Terrestrial Wildlife Mitigation

- CPW will place salt blocks on the north side of I-70 to keep sheep away from the roadway during blasting
- Improve conditions for wildlife crossing under the new Hidden Valley bridge



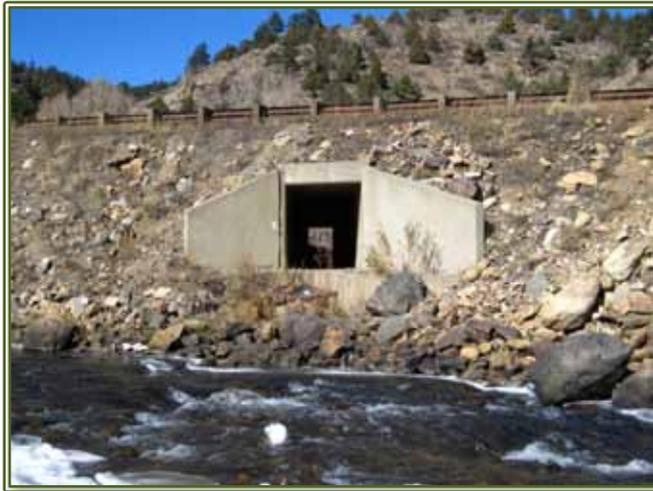
Terrestrial Wildlife Mitigation

- Replace existing barbed and woven wire fence between Clear Creek and the west portal with a more wildlife friendly fence
- Remove some upland trees west of the west portal to improve driver visibility and reduce animal-vehicle collisions



Terrestrial Wildlife Mitigation

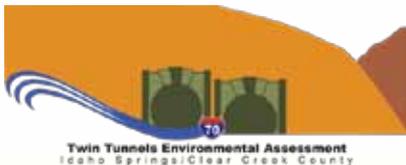
- Place a natural substrate along bottom of concrete box culvert at MP 242
- Leave concrete box culvert open to encourage wildlife usage



- Install new fencing to direct wildlife to improved crossing

Questions or Comments?

- Comments on the Tier 2 process?
- Comments on analysis methods?
- Comments on impacts?
- Comments on mitigation?
- Comments or questions about other resources not covered?

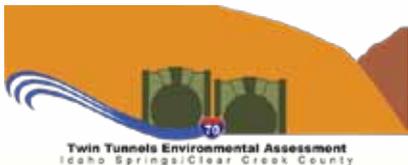


Twin Tunnels EA Impacts and Mitigation



Floodplain Impacts and Mitigation

- No direct, permanent encroachment on the 100 year floodplain will occur (all retaining walls and bridge structures will be placed outside the floodplain)
- Temporary excavation of the existing channel bank and replacement of channel armoring will occur
- No change to channel or floodplain elevations will occur on a permanent basis
- No floodplain mitigation is required



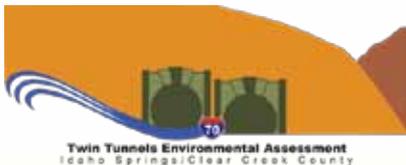
Geological Impacts



- Widened portals will increase exposure to rock falls
- Temporary increases in rock fall hazards during construction
- Temporary need to dispose of large quantities of waste rock
- Temporary increases in erosion

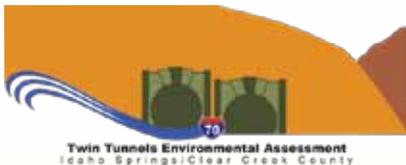
Geologic Mitigation

- Rock fall mitigation will be incorporated into portal design
- Temporary erosion and sediment control BMPs will be implemented
- Periodic maintenance will be needed to cleanup rock slide and debris areas
- Use waste rock on side whenever possible
- Expose of excess waste rock off site



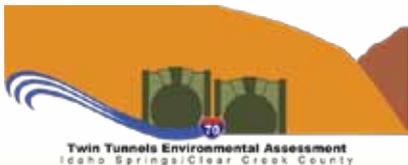
Vegetation Impacts

- Permanent impacts include paving of 5.7 to 6.2 acres of existing vegetation
- Temporary soil disturbance will include 8.6 to 8.74 acres of currently vegetated area
- Temporary increase in susceptibility to the spread of weed species



Vegetation Mitigation

- Areas disturbed during construction (including between new retaining walls and Clear Creek) will be revegetated
- Temporarily disturbed areas will be protected as much as possible and reseeded
- Seeding, mulching and tackifier will be applied in phases during construction
- An Integrated Noxious Weed Management Plan will be developed to prevent the spread of noxious weeds into temporarily disturbed areas



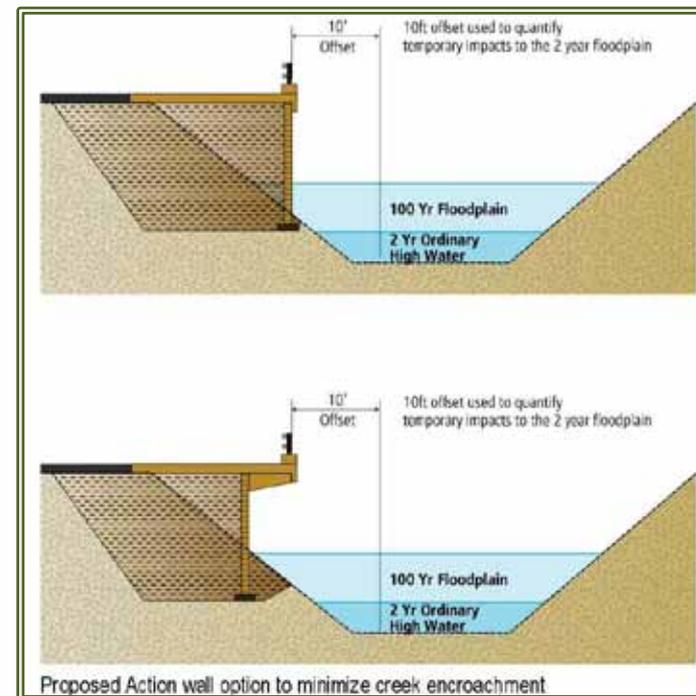
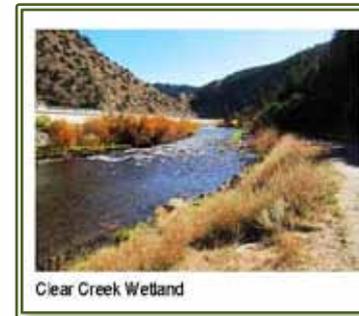
Threatened, Endangered or Sensitive Species Impacts and Mitigation

- No federally threatened, endangered, candidate or proposed species would be affected
- Water that is temporarily used for construction will be addressed by FHWA and CDOT involvement in the Platte River Recovery Implementation Program



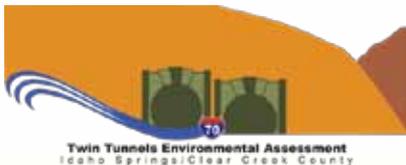
Wetlands and Other Waters of the US Impacts

- No permanent impacts to wetlands will occur
- Temporary impacts to Water of the US in Clear Creek could occur (0.11 to 0.16 acre) due to activities needed to install retaining walls
- Increase in impervious surface area could indirectly effect wetlands



Wetlands and Other Waters of the US Mitigation

- Construction limit fencing will be installed
- Construction staging and material stockpiling will be kept away from wetland areas
- Temporary erosion and sediment control BMPs will be implemented and used around edges of wetlands and adjacent to Clear Creek
- Fertilizers and/or hydro mulching will be controlled around wetlands
- Construction equipment will be controlled around the two year floodplain



Wetlands and Other Waters of the US Mitigation (cont'd)

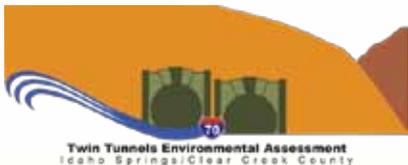
- Equipment refueling will be kept away from wetlands, floodplains and Clear Creek
- Replacement of rip-rap will be monitoring to make sure that additional fill is not placed into the two year floodplain
- Section 404 permit will be acquired



Social and Economic Resources

Permanent Impacts

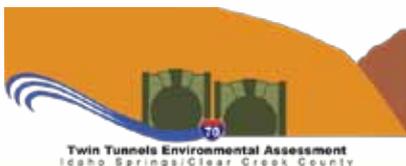
- No adverse permanent impacts and no disproportionately high and adverse effects on minority and/or low-income populations
- Benefits
 - » Travel time and safety improvements for commuters, residents, and emergency response
 - » Safety improvements would reduce number of emergency response calls
- Managed lane benefits
 - » Encourage bus ridership and higher vehicle occupancy to obtain reliable travel time and distribute charge among more riders
 - » Reliable travel time for emergency response



Social and Economic Resources

Construction Impacts

- Travel delays for commuters, residents, emergency response due to 35 mph detour and westbound closures during tunnel blasting
- Closure of CR 314 to local travel during detour operation
- 4 percent shift in traffic to frontage road and SH 9/US 285 during detour operation. Minor effects to businesses that rely on highway traffic for customers.
- Possible reduced revenues for rafting companies if daytime river closures occur during rafting season
- Benefits to city and county businesses from construction spending



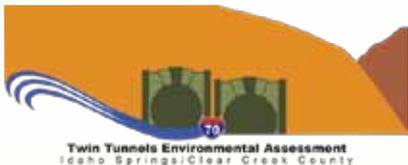
Social and Economic Resources Mitigation

- Implement construction and detour plan to inform residents and business owners of construction and detour activities
- Implement public information strategies to inform travelers of construction activities
- Coordinate with local economic development officials to help develop promotional strategies during construction
- Identify community representatives to partner in the construction traffic control program and provide feedback
- Provide safe, effective directional signage



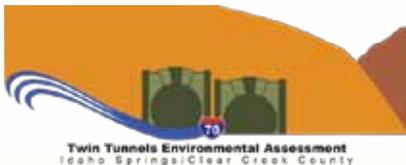
Regulated Materials Impacts

- No adverse permanent impacts expected
 - » No mine wastes or mineralized rock identified in construction area
- Benefits
 - » Safety improvements would reduce risk of crashes and spills
 - » Spill containment structures
- Construction Impacts
 - » Construction on bridges with lead-based paint



Regulated Materials Mitigation

- Implement Materials Management Plan and Health and Safety Plan
- Implement dust suppression and Stormwater Management Plan
- Obtain permit from CDPHE for groundwater discharge if it occurs
- Follow CDOT Spec 250 – Environmental, Health and Safety Management
- Complete modeling to characterize impacts to underground wastewater storage tanks and monitor blasting activities to evaluate effects



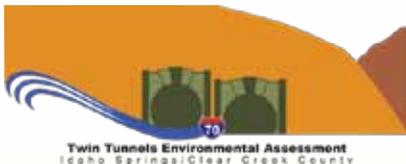
Land Use and Right-of-Way

- Impacts
 - » Acquisition of vacant undevelopable property adjacent to existing chain station
 - » No acquisition outside of CDOT right-of-way at Hidden Valley curve on CR 314
 - » Consistent with land use planning and zoning in study area
- Mitigation
 - » Comply with Uniform Relocation Act



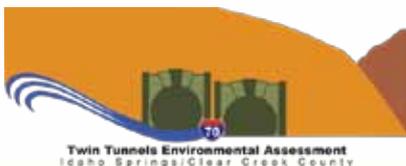
Energy Impacts

- Improved travel speeds during peak travel periods, particularly under Managed Lane operation, would result in lower energy consumption and greenhouse gas emissions for Proposed Action compared to No Action
- Construction would result in energy consumption and greenhouse gas emissions



Energy Mitigation

- Encourage contractor to properly maintain equipment and minimize idling of equipment
- Require contractor to prepare plan for construction worker parking and transport to construction site
- Locate staging areas close to construction area and encourage use of nearby sources for materials, to reduce construction equipment miles traveled
- Implement traffic management techniques to minimize vehicle idling and delays during construction



Recreation Resource Restoration

- Restoration of areas affected by construction to be determined in cooperation with Clear Creek County
- Options to be considered include:
 - » Game check area and Scott Lancaster Memorial Trail
 - » River accesses
 - » Others

