

Colorado Department of Transportation Mitigation Commitment Monitoring and Reporting

Project Information

Project Name: I-70 Floyd Hill to Veterans Memorial Tunnels Environmental Assessment
Environmental Project Manager: Vanessa Henderson
Project Number: NHPP 0703-445, Project Code 21912
Document Type and Date of Approval: EA/FONSI
Project Phase: Planning



I-70 Floyd Hill to Veterans Memorial Tunnels

Mitigation Commitment #	Mitigation Category	Impact from NEPA Document	Locaton of Impact Triggering Mitgiaton	Commitment From Mitigation Table In Source Document Use Exact Wording from Table in Source Document	Responsible Branch	Timing/Phase of Construction Mitigation to be Constructed	Source Document of Mitigation Commitment and Page Number	Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply	Mitigation Status		Agency Coordination		Comments
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1	Air Quality	Dust during construction	Within Project Limits	Obtain any required air quality permits prior to start of construction, including a CDPHE Air Pollutant Emission Notice (APEN), which requires a Fugitive Dust Control Plan to address how dust will be kept at a minimum at the Project site.	CDOT Construction Engineering	Pre-Construction	EA Page 95						
2	Air Quality	Dust during construction	Entire Construction Zone	Monitor for PM10, which will allow for the real-time modification or implementation of various dust control measures during construction.	CDOT Environmental	Construction	EA Page 95						
3	Air Quality	Dust during construction	Within Project Limits	Locate staging areas as far away as possible from residential areas.	CDOT Construction Engineering; Contractor	PreConstruction/ Construction	EA Page 95						
4	Air Quality	Higher pollution emissions in construction areas nearest equipment	Within Project Limits	Locate construction vehicles and equipment with diesel engines as far away as possible from residential areas.	CDOT Construction Engineering; Contractor	Construction	EA Page 95						
5	Air Quality	Higher pollution emissions in construction areas nearest equipment	Within Project Limits	Require heavy construction equipment to use the cleanest available engines or be retrofitted with diesel particulate control technology. Keep construction equipment and vehicles well maintained to ensure exhaust systems are kept in good working order.	CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 95						
6	Air Quality	Higher pollution emissions in construction areas nearest equipment	Within Project Limits	Post signage indicating engines should not idle more than 5 minutes.	CDOT Construction Engineering; Contractor	Construction	EA Page 95						
7	Air Quality	Higher pollution emissions in construction areas nearest equipment	Within Project Limits	Install engine pre-heater devices to eliminate any idling for cold season construction.	CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 95						
8	Air Quality	Higher pollution emissions in construction areas nearest equipment	Within Project Limits	Prohibit tampering with equipment to increase horsepower or defeat an emissions control device's effectiveness.	CDOT Construction Engineering; Contractor	Construction	EA Page 96						
9	Cultural Resources	Although impacts are not expected with the Project as designed, construction would occur near an NRHP-eligible archaeological site	Within Project Limits (protected site location)	Review construction plans by qualified archaeologist to ensure that identified NRHP-eligible archaeological site is not disturbed. If construction may disturb the site, monitor construction by a qualified archaeologist. If site is uncovered during construction, cease work and develop a recovery plan in consultation with the Colorado SHPO if necessary.	CDOT Environmental and CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 96						
10	Cultural Resources	Unexpected discovery of and damage to archaeological resources	Within Project Limits	In the event of an unexpected discovery of archaeological resources, stop work until the CDOT senior staff archaeologist is contacted and the resources have been evaluated to determine their significance, per CDOT Standard Specification 107.23.	CDOT Environmental and CDOT Construction Engineering; Contractor	Construction	EA Page 96						
11	Cultural Resources	Potential disruption to historic tourism and access to historic sites in Idaho Springs	Within Project Limits	Work with the PLT and TT to select community liaisons who will represent historic preservation interests in Idaho Springs and provide assistance and feedback to the traffic control team concerning construction scheduling and mitigation strategies.	CDOT Environmental and CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 96						
12	Cultural Resources	Alteration of viewsheds that change setting for historic properties	Within Project Limits	Incorporate Mountain Mineral Belt design guidelines.	CDOT Design Engineering	Final Design	EA Page 96						
13	Floodplains	Although not expected to occur with the Project as designed, construction within the floodplain can result in changes to base flood elevations or floodplain limits	Within Central and West Section of Project	Perform hydraulic modeling during final design to confirm that the Project would not adversely affect Clear Creek hydrology or result in a rise in water surface elevation of the Clear Creek floodplain. If modeling determines that base flood elevations would rise and require a change in flood mapping, coordinate with the Federal Emergency Management Agency and Clear Creek County floodplain administrator to obtain a Conditional Letter of Map Revision or a Letter of Map Revision to document the changes to the floodplain.	CDOT Design Engineering	Final Design	EA Page 97						
14	Geologic Resources	Rock excavation can cause rockfall hazards that pose a safety risk to the public. Large failures during construction can cause road closures and maintenance.	Along I-70 and CR 314 within Project limits	Incorporate permanent rockfall mitigation during construction, including proven techniques (such as rockfall catchments, mesh, cable netting, fences, scaling, and blasting) to reduce rockfall hazards for new rock cut areas and stabilize slopes.	CDOT Design Engineering and CDOT Construction Engineering	Final Design/ Pre-Construction/ Construction	EA Page 97						
15	Geologic Resources	Rock excavation can cause rockfall hazards that pose a safety risk to the public. Large failures during construction can cause road closures and maintenance.	Along I-70 and CR 314 within Project limits	Prior to blasting, evaluate the rock mass for the likelihood of rockfall occurring. Employ temporary construction BMPs to minimize rockfall potential.	CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 97						
16	Hazardous Materials	Potential mine wastes and other contaminants such as petroleum hydrocarbons and solvents may be uncovered during excavation	In the Central Section	Complete and implement a Project-specific Materials Management Plan (MMP) in coordination with CDPHE that details specific standard operating procedures regarding the identification, sampling, handling and disposal of hazardous materials, including mine-related wastes, petroleum hydrocarbons, solvents, and underground storage tanks that could be encountered during construction of the Project. Include successful provisions included in other Tier 2 projects in the area for managing encountered mine wastes in the MMP that are encountered.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering	Pre-Construction/ Construction	EA Page 97						

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17	Hazardous Materials	Potential mine wastes and other contaminants such as petroleum hydrocarbons and solvents may be uncovered during excavation	In the Central Section	Complete and implement a Health and Safety Plan to address hazardous materials that could be uncovered during construction.	CDOT Construction Engineering; Contractor	Pre-Construction	EA Page 98						
18	Hazardous Materials	Potential mine wastes and other contaminants such as petroleum hydrocarbons and solvents may be uncovered during excavation	In the Central Section	Implement BMPs to prevent potential hazardous materials from being exposed in the air (dust suppression), or to impact surface waters such as Clear Creek (stormwater controls).	CDOT Construction Engineering; Contractor	Construction	EA Page 98						
19	Hazardous Materials	Potential mine wastes and other contaminants such as petroleum hydrocarbons and solvents may be uncovered during excavation	In the Central Section	Workers on this Project must follow CDOT Specification 250 – Environmental, Health and Safety Management during excavation activities at the Project.	CDOT Construction Engineering; Contractor	Construction	EA Page 98						
20	Hazardous Materials	Alluvial groundwater may be impacted with heavy metals; it is possible that groundwater will be displaced temporarily during construction	In the Central Section	Consider design adaptations to minimize intrusion of groundwater into bridge and/or viaduct excavations, which may include, but should not be limited to, utilizing driven piles rather than drilled caissons, installation of sheet piling to reduce groundwater intrusion into subsurface excavations, or altering grading to minimize or eliminate excavations that extend below the groundwater interface.	CDOT Design Engineering and CDOT Construction Engineering	Final Design	EA Page 98						
21	Hazardous Materials	Alluvial groundwater may be impacted with heavy metals; it is possible that groundwater will be displaced temporarily during construction	In the Central Section	Coordinate with the CDPHE Water Quality Control Division (WQCD) and obtain necessary permits for dewatering and discharge to Clear Creek, which may include a Construction Dewatering Activities permit or a Remediation Activities permit.	CDOT Environmental and CDOT Construction Engineering	Pre-Construction	EA Page 98						
22	Hazardous Materials	Alluvial groundwater may be impacted with heavy metals; it is possible that groundwater will be displaced temporarily during construction	In the Central Section	Treat and discharge groundwater in accordance with the CDPHE-WQCD permit as applicable.	CDOT Construction Engineering; Contractor	Construction	EA Page 98						
23	Hazardous Materials	Regulated materials such as asbestos and/or lead-based paint may be present on bridges, buildings, or structures that would require demolition	In the Central and West Sections	Conduct appropriate inspections by certified personnel for asbestos and lead-based paint on structures to be modified or demolished prior to demolition or construction.	CDOT Environmental and CDOT Construction Engineering	Pre-Construction	EA Page 99						
24	Hazardous Materials	Regulated materials such as asbestos and/or lead-based paint may be present on bridges, buildings, structures, guardrails or signs that would be disturbed or require demolition	In the Central and West Sections	Dispose or recycle demolition materials depending on the nature of the materials that are present (if any). Abatement actions may be required by a licensed abatement contractor. Alternatively, metal components should be recycled; the Contractor must notify the recycling facility of the presence of lead-based paint, if applicable. Additional mitigations may be recommended depending on the type of materials, concentrations, and other regulations, including those promulgated by the CDPHE and Occupational Safety and Health Administration..	CDOT Construction Engineering; Contractor	Construction	EA Page 99						
25	Hazardous Materials	Purchase of real estate (i.e., right of way), including structures slated for demolition (if any)	Within Project Limits	Conduct ASTM Standard Phase I Environmental Site Assessment prior to real estate purchases.	CDOT Environmental	Pre-Construction	EA Page 99						
26	Hazardous Materials	Direct and/or indirect impacts to surface waters and wetlands	Within Project Limits	Refuel equipment within designated refueling containment area away from floodplain, creeks, and wetlands.	CDOT Construction Engineering; Contractor	Construction	EA Page 99						
27	Noise	Continued noise levels in exceedance of CDOT noise abatement criteria	In the West Section, north of I 70 in Idaho Springs	Conduct a Benefitted Receptor Preference Survey for owners and residents benefitted by the recommended noise wall in eastern Idaho Springs [see I 70 Floyd Hill to Veterans Memorial Tunnels Noise Technical Report (EA Appendix A)].	CDOT Environmental	Pre-Construction	EA Page 99						
28	Noise	Continued noise levels in exceedance of CDOT noise abatement criteria	In the West Section, north of I 70 in Idaho Springs	Construct recommended noise wall north of I 70 in East Idaho Springs if benefitted receptors support.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering; Contractor	Construction	EA Page 99						
29	Noise	Noise impacts at nearby residences and recreation facilities	Residential properties and recreational facilities within Project limits	Include strategies in public information plan to notify noise-sensitive receptors near construction work that may result in noise.	CDOT Public Involvement, CDOT Construction Engineering	Pre-Construction/ Construction	EA Page 100						
30	Noise	Noise impacts at nearby residences and recreation facilities	Residential properties and recreational facilities within Project limits	Keep exhaust systems on equipment in good working order. Maintain equipment on a regular basis; conduct regular inspections to ensure maintenance is being conducted.	CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 100						
31	Noise	Noise impacts at nearby residences and recreation facilities	Residential properties and recreational facilities within Project limits	Locate haul roads and other noisy activities that are not location-specific (such as rock crushing, equipment maintenance, etc.) away from noise-sensitive receptors to the extent possible.	CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 100						
32	Noise	Noise impacts at nearby residences and recreation facilities	Residential properties and recreational facilities within Project limits	Place stationary equipment as far from sensitive receptors as possible.	CDOT Construction Engineering; Contractor	Construction	EA Page 100						
33	Noise	Noise impacts at nearby residences and recreation facilities	Residential properties and recreational facilities within Project limits	Adhere to Colorado Noise Statute 23-5-12-103 for construction activities in Clear Creek County. Adhere to the Jefferson County noise abatement policy For construction activities in Jefferson County. Coordinate with local officials if variances are needed for nighttime construction work to maintain traffic.	CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 100						

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34	Recreational Resources	Trucks pushing snow over the edge of the viaduct onto the Scott Lancaster Memorial Trail	In the Central Section between US 6 interchange and Hidden Valley/ Central City interchange	Include snow barriers and fences in design where feasible to direct snow off the viaduct in locations that minimize impacts to the trail.	CDOT Design Engineering	Final Design	EA Page 100						
35	Recreational Resources	Elimination of the pull-off on the side of CR 314 that currently accommodates Clear Creek Access Point #5 downstream of the Game Check Park as shown in Exhibit 3 of the I-70 Floyd Hill to Veterans Memorial Tunnels Recreation Technical Report (EA Appendix A14)	In the West Section—CR 314 to east of the Veterans Memorial Tunnels	Work with Clear Creek County through the Greenway ITF to develop Clear Creek access improvements along the corridor.	CDOT Environmental and CDOT Design Engineering	Final Design	EA Page 101						
36	Recreational Resources	Temporary closures to Clear Creek recreational access points	In the Central Section	Coordinate with rafting companies prior to construction to develop communication protocols in the event of unanticipated river closures during rafting season. Plan creek closures outside of rafting season (June through August) to minimize effects to operations.	CDOT Public Involvement and CDOT Construction Engineering; Contractor	Pre-Construction	EA Page 101						
37	Recreational Resources	Safety risks to recreationalists along Clear Creek	In the Central Section near banks of Clear Creek	Fence off construction areas near the banks of the creek to prevent access by anglers or other pedestrians.	CDOT Construction Engineering; Contractor	Construction	EA Page 101						
38	Recreational Resources	Temporary closures to Scott Lancaster Memorial Trail, Clear Creek recreational access points, and informal rock-climbing area	In the Central Section	Place temporary signage along the trail and near the Clear Creek access points and rock-climbing area to warn recreationalists of viaduct construction and rock blasting activities and provide sources of information on the Project and potential trail closures.	CDOT Construction Engineering; Contractor	Construction	EA Page 101						
39	Recreational Resources	Temporary closures to Scott Lancaster Memorial Trail, Clear Creek recreational access points, and informal rock-climbing area	In the Central Section	Establish a safety-critical zone in the vicinity of rock blasting and evacuate recreational users before, during, and after rock blasting (approximately 30-minute durations).	CDOT Construction Engineering; Contractor	Construction	EA Page 101						
40	Recreational Resources	Resurfacing the Scott Lancaster Memorial Trail	In the Central and West Sections—US 6 interchange to Game Check Area Park	Clearly sign and provide advance notice of trail closures Avoid trail closures between 4:00 PM on Fridays and 8:00 AM on Mondays as possible.	CDOT Public Involvement and CDOT Construction Engineering; Contractor	Construction	EA Page 101						
41	Recreational Resources	Temporary impediment to recreational creek activities, including rafting and fishing, due to periodic closures of Clear Creek	In the West Section between Hidden Valley/Central City interchange and the Veterans Memorial Tunnels	Unless necessitated by safety concerns, river closures due to rock blasting and creek realignment will not occur during rafting season (June through August).	CDOT Construction Engineering; Contractor	Construction	EA Page 102						
42	Recreational Resources	Temporary impediment to recreational creek activities, including rafting and fishing, due to periodic closures of Clear Creek	In the West Section between Hidden Valley/Central City interchange and the Veterans Memorial Tunnels	Coordinate with rafting companies prior to construction to develop communication protocols in the event of unanticipated river closures during rafting season (June through August).	CDOT Public Involvement and CDOT Construction Engineering; Contractor	Pre-Construction	EA Page 102						
43	Recreational Resources	Safety risks to recreationalists along Clear Creek	In the West Section between Hidden Valley/Central City interchange and the Veterans Memorial Tunnels	Fence off construction areas near the banks of the creek to prevent access by anglers or other pedestrians.	CDOT Construction Engineering; Contractor	Construction	EA Page 102						
44	Recreational Resources	Temporary impediment to recreational creek activities, including rafting and fishing, due to periodic closures of Clear Creek	In the West Section between Hidden Valley/Central City interchange and the Veterans Memorial Tunnels	Place temporary signage along Clear Creek to warn recreationalists of creek realignment and rock blasting activities and provide sources of information on the Project and potential river closures.	CDOT Construction Engineering; Contractor	Construction	EA Page 102						
45	Recreational Resources	Temporary impediment to recreational creek activities, including rafting and fishing, due to periodic closures of Clear Creek	In the West Section between Hidden Valley/Central City interchange and the Veterans Memorial Tunnels	Establish a safety-critical zone in the vicinity of rock blasting and evacuate recreational users before, during, and after rock blasting (approximately 30-minute durations).	CDOT Construction Engineering; Contractor	Construction	EA Page 102						

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46	Right of Way	Acquisition of public and private property	In the Central and West Sections	For any person(s) whose real property interests may be impacted by this project, the acquisition of those property interests will comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act). The Uniform Act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from federal or federally assisted programs or projects. It was created to provide for and ensure the fair and equitable treatment of all such persons. All impacted owners will be provided notification of the acquiring agency's intent to acquire an interest in their property including a written offer letter of just compensation specifically describing those property interests. A right of way specialist will be assigned to each property owner to assist them with this process.	CDOT Design Engineering and CDOT Right of Way	Final Design/Pre-Construction	EA Page 103						
47	Socioeconomic Resources	Reduction of patronage and revenue for Two Bears Tap and Grill and river recreation outfitters	North of US 6 interchange	Maintain access to Two Bears Tap and Grill and river recreation outfitters at US 6 through the newly constructed frontage road, which will connect to I 70 at the Hidden Valley/Central City interchange to the west. Provide signage for affected businesses to direct customers to the new accesses.	CDOT Construction Engineering; Contractor	Final Design/Construction/Post-Construction	EA Page 103						
48	Socioeconomic Resources	Increase in emergency response travel times between Clear Creek County and medical services in Jefferson County	Within Project limits	Develop an emergency service provider coordination plan that will include procedures for notifying emergency service providers (Colorado State Patrol, sheriff, police, fire dispatchers, ambulance providers, etc.) of closures or traffic delays and providing a clear path through the construction zone when needed. Maintain access for emergency vehicles through the Project area at all times.	CDOT Construction Engineering; Contractor	Pre-Construction/Construction	EA Page 103						
49	Socioeconomic Resources	Increase in travel times to reach residences, businesses, and recreational destinations	Within Project limits	Develop and implement a public information plan and work with local public information officers to disseminate construction information to the traveling public. The public information plan will define strategies such as media advisories, variable message signs, advance signs, a telephone hotline, real-time web cameras, notifications to nearby noise-sensitive receptors of upcoming construction work that may result in noise, and alternate route advisories to alert travelers to construction activities.	CDOT Public Involvement and CDOT Construction Engineering; Contractor	Pre-Construction/Construction	EA Page 104						
50	Socioeconomic Resources	Increase in travel times to reach residences, businesses, and recreational destinations	Within Project limits	Solicit input from Idaho Springs and Clear Creek County on the construction traffic control program and avoid construction during peak directional periods. Work requiring lane closures will be conducted at night as much as possible in accordance with CDOT lane closure strategies.	CDOT Public Involvement, CDOT Traffic, and CDOT Construction Engineering; Contractor	Pre-Construction/Construction	EA Page 104						
51	Socioeconomic Resources	Economic losses due to reduced through-traveler patronage at local businesses	Two Bears Tap and Grill and businesses in Idaho Springs	Provide detailed construction and detour plans to business owners in the surrounding area as far in advance as possible Maintain access to Two Bears Tap and Grill throughout construction and provide well-placed and highly visible signs to direct patrons to businesses.	CDOT Public Involvement and CDOT Construction Engineering; Contractor	Pre-Construction/Construction	EA Page 104						
52	Threatened and Endangered Species	Potential impacts to Townsend's big-eared bat foraging habitat	Within Project Limits	Avoid unnecessary disturbance to existing trees and shrubs to the maximum extent possible. Revegetate disturbed areas with native species.	CDOT Construction Engineering; Contractor	Construction/Post-Construction	EA Page 104						
53	Threatened and Endangered Species	Impacts to Townsend's big-eared bats foraging behavior	Within Project limits	Use shielded lighting during all night work activities.	CDOT Construction Engineering; Contractor	Construction	EA Page 104						
54	Threatened and Endangered Species	Potential impacts to PMJM and northern leopard frog habitat	South side of I-70 between the Soda Creek Road and Exit 247, Hyland Hills/Floyd Hill interchanges	Place wildlife fence outside or on the edge of riparian areas to limit disturbance to PMJM and northern leopard frog habitat. Install wildlife fence outside of the PMJM hibernation period (September to May), coordinate with the USFWS if work needs occur during these months.	CDOT Design Engineering and CDOT Construction Engineering; Contractor	Final Design/Construction	EA Page 104						
55	Threatened and Endangered Species	Potential impacts to PMJM and northern leopard frog habitat	East Section of the Project	Identify and implement a no work zone for all suitable PMJM habitat, and install construction limit fencing to protect PMJM habitat from construction activities.	CDOT Environmental and CDOT Construction Engineering; Contractor	Final Design/Construction	EA Page 105						
56	Threatened and Endangered Species	Potential impacts to PMJM and northern leopard frog habitat	East Section of the Project	Follow measures listed in the I 70 Mountain Corridor Programmatic Biological Opinion (USFWS, 2011) for all areas identified as suitable for PMJM habitat.	CDOT Environmental and CDOT Construction Engineering; Contractor	Final Design/Construction	EA Page 105						
57	Threatened and Endangered Species	Introduction and spread of noxious weeds, which could impact PMJM and northern leopard frog habitat	Within Project Limits	Develop and implement an Integrated Noxious Weed Management Plan (see commitment #61).	CDOT Construction Engineering; Contractor	Pre-Construction/Construction	EA Page 105						
58	Utilities	Disturbance to underground utilities	Under I 70 between approximately MP 242.4 and MP 244.8	Coordinate with utility owners and operators to identify construction requirements and financial responsibilities for relocations.	CDOT Construction Engineering	Pre-Construction/Construction	EA Page 105						
59	Vegetation and Noxious Weeds	Reclamation of existing roadway that would not be incorporated into the Proposed Action	Within Project Limits	Develop a landscape plan to be approved by a CDOT landscape architect for all reclamation areas prior to construction. Re-vegetate reclaimed areas with native species to replicate or enhance native vegetative communities.	CDOT Design Engineering	Pre-Construction/Construction	EA Page 105						

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60	Vegetation and Noxious Weeds	Clearing and removal of vegetation exposes soils to erosion and disturbs habitat	Within Project Limits	Re-vegetate and stabilize temporarily disturbed areas.	CDOT Construction Engineering; Contractor	Post-Construction	EA Page 105						
61	Vegetation and Noxious Weeds	Potential to introduce noxious weeds or contribute to the spread of noxious weeds	Within Project Limits	Conduct a noxious weed survey prior to construction to map existing weeds within the Project area. Develop and implement an Integrated Noxious Weed Management Plan to prevent the spread of noxious weeds into temporarily disturbed areas. Implement measures to control noxious weed spread, such as: •Salvage weed-free topsoil for use in seeding •CDOT Standard Specification Section 217—Herbicide Treatment will be incorporated into the Project Specifications	CDOT Environmental and CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 106						
62	Visual Resources	Introduction of additional built elements into the landscape, causing potential for additional disruption of visual coherence in the landscape and strong visual contrast with natural features.	Within Project Limits	Follow <i>I 70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015) and <i>I 70 Mountain Corridor Design Criteria</i> (CDOT, n.d.), and consult with stakeholders during design to address design aesthetics and exceptions, using the CSS process, in a manner similar to the previous Twin Tunnels and Westbound Peak Period Shoulder Lanes Tier 2 projects.	CDOT Design Engineering and CDOT Environmental	Final Design/Pre-Construction/ Construction	EA Page 106						
63	Visual Resources	Introduction of additional built elements into the landscape, causing potential for additional disruption of visual coherence in the landscape and strong visual contrast with natural features	Within Project limits	Develop a site-specific Tier 2 Aesthetic Plan and Lighting Plan.	CDOT Design Engineering	Final Design	EA Page 106						
64	Visual Resources	Introduction of additional built elements into the landscape, causing potential for additional disruption of visual coherence in the landscape and strong visual contrast with natural features	Within Project limits	Conduct rock blasting activities in a manner adhering to <i>I-70 Mountain Corridor Aesthetics Guidance</i> (CDOT, 2015) and <i>I-70 Mountain Corridor Design Criteria</i> (CDOT, n.d.); use naturalized custom cut methods, use scatter blasting techniques, and provide for adequate rockfall area at the base.	CDOT Construction Engineering; Contractor	Construction	EA Page 106						
65	Visual Resources	Blocking views from some locations along the Greenway trail and Clear Creek	In the Central Section at viaduct crossings of the Greenway trail and Clear Creek	Conduct a study of views during final design so that pier placement minimizes blockage of views and frames views if possible as trail and creek users move past piers.	CDOT Environmental and CDOT Design Engineering	Final Design	EA Page 106						
66	Visual Resources	Shading of landforms and vegetation under the viaduct may affect visual quality	In the Central Section under the viaduct	Conduct a shading study during final design to understand location of shading impacts by season and adjust design to minimize impacts; for example, the viaduct height may be adjusted to minimize shading in some areas, and the Greenway trail alignment and amenities may be adjusted to avoid shady areas in winter.	CDOT Environmental and CDOT Design Engineering	Final Design	EA Page 107						
67	Visual Resources	Introduction of new built element into the landscape, causing additional disruption of visual coherence in the landscape and strong visual contrast with natural features	Within Project limits	Conduct a study of views and coordinate with the CDOT Landscape Architect to determine signage placement during final design so that Express Lane signage placement minimizes blockage of views while also complying with the <i>Manual on Uniform Traffic Control Devices for Streets and Highways</i> .	CDOT Environmental and CDOT Design Engineering	Final Design	EA Page 107						
68	Visual Resources	Visual disorder due to presence of equipment, dust and debris, temporary fencing, material stockpiles, barren landforms, nighttime construction lighting, etc.	Within Project Limits	Develop a site-specific Tier 2 Aesthetic Plan and Lighting Plan, including plans for construction activities.	CDOT Design Engineering	Final Design	EA Page 107						
69	Water Quality	Impacts to water resources as a result of water quality degradation	Within Project Limits	Train winter maintenance staff to implement non-structural CMS according to proper standard operating procedures.	CDOT Maintenance	Construction/Post-Construction	EA Page 107						
70	Water Quality	Elevated sediment and chloride levels in Clear Creek due to use of traction sand and liquid and solid deicer salts	Within Project Limits	Refine and implement water quality CMs recommended by SWEEP ITF and included in the <i>I-70 Floyd Hill to Veterans Memorial Tunnels Drainage and Water Quality Technical Report</i> (EA Appendix A), including detention basins to capture solids and associated pollutants and vegetated swales to capture and dilute salt and other dissolved pollutants to the extent possible.	CDOT Design Engineering and CDOT Construction Engineering	Final Design/ Construction	EA Page 107						
71	Water Quality	Impacts to water resources as a result of water quality degradation	Within Project Limits	Implement appropriate construction BMPs for erosion and sediment control according to the CDOT <i>Erosion Control and Storm Water Quality Guide</i> (CDOT, 2002), and develop a stormwater management plan, which includes water quality monitoring.	CDOT Design Engineering and CDOT Construction Engineering; Contractor	Pre-Construction/ Construction/Post-Construction	EA Page 107						
72	Water Quality	Erosion and increased sedimentation to adjacent water resources	Within Project Limits	Revegetate disturbed areas and implement permanent and temporary erosion controls measures to stabilize vegetation in non-rocky areas. Apply mulch or mulch tackifier to prevent erosion in areas where permanent seeding operations are not feasible due to seasonal constraints (e.g., summer and winter months).	CDOT Construction Engineering; Contractor	Construction/Post-Construction	EA Page 108						
73	Water Quality	Impacts to water resources as a result of water quality degradation	Within Project Limits	Obtain and follow provisions of all applicable state and local stormwater and dewatering permits.	CDOT Construction Engineering; Contractor	Pre-Construction/Post-Construction	EA Page 108						
74	Wetlands and Aquatic Resources	Direct and/or indirect impacts to surface waters and wetlands	Within Project Limits	Install construction limit fencing around all delineated and mapped wetlands in the Project area to protect wetlands that are not directly impacted by the Project.	CDOT Construction Engineering; Contractor	Pre-Construction/ Construction	EA Page 108						
75	Wetlands and Aquatic Resources	Direct and/or indirect impacts to surface waters and wetlands	Within Project Limits	Maintain temporary erosion controls and plantings to stabilize temporarily disturbed wetland areas.	CDOT Construction Engineering; Contractor	Construction/Post-Construction	EA Page 108						

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Project Phase: Planning



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76	Wetlands and Aquatic Resources	Direct and/or indirect impacts to surface waters and wetlands	Within Project Limits	Prohibit fertilizers and/or hydro mulching within 50 feet of wetlands.	CDOT Construction Engineering; Contractor	Construction/Post-Construction	EA Page 108						
77	Wetlands and Aquatic Resources	Direct and/or indirect impacts to surface waters and wetlands	Within and adjacent to all mapped wetlands and surface waters	Ensure BMPs and containment structures are in place for work conducted within and adjacent to the OHWM and mapped wetlands to prevent concrete washout and other potential pollutants from reaching wetlands and surface waters.	CDOT Construction Engineering; Contractor	Pre-Construction/Construction	EA Page 108						
78	Wetlands and Aquatic Resources	Direct impacts to wetlands	Within identified and permitted wetland areas.	Replace impacted wetlands at a ratio of 1:1, likely at an offsite location within the watershed.	CDOT Environmental and CDOT Design Engineering	Post-Construction	EA Page 108						
79	Wetlands and Aquatic Resources	Direct impacts to Clear Creek surface waters	Clear Creek, West Section of Project	Obtain a Section 404 Individual Permit. * Verify impacts and identify any additional encroachment within the OHWM prior to submitting 404 Permit application. The mitigation plan will include mitigation of at least a 1:1 linear area of functional stream length impacted. * Conduct a stream functional assessment to determine the functional length of the creek that needs to be mitigated. * Coordinate with USACE, EPA, CPW, rafting groups, and the SWEEP ITF to develop the mitigation plan before submitting the Section 404 permit application.	CDOT Environmental	Final Design/Pre-Construction	EA Page 109						
80	Wetlands and Aquatic Resources	Direct impacts to surface waters	Within identified and permitted surface water areas.	Closely monitor construction activities to ensure that additional fill is not placed within the OHWM.	CDOT Construction Engineering; Contractor	Construction	EA Page 109						
81	Wetlands and Aquatic Resources	Disturbance of vegetation and potential pollutant discharges into wetlands	Construction staging areas within the Project area	Locate construction staging and materials stockpiling at least 50 feet from the edge of wetlands or creeks, when possible, with no staging in wetlands. Determine specific staging locations during construction planning to verify this buffer is achievable considering the narrowness of the corridor and limited areas available. If this buffer is not achievable, CDOT will consider allowing materials closer to the edge of wetlands or the edge of water and identify appropriate, additional BMPs that would be required to minimize disturbance of vegetation and prevent pollutant discharges into sensitive habitats. BMPs will be determined on a site-by-site basis and any modifications will require CDOT environmental staff's approval.	CDOT Construction Engineering and CDOT Environmental; Contractor	Pre-Construction/Construction	EA Page 109						
82	Wetlands and Aquatic Resources	Temporary impacts to wetlands	Construction activities at wetland and riparian areas	Use timber mats or geotextile/ straw to minimize temporary impacts to wetlands from construction equipment traversing wetlands areas.	CDOT Construction Engineering; Contractor	Construction	EA Page 110						
83	Wetlands and Aquatic Resources	Temporary impacts to surface waters	Construction of new bridges at Clear Creek crossings	Prohibit construction equipment from entering the OHWM except where identified on design plans.	CDOT Construction Engineering; Contractor	Final Design/Construction	EA Page 110						
84	Wildlife and Aquatic Species	Habitat fragmentation, loss of connectivity between populations, decreased genetic diversity	Within Project limits	Provide new wildlife crossings along the I 70 Mountain Corridor within CDOT Region 1 boundary (east of the Eisenhower-Johnson Memorial Tunnels) based on ALIVE recommendations and FHWA Eco-Logical guidance described in Appendix C to the <i>I 70 Floyd Hill to Veterans Memorial Tunnels Terrestrial Wildlife and Aquatic Species Technical Report</i> (EA Appendix A23). •Investment in crossing(s) will be commensurate with the cost of a wildlife overpass in the Floyd Hill project area, which is currently estimated at \$17.6 million. •Revisit and refine designs for potential crossing locations outside the Project area that the ALIVE ITF evaluated and prioritized for the new crossing(s). •Design, fund, and construct new wildlife crossing(s) before the Project closeout is completed.	CDOT Environmental and CDOT Design Engineering	Construction/Post-Construction	EA Page 110						
85	Wildlife and Aquatic Species	Habitat fragmentation, loss of connectivity between populations, decreased genetic diversity	In the East Section, Johnson Gulch culvert (MP 244.9)	Consider opportunities and coordinate with ALIVE ITF during final design to review wildlife passage for carnivores and medium-sized fauna at the Johnson Gulch (MP 244.9) culvert.	CDOT Environmental and CDOT Design Engineering	Final Design	EA Page 110						

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86	Wildlife and Aquatic Species	Potential for increased animal-vehicle collisions	In the East Section	Install permanent wildlife fencing on the north and south side of I-70 from the Hyland Hills/Floyd Hill interchange to Soda Creek Road (approximately MP 249) in accordance with recommendations described in Attachment C to the <i>I-70 Floyd Hill to Veterans Memorial Tunnels Terrestrial Wildlife and Aquatic Species Technical Report</i> (EA Appendix A23). Include wildlife guards at interchanges, escape ramps (at least four per mile; ramps should be located near the fence ends and around the Beaver Brook/Floyd Hill interchange), and, if needed, pedestrian access gates. Consider improvements (e.g., pathways, vegetation enhancements) to improve the functionality of the existing Soda Creek Road bridge for wildlife passage during final design of fence ends at this location. in accordance with recommendations described in Attachment C to the <i>I-70 Floyd Hill to Veterans Memorial Tunnels Terrestrial Wildlife and Aquatic Species Technical Report</i> (EA Appendix A23).	CDOT Environmental, CDOT Design Engineering, and CDOT Construction Engineering; Contractor	Final Design/Construction	EA Page 111						
87	Wildlife and Aquatic Species	Potential for increased animal-vehicle collisions	In the Central Section	Incorporate a wildlife bench under new US 6 bridges adjacent to Clear Creek to improve the creek bottom to allow wildlife passage under I-70.	CDOT Design Engineering	Final Design	EA Page 111						
88	Wildlife and Aquatic Species	Permanent and temporary loss of riparian vegetation and habitats, including within SB 40 jurisdictional areas	Within Project limits	Develop and implement restoration plan for affected riparian and aquatic habitats in consultation with the USACE, CPW, and CDOT biologist. •Survey riparian areas subject to SB 40 certification with CPW •Develop and implement SB 40 planting plan to replace trees and shrubs according to SB 40 requirements •Riparian trees and shrubs removed during construction will be replaced at a ratio of 1:1 based on a stem count of all trees with diameter at breast height of 2 inches or greater for riparian trees •Replace riparian shrubs removed during construction, whether native or non-native, with native species, based on their preconstruction distribution and coverage. •Install temporary construction fencing to protect riparian areas during construction.	CDOT Environmental, CDOT Design Engineering, and CDOT Construction Engineering; Contractor	Pre-Construction/Construction/Post-Construction	EA Page 112						
89	Wildlife and Aquatic Species	Possible effect to raptors, including temporary displacement, auditory disturbance, and habitat loss	Within Project limits	Conduct raptor nest surveys within a 0.5-mile buffer from the construction site before construction; if raptor nests are identified within the buffer, coordinate with CPW and the USFWS to determine an appropriate course of action, which may include, but is not limited to, a delay in construction to avoid the breeding season. Follow CPW Recommended Buffer Zones and Seasonal Restrictions for Colorado raptors (CPW, 2020).	CDOT Environmental and CDOT Construction Engineering	Pre-Construction/Construction	EA Page 112						
90	Wildlife and Aquatic Species	Potential impacts to migratory birds and/or their habitats	Within Project limits	Incorporate a CDOT Special Specification 240 (Protection of Migratory Birds) as part of the final plan set to avoid impacts on nesting raptors and migratory birds in accordance with the Migratory Bird Treaty Act. Modify Specification 240, as needed, to survey for any nesting migratory birds or raptors that may be present outside the typical breeding season. Conduct a nest survey by a qualified biologist before construction. If active nests are found, coordinate with CPW and the USFWS to determine an appropriate course of action, which may include, but is not limited to, a delay in construction to avoid the breeding season.	CDOT Environmental, CDOT Design Engineering, and CDOT Construction Engineering	Final Design/Pre-Construction	EA Page 113						
91	Wildlife and Aquatic Species	Impacts to movement of nocturnal species and birds that migrate at night	Within Project limits	Reduce nighttime lighting to minimum levels necessary and use shielded lighting.	CDOT Construction Engineering; Contractor	Construction	EA Page 113						
92	Wildlife and Aquatic Species	Permanent and temporary removal of upland trees and vegetation and loss of wildlife habitat	Within Project limits	Develop a landscape plan that includes the following measures: •Reseed temporarily disturbed areas with native grasses and forbs, and plant native trees and shrubs where possible. •Minimize the spatial extent of disturbance and the amount of time that disturbed areas are allowed to remain non-vegetated.	CDOT Design Engineering	Pre-Construction/Construction	EA Page 113						
93	Wildlife and Aquatic Species	Permanent impacts to bighorn sheep winter range, summer range, and severe winter range	In the Central and West Sections	Review rock blasting activities in bighorn sheep habitat locations with the ALIVE ITF to determine whether measures can be taken to minimize impacts of rock excavation on bighorn sheep during construction.	CDOT Environmental and CDOT Construction Engineering	Pre-Construction/Construction	EA Page 114						
94	Wildlife and Aquatic Species	Fish and invertebrate mortality. Smothering of downstream spawning gravel beds, eggs, and emerging fry. Downstream pools, used for fish overwintering, could be destroyed or filled in. Macroinvertebrate mortality. Temporary impacts to fish migration and access to upstream spawning habitat.	In the West Section	Prohibit construction work in the existing channel of Clear Creek between October 1 and May 31 without prior written approval from CPW to protect brown trout spawning habitat. Implement Section 404 Individual Permit requirements (see Mitigation #79).	CDOT Construction Engineering; Contractor	Construction/Post-Construction	EA Page 114						

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95	Wildlife and Aquatic Species	Inadvertently trap birds, including small forest owls, within rockfall mesh	Within Project limits where rock will be excavated	Develop and implement rockfall mitigation, as practical, in coordination with the ALIVE ITF to reduce trapping of birds.	CDOT Environmental, CDOT Design Engineering, and CDOT Construction Engineering; Contractor	Pre-Construction/Construction	EA Page 114						