

5.0 Preferred Alternative Mitigation Commitments

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This chapter describes the mitigation commitments, permits, and additional clearances needed for the Preferred Alternative, which is the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative. See Appendix E, *Resource Technical Documentation*, for more information regarding impacts and mitigation for each resource.

There are also state commitments located in the project-related state reports related to air quality and socioeconomics available on the project website. These commitments are in addition to these mitigation commitments and are funded by state dollars.

Table 1 is part of a larger tracking table that Colorado Department of Transportation (CDOT) Environmental staff use to ensure mitigation is being completed. CDOT Environmental staff meet regularly with the project team to go through the full tracking table and add notes to indicate status or to indicate completion. In addition, if a mitigation no longer applies or is changed, that documentation is also included in the tracking table.

Table 5-1. Summary of Impacts and Mitigation - Preferred Alternative

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
1	Transportation	Bridge demolition, reconstruction, and interstate widening	Study Area	Temporary disruption of transit travel on Regional Transportation District (RTD) routes Flatiron Flyer 5 [FF5], 37, 48, 49, and 88	Notify the public of anticipated construction disruptions utilizing CDOT's project website, COtrip, RTD service update notifications, portable changeable message. Maintain two open lanes in each direction during peak hours; ensuring at least one lane remains open in each direction during off-peak hours in accordance with CDOT's Lane Closure Strategy. Lane closures may not be scheduled during special events that affect traffic conditions along state highway facilities in accordance with CDOT's Lane Closure Strategy.	CDOT Engineering and Public Involvement, and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
2	Transportation	Bridge demolition, reconstruction, and interstate widening	Study area	Temporary disruption of bicycle and pedestrian travel	Develop a construction phasing plan identifying a sequence of construction that maintains vehicle, bicycle, and pedestrian access. Detour pedestrians on to the roadway using wayfinding signage, protected from vehicle travel by concrete guardrail. Full closures are only to be implemented overnight. Flaggers will be used to manage vehicle, bicycle, and pedestrian access, should a narrower cross section be required during construction. Place signage in advance of construction zones warning of upcoming detours. Notify the public of anticipated construction disruptions utilizing CDOT project website, COtrip, and portable changeable message sign.	CDOT Engineering and Public Involvement, and Contractor	Pre-Construction and Construction



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3	Transportation	Bridge demolition, reconstruction, interstate widening, and trail construction	Brighton Boulevard and Union Pacific Railroad (UPRR)/BNSF Railway (BNSF) under I-270	Work over the railroad tracks	Coordinate with UPRR and BNSF to maintain clearances, avoid conflicts with train schedules, and implement protection measures to prevent debris from falling on or near the tracks.	CDOT Engineering and Public Involvement, and Contractor	Pre-Construction and Construction
4	Transportation	Bridge, sidewalk, and trail spur demolition and reconstruction; interstate widening; arterial widening; and adding sidewalks.	Study area	Temporary disruption of travel throughout the corridor	Coordinate with emergency responders about anticipated construction disruptions, including access changes, lane closures, and detours.	CDOT Engineering and Public Involvement, and Contractor	Pre-Construction and Construction
5	Air Quality	General construction activities	Study Area	Release of fugitive dust from construction activities	Obtain any required air quality permits prior to the start of construction, including a Colorado Department of Public Health and Environment (CDPHE) Air Pollutant Emission Notice (APEN), which requires a Fugitive Dust Control Plan to address how dust will be kept to a minimum during construction. Develop the Fugitive Dust Control Plan prior to construction.	CDOT Engineering and Contractor	Pre-Construction

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
6	Air Quality	General construction activities	Study Area	Release of fugitive dust from construction activities	Develop a monitoring plan prior to construction and conduct ambient air quality monitoring for particulate matter (PM) near the project area to assess air quality conditions and trigger additional mitigation measures when elevated PM readings occur during construction.	CDOT Engineering and Contractor	Pre-Construction and Construction
7	Air Quality	General construction activities	Study Area	Release of fugitive dust from construction activities	Cover, wet, compact, or use a chemical stabilization binding agent to control dust and excavated materials at construction sites during windy conditions and as specified by the Fugitive Dust Control Plan.	CDOT Engineering and Contractor	Construction
8	Air Quality	General construction activities	Study Area	Release of fugitive dust from construction activities	Use wind barriers and wind screens to prevent the spreading of dust from the site during windy conditions and as specified by the Fugitive Dust Control Plan.	CDOT Engineering and Contractor	Construction
9	Air Quality	General construction activities	Study Area	Release of fugitive dust from construction activities	Have a wheel wash station and/or crushed stone apron at egress/ingress areas to prevent dirt from being tracked onto public streets.	CDOT Engineering and Contractor	Construction
10	Air Quality	General construction activities	Study Area	Release of fugitive dust from construction activities	Use vacuum-powered street sweepers to remove dirt tracked onto public streets.	CDOT Engineering and Contractor	Construction

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11	Air Quality	General construction activities	Study Area	Release of fugitive dust from construction activities	Cover all dump trucks that are hauling material, leaving the sites to prevent dirt from spilling onto public streets.	CDOT Engineering and Contractor	Construction
12	Air Quality	General construction activities	Study Area	Release of fugitive dust from construction activities	Minimize disturbed areas, particularly in winter.	CDOT Engineering and Contractor	Construction
13	Air Quality	General construction activities	Study Area	Release of diesel emissions from construction equipment	Prohibit unnecessary idling of construction equipment.	CDOT Engineering and Contractor	Construction
14	Air Quality	General construction activities	Study Area	Release of diesel emissions from construction equipment	Locate diesel engines as far away as possible from residential areas.	CDOT Engineering and Contractor	Construction
15	Air Quality	General construction activities	Study Area	Release of diesel emissions from construction equipment	Locate staging areas as far away as possible from residential areas.	CDOT Engineering and Contractor	Construction
16	Air Quality	General construction activities	Study Area	Release of diesel emissions from construction equipment	To the extent practical, use heavy construction equipment that has the cleanest available engines or that can be retrofitted with diesel particulate-control technology.	CDOT Engineering and Contractor	Pre-Construction and Construction

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17	Air Quality	General construction activities	Study Area	Release of diesel emissions from construction equipment	To the extent practical, use alternatives to diesel engines and/or diesel fuels, such as biodiesel, liquefied natural gas, or compressed natural gas, fuel cells, and electric engines.	CDOT Engineering and Contractor	Construction
18	Air Quality	General construction activities	Study Area	Release of diesel emissions from construction equipment	Install engine pre-heater devices to eliminate unnecessary idling for wintertime construction.	CDOT Engineering and Contractor	Pre-Construction
19	Air Quality	General construction activities	Study Area	Release of diesel emissions from construction equipment	Prohibit tampering with equipment to increase horsepower or to defeat an emission control device's effectiveness.	CDOT Engineering and Contractor	Construction
20	Air Quality	General construction activities	Study Area	Release of diesel emissions from construction equipment	Require construction vehicle engines to be properly tuned and maintained.	CDOT Engineering and Contractor	Construction
21	Air Quality	General construction activities	Study Area	Release of diesel emissions from construction equipment	Use construction vehicles and equipment with the minimum practical engine size for the intended job.	CDOT Engineering and Contractor	Construction



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22	Noise	Operational Highway Traffic	North of I-270 and south of North Sandcreek Drive in City of Commerce City (Commerce City) residential area	Exceedances of the CDOT Noise Abatement Criteria (NAC)	The Design Engineer will complete the noise wall design during final design.	CDOT Engineering and Environmental	Final Design
23	Noise	Operational Highway Traffic	North of I-270 and south of North Sandcreek Drive in Commerce City residential area	Exceedances of the NAC	CDOT will conduct a Benefited Receptor Survey of those who would receive the benefits of the recommended noise wall during final design.	CDOT Engineering and Environmental	Final Design
24	Noise	General construction activities	Study Area	Construction Noise	The Contractor shall follow local noise ordinances, the Colorado Noise Statute 25-12-103, and apply for variances, as necessary.	CDOT Engineering and Contractor	Pre-Construction and Construction
25	Noise	General construction activities	Study Area	Construction Noise	Notify neighbors as far in advance as reasonably possible when construction noise may occur.	CDOT Engineering and Contractor	Pre-Construction and Construction



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26	Noise	General construction activities	Study Area	Construction Noise	Keep noisy activities as far from sensitive receptors as possible. Coordinate with the Project Engineer.	CDOT Engineering and Contractor	Construction
27	Noise	General construction activities	Study Area	Construction Noise	Keep exhaust systems on equipment in good working order. It should be subject to inspection by the construction project manager to ensure maintenance is being conducted.	CDOT Engineering and Contractor	Construction
28	Noise	General construction activities	Study Area	Construction Noise	Use properly designed engine enclosures and intake silencers, if appropriate. Documentation will be provided by the Contractor to show what is used.	CDOT Engineering and Contractor	Construction
29	Noise	General construction activities	Study Area	Construction Noise	Place stationary equipment as far from sensitive receptors as possible. Coordinate with Project Engineer.	CDOT Engineering and Contractor	Construction
30	Noise	General construction activities	Study Area	Construction Noise	Perform construction activities in noise sensitive areas during hours that are least disturbing to nearby residents, generally daytime hours, as feasible.	CDOT Engineering and Contractor	Construction
31	Noise	General construction activities	Study Area	Construction Noise	Locate haul roads so that they are as least disruptive as possible. Coordinate with Project Engineer.	CDOT Engineering and Contractor	Construction



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32	Noise	General construction activities	Study Area	Construction Noise	Provide mechanisms for complaints. Mechanism will be determined during final design and may include a project hotline number or other mechanism.	CDOT Engineering and Contractor	Final Design, Pre-Construction, and Construction
33	Biological Resources	General construction activities	Study Area	Direct impacts to wetlands and non-wetland waters	Obtain a Clean Water Act (CWA) Section 404 Permit from the US Army Corps of Engineers (USACE) prior to the start of construction. A series of Nationwide Permits (NWP) are anticipated to permit the proposed work, including but not limited to, NWP 14 for linear transportation projects and NWP 3 for the repair, rehabilitation, or replacement of serviceable structures.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
34	Biological Resources	General construction activities	Study Area	Direct impacts to wetlands and non-wetland waters	Consult with CDPHE under Regulation 87. Depending on the impacts and construction timeline, a temporary or permanent authorization may be required.	CDOT Engineering and Environmental	Pre-Construction



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35	Biological Resources	Vegetation Removal	Study area	Disruption and/or destruction of active migratory bird nests	Vegetation or structure (e.g., bridges, box culverts) removal within the project limits will occur outside of the bird breeding season (April 1 to August 31). If vegetation or structures must be removed during the breeding season, a survey for active nests will be conducted within a project limit buffer, per CDOT Standard Specification 240 and the Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors (Colorado Parks and Wildlife [CPW] 2020). If necessary, no work will occur within these buffer areas, and they will be maintained and kept in working order until the nest is no longer active, as determined by the CDOT biologist. If an active nest is inadvertently taken during construction, the US Fish and Wildlife Service (USFWS) will be notified within 24 hours.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction



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36	Biological Resources	Vegetation Removal	Study Area	Disruption and/or destruction of roosting bats	Tree or structure (e.g., bridges, box culverts) removal within the project limits will occur outside of the summer bat roosting season (generally April 1 to October 31). If vegetation or structures must be removed during the roosting season, a habitat survey for roosting bats will be conducted within a project limit buffer. Surveys will utilize the Bridge/Structure Bat Assessment Form included as Attachment D of the Range-wide Indiana Bat & Northern Long-eared Bat Survey Guidelines (USFWS 2024). If necessary, measures to avoid and minimize impacts to roosting bats, should they occur, will be implemented in coordination with the CDOT biologist.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction



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37	Biological Resources	Vegetation Removal	Study Area	Disruption and/or destruction of active black-tailed prairie dog colonies	During final design and construction, avoid and minimize impacts to prairie dog colonies, to the extent practicable. Follow CDOT's Black-tailed Prairie Dog Policy to guide prairie dog management activities. Pre-construction surveys will be conducted to confirm the extent of active prairie dog colonies. Coordination will occur with the CDOT biologist during preparation of the prairie dog management plan. Per CDOT policy, if impacts exceed 2.0 acres, relocation will be evaluated.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
38	Biological Resources	Vegetation Removal	Study Area	Disruption and/or destruction of active black-tailed prairie dog colonies	The area of black-tailed prairie dog towns that will be affected by the project will be calculated before construction by a qualified biologist (CDOT 2009).	CDOT Engineering and Contractor	Pre-Construction and Construction



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39	Biological Resources	Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Develop a revegetation plan during final design. 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.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction
40	Biological Resources	Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Minimize the amount and time period of disturbance to allow revegetation of disturbed areas.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction



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41	Biological Resources	Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Avoid disturbance to existing trees, shrubs, and vegetation, to the maximum extent possible.	CDOT Engineering and Contractor	Construction
42	Biological Resources	Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Revegetate all disturbed areas with native grass and forb species. Apply seed, mulch, and mulch tackifier in phases throughout construction. Native trees and shrub plantings shall be included in project landscape plans and mitigated on a 1:1 basis, where feasible.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction
43	Biological Resources	Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Include at least two pollinator species and milkweed in the seed mix as a conservation measure for the monarch butterfly. Pollinator species and milkweed will equal at least 20% of the Pure Live Seed content of the overall seed mix.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction
44	Biological Resources	Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Use temporary erosion control blankets with flexible natural fibers.	CDOT Engineering and Contractor	Construction and Post-Construction

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45	Biological Resources	Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Install temporary orange plastic fencing along the limits of disturbance, where feasible, to minimize construction impacts to vegetation.	CDOT Engineering and Contractor	Construction
46	Biological Resources	Vegetation Removal	Study Area	Temporary and permanent impacts to Senate Bill (SB) 40 resources (Riparian Areas)	A Programmatic or Formal SB40 Wildlife Certification will be required from Colorado Parks and Wildlife during final design, prior to project construction. A formal SB40 inventory will be conducted during final design.	CDOT Engineering and Environmental, and Contractor	Final Design, Construction, and Post-Construction
47	Biological Resources	Vegetation Removal	Study Area	Temporary and permanent impacts to SB40 resources (Riparian Areas)	Riparian trees removed during construction will be replaced as stipulated in CDOT's Guidelines for SB40 Wildlife Certification, which state that trees removed during construction, whether native or non-native, shall be replaced with a goal of 1:1 replacement based on a stem count of all trees with diameter at breast height of two inches or greater.	CDOT Engineering and Contractor	Construction and Post-Construction



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48	Biological Resources	Vegetation Removal	Study Area	Temporary and permanent impacts to SB40 resources (Riparian Areas)	Shrubs removed during construction, whether native or non-native will be replaced based on their pre-construction aerial coverage. In all cases, all such shrubs will be replaced with native species. These planting locations will be identified in the final design plan set.	CDOT Engineering and Contractor	Construction and Post-Construction
49	Biological Resources	Vegetation Removal	Study Area	Temporary and permanent impacts to SB40 resources (Riparian Areas)	Riparian areas, where vegetation is not completely cleared or grubbed, will use geo-textile or other protection measures to leave roots/stumps of trees (such as cottonwood) or shrubs (such as sandbar willow) to regenerate after construction is completed.	CDOT Engineering and Contractor	Construction and Post-Construction

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50	Biological Resources	Vegetation Removal	Study Area	Temporary and permanent loss of vegetation and wildlife habitat/shortgrass prairie	Mitigate loss of shortgrass prairie habitat through the Shortgrass Prairie Initiative (SGPI). Record and report the amount of impervious surface increase for consideration through the SGPI. CDOT maintains a database of these impacts (both temporary and permanent), which is reported to USFWS on an annual basis. Impacts to shortgrass prairie will be refined during final design and onsite mitigation measures will be incorporated into the construction plans.	CDOT Engineering and Environmental, and Contractor	Final Design and Construction
51	Biological Resources	General construction activities	Wetland and aquatic areas	Potential loss of habitat for the northern leopard frog	A survey will be conducted between May 1 and September 1 prior to construction to determine if northern leopard frogs are present. If northern leopard frogs are found, coordination with CPW will occur. Proper erosion control and construction Best Management Practices (BMPs) will be used and identified in the SWMP to minimize erosion and sedimentation in frog habitat.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction

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52	Biological Resources	Water usage	Study Area	Endangered Species Act-listed species, South Platte River basin water depletions	Any water used for this project will be reported to USFWS at the end of the year after the completion of the project.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction
53	Wetlands and Aquatic Resources	General construction activities	Study Area	Direct impacts to wetlands and other non-wetland waters	Obtain a CWA Section 404 Permit from the USACE prior to the start of construction and/or obtain a CDPHE Regulation 87 authorization. A series of NWP are anticipated to permit the proposed work, including, but not limited to, NWP 14 for linear transportation projects and NWP 3 for the repair, rehabilitation, or replacement of serviceable structures.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
54	Wetlands and Aquatic Resources	General construction activities	Study Area	Direct impacts to wetlands and non-wetland waters	Consult with CDPHE under Regulation 87. Depending on the impacts and construction timeline, a temporary or permanent authorization may be required.	CDOT Engineering and Environmental	Pre-Construction



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55	Wetlands and Aquatic Resources	General construction activities	Study Area	Ground disturbance impacting wetlands and surface waters	During final design, avoid and minimize impacts to wetlands and surface waters by reducing and refining the project footprint, where possible. Where excavation in wetlands must occur, wetland topsoil will be salvaged and stockpiled for restoration wherever possible	CDOT Engineering and Environmental	Final Design
56	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct impacts to wetlands and non-wetland waters	Mitigate for temporary impacts by restoring areas to pre-existing conditions. Permanent impacts will be mitigated through on-site compensatory mitigation, off-site mitigation, purchase of wetland bank credits, or use of a separate strategy to both federally jurisdictional and non-jurisdictional wetlands at a minimum of a one-to-one ratio. This will be determined during final design, prior to construction.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction

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57	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct impacts to wetlands and non-wetland waters	Equipment shall be refueled within a designated refueling containment area away from wetlands. The refueling containment area shall be located greater than 100 horizontal feet away from wetlands and other sensitive environmental areas. Electric vehicles shall be used for construction, where reasonable and feasible.	CDOT Engineering and Contractor	Construction
58	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct impacts to wetlands and non-wetland waters	Construction fencing and appropriate sediment control BMPs will be used to mark wetland boundaries and sensitive habitats during construction.	CDOT Engineering and Contractor	Pre-Construction and Construction
59	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct impacts to wetlands and non-wetland waters	Seed and mulch disturbance areas adjacent to wetlands to reduce erosion and promote revegetation, plant supplemental vegetation, as needed.	CDOT Engineering and Contractor	Construction and Post-Construction
60	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct and/or indirect impacts to wetlands and non-wetland waters	Work occurring in and near wetlands during construction activities will be monitored by CDOT environmental staff or their designee to ensure protection of wetlands.	CDOT Engineering and Environmental, and Contractor	Construction

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61	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct and/or indirect impacts to wetlands and non-wetland waters	Prohibit construction equipment from entering the Ordinary High Water Mark (OHWM), except where identified on design plans.	CDOT Engineering Contractor	Construction
62	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct and/or indirect impacts to wetlands and non-wetland waters	Closely monitor construction activities to ensure that additional fill is not placed within the OHMW.	CDOT Engineering and Contractor	Construction
63	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct and/or indirect impacts to wetlands and non-wetland waters	A specification and detail will be developed and included in plans and project special provisions for the use of timber mats or geo-textile/straw to minimize temporary impacts to wetlands from construction equipment traversing wetland areas.	CDOT Engineering and Environmental, and Contractor	Final Design and Construction
64	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct and/or indirect impacts to wetlands and non-wetland waters	Locate construction staging and materials stockpiling at least 50 horizontal feet from the edge of wetlands or open water, when possible. No staging will be allowed in wetlands.	CDOT Engineering and Contractor	Pre-Construction and Construction



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65	Wetlands and Aquatic Resources	General construction activities	Study Area	Potential for direct and/or indirect impacts to wetlands and non-wetland 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 open water and wetlands.	CDOT Engineering and Contractor	Pre-Construction and Construction
66	Wetlands and Aquatic Resources	General construction activities	Study Area	Ground disturbance promoting noxious weed growth	Follow Sections 207, 212, and 217 of the CDOT Standard Specifications to avoid and minimize potential for noxious weed spread.	CDOT Engineering and Contractor	Pre-Construction and Construction
67	Water Quality	Erosion impacts from soil disturbances that occurred during construction	Construction Areas	Erosion and increased sedimentation to adjacent water resources	Permanent stabilization plan shall be created using techniques of revegetation, plantings, Permanent Water Quality (PWQ) control measures (CMs), and hardscape to permanently stabilize the construction area.	CDOT Engineering, Landscape Architect, and Environmental, and Contractor	Final Design, Construction, and Post-Construction
68	Water Quality	Spills of regulated materials during construction	Construction Areas	Water resources and water quality contamination and degradation	A spill prevention, control, and countermeasure plan shall be developed and implemented for the construction site that shall establish standard operating procedures and employee training to minimize the accidental release of pollutants.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction



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69	Water Quality	Erosion and stormwater pollutant runoff during construction	Construction Areas	Water resources and water quality contamination and degradation	During final design, a SWMP complying with all applicable federal, state, and local agency stormwater regulations will be prepared. The SWMP shall: Detail how and where temporary CMs will be used before, during, and after active construction, until final stabilization is achieved. Include temporary rundown protections on slopes steeper than 3:1. Include Municipal Separate Storm Sewer System (MS4) Construction Sites program compliance inspection and monitoring requirements until final stabilization has been achieved. The Contractor shall implement the SWMP, SWMP requirements, all the different stormwater permit requirements, and inspection requirements.	CDOT Engineering, Environmental, and Landscape Architect, and Contractor	Final Design, Construction, and Post-Construction



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70	Water Quality	Erosion and stormwater pollutant runoff during construction	Construction Areas	Water resources and water quality contamination and degradation Erosion and increased sedimentation to adjacent water resources	Obtain and implement any requirements from CWA Section 401 Water Quality Certification from CDPHE.	CDOT Engineering and Environmental, and Contractor	Pre-Construction, Construction, and Post-Construction
71	Water Quality	Erosion and stormwater pollutant runoff during construction	Construction Areas	Water resources and water quality contamination and degradation Erosion and increased sedimentation to adjacent water resources	Obtain and implement any requirements from Adams County's Stormwater Quality Permit.	CDOT Engineering and Environmental, and Contractor	Pre-Construction, Construction, and Post-Construction
72	Water Quality	Erosion and stormwater pollutant runoff during construction	Construction Areas	Water resources and water quality contamination and degradation Erosion and increased sedimentation to adjacent water resources	Obtain and implement any requirements from CDOT's MS4 permit.	CDOT Engineering and Environmental, and Contractor	Pre-Construction, Construction, and Post-Construction

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73	Water Quality	Erosion and stormwater pollutant runoff during construction	Construction Areas	Water resources and water quality contamination and degradation Erosion and increased sedimentation to adjacent water resources	Obtain and implement any requirements from CDPHE's Construction Dewatering permit(s).	CDOT Engineering and Environmental, and Contractor	Pre-Construction, Construction, and Post-Construction
74	Water Quality	Erosion and stormwater pollutant runoff during construction	Construction Areas	Water resources and water quality contamination and degradation Erosion and increased sedimentation to adjacent water resources	Obtain and implement any requirements from CDPHE's Construction Stormwater permit.	CDOT Engineering and Environmental, and Contractor	Pre-Construction, Construction, and Post-Construction
75	Water Quality	Erosion and stormwater pollutant runoff during construction	Construction Areas	Water resources and water quality contamination and degradation Erosion and increased sedimentation to adjacent water resources	Obtain and implement any requirements from the City and County of Denver's (Denver's) Construction Activities Stormwater Discharge Permit.	CDOT Engineering and Environmental, and Contractor	Pre-Construction, Construction, and Post-Construction

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76	Water Quality	Erosion and stormwater pollutant runoff during construction	Construction Areas	Water resources and water quality contamination and degradation Erosion and increased sedimentation to adjacent water resources	Obtain and implement any requirements from Commerce City's Construction stormwater permit.	CDOT Engineering and Environmental, and Contractor	Pre-Construction, Construction, and Post-Construction



77	Water Quality	Increased stormwater runoff from new impervious surfaces	Construction Areas	Water resources and water quality contamination and degradation	During final design, Designers will prepare PWQ CMs to treat impervious areas. This will include the following: The storm drain system shall be sized to capture, collect, and direct runoff to the PWQ CMs. PWQ CMs will be provided to treat roadway runoff prior to release to the drainage ways. PWQ CMs in an MS4 shall be designed to meet the applicable MS4 requirements. For CDOT, use the latest version of the CDOT's Drainage Design Manual for PWQ CMs and PWQ Program required CM documentation shall be completed during both design and construction. Prior to final design, determine, negotiate, and memorialize which agency will maintain the PWQ CMs per CDOT Policies, Procedures, and Colorado Revised Statutes (CRS) 43-2-135 requirements. An Intergovernmental Agreement (IGA) is required prior to finalizing design, if a Local Agency will perform the maintenance of the PWQ CMs. The total area treated by existing PWQ CM that is removed by construction shall be replaced by the project and	CDOT Engineering and Environmental, and Contractor	Final Design and Construction
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					will treat equal to or greater than the original area. Existing PWQ CM that are altered by construction shall have updated design and documentation (drainage report, operations and maintenance, etc.) to reflect current CDOT MS4 and CDOT Drainage Design Manual Standards. The Contractor shall construct PWQ CMs per CDOT plans and specifications and plans.		



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
78	Water Quality	Permanent erosion issues	Construction Areas	Water resources and water quality contamination and degradation	During final design, Designers will prepare a drainage plan, which addresses the following: Review and implement corrective measures to areas which are erosive and have concentrated flow. All culvert outlets and rundowns shall have permanent energy dissipation protection. Rundowns shall be to the bottom of the slopes and designed to prevent erosion of the slopes. Existing slope erosion shall be permanently corrected to a stabilized condition. Contractor shall implement stormwater management, final stabilization, and drainage in accordance with CDOT's plans and specifications.	CDOT Engineering and Environmental, and Contractor	Final Design and Construction
79	Floodplains	Construction within the regulatory floodplain and floodway	Along Sand Creek and at the South Platte River Crossing of I-270	Significant encroachment	Obtain and implement any requirements from Adams County's Floodplain Development Permit, if applicable.	CDOT Engineering and Floodplains, and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
80	Floodplains	Construction within the regulatory floodplain and floodway	Along Sand Creek and at the South Platte River Crossing of I-270	Significant encroachment	Obtain and implement any requirements from Denver's Floodplain Development Permit, if applicable.	CDOT Engineering and Floodplains, and Contractor	Pre-Construction and Construction
81	Floodplains	Construction within the regulatory floodplain and floodway	Along Sand Creek and at the South Platte River Crossing of I-270	Significant encroachment	Obtain and implement any requirements from Commerce City's Floodplain Development Permit, if applicable.	CDOT Engineering and Floodplains, and Contractor	Pre-Construction and Construction
82	Floodplains	Construction within the regulatory floodplain and floodway	Along Sand Creek and at the South Platte River Crossing of I-270	Temporary reduction in flood conveyance Significant encroachment	Construction materials will not be stored in the floodplain, and construction activities (including trail detours) will be limited within the floodplain, as feasible, to reduce the potential impacts to the floodplain.	CDOT Engineering and Contractor	Construction
83	Floodplains	Placement of fills within the regulatory floodplain and floodway	Along Sand Creek and at the South Platte River Crossing of I-270	Changes to the 100-year base flood elevation Significant encroachment	CDOT will initiate with the Federal Emergency Management Agency a Letter of Map Revision (LOMR) along Sand Creek and the South Platte River to formalize the changes to the Flood Insurance Rate Map panel data. If required by the local agency, CDOT will also prepare a Conditional Letter of Map Revision to conditionally update the effective Flood Insurance Study and Rate Map panel data prior to the LOMR submittal.	CDOT Engineering and Floodplains, and Contractor	Pre-Construction and Post-Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
84	Land Use/ Right-of-Way (ROW)	Property Acquisition	Adjacent to I-270 throughout the project limits	Acquisition of public and private property	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, which 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. 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 ROW Specialist will be assigned to each property owner to assist them with this process.	CDOT ROW	Final Design and Pre-Construction

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
85	Social and Economic	Lane closures and construction-related travel delays	Communities adjacent to construction areas	Employment and other economic losses due to traffic congestion and delays throughout construction.	CDOT will develop and implement a public information plan and will work with local public information officers to disseminate construction information to the traveling public, in accordance with CDOT Revised Standard Specification Section 626 - Public Information Management. Construction updates will be posted on the CDOT project website. CDOT will solicit input from Adams County, Denver, and Commerce City on the public information plan.	CDOT Engineering and Public Involvement, and Contractor	Pre-Construction, Construction
86	Social and Economic	Lane closures and construction-related travel delays	Communities adjacent to construction areas	Employment and other economic losses due to traffic congestion and delays throughout construction.	Coordinate project construction, closure, and detour information with the Colorado Motor Carriers Association.	CDOT Engineering and Contractor	Pre-Construction and Construction
87	Social and Economic	Lane closures and construction-related travel delays	Communities adjacent to construction areas	Employment and other economic losses due to traffic congestion and delays throughout construction.	The Contractor will notify nearby residents and businesses of upcoming construction work and detour routes, in accordance with CDOT Standard Specification Section 630.10 - Traffic Control Management.	CDOT Engineering and Contractor	Construction

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
88	Social and Economic	Lane closures and construction-related travel delays	Communities adjacent to construction areas	Employment and other economic losses due to traffic congestion and delays throughout construction	CDOT will solicit input from Adams County, Denver, and Commerce City on the traffic control plan.	CDOT Engineering and Contractor	Pre-Construction
89	Social and Economic	Lane closures and construction-related travel delays	Communities adjacent to construction areas	Employment and other economic losses due to traffic congestion and delays throughout construction	CDOT will provide detailed construction and detour plans to business owners in the project area as far in advance as possible. Construction updates will be posted on the CDOT project website.	CDOT Engineering and Contractor	Pre-Construction and Construction
90	Social and Economic	Lane closures and construction-related travel delays	Throughout construction areas	Increase in emergency response times throughout construction	CDOT will develop an emergency service provider coordination plan that will include procedures for notifying emergency service providers (Colorado State Patrol, sheriffs, police, fire dispatchers, ambulance providers, etc.) of closures or traffic delays and will provide a clear path through the construction zone, when needed.	CDOT Engineering, Public Information, and Traffic Management Center, and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
91	Social and Economic	Lane closures and construction-related travel delays	Throughout construction areas	Increase in emergency response times throughout construction	A traffic control plan will be developed for the project (CDOT Standard Specification 630.10a - Traffic Control Plan). The plan will maintain access for emergency vehicles at all times through the project area.	CDOT Engineering and Contractor	Pre-Construction and Construction
92	Hazardous Materials	General construction activities	Study Area	Potential to encounter contamination during construction	Obtain and implement the requirements from CDPHE's Colorado Discharge Permit System - Construction Dewatering Permit (Water Quality Control Division [WQCD]).	CDOT Engineering and Environmental, and Contractor	Pre-Construction, Construction, and Post-Construction
93	Hazardous Materials	General construction activities	Study Area	Potential to encounter contamination during construction from per- and polyfluoroalkyl substances (PFAS)	For project areas located within mapped PFAS contaminated groundwater, the Contractor will follow revised Section 107.25 - Legal Relations and Responsibility to Public. CDPHE PFAS source/concentration maps will be reviewed, when available.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
94	Hazardous Materials	General construction activities	Study Area	Potential to encounter contamination during construction from PFAS	Consult with CDPHE WQCD on potential PFAS impact and management. There are likely monetary impacts associated with encountering PFAS contamination.	CDOT Engineering and Environmental	Pre-Construction and Construction

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
95	Hazardous Materials	Geotechnical investigation and sampling	Study Area	Potential duplicative efforts	Coordinate any geotechnical and sampling work prior to doing the work to save money and avoid potential duplicative testing/mobilizations.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
96	Hazardous Materials	General construction activities	Study Area	Potential to encounter contamination during construction	Obtain and implement the requirements from CDPHE's Beneficial Reuse of Impacted Soil, Environmental Use Restriction/Covenant Permit, and the Materials Management Plan (MMP) (Hazardous Materials and Waste Management Division)	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
97	Hazardous Materials	General construction activities	Study Area	Potential to encounter contamination during construction	Obtain and implement the requirements from CDPHE's Demolition Permit - Asbestos-Containing Materials (ACM) (Hazardous Materials and Waste Management Division)	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
98	Hazardous Materials	Dewatering of groundwater/infiltration water in excavations	All locations where groundwater / infiltration water is generated, and dewatering is required.	Potential to encounter contaminated groundwater during construction dewatering	Follow CDOT Standard Specifications for Road and Bridge Construction, Section 250 regarding monitoring and characterization, and Section 107.25 regarding water quality control.	CDOT Engineering and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
99	Hazardous Materials	Construction in potentially contaminated areas	Southeast clover leaf off Vasquez Boulevard; adjacent to Sand Creek and Suncor Plant 1; and areas adjacent to Waste Management Facility and Brighton Boulevard	Potential to encounter subsurface contamination	Comply with CDOT's latest Revision of Section 250 (Environmental, Health and Safety Management) of the Standard Specifications for Road and Bridge Construction. Workers shall be alert during excavations for any visual or olfactory signs of contamination. If soil or groundwater contamination is encountered, work will stop immediately, and the procedures outlined in CDOT Specification 250 and subsection 107.25(b) shall be followed.	CDOT Engineering and Contractor	Pre-Construction and Construction
100	Hazardous Materials	Construction/excavation in petroleum contaminated areas	Adjacent to Sand Creek and Suncor Plant 1 Areas adjacent to Waste Management Facility and Brighton Boulevard	Potential to encounter petroleum contaminated soil	A project-specific MMP will be prepared and implemented to specify characterization and management practices for contaminated soil, debris, impacted groundwater, and landfill gases that may be encountered during construction.	CDOT Engineering and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
101	Hazardous Materials	Construction/excavation in petroleum contaminated areas	Adjacent to Sand Creek and Suncor Plant 1 Areas adjacent to Waste Management Facility and Brighton Boulevard	Potential to encounter petroleum contaminated soil	A Health and Safety Plan will be developed to address hazardous materials that could be uncovered during construction.	CDOT Engineering and Contractor	Pre-Construction and Construction
102	Hazardous Materials	Construction/excavation in petroleum contaminated areas	Adjacent to Sand Creek and Suncor Plant 1; Areas adjacent to Waste Management Facility and Brighton Boulevard	Potential to encounter petroleum contaminated soil	Generate waste profiles for petroleum contaminated soil and oversee transportation and disposal of petroleum contaminated soil with local landfill.	CDOT Engineering and Contractor	Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
103	Hazardous Materials	Construction/excavation in areas with Institutional Controls or environmental use restrictions	Weaver Electric and Multi-Contractor properties, 3200 East 64th Avenue; south of I-270, north of Sand Creek, east and west of Burlington Ditch, west of Brighton Boulevard	Potential to encounter subsurface contamination on Weaver Electric property	This property is under Institutional Controls with use restrictions, prohibiting soil-disturbing activities unless conducted in accordance with the MMP Addendum. Prior to construction, contact CDPHE and property representative(s) to approve and coordinate construction activities. Additionally, any soil-disturbing activities will be conducted in accordance with the site-specific MMP Addendum.	CDOT Engineering and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
104	Hazardous Materials	Construction/excavation in potentially contaminated areas	Landfill areas with debris and elevated methane adjacent to the Burlington Ditch; southeast clover leaf off Vasquez Boulevard; westbound I-270 to eastbound I-76 and westbound I-270 to westbound I-76 ramps; and areas adjacent to the Waste Management Facility and Brighton Boulevard	Potential to encounter subsurface contamination associated with historic landfills	Prior to construction, conduct targeted subsurface investigation to characterize landfill gas levels within areas of concern. Conduct additional landfill gas monitoring and/or mitigation, as needed, to minimize worker health and safety concern and to define potential project risks. Develop landfill gas mitigation plan for construction.	CDOT Engineering and Environmental, and Contractor	Pre-Construction



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105	Hazardous Materials	Construction / excavation in potentially contaminated areas	Landfill areas with debris and elevated methane adjacent to the Burlington Ditch; southeast clover leaf off Vasquez Boulevard; westbound I-270 to eastbound I-76 and westbound I-270 to westbound I-76 ramps; and areas adjacent to the Waste Management Facility and Brighton Boulevard	Potential to encounter subsurface contamination associated with historic landfills	Develop a monitoring plan prior to construction and perform real-time monitoring during construction for volatile organic compounds, methane, and ACMs. Health and safety monitoring and ACMs remediation may be necessary. Follow the safety practices in the MMP and the Adams County Flammable Gas Overlay Zone District Regulations for any construction activities within 1,000 feet of a former solid waste disposal site or any site discovered to have been a solid waste disposal site.	CDOT Engineering and Contractor	Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
106	Hazardous Materials	Construction/excavation in historic landfills	Landfill areas with debris and elevated methane adjacent to the Burlington Ditch; southeast clover leaf off Vasquez Boulevard; westbound I-270 to eastbound I-76 and westbound I-270 to westbound I-76 ramps; and areas adjacent to the Waste Management Facility and Brighton Boulevard	Potential to impact historic landfills	Coordinate with CDPHE and Adams County Health Department, where historic landfills may be encountered during construction activities. “Hot work” activities will be prohibited in proximity to any excavations, including, but not limited to, welding/cutting, grinding, explosives, smoking, etc., due to the potential for explosion. If construction activities, such as drilling, have the potential to extend through the bottom of the landfill, the boring is required to be grouted with slurry or bentonite to prevent creating a hole in the landfill liner. The contractor shall comply with CDPHE’s Solid Waste Regulations (6 CCR 1007-2 Part 1) pertaining to solid waste sites/landfills.	CDOT Engineering and Contractor	Pre-Construction and Construction

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
107	Hazardous Materials	Construction/excavation in potentially contaminated areas with ACM	Landfill areas with debris in the southeast clover leaf off Vasquez Boulevard, Multi-contractor and Weaver Electric properties, and areas adjacent to the Waste Management Facility and Brighton Boulevard	Discovery of ACM in soil or landfill debris	If suspected ACM is encountered, workers will follow CDOT Specification 250.07 and CDOT Soil Management standard operating procedures and CDPHE's Soil Regulations and requirements under 6 CCR 1007-2.	CDOT Engineering and Contractor	Construction

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
108	Hazardous Materials	General construction activities	Throughout the project area and/or surrounding properties; Monitoring wells on Multi-contractor and Weaver Electric properties	Potential to impact drinking water or groundwater monitoring wells	Impacts to wells, including monitoring wells may not be avoidable. CDOT should initiate discussions with well owners about proper abandonment of existing wells, project phasing, and replacement if necessary. If any drinking water and groundwater monitoring wells are within the proposed construction area, wells will be abandoned and plugged according to CDOT Section 202.02 in Standard Specifications for Road and Bridge Construction and in conformance with the Colorado Department of Natural Resources Division of Water Resources State Engineer Water Well Construction Rules, specifically Rule 16, "Standards for Plugging, Sealing, and Abandoning Wells and Boreholes."	CDOT Engineering and Contractor	Construction
109	Hazardous Materials	Bridge replacement, demolition of structures	Throughout the project area and/or surrounding properties	Lead-based paint (LBP) and ACM	If structures are disturbed or demolished, they must be tested for LBP and ACMs for worker protection and disposal purposes.	CDOT Engineering and Contractor	Pre-Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
110	Hazardous Materials	Acquisition of property with potential hazardous material concerns	Throughout the I-270 corridor, surrounding properties located outside the existing CDOT ROW	Potential to acquire property with potential hazardous material concerns	An ASTM International-compliant Phase I Environmental Site Assessment (ESA) should be completed (at the discretion of the CDOT Hazardous Materials Specialist) before taking any additional ownership interest for properties considered for acquisition. Based on results of those assessments, specific management practices for areas where contamination could be encountered during construction or parcels where an ROW is acquired in these areas may be necessary. When recommended by the Phase I ESA or MMP, conduct subsurface investigations in high priority areas, as necessary, to help define or refine project risks. Utilize additional data generated to develop more targeted recommendations that help to mitigate hazardous materials issues.	CDOT Engineering, Environmental and ROW	Pre-Construction

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
111	Soils and Geologic Resources	Construction/excavation near landfills	All locations where existing differential settling occurs	Potential to exacerbate the issue	Develop a mitigation plan prior to construction and implement it during construction to address differential settling that exists today and reduce the potential for it to occur in the future. If additional delineation of the landfill boundary is needed prior to developing the mitigation plan, consider including a full geophysical survey along the route in the post-NEPA design process using techniques such as seismic, ground penetrating radar, or other techniques.	CDOT Engineering and Contractor	Pre-Construction and Construction
112	Soils and Geologic Resources	Excavation and drilling activities	All locations where groundwater / infiltration water is generated, and dewatering is required	Potential to encounter groundwater during construction	A Colorado Discharge Permit System - Construction Dewatering Permit will be obtained from the CDPHE - WQCD and requirements will be followed.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
113	Historic Resources	Design change	Near the 11 National Register eligible properties	Potential to change effects finding	CDOT will need to reassess individual project designs as they move forward to ensure that the effects to historic properties have not changed and that there are not new effects to properties not previously identified.	CDOT Engineering and Environmental	Final Design and Construction
114	Archaeological Resources	Post-Review Discovery during Project Construction	Project Area	Construction disturbance	If subsurface cultural materials are encountered during project construction, the CDOT Senior Archaeologist shall be contacted immediately to initiate the process for evaluating National Register eligibility and effects per 36 CFR §800.13.	CDOT Engineering and Environmental, Contractor	Construction
115	Paleontological Resources	Excavation into Pleistocene alluvial units	Intermittent; primarily north of the Vasquez Boulevard intersection	Potential damage to Pleistocene mammal fossils	Develop a monitoring plan prior to construction and implement paleontological monitoring at spot-check frequency, with timing determined by the CDOT staff paleontologist in consultation with the active monitor.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
116	Paleontological Resources	Excavation or drilling into the Denver or Arapahoe Formations	Primarily north of the Vasquez Boulevard intersection, but potentially anywhere in the project at various depths ranging from 0 feet near I-76 to about 40 feet near Brighton Boulevard	Potential damage to Cretaceous or Paleocene fossils	Develop a monitoring plan prior to construction and implement paleontological monitoring at spot-check frequency until bedrock is identified, after which continuous monitoring will be required. Monitoring is not required when landfill material is being excavated.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
117	Paleontological Resources	Discovery of fossils	Study Area	Removal of fossils	Obtain an excavation permit and conduct paleontological testing for any removal of fossils (permit must be held by a qualified paleontologist).	CDOT Engineering and Environmental, and Contractor	Construction
118	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	Roadway resurfacing and re-striping	Clear Creek Trail underpass at I-270	Potential for falling debris during construction	Develop a plan to protect users of the Clear Creek Trail from falling debris prior to construction and incorporate those measures during construction.	CDOT Engineering and Contractor	Final Design and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
119	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	Bridge replacements; Underground pipe outfall installation; Trail improvements	South Platte River Trail underpass at I-270; Spur to Sand Creek Trail at Brighton Boulevard/East 60th Avenue; Sand Creek Trail underpass at Vasquez Boulevard; Sand Creek Trail at Dahlia Trailhead; Sand Creek Trail at East 53rd Way	Temporary occupancy of and disturbance to trails	Access along existing trails shall be maintained, where possible, using signs and flaggers, as needed. Where closures of existing trails are necessary to complete construction activities, temporary trails shall be constructed to maintain access along trails during construction. Officials with jurisdiction (OWJs) over the trails shall be notified at least two weeks prior to closure. For the South Platte River Trail this is Adams County Parks, Open Space, & Cultural Arts. For the Sand Creek Trail, this is Commerce City Parks, Recreation and Golf and Sand Creek Regional Greenway Partnership (SCRGP).	CDOT Engineering and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
120	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	Bridge replacements; Underground pipe outfall installation; Trail improvements	South Platte River Trail underpass at I-270; Spur to Sand Creek Trail at Brighton Boulevard/East 60th Avenue; Sand Creek Trail underpass at Vasquez Boulevard; Sand Creek Trail at Dahlia Trailhead; Sand Creek Trail at East 53rd Way	Temporary occupancy of and disturbance to trails	Signage shall be installed at strategic locations along and off the trail (access points, parking areas, trailheads, etc.), and shall clearly communicate the expected construction timeline, and closure and detour areas. Signs shall be maintained, as needed, to ensure information remains accurate and up to date.	CDOT Engineering and Contractor	Pre-Construction and Construction



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121	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	Bridge replacements; Underground pipe outfall installation; Trail improvements	South Platte River Trail underpass at I-270; Spur to Sand Creek Trail at Brighton Boulevard/East 60th Avenue; Sand Creek Trail underpass at Vasquez Boulevard; Sand Creek Trail at Dahlia Trailhead; Sand Creek Trail at East 53rd Way	Temporary occupancy of and disturbance to trails	Flaggers and signage shall be utilized to manage bicyclists and pedestrians if the temporary trail cannot be constructed to the minimum standard width to accommodate both users.	CDOT Engineering and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
122	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	Bridge replacements; Underground pipe outfall installation; Trail improvements	South Platte River Trail underpass at I-270; Spur to Sand Creek Trail at Brighton Boulevard/East 60th Avenue; Sand Creek Trail underpass at Vasquez Boulevard; Sand Creek Trail at Dahlia Trailhead; Sand Creek Trail at East 53rd Way	Temporary occupancy of and disturbance to trails	Impacted trail segments shall be reconstructed and reopened immediately following trail-disturbing construction activities.	CDOT Engineering and Contractor	Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
123	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	Bridge replacements; Underground pipe outfall installation; Trail improvements	South Platte River Trail underpass at I-270; Spur to Sand Creek Trail at Brighton Boulevard/East 60th Avenue; Sand Creek Trail underpass at Vasquez Boulevard; Sand Creek Trail at Dahlia Trailhead; Sand Creek Trail at East 53rd Way	Temporary occupancy of and disturbance to trails	Ensure that Adams County trail specifications are incorporated in the design for areas of the South Platte River Trail to be replaced, and that Commerce City trail specifications are incorporated into the design for areas of the Sand Creek Trail to be replaced.	CDOT Engineering and Contractor	Final Design and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
124	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	Bridge replacements	South Platte River Trail underpass at I-270; Spur to Sand Creek Trail at Brighton Boulevard/East 60th Avenue; Sand Creek Trail underpass at Vasquez Boulevard	Temporary occupancy of and disturbance to trails; overnight closures of trail underpasses	Temporary trails shall be constructed prior to beginning bridge girder installation to ensure adequate vertical clearance is maintained between the temporary trail and the bottom of the new girders. Develop a plan to protect users of the South Platte River Trail from falling debris prior to construction and ensure those protective measures are in place to protect trail users along the temporary trail from construction activities required to construct the new bridge.	CDOT Engineering and Contractor	Pre-Construction and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
125	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	Bridge replacements	South Platte River Trail underpass at I-270; Spur to Sand Creek Trail at Brighton Boulevard/East 60th Avenue; Sand Creek Trail underpass at Vasquez Boulevard	Temporary occupancy of and disturbance to trails; overnight closures of trail underpasses	Necessary closures of temporary trails restricting use of trail underpasses shall only occur outside established operating hours of 5 a.m. to 11 p.m. Temporary trails shall reopen promptly inside established operating hours. The OWJ over the trails shall be notified at least two weeks prior to construction activities, requiring overnight closures of underpasses. For the South Platte River Trail, this is Adams County Parks, Open Space, & Cultural Arts. For the Sand Creek Trail, this is Commerce City Parks, Recreation and Golf and SCRGP.	CDOT Engineering and Contractor	Pre-Construction and Construction



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126	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	General construction activities	Sand Creek Greenway at west of Burlington Ditch, Brighton Boulevard/East 60th Avenue, Vasquez Boulevard, Dahlia Trailhead, and East 53rd Way	Temporary disturbance of the Sand Creek Greenway	All disturbed areas from construction activities within the Sand Creek Greenway shall be restored following construction.	CDOT Engineering and Contractor	Construction and Post-Construction
127	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	General construction activities	Benches and sign within Sand Creek Greenway 300 feet west of Vasquez Boulevard	Potential disturbance to Sand Creek Greenway amenities during construction	The paved area containing benches and a sign within the Sand Creek Greenway approximately 300 feet west of Vasquez Boulevard shall not be disturbed during construction.	CDOT Engineering and Contractor	Construction
128	Recreational, Section 4(f) Non-Historic, and Section 6(f) Resources	Construction of sidewalk connections; General construction activities	Dahlia Trailhead	Temporary disturbance and occupancy of Dahlia Trailhead	Dahlia Trailhead shall remain open for recreational use during construction, and all disturbances to the trailhead shall be restored following construction at that location.	CDOT Engineering and Contractor	Construction and Post-Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
129	Visual Resources	Highway widening	Corridor wide	Visual impacts associated with highway widening and other infrastructure changes	Corridor Aesthetic Design Guidelines will be developed to guide the design and future corridor improvements. Guidelines will include color, texture, and materials to ensure coherent design along the corridor. Design guidelines will include strategies for addressing slopes steeper than 3:1. Design guidelines will examine local jurisdictions' (Commerce City, Adams County, and Denver) master plans. The public will have an opportunity to provide input into the guidelines.	CDOT Design Engineer and Landscape Architect	Final Design
130	Visual Resources	Installation of new traffic signals	Vasquez interchange	Install new traffic signals at Vasquez Boulevard, which would have negligible impacts to views and landscape character	Landscape features will be added at new intersections. Clear zones and sight triangles will be verified for all landscape elements. Landscape elements will meet corridor design guidelines.	CDOT Engineering and Landscape Architect, and Contractor	Final Design and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
131	Visual Resources	Installation of walls (noise and retaining)	York Street area	Install walls, which would primarily affect views for I-270 travelers. Walls may visually impact views for up to three residents on either side of the highway, in the vicinity of York Street, as well as local residents. Installation of walls may provide visual coherence	The material, texture and color of the walls will be per corridor design guidelines. Walls should be thoughtful placed offset from sidewalks and trails to consider the pedestrian scale and allow for plantings. Consider terracing retaining walls where adjacent to pedestrian and bicycles trails and sidewalks for comfort and safety.	CDOT Engineering and Landscape Architect, and Contractor	Final Design and Construction

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
132	Visual Resources	Installation of Intelligent Transportation Systems (ITS) equipment	Project Area	ITS improvements, particularly variable message signs equipment would introduce new vertical features that could potentially block distant views, particularly of mountains for westbound travelers	The CDOT environmental team will work with the ITS designers to identify locations of large vertical structures. Proactive measures will be taken to locate ITS equipment to minimize obstructions of distant mountain and Denver skyline views.	CDOT Engineering, ITS, and Landscape Architect, and Contractor	Final Design and Construction



133	Visual Resources	Removal of trees	Project Area	Trees may be removed from the greenways to accommodate highway expansion, removing natural elements that are uncommon in the area	SB40 Wildlife Certification will be required for this project. Per SB40 requirements, “all practicable effort shall be expended to avoid unnecessary destruction of trees and shrubs in the vicinity of streams and in riparian areas. Trees removed should be considered for use onsite in a manner that improves riparian and in-stream habitat and for bank stabilization purposes. Any riparian trees removed will be replaced, according to the tree mitigation plan that will be developed for this project, which will be based on SB 40. Riparian trees and shrubs will be planted along the waterways replaced in accordance with SB40 Tree Mitigation Plan. Any upland tree identified for removal with a diameter at breast height greater than 4 inches will be inventoried. All upland trees greater than 4 inches in diameter at breast height will be replaced on a 1:1 basis. Use trees adapted to Colorado, low water and salt and pollution tolerant. PD503.1 Landscaping requires the use of native species where no irrigation is available. Kentucky bluegrass should not be used per Colorado's recent greening of	CDOT Engineering and Landscape Architect, and Contractor	Final Design, Construction, and Post-construction
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#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
					government initiatives. Use of xeriscaping principles, shrub selected for the site conditions. Tree replacement to consider the site and site conditions. Street trees should be adapted to the soils and moisture conditions. Riparian and wetland tree replacement should be with native trees where they are not in conflict with the interstate or trails and sidewalks. All trees should be irrigated or watered for establishment for a period of 3 years.		

#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
134	Visual Resources	General construction activities	Project Area	Temporary visual impacts would result from views of staging areas to cache construction materials; from views of large, slow-moving, and stationary construction vehicles; and construction personnel and temporary construction mitigation measures, such as silt fences	Restore staging areas and construction mitigation, such as silt fences, per CDOT Design Specification 106.08, Storage of Materials: "All storage sites shall be restored to their original condition at the Contractor's expense" (CDOT 2019b) and Section 208.4(f), CMs for Stormwater: "If [temporary control measures are] removed, the area in which these control measures were constructed shall be returned to a condition similar to that which existed prior to its disturbance" (CDOT 2019c). Restoration includes but is not limited to seeding in accordance with CDOT Procedural Directive 503.1. Use tree protection to protect trees designated to remain and riparian and wetland areas from construction traffic, staging and storage of materials.	CDOT Engineering and Environmental, Contractor	Construction and Post-Construction
135	Visual Resources	Lighting of construction site	Construction areas	Temporary visual impacts from stray light	Minimize stray light in the illumination plan for I-270 to the people in the adjacent communities (this can be done with designing the headlamps to be downcast)	CDOT Design Engineer and Landscape Architect, and Contractor	Final Design and Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
136	Visual Resources	Addition of new lighting or enhancement of existing lighting	Study area	Visual impacts from stray light	Minimize stray light in the illumination plan for I-270 to the people in the adjacent communities to the extent possible (this can be done with designing the headlamps to be downcast)	CDOT Design Engineer and Landscape Architect, and Contractor	Final Design and Construction
137	Utilities	Relocation or adjustment of utility line	Construction areas	Utility conflict	Conduct early coordination with utility owners for designs and/or construction that can be advanced to take place prior to construction.	CDOT Engineering and Contractor	Pre-Construction and Construction
138	Utilities	Relocation or adjustment of utility line	Construction areas	Service disruption due to utility conflict	Schedule service disruptions to coincide with periods of lower demand. This will be especially critical for large water conduit lines.	CDOT Engineering and Contractor	Pre-Construction and Construction
139	Utilities	Relocation or adjustment of utility line	Construction areas	Service disruption due to utility conflict	Minimize service disruptions by connecting to active utilities wherever possible.	CDOT Engineering and Contractor	Construction
140	Utilities	General construction activities	Construction areas	Protect remain-in-place utilities	Encase or provide protective cover over any impacted underground utilities, as necessary. This might include utilities under new or reconstructed roads, or where existing cover will be reduced over a utility.	CDOT Engineering and Contractor	Construction



#	Resource	Activity Triggering Mitigation	Location of Activity	Impact	Mitigation	Responsible Branch	Timing/Phase that Mitigation will be Implemented
141	Utilities	Relocation or adjustment of utility line	Construction areas	Utility conflicts	Coordinate with utility owners and operators to identify construction requirements and financial responsibilities for relocations based upon easements, license agreements, ownership, or other existing agreements covering the use of affected utilities.	CDOT Design and Construction Engineers and Contractor	Pre-Construction and Construction
142	Utilities	Relocation or adjustment of utility line	Construction areas	General utility concerns by providers	Identify and improve any utility concerns that can be addressed as part of project implementation, where feasible.	CDOT Engineering and Contractor	Pre-Construction and Construction
143	Utilities	Relocation or adjustment of utilities	Construction areas	Utility conflicts	At completion of construction, all remaining impacted utilities will be returned to condition that is in compliance with current codes and standards with renewed serviceability life.	CDOT Engineering and Contractor	Construction and Post-Construction