3.29 MITIGATION SUMMARY

This section summarizes the mitigation measures identified by CDOT and FHWA to eliminate or minimize social and environmental impacts from each of the build packages, including the Preferred Alternative. The impacts are summarized in **Section 3.28** *Summary of Direct and Indirect Impacts*. Mitigation measures that warrant monitoring have also been identified below. Monitoring has been identified where it is appropriate for specific resources to ensure implementation, meet permitting requirements and/or help identify trends and possible means for improvement. As described in this section, monitoring has been identified for air quality (during construction), water quality (per CDOT region and statewide program/permit requirements), wetlands (per Section 404 permit requirements), noxious weeds (during construction and revegetation), hazardous materials (during construction), paleontology (during construction), and a number of construction activities (as listed below). Commitments regarding mitigation measures and monitoring actions associated with a selected alternative will be included in the ROD.

Impacts to social and environmental resources are discussed earlier in this chapter. Transportation improvements and impacts are presented in **Chapter 4** *Transportation Impacts.*

Table 3.29-1 Summary of Mitigation Measures and Monitoring

Resource	Mitigation Measures
Land Use and Zoning	No mitigation measures will be required for the build packages. Once the Preferred Alternative is identified and an initial phase is formally selected in the Record of Decision, CDOT/FHWA will encourage the local governments to address incompatibilities between the proposed transportation improvements and land use/zoning through their existing land use processes. Typical processes local governments use to address land use incompatibilities include public involvement and visioning, amendments to comprehensive plans, and zoning changes.
Social Conditions	Where feasible, retaining walls have been identified for construction along I-25 and the BNSF rail corridor to minimize impacts to residential development. Also see mitigation measures associated with Noise/Vibration and Right-of-Way for property acquisition, provided later in this table. Mitigation for construction related impacts to minority and low-income populations could include the provision of reduced price bus passes during construction, acceptable access modifications, and translated information on construction processes and alternate modes available during construction and pre-opening day. If toll lanes are constructed, ways to make tolling more equitable will be sought. For example, payment options will be considered.
Economic Conditions	Acquisition or relocation of property will comply with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (the Uniform Act)*, and other applicable relocation assistance programs. If any of the build packages are implemented, a traffic control plan will be developed to minimize interference to traffic flow from construction equipment and activities. Mitigation has already been factored in to the analysis of impacts to minority and low-income populations. CDOT/FHWA will provide advance notice to emergency service providers, local schools, home owners associations, and the public of upcoming activities that are likely to result in traffic disruption. Such notifications will be accomplished through radio and public announcements, newspaper notices, on-site signage, and CDOT's website. New access will be provided for properties where existing accesses are removed. Although some businesses may have changes in access due to the project, CDOT will work to insure that some form of access is provided to all businesses. To avoid disruption of business activities during construction, the new access will be provided before the existing access is removed. To minimize disruption to traffic and local businesses, construction activities will be staged and work hours varied. Throughout the construction stage, access will be preserved for each affected business. Where feasible, retaining walls have been identified for construction along I-25 and the BNSF rail corridor to minimize impacts to commercial development.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Right-of-Way	Acquisition of those property interests required for the project will comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (the Uniform Act) and other applicable relocation assistance programs. The Uniform Act also provides for numerous benefits to individuals who occupy improvements that must be acquired, to assist them both financially and with advisory services related to relocating their residence or business operation to a replacement site.
Air Quality	The following mitigation measures are recommended to mitigate potential air quality emissions from commuter rail: ▸ New commuter rail, BRT, commuter, and feeder bus vehicles will be required to meet Tier 3 and Tier 4 standards. ▸ Alternative bus fleet vehicle selections will be investigated for more energy and emissions efficient vehicles, such as hybrids, electric buses, etc. The following mitigation measures are recommended for construction activities associated with any of the Build Packages: ▸ An air quality mitigation plan will be prepared describing all feasible measures to reduce air quality emissions from the project. CDOT staff must review and endorse construction mitigation plans prior to work on a project site. ▸ Acceptable options for reducing emissions could include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, and after-treatment products. ▸ The contractor will ensure that all construction equipment is properly tuned and maintained. ▸ Idling time will be minimized to 10 minutes—to save fuel and reduce emissions. ▸ An operational water truck will be on site at all times. Water will be applied to control dust as needed to prevent dust impacts off site. ▸ There will be no open burning of removed vegetation. Vegetation will be chipped or delivered to waste energy facilities. ▸ Existing power sources or clean fuel generators will be utilized rather than temporary power generators. ▸ Operations affecting traffic for off-peak hours will be scheduled whenever reasonable. ▸ Obstructions of through-traffic lanes will be minimized. A flag person will be provided to guide traffic properly minimizing congestion and to ensure safety at construction sites. Monitoring requirements for air quality mitigation during construction will be established in the air quality mitigation plan, and will be implemented by the construction contractor with CDOT oversight.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Air Quality (cont'd.)	The following mitigation measures were identified which could be included (for others to implement) to help reduce ammonia emissions within the regional study area: ▸ Choose a nitrogen fertilizer appropriate for a given cropping system that will have the lowest nitrogen volatilization on the soil type to which it is applied. ▸ Incorporating fertilizer or manure as soon as possible into the soils will greatly reduce ammonia volatilization, minimize the loss of ammonia, and make more applied nitrogen available for plants. ▸ Properly store and manage commercial fertilizer to minimize emissions of ammonia from leaks, spills, or other problems. ▸ The use of feed additive and supplemental hormones in animal production has proven to greatly improve nutrient utilization, resulting in more efficient milk and meat production. Use of these products may decrease nitrogen excretion per day and/or reduce the total number of days on feed, thereby reducing overall nitrogen excretion and subsequent ammonia volatilization. ▸ Ammonia volatilization occurs soon after manure is deposited on barn floors. BMPs should be implemented such as scraping and flushing the floors and alleyways, drying manure and cooling barn temperatures, installing filters/scrubbers on air exchange systems, etc. ▸ Areas such as lawns, open spaces, parks, and golf courses require large amounts of water as well as significant amounts of fertilizers to help them stay green. Therefore, appropriate fertilizers should be applied and BMPs for re-treatment of wastewater runoff should be implemented.
Noise & Vibration	There are several existing traffic noise barriers in the project area. If any of these barriers must be removed for construction, the old barrier will be replaced with an equivalent or better barrier as part of either Package A, Package B, or the Preferred Alternative. From the feasibility and reasonableness evaluations for the barriers, new traffic noise barriers are recommended for the following locations along the build alternatives, including the Preferred Alternative: ▸ Wellington East (10-foot to 12-foot barrier) – Packages A,B, and the Preferred Alternative ▸ Mountain Range Shadows (12-foot barrier) – Packages A,B, and the Preferred Alternative ▸ Thorncreek Village (14-foot barrier) – Package B and the Preferred Alternative ▸ Stone Mountain Apartments (14 foot barrier) – Package B and the Preferred Alternative ▸ Greens of Northglenn (10-foot to-12-foot barrier) – Package B and the Preferred Alternative ▸ Badding Reservoir extension (12-foot barrier) – Package B and the Preferred Alternative ▸ Brittany Ridge extension (12-foot barrier) – Package B and the Preferred Alternative

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Noise & Vibration (cont'd.)	If the designs in the future differ from those used in the Final EIS, corresponding adjustments to the mitigation evaluations may be required. Consideration of the placements of noise barriers will continue through final design of the selected alternative. Package A and Preferred Alternative would also result in rail transit noise and vibration impacts. The preferred mitigation actions of quiet zones, noise barriers, special trackwork and TDA would eliminate rail noise and vibration impacts such that no receivers would be impacted by rail transit noise or rail vibration. Mitigation actions for rail transit noise will require the involvement of several local governments. With the proposed mitigation: ▸ Package A would impact 623 Category B and 153 Category C receivers from traffic noise; while no receivers would be impacted by commuter rail, noise or vibration. ▸ Package B would impact 504 Category B and 163 Category C receivers from traffic noise. ▸ Preferred Alternative would impact 498 Category B and 161 Category C from traffic noise; while no receivers would be impacted by commuter rail, noise or vibration. **CONSTRUCTION NOISE** Construction noise would be subject to relevant local regulations and ordinances, and any construction activities would be expected to comply with them. To address the temporary elevated noise levels that may be experienced during construction, standard mitigation measures would be incorporated into construction contracts, where it is feasible to do so. These would include: ▸ Exhaust systems on equipment would be in good working order. Equipment would be maintained on a regular basis, and equipment may be subject to inspection by the project manager to ensure maintenance. ▸ Properly designed engine enclosures and intake silencers would be used where appropriate. ▸ New equipment would be subject to new product noise emission standards. ▸ Stationary equipment would be located as far from sensitive receivers as possible. Most construction activities in noise-sensitive areas would be conducted during hours that are least disturbing to adjacent and nearby residents.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Water Resources	A combination of mitigation measures consisting of permanent structural, nonstructural, and temporary construction best management practices (BMPs) will be implemented in the project area, in compliance with the Clean Water Act and CDOT's MS4 permit requirements. BMPs will include water collection and passive treatment of stormwater, which is currently being directly discharged into existing water systems. **STRUCTURAL BMPS** Extended detention/retention ponds have been identified as the primary structural BMP for this project. During final design, BMPs other than water quality ponds may be determined to be more appropriate, based on site conditions at that time. With Package A, water quality ponds will treat approximately 1,765 acres (90.7 percent) of the impervious surfaces within the project area. With Package B, about 2,509 acres (125 percent) will be treated. The Preferred Alternative would provide water quality ponds with a capacity to treat 2,009 acres, or 101 percent, of the total impervious area. Locations of water quality ponds have been identified throughout the project area. Placement of the BMPs is provided in the Water Quality and Floodplain Technical Report (FHU, 2008c) and Addendum (FHU, 2011b) and the Concept Plans Technical Report (FHU and Jacobs, 2011b). Stormwater management plans (silt fence, inlet protection, containerization of wastes, etc.) will be developed during design, implemented during construction, and updated as needed. Riprap will be placed at bridge abutments, piers, and at critical portions of channels or floodplains. When possible, passive BMPs (e.g., grass swales or natural infiltration) will be used for ephemeral streams. **TEMPORARY CONSTRUCTION BMPS** ▸ A Spill Prevention Control and Countermeasure Plan, per Section 311 of the Clean Water Act, will be prepared. ▸ In-stream activities will be minimized. ▸ CDOT's specifications for managing stormwater at a construction site (currently specifications 107.25, 212, 213, and 216) will be followed. ▸ Construction BMPs will be implemented and maintained in compliance with the CDPHE general construction permit. Construction plans must adhere to a stormwater management plan (Section 402, Clean Water Act CDPHE Regulation 61). ▸ Vegetation or other sediment and erosion control techniques (as indicated by CDOT erosion control practices) will be established to prevent sediment loading in compliance with the general stormwater construction permit. ▸ Construction activities will be phased to minimize effects associated with large areas of exposed ground and with soil compaction from heavy machinery use. CDOT has an on-going monitoring program for implementation of its Clean Water Act and MS4 permit requirements on a region and statewide basis. Specific monitoring activities for construction projects will be established in accordance with that program.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Water Resources (cont'd.)	**GROUNDWATER QUALITY** If groundwater is encountered during activities associated with excavations for caisson/retaining walls, the discharge of groundwater is authorized when the following conditions are met and then a dewatering permit would not be required: ▸ A Construction Stormwater Permit may be obtained; ▸ The source is groundwater and/or groundwater combined with stormwater that does not contain pollutants in concentrations exceeding the State groundwater standards in Regulations 5 CCR 1002-41 and 42; ▸ The discharge is in accordance with CDPH-WQCD Water Quality Policy-27, Low Risk Discharges-September 2009. ▸ The source is identified in the Stormwater Management Plan (SWMP); ▸ Dewatering BMPs are included in the SWMP, and ▸ These discharges do not leave the site as surface runoff or to surface waters. If these conditions are not met, then a separate Clean Water Act Section 402 Construction Dewatering Permit or Individual Construction Dewatering Permit will be required to be obtained by CDOT's contractor from the CDPHE – Water Quality Control Division. If dewatering is necessary, groundwater brought to the surface will be managed according to Section 107.25 of the CDOT *Standard Specifications for Road and Bridge Construction* (CDOT, 2005c). Monitoring associated with construction dewatering will be conducted as established in the applicable permit and the CDOT specifications. If active wells are present prior to construction, status of groundwater well use will have to be determined. Active wells within the right-of-way will be relocated, replaced, or supplemented if a reduction in the water table is anticipated.
Wetlands	Impacts to wetlands and jurisdictional open water will be avoided and minimized to the greatest extent possible during preliminary and final design. The following mitigation goals are appropriate for unavoidable impacts to wetlands for all build packages, including the Preferred Alternative: ▸ CDOT plans to mitigate permanent impacts to lower quality wetlands associated with project implementation through the purchase of wetland banking credits from a USACE-approved facility. ▸ Mitigation for impacts to moderate quality wetlands and high quality wetlands, generally associated with perennial waterways, will come in the form of a combination of in-lieu fee arrangements and off-site wetland creation or restoration. Monitoring requirements for wetland mitigation will be established through the USACE Section 404 Permit for the project.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Wetlands (cont'd.)	During construction, BMPs will be used to avoid indirect construction impacts to wetlands. Materials and equipments will be stored a minimum of 50 feet from wetlands, drainages, and ditches that could carry toxics materials into wetlands. Construction fencing and appropriate sediment control BMPs will be used to mark wetland boundaries and sensitive habitats during construction. Sediment and erosion control will be required to be placed during all phases of construction and will remain in place until all disturbed areas have reached 70% of preconstruction vegetative cover.
Floodplains	The following measures will be taken to mitigate floodplain impacts to the extent practicable: ▸ Designs will comply with federal, state, and local agency requirements. ▸ Design will consider the maximum allowable backwater as allowed by FEMA. ▸ 100-year FEMA design flows will be used for freeboard determinations, scour design, and to ensure that flow velocities are acceptable. ▸ 500-year design flows will be used for the scour design and to determine the depths of piles or caissons. ▸ Impacts to downstream areas must be assessed during preliminary and final design by using the guidelines described in **Section 3.9** *Floodplains.* ▸ Design flows will be based on the current level of development, and it will not be assumed that any inadvertent detention facilities will lower them. ▸ A bridge deck drainage system that controls seepage at joints should be considered. If possible, bridge deck drains will be piped to a water quality feature before being discharged into a floodplain. ▸ CDOT policy, to obey the Natural Flow Rule of Colorado and to hold others to the same standard (CDOT Drainage Design Manual, 2004, sec. 2.5.2 and 12.1.1), will be followed. ▸ The designs will comply with federal and state agencies. The designs will make every consideration towards meeting local agency requirements and will be consistent with existing watershed and floodplain management programs. ▸ Sediment and erosion will be controlled by implementing appropriate structural and non-structural BMPs during each phase of construction to avoid potential pollutants from entering state waters. ▸ Disturbed land will be seeded and re-vegetated in accordance with current CDOT standards and specifications. ▸ SB 40 requirements will be met for applicable areas.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Vegetation	Specific BMPs will be determined during final design. Mitigation measures are anticipated to include: ▸ An acceptable revegetation plan will be developed with the CDOT landscape architect and with county personnel in Adams, Boulder, Broomfield, Denver, Larimer, and Weld counties. The revegetation plan must also be acceptable to municipalities, such as Fort Collins and Longmont, within their jurisdictional areas. ▸ A SB 40 certification for stream crossings or adjacent stream banks will be obtained. In these areas, it is recommended trees and shrubs be replaced on a 1:1 basis (trees) and square-foot basis (shrubs). ▸ CDOT standard specifications for the amount of time that disturbed areas are allowed to be non-vegetated will be followed. ▸ Existing trees, shrubs, and vegetation will be avoided to the maximum extent possible, especially wetlands and riparian plant communities. The project team will coordinate with the CDOT landscape architect before construction to determine the types of vegetation that will be protected during construction. ▸ Weed-free topsoil will be salvaged for use in seeding. ▸ Erosion control blankets will be used on steep, newly seeded slopes. Slopes should be roughened at all times. ▸ All disturbed areas will be re-vegetated with native grass and forb species. ▸ Seed, mulch, and mulch tackifier will be applied in phases throughout construction. ▸ Mitigation measures for impacts to shortgrass prairie species are included in this table under Threatened, Endangered, and State Sensitive Species.
Noxious Weeds	An integrated weed management plan or project-specific CDOT 217 Specification will be incorporated into the project design and implemented during construction. Specific BMPs will be required during construction to reduce the potential for introduction and spread of noxious weed species. These will include: ▸ Noxious weed mapping will be included in the construction documents along with appropriate weed control methods. ▸ Highway right-of-way areas will be inspected periodically by the associated city or its consultants during construction and during post-construction weed monitoring for invasion of noxious weeds. ▸ Weed management measures will include removal of heavily infested topsoil, herbicide treatment of lightly infested topsoil as well as other herbicide and/or mechanical treatments, limiting disturbance areas, phased seeding with native species throughout the project, and monitoring during and after construction. ▸ Use of herbicides will include selection of appropriate herbicides and timing of herbicide spraying and use of a backpack sprayer in and adjacent to sensitive areas, such as wetlands and riparian areas. ▸ Certified weed-free hay and/or mulch will be used in all revegetated areas. ▸ No fertilizers will be allowed on the project site.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Noxious Weeds (cont'd)	▸ Imported topsoil must be inspected and approved by the project's Noxious Weed Management Supervisor before it can be used on-site. ▸ Preventative control measures for project design and construction may include: • Only native species will be used to revegetate sites. • Materials used for revegetating will be inspected and regulated in accordance with provisions of the Weed Free Forage Act, Title 35, Article 27.5, CRS. • When salvaging topsoil from on-site construction locations, the potential for spread of noxious weeds will be considered. Importing topsoil onto the project site will not be allowed. ▸ Equipment will remain on designated roadways and stay out of weed-infested areas until the areas are treated. All equipment will be cleaned of all soil and plant parts before its arrival at a project site. Appropriate monitoring actions for noxious weeds mitigation will be identified in the integrated weed management plan or project-specific CDOT 217 Specification.
Wildlife	CDOT mitigation measures associated with wildlife impacts will include: ▸ An application for SB 40 Certification will be submitted to CDOW. ▸ Requirements of the Migratory Bird Treaty Act (1918) (MBTA) will be followed. CDOT has proposed special provisions creating a new Standards and Specification Section 240 – Protection of Migratory Birds to address the requirements of the MBTA. These provisions will ensure that consistent, appropriate and reasonable measures are taken to prevent injury to and death of migratory birds and the CDOT activities are compatible with current federal and state wildlife laws and regulations. ▸ CDOT will implement three mitigation measures for projects that will have an impact to migratory birds: (1) tree trimming and/or removal activities, (2) bridge or box culvert work that may disturb nesting birds, and (3) clearing and grubbing of vegetation that may disturb ground nesting birds will all be completed before birds begin to nest or after the young have fledged. ▸ A raptor nest survey will be conducted prior to project construction to identify raptor nests and nesting activity in the vicinity of the proposed project. CDOW recommended buffers and seasonal restrictions will be implemented if active raptor nests are found. ▸ If impacts to raptor nests are unavoidable, specific mitigation measures will be developed prior to construction. ▸ To maximize use of movement corridors by wildlife, bridge spans and culverts should have the following features: a minimum clearance of 10 feet and width of 20 feet for deer and a minimum "openness ratio" of 0.75. ▸ Shrubs and vegetative cover will be placed at bridge underpass openings to attract wildlife and provide a "funnel effect". ▸ For structures that periodically convey water, ledges or shelves will provide passage alternatives during high water. ▸ To avoid human disturbance to wildlife, trails should not be placed near wildlife crossing structures.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Wildlife (cont'd)	To maximize use of bridges and culverts by wildlife, other recommended design elements include: ▸ The placement of lighting should be avoided near the crossing structures. ▸ Roadside vegetation height should be kept to a minimum. ▸ Along the commuter rail corridor, CDOT/FHWA will seek permission from the regional transit authority to minimize the use of chain-link fencing in areas that are heavily used by wildlife. The following design measures may be implemented to mitigate potential impacts to aquatic species, including native fish: ▸ Riffle and pool complexes should be maintained and/or created. ▸ Natural stream bottoms will be maintained. ▸ Culverts should be partially buried and the bottom should be covered with gravel/sand and have a low gradient. ▸ Culverts to be replaced should be replaced with one of equal or greater size. ▸ Culverts will not have grates, impact dissipators, or any other features that would impede fish movement. ▸ Access points to streams during construction will be limited to minimize degradation of the banks. ▸ No new fish passage barriers will be created. ▸ Existing drop structures that create a barrier to fish movements will be removed or redesigned where possible. ▸ Erosion control blankets will be "wildlife friendly", consisting of 100 percent biodegradable materials.
Threatened, Endangered, Other Federally-Protected and State Sensitive Species	Mitigation measures for occupied Preble's habitat may be required as part of Section 7 consultation with USFWS. Because the project will be built over a period of many years, CDOT will reinitiate Section 7 consultation with USFWS when future phases are initiated to determine whether additional surveys for PMJM are needed at that time. Avoidance and minimization measures will include: ▸ Construction within occupied Preble's habitat at the Little Thompson and Big Thompson rivers and any area found to be occupied by Preble's by future surveys will be limited to Preble's inactive season (November through April). ▸ Visible barriers will be used to limit the area of construction. ▸ If culverts in Preble's habitat are replaced or upgraded, the new culverts will incorporate ledges to facilitate small mammal passage. ▸ Current technology to reduce lighting impacts to Preble's will be investigated.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Threatened, Endangered, Other Federally-Protected and State Sensitive Species (cont'd.)	▸ Where impacts are unavoidable, compensatory mitigation will be provided through replacement with suitable habitat for Preble's habitat. Mitigation measures for Preble's could be combined with wetlands mitigation. Wetland mitigation measures also may replace any impacts to suitable unoccupied Preble's habitat. Permanent impacts would be mitigated at a 3:1 mitigation to impact ratio; temporary impacts would be mitigated at a 1:1 ratio. ▸ Conservation measures would be employed to minimize impacts during construction and include: • Stockpiling construction materials in bare areas, rather than on top of existing vegetation in known occupied and high potential habitats. • Informing construction workers the reasons for and importance of limiting impacts to vegetated habitat outside the work area in known occupied habitat. • Supervising work on a daily basis to ensure that conditions established by the USFWS are met. • Providing a report to the USFWS that includes photographic documentation of site conditions prior to and at the completion of construction. • Following requirements stipulated in the Biological Opinion prepared by the USFWS. • Conservation measures in accordance with the Short Grass Prairie Initiative Biological Opinion for sensitive, nonlisted species including black-tailed prairie dog, burrowing owl, native fish, and mussels (including brassy minnow, common shiner, plans minnow, and cylindrical papershell), and northern leopard frog. Mitigation measures for bald eagles include: ▸ A raptor nest survey will be conducted prior to construction to identify bald eagle nests in the project area. If an active bald eagle nest is found within 0.5 mile of the project area, the buffers and seasonal restrictions recommended by CDOW will be established during construction to avoid nest abandonment. ▸ No construction will occur within 0.25 mile of active nocturnal roosts between November 15 and March 15. If perch or roost trees are removed during construction, they will be replaced at a 2:1 ratio with native cottonwood trees. ▸ All overhead lighting at the intersection of I-25 and SH 392 near Fossil Creek Reservoir will incorporate the latest technology at the time of construction to control light leakage and direct lighting away from eagles roosting or nesting at the reservoir. ▸ Mitigation for wetland impacts will also provide mitigation for impacts to riparian habitats used by foraging bald eagles. Prairie dog colonies will need to be resurveyed prior to construction. In areas where avoidance of prairie dogs is not possible, CDOT will follow its Impacted Black-tailed Prairie Dog Policy. Any prairie dog relocation or removal activities will be carried out in accordance with CRS 35-7-203, as well as any other applicable laws or regulations, and with close coordination with CDOW.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Threatened, Endangered, Other Federally-Protected and State Sensitive Species (cont'd.)	Burrowing owl surveys will be conducted prior to any work in prairie dog colonies between March 15 and October 31. If burrowing owls are present, prairie dog removal will be scheduled to occur outside this time period. If burrowing owls are found within the construction footprint during preconstruction surveys, nests will be left undisturbed and additional avoidance measures will be developed in coordination with CDOW. Direct impacts to burrowing owls will be avoided by covering or destroying prairie dog burrows prior to construction (prior to March 15). Direct impacts to nesting great blue herons will be avoided by prohibiting work within the 500-meter (0.31-mile) buffer from nest sites recommended by CDOW. Impacts within this buffer will be limited during the nesting season, which occurs from mid-March through July. Mitigation measures for wetlands and Preble's, including wetlands replacement and riparian enhancement, will also mitigate impacts to northern leopard frogs and common gartersnakes. Replacement of culverts with larger culverts or free-spanning bridges will also mitigate potential impacts to northern leopard frog and common gartersnake. The following design measures will mitigate potential impacts to aquatic species, including native fish: ▸ Riffle and pool complexes should be maintained and/or created; ▸ Natural stream bottoms will be maintained; ▸ Culverts should be partially buried and the bottom should be covered with gravel/sand and have a low gradient; ▸ Culverts to be replaced will be replaced with one of equal or greater size; ▸ Culverts will not have grates, energy dissapators, or any other features that would impede fish movement. ▸ To avoid erosion-induced siltation and sedimentation, erosion control measures will be applied, such as the immediate reseeding of disturbed areas after construction and, if necessary, the application of mulch and mulch tackifier to stabilize slopes. ▸ Access points to streams during construction will be limited to minimize degradation of the banks. ▸ No new fish passage barriers will be created. ▸ Existing drop structures that create a barrier to fish movements will be removed or redesigned where practicable. CDOT's water quality BMPs will be applied, and will include installation of mechanisms to collect, contain, and/or treat roadway runoff. Mitigation measures, such as habitat replacement/enhancement and replacement of existing culverts with larger or more numerous culverts and/or free-spanning bridges, would also improve fish habitat. These measures are designed to offset impacts to wetlands, Ute ladies'-tresses orchid, and Preble's. Potential Colorado butterfly plant and Ute ladies'-tresses orchid habitat within the project area, along the Cache la Poudre, Big Thompson and Little Thompson rivers, and along St. Vrain Creek will be surveyed during the flowering season just prior to construction. An integrated weed management plan or project specific CDOT 217 specification will be developed and implemented to control the spread of noxious weeds.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Visual Quality	▸ Mitigation measures to address visual effects of highway widening will include incorporating landscaping at interchanges and along the highway. ▸ Mitigation measures to address visual effects of structural elements will include providing architectural interest or color into retaining walls and sound walls, and reducing the effect of overpasses by providing architectural detailing of the railings and other features. ▸ Mitigation measures to address the visual effects of carpool lots will include the use of trees in combination with shrubs to filter views to the carpool lots, provide a human scale, and present a positive image. Landscape islands with shade trees would be placed in parking lots to break up the expanse of pavement and parked vehicles. ▸ Mitigation measures to soften and enhance the visual effects of slip ramps will include incorporating landscaping, providing architectural interest or color in retaining wall and limiting lighting to only what is required for safety and security. ▸ Potential mitigation measures to soften and enhance the visual effect of the proposed commuter rail service will include fencing types, landscaping, and architectural features. ▸ Mitigation measures to soften and enhance visual effects of track widening for transit will include incorporating landscaping, considering vinyl-coated chain-link fencing, providing architectural interest or color in retaining wall and bridge design, and limiting lighting to only what is required for safety and security. ▸ Mitigation measures to address visual effects of express bus, commuter bus, and commuter rail stations will include providing distinctive treatments at station locations to designate station locations. Local communities, business districts, or other entities should be involved in upgrading or enhancing the currently proposed features. The effects of overpasses will be reduced with architectural detailing of the railing and other features. Station effects will be reduced with the use of trees in combination with shrubs to filter views to the station and parking lots, provide a human scale, and present a positive image to attract ridership. Landscape islands with shade trees will be placed in parking lots to break up the expanse of pavement and parked vehicles.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Historic Preservation	Mitigation measures to address adverse effects to historic properties will be determined by consultation between FHWA, CDOT and the Colorado SHPO. Mitigation measure for permanent impacts may include: ▸ Avoidance and minimization will be addressed first. ▸ Memorandum of Agreement with parties will be established. ▸ Colorado Historical Society Standards Level II Documentation will be provided. ▸ If subsurface archaeological remains are exposed during any phase of construction, all activities in the vicinity of the discovery will cease and the CDOT Senior Staff Archaeologist will be contacted. Consultation with the SHPO and any pertinent consulting parties will be contacted, as necessary. Work will not proceed until authorization from the CDOT Senior Staff Archaeologist has been provided. Mitigation measures for indirect effects include: ▸ Construction disturbances will be controlled and minimized. ▸ All disturbed areas will be returned to their original configuration to the extent possible. ▸ Precautionary measures, such as applied palliatives to reduce impact of dust will be implemented. ▸ Contractor training to prevent flying debris effects will be implemented. ▸ Planned construction staging will be provided to avoid these effects whenever possible. ▸ Signage and well marked alternate routes for access will be provided. ▸ Landscape context sensitive design will be employed to minimize intrusive effects of transportation features. ▸ Noise barriers will be constructed as warranted.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Paleonto-logical Resources	The latest revision of the CDOT Specification 107.23 Archaeological */Paleontological* Discoveries shall be followed. All paleontological monitoring work will be performed by a qualified and State of Colorado-permitted paleontologist. Paleontological monitoring will include inspection of exposed rock units and microscopic examination of matrix to determine if fossils are present. This work would take place during surface disturbing activities, such as excavations for the construction of roads, railways, bridges, underpasses, and buildings. Monitoring will be scheduled to take place continuously or to consist of spot-checks of construction excavations, depending upon the paleontological sensitivity of the project area based on its geology and the types and significance of potential fossils that could be present in subsurface sedimentary deposits. Paleontological monitors will follow earth-moving equipment and examine excavated sediments and excavation sidewalls for evidence of significant paleontological resources. At the request of the monitors, the project engineer will order temporary diversion of grading away from exposed fossils in order to permit the monitors to efficiently and professionally recover the fossil specimens and collect associated data. All efforts to avoid delays to project schedules will be made. If any subsurface bones or other potential fossils are found by construction personnel during construction, work in the immediate area will cease immediately, and the CDOT paleontologist will be contacted to evaluate the significance of the find.
Hazardous Materials	The *Modified Phase I Environmental Site Assessment Technical Report* (FHU, 2008d) and *Addendum* (2011c) contains a complete listing of sites with potential and recognized environmental conditions that were identified for the project and should be referenced to verify recommended mitigation actions. A Materials Management Plan (MMP), as required by Section 250.03 of the CDOT *Standard Specifications for Road and Bridge Construction* (CDOT, 2005c), will be prepared for areas with known soil and groundwater contamination. Construction specifications will be written to include review of the MMP by the CDOT Regional Environmental Manager. If dewatering is necessary, groundwater brought to the surface will be managed according to Section 107.25 and 250.03 of the CDOT *Standard Specifications for Road and Bridge Construction* (CDOT, 2005c) and permitted by the CDPHE Water Quality Control Division. Relocation of overhead electrical utility lines and pole-mounted transformers will be conducted in accordance with state and federal requirements, and any easement agreement between CDOT and/or private landowners. All wells within the proposed construction area will be abandoned and plugged according to CDOT Section 202.02 in *Standard Specifications for Road and Bridge* Construction (CDOT, 2005c) and in conformance with the Colorado Department of Natural Resources Division of Water Resources State Engineer Water Well Construction Rules, specifically Rule 16. If petroleum-contaminated soil is identified with a concentration less than 1,000 ppm but higher than 500 ppm, CDOT will be responsible for clean-up. A MMP and a Health and Safety plan, as required by Section 250.03 of the *CDOT Standard Specifications for Road and Bridge Construction* (CDOT, 2005c), also is recommended for use when oil and gas facilities are encountered.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Hazardous Materials (cont'd.)	Prior to demolition of any structures, an asbestos, lead-based paint, and miscellaneous hazardous materials survey will be conducted at each parcel, where applicable. Regulated materials abatement will be conducted in accordance with Section 250, Environmental, Health, and Safety Management, of the CDOT S*tandard Specifications for Road and Bridge Construction* (CDOT, 2005c) and relevant Occupational Health and Safety (OSHA) regulatory details. Prior to demolition, regulated materials must be removed from any structures and appropriately recycled or disposed. Coordination with the Colorado Department of Labor and Employment Division of Oil and Public Safety (OPS) will be required prior to parcel acquisition of any sites that are identified as having active leaking tanks. If site characterization and/or remediation have not been completed, the OPS may require CDOT to complete these activities after acquisition. During the right-of-way acquisition process, additional properties may require other actions depending on the results of the Initial Site Assessments (ISAs). By law, all friable asbestos-containing materials (ACM) must be removed from structures (including bridges) prior to demolition, and soils if encountered in excavated landfill or building debris, buried utilities, or other ACM is encountered. The contractor performing the asbestos abatement is required to be licensed to perform such work and obtain permits from the CDPHE. Lead-based paint may need to be removed prior to demolition if the lead is leachable at concentrations greater than regulatory levels. Where lead-based painted surfaces will be removed via torching, additional health and safety monitoring requirements are applicable. Prior to construction activities, a Health and Safety Plan, as required by Section 250.03 of the CDOT *Standard Specifications for Road and Bridge Construction* (CDOT, 2005c), will be developed. Construction specifications shall be written to include review of the Health and Safety Plan by the CDOT Regional Environmental Manager. If abandoned landfills or coal mines are present below and/or within 1,000 feet of construction activities, the Health and Safety Plan will need to include provisions for assessing and monitoring air quality at all utility trenches, drainage structures, and similar underground construction (i.e., caissons) areas prior to and during intrusive activities to ensure worker safety. Monitoring requirements for hazardous materials concerns during construction activities will be established in the MMP, Health and Safety Plan, and CDOT standard and project-specific specifications.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Parks and Recreation	All ground disturbing and debris generating construction processes will be contained by erosion and sediment control BMPs designed as part of approved stabilization and stormwater management plans. All disturbed areas will be returned to their original contour, vegetation. and landscape appearance in cooperation with and direction from the resource jurisdictional authorities. Some techniques that may be used to mitigate impacts will include, but not be limited to: ▸ coordinating with the local jurisdiction to prepare for construction at the site, including public safety and security measures and providing signed detour and alternate access information; ▸ replacing vegetation will be with native grass and shrubs or irrigated turf as pre-construction conditions dictate; (mitigation ratios and plant selection and placement will be determined through coordination with local jurisdictional agencies); ▸ using BMPs to limit erosion during construction; ▸ compensating for acquisition of the resource (location of any lost access will be negotiated with park representatives during final design); and ▸ rebuilding park features, such as trails, elsewhere on the park site. ▸ Fencing will be included in all areas where pedestrian safety is a concern.
Section 6(f)	Coordination has occurred with the Colorado State Parks Department to ensure that potential impacts to any Section 6(f) resources have been properly analyzed. The build alternatives would not result in any impacts to Section 6(f) properties and therefore, no mitigation is necessary.
Farmland	NRCS offices recommended keeping construction materials, tools, and vehicles within the proposed ROW to reduce impacts and consideration of converting non-prime farmland before impacting prime farmland.
Energy	Mitigation of energy consumption during operations will focus on a reduction in daily vehicle miles of travel. This reduction can be achieved through successful transit-oriented development, congestion management, and effective improvements to the roadways. These measures all work to increase travel efficiency and save energy.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Public Safety and Security	Mitigation measures for temporary impacts during construction include: ▸ The design of bus stations will incorporate life-safety standards, similar to RTD's Comprehensive Safety Certification Program. To ensure consistency of service across the transit corridor, the commuter rail operating authority will be expected to adhere to these same standards. These include measures such as fencing to protect patrons from the track area; well-designed pedestrian underpasses; lighting as a deterrent to crime and to ensure good visibility in stations and parking areas; and, where walls and elevator shafts are constructed, the use of transparent materials to provide better sight lines and reduce concealment areas for criminals. ▸ Prior to operation of commuter rail with Package A and the Preferred Alternative, the operational authority will host training sessions for all affected police, fire, emergency response teams, schools, and employers who either are responsible for police or emergency response or are located in the immediate project corridor. These training sessions will cover the details of commuter train and bus operations, potential security issues, and agency responsibilities. ▸ Potential losses at construction sites will be mitigated through fencing and on-site security provided by contractors. All construction contractors will be responsible for safety at their respective sites and will be required to follow all OSHA requirements applicable to construction site safety. The appropriate agencies will provide a site safety officer to monitor site safety.
Construction	CDOT's *Standard Specifications for Road and Bridge Construction* (2005c) and CDOT's *Construction Manual* (2002d) outline basic mitigation measures and monitoring actions that contractors are required to take on any construction project. Appropriate application of these mitigation strategies and monitoring actions will be defined during the final engineering phase of this project, including the following: **Noise** ▸ Implement construction best management practices. ▸ Use noise blankets on equipment and quiet-use generators. ▸ Combine noisy operations to occur in the same time period. ▸ In residential areas, construction activities will be minimized during the evening, nighttime, weekends, and holidays when receptors are usually in these areas ▸ Nighttime construction will be desirable (e.g., commercial areas where businesses may be disrupted during daytime hours) or necessary to avoid major traffic disruption. ▸ The major noise source on construction sites is typically diesel motors; therefore, all engines will use commercially available effective mufflers and enclosures, as possible.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Construction	▸ Modern equipment will be used with improved noise muffling and all equipment items will be evaluated to ensure that they have the manufacturers' recommended noise abatement measure, such as mufflers, engine covers, and engine vibration isolators intact and operational. Generally, newer equipment would create less operational noise than older equipment. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise-control devices (e.g., mufflers and shrouding). ▸ The use of impact pile driving will be avoided near noise-sensitive areas, where possible. Alternative foundation preparation technologies will be used, such as vibratory pile driving or cast in drilled hole. ▸ Temporary barriers will be used and relocated, as required, to protect sensitive receptors from excessive construction noise. Noise barriers should be made of heavy plywood or moveable insulated sound blankets. ▸ Plans will be made to conduct truck loading, unloading, and hauling operations so that noise will be kept to a minimum. ▸ Frequent updates of all construction activities will be provided to the public. ▸ A community noise and vibration monitoring plan and a noise and vibration control plan will be prepared before initiating any construction. **Access** ▸ Use enhanced signing. ▸ Use alternate access enhancements. ▸ Use advertising/public relations. ▸ Do not close multiple interchanges concurrently. **Highway** ▸ Limit detours. ▸ Place detours on major arterial streets and ensure no local street detours are implemented. ▸ Schedule construction during periods of least traffic. ▸ Use geometric enhancements including wider lanes and better visibility. ▸ Limit construction vehicles to major arterials. ▸ Enforce speed restrictions; provide adequate space for enforcement; make prime contractor accountable. ▸ Use courtesy patrol

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Construction (cont'd.)	▸ Use enhanced signing. ▸ Phase construction to limit traffic in neighborhoods. ▸ Comply with AASHTO guidance and Manual on Uniform Traffic Control Devices. ▸ Coordinate work activities to ensure they do not coincide with sporting, school, or special events. ▸ Implement advanced traffic diversion. ▸ Use intelligent management systems and variable message signs to advise/redirect traffic. ▸ Work with RTD to offer enhanced operations during peak construction. ▸ Develop traffic management plans. ▸ Maintain access to local businesses/residents. ▸ Coordinate with emergency service providers to minimize delay and ensure access to properties. **Pedestrian/Bicycle Mobility** ▸ Provide well-defined detours for pedestrians/ bicyclists. ▸ Enhance safety through the use of adequate signing, fencing, and lighting. ▸ Implement a public relations program. ▸ Comply with American Disability Act requirements. ▸ Construct new bike/pedestrian overpass as a detour before old is demolished. **Environmental Impacts** ▸ Use wetting/chemical inhibitors for dust control. ▸ Provide early investigation of subsurface conditions. ▸ Prepare a well-defined materials handling plan. ▸ Employ educated contractor with trained personnel. ▸ Require prompt and safe disposal of waste products. ▸ Implement water quality best management practices. ▸ Institute resource reuse and allocation. ▸ Ensure regulatory compliance.

1 **Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)**

Resource	Mitigation Measures
Construction (cont'd.)	▸ Cover trucks hauling soil and other materials. ▸ Stabilize and cover stockpile areas. ▸ Minimize offsite tracking of mud, debris, hazardous material, and noxious weeds by washing construction equipment in contained areas. ▸ Avoid impacts to wetlands or other areas of important habitat value in addition to those impacted by the project itself. ▸ Control and prevent concrete washout and construction wastewater. As projects are designed, ensure that proper specifications are adhered to and reviewed to ensure adequacy in the prevention of water pollution by concrete washout. ▸ Store equipment and materials in designated areas only. ▸ Promptly remove any unused detour pavement or signs. ▸ Follow CDOT *Standard Specifications for Road and Bridge Construction* (2005c), including sections regarding water quality control, erosion control, and environmental health and safety. ▸ Prepare or revegetate exposed areas as soon as possible after construction. ▸ Remove soil and other materials from paved streets. ▸ Incorporate recommendations as appropriate from the Regional Air Quality Council (RAQC) report, *Reducing Diesel Emissions in the Denver Area* (RAQC, 2002). ▸ Operate equipment mainly during off-peak hours. ▸ Limit equipment idling time. ▸ Use recycled materials for project activities to the extent allowed by good practice and CDOT construction specifications. ▸ Use construction equipment that use ultra-low sulfur fuels to the extent practicable. **Floodplains and Water Resources** ▸ Best management practices used will be consistent with the MS4 permitting requirements, requirements of Northern Front Range flood control districts, as well as practices mentioned in CDOT's *Erosion Control and Stormwater Quality Guide* (CDOT, 2002b). ▸ Section 107.25 of CDOT's *Standard Specifications for Road and Bridge Construction* (2005c) deals with contractor's requirements for water quality control.

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Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Section 4(f)	**Historic Resources** Old City Electric Building, Colorado & Southern/BNSF Depot, Hingley Farm, and Jillson Farm: ▸ Property acquisition will be completed under the Uniform Relocation Act. ▸ Continued consultation with SHPO is recommended prior to final design to implement possible revised design elements to facilitate historic preservation. ▸ Detailed recording of the building, in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended. ▸ All mitigation measures are pending SHPO concurrence. Louden Ditch: ▸ Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence. ▸ Operation of irrigation ditch maintained during construction. ▸ Appropriate erosion and sediment control Best Management Practices (BMPs) employed to ensure protection of resource during construction. ▸ Disturbed areas will be reseeded with native grasses. Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder Valley Branch (UPD&BVB): ▸ Detailed recording of the affected railway, in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended pending SHPO concurrence. ▸ Continued consultation with SHPO is recommended prior to final design to implement possible revised design elements to facilitate historic preservation.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Section 4(f) (cont'd)	**Park, Recreation, and Wildlife and Waterfowl Refuge Resources** McWhinney Hahn Sculpture Park ▸ Coordinate with City of Loveland to relocate park to new location. ▸ Coordinate with City of Loveland to identify new park, gateway, and visitor's center location. ▸ Continue coordination with City of Loveland into final design to assure no disruption of services ***De Minimis*** For all Resources ▸ Permanent easements or property acquisition will be completed under the Uniform Relocation Act. ▸ Disturbed areas will be re-landscaped or reseeded with native grasses. ▸ Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction. Historic Resources Larimer County Ditch, Cache la Poudre Reservoir Inlet, Boxelder Ditch, Loveland and Greeley Canal, Farmers Ditch, Hillsboro Ditch, Handy/Home Supply Ditch Confluence, Bull Canal/Standley Ditch, Rough and Ready Ditch, Oligarchy Ditch, Big Thompson Ditch, Boulder and Weld County Ditch, Rural Ditch, Supply Ditch: ▸ Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence. ▸ Maintain operation of irrigation ditch during construction. Einarsen Farm, Hatch Farm, Mountain View Farm, Bein Farm, Olsen Farm: ▸ Maintain operation of farm during construction. Schmer Farm: In addition to mitigation measures for farms listed above: ▸ Work with SHPO during final design to formulate acceptable aesthetic treatment of highway ramps and flyways (facades, pier treatments, elevation changes, landscaping, etc.). Great Western Railway ▸ Maintain rail operations during construction. ▸ Colorado and Southern Railway Depot / Loveland Depot ▸ Attempt to incorporate the depot into the station platform.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Section 4(f) (cont'd)	Kitely House ▸ Detailed recording of the affected property in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence. Great Western Sugar Factory ▸ Refer to mitigation measures for all resources above. Sandstone Ranch ▸ Retaining walls used to minimize surface use. ▸ Operation of recreational facilities during construction will be maintained. UPRR Dent Branch ▸ Detailed recording of the affected railway, in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended pending SHPO concurrence. <u>Public Parks, Recreation Areas, and Wildlife and Waterfowl Refuge Resources</u>: Arapaho Bend Natural Area ▸ Reclaim and revegetate in-kind the areas where the existing bridges are removed. ▸ CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by the transportation improvements. Archery Range Natural Area ▸ BMPs will be used to avoid or minimize construction-related nuisances in affected areas from noise, dust, light/glare, etc. ▸ Native shrubs will be added as appropriate. Big Thompson Ponds State Wildlife Area ▸ CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by the transportation improvements. ▸ Native shrubs will be replaced as appropriate.

Table 3.29-1 Summary of Mitigation Measures and Monitoring (cont'd.)

Resource	Mitigation Measures
Section 4(f) (cont'd)	Little Thompson River Corridor ▸ CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by transportation improvements. ▸ CDOT will develop the new access before the existing access is closed. Alternate routes will be identified and adequate detour signing will be provided. ▸ Work with Berthoud to reseed disturbed areas with native grasses. ▸ Native shrubs will be added as appropriate Sandstone Ranch ▸ Native shrubs will be added as appropriate. ▸ BMPs will be used to avoid or minimize construction-related nuisances in affected areas from noise, dust, light/glare, etc. ▸ CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by the transportation improvements. <u>Trail resources:</u> 120th Avenue Transit Station Underpass, Niver Creek Open Space/Coronado Parkway Trail, Farmers Highline Canal Trail, RR Alignment Trail (21st to Hwy 66) ▸ A detour will be in provided and in place prior to closure of the existing trail. ▸ Advanced notice and signage will be in place for closure and detour. ▸ Trail crossings will be returned to existing or improved condition after construction. ▸ A public safety and security program will be developed and implemented for affected areas with local officials, including access management, signage, and public information. ▸ Applicable regional and/or local design criteria will be included for bridges and the box culvert structures in construction specifications ▸ Coordination with the official with jurisdiction will be ongoing to insure no disruption to the use of the trail during construction.