APPENDIX C

REVISED IMPACT AND MITIGATION TABLE

Table C-1. Summary of Impacts and Mitigation for the Proposed Action, I-70 West Vail Pass Auxiliary Lanes

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
1	CSS	CSS design criteria exceptions	CDOT will create a CSS Design Criteria Exception ITF to further examine and refine the design criteria exceptions. The ITF will be multidisciplinary and will consist, at a minimum, of members with expertise in the following disciplines, similar to the existing Project TT: engineering, wildlife, water quality, recreation, freight, aesthetics, and representatives from CDOT, USFS, and FHWA. This ITF will be convened during the final design life cycle phase of the project and will focus on the CSS design exceptions that are pertinent to the design work at that time.	CDOT Design Engineering and CDOT Environmental	Design
2	Transportation – Travel Delays	Increases traffic delays and backups during construction	• Extensive warning signage for work zone will warn drivers of downstream traffic delays and backups. • CDOT will work with the Contractor to avoid closures to the greatest extent possible during peak periods.	CDOT Design Engineering, CDOT Traffic, and CDOT Construction Engineering Contractor	Design Construction
3	Transportation – Emergency Response	Limited shoulder area for emergency response during construction	CDOT will work with the Contractor to maximize the number and frequency of emergency pull-off areas to the greatest extent possible through the work zone.	CDOT Design Engineering, CDOT Traffic, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
4	Transportation – Highway Closures	Increased traffic delays and backups during construction	• CDOT will work with the Contractor to avoid closures to the greatest extent possible during peak periods. • CDOT and the Contractor will notify emergency service providers of the timing of impending highway closures during construction.	CDOT Design Engineering, CDOT Traffic, and CDOT Construction Engineering Contractor	Design Construction
5	Transportation – Safety	FHWA Design Criteria Exceptions for sight distance and grades at several locations	• Providing six-foot inside shoulders, wider outside shoulder width at several locations, the added auxiliary lane in each direction, improved curve radii and superelevation, and improved signage with dynamic and enhanced advance curve signs will minimize the minimal safety impacts of the reduced sight distance. • Providing lower truck chain station improvements, truck emergency ramp improvements, the added auxiliary lane in each direction, improved curve radii and superelevation, and improved signage with dynamic and enhanced advance curve signs will minimize the safety impacts of maintaining the existing I-70 grades.	CDOT Design Engineering, CDOT Traffic, and CDOT Construction Engineering Contractor	Design Construction
6	Transportation – Safety	Increased potential for crashes during construction	• Extensive warning signage for work zone will warn drivers of downstream traffic delays and backups and provide information on appropriate speeds. • Work requiring lane closures will follow CDOT's lane closure policy. CDOT will work with the Contractor to avoid closures to the greatest extent possible and closures will be	CDOT Design Engineering, CDOT Traffic, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			minimized to the greatest extent possible during peak periods.		
7	Air Quality	Dust from ground-disturbing activities during construction	• An Air Pollutant Emissions Notice (APEN) for projects over 25 acres and that last more than 6 months in length may be needed. A permit may be needed if emissions exceed permit thresholds. If needed, the APEN and permit-will cover Air Pollution Control Division (APCD) required mitigation measures for active construction. If required, prepare a Fugitive Dust Control Plan. Contractor will utilize dust control methods such as: • Apply water or wetting agents to manage dust when appropriate. • Use wind barriers and wind screens to minimize the spread of dust in areas where large amounts of materials are stored. • Use of a wheel wash station and/or large-diameter cobble apron at egress/ingress areas to minimize dirt being tracked onto public streets. • Use of pick-up brooms to control dirt tracked onto public streets. • Cover or wet temporary excavated materials. • Use a binding agent for long-term excavated materials.	CDOT Construction Engineering Contractor	Pre-Construction Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			• Properly tune and maintain construction vehicle engines. • Water active grading and parking areas as required • Apply best management practices (BMPs) to stockpiles. • Cover loads on all trucks hauling dirt, sand, or other loose material.		
8	Air Quality	Diesel-powered equipment emissions during construction	In areas near sensitive receptors (western Project limits to just east of the Gore Creek), measures to reduce diesel emissions from construction equipment should be included, such as: • Prohibit unnecessary idling of construction equipment. • Locate construction diesel engines as far away as possible from residential areas. • Locate staging areas as far away as possible from residential areas. • Limit unnecessary idling to less than 5 minutes by posting signage. • Install engine pre-heater devices to eliminate any idling for cold season construction. • Prohibit tampering with equipment to increase horsepower or defeat an emissions control device's effectiveness.	CDOT Construction Engineering Contractor	Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
9	Noise	Permanent noise impacts	One noise barrier located along the WB I-70 edge of shoulder near MP 180, 20 feet high by 1,350 feet long was found to be reasonable and feasible. A benefitted receptor survey will be conducted during final design to determine if a majority want the barrier constructed.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction
10	Noise	Construction noise	• Adhere to Town of Vail noise ordinance, where applicable, and Colorado Noise Statute 25-12-103 for the unincorporated areas. If construction activities must occur outside of ordinance hours, Contractor must apply for a noise variance. Contractor will utilize methods, such as the following, to minimize impacts during construction: • Notify neighbors in advance when construction noise may occur. • Keep noisy activities as far from sensitive receptors as possible. • Keep exhaust systems on equipment in good working order. Maintain equipment on a regular basis; it should be subject to inspection by the construction project manager to ensure maintenance is being conducted. • Use properly designed engine enclosures and intake silencers if appropriate.	CDOT Construction Engineering Contractor	Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			• Place stationary equipment as far from sensitive receptors as possible. • Perform construction activities in noise sensitive areas during hours that are least disturbing to nearby residents, as feasible.		
11	Social Resources - Land Use/ROW	Permanent ROW impacts to USFS property	• FHWA and the USFS will modify the Highway Easement Deed with agreed upon terms and conditions.	CDOT Design Engineering and CDOT ROW	Design Construction
12	Social Resources - Land Use/ROW	Temporary easements during construction	The acquisition of any property interests will comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), applicable Colorado statutes, and CDOT's ROW manual.	CDOT Design Engineering and CDOT ROW	Design Construction
13	Social Resources - Economic Resources	Impacts to local businesses and tourist destinations during construction	• Coordination will occur with local jurisdictions, and the traveling public, businesses, and residents will be notified in advance of any access changes • Coordinate with the local jurisdictions to prepare for construction including public safety and security measures, signed detours, lane closures, and alternate access information. • Community, business, and recreation access will be maintained to the highest degree possible. • When lane restrictions and closures are required, CDOT will follow the most current	CDOT Design Engineering and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			lane closure strategy to minimize traffic disruptions		
14	Social Resources - Economic Resources	Impacts during construction to commercial recreation outfitters/guides	• Closures to Vail Pass Recreation Trail will be minimized to the highest degree possible. Closures and other impacts to trail use will be coordinated with the USFS and recreation outfitters in advance of when they will occur.	CDOT Design Engineering and CDOT Construction Engineering Contractor	Design Construction
15	Social Resources – EJ	Exposure to increased noise, dust, vibration, and impaired mobility during construction	• Notify neighbors in advance when construction noise may occur. Language assistance will be made available upon request. All written materials will be provided in English and Spanish. • Coordinate with the local jurisdictions, residents, businesses, and traveling public to prepare for construction including public safety and security measures, signed detours, lane closures, and alternate access information.	CDOT Construction Engineering Contractor	Construction
16	Social Resources-Parks and Recreation (including Section 4(f))	Vail Pass Recreation Trail relocation	• In order to minimize disruption to trail users, access on the re-aligned portion of the trail will not be closed for extended durations and will utilize flaggers during any additional work or conduct the work at night when the trail is not in use. • All potential detours and closures will be confirmed during final design and coordinated with the USFS and recreation outfitters.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			• Where the trail requires minor realignment, flaggers will be used as necessary keep the path operable during construction.		
17	Social Resources-Parks and Recreation (including Section 4(f))	Closures of trails and accesses to trails and campground	• All closures of Bighorn Road, Columbine Drive, and Two Elk Trail at MP 184 will be minimized in duration to the maximum extent practicable and full closures will only be for the safety of trail and campground users during construction. • Contractor parking will only be allowed on Bighorn Road if it is in an active traffic control zone to not further impact access to trails and campground.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction
18	Historic Resources (including Section 4(f))	Adverse effect to I-70 at Vail Pass	• As part of the mitigation measures for anticipated impacts to Vail Pass, CDOT prepared a historic context statement in 2019 detailing the history and significance of the Vail Pass route of I-70. This report provides detailed documentation on the design and construction of the highway segment and its contributing features. • CDOT will develop a supplement to the 2008 I-70 Mountain Corridor Section 106 PA that outlines historic properties mitigation commitments for the adverse effect finding for this project. Proposed mitigation includes the historic context and site forms for the Vail Pass Segment of I-70; efforts to honor the aesthetic of the original design in the new design; and an interpretive panel that outlines the	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			construction history of I-70 over Vail Pass. Additional mitigation may be identified in consultation with the State Historic Preservation Officer (SHPO) and the consulting parties during the review of the PA. • CDOT will create an Aesthetics ITF during final design of the project, which will include the Section 106 consulting parties. This ITF will be responsible for developing project-specific aesthetic guidance that builds on the *Memorandum of Understanding (MOU) Between the Bureau of Land Management, The Colorado Department of Transportation, The Federal Highway Administration and the USDA, Forest Service Rocky Mountain Region* and Crest of the Rockies Aesthetic Guidance and incorporates the historic context of West Vail Pass. The guidance will include, but is not limited to: aesthetic treatments for structures, materials, colors, planting, site grading forms, and maintenance recommendations.		
19	Archaeological Resources	SHPO concurred with the finding of "no historic properties affected" as long as the Vail Pass Rest Area is not used for staging or materials storage	• The Vail Pass Rest Area may not be used as staging, materials storage, or any other potentially impactful activity during construction. • Should unidentified archaeological resources be discovered during any phase of construction, work will stop until the CDOT senior staff archaeologist is contacted and the resources have been evaluated in terms of the National Register of Historic Places eligibility	CDOT Environmental and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			criteria. The Contractor shall comply with CDOT Standard Specification 107.23 (Archaeological and Paleontological Discoveries), as identified in the project construction plans.		
20	Hazardous Materials	Potential to encounter subsurface contamination (including mine materials)	• A Material Management Plan (MMP), as required by CDOT Standard Specifications subsection 250.03, will be prepared, which will also include a dust control plan. • A Health and Safety Plan (HASP) will be completed to address potentially hazardous wastes that could be uncovered during construction. • Surveying, sampling, managing hazardous material and using BMPs will be performed if contamination is suspected or discovered. • Known or suspected contamination, primarily from previous petroleum spills, occur in the Project area and may pose a health or safety risk during construction, and the Contractor will conduct additional investigations in these locations. • During subsurface activities, workers must be alert for visual and olfactory signs of contamination. This includes visual signs of mine waste, which are usually mud-like and a different color than the surrounding soils. If contamination is encountered, work will stop, and procedures established in the MMP will be followed. Any contaminated soils will be	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			properly handled and sampled prior to disposal. • Structural excavation, such as caisson and retaining wall construction, may require the dewatering of contaminated groundwater. If dewatering is necessary, groundwater brought to the surface will be managed according to CDOT Standard Specifications subsection 107.25 and permitted by the CDPHE Water Quality Control Division, in accordance with Section 402 of the CWA.		
21	Hazardous Materials	Potential to encounter hazardous materials – lead-based paint	Prior to demolition of any painted structure within the study area, a State Certified Lead-Based Paint Inspector shall inspect, and if necessary, sample for the presence of LBP or other heavy metal paints. If LBP/heavy metal paint is present on any highway structures or other painted surfaces, the requirements of CDOT Standard Specification subsections 250.03 and 250.04.	CDOT Environmental and CDOT Construction Engineering Contractor	Construction
22	Hazardous Materials	Potential to encounter hazardous materials –asbestos containing material (ACM)	• Prior to demolition of any structure within the study area, a State Certified Asbestos Inspector shall inspect, and if necessary, sample for the presence of ACM. If asbestos is found, all further work shall proceed in accordance with CDOT Standard specification 250.07. • If ACM is identified, the Air Quality Control Commission Regulation Number 8 Part B, and the Colorado Department of Public Health and Environment Hazardous Materials and Waste Management Division Section 5.5 of the	CDOT Environmental and CDOT Construction Engineering Contractor	Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			Regulations (6 Colorado Code of Regulations 1007-2) must be followed.		
23	Hazardous Materials	Potential to encounter subsurface contamination (including mine materials) and illegal drug laboratory waste	• During construction, workers will be alert for visual signs of illegal drug laboratories' waste. Many different chemicals are used in the production of these illegal drugs, and CDOT has available a video to help identify these wastes at: http://www.youtube.com/watch?v=kF25d0Gnvjo • If illegal drug laboratory waste is encountered, work will stop, and procedures established in the MMP will be followed. Any contaminated waste will be properly handled and sampled prior to disposal.	CDOT Environmental and CDOT Construction Engineering Contractor	
24	Utilities	Utilities may need to be relocated or adjusted to accommodate the roadway construction	• Coordinate with CDOT Utilities Unit regarding required permits and clearances during final design. • A qualified subsurface utility engineering provider will designate the utilities early in the final design process. • Where conflicts are identified, relocations or adjustments will be coordinated with the affected utility owners. Advance notice will be provided to allow delivery of uninterrupted utility service during construction. • During final design, CDOT will determine the need to establish a utility corridor.	CDOT Design Engineering, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
25	Utilities	Potential for temporary loss of utility service during construction	Coordinate utility relocation with utility companies during final design to minimize service interruptions and to inform utility users as part of the Public Information Outreach campaign during construction.	CDOT Construction Engineering Contractor	
26	Vegetation	Removal of vegetation would be required during construction	• A vegetation survey will be completed during final design to determine the number and type of SB 40 trees and shrubs. • Replace riparian trees removed as stipulated in CDOT's Guidelines for Senate Bill 40 Wildlife Certification, which states that riparian trees removed during construction, whether native or non-native, shall be replaced with a goal of 1:1 replacement based on a preconstruction stem count of all trees with a diameter at breast height of two inches or greater. • Riparian shrubs removed during construction, whether native or non-native, will be replaced with native species based on their preconstruction aerial coverage. In all cases, CDOT will replace all such trees and shrubs with native species. • Avoid disturbance of native trees, shrubs, and vegetation to the extent possible. When disturbance is unavoidable, replace native and non-native species with native species.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			• Develop a revegetation plan during final design in coordination with the USFS and CDOT. The revegetation plan will be incorporated into the Stormwater Management Plan (SWMP) and seed mixes (also identified in the SWMP) to be used will be specific to upland areas, riparian areas, and wetland areas. Specific objectives of the revegetation plan will be identified, such as selecting native plants and seed mixes for revegetation that blend the vegetation with existing vegetation, are consistent with vegetation types, growth habits, and soil types, use of native species, mimic surrounding native plant densities and minimizing the spread of noxious and invasive weeds. The seed mix used for revegetation will be approved by the USFS and CDOT. • Minimize the amount and time period of disturbance to allow revegetation of disturbed areas. • Revegetate all disturbed areas with native grass and forb species. Apply seed, mulch, and mulch tackifier in phases throughout construction. • Use temporary erosion control blankets with flexible natural fibers.		
27	Noxious Weeds	Introduction and spread of noxious weeds during construction	• Manage the clearing and earthmoving operations to minimize the potential for weeds to infest new areas and/or increase in abundance through the construction	CDOT Design Engineering, CDOT Environmental,	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			disturbance area. This includes the application of BMPs to all construction sites to manage open soil surfaces and topsoil stockpiled for reuse, including landscape and planning designs that incorporate the use of native vegetation and integrated noxious weed controls. • Prepare and implement Noxious Weed Management Plans for the Project, which will be completed prior to construction so they reflect the most recent federal and local noxious weed lists and guidance. Noxious Weed Management Plans will identify the status and location of noxious weed infestations in and near individual Project areas and identify control methods (e.g., herbicides) and BMPs that will be used to eradicate or control weeds during and after construction. These BMPs generally include, but are not limited to, minimization of soil disturbance, use of native species in seeding and revegetation plans, use of weed-free hay, topsoil management, equipment cleaning and management, and coordination with relevant stakeholders such as County Weed Managers.	and CDOT Construction Engineering Contractor	
28	Wildlife	Creation of new barriers to wildlife movement and habitat fragmentation from highway widening, glare screens, guardrail, new retaining walls, and drainage improvements.	• Fulfill responsibilities set forth in the ALIVE MOU to address issues related to improving wildlife movement and reducing habitat fragmentation in the study area. Responsibilities include but are not limited to, working to actively support and implement the	CDOT Design Engineering, CDOT Environmental, and CDOT	Design Construction

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			MOU concepts, provide wildlife expertise to support wildlife betterments and passages, establish efficient processes for regulatory review and permitting, and work collaboratively to pursue funding and new opportunities for wildlife passages. • Six new wildlife crossing structures (underpasses) constructed at approximately the following MPs: 186.9, 187.4, 187.8, 188.3, 188.7, 189.7. • Wildlife fencing to be installed on both sides of the highway from MP 181 to 190 to reduce wildlife-vehicle collisions (WVCs) and guide animals to crossing structures. • Small mammal shelves will be installed within drainage and stream crossing culverts wherever feasible to increase below grade crossing opportunities for smaller animals. • Determine bat use of bridges prior to work being conducted and if evidence of use is present, features will be added to promote day and night roosting for bats where appropriate. • Wildlife escape ramps will be installed throughout the Project area at a minimum of every 0.25 miles. Ramps will be built following the most current design specifications to improve wildlife use. Where ramps are not feasible due to topographical and/or other limitations other measures such as wildlife gates will be installed at a similar spacing.	Construction Engineering Contractor	

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			• Measures to minimize snow loading in front of crossing structures will be included in crossing structure design. • Coarse woody material and rocks will be placed at the entry and within each crossing structure to provide cover and promote use by smaller animals. • Where site conditions allow, "wildlife lanes" will be incorporated within any crossing structure intended for or that may otherwise be used by people. Such lanes will be separated by grade from crossing intended for people (i.e., trail) and will include coarse woody material and rocks at entry and within crossing structure to provide cover and promote use by smaller animals. • Snow deflection devices will be placed above wildlife crossing structures to keep the crossing structures clear of snow and debris. Crossing structures shall be kept clear during winter. Where possible, retaining walls will be placed such that they do not impede wildlife movement or use of crossing structures and outside of primary and secondary vegetation.		
29	Wildlife	Habitat impacts from temporary ground disturbance and vegetation impacts during construction	• Construction should be concentrated to as small of an area as possible in order to minimize the amount of habitat affected at one time and keep adjacent habitat areas available for use by the species to forage, hide, or travel.	CDOT Design Engineering, CDOT Environmental, and CDOT	Design Construction

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			• Recontour and restore all temporarily impacted habitats on the Project site so that they become available for use.	Construction Engineering Contractor	
30	Wildlife	Impacts to bats during construction on bridges	Bat surveys will be conducted on all bridges planned for demolition or significant modification. If bats are found, demolition or construction will be suspended during that species maternity season, approximately May 15 – July 15.	CDOT Environmental, CDOT Construction Engineering Contractor	Construction
31	Wildlife	Impacts to migratory birds during construction	Follow Migratory Bird Treaty Act nest survey guidelines during the nesting season, which are outlined in Revision of Section 240 Protection of Migratory Birds. Include specifics on bird nest surveys within these project specials and/or general notes and within in the contract/project plans.	CDOT Design Engineering and CDOT Environmental	Prior to Construction
32	Fish	Impacts to fish species during construction in and near waterways	• Fulfill responsibilities set forth in the SWEEP MOU to address issues related aquatic habitat in the study area. Responsibilities include but are not limited to, following the CSS Process, identify and prioritize species and habitats, establish mitigation recommendations and determine how they will be implemented, and work effectively and collaboratively. • Fish barriers between Black Gore Creek and conservation streams should be inspected and repaired/improved where necessary.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			• In no instance allow construction activities or equipment to work in flowing water or disturb sediment during recognized trout spawning seasons unless in coordination with Colorado Parks and Wildlife (CPW), as follows: » Cutthroat & Rainbow Trout: March 1-May 31 » Brown Trout: October 1-November 30 • Prevent the spread of invasive aquatic nuisance species, including Eurasian watermilfoil, zebra mussel, and New Zealand mudsnail by following CDOT's Guidelines for SB 40 Wildlife Certification.		
33	Threatened, Endangered, and Special Status Species	Adverse effects to Canada lynx from permanent lighting	Ensure that permanent lighting is "dark sky" compliant and shines only on the area(s) that need to be illuminated. Do not direct lighting into areas of lynx or snowshoe hare habitat to prevent disturbing these species' foraging behaviors. Ensure that lights are on only when necessary (i.e., at chain stations ensure that lights are on only when chain-up or chain-down is necessary). Monitor lighting to ensure that it does not exceed the approved lighted area and that lights are on only when necessary to reduce the effects of the Project on Canada lynx populations to an insignificant amount.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction
34	Threatened, Endangered, and Special Status Species	Temporary impacts to Canada lynx from noise, lighting, and increased human activity	• Conduct work during daylight hours as much as possible when lynx are less active to avoid disrupting this nocturnal species foraging and travel behaviors. For night work, concentrate the activity in as small an area as possible, and	CDOT Design Engineering, CDOT Environmental, and CDOT	Design Construction

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			work for four (4) consecutive nights separated by three (3) consecutive nights of no work to allow any individuals in the vicinity to recover and potentially use the site for foraging or travel. • Temporary lighting will be used with directional shielding to focus the lighting onto the driving surface to avoid disrupting foraging and travel behaviors of this primarily nocturnal species.	Construction Engineering Contractor	
35	Threatened, Endangered, and Special Status Species	Incidental take of Canada lynx	• Provide an annual report documenting the project progress and its impact on Canada lynx • Notify the USWS Colorado Field Office in the event that a Canada lynx, or any other federally listed species is killed or injured during project activities.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction
36	Threatened, Endangered, and Special Status Species	Temporary and permanent impacts to sensitive plant species from construction	Conduct presence/absence surveys during final design, using USFS survey protocol, in the following areas that will be impacted under the Proposed Action: Fens, natural slope wetlands, and riverine wetlands (not wetlands with stormwater as their primary water source) sphagnum, Baltic sphagnum, lesser panicled sedge, livid sedge, whitebristle cottongrass, Chamisso's cottongrass, slender cottongrass, simple bog sedge, Porter feathergrass, roundleaf sundew, Kotzebue's grass	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction

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			of Parnassus, dwarf raspberry, both willows, and lesser bladderwort • Moist meadows and open natural wetland edges for park milkvetch • Aspen forest areas for yellow lady slipper • Open slopes, forest edges and historically disturbed areas for triangle lobe moonwort and narrowleaf grapefern • Open, gravelly slopes for Colorado tansyaster		
37	Water Quality – Sediment Runoff and Erosion	Control measures will continue to collect sediment and require ongoing monitoring and maintenance.	In conjunction with final design and prior to the construction of any new impervious surface, the Black Gore Creek Sediment Control Action Plan (SCAP) will be updated, in coordination with the SWEEP ITF. SCAP control measures will be implemented as appropriate when an improvement feature triggers the need for sediment collection, such as an increase in impervious area.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction
38	Water Quality – Sediment Runoff and Erosion	Increased sediment load and runoff from additional impervious surface	Improvements identified in the SCAP update will be designed and constructed as mitigation in areas of new construction where there are impacts of additional traction sand and additional runoff.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction
39	Water Quality – Sediment Runoff and Erosion	Potential for new areas of erosion	• Riprap aprons or other appropriate control measures will be used below outlets of stormwater infrastructure.	CDOT Design Engineering, CDOT	Design Construction

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			• Sheet flow will be consolidated into channels and swales, where feasible, and conveyed to dedicated discharge points through a sediment control measure to reduce riling/rutting of the slope. • Utilize grading and revegetation with native species to achieve permanent stabilization. • Permanent control measures will be implemented in areas of historic erosion or suspected future erosion.	Environmental, and CDOT Construction Engineering Contractor	
40	Water Quality – Sediment Runoff and Erosion	Sheet flow and rill erosion during construction	• Temporary control measures will be required within the disturbance area during construction to minimize disturbed sediment from entering the adjacent creeks. • A Stormwater Construction Permit (SCP) through CDPHE will be obtained prior to construction. • A SWMP will be prepared and implemented through observations and updates to the plan during construction. » CDOT will implement appropriate control measures for erosion and sediment control according the CDOT Erosion Control and Storm Water Quality Guide, and CDOT Specifications requirements.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction
41	Water Quality – Sediment Accumulation	Continued sediment accumulation	• As part of the SCAP update, CDOT will identify opportunities to improve maintenance access to these areas in Zone 1 (as defined by the	CDOT Design Engineering, CDOT Environmental,	Design Construction

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			SCAP) by incorporating improvements into the roadway and structure design. • During construction of the Proposed Action, collected sediment in these areas will be removed where feasible and the areas will be revegetated. Alternative stabilization measures will be evaluated for use in shaded areas where vegetation may not grow. Areas that are suitable for riparian or wetland enhancement have been identified and will be further evaluated for enhancement feasibility as part of the CWA Section 404 permitting process, as discussed in the *I-70 West Vail Pass Auxiliary Lanes Wetlands Technical Memorandum.*	and CDOT Construction Engineering Contractor	
42	Water Quality – Sediment Accumulation	Additional sediment loading from construction	• See mitigation commitment 39. • SWMP will identify methods to mitigate disturbance to deposits during construction including, but not limited to, remediation practices under bridges (in areas impacted by construction activities), sediment removal, and stabilization practices. Practices will be employed where possible and only in areas where the situation can be improved by intervening.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction

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43	Water Quality – Drinking Water Supplies and Wastewater Treatment Facilities	Minor sediment loading in Black Lakes	Permanent control measures will be designed and installed to minimize the amount of sediment entering the Black Lakes.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction
44	Water Quality – Drinking Water Supplies and Wastewater Treatment Facilities	Increased sedimentation of Black Lakes, Black Gore Creek, and Gore Creek during construction	Temporary control measures during construction installed to minimize the amount of sediment entering the Black Lakes, Black Gore Creek, and Gore Creek.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction
45	Floodplains	Change in base flood elevations	Project will be designed to seek a No-Rise Certification by ensuring adequate structure openings and pier locations where feasible. If not feasible, Conditional Letter of Map Revision (CLOMR)/Letter of Map Revision (LOMR) process will be followed to comply with federal regulation.	CDOT Design Engineering	Design

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
46	Floodplains	Construction materials may reduce floodplain conveyance.	Construction materials will not be stored in the floodplain, and construction activities will be limited within the floodplain as feasible to reduce the potential impacts to the floodplain. A construction stormwater and a floodplain permit will be obtained from Eagle County.	CDOT Design Engineering CDOT Construction Engineering Contractor	Design Construction
47	Wetlands/Other Water Features	Approximately 9.44 acres of wetlands (including 0.42 acre of fen) and 0.19 acre of other water features would be permanently impacted. This will be confirmed during final design. Some indirect impacts to wetlands may also occur but are not quantifiable.	• Prior to construction, all wetlands/waters of the US will be formally delineated using the US Army Corps of Engineers (Corps) standards and the Section 404 permitting process will be followed. During refinement of the Proposed Action in final design, all efforts will be made to avoid any additional wetland impacts, minimize potential impacts to the maximum extent practicable, and then provide compensatory mitigation for unavoidable impacts. • All permanently impacted non-fen wetlands will be replaced at a 1:1 ratio. • CDOT Environmental staff will be consulted during preliminary/final design to confirm specific compensatory wetland mitigation strategies and locations. CDOT is committed to utilizing onsite compensatory mitigation as its first priority and will work with the Corps to confirm the specific wetland mitigation strategy. • Fens may need to be replaced at a higher ratio, if determined by the Corps.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
48	Wetlands/Other Water Features	Some temporary impacts for access or installation of control measures may occur during construction	• Use temporary soil stabilization measures and structures to prevent and/or slow runoff across disturbed areas and/or divert untreated runoff to sediment basins • Use sediment control measures, including erosion logs, check dams, silt fences, sediment traps and/or sediment basins • Use water quality treatment measures to capture and treat runoff and to prevent runoff from entering wetlands and other water features (see mitigation commitments 36-39) • Drainage patterns will be preserved by maintaining existing roadside ditches or constructing new ditches as needed. • Use designated areas for vehicle staging to minimize disturbance of wetlands and vegetated areas • Avoid unnecessary impacts to wetlands and other water features by fencing the limits of construction. There shall be no vehicle access in wetland or other water feature areas outside the limits of construction. • Do not store or stockpile construction equipment, fuels, lubricants, and other petroleum distillates within 50 horizontal feet of wetlands or other water features. • Equipment fueling and servicing shall occur only within approved designated areas.	CDOT Design Engineering, CDOT Environmental, and CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			• Use chemicals such as soil stabilizers, dust palliatives, herbicides, growth inhibitors, fertilizers, deicing salts, etc., in accordance with the manufacturer's recommended application rates, frequency, and instructions. These chemicals shall not be used, stored, or stockpiled within 50 horizontal feet of wetlands or other water features. • Revegetate disturbed areas as quickly as possible with native vegetation known to occur in the vicinity.		
49	Geologic Resources and Soils	Instability of existing landslides and exposure of collapsible soils	• Manage erosion and stormwater runoff and ensure control measures are in place to prevent migration of sediment from waste piles, slopes and excavations during construction. • Minimize slope excavation of the undisturbed slopes and follow natural topography and slope angle when new cuts are constructed. • Using excavation and landscaping techniques, such as slope rounding, terracing, and seeding to establish vegetation to minimize soil loss. • Avoid destabilizing existing landslides, debris flow/alluvial fans during roadway construction, which includes minimizing cut slopes and selectively locating embankments.	CDOT Design Engineering, CDOT Construction Engineering Contractor	Design Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
50	Geologic Resources and Soils	Potential permanent impact to existing cut slopes from additional excavation	• Using rock sculpting, which involves blasting rock by using the existing rock structure to control overbreak and blast damage to create a more natural-looking cut. Aesthetic treatments for rock cuts will be determined during the Aesthetic ITF (see mitigation commitment 18)	CDOT Design Engineering, CDOT Construction Engineering Contractor	Design Construction
51	Geologic Resources and Soils	Increased rockfall and avalanche activity	• Using proven mitigation techniques as well as scaling and blasting, to address rockfall from cut slope areas. Determination of rockfall mitigation measures will be based on the slope configuration at final design. Aesthetic treatments for rock cuts will be determined during the Aesthetic ITF (see mitigation commitment 18). • Use avalanche fencing to manage avalanches.	CDOT Design Engineering, CDOT Construction Engineering Contractor	Design Construction
52	Geologic Resources and Soils	Potential to encounter and impede groundwater, which could result in associated frost heave	• Frost heave mitigation includes methods to prevent water from pooling under pavement such as over-excavation down to frost depth of frost susceptible soils and replacement with non-frost susceptible soils or rigid foam insulation, improve surface and subsurface drainage, and reduce infiltration of water.	CDOT Design Engineering, CDOT Construction Engineering Contractor	Design Construction
53	Paleontological Resources	Potential for fossil vertebrates impacts during excavation	• Notify CDOT staff Paleontologist, Nicole Peavey at 303.757.9632 of the schedule of work planned at MP 185.5 a minimum of 2 weeks/10 business days prior for her to either conduct a survey prior to construction or to monitor a portion of the construction there.	CDOT Environmental and CDOT Construction Engineering Contractor	Construction

#	Mitigation Category	Impact	Mitigation Commitment From Source Document	Responsible Branch	Timing/Phase Mitigation will be Implemented
			• Should vertebrate fossil materials be encountered during excavation, work should be halted and the CDOT staff Paleontologist, Nicole Peavey be notified immediately at 303.757.9632.		