

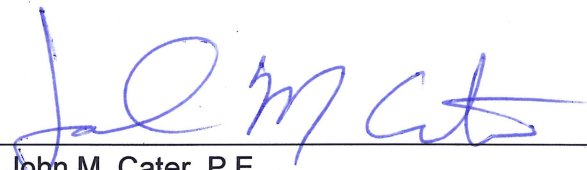
NORTH I-25
SH 56 TO SH 392

**RECORD OF
DECISION 4**

April 2017

DECISION

Based on the information provided in the August 2011 *North I-25 Final Environmental Impact Statement/Section 4(f) Evaluation* (CDOT 2011a) and the October 2011 *Revised Section 4(f) Evaluation* (CDOT 2011b), which have been incorporated by reference into this Record of Decision 4 (ROD4), and information contained in this ROD4, the Federal Highway Administration (FHWA) concludes that selecting the ROD4 Selected Alternative described in this document, for the North I-25 Project, is in the best overall public interest, uses all practicable means to restore and enhance the quality of the human environment, and avoids or minimizes any possible adverse effects. The FHWA also concludes that there are no feasible and prudent alternatives to the use of Section 4(f)-protected lands, and that the ROD4 Selected Alternative includes all possible planning to minimize harm to the identified Section 4(f) properties resulting from such use.



John M. Cater, P.E.
Division Administrator
Colorado Division
Federal Highway Administration

4/27/17

Date

STATUTE OF LIMITATIONS

A notice will be published in the Federal Register, pursuant to 23 United States Code §139(l), indicating that the Federal Highway Administration has taken the final action to approve the North I-25 ROD4: State Highway (SH) 56 to SH 392 Project. Claims seeking judicial review of this federal action must be filed within 150 days after the date of the notice.

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NORTH I-25 RECORD OF DECISION 4

The *North I-25 Record of Decision 4* (CDOT, 2015a) is available electronically at <https://www.codot.gov/projects/north-i-25-eis> or in hard copy format. Please contact either of the individuals listed above to obtain a copy.

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| Appendix J | Programmatic Biological Opinion |
| Appendix K | CDOT Mitigation Tracking Form |
| Appendix L | Correspondence |

ACRONYMS AND ABBREVIATIONS

| | |
|-----------------|--|
| ACM | Asbestos-containing material |
| ACS | American Community Survey |
| AMSL | Above mean sea level |
| APE | Area of Potential Effect |
| APEN | Air Pollution Emissions Notice |
| AST | Above-ground storage tank |
| | |
| BMP | Best management practice |
| BRT | Bus Rapid Transit |
| BTPD | Black-tailed prairie dog |
| BTU | British thermal unit |
| | |
| CAA | Clean Air Act |
| CBP | Colorado butterfly plant |
| CDOT | Colorado Department of Transportation |
| CDPHE | Colorado Department of Public Health and Environment |
| CDPS | Colorado Discharge Permit System |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| CLOMR | Conditional Letter of Map Revision |
| CO ₂ | Carbon dioxide |
| COGCC | Colorado Oil and Gas Conservation Commission |
| COLT | City of Loveland Transit |
| CPW | Colorado Parks and Wildlife |
| | |
| dBA | A-weighted decibel |
| DEIS | Draft Environmental Impact Statement |
| DIA | Denver International Airport |
| DOLA | Colorado Department of Local Affairs |
| DSA | Demographic study area |
| | |
| EDR | Environmental Data Resources |
| EIS | Environmental Impact Statement |

ACRONYMS AND ABBREVIATIONS

| | |
|----------|---|
| EPA | Environmental Protection Agency |
| FAST Act | Fixing America’s Surface Transportation Act |
| FEIS | Final Environmental Impact Statement |
| FEMA | Federal Emergency Management Agency |
| FHWA | Federal Highway Administration |
| FIS | Flood insurance study |
| FPPA | Farmland Protection Policy Act |
| | |
| H&S | Health and Safety |
| | |
| I-25 | Interstate 25 |
| IAR | Interstate Access Request |
| iPAC | Information for Planning and Conservation |
| ISA | Initial Site Assessment |
| ITS | Intelligent Transportation Systems |
| | |
| LCR | Larimer County Road |
| LEP | Limited English proficiency |
| LOMR | Letter of Map Revision |
| LOS | Level of service |
| LPG | Liquid petroleum gas |
| LUST | Leaking underground storage tank |
| | |
| MBTA | Migratory Bird Treaty Act |
| MMP | Materials Management Plan |
| MOVES | Motor Vehicle Emissions Model |
| MPO | Metropolitan Planning Organization |
| MS4 | Municipal Separate Storm Sewer System |
| MSAT | Mobile Source Air Toxics |
| | |
| NAAQS | National Ambient Air Quality Standards |
| NAC | Noise Abatement Criteria |
| NEPA | National Environmental Policy Act |

ACRONYMS AND ABBREVIATIONS

| | |
|--------|---|
| NFA | No further action |
| NFIP | National Flood Insurance Program |
| NFRMPO | Northern Front Range Metropolitan Planning Organization |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Properties |
| OAHP | Office of Archaeology and Historic Preservation |
| OPS | Colorado Division of Oil and Public Safety |
| OSHA | Occupational Safety and Health Administration |
| OTIS | Online Transportation Information System |
| PBA | Programmatic Biological Assessment |
| PBO | Programmatic Biological Opinion |
| PEL | Planning and Environmental Linkages |
| PM | Particulate matter |
| PMJM | Preble's meadow jumping mouse |
| ppb | Parts per billion |
| ppm | Parts per million |
| PSI | Preliminary Site Investigation |
| RAQC | Regional Air Quality Council |
| RCRA | Resource Conservation and Recovery Act |
| ROD | Record of Decision |
| RR | Railroad |
| RTD | Regional Transportation District |
| RTP | Regional Transportation Plan |
| SB | Senate Bill |
| SH | State Highway |
| SHPO | State Historic Preservation Office |
| SIP | State Implementation Plan |

ACRONYMS AND ABBREVIATIONS

| | |
|-------------|--|
| SPPBO | South Platte Programmatic Biological Opinion |
| SWA | State Wildlife Area |
| SWMP | Stormwater Management Plan |
| TDM | Transportation Demand Management |
| TIP | Transportation Improvement Program |
| ULTO | Ute ladies'-tresses orchid |
| Uniform Act | Uniform Relocation Assistance and Real Property Acquisition Policies Act |
| UPRR | Union Pacific Railroad |
| US 36 | U.S. Highway 36 |
| US 287 | U.S. Highway 287 |
| USACE | U.S. Army Corps of Engineers |
| USDOT | U.S. Department of Transportation |
| USFWS | U.S. Fish and Wildlife Service |
| UST | Underground storage tank |
| VIA | Visual Impact Assessment |
| VMS | Variable message sign |
| VMT | Vehicle miles traveled |
| VOC | Volatile organic compound |
| WCR | Weld County Road |
| YOE | Year of Expenditure |

BACKGROUND

This Record of Decision 4 (ROD4) documents the final agency decision for improvements to Interstate 25 (I-25) between State Highway (SH) 56 and SH 392. It is the final step in the National Environmental Policy Act (NEPA) process for this section of I-25, which started with a Notice of Intent to prepare an Environmental Impact Statement (EIS) in 2003.

The ROD4 Selected Alternative discussed in this document includes the reconstruction of I-25 between SH 56 and SH 392 for approximately 12 miles to provide an express lane in each direction. These lanes will be separated from the general-purpose lanes by a painted four-foot buffer. Widening would require reconstruction of the entire cross section to correct the horizontal and vertical alignment and widen both inside and outside shoulders. The ultimate cross section would retain 32 feet of the existing grass median with a tension cable barrier. The project includes reconstruction or improvement to interchanges at SH 60, LCR 16, and SH 402. It also includes phased implementation of the US 34 interchange.

The Final Environmental Impact Statement (FEIS) Preferred Alternative is similar to the ROD4 Selected Alternative except that it includes construction of one additional general-purpose lane and one express lane on I-25. Details on the differences between the FEIS Preferred Alternative and ROD4 Selected Alternative are included in 2.0 Description of the ROD4 Selected Alternative, Table 2.

The ROD4 Selected Alternative includes additional widening of the Union Pacific Railroad underpass to allow for a structure wide enough to allow for Kendall Parkway to pass under I-25 next to the Union Pacific Railroad which was not included as part of the FEIS Preferred Alternative. The widening to allow for the Kendall Parkway connection under I-25 does not result in additional impacts to environmental and social resources.

The ROD4 Selected Alternative will be built in the location shown in the *North I-25 Final Environmental Impact Statement* (FEIS) (CDOT 2011a) (Figure 1). These improvements are selected because they support the purpose and need of the overall full build out of the project by improving the corridor's safety through maintaining free-flowing traffic, reducing traffic congestion through increasing capacity on the corridor, and providing modal alternatives through building park-n-ride facilities and the use of express lanes by Bustang.

This ROD4 and Re-evaluation also reviews information contained in the *North I-25 Final Environmental Impact Statement* (CDOT 2011a) and in the *North I-25 Revised Section 4(f) Evaluation* (CDOT 2011b), and reevaluates the analysis considering changes in legislation, regulations, or guidance and existing conditions or future conditions.

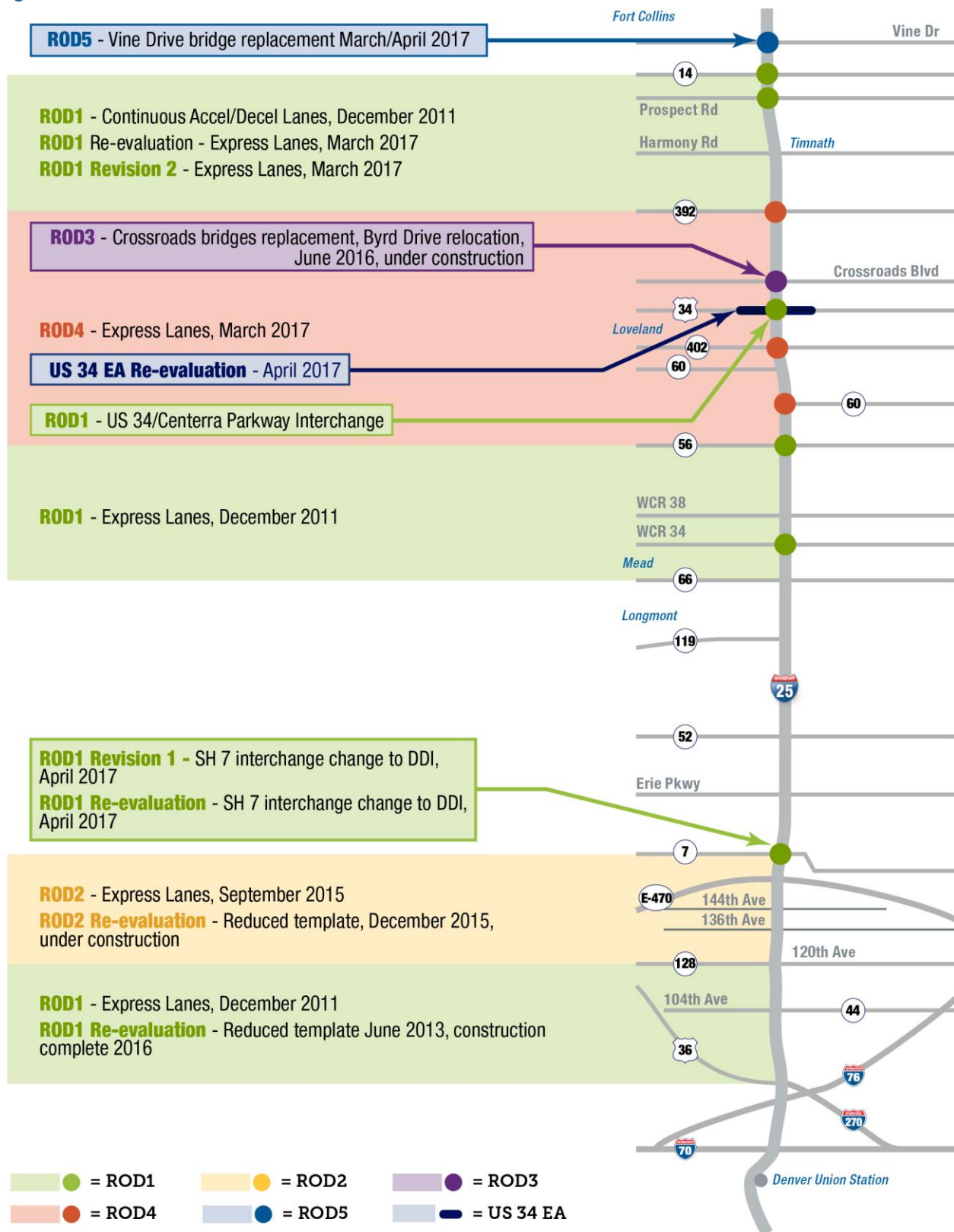
1.0 INTRODUCTION

The *North I-25 Record of Decision* (ROD1) (CDOT 2011c) was the final step in the NEPA process for only a portion of the FEIS Preferred Alternative identified in the North I-25 FEIS, referred to as Phase 1. The ROD1 stated a commitment on behalf of the Federal Highway Administration (FHWA) and the Colorado Department of Transportation (CDOT) (lead agencies) that the lead agencies intend to work toward implementing the FEIS Preferred Alternative in its entirety. As additional funding is identified and included in the fiscally constrained Regional Transportation Plan (RTP), subsequent phases or portions of phases can be implemented.

CDOT prepared this ROD4 to update the findings in the FEIS and to select another portion of the FEIS Preferred Alternative (SH 56 to SH 392) for implementation. The conclusion of the ROD4 is that changes to the existing and future conditions do not cause new significant environmental impacts. This ROD4 has been prepared in compliance with the FHWA regulation 23 Code of Federal Regulations (CFR) §771 and §774, Council on Environmental Quality (CEQ) regulations at 40 CFR §1500-§1508, and the requirements of NEPA as amended.

Figure 1 illustrates the context of this ROD4 with other construction projects in ROD1 through ROD 3 and ROD 5. The ROD4 improvements were included in the FEIS with the exception of Kendall Parkway.

Figure 1. ROD Phases



1.1 Project Cost and Funding

The North Front Range Metropolitan Planning Organization (NFRMPO) is responsible for developing a long-range transportation plan for the North Front Range region of Colorado. In 2015, the NFRMPO adopted the 2040 Regional Transportation Plan (2040 RTP), a federally mandated plan for Metropolitan Planning Organizations (MPOs), which includes a long-term transportation vision for the region. The plan identified individual regionally significant (major) roadway capacity and rapid transit projects to be implemented over the next 20 years.

In September 2016, CDOT submitted a proposed amendment to the NFRMPO to add the improvements planned for North I-25 from SH 56 to SH 392 to the 2040 RTP. The amendment was approved in February 2017.

The ROD4 Selected Alternative has a total estimated cost of approximately \$521 million (in 2016 dollars). Table 1 shows how CDOT plans to fund the ROD4 Selected Alternative.

Table 1. Funding Sources

| Funding Source | Total in Million Dollars (2016) |
|---------------------------|--|
| Regional Priority Program | \$ 35 |
| FASTER Safety | \$ 20 |
| Tolling Revenue | \$ 36 |
| Surface Treatment | \$165 |
| TC Contingency | \$ 74 |
| Commercial Loan | \$ 13 |
| ROADX | \$ 2 |
| FASTLANE State Allocation | \$ 50 |
| Local | \$ 15 |
| TIGER Grant | \$ 7 |
| Strategic Transit | \$ 41 |
| Strategic Funds | \$ 43 |
| STP Metro/CMAQ | \$ 20 |
| TOTAL | \$521 |

A Cost Estimate Review has been conducted for the North I-25 Corridor. However, the specific elements as they are grouped together in the ROD4 Selected Alternative were not previously included in the corridor Cost Estimate Review. A Cost Estimate Review for the ROD 4 Selected Alternative was conducted in November 2016 and confirmed the estimated cost of the project.

The ROD 4 Selected Alternative has a total estimated cost of approximately \$521M in 2016 dollars. The mid-year of construction is estimated to be 2029. A 3-percent inflation rate was used to determine the year-of-expenditure cost of the project. The year of expenditure cost of the project is \$788 million. As of November 28, 2016 the 70 percent probability cost of the

funded phase of the FEIS Preferred Alternative is \$2.1 billion in year of expenditure (YOE) and the total build-out of the FEIS Preferred Alternative is \$8.2 billion in YOE with completion estimated in 2055.

1.2 Independent Utility and Logical Termini

Independent utility means that a proposed project is a reasonable expenditure and would be usable even if no additional improvements are made in the area. A NEPA proposed action must have rational physical end points and allow for review of environmental impacts on a broad scale.

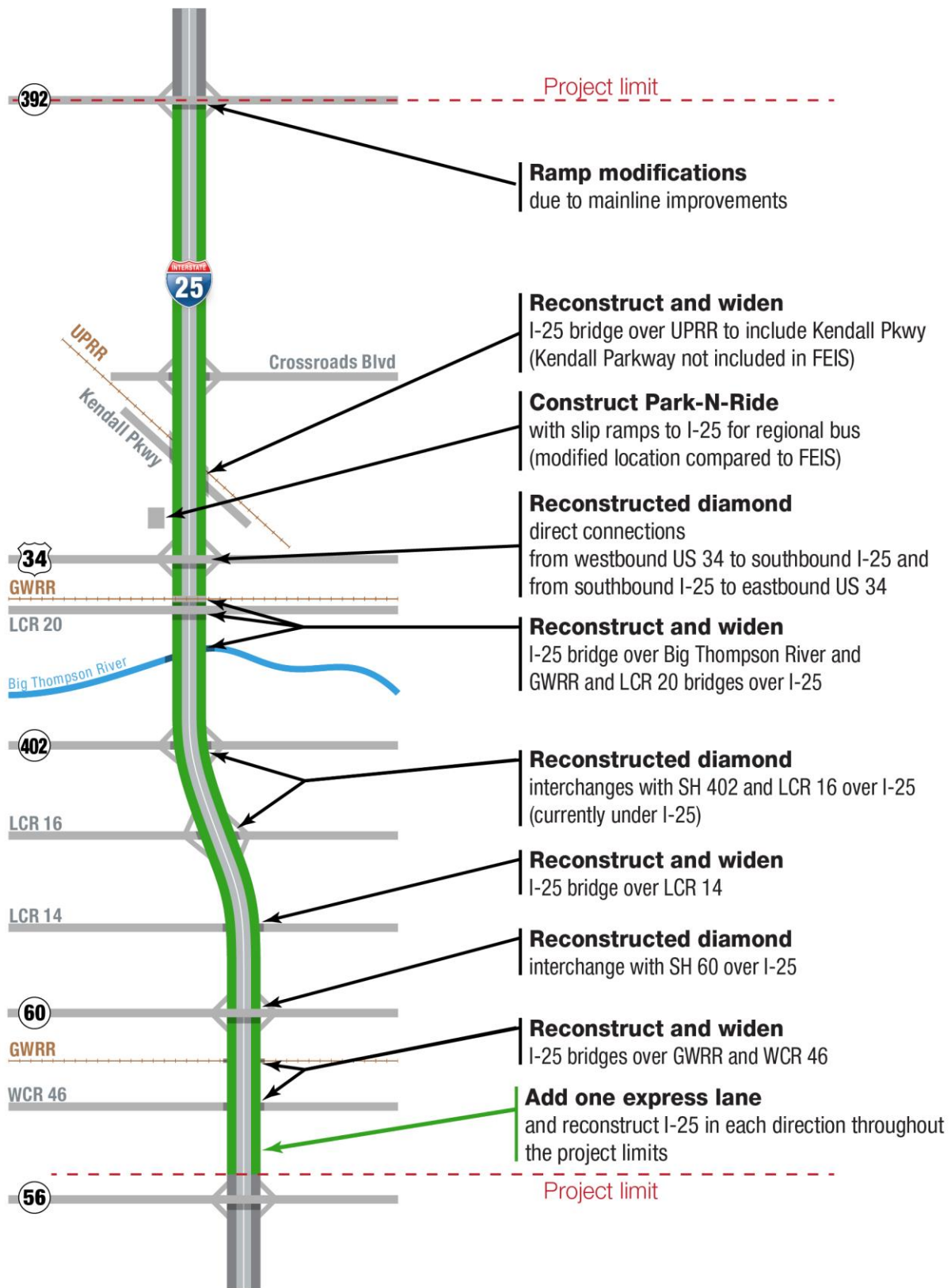
Since the FEIS and the passing of FASTER legislation which created the HPTE, changes to implementing the FEIS Preferred Alternative have been made. The formation of HPTE has allowed CDOT to implement projects with more innovative financing strategies. A key element of being successful with these projects is having a connected system of managed lanes. CDOT is focusing on prioritizing a managed lane between Fort Collins and Denver to accelerate the construction of the FEIS Preferred Alternative by taking advantage of innovative financing opportunities.

The ROD4 Selected Alternative adds one buffer-separated express lane in each direction while reconstructing the entire cross section and substandard interchanges to current standards.

The ROD4 Selected Alternative, as depicted in Figure 2, bridges the gap between two improved sections of I-25 included in ROD1 and will create a continuous 26-mile stretch of improvement. Improvements identified in ROD4 will be combined with the improvements identified in the revised ROD1 (SH 392 to SH 14) to form a single design-build project. This combined design-build project will address some of the most congested sections of I-25 and will improve safety and operational flow without any additional improvements on the corridor and are a reasonable expenditure of federal and state funds. There are no other projects or improvements necessary to attain the operational benefits resulting from the construction of the improvements included in ROD4 combined with the revised ROD1.

The project will have independent utility in that the improvements accommodate the maximum reasonably foreseeable corridor envelope and improve capacity and safety. The selection of the ROD4 alternative does not preclude or restrict other transportation projects in this area.

Figure 2. Elements of the ROD4 Selected Alternative



1.3 Other Transportation Projects

There have been changes in adjacent, recently completed, or ongoing transportation projects since the completion of the FEIS in August of 2011 and the approval of ROD1 in December of 2011. These changes include:

- **Lack of Funding for FasTracks Commuter Rail Corridors**, which has resulted in a substantial delay for the planned Northwest Rail Corridor, which is to run from Westminster to Boulder to Longmont. This lack of funding also has resulted in a shortened North Metro commuter rail corridor. Instead of ending at 162nd Avenue, the North Metro corridor is now funded to end at 124th Avenue. Additional funding is not anticipated until after 2040.
- **Completion of the Northwest Area Mobility Study**, which examined options for completion of the FasTracks service in the northwestern Denver metropolitan area. The recommendations from this study included completion of a bus rapid transit (BRT) on US 36; addition of arterial BRT service on SH 119 from Longmont to Boulder and on U.S. Highway 287 (US 287) from Longmont to Denver Union Station, and perhaps other corridors, such as SH 7; addressing the existing I-25/US 36 reversible high-occupancy vehicle/high-occupancy toll lanes; and continuing to look for funding opportunities to complete the Northwest Rail Corridor. CDOT is considering moving forward with bus-on-shoulder applications in the short term on US 36 and I-25 in the vicinity of the US 36/I-25 interchange and on one or more of the arterial BRT corridors.
- **Completion of the North I-25 (US 36 to SH 7) Planning and Environmental Linkages (PEL) Study**, which recommends a continuous acceleration/deceleration lane in both directions on I-25 from US 36 to north of SH 7. The PEL study recommends new park-n-rides at 128th Avenue, 136th Avenue, 144th Avenue, and SH 7. The PEL study also recommends converting the tunnel at the Wagon Road Park-n-Ride on the southwest corner of 120th Avenue and I-25 to a bi-directional tunnel for buses, and adding ramp meters at 120th Avenue (northbound and southbound), 136th Avenue (northbound and southbound), 144th Avenue (northbound and southbound) and SH 7 (southbound). This PEL study was completed in December 2014.
- **Completion of the SH 7 PEL Study** (CDOT, 2014b) which identified a diverging diamond interchange configuration at SH 7/I-25 as a viable option to the partial cloverleaf configuration that was included in the North I-25 FEIS and the ROD1. This study also recommended widening of SH 7 in the vicinity of I-25 to carry three 12-foot travel lanes in each direction, with a 30-foot raised median, 12-foot shoulders/bike lanes, and a 10-foot shared-use path on each side of SH 7.
- **Design and construction of the North I-25 Express Lanes from US 36 to just south of 120th Avenue**, including tolling and Intelligent Transportation Systems (ITS) infrastructure; active traffic management in the southbound direction; resurfacing, reconstructing, and restriping I-25; and adding four new noise walls and rehabilitating existing noise walls. This project was open to the public in July 2016. It is an interim version of this section of the ROD1 Selected Alternative.
- **SH 7/I-25 Interchange Revision and Reevaluation**, which evaluates impacts using a Diverging Diamond Interchange configuration compared to a Partial Cloverleaf, which was included in the ROD1. Approval is expected in early 2017.
- **Completion of the Interregional Connectivity Study**, which examined high-speed rail between Fort Collins and Denver. This was studied during the FEIS/ROD1 but not recommended because it would not address the purpose and need due to the lack of

stations in most of the communities. The study recommended that high-speed rail be located along the east side of I-25 between Fort Collins and a North Suburban Station at E-470/Northwest Parkway. This study assumes stations near Harmony Road/I-25 and at SH 119/I-25.

- **US 85 PEL Study**, which began in February 2014 with an anticipated completion date of Spring 2017. The study team has conducted numerous public meetings and is continuing the on-going coordination with local agencies and elected officials. The Purpose and Need for the project addresses safety, access, mobility, railroad proximity, and multi-modal needs along the corridor, and has been accepted by local agencies and FHWA. At this time, no changes to the FEIS Preferred Alternative are anticipated as a result of this PEL study.
- **Interregional Bus Service (Called Bustang) on I-25**. CDOT's Division of Transit and Rail added express bus service on I-25 with stops at the Harmony Road Park-n-Ride and US 34/I-25 and service ending in downtown Denver (Denver Union Station and the bus terminal). This service consists of five round trips per weekday (four during the peak period and one during the off-peak period). This service will use the express lanes on I-25 when they are completed. Service began in July 2015.
- **North Front Range Commuter Rail Update** is a study undertaken by CDOT's Division of Transit and Rail, initiated in summer 2014. Its goals were to update the costs, alignment, and operating plans for the commuter rail component of the North I-25 FEIS Preferred Alternative. This study, completed in April 2015, recommends a new commuter rail alignment in the I-25 right of way along the east side from Weld County Road (WCR) 8 to SH 119. It also recommends two alternate station locations and a revised operating plan (CDOT, 2015a). At this time, no changes to the FEIS Preferred Alternative are anticipated as a result of this study.
- **Design and Construction of North I-25 Express Lanes from South of 120th Avenue to E-470**, including tolling and ITS infrastructure, asphalt mill-and-fill for the existing lanes, shoulder widening, safety improvements, and lighting improvements. This project is under construction, intended to be open to the public in 2018.
- **Crossroads Boulevard Bridge Replacement** consists of replacing the bridges that carry I-25 over Crossroads Boulevard. The project also will reconstruct I-25 approximately one-half mile north and south of Crossroads Boulevard with wider pavement, shoulders, improved roadway grades, and enhanced roadside safety. This project is currently under construction and is scheduled to be complete by the end of 2017.
- **ITS Installation** updated I-25 from Denver to the Wyoming State Line with highway cameras, weather stations, fiber optic cable, traffic detection system, and Ethernet conversion of ITS networks. This project is complete.

2.0 DESCRIPTION OF THE ROD4 SELECTED ALTERNATIVE

The ROD4 Selected Alternative is similar to the FEIS Preferred Alternative between SH 56 and SH 392. Table 2 presents the improvements included in the ROD4 Selected Alternative as compared to the FEIS Preferred Alternative. Figure 2, presented earlier, illustrates the improved elements of the ROD4 Selected Alternative.

Table 2. Alternative Elements included in the FEIS Preferred Alternative Compared to the ROD4 Selected Alternative

| Alternative Element | FEIS Preferred Alternative Improvement | ROD4 Selected Alternative Improvement |
|--|--|---|
| Widening I-25 (approximately 12 miles) | Addition of one general-purpose lane and one express lane in each direction | Addition of one express lane in each direction |
| Mitigations | Includes noise abatement walls and water quality ponds | Same as FEIS Preferred Alternative |
| Right of Way | Right-of-way purchase associated with the FEIS Preferred Alternative cross section | CDOT will purchase ultimate right of way only in areas where it will be purchasing right of way for the ROD4 Selected Alternative and noise walls |
| Utility Easement | Not included in the FEIS | Since the FEIS an easement for utilities was identified on the east side of I-25 just south of SH 392 and is included in the ROD4 Selected Alternative |
| Interchanges and Other Structures | | |
| SH 392 | Ramp modifications due to I-25 mainline improvements | Same as FEIS Preferred Alternative |
| Crossroads Boulevard | Reconstructed diamond | I-25 bridge over Crossroads Boulevard is included in ROD3 Includes construction of a southbound shoulder and space for an express lane; only additional element is the striping for the express lane; consistent with the FEIS Preferred Alternative (except the additional general-purpose lanes) |
| Union Pacific Railroad | Reconstruct and widen I-25 bridge over UPRR | Same as FEIS Preferred Alternative, now also includes structure wide enough for Kendall Parkway |

Table 2. Alternative Elements included in the FEIS Preferred Alternative Compared to the ROD4 Selected Alternative

| Alternative Element | FEIS Preferred Alternative Improvement | ROD4 Selected Alternative Improvement |
|------------------------------|---|---|
| Kendall Parkway | Transit-only bus ramps to connect with the Park-n-Ride | Underpass at I-25 and Kendall Parkway to provide a local road connection (see previous) Transit-only bus ramps to connect with the Kendall Parkway Park-n-Ride in different location than what was included in the FEIS |
| US 34 | Dual directional/diamond | The ROD4 Selected Alternative includes replacing the existing cloverleaf interchange with a diamond interchange with two direct connections: one from westbound US 34 to southbound I-25 and the other from southbound I-25 to eastbound US 34. |
| Great Western Railroad | Reconstruct and widen Great Western Railroad bridge over I-25 | Same as FEIS Preferred Alternative |
| Larimer County Road (LCR) 20 | Reconstruct and widen LCR 20 bridge over I-25 | Same as FEIS Preferred Alternative |
| Big Thompson River | Reconstruct and widen I-25 bridge over Big Thompson River | Same as FEIS Preferred Alternative |
| SH 402 | Reconstruct diamond interchange Reconstruct and widen SH 402 over I-25 | Same as FEIS Preferred Alternative |
| LCR 16 | Reconstruct diamond interchange Reconstruct and widen LCR 16 over I-25 | Same as FEIS Preferred Alternative |
| LCR 14 | Reconstruct and widen LCR 14 bridge over I-25 | Same as FEIS Preferred Alternative |
| SH 60 | Reconstruct diamond interchange Reconstruct and widen SH 60 over I-25 | Same as FEIS Preferred Alternative |
| Great Western Railroad | Reconstruct and widen I-25 bridge over Great Western Railroad | Same as FEIS Preferred Alternative |
| WCR 46 | Reconstruct and widen I-25 bridge over WCR 46 | Same as FEIS Preferred Alternative |
| SH 56 | Reconstruct diamond interchange (I-25 over SH 56) | Not included in ROD4 |
| Frontage Roads | Reconstructed or upgraded to accommodate future travel needs | Same as FEIS Preferred Alternative |

Table 2. Alternative Elements included in the FEIS Preferred Alternative Compared to the ROD4 Selected Alternative

| Alternative Element | FEIS Preferred Alternative Improvement | ROD4 Selected Alternative Improvement |
|--|---|--|
| Carpool Lots | | |
| SH 392 | Included 95 express bus parking spaces | Not included in ROD4 |
| Crossroads Boulevard (previously referred to as Kendall Parkway Park-n-Ride in the FEIS) | Included 132 express bus parking spaces, pedestrian overpass | Modified the layout from FEIS to include a Park-n-Ride facility at Kendall Parkway with 200 parking spaces for car-poolers, bicycle storage, and connections to regional and local bus transit Pedestrian overpass not included or needed due to the structure widening being completed for Kendall Parkway |
| SH 402 | 290 parking spaces | Same as FEIS Preferred Alternative |
| SH 60 | 90 parking spaces | Same as FEIS Preferred Alternative |
| Express Bus | Express Bus services would connect northern Colorado communities to downtown Denver and to Denver International Airport (DIA), utilizing the express lanes along I-25 | Not included in ROD4 |
| Commuter Rail | Commuter rail transit service from Fort Collins to the planned FasTracks North Metro end-of-line | Not included in ROD4 |

The improvements associated with the ROD4 Selected Alternative are explained in more detail below:

- **I-25 Mainline.** Reconstruction of I-25 between SH 56 and SH 392 for approximately 12 miles to provide an express lane in each direction. These lanes will be separated from the general-purpose lanes by a painted four-foot buffer. Widening would require reconstruction of the entire cross section to correct the horizontal and vertical alignment and widen both inside and outside shoulders. The ultimate cross section would retain 32 feet of the existing grass median with a tension cable barrier (see Figure 3).
- **Operation of Express Lanes.** The express lanes allow express buses, high-occupancy vehicles (that meet the current criteria for occupancy) and tolled vehicles. There will be a surcharge for vehicles with more than two axles. The project will comply with state laws that are established regarding express lanes and high-occupancy vehicles. Access to and from the express lanes is allowed only at designated locations.
- **Interchange Modifications.** The project includes reconstruction or improvement to interchanges at SH 60, LCR 16, and SH 402. The ROD4 Selected Alternative includes replacing the existing cloverleaf interchange with a diamond interchange with two direct

connections: one from westbound US 34 to southbound I-25 and the other from southbound I-25 to eastbound US 34.

- **Transit Center.** The project includes transit-only slip ramps and park-n-ride at Kendall Parkway to provide direct connections from the park-n-ride to I-25. These slip ramps and the park-n-ride were included in the FEIS but have been moved south due the revision of the pedestrian access. Pedestrian access to the Kendall Parkway Transit Center was revised to eliminate the need for a pedestrian bridge over I-25 and elevators.
- **Retaining Walls and Noise Walls.** Retaining walls are included to avoid or minimize impacts to environmentally sensitive areas and to minimize right-of-way acquisition. Noise walls are included in areas to reduce noise impacts from the highway to sensitive receptors where feasible and reasonable. For more information on location of noise walls, see Section 6.6.
- **Bridges and Drainage Structures.** Table 3 lists bridge and culvert replacements or rehabilitations included as a part of the ROD4 Selected Alternative.
- **Congestion Management Measures.** Table 2-19 of the FEIS lists elements of the FEIS Preferred Alternative whose purpose is to manage congestion. Elements from this list that are included in the ROD4 Selected Alternative are local transit service, carpool and vanpool, incident management program, signal coordination and prioritization, real-time transportation information, and travel demand measures.

Figure 3. ROD4 Selected Alternative Cross Section

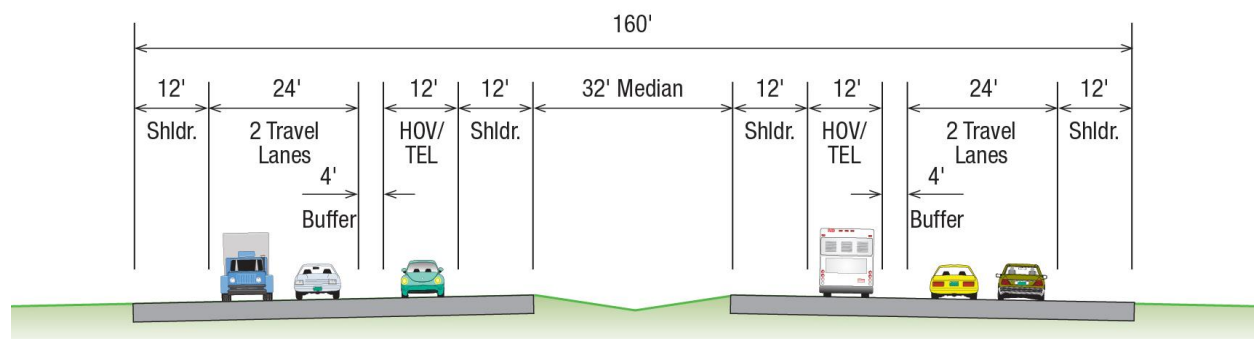


Table 3. Bridge and Culvert Replacements or Rehabilitation for ROD4

| Structure | Work Required | New Structure Type |
|---|----------------------|---|
| Union Pacific Railroad/Kendall Parkway | Replace | Precast Prestressed Girder (Box or BT) |
| Greeley-Loveland Ditch | 70'-0" Widen | Precast Prestressed Girder Slab |
| SB I-25 to EB US 34 Flyover Ramp | New | Post-Tensioned Precast Concrete U Girder or Precast Segmental |
| WB US 34 to SB I-25 Flyover Ramp | New | Post-Tensioned Precast Concrete U Girder or Precast Segmental |
| US 34 | New | Cast In Place, Post Tensioned or Steel Box Girder |
| Great Western Railroad over I-25 | Replace | Precast Prestressed BT or Steel Plate Girder |
| LCR 20 over I-25 | Replace | Precast Prestressed Girder (BT or U Tub) |
| I-25 over Big Thompson River | Replace | Precast Prestressed Girder (Box or BT) |
| I-25 Service Road over Big Thompson River | Replace | Precast Prestressed Girder (Box or BT) |
| LCR Underpass (Hillsboro Ditch Access Road) | Replace | Cast In Place, Concrete Box Culvert |
| SH 402 | New | Cast In Place, Post Tensioned or Steel Box Girder |
| East Frontage Road over Draw | Replace | Precast Prestressed Girder (Box or BT) |
| I-25 over Draw | New | Precast Prestressed Girder (Box or BT) |
| LCR 16 | New | Cast In Place, Post Tensioned or Steel Box Girder |
| LCR 14 | Replace | Precast Prestressed Girder (Box or BT) |
| SH 60 | Replace | Cast In Place, Post Tensioned or Steel Box Girder |
| Great Western Railroad | Replace | Precast Prestressed Girder (Box or BT) |
| WCR 46 | Replace | Precast Prestressed Girder (Box or BT) |

3.0 PROJECT PURPOSE AND NEED

The purpose of the North I-25 Project is discussed in Chapter 1 of the FEIS and summarized in this document. It is to meet long-term travel needs between the Denver Metro Area and the rapidly growing population centers along the I-25 corridor north to the Fort Collins-Wellington area. To meet long-term travel needs, the project must improve safety, mobility, and accessibility and provide modal alternatives and interrelationships. The need for the project can be summarized in four categories:

1. Increased frequency and severity of crashes
2. Increasing traffic congestion leading to mobility and accessibility problems
3. Aging and functionally obsolete infrastructure
4. Lack of modal alternatives

The ROD4 Selected Alternative incrementally addresses the elements of purpose and need between SH 56 and SH 392 in the following ways:

- **Increased frequency and severity of crashes.** The most common types of accidents in the project area are rear-end collisions and same direction sideswipes, which most often are related to congestion. The addition of the express lanes will help reduce congestion in the general-purpose lanes, allowing free-flowing movement. Improving the corridor's ability to sustain free-flowing traffic conditions will decrease the number of crashes. Significant widening of the inside and outside shoulders along I-25 and bridges will allow more opportunities for accident avoidance and will reduce secondary crashes.

An adjustment will be made to the vertical curvature of the roadway over the Union Pacific Railroad (UPRR)/Kendall Parkway Bridge that will improve sight distance for motorists. The improvement will allow drivers to see farther in front of them, allowing more time to make speed adjustments and avoid crashes.

- **Increasing traffic congestion leading to mobility and accessibility problems.** Adding an express lane to I-25 between SH 56 and SH 392 would improve mobility along the I-25 corridor. The express lanes would operate with no or minimal congestion compared to the general-purpose lanes providing a reliable and congestion free option for travelers. Reconstructing and improving various interchanges along the corridor also would improve accessibility at these locations.
- **Aging and functionally obsolete infrastructure.** All existing pavement within the project area will be reconstructed or rehabilitated, which will improve the service life of the pavement. Concrete reconstruction and rehabilitation is planned for the entire length of the project from SH 56 to SH 392. Additionally, any other aging and functionally obsolete infrastructure such as guardrails, culverts, bridges, and signing will be reconstructed or rehabilitated as part of the project.
- **Lack of modal alternatives.** A new Park-n-Ride facility will be built at Kendall Parkway, with 200 parking spaces for car-poolers, bicycle storage, and connections to regional and local bus transit. Discussions are underway with Greyhound to bring national service to the Park-n-Ride. The Park-n-Ride will host CDOT's new commuter bus service, "Bustang," which provides service between Fort Collins and Denver. Connections with FLEX—a service with stops in Fort Collins, Loveland, Berthoud, Longmont, and Boulder—will be made via the City of Loveland Transit (COLT). Additionally, Park-n-Ride facilities at SH 402 with 200 parking spaces and at SH 60 with 90 parking spaces are

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included as part of the project. The new UPRR/Kendall Parkway Bridge will provide an underpass at I-25 that will improve vehicle, pedestrian, and bicycle access east and west. Sidewalks and a dedicated bicycle lane are included in these improvements.

The project will include transit-only bus slip ramps from I-25 to the new Kendall Park-n-Ride. The slip ramps will improve bus service performance and reduce each total trip time by 15 minutes.

4.0 ALTERNATIVES CONSIDERED

There were a number of alternatives developed and evaluated during the North I-25 EIS process. These were documented in the *North I-25 Draft Environmental Impact Statement* (DEIS) that was released for public comment in 2008 and in the FEIS that was released for public comment in August 2011. These alternatives included:

- **No Action Alternative**, which included only projects with committed funding. This included the two FasTracks rail corridors, the bridge over I-25 at 84th Avenue, the I-25/SH 392 interchange reconstruction, interchange improvements at I-25 and Prospect Road, and the replacement of the I-25 frontage road over the Little Thompson River.
- **Package A**, which focused on general-purpose lane widening of I-25 (one additional lane in each direction), plus construction of a double-tracked commuter rail line between Fort Collins and Thornton (at the terminus of the FasTracks North Metro commuter rail line). Package A also included commuter bus service along US 85 from Greeley to downtown Denver and along E-470 from US 85 to DIA.
- **Package B**, which included one additional tolled express lane (now referred to as express lane) along I-25 in each direction except north of SH 60, where two tolled express lanes (now referred to as express lanes) in each direction were assumed. Package B also included BRT service along I-25 and feeder bus service along several arterial streets.
- **FEIS Preferred Alternative**, which combined some elements of Package A with Package B. I-25 would be widened with general-purpose lanes and tolled express lanes (now called express lanes). Substandard interchanges would be reconstructed or upgraded.

The FEIS Preferred Alternative also includes commuter rail transit service from Fort Collins to the anticipated FasTracks North Metro end-of-line. Service to Denver would travel through Longmont and along the FasTracks North Metro Corridor. A connection to Boulder also would be made with a transfer to Northwest Rail at the Sugar Mill Station in Longmont. Nine commuter rail stations and a commuter transit maintenance facility are included in the FEIS Preferred Alternative. The commuter rail would consist of a single track with occasional passing tracks at four locations. The BNSF railroad is requiring that commuter rail utilizing BNSF track upgrade BNSF facilities to include a maintenance road where maintenance access is not available. The FEIS Preferred Alternative design includes a maintenance road parallel to the BNSF line between Longmont and Fort Collins. Commuter rail track that is not within the BNSF right of way does not include a maintenance road.

Express bus service would operate in the express lanes to connect northern Colorado communities to downtown Denver and DIA and serve 13 stations along Harmony Road, US 34, and I-25. Commuter bus service along US 85 would connect Greeley with downtown Denver, with five stops at the communities along the route. A bus maintenance facility would be constructed to accommodate both express buses and commuter buses.

As documented in ROD1, the FEIS Preferred Alternative:

- Best responds to the project purpose and need (reducing the frequency and severity of crashes, addressing the increasing traffic congestion along I-25, replacing aging and functionally obsolete infrastructure, and providing modal alternatives)

- Best responds to the land use goals of the cities and counties
- Provides the best regional connectivity
- Provides the best regional safety
- Provides the best overall travel reliability into the future
- Best supports livability goals (energy consumption, land use, environmental factors)

4.1 Environmentally Preferable Alternative

The CEQ regulations (40 CFR §1505.2[b]) require the ROD to identify an environmentally preferable alternative, which is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. The CEQ has clarified that the environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment, and that best protects, preserves, and enhances historic, cultural, and natural resources. NEPA does not require an agency to select the environmentally preferable alternative.

Package A requires relocation of the most number of residences and businesses, results in slightly higher total air emissions than the other packages, results in the most acres of vegetation impacts and soil disturbance, has the most acreage of impact to potential Preble's meadow jumping mouse (PMJM) habitat, creates the highest number of adverse effects to properties on the National Register of Historic Places (NRHP), and disturbs the most number of parcels with potential or recognized hazardous material conditions. Package A also exacerbates an existing freight rail barrier between neighborhoods in some areas and creates a new barrier in other areas. Package A improves transit-related mobility on two corridors in the regional study area. The addition of general-purpose lanes to I-25, however, does not provide an opportunity to manage congestion over time, as volumes grow.

Package B results in the largest number of residences and commercial buildings that would be impacted by highway noise, the most acreage of new impervious surface area, the most wetland impact, the most acreage of floodplain impact, the greatest acreage of impact to sensitive wildlife habitat and aquatic habitat, and the most acres of impact to black-tailed prairie dog habitat. Package B concentrates both highway and transit improvements on a single corridor, I-25. It, therefore, does not have the negative community impacts the other two alternatives have on noise, visual resources, and community cohesion. It requires the least number of residential and business relocations. It also could provide a growth stimulus to areas along I-25, farther away from the downtown areas located along the US 287 corridor.

Air pollutant emissions associated with all three build packages would be slightly greater than those anticipated under the No Action Alternative because vehicle miles of travel would be expected to increase. These emissions in 2040 would, however, be lower than existing levels for all pollutants and in all alternatives.

In general, the magnitude and severity of the impacts of the three build alternatives to the natural environment are relatively similar taking into account the size of the project. The FEIS Preferred Alternative has fewer impacts to the habitat for the PMJM, a federally threatened species. The FEIS Preferred Alternative also has the least impacts to aquatic resources. On the other hand, the FEIS Preferred Alternative has more impacts than either of the other build alternatives to Bald Eagle foraging habitat and raptor nests and it has more impervious surface than Package A.

The FEIS Preferred Alternative has been determined to cause the least overall harm to Section 4(f) properties. The FEIS Preferred Alternative is most responsive to land use goals of stimulating growth around transit stations, because it includes commuter rail along US 287, express bus along I-25, and commuter bus along US 85. Over time, there is a greater potential with the FEIS Preferred Alternative to conserve energy and reduce air pollutant emissions because of the easier expansion capabilities of transit service provided on more corridors and because of the potential for transit-oriented development around commuter rail, express bus, and commuter bus stations. The FEIS Preferred Alternative also has the least impact to aquatic resources, including wetlands, other jurisdictional waters, aquatic habitat, and impacts to PMJM habitat. For these reasons, the FEIS Preferred Alternative is considered to be the Environmentally Preferable Alternative.

4.2 Least Environmentally Damaging Practicable Alternative

The FEIS Preferred Alternative (which includes the ROD4 Selected Alternative) has received a Section 404 permit. Wetland mitigation for the entire FEIS Preferred Alternative has been completed in advance of wetland impacts. The permit number is NWO-2004-80110-DEN, and it was issued on May 17, 2013. In issuing this permit, the U.S. Army Corps of Engineers (USACE) has confirmed that the FEIS Preferred Alternative, which includes the ROD4 Selected Alternative, is the Least Environmentally Damaging Practicable Alternative.

4.3 ROD1 and Phased Implementation

A phased approach to the decision-making process was taken during development of ROD1 because the solution to the identified transportation problems cost more to implement than is available in the fiscally constrained RTPs. The identification of an initial phase for implementation is consistent with FHWA requirements to have funding identified for projects before final decisions are made.

The ROD1 identified a set of guiding principles that were to be used to develop a phasing plan for the FEIS Preferred Alternative. These were related to project purpose and need and include:

1. Replace aging infrastructure
2. Address safety concerns
3. Improve mobility
4. Coordinate with community plans
5. Consider long-term with near-term implementation
6. Implement a cost-effective solution

The improvements identified in this ROD4 meet these guiding principles by:

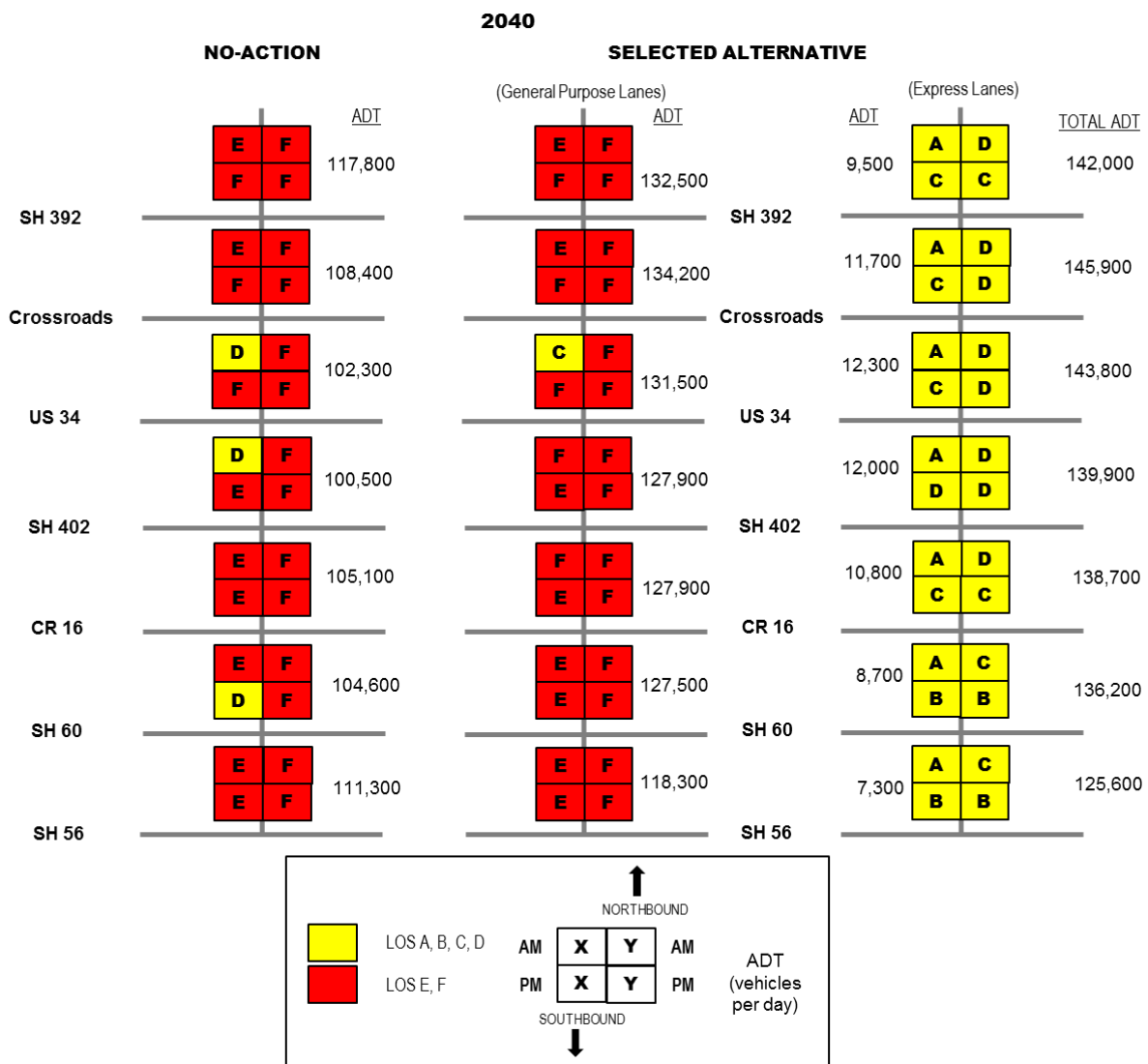
- Replacing aging infrastructure at the interchanges and at drainage crossings
- Improving mobility by increasing capacity
- Addressing safety issues by decreasing congestion
- Increasing modal options and providing a competitive time advantage by providing the express lane for carpools, vanpools, and bus service

5.0 TRAFFIC AND TRANSPORTATION

Existing and future traffic volumes have changed since the completion of the FEIS. The new future planning horizon year in the project area is 2040. Appendix A documents changes in existing conditions since the FEIS and presents the traffic analysis based on NFRMPO 2040 traffic projections. It also documents the impacts of the ROD4 Selected Alternative. Future traffic conditions and operations are similar to those documented in the FEIS.

The express lanes included in the ROD4 Selected Alternative would provide drivers the option of traveling in either the express lanes or the general purpose lanes. The express lanes would operate with no or minimal congestion compared to the general-purpose lanes. Figure 4 illustrates the level of service (LOS) for the 2040 No Action and 2040 ROD4 Selected Alternative for each segment of I-25 between SH 56 and SH 392.

Figure 4. I-25 Mainline General-Purpose and Express Lanes Level of Service



As shown in Figure 4, the ROD4 Selected Alternative provides much higher throughput by accommodating anywhere from 15,000 to 40,000 more vehicles per day than the No Action, in addition to providing higher corridor reliability through the addition of the express lanes that provide a choice for a lane with minimal congestion.

5.1.1 Impacts of the ROD4 Selected Alternative

The updated traffic analysis is consistent with the FEIS in that there is a travel time benefit, an increase in reliability, and faster speeds in the express lane when compared to travel in the general purpose lanes or when compared to No Action. Improvements in safety are also anticipated because of the reduction in congestion. These impacts are the same as documented in the FEIS.

5.1.2 Mitigation

Mitigation for construction-related traffic and transportation impacts are included in Table 4.

Table 4. Transportation Impacts and Mitigation of Selected Alternative

| Impact | Mitigation |
|---|---|
| Construction Related Traffic and Transportation Impacts | <ul style="list-style-type: none"> • Develop a Traffic Management Plan that identifies a construction-related traffic control plan, work zone management strategies, and contingency plans. • During construction, keep open the same number of lanes as are currently open at all times except during off-peak travel times. • Develop bridge demolition and detour routes to avoid overloading local streets with detour traffic. • Limit peak-period ramp closures to low-volume interchanges. • Limit closure of high-volume ramps to nights or weekends. • Maintain access to local businesses and residences. |

Another element of the construction mitigation measures defined in Section 4.9.3 of the FEIS and in the FHWA guidance titled *Developing and Implementing Transportation Management Plans for Work Zones* is travel demand management.

For the ROD4 Selected Alternative, CDOT will work to promote the future usage of the express lanes for bus service, carpools, and vanpools by providing information about the express lanes on variable message signs (VMS) that will be installed between Denver and Fort Collins. Additionally, CDOT will provide a courtesy patrol during construction.

CDOT will continue to coordinate with Smart Commute Metro North, the Transportation Management Organization for this area, to take into consideration an appropriate travel demand management program.

6.0 ENVIRONMENTAL RESOURCES

The ROD4 process included a review of existing conditions, future conditions; changes in legislation, regulations, policies, or guidance; and changes in impacts and mitigation for each of the environmental resources examined in the North I-25 FEIS. A summary of major findings of this review is presented here. Additional information is contained in this document in:

- Appendix A Traffic and Transportation Technical Memorandum
- Appendix B Air Quality Technical Memorandum
- Appendix C Noise Technical Report
- Appendix D Section 404 Permit
- Appendix E Biological Technical Memorandum
- Appendix F Abbreviated Visual Impact Assessment
- Appendix G Historic Resources Technical Memorandum
- Appendix H Archaeological Resources Technical Memorandum
- Appendix I EDR Regulatory Report
- Appendix J Programmatic Biological Opinion (PBO)
- Appendix K CDOT Mitigation Tracking Form
- Appendix L Correspondence

Changes to existing or future conditions that affect the ROD4 Selected Alternative are summarized in the resource discussion. Because the design of the ROD4 Selected Alternative is similar to the design used for the FEIS Preferred Alternative, the primary changes in impacts or mitigation are associated with changes in existing or future conditions or legislation, regulations, policies, or guidance. Additionally, the Union Pacific Railroad will be wider than the FEIS Preferred Alternative to allow Kendall Parkway to pass underneath I-25 and the Kendall Parkway park-n-ride and transit-only slip ramps (herein referred to as Kendall Parkway Transit Center) have been moved south since the FEIS. Pedestrian access to the Kendall Parkway parking lot was revised to eliminate the need for a pedestrian bridge over I-25 and elevators. Changes in impacts due to these modifications are shown separately in the resource sections below, where applicable. None of the changes result in a new significant impact that was not identified in the FEIS. The study area used to calculate impacts for ROD4 Selected Alternative (herein referred to as ROD4 study area) includes the area within a quarter-mile of the construction limits.

6.1 Land Use

Since completion of the FEIS, three communities along the project corridor have prepared updated comprehensive plans that address recent land use changes and future land use planning initiatives. These plans were listed in Table 3.1-1, Summary of Comprehensive/Land Use Plans, of the FEIS. The updated plans are:

- Town of Berthoud, *2014 Comprehensive Plan*, April 2014
- Town of Windsor, *Comprehensive Plan*, March 2016
- City of Loveland, *Comprehensive Plan*, July 2016

Land Use Data

Land use data were obtained from Larimer County, Weld County, and the NFRMPO. As stated in the FEIS, land uses are rapidly being converted from agricultural lands to commercial and residential uses in northern Colorado.

Future (Year 2040) Land Use

The future land use discussion has been updated to the year 2040 for the ROD4 study area. Land use changes are anticipated along the I-25 corridor between now and 2040. The amount of agricultural lands will be reduced as residential and employment areas increase, consistent with what was described in the FEIS.

Zoning

There are no changes to the zoning since the FEIS.

6.1.1 Impacts of the ROD4 Selected Alternative

Approximately 258 acres of land within the ROD4 study area that currently is used for agricultural and commercial uses will be converted to a transportation use.

Table 5 compares the FEIS and ROD4 land use acres converted from an existing land use to a transportation use. Overall the total acreage of conversion was reduced through design changes for this section of the corridor.

Table 5. Comparison of Acres Converted

| Land Use Category | FEIS Land Use Data | | | ROD4 Land Use Data | | |
|-------------------|--------------------|---------------------------|----------------------------|--------------------|---------------------------|----------------------------|
| | Acres Converted | Percent of Converted Land | Percent of ROD4 Study Area | Acres Converted | Percent of Converted Land | Percent of ROD4 Study Area |
| Agriculture | 313 | 69.7% | 4.7% | 202 | 78.3% | 3.0% |
| Employment Area | 73 | 16.3% | 1.1% | 48 | 18.6% | 0.7% |
| Open Space/Park | 0 | 0.0% | 0.0% | 2 | 0.8% | 0.0% |
| Residential | 17 | 3.8% | 0.3% | 3 | 1.2% | 0.0% |
| Vacant | 46 | 10.2% | 0.7% | 3 | 1.2% | 0.0% |
| Total | 449 | 100.0% | 6.7% | 258 | 100.0% | 3.90% |

The change in existing land use types for this ROD4 is consistent with change anticipated in the FEIS. For all land use categories, the percent of the land use type converted is reduced within the ROD4 study area.

Impacts of Kendall Parkway Transit Center

The improvements associated with the Kendall Parkway Transit Center which are included in the ROD4 Selected Alternative impacts would convert 0.3 acres of agricultural land and 1.9 acres of employment area. There are an additional 14.2 acres which are currently in transportation use.

6.1.2 Mitigation

No mitigation is needed.

6.2 Social Conditions

Population and Housing Statistics

The FEIS used data from the 1990 and 2000 U.S. Census Bureau at the census tract level to analyze population and housing characteristics of the regional study area. For the ROD4 analysis, 2010 U.S. Census Bureau and 2010-2014 American Community Survey (ACS) data at the census block group have been used. A demographic study area (DSA), which encompasses the ROD4 study area has been defined for this analysis.

The DSA is the smallest statistical area of the 2010 Census that includes the ROD4 study area. The DSA for this project includes six census block groups listed in Table 6, four in Larimer County and two in Weld County.

Table 6. Demographic Study Area Census Block Groups

| County | 2010 Census | |
|---------|--------------|-------------|
| | Census Tract | Block Group |
| Larimer | 25.01 | 2 |
| | 17.09 | 2 |
| | 16.08 | 1 |
| | 17.09 | 1 |
| Weld | 21.02 | 1 |
| | 21.03 | 2 |

From 2000 to 2010, the overall population of the DSA increased from 13,043 to 36,460. This is an overall growth rate of 180 percent (an annualized average rate of 11 percent). This overall growth rate is notably higher than the state's overall growth rate of approximately 17 percent. Approximately 69 percent of the housing units in the DSA have been built since the year 2000.

Persons with Disabilities and Advanced Age

The analysis included a review of 2010 Census data for Sex by Age for the DSA. The data identified a higher percentage of residents age 65 or older near the northwest quadrant of the US 34 interchange at I-25 since the FEIS. Further research identified the Park Regency Senior Living Apartments are located at 1875 Fall River Drive, within the DSA but outside of the ROD4 study area.

Community Facilities and Services

There are no changes in community facilities and services since the FEIS.

Neighborhoods

In addition to the neighborhoods mentioned in the FEIS, the Thompson River Ranch subdivision, located east of I-25 and south of the Big Thompson River in the Town of Johnstown, has been developed.

Environmental Justice

The result of the analysis for the environmental justice populations is similar to the FEIS. However, since the FEIS was completed new regulations and guidance have been issued for environmental justice analysis. This analysis considered the following changes in guidance and regulations for environmental justice. *FHWA Guidance on Environmental Justice and NEPA*, signed on December 16, 2011, supplements *FHWA Technical Advisory 6640.8A*, and provides guidance on the process for addressing Environmental Justice, Title VI, and Limited English Proficiency (LEP). This guidance includes the documentation requirements for NEPA studies and directs the analysis to consider only those adverse effects that remain after mitigation is considered when evaluating disproportionately high and adverse effects. On May 2, 2012, U.S. Department of Transportation (USDOT) Order 5610.2(a) was issued, which updates the DOT's original Environmental Justice Order and clarifies certain aspects of it, including the definitions of "minority" populations. On June 14, 2012, FHWA Order 6640.23A was issued to establish policies and procedures to comply with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (Executive Order 12898). The most current CDOT NEPA Manual was released in October 2014 (revised July 2015).

The FEIS identified minority populations in the study area by census tract, as shown on Figure 3.2-3 of the FEIS, which are protected by the Environmental Justice Executive Order and the DOT order. The analysis completed for this ROD4 used 2010 Census block data for a more precise analysis. It identified a minority population in the same general vicinity as the FEIS located in Census Tract 16.08, Block Group 1 (west side of I-25/SH 392 interchange).

6.2.1 Impacts of the ROD4 Selected Alternative

The impacts of the ROD4 Selected Alternative are the same as those documented in the FEIS. The FEIS indicated that impacts and benefits would be distributed across all communities, including minority and low-income populations, as well as non-minority/non-low-income populations. All segments of the population would benefit from safety and access improvements to businesses, residences, and community facilities; from stronger regional community connections resulting from the ROD4 Selected Alternative; and from mitigation commitments that will, in some cases, improve conditions over existing conditions and over the No Action Alternative.

Right-of-way acquisition along I-25 for the ROD4 Selected Alternative will result in three residential relocations. Mitigation for impacts from relocation or displacement of existing occupants due to right-of-way acquisition is addressed in Section 6.4, Right of Way.

During construction, detours, traffic delays, and temporary noise and visual impacts may occur. Construction phasing is planned to minimize temporary impacts to the greatest extent possible. Employment and positive indirect economic effects also would occur during construction.

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.2.2 Mitigation

The following mitigation measures included in the FEIS (shown below in Table 7) are still applicable. In addition to the mitigation measures listed in the FEIS, a Traffic Management Plan will be developed that identifies a construction-related traffic control plan, work zone management strategies, and contingency plans.

Table 7. Social Conditions Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| Residential relocations | <ul style="list-style-type: none"> Ensure that acquisition or relocation of property as a result of this project will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended, and other applicable relocation assistance programs. |
| Ability for all economic groups to use toll facilities | <ul style="list-style-type: none"> Seek ways to make tolling more equitable. For example, consider payment options to enable the broadest opportunity for all economic groups to use toll facilities. Provide alternate payment options so that persons who do not have a credit card can still participate in the tolled express lanes. Also consider including toll replenishment using cash or employer-based payroll deductions in the tolling program. |

6.3 Economic Conditions

The FEIS showed substantial change in employment between 2005 and 2035 in Weld and Larimer counties, increasing 182 percent and 56 percent respectively, and continue to increase. According to the Colorado Department of Local Affairs (DOLA), *Labor Force Supply & Demand* (October 30, 2015), the total number of new jobs in Weld and Larimer and counties combined is expected to increase by approximately 232,900 jobs. Table 8 shows the employment change from 2010 to 2040 by county.

Table 8. ROD4 Study Area Employment Change by County

| County | Employment (Total Jobs) | | | |
|---------|-------------------------|---------|------------|------------|
| | 2010 | 2040 | Difference | Change (%) |
| Larimer | 165,263 | 257,297 | +109,075 | 66% |
| Weld | 104,463 | 211,865 | +125,500 | 120% |

As noted in the FEIS, the largest increase in employment is expected to occur along the I-25 corridor within a half-mile of the highway, and this growth is anticipated to continue into the future.

6.3.1 Impacts of the ROD4 Selected Alternative

There will be short-term improvements in the local economy associated with construction-related employment. These impacts are not changed from the FEIS.

Right-of-way acquisition along I-25 for the ROD4 Selected Alternative will result in five business relocations (fewer than what was reported in the FEIS), which will affect the economic

conditions of the area by removing employment opportunities and reducing the tax base. These businesses are summarized in Table 9. Mitigation for impacts from relocation or displacement of existing businesses due to right-of-way acquisition is addressed in Section 6.4, Right of Way.

Table 9. Business Relocations

| Location | Number of Relocations | Type of Business | Reason |
|--|-------------------------------|------------------|-----------------------|
| Northeast Quadrant of LCR 16 and I-25 (Johnson's Corner) | 2 | Warehouses | Widening of LCR 16 |
| Southeast Quadrant of US 34 and I-25 | 1 | Gas station | Right of way for I-25 |
| Northwest Quadrant of US 34 and I-25 | 1 | Restaurant | Right of way for I-25 |
| Northeast Quadrant of US 34 and I-25 | 1 | Retailer | Right of way for I-25 |
| Total | 5 Business Relocations | | |

Access to both Centerra and the Loveland Outlets would be similar to existing conditions. The US 34/I-25 interchange would be converted to a diamond configuration with direct connect ramps from southbound I-25 to eastbound US 34 and westbound US 34 to southbound I-25. Access to the adjacent business would be through the diamond interchange, while the direct connect ramps provide improved regional connections.

At the Johnson's Corner truck stop and café, LCR 16 would go over I-25 to more safely accommodate traffic. The two access points to Johnson's Corner from LCR 16 would remain in their existing location. Some out-of-direction travel would be required for patrons traveling along the frontage road. Existing access from the frontage road would be replaced so that customers would have to travel east on LCR 16 to the frontage road, circle around the property, and enter at the south end. This configuration would accommodate trucks.

Access to businesses in the northwest quadrant of the SH 60/I-25 interchange would remain similar to existing. Interchange ramps would be shifted to the east to minimize impacts to these businesses.

During construction, access to local businesses may be temporarily disrupted or a minor delay may occur that could negatively impact the performance of some of the businesses. Conditions will return to normal after construction is complete.

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.3.2 Mitigation

Table 10 outlines the economic conditions impacts and mitigation measures for the ROD4 Selected Alternative.

Table 10. Economic Conditions Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|---|
| Business relocations and impacts | <ul style="list-style-type: none"> Ensure that acquisition or relocation of property as a result of this project will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended, and other applicable relocation assistance programs. |
| During construction, access to local businesses may be temporarily disrupted or a minor delay may occur that could negatively impact the performance of some of the businesses | <ul style="list-style-type: none"> Provide new access for properties where existing accesses are removed. Although some businesses may have changes in access due to the project, CDOT will work to ensure that all business are provided with some form of access. To avoid disruption of business activities during construction, provide the new access before the existing access is removed. Develop a traffic control plan to minimize interference with traffic flow from construction equipment and activities. CDOT will provide advance notice to emergency service providers, local businesses, rail operators, and residents with regard to road delays, access, and special construction activities. Make these notifications available via radio and public announcements, newspaper notices, onsite signage, and CDOT's website. Stage construction activities and vary work hours to minimize disruption to traffic and local businesses. Throughout the construction phase, preserve access for each affected business. Construct retaining walls along I-25, where feasible, to minimize impacts to commercial development. |

6.4 Right of Way

The ROD4 study area extends from SH 56 to SH 392 along I-25 corridor. The existing I-25 mainline right-of-way has not changed since the FEIS and range from 285 feet to 325 feet as mentioned in Section 3.4-1 of the FEIS. Although new construction has occurred at Crossroads Boulevard since publication of the FEIS as part of ROD3, these improvements were within CDOT right of way and did not change the existing right of way in the area. There have been no changes in regulations or guidelines since publication of the FEIS.

6.4.1 Impacts of the ROD4 Selected Alternative

The ROD4 Selected Alternative requires acquisition of approximately 233.42 acres of right of way. Additionally, temporary easements may be necessary for construction activities and will be identified during the final design of the project. The FEIS included approximately 259.4 acres for the same area. The acreage of right of way has decreased since the FEIS due to the minor changes in the project design.

Table 11 summarizes the land use categories and acreage breakdown of the acquisition.

Table 11. Right-of-Way Acquisition of ROD4 Selected Alternative

| Type | Right-of-Way Acquisition (Acres) | | | |
|---------------------|----------------------------------|-------------|---------------|---------------|
| | Commercial | Residential | Agriculture | Total |
| Full Acquisition | 1.18 | - | - | 1.18 |
| Partial Acquisition | 79.57 | 1.05 | 95.29 | 175.91 |
| Permanent Easement | 0.51 | - | 55.82 | 56.33 |
| Total | 81.26 | 1.05 | 151.11 | 233.42 |

The right-of-way acquisition for the ROD4 Selected Alternative results in relocation of five businesses, and three residential units compared to six businesses and eight residential units from the same area in the FEIS. There are fewer relocations since publication of the FEIS due to modifications to the project design and changes in existing conditions. Figure 5 shows the general location of the business and residential relocations along the corridor. Due to the size of the parcels, and based on the location of the structures on these parcels, three residential relocations are anticipated although no full residential acquisitions are identified.

Impacts of Kendall Parkway Transit Center

Acquisition of 2.2 acres would be required for this improvement which are included in the ROD4 Selected Alternative impacts. There are no commercial or residential relocations due to the Transit Center.

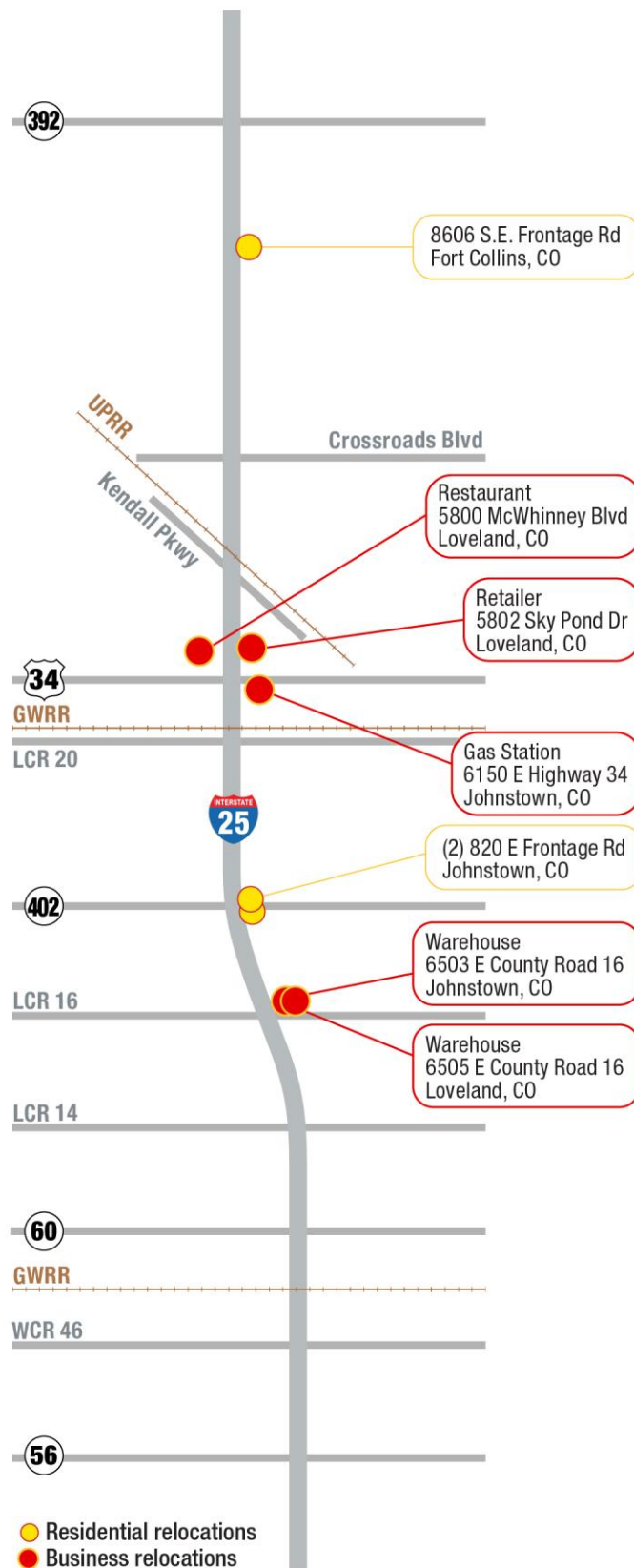
6.4.2 Mitigation

For any person whose real property interests may be impacted by the project, the acquisition will fully comply with the Uniform Act. The Uniform Act also provides for numerous benefits to individuals who occupy buildings 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. Table 12 outlines the acquisition impacts and mitigation measures for the ROD4 Selected Alternative.

Table 12. Right-of-Way Acquisition and Relocation Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|---|---|
| Five business and three residential relocations | Ensure that relocation of residents and businesses as a result of this project will comply with the Uniform Act, as amended, and other applicable relocation assistance programs. |
| 233.42 acres of acquisition | Ensure that acquisition of properties as a result of this project will comply with the Uniform Act, as amended. |
| Temporary easement | Ensure that temporary easements of those property interests required for the project during construction will comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and other applicable relocation assistance programs. |

Figure 5. ROD4 Selected Alternative Relocations



6.5 Air Quality

The project is located in the nonattainment area for the Denver-North Front Range Area for the 2008 ozone standard. The area was designated as a “marginal” nonattainment area in 2012, but was reclassified to a “moderate” nonattainment area after failing to attain the marginal designation. A new ozone SIP is currently under review, and EPA action on the SIP is expected in 2017. Since ozone is a regional pollutant, conformity is based on a regional analysis. The project is included in the conforming, fiscally constrained NFRMPO 2016–2021 Transportation Improvement Program (TIP) and the 2040 RTP, as amended and adopted on February 2, 2017, which were found to conform to the ozone SIP. The FHWA conformity determination was made on March 3, 2017. Additional information can be found in the Air Quality Technical Memorandum in Appendix B.

Changes in air quality laws, policies, and guidance since publication of the FEIS in 2011 include:

- The Motor Vehicle Emissions Model (MOVES) version 2014a was released in November 2015. This was a major update to MOVES2010 and its minor revisions that corrected errors and added the ability to evaluate additional air toxics (MOVES2010a and MOVES2010b). MOVES2014 includes three new emission control programs associated with regulations promulgated since the release of MOVES2010b, and its minor revision, MOVES2014a, incorporates significant improvements in calculating on-road and non-road equipment emissions. Technical and policy guidance in the use of MOVES2014 for a variety of purposes and pollutants also has been updated.
- FHWA’s *Interim Guidance Update on Mobile Source Air Toxics Analysis in NEPA* was updated on October 18, 2016, from the original guidance published in September 2009. The revised guidance reflects changes in methodology for conducting emissions analysis and updates various research topics in mobile source air toxics (MSAT) analyses.
- The U.S. Environmental Protection Agency (EPA) released *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas* updated November 2015.
- The National Ambient Air Quality Standard (NAAQS) for ozone was lowered from 75 parts per billion (ppb) to 70 ppb in October 2015. EPA’s nonattainment designations will be made in late 2017.
- The EPA released *Transportation Conformity Regulations as of April 2012*.
- FHWA’s *Carbon Monoxide Categorical Hot-Spot Finding* memo was released in February 2014.
- In 2016 the Denver-North Front Range 2008 8-hour ozone nonattainment area designation changed from “marginal” to “moderate” after failure to attain the marginal classification.

6.5.1 Impacts of the ROD4 Selected Alternative

For the ROD4 Selected Alternative, the MSAT emissions would be proportional to the vehicle miles traveled (VMT). The VMT estimated for the ROD4 Selected Alternative is slightly higher than if the project was not built, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network.

The proposed project will not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the NAAQS or any required interim emissions reductions or other milestones. This project complies with the transportation conformity regulations in 40 CFR §93 and with the conformity provisions of Section 176(c) of the Clean Air Act (CAA).

During construction, dust and other emissions will cause temporary and localized pollution generated by construction vehicles and earth disturbances.

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.5.2 Mitigation

Because the ROD4 Selected Alternative does not cause any additional air quality impacts beyond those listed in the FEIS, the mitigation commitments for air quality are related to air pollution during construction (see Table 13).

Table 13. Air Quality Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| Localized dust and other emissions during construction | <ul style="list-style-type: none"> • Prepare an air quality mitigation plan 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. • Ensure that all construction equipment is properly tuned and maintained by the contractor. • Minimize equipment idle time to 10 minutes. • Chip or deliver vegetation to waste energy facilities. Do not open burn removed vegetation. • Utilize existing power sources or clean fuel generators rather than temporary power generators. • Operate equipment affecting traffic mainly during off-peak hours. • Minimize obstructions of through-traffic lanes. Utilize a flag person to guide traffic properly to minimize congestion and to ensure safety. • Ensure that an operational water truck is onsite at all times. Apply water to control dust as needed to prevent dust impacts both onsite and offsite. • Use wetting/chemical inhibitors for dust control. • Stabilize and cover stockpile areas. • Remove soil and other materials from paved streets. |

6.6 Noise

Since completion of the analysis for the FEIS, the regulations in 23 CFR 772 were updated in 2010. Subsequently, noise guidance from FHWA and CDOT have been updated. CDOT's *Noise Analysis and Abatement Guidelines* was revised in January 2015, and FHWA's revised *Highway Traffic Noise: Analysis and Abatement Guidance* was released in December 2011. The noise

analysis for ROD4 Selected Alternative has been updated to follow the most recent guidelines and utilize the latest traffic forecast volumes.

The ROD4 study area has been reviewed to identify any new development or land use changes that have occurred since the prior noise analysis. New development has occurred in the area and new receptor locations have been added to the model to account for these new developments. Receptor locations and categorization were updated to reflect the latest guidelines. Additionally, new ambient noise measurements were taken at four locations within 500 feet of I-25 within the vicinity of noise-sensitive sites.

6.6.1 Impacts of the ROD4 Selected Alternative

The ROD4 Selected Alternative was modeled to assess noise impacts for the project. As summarized in Table 14, there are currently 85 receptors that have traffic noise impacts within the ROD4 study area. These receptors are located either in the Mountain Range Shadows Subdivision just north of LCR 30, or in locations irregularly spaced north and south through the ROD4 study area adjacent to I-25. Most of the impacts are because noise levels would be above the noise abatement criteria (NAC). The locations are shown on maps in Appendix C, Noise Technical Report.

In addition to the ROD4 Selected Alternative, the existing condition, 2040 No Action, and the FEIS Preferred Alternative were modeled using the updated 2040 traffic data for comparison purposes and are also included in Table 14. For more detail on the noise analysis, see Appendix C, Noise Technical Report.

Table 14. Noise Impact and Mitigation Summary

| Noise Impacts and Mitigation Criteria | Alternative | | | |
|--|-------------|-----------------------|---------------------------|----------------------------|
| | Existing | No-Action Alternative | ROD4 Selected Alternative | FEIS Preferred Alternative |
| Number of Receptors Exceeding NAC Threshold and/or with a Substantial Noise Increase in Noise Levels | 85 | 98 | 157 | 160 |
| Number of Receptors with Noise Levels that exceed NAC Threshold | 85 | 98 | 157 | 159 |
| Number of Receptors with Substantial Increase (10 dBA) in Noise Levels | N/A | 1 | 2 | 4 |
| Leq(h) (dBA) Minimum | 43 | 47 | 45 | 47 |
| Leq(h) (dBA) Maximum | 80 | 81 | 81 | 81 |
| Evaluated Wall Heights (ft) | N/A | N/A | 8 to 20 | 8 to 20 |
| Optimized Reasonable and Feasible Wall Heights (ft) | | | 12 to 20 | 12 to 20 |

Construction noise will present the potential for short-term impacts to those receptors located along the corridor and along designated construction access routes. It is anticipated that a portion of the construction will occur at night to minimize traffic disruption. Vibrations can occur

from general construction equipment use near noise-sensitive receptors, particularly pile driving for substructure elements from compaction equipment. The primary source of construction noise is expected to be diesel-powered equipment, such as trucks and earth-moving equipment, and construction activities, such as demolition hammers on trackhoes, rubble load outs, and tailgate and bucket bang. Pile driving and demolition are expected to be the loudest construction operations. Piles would be required at most major bridge installations. Bridge and road demolition also would be required at many locations.

This project will abide by the appropriate city codes as they pertain to construction noise. If noise levels during construction are expected to exceed the limits from the city codes, the contractor must obtain the necessary ordinance variance.

Impacts of Kendall Parkway Transit Center

The changes associated with the Kendall Parkway Transit Center do not change the impacts of the ROD4 Selected Alternative.

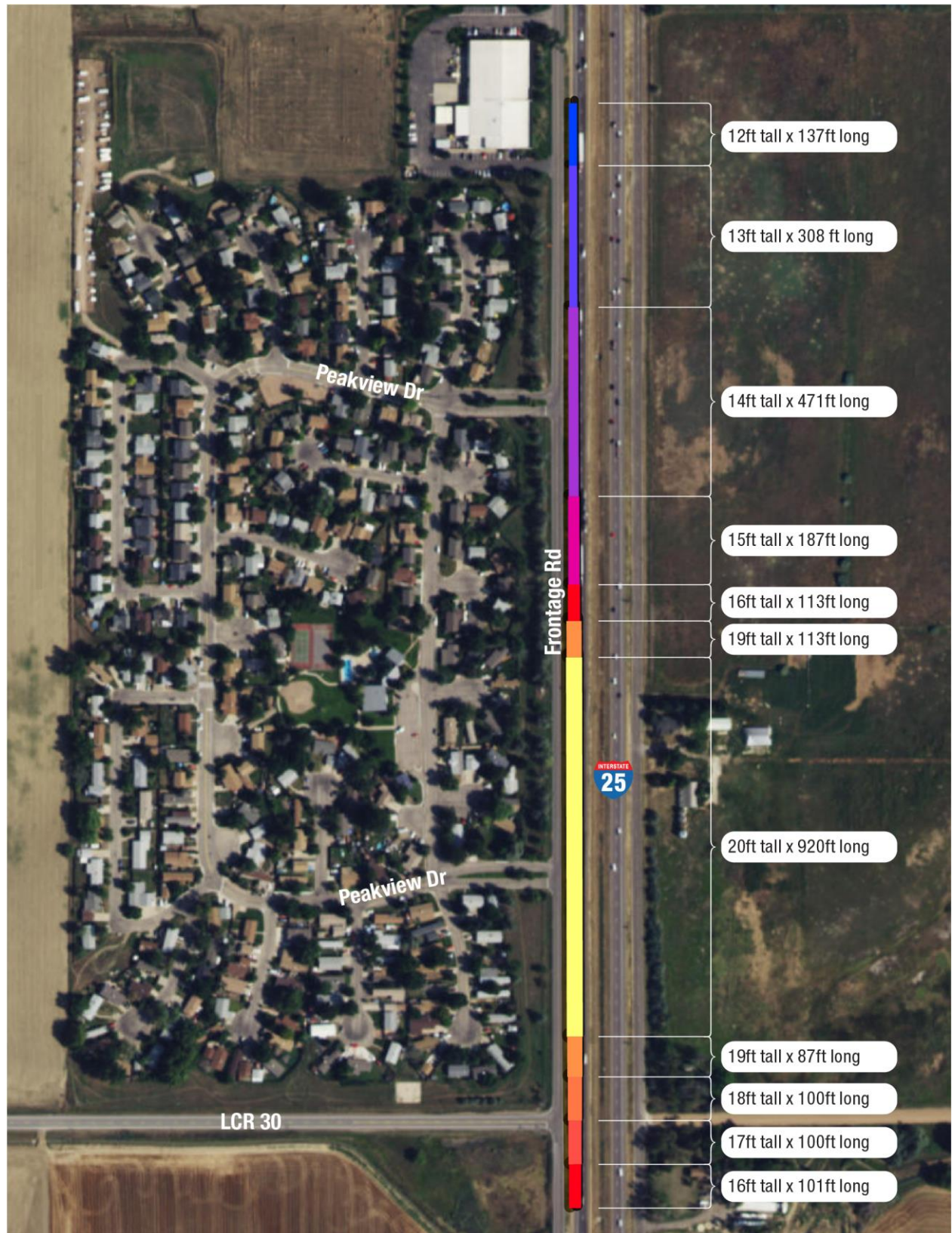
6.6.2 Mitigation

To mitigate the impacts of the ROD4 Selected Alternative, 21 barriers were analyzed for reasonableness and feasibility. Of those, only one was found to be reasonable and feasible, based on CDOT's cost benefit index. The only recommended barrier for this project is located at Mountain Range Shadows Subdivision. The barrier recommended at the Mountain Range Shadows Subdivision ranges from 12 feet to 20 feet high (see Figure 6).

The FEIS recommended a wall height of 12 feet at Mountain Range Shadows Subdivision. Since the completion of the analysis for the FEIS, impacts changed when the noise model was updated with the most recent traffic volume data available. Impacts also were affected by rounding; previously, the FEIS did not consider noise levels of 65.5 dBA to 65.9 dBA to be impacted for a threshold of 66 dBA (NAC Category B or C receptors). To better follow CDOT's most recent Noise Analysis and Abatement Guidelines released in January 2015, noise levels in this document have been rounded. These changes in impacts also resulted in changes in the mitigation required, or changes in wall height since the FEIS.

A Benefitted Receptor Preference Survey will be completed for the recommended noise barrier to identify if construction of the barrier is desired by the benefitted receptors. The noise wall will be constructed only if at least 50 percent of the benefitted receptors vote for the wall. The location and height of the wall results were similar to the FEIS Preferred Alternative. See Appendix C, Noise Technical Report, for more information regarding the recommended barriers and their location.

Figure 6. Proposed Noise Walls Location and Height



Construction Mitigation

During construction, the Contractor will comply with all applicable local noise ordinances and regulations, unless a variance from the municipality is secured. Required permits will be acquired prior to the start of any associated construction activities.

To address the temporary elevated noise levels that may be experienced during construction, the standard mitigation measures will be used where it is feasible. These can include but are not limited to:

1. Exhaust systems on equipment shall be in good working order. Equipment shall be maintained on a regular basis, and equipment may be subject to inspection by the project manager to ensure maintenance.
2. Properly designed engine enclosures and intake silencers shall be used where appropriate.
3. New equipment shall be subject to new product noise emission standards.
4. Stationary equipment shall be located as far from sensitive receivers as possible.

A Noise Mitigation Plan that outlines allowable daytime and nighttime activities, projected noise levels, and locations and types of noise abatement measures for the associated construction activities will be prepared prior to start of construction.

Temporary and permanent noise impacts and mitigation are summarized in Table 15.

Table 15. Noise Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|---|--|
| Elevated noise levels at Mountain Range Shadows Subdivision | <ul style="list-style-type: none"> • Consider new traffic noise barriers for the Mountain Range Shadows neighborhood (recommended 12-feet to 20-feet high barrier) • Perform a Benefitted Receptor Preference Survey for the recommended noise barriers |
| Construction noise | <ul style="list-style-type: none"> • Ensure exhaust systems on equipment are in good working order by performing maintenance on a regular basis and maintenance inspections performed by the project manager. • Use properly designed engine enclosures and intake silencers where appropriate. • Ensure new equipment meets new product noise emission standards. • Locate stationary equipment as far from sensitive receivers as possible. • Comply with all applicable local noise ordinances and regulations • Use standard mitigation measures where feasible • Prepare a Noise Mitigation Plan • Conduct construction activities in noise-sensitive areas during hours that are least disturbing to adjacent and nearby residents |

6.7 Water Quality

The ROD4 Selected Alternative is situated entirely in the South Platte River basin, and is located within the Big Thompson River watershed and the Cache la Poudre River watershed. There are no changes to the watersheds and the crossings since the FEIS. For more information about the watersheds, see Section 3.7, Water Resources, of the 2011 FEIS.

The primary change in regulations since the 2011 FEIS is that CDOT has negotiated a new Municipal Separate Storm Sewer System (MS4) permit with the Colorado Department of Public Health and Environment (CDPHE) in 2015. If a planned project creates more than one acre of ground disturbance, will increase impervious area by 20 percent or more, and is tied to an FEIS, CDOT's New Development Redevelopment Program requires implementing permanent water quality treatment. The FEIS identified 101 percent capture volume. This percentage was due to not only capturing the runoff from the new impervious surface; but also runoff from the existing impervious surface. That capture volume is greater than the current CDOT 2015 MS4 permit. Although the FEIS has identified 101 percent treatment for the FEIS Preferred Alternative, the CDOT 2015 MS4 permit only requires treatment of 90 percent of the run off from the new impervious surface, which the ROD4 Selected Alternative will follow.

6.7.1 Impacts of the ROD4 Selected Alternative

The ROD4 Selected Alternative would result in an increase of approximately 130 acres of impervious surface which is a 36 percent increase.

Impacts of Kendall Parkway Transit Center

This improvement would result in an additional 7.04 acres of impervious surface which are included in the ROD4 Selected Alternative impacts.

The impacts associated with the increase in impervious area are consistent with the impacts discussed in the FEIS. There is potential for temporary water quality impacts during construction.

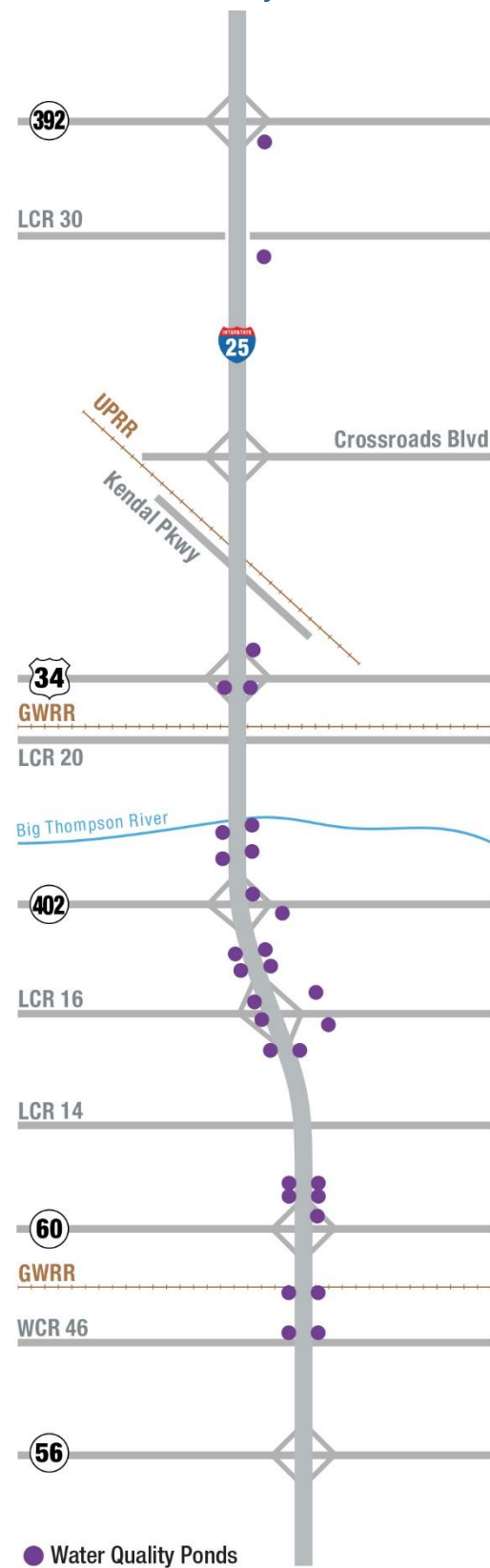
6.7.2 Mitigation

Temporary and permanent water quality impacts and mitigation are summarized in Table 16. Figure 7 shows the areas along the I-25 corridor where water quality ponds are proposed.

Table 16. Water Quality Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| <ul style="list-style-type: none"> • Increased impervious surface area • Potential for temporary water quality impacts during construction • Potential to encounter groundwater | <p>A combination of mitigation measures consisting of permanent non-structural and temporary best management practices (BMPs) will be implemented in the study area, in compliance with the Clean Water Act and MS4 permit requirements.</p> <ul style="list-style-type: none"> • Identify and build extended detention basins as the primary structural BMP for this project. • Develop a Stormwater Management Plan (SWMP) during design, to be implemented during construction and updated as needed. • Minimize in-stream activity. • Prepare a Spill Prevention Plan. • Follow CDOT's specifications for managing stormwater at a construction site (currently specifications 107.25, 208, 212, 213 and 216) will be followed. • Implement and maintain construction BMPs 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). • Establish vegetation or other erosion control techniques to prevent sediment loading in compliance with the general stormwater construction permit. • Phase construction activities to minimize effects associated with large areas of exposed ground and with soil compaction from heavy machinery use. • If groundwater is encountered during activities associated with excavations for caisson/retaining walls, discharge groundwater only when the following conditions are met: <ul style="list-style-type: none"> ○ 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. ○ Discharge is in accordance with CDPHE Water Quality Control Division, Water Quality, Policy-27, Low-Risk Discharges, September 2009. ○ The source is identified in the SWMP. ○ Dewatering BMPs are included in the SWMP. ○ Ensure these discharges do not leave the site as surface runoff or enter surface waters. • If these conditions are not met, then obtain a separate Clean Water Act Section 402 Construction Dewatering Permit or Individual Construction Dewatering Permit from the CDPHE's Water Quality Control Division. • Manage dewatering groundwater brought to surface in accordance with Section 107.25 of the CDOT <i>Standard Specifications for Road and Bridge Construction</i> (CDOT, 2011). |

Figure 7. ROD4 Selected Alternative Water Quality Detention Basin Locations



6.8 Wetlands

The new Clean Water Rule: Definition of “Waters of the United States,” was published June 29, 2015, and became effective August 28, 2015 (40 CFR §230.3). However, a nationwide stay was issued by the U.S. Court of Appeals for the 6th Circuit on October 9, 2015, which blocked the implementation of the new rule. In response to this decision, EPA and the Department of the Army resumed nationwide use of the agencies’ prior regulations defining the term “waters of the United States.” Those regulations will be implemented as they were prior to August 27, 2015 (EPA 2015b).

There are no changes to existing wetlands and other waters of the U.S. (hereafter referred to as open waters) since the FEIS. The USACE Denver Regulatory Office issued a Preliminary Jurisdictional Delineation for wetlands and open waters located along the I-25 highway corridor, which can be found in the Technical Memorandum Addendum for Wetlands and Other Waters of the U.S. of the FEIS.

6.8.1 Impacts of the ROD4 Selected Alternative

CDOT has obtained the Section 404 Permit for impacts resulting from the FEIS Preferred Alternative conceptual design. As a requirement of the Section 404 permit, wetland impacts were calculated using the refined construction limits for the ROD4 Selected Alternative by overlaying them with the wetland delineation performed for the FEIS. The ROD4 Selected Alternative is not to exceed the 4.26 acres of impacts to wetlands as calculated in the FEIS.

The ROD4 Selected Alternative will result in indirect wetland effects from the increase in impervious surfaces caused by additional lanes and added road shoulders. Additional indirect effects would be expected to include increased roadway runoff, increased surface flows in adjacent streams, erosion, and the creation of channels in wetlands that were previously free of channelization. Other indirect effects include the decrease or elimination of upland tree and/or shrub buffers between the proposed roadway and wetlands adjacent to other aquatic sites.

New flows could contain pollutants associated with roadway runoff that would degrade water quality and impact wetland vegetation from the following:

- Winter sanding operations
- Deicers, petroleum products, and other chemicals
- Exposed soils from the removal of vegetation during and after construction until exposed fill and cut slopes could be successfully revegetated
- The decrease or elimination of upland tree and/or shrub buffers between the proposed roadway and wetlands adjacent to other aquatic sites

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.8.2 Mitigation

Impacts to wetlands and jurisdictional open waters will be avoided and minimized to the greatest extent possible during preliminary and final design. The following mitigation goals included in Table 17 are appropriate for unavoidable impacts to wetlands.

Table 17. Wetland Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| Total direct impacts to 4.26 acres of wetlands | <ul style="list-style-type: none"> Follow all general and special conditions from the Section 404 Permit already obtained (see Appendix D, Section 404 Permit). This includes construction of wetland mitigation (already completed) and notification to the USACE prior to construction. |
| Indirect wetland effects | <ul style="list-style-type: none"> During construction, use BMPs to avoid indirect construction impacts to wetlands. Store materials and equipment a minimum of 50 feet from wetlands, drainages, and ditches that could carry toxic materials into wetlands. Use construction fencing and appropriate sediment control BMPs to mark wetland boundaries and sensitive habitats during construction. Place sediment and erosion control during all phases of construction. They must remain in place until all disturbed areas have reached 70 percent of preconstruction vegetative cover. |

6.9 Floodplains

The proposed improvements to I-25 between SH 56 and SH 392 impact the existing Federal Emergency Management Agency (FEMA) floodplains for the Cache la Poudre River and the Big Thompson River. Floodplains include both flood fringe areas and floodway areas in both watersheds, and are managed by minimum federal standards established by the National Flood Insurance Program (NFIP). NFIP flood risk management standards are administered by local agencies within their jurisdiction.

The various governmental policies listed in the FEIS still apply and guidance corresponds to the most recent editions. The CDOT *Erosion Control and Stormwater Quality Guide* was revised in 2011. An updated Flood Insurance Study (FIS) was completed for Larimer County and all incorporated areas on February 6, 2013.

The FEMA flood zone for the Big Thompson River is in the process of being revised with the Thompson River Ranch Letter of Map Revision (LOMR) (FEMA Case No. 16-08-1159P); the estimated effective date will be May 2017. The FEMA flood zone for the Cache la Poudre River is in the process of being revised with the Risk MAP Restudy/Physical Map Revision; the estimated effective date will be December 2019. For more information regarding the floodplains and FEMA zones, see the North I-25 FEIS published in 2011.

6.9.1 Impacts of the ROD4 Selected Alternative

There are no changes to floodplains impacts since the FEIS. The Big Thompson River crosses under I-25 near mile post 257, flowing from west to east. The current bridge would be replaced with a wider bridge because of the widening of I-25. The proposed bridge will be comparable in length to the existing bridge, but the profile of I-25 would be raised to provide the capacity needed to pass the 100-year flows. This improvement would have the following floodplain impacts:

- There should be minimal or no changes to the floodplain limits and water surface. There may be local changes due to the widening of the bridge, but this should not affect flooding upstream or downstream of the structure.
- Natural vegetation surrounding the structure would be disturbed during construction.
- Surrounding wetlands would be disturbed during construction
- The highway improvements impacting the floodplain are considered floodplain and floodway encroachments, and would include lengthening bridge structures and adding fill in overbank floodplain areas for raised embankment profiles

Floodplain impacts would include increasing the sizes of bridges, culverts, and other drainage facilities in order to better convey floodwaters. In most cases, larger drainage structures would not disturb the existing low flow channel areas where riparian habitat is located. The overbanks adjacent to the low flow channels are generally expanded with the newer structures in order to pass the higher flows. Enlarged overbank areas are generally revegetated with a diverse planting in order to enhance the habitat.

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.9.2 Mitigation

Upstream flood risks should decrease with an enlarged drainage structure. Downstream flood risks can increase due to the improved conveyance of stormwater. It is CDOT policy to size a drainage structure based on FEMA flows, 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 30 and 12.1.1). The standard flood for CDOT and FEMA is the 100-year flood. Impacts to downstream areas must be assessed at the time of preliminary and final design by using detailed hydraulic methods. All improvements are to follow the guidelines described in Section 3.9.1 of the FEIS.

Floodplain mitigations are summarized in Table 18.

Table 18. Floodplains Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|---|--|
| Downstream flood risks can increase due to the improved conveyance of the stormwaters | <ul style="list-style-type: none"> • Assess downstream areas at the time of preliminary and final design by using detailed hydraulic methods. |

Table 18. Floodplains Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| Vegetation and wetland impacts within Big Thompson River floodplains | <ul style="list-style-type: none"> • Control sediment and erosion by implementing appropriate structural and non-structural BMPs during each phase of construction to avoid potential pollutants from entering state waters • Seed and revegetate disturbed land in accordance with current CDOT standards and specifications • Revegetate enlarged overbank areas with a diverse planting to enhance the habitat • Meet Senate Bill (SB) 40 requirements for applicable areas • Conduct wetland mitigation in accordance with the mitigation approach described in Section 6.8.2. |
| Floodplain or floodway encroachment | <ul style="list-style-type: none"> • Use the 100-year FEMA design flows for freeboard determinations, scour design, and to ensure that flow velocities are acceptable • Use the 500-year design flows to further assess the scour design and set the depths of piles or caissons • Assess impacts to downstream areas during preliminary and final design by using the guidelines described in Section 3.9 <i>Floodplains</i> in the North I-25 FEIS • Base design flows on the current level of development. • Follow the CDOT Policy, to obey the Nature Flow Rule of Colorado and hold others to the same standard (CDOT Drainage Design Manual, 2004, sec. 2.5.2 and 12.1.1). • Consider the maximum allowable backwater as allowed by FEMA • Determine degradation, aggregation, and scour. Select adequate counter measures using criteria established by the National Cooperative Highway Research Program Report 568 (TRB, 2006) • Minimize disruption to the ecosystem • Consider costs for construction and maintenance • Consider a bridge deck drainage system that controls seepage at joints. If possible, pipe bridge deck drains to a water quality feature before being discharged into a floodplain • Comply with federal and state agencies and make every consideration towards local agency requirements when designing and be consistent with existing watershed and floodplain management programs. <p>As a result of design refinements, additional mitigation measures have been developed since the FEIS and are listed below:</p> <ul style="list-style-type: none"> • Design all encroachment in the floodway portion of the floodplain with compensatory conveyance, certified to cause no rise in the Base Flood Elevation, and documented in an approved floodplain development permit to the local agency administering NFIP standards in the affected reach. • Be prepared to provide CLOMRs pre-construction and LOMRs post-construction using certified as-built information from ground survey. • Document all encroachment in the flood fringe portion of the floodplain in an approved floodplain development permit to the local agency administering NFIP standards in the affected reach. |

6.10 Vegetation

A desktop survey was conducted to determine areas of new development or other land use changes that have influenced the vegetation within the limits of the ROD4 Selected Alternative. The desktop survey concluded that notable locations in the ROD4 study area where vegetation has changed (i.e., is no longer present in the area) since the FEIS are near Crossroads Boulevard and SH 392 due to interchange modifications. A follow-up field survey was conducted and verified these changes in the ROD4 study area.

6.10.1 Impacts of the ROD4 Selected Alternative

Existing vegetated areas were mapped in ArcGIS using aerial photography taken in 2014. Impacts were calculated by overlaying the proposed ROD4 Selected Alternative roadway footprint with the vegetation layer, to provide an approximate acreage of existing vegetation within the corridor that will be converted to impervious roadway. The project will directly impact approximately 206 acres of existing vegetation. Most of the impacts occur within agriculture land, previously disturbed vegetation, or areas that have been replanted or landscaped. For comparison, vegetation impacts were calculated using the same methodology for the portion of the FEIS Preferred Alternative that extends from SH56 to SH392. Approximately 234 acres of existing vegetation would be impacted by the FEIS Preferred Alternative.

Impacts of Kendall Parkway Transit Center

Vegetation impacts will amount to approximately 6.0 acres which are included in the ROD4 Selected Alternative impacts.

6.10.2 Mitigation

Specific BMPs to be followed in the plan are summarized in Table 19.

Table 19. Vegetation Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--------------------|--|
| Vegetation removal | <ul style="list-style-type: none"> • Minimize the amount of disturbance and limit the amount of time that disturbed locations are allowed to be non-vegetated. Follow CDOT standard specifications for the amount of time that disturbed areas are allowed to be non-vegetated. • Avoid existing trees, shrubs, and vegetation to the maximum extent possible, especially wetlands and riparian plant communities. Coordinate with the CDOT landscape architect before construction to determine the types of vegetation that will be protected during construction. • Salvage weed-free topsoil for use in seeding. • Implement temporary and permanent erosion control measures to limit erosion and soil loss. Use erosion control blankets on steep, newly-seeded slopes to control erosion and to promote the establishment of vegetation. Roughen slopes at all times. • Revegetate all disturbed areas with native grass and forb species. Apply seed, mulch, and mulch tackifier in phases throughout construction. • Develop an acceptable revegetation plan with the CDOT landscape architect that is also acceptable to municipalities within their jurisdictional areas. • Develop revegetation success criteria based on consultation with USFWS and monitor revegetated sites for at least three growing seasons following habitat restoration and enhancement activities to ensure those success criteria are achieved. • Obtain SB 40 (33-5-101-107, CRS 1973, as amended) certification from Colorado Parks and Wildlife (CPW) for construction in "...any stream or its bank tributaries..." |

6.11 Noxious Weeds

There are no changes to laws, regulations, or guidance for noxious weeds since completion of the FEIS.

A windshield survey was conducted within the ROD4 study area on August 26, 2016, to identify any occurrences of state-designated noxious weeds categorized as List A, List B, or List C species. No List A noxious weeds were identified; however, several List B and List C species were observed (see Table 20). Other noxious weed species that have an earlier blooming period or that would only be noted during a complete walking survey also could be present in the ROD4 study area. For further information about the noxious weed survey, see the Biological Technical Memorandum in Appendix E.

The survey consisted of field-verifying records of noxious weed occurrences from the 2015 CDOT Online Transportation Information System (OTIS), as well as documenting any other occurrences observed within the ROD4 study area. Based on results of the field survey and CDOT noxious weed occurrences data, a total of 10 noxious weed species were recorded within the ROD4 study area, three of which were not formerly described in the FEIS. A list of all noxious weeds recorded within the ROD4 study area is presented Table 20.

Table 20. Noxious Weed Species Observed within the ROD4 Study Area

| County | Colorado Noxious Weed List | Larimer County Weed List | Weld County Weed List |
|---|----------------------------|--------------------------|-----------------------|
| Canada thistle (<i>Cirsium arvense</i>) | B | Yes | Yes |
| Common mullein (<i>Verbascum thapsus</i>) | C | | Yes |
| Field bindweed (<i>Convolvulus arvensis</i>) | C | | Yes |
| Musk thistle (<i>Carduus nutans</i>) ¹ | B | Yes | Yes |
| Plumeless thistle (<i>Carduus acanthoides</i>) ¹ | B | | Yes |
| Puncture vine (<i>Tribulus terrestris</i>) | C | | Yes |
| Russian knapweed (<i>Acroptilon repens</i>) ¹ | B | Yes | Yes |
| Russian olive (<i>Elaeagnus angustifolia</i>) | B | | Yes |
| Salt cedar/tamarisk (<i>Tamarix</i> sp.) | B | Yes | Yes |
| Scotch thistle (<i>Onopordum acanthium</i>) | B | Yes | Yes |

¹Species not previously recorded in the FEIS.

Additional CDOT noxious weed occurrence data from 2012 to 2014 were reviewed, and four other species have the potential to occur in the ROD4 study area, but were not verified during the field visit. These species include hoary cress (*Lepidium draba*), Johnson grass (*Sorghum halepense*), cutleaf teasel (*Dipsacus laciniatus*), and moth mullein (*Verbascum blattaria*).

6.11.1 Impacts of the ROD4 Selected Alternative

Construction activities involving soil disturbance will increase the potential for the establishment and spread of noxious weeds. All areas of the ROD4 study area other than impervious surfaces are assumed to support vegetation growth and the potential establishment of noxious weeds. The noxious weed analysis for the ROD4 Selected Alternative was calculated by subtracting the proposed roadway footprint from the proposed construction limits. The remaining area represents all areas that would likely be disturbed during construction, and would be subject to noxious weed establishment post construction. The potential acreage within which noxious weeds could establish and spread in the ROD4 construction limits is estimated to be 374 acres. For comparison, the area subject to noxious weed establishment within the portion of the FEIS Preferred Alternative from SH56 to SH392 is approximately 507 acres, which is more than the estimated area subject to the spread of noxious weeds for the ROD4 Selected Alternative construction limits.

Impacts of the Kendall Parkway Transit Center

Potential acreage within which noxious weeds could establish in the Kendall Parkway Transit Center is estimated to be 9.3 acres which are included in the ROD4 Selected Alternative impacts.

6.11.2 Mitigation

Specific BMPs to be followed are summarized in Table 21.

Table 21. Noxious Weed Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| Construction activities would increase the potential for the spread and establishment of noxious weeds in areas where soil is disturbed. | <ul style="list-style-type: none"> • Include noxious weed mapping in the construction documents, along with appropriate weed control methods. • Inspect highway right-of-way areas periodically during construction and during post-construction weed monitoring for invasion of noxious weeds. • Include weed management measures for the removal of heavily infested topsoil, herbicide treatment of lightly infested topsoil, and other herbicide and/or mechanical treatments, limiting disturbance areas, phased seeding in accordance with CDOT seeding seasons, and monitoring during and after construction. • Select appropriate herbicides and time herbicide spraying in and adjacent to sensitive areas, such as wetlands and riparian areas. • Use certified weed-free hay and/or mulch in all revegetated areas. • Use only fertilizers that meet CDOT Standard Specification 212. • Incorporate an Integrated Noxious Weed Management Plan into the project design and implement it during construction. <p>Preventative control measures for project design and construction may include:</p> <ul style="list-style-type: none"> • Use only native species to revegetate sites disturbed by construction activities. Coordinate native plant species used for revegetation with agencies and CDOT specialists. • Per the Weed Free Forage Act, inspect and regulate materials used for revegetation in accordance with provisions of the Weed Free Forage Act, Title 35, Article 27.5, CRS. • The project's Noxious Weed Management Supervisor must inspect imported topsoil. Do not use the imported topsoil on the project if it is determined to be contaminated with weeds, or if it cannot be inspected properly. • Keep equipment on designated roadways and out of weed-infested areas until the areas are treated. Clean all equipment of all soil and vegetative plant parts before its arrival at the project site. |

6.12 Wildlife

The location and number of wildlife resources have changed since the FEIS. A biological survey was conducted between August 24, 2016 and August 26, 2016 to determine the presence or absence of black-tailed prairie dogs (*Cynomys ludovicianus*), raptor nests, wildlife crossings, and other sensitive wildlife habitat. Results of the survey are presented in the Biological Technical Memorandum located in Appendix E, and summarized below.

Raptors

A total of 13 raptor nests were observed within one mile of the ROD4 Selected Alternative construction limits. Of the 13 raptor nests observed, only one nest was located within the ROD4 Selected Alternative construction limits, and 10 of the nests were not previously documented by CPW. CPW recommends seasonal buffers for raptor nests.

Sensitive Wildlife Habitat Areas

An Osprey nest is located near an unnamed pond east of Boyd Lake which was not previously identified in the FEIS. Updated information was gathered from CPW for Bald Eagle nest and roost locations in the ROD4 Selected Alternative. No Bald Eagle nests or roosts occur in the project area, or within one mile of the project area. The nearest Bald Eagle nest (not previously identified in the FEIS) is located along the Big Thompson River approximately 2 miles east of the ROD4 study area. The sensitive wildlife habitat area identified at the Big Thompson River crossing has not changed since the FEIS.

Big Game and Movement Corridors

There are no changes to the types and number of existing big game, nor to the movement corridors since the FEIS.

Aquatic Habitats

Aquatic habitat in the ROD4 study area has changed since the FEIS. As a result of the 2013 flood that inundated this area, the Big Thompson River channel geomorphology and surrounding riparian vegetation was altered drastically. However, the river still supports aquatic insects, macroinvertebrates, and fish.

Upland Habitats

There are no changes to the existing upland habitats since the FEIS. A prairie dog survey was conducted which resulted in identification of six active black-tailed prairie dog (BTPD) colonies that are new since the FEIS. For information regarding these colonies, see Appendix E, Biological Technical Memorandum.

6.12.1 Impacts of the ROD4 Selected Alternative

Direct effects to wildlife could result from the road widening, replacement, and construction of bridges and ramps. Direct effects include habitat loss, habitat fragmentation, direct mortality through crushing or burial, and disturbance during construction. The majority of the permanent habitat loss would occur in existing disturbed areas such as mowed rights of way adjacent to the existing highway.

Indirect effects include impacts to water quality from increased sedimentation, increased traffic resulting in wildlife mortality, and increased disturbance from vehicle lights.

An unidentified raptor nest is located in a large tree within the construction limits and will be impacted by the project. The raptor nest is located along the SE Frontage Road, approximately 0.3 mile south of LCR 32. Additionally, 12 raptor nests are located within one mile of the ROD4 Selected Alternative; these nests could be indirectly impacted. Direct effects to raptors and other birds would occur if an active nest was disturbed or removed. Indirect effects could occur as a result of lighting, construction noise, and vibration in the immediate vicinity of an active nest, potentially resulting in nest failure or abandonment.

Construction at the Big Thompson River will not exceed impacting 0.47 acre of sensitive wildlife habitat as stated in the FEIS. Sensitive wildlife habitat identified at the Big Thompson River crossing includes PMJM occupied habitat (see Section 6.13.1 for PMJM occupied habitat impacts), a big game movement corridor, white-tailed deer winter concentration area and Bald Eagle winter and summer foraging area. Effects to sensitive wildlife habitat would include removal of riparian tree and shrub vegetation that provides cover for wildlife. Indirect effects of increased noise, light, and human disturbance would temporarily reduce available habitat.

These effects would occur primarily during construction and replacement of the Big Thompson River bridge.

Additionally, direct impacts to aquatic habitat will occur at the Big Thompson River, amounting to 0.13 acre which are the same as the FEIS. Direct effects to aquatic habitat include temporary loss of habitat during construction of the Big Thompson River bridge. Indirect effects include increased sediment loads during construction and interference with seasonal movements.

Of the six prairie dog colonies identified, only three of the colonies are located within the ROD4 Selected Alternative construction limits and would be directly impacted by the project. The three colonies combined have a total population of approximately 152 prairie dogs.

Impacts of the Kendall Parkway Transit Center

There are no additional impacts.

6.12.2 Mitigation

Impacts to wildlife will be avoided and minimized to the greatest extent possible during construction. Mitigation measures for each of the wildlife resources are outlined in Table 22.

Table 22. Wildlife Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|---|
| Raptor nests will be directly and indirectly impacted by construction. | <ul style="list-style-type: none"> • Conduct a raptor nest survey prior to project construction to identify raptor nests and nesting activity in the vicinity of the proposed project. • Comply with the buffer zones and seasonal restrictions recommended by CPW to minimize impacts to breeding and nesting raptors (CPW, 2008). • Conduct a Burrowing Owl survey prior to construction using “Recommended Survey Protocol and Action to Protect Burrowing Owls” by CPW. • If raptor nests will be impacted by the proposed project, develop specific mitigation measures for impacts to nesting raptors in coordination with the CPW and the U.S. Fish and Wildlife Service (USFWS) prior to construction. If disturbance of raptor nests is unavoidable, construct artificial nests in suitable habitat or enhance prey habitat. Construct artificial nests in the same general area as impacts. |

Table 22. Wildlife Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|---|
| Migratory bird nests could be impacted by removal of vegetation. | <ul style="list-style-type: none"> • Follow Standards and Specifications Section 240: Protection of Migratory Birds, to meet requirements of the Migratory Bird Treaty Act (MBTA). <p>CDOT will implement the following mitigation measures for projects that will have impacts to migratory birds:</p> <ul style="list-style-type: none"> • Complete tree trimming and/or removal activities before birds begin to nest or after the young have fledged. In Colorado, most nesting and rearing activities occur between April 1 and August 31. However, since some birds nest as early as February, conduct a nesting bird survey by a biologist before any tree trimming or removal activities begin. • Complete bridge or box culvert work that may disturb nesting birds before birds begin to nest or after the young have fledged. No bridge or box culvert work will take place between April 1 and August 31. If work activities are planned between these dates, remove nests (before nesting begins) and take appropriate measures to assure no new nests are constructed. • Complete clearing and grubbing of vegetation that may disturb ground nesting birds before birds begin to nest or after the young have fledged. If work activities are planned between April 1 and August 31, remove vegetation and/or trim it to a height of six inches or less prior to April 1. After vegetation has been removed and/or trimmed, implement appropriate measures, i.e., repeated mowing/trimming, to assure vegetation does not grow more than six inches. |
| Wildlife crossing at Big Thompson River will be temporary impacted | <ul style="list-style-type: none"> • Maximize use of movement corridors by wildlife by creating bridge spans and culverts that 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. • Place shrubs and vegetative cover at bridge underpass openings to attract wildlife and provide a “funnel effect.” • Provide ledges or shelves within structure that periodically convey water to create passage alternatives during high water. • Do not place trails near wildlife crossing structures to avoid human disturbance of wildlife. • Maximize use of bridges and culverts by wildlife, where practical, by incorporating other design elements, including: <ul style="list-style-type: none"> • Do not place lighting near the crossing structures. • Keep roadside vegetation height to a minimum. |
| Sensitive wildlife habitat will be impacted from removal of vegetation to construct a bridge over the Big Thompson River | <ul style="list-style-type: none"> • Mitigation measures to minimize impacts to wetlands and riparian areas will also minimize impacts to sensitive wildlife habitat, which is located along the Big Thompson River crossing (see Section 6.8.2, Table 17). • Mitigation measures to minimize impacts to wildlife crossings (above) will also benefit sensitive wildlife habitat. |
| Aquatic and upland habitats will be directly impacted from | <p>Implement the following design measures to mitigate potential impacts to aquatic species, including native fish, where applicable:</p> <ul style="list-style-type: none"> • Maintain and/or create riffle and pool complexes. |

Table 22. Wildlife Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|---|--|
| removal of vegetation prior to construction | <ul style="list-style-type: none"> • Maintain natural stream bottoms. • Partially bury culverts; cover the bottom with gravel/sand and ensure there is a low gradient. • Replace culverts targeted for replacement with those of equal or greater size. • Do not incorporate grates, impact dissipaters, or any other features into culvert design that would impede fish movement. • To avoid erosion, induced siltation, and sedimentation, place sediment/erosion control BMPs during each phase of construction. Upon completion of slope, place seed in combination with mulch/mulch tackifier or erosion control blankets within the limits set in Section 208 of CDOT specifications. • Use only erosion control blankets that will be “wildlife friendly,” consisting of 100 percent biodegradable materials. • Limit access points to streams during construction to minimize degradation of the banks. • Do not create any new fish passage barriers. • Remove or redesign existing drop structures that create a barrier to fish movements, where possible. • Comply with Colorado SB 40, which requires all state agencies to obtain wildlife certification from CPW when the agency plans construction in any stream or its bank or tributaries. • Implement mitigation measures outlined in the water quality section (see Section 6.7.2) for aquatic habitats. • Mitigate upland habitats by implementing measures outlined in the vegetation section • Use visible barriers to limit the area of construction. • Stockpile construction materials in bare areas rather than on top of existing vegetation. • Implement concurrent revegetation during construction to the maximum extent practicable. |
| Black-tailed prairie dogs will be directly impacted by construction | <ul style="list-style-type: none"> • Resurvey prairie dog colonies prior to construction. In areas where avoidance of prairie dogs is not possible, follow CDOT’s Impacted BTPD Policy. Carry out any prairie dog relocation or removal activities in accordance with CRS 35-7-203, as well as any other applicable laws or regulations, and with close coordination with CPW. • Place silt fence to prohibit any additional BTPDs from entering the construction site. |

6.13 Threatened and Endangered & State Sensitive Species

USFWS provided a list of species potentially occurring in the regional study area on July 14, 2005. This list (shown in Table 23) was used to identify and evaluate threatened, endangered, and species of special concern with potentially suitable habitat in the FEIS.

Table 23. Federal-Listed Species Analyzed in the FEIS

| Common Name | Scientific Name | Federal Listing Status |
|---------------------------------|---------------------------------------|------------------------|
| Least Tern* | <i>Sternula antillarum</i> | Threatened |
| Piping Plover* | <i>Charadrius melodus</i> | Threatened |
| Western prairie fringed orchid* | <i>Platanthera praeclara</i> | Threatened |
| Whooping Crane* | <i>Grus americana</i> | Endangered |
| Pallid sturgeon* | <i>Scaphirhynchus melodus</i> | Endangered |
| Preble's meadow jumping mouse | <i>Zapus hudsonius preblei</i> | Threatened |
| Colorado butterfly plant | <i>Gaura neomexicana coloradensis</i> | Threatened |
| Ute ladies'-tresses orchid | <i>Spiranthes diluvialis</i> | Threatened |

* Indicates Platte River species, which may be indirectly affected by water used for the project. Water usage will be reported to the USFWS at year's end after completion of the project per the South Platte Programmatic Biological Opinion (SPPBO).

The National Hydrography Dataset, National Wetland Inventory, GeoSearch data, USFWS Information for Planning and Conservation (IPaC), and aerial photography were reviewed to identify any changes to the list of species analyzed in the FEIS and listed in Table 23. The IPaC search identified six additional species with potential to occur in the project area that were not evaluated in the FEIS (shown in Table 24).

Table 24. Federal-Listed Species added for Weld and Larimer Counties since the FEIS

| Species | Federal Status |
|--|---------------------|
| Mexican Spotted Owl (<i>Strix occidentalis lucida</i>) | Threatened |
| Greenback cutthroat trout (<i>Oncorhynchus clarki stomias</i>) | Threatened |
| North Park phacelia (<i>Phacelia formosula</i>) | Endangered |
| Arapahoe snowfly (<i>Arsapnia arapahoe</i>) | Candidate |
| Canada lynx (<i>Lynx canadensis</i>) | Threatened |
| North American wolverine (<i>Gulo gulo luscus</i>) | Proposed Threatened |

On August 15, 2016, a general field reconnaissance was conducted at the Big Thompson River to review site conditions and identify any changed conditions for the PMJM, Ute ladies'-tresses orchid (ULTO), and Colorado butterfly plant (CBP) compared to the FEIS.

Based on the conditions of the site at the time of inspection and upon available known occurrence and trapping data for the surrounding areas, it was determined that the Big Thompson River presents marginally suitable habitat not likely to support a resident population of PMJM, but may provide connectivity to upstream and downstream habitat for PMJM.

In the North I-25 Programmatic Biological Assessment (PBA) CDOT determined that the Big Thompson River was PMJM habitat and 0.47 acres will be impacted.

The field survey determined that habitat suitable for ULTO was not present and only marginally suitable habitat exists for CBP. No individual plants were observed.

Since the project will cause a depletion to the South Platte River basin the project is **likely to adversely affect** the downstream listed species of the South Platte River Basin. This affect is addressed by the SPWRAP programmatic agreement (BO signed 04/04/2012). The quantity of water used for the project will be recorded and reported to the USFWS upon the completion of the project; therefore, no additional mitigation or conservation measures are necessary for this project.

State-listed threatened, endangered, and species of special concern were identified in the FEIS as potentially occurring in the regional study area. A list of those species is presented in Table 25.

Table 25. State-listed Threatened, Endangered, and Species of Special Concern Analyzed in the FEIS

| Species | Status |
|---|-----------------------|
| Black-tailed prairie dog (<i>Cynomys ludovicianus</i>) | Special Concern (SC) |
| Swift fox (<i>Vulpes velox</i>) | SC |
| Townsend's big-eared bat (<i>Plecotus townsendii</i>) | SC |
| Western Burrowing Owl (<i>Athene cunicularia</i>) | State Threatened (ST) |
| Ferruginous Hawk (<i>Buteo regalis</i>) | SC |
| Mountain Plover (<i>Charadrius montanus</i>) | SC |
| Common garter snake (<i>Thamnophis sirtalis</i>) | SC |
| Northern leopard frog (<i>Rana pipiens</i>) | SC |
| Common shiner (<i>Notropis comutus</i>) | State Endangered (SE) |
| Brassy minnow (<i>Hybognathus hankinsoni</i>) | ST |
| Iowa darter (<i>Etheostoma exile</i>) | SC |
| Stonecat (<i>Noturus flavus</i>) | SC |
| Cylindrical papershell (<i>Anodontooides ferussacianus</i>) | SC |

Sources: CDOW, 2010; NDIS, 2010.

Data were reviewed, including Natural Diversity Information Source (NDIS, 2016), CPW Threatened and Endangered List (CPW, 2016), and Colorado Natural Heritage Program (CNHP, 2016) to identify any changes to the list of species analyzed in the FEIS and listed in Table 25. Based on mapped NDIS data, swift fox does not occur within the project area. A review of habitat characteristics and range determined that common shiner, brassy minnow, and stonecat do not occur in the Big Thompson River drainage or any other water bodies located within the project area. All other species listed in Table 25 could potentially occur in the project area. The CPW 2016 state threatened, endangered, or species of special concern was reviewed and no new species were identified as potentially occurring within the project area.

A biological survey was conducted August 24, 2016, through August 26, 2016, to evaluate habitat for state-listed species and determine the presence or absence of black-tailed prairie dogs (*Cynomys ludovicianus*). A total of six active BTPD colonies were identified, which were not identified in the FEIS.

6.13.1 Impacts of the ROD4 Selected Alternative

Potential impacts to federal-listed species not formerly considered in the FEIS were evaluated for the ROD4 Selected Alternative, and are presented in Table 26.

Table 26. Potential Effects to Federal-listed Species added to Weld and Larimer since the FEIS

| Species | Federal Status | Potential Effects |
|---|------------------------|--|
| Mexican Spotted Owl (<i>Strix occidentalis lucida</i>) | Threatened | None; there are no mature or old-growth forests suitable for the species within the project area. |
| Greenback cutthroat trout (<i>Oncorhynchus clarki stomias</i>) | Threatened | None; there are no coldwater streams or rivers within the project area. |
| North Park phacelia (<i>Phacelia formosula</i>) | Endangered | None; the project does not meet elevational requirements (8,000–8,300 feet above mean sea level (AMSL)). |
| Arapahoe snowfly (<i>Arsapnia arapahoe</i>) | Candidate | None; there are no coldwater streams or rivers within the project area |
| Canada lynx (<i>Lynx canadensis</i>) | Threatened | None; the project area does not meet preferred elevations in Colorado (a minimum 8,000 feet AMSL), does not have the preferred vegetative cover with complex structural components for denning or transients, and does not have the preferred prey base (i.e., snowshoe hare) for the species. |
| North American wolverine (<i>Gulo gulo luscus</i>) | Proposed Threatened | None; while wolverines can cover great distances and be found in a variety of habitats, the project area does not have the preferred vegetative cover, such as dense riparian areas, for transients and does not have the consistent, deep snowpack for denning. |

Based on a review of habitat characteristics and site observations of the ROD4 Selected Alternative construction limits, the project will have no effect to any of the federal-listed species in Table 26.

In the North I-25 PBA, CDOT determined that the Big Thompson River was PMJM occupied habitat and 0.47 acre would be impacted (0.33 acres permanent and 0.14 acres temporary). Therefore, the impacts to PMJM occupied habitat may not exceed 0.47 acre with construction of the ROD4 Selected Alternative

Because conditions have not changed in relation to the FEIS, the effects determinations made for federal-listed threatened, endangered, and candidate species identified in the FEIS remain valid. A letter was submitted to USFWS on March 23, 2017 from FHWA, to provide USFWS with an updated project description and analysis of effects to federal-listed species within the ROD4 Selected Alternative construction limits. USFWS responded in a letter dated April 7, 2017,

stating that USFWS agrees that the project complies with the terms and conditions outlined in the PBO dated October 13, 2011 (see Appendix J) and continues to concur with the determination that the impacts resulting from the project will not jeopardize the existence of the PMJM nor are likely to adversely affect the Ute ladies'-tresses orchid or CBP. The same conservation measures outlined in the PBO apply to the ROD4 Selected Alternative.

Of the state-listed species with potential to occur in the project area, BTPD and Western Burrowing Owls could be directly impacted. Of the six prairie dog colonies identified, only three of the colonies (1.84 acres) are located within the ROD4 Selected Alternative construction limits and will be directly impacted by the project. The three colonies have a combined total population of approximately 152 prairie dogs. For information regarding these colonies, see Appendix E, Biological Technical Memorandum. Impacts to all other state-listed threatened, endangered, and species of special concern with potential to occur in the ROD4 Selected Alternative limits have not changed since the FEIS.

Impacts of the Kendall Parkway Transit Center

The changes associated with the Kendall Parkway Transit Center does not change the impacts due to ROD4 Selected Alternative.

6.13.2 Mitigation

Impacts to threatened, endangered, other federally protected species and state listed species will be avoided and minimized to the greatest extent possible during preliminary and final design. A list of mitigation measures for each of the resources are outlined in Table 27.

Table 27. Threatened, Endangered, Other Federally-Protected, and State Sensitive Species Impacts and Mitigation of ROD4 Selected Alternative

| Impact | Mitigation |
|---|--|
| Potential Impacts to federal-listed species | <ul style="list-style-type: none"> • Incorporate an integrated weed management plan into project design and implement it during construction to control the infestation and spread of noxious weeds. • Use visible barriers to limit the area of construction. • Stockpile construction materials in bare areas rather than on top of existing vegetation in known occupied and suitable habitats. • Inform construction workers of the reasons for and importance of limiting impacts to vegetated habitat outside the work area in habitats known to be occupied by listed species. • Supervise work daily to ensure that conditions established by the USFWS are met. • Implement water quality BMPs to prevent sediment loading and impacts to CBP, ULTO, and PMJM habitats. • Implement concurrent revegetation during construction to the maximum extent practicable. • Provide a report to the USFWS that includes photographic documentation of site conditions prior to and at the completion of construction. • Employ conservation measures in accordance with the Short Grass Prairie Initiative Biological Opinion for sensitive non-listed species, including black-tailed prairie dog, Burrowing Owl, native fish, and mussels (including brassy minnow, common shiner, plains minnow, and cylindrical papershell), and Northern leopard frog. |

Table 27. Threatened, Endangered, Other Federally-Protected, and State Sensitive Species Impacts and Mitigation of ROD4 Selected Alternative

| | |
|---|--|
| Potential Impacts to Colorado butterfly plant | <ul style="list-style-type: none"> • Conduct pre-construction habitat assessments and/or surveys for the CBP during the survey season just prior to construction, or in accordance with the USFWS survey protocol at the time of construction. Should the plant occur within the construction footprint, develop specific conservation measures during site-specific consultation. • CDOT's Shortgrass Prairie Initiative addresses impacts to the CBP in the project area; therefore, no additional conservation measures for CBP will be necessary if the Shortgrass Prairie Initiative is still in effect when construction begins. |
| Potential Impacts to Ute ladies'-tresses orchid and CBP | <ul style="list-style-type: none"> • CDOT's Shortgrass Prairie Initiative addresses impacts to ULTO in the project area; therefore, no additional conservation measures for ULTO will be necessary if the Shortgrass Prairie Initiative is still in effect when construction begins. |
| Potential Impacts to Preble's Meadow Jumping Mouse | <ul style="list-style-type: none"> • Conduct pre-construction habitat assessments and/or trapping surveys for the PMJM where appropriate. • Limit impacts to occupied PMJM habitat at the Little Thompson and Big Thompson rivers and any areas found to be occupied by the PMJM by future surveys to their inactive season (November through April). • Incorporate current lighting and standards (e.g., Dark Skies) within and near PMJM habitat at the time of design to reduce lighting impacts. • During construction, minimize nighttime work within 0.25 mile of PMJM habitat. • Mitigation will occur at a 3:1 ratio for permanent impacts and a 1:1 ratio for temporary impacts. Where impacts to occupied PMJM habitat are unavoidable, compensatory mitigation to create suitable PMJM habitat will occur in the same drainage within CDOT right of way. If the right of way is limited, CDOT will enter into an agreement with CPW to mitigate the remainder of PMJM impacts on CPW property located on the southwest quadrant of I-25 and the Big Thompson River. • Mix riprap with finer grained material to avoid settling. Cover riprap with approximately 12 inches of soil and plant it with woody and herbaceous vegetation to not reduce the overall amount of habitat available to PMJM. • Follow USFWS consultation and PBO for restoration and revegetation of the disturbed area • Report any inadvertent PMJM mortalities during construction as specified in current trapping guidelines. Report all relevant information within 24 hours and subsequently submit a completed Injury/Mortality Documentation Report to the USFWS, Ecological Services Colorado Field Office or the USFWS Division of Law Enforcement in Lakewood, Colorado (telephone 720-981-2777). • In the unlikely event that a PMJM (dead, injured, or otherwise) is located during construction, contact the Colorado Field Office of the USFWS immediately to identify additional measures, as appropriate, to minimize impacts to PMJM. • Visible barriers will be used to limit the area of construction within occupied habitat. |

Table 27. Threatened, Endangered, Other Federally-Protected, and State Sensitive Species Impacts and Mitigation of ROD4 Selected Alternative

| | |
|--|--|
| | <p>CDOT would employ conservation measures to minimize impacts during construction. These measures would include:</p> <ul style="list-style-type: none"> • Stockpile construction materials in bare areas rather than on top of existing vegetation in known occupied and high potential habitats. • Inform construction workers of the reasons for and importance of limiting impacts to vegetated habitat outside the work area in known occupied habitat. • Supervise work daily to ensure that conditions established by the USFWS are met. • Implement concurrent revegetation during construction to the maximum extent practicable. • Provide a report to the USFWS that includes photographic documentation of site conditions prior to and at the completion of construction. • Coordinate with the USFWS prior to mitigation implementation. When CDOT has final design, CDOT will submit the final location and quantity of impacts and the location and quantity of mitigation to the USFWS for coordination and tracking. |
| Direct impacts to Black-Tailed Prairie Dogs | <ul style="list-style-type: none"> • Resurvey prairie dog colonies prior to construction. In areas where avoidance of prairie dogs is not possible, follow CDOT's Impacted Black-tailed Prairie Dog Policy. Carry out any prairie dog relocation or removal activities in accordance with CRS 35-7-203, as well as any other applicable laws or regulations. Place silt fence to prohibit any additional BTPDs from entering the construction site. |
| Potential Impacts to Bald Eagle | <ul style="list-style-type: none"> • Conduct a raptor nest survey prior to construction to identify Bald Eagle nests in the regional study area. If an active Bald Eagle nest is found within 0.5 mile of the regional study area, establish the buffers and seasonal restrictions recommended by CPW during construction to avoid nest abandonment. • Ensure that no construction occurs within 0.25 mile of active Bald Eagle nocturnal roosts between November 15 and March 15. If perch or roost trees are removed during construction, replace them at a 2:1 ratio with native cottonwood trees. • Incorporate the latest technology at the time of construction for all overhead lighting at the intersection of I-25 and SH 392 near Fossil Creek Reservoir to control light leakage and direct lighting away from Bald Eagles roosting and nesting at the reservoir. • Provide mitigation for impacts to riparian habitats used by foraging Bald Eagles. |
| Potential Impacts to Burrowing Owls | <p>Conduct Burrowing Owl surveys prior to any work in prairie dog colonies between March 15 and October 31. If Burrowing Owls are present, schedule prairie dog removal to occur outside this time period. If Burrowing Owls are found within the construction footprint during preconstruction surveys, leave nests undisturbed and develop additional avoidance measures in coordination with CPW. Avoid direct impacts to Burrowing Owls by covering or destroying empty prairie dog burrows prior to construction (prior to March 15).</p> |
| Potential Impacts to Northern Leopard Frog and Common Garter Snake | <p>Mitigate potential impacts to northern leopard frogs and common garter snakes by incorporating mitigation measures for wetlands and PMJM, including wetlands replacement and riparian enhancement, and replacement of culverts with larger concrete box culverts or free-spanning bridges.</p> |

Table 27. Threatened, Endangered, Other Federally-Protected, and State Sensitive Species Impacts and Mitigation of ROD4 Selected Alternative

| | |
|--|--|
| Potential Impacts to State Threatened, Endangered, and Special Concern Aquatic Species | <p>To offset temporary impacts to aquatic species from habitat disturbance, restore aquatic habitats after construction activities have ceased. The following design measures will mitigate potential impacts to aquatic species, including native fish:</p> <ul style="list-style-type: none"> • Maintain and/or create riffle and pool complexes. • Maintain natural stream bottoms. • Partially bury culverts; cover the bottom with gravel/sand and ensure there is a low gradient. • Replace culverts targeted for replacement with those of equal or greater size. • Do not incorporate grates, impact dissipaters, or any other features into culvert design that would impede fish movement. • Place sediment/erosion control BMPs during each phase of construction to avoid erosion, induced siltation, and sedimentation. Upon completion of slope, place seeding in combination with mulch/mulch tackifier or erosion control blankets within the limits set in Section 208 of CDOT specifications. • Only use erosion control blankets that will be “wildlife friendly,” consisting of 100 percent biodegradable materials. • Limit access points to streams during construction to minimize degradation of the banks. • Do not create any new fish passage barriers. • Comply with Colorado SB 40, which requires all state agencies to obtain wildlife certification from CPW when the agency plans construction in any stream or its bank or tributaries. • Apply CDOT’s water quality BMPs, and include the installation of mechanisms to collect, contain, and/or treat road runoff. Mitigate potential impacts to fish habitat by incorporating mitigation measures, such as habitat replacement/enhancement and replacement of existing culverts with larger or more numerous culverts and/or free-spanning bridges. These measures are designed to offset impacts to wetlands, ULTO, and PMJM. |
|--|--|

6.14 Visual Quality

There has been one change since the 2011 FEIS, new guidelines to perform visual impact assessment were published by FHWA. *Guidelines for the Visual Impact Assessment of Highway Projects* was published in January 2015 as an update to the original 1980s *Visual Impact Assessment (VIA)* document. The new guidelines are more efficient and comprehensive and provide a roadmap for conducting the assessment. An Abbreviated Visual Impact Assessment was prepared for the ROD4 Selected Alternative to follow the new guidelines; however, the new assessment did not change the result of the analysis performed as part of the FEIS.

6.14.1 Impacts of the ROD4 Selected Alternative

Improvements associated with the ROD4 Selected Alternative are the same as the 2011 FEIS. There could be both short-term and long-term visual impacts. Short-term impacts include disruptions during construction, while long-term impacts are the result of permanent alterations

that change the way people observe the area. Most of the proposed improvements would not have a substantial effect on the overall visual quality of the corridor.

Long-term impacts include increased pavement and right of way and changes to the surrounding landscape through the use of overpasses, bridges, noise walls, retaining walls, and medians, as well as alterations to the existing roadway grade. The ROD4 Selected Alternative includes a noise wall by the Mountain Range Shadows subdivision just north of LCR 30 on the west side of I-25 (see Section 6.6 for more information on noise mitigation). This wall will change the visual experience of the drivers and residents in the area.

The design of the highway generally follows the existing grade; however, in some areas, there will be minor grade changes. The widening of the highway between SH 56 and SH 392 would result in a change in the visual experience for motorists due to additional pavement. The bridges over the highway and the interchanges along the corridor are proposed to be reconstructed at approximately the same height as existing structures, minimizing changes to the proposed visual character.

Short-term impacts include potential detours, increased roadway congestion in and around the area due to construction, the presence of large equipment, and dust from construction. These short-term impacts would have a temporary visual effect on the community.

None of the aesthetic resources that identify the visual character of the area will be substantially altered as part of the project. Appendix F of this report, the Abbreviated Visual Impact Assessment, provides more detail on the visual resources in the area and the impacts of the project.

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.14.2 Mitigation

The project has identified measures to minimize the minor impacts to the visual quality of the area. The *I-25 Corridor Common Structural Elements and Design Criteria for the Preparation of Site-Specific Structure Selection Reports* has been prepared to set aesthetic guidelines for the structures and various elements of the project. All the new bridges and interchanges along the corridor will follow the guidelines provided in the report. Additionally, to address visual effects of the widening, the project will include landscaping at interchanges and along the highway.

A noise wall will be constructed depending on the results of a benefitted receptor survey. If the community agrees with construction of the noise wall, it will follow the guidelines as outlined in the *I-25 Corridor Common Structural Elements and Design Criteria for the Preparation of Site-Specific Structure Selection Reports*. The construction of the noise wall will have no adverse impacts on the visual resources in the ROD4 study area.

No mitigation is required for short-term impacts since they will be temporary. Table 28 summarizes the minor visual impacts and measures to alleviate these impacts.

Table 28. Visual Quality Impacts and Measures to Minimize Minor Impacts

| Impact | Mitigation |
|---|---|
| Changes in visual quality due to grade changes and new structures, noise walls, park-n-ride facilities, and retaining walls | <p data-bbox="548 300 1409 394">Follow the guidelines as provided in <i>I-25 Corridor Common Structural Elements and Design Criteria for the Preparation of Site-Specific Structure Selection Reports</i></p> <ul data-bbox="597 405 1417 825" style="list-style-type: none"> <li data-bbox="597 405 1417 541">• Provide architectural interest or color into retaining wall and sound walls, and reducing the effect of overpasses by providing architectural detailing of the railings and other features to address visual effects of structural elements. <li data-bbox="597 552 1417 720">• Include the use of trees in combination with shrubs to filter views to the carpool lots, provide human scale, and present a positive image to address the visual effects of carpool lots. Landscape islands with shade trees would be placed in parking lots to break up the expanse of placement and parked vehicles. <li data-bbox="597 730 1417 825">• Incorporate landscaping to soften and enhance the visual effects of slip ramps. Provide architectural interest or color in retaining wall and limiting lighting to only what is required for safety and security. |
| Changes in visual quality due to highway widening | Plant landscaping along the corridor and at interchanges. |

6.15 Historic Properties

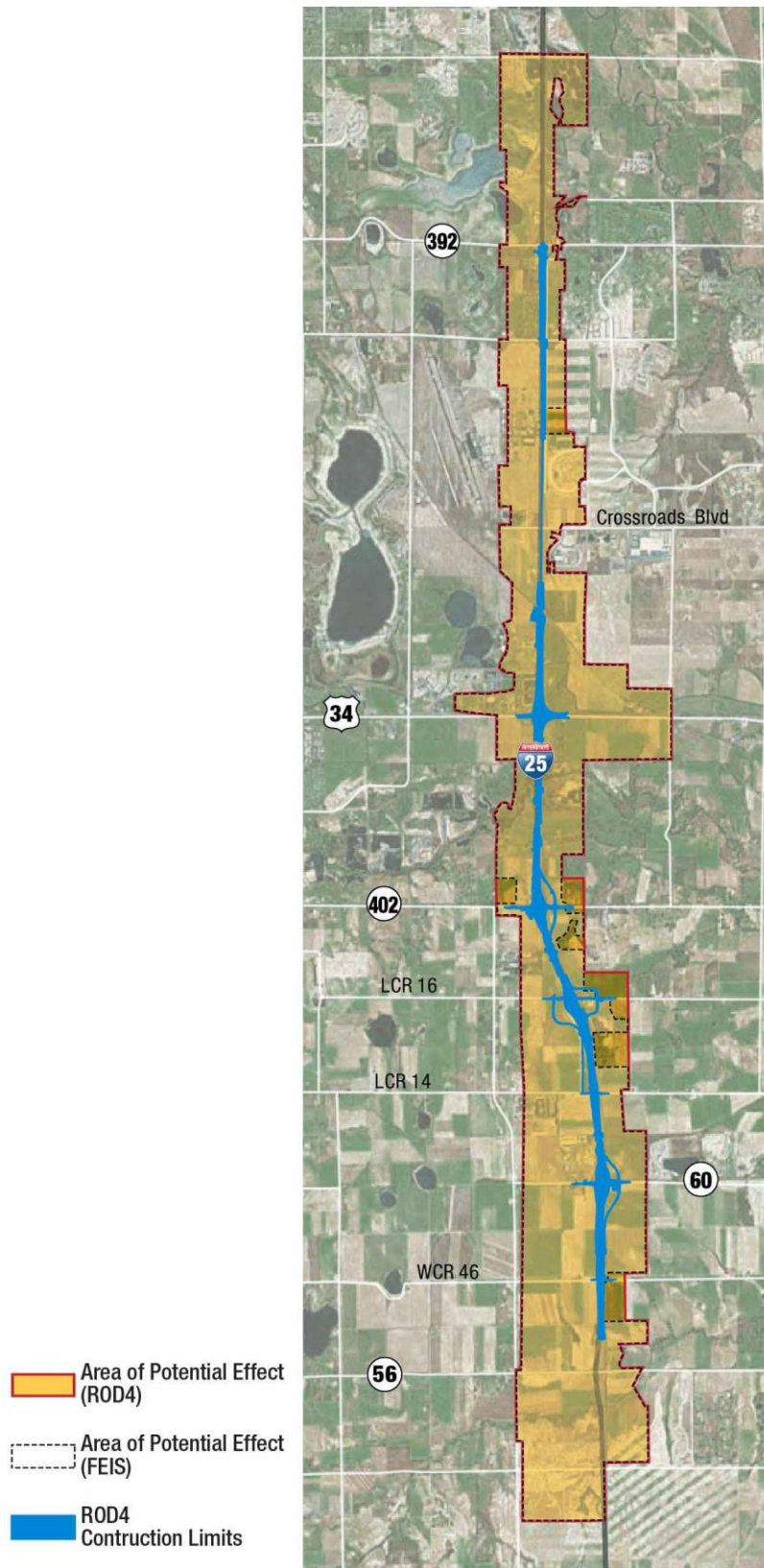
As required by the North I-25 EIS Programmatic Agreement for Section 106, a new field survey and file search was completed for ROD4. The survey, file search, and original FEIS results identified various resources, including architecture, irrigation features, and bridges within the area of potential effect (APE). The APE has expanded since the North I-25 EIS due to additional right-of-way needs. These areas are shown in Figure 8. The APE for ROD4 was agreed to by Colorado State Historic Preservation Office (SHPO) on March 7, 2017 (see Appendix L).

Some resources have been previously evaluated, and others have not, in the following frequencies:

- Previously determined eligible—19 resources
- Previously determined not eligible—22 resources
- Newly-identified and assumed eligible—3 properties
- Newly-identified and evaluated—3 properties

Fieldwork was undertaken in the fall of 2016 to review the previously-recorded properties, and to determine eligibility for the newly-identified properties. SHPO concurrence on eligibility for the entire segment was received on March 7, 2017 and is available in Appendix L.

Figure 8. ROD4 APE



Previously determined eligible

The North I25 FEIS Section 106 PA reads: “Re-evaluations of eligibility for previously-recorded historic properties shall be done ten years after the initial recording.” Previously-recorded properties that were determined eligible, along with their original survey dates, are listed below in Table 29. All of the sites previously determined as eligible were re-evaluated to determine if any major changes had occurred that could affect National Register eligibility. None of the 19 eligible resources re-evaluated per the PA were significantly altered from their original recording, and so re-visitation forms were not completed. All sites re-evaluated are still considered eligible.

Previously determined not eligible

The Section 106 PA also states: “The passage of time, changing perceptions of significance, changes in the design of the FEIS Preferred Alternative or incomplete prior evaluations may require the agencies to re-evaluate properties that were previously determined not eligible; presumed eligible due to inadequate documentation, or newly-discovered properties in the APE.” Previously-recorded properties that were determined officially not eligible, along with their original survey dates, are included in Appendix G, Historic Resources Technical Report. All of the sites previously determined as not eligible were reviewed to determine if any major changes had occurred that could affect site eligibility. All sites previously determined not eligible were evaluated, and are still considered not eligible for nomination to the NRHP. As such, they are not dealt with further in this evaluation.

Two bridges without site numbers were evaluated during the FEIS. In the area of the ROD4 Selected Alternative, the bridges are Structure C-17-F over the Big Thompson River and Structure C-17-CI, the Greeley-Loveland Ditch Bridge. They were evaluated in the 2007 Historic Resources Survey Report and were determined not eligible.

Newly-identified and assumed eligible or evaluated

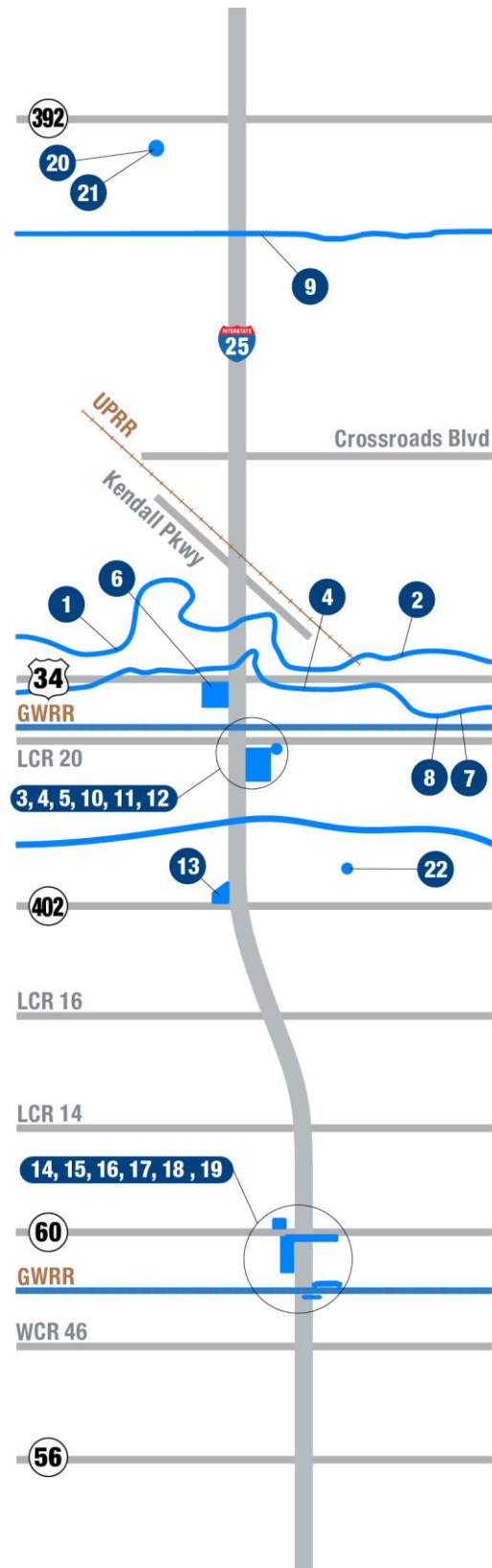
Six newly-identified properties within the APE were evaluated for eligibility. Right of entry was granted for three out of the six properties. The properties where right of entry was granted are 3815 S County Road 5 (5LR14083), 1106 SE Frontage Road (5LR14084) and 6163 E County Road 18 (5LR14085). Since access was denied for three of the properties, CDOT is treating these remaining properties as NRHP eligible for the purposes of Section 106 and this project.

The three accessible properties were recorded in an intensive-level historic architectural survey (OAHF Form 1403) provided in Appendix A. None of the three meet eligibility criteria for nomination to the NRHP (36 CFR 60.4); therefore, they are not discussed further.

The remaining three properties are assumed to be eligible by CDOT and FHWA and are being treated as historic properties under 36 CFR 800 for the sake of consultation. The properties are also listed in Table 29.

Figure 9 shows the locations of the historic properties identified as a result of this evaluation. Each is considered for effects in the following section. Property numbers in Table 29 correspond to the numbers in Figure 9.

Figure 9. Historic Properties in the ROD4 APE



Archaeological Resources

The FEIS documented two non-eligible archaeological resources between SH 392 and SH 56. These are 5LR11427 and 5WL5325. However, survey was limited by right-of-entry. For this ROD, right-of-entry was requested for all parcels not previously surveyed. This includes 41 parcels. Right-of-entry was granted for 15 of them. Each parcel for which access was granted was surveyed for archaeological sites. No new archaeological sites were documented in these surveys.

6.15.1 Impacts of the ROD4 Selected Alternative

Twenty-two historic properties are considered for Section 106 effect in Table 29, below. This includes 19 properties that were previously determined eligible, and three properties treated as NRHP eligible for the purposes of Section 106 and this project. For the 19 previously-recorded properties, 18 effect determinations remain the same as presented in the FEIS, and subsequent correspondence with SHPO in October of 2011. The exception is the Bashor Barn (5WL5204). It had no direct effects in the FEIS, but current design requires for 0.17 acre of acquisition to accommodate the toe of the CR 48 slope. Its effect determination has changed from No Historic Properties Affected to No Adverse Effect. The small strip take will occur on a vacant field, and will not affect the historic or character-defining features of the property.

SHPO concurrence on effects was received on March 7, 2017 and is available in Appendix L.

Table 29. Historic Properties Located in the ROD4 APE and Effect Determinations

| # | Site Number | Address/ Location | Name | Impact Description | Effect Determination |
|---|-------------|-------------------------------------|------------------------|--|----------------------|
| 1 | 5LR.503 | Near intersection of I-25 and US 34 | Loveland-Greeley Canal | 65-foot culvert extension and temporary construction impacts | No Adverse Effect |
| 2 | 5LR.503.2 | Near intersection of I-25 and US 34 | Loveland-Greeley Canal | Same as 5LR.503 | No Adverse Effect |
| 3 | 5LR.850 | Near Intersection of I-25 E LCR 20 | Great Western RR | 155 feet of railroad track would be directly impacted as a result of new bridge construction | No Adverse Effect |
| 4 | 5LR.850.1 | Near Intersection of I-25 E LCR 20 | Great Western RR | Identical to 5LR850 | No Adverse Effect |
| 5 | 5LR.850.3 | Near Intersection of I-25 E LCR 20 | Great Western RR | Identical to 5LR850 | No Adverse Effect |
| 6 | 5LR.8927.1 | Near Intersection of I-25 E LCR 18 | Hillsboro Ditch | 55-foot-longer box culvert of the same cross section as existing culvert | No Adverse Effect |
| 7 | 5LR.8928.1 | Near intersection of I-25 and US 34 | Farmers Ditch | 2,532 linear feet or 0.48 mile of open ditch requiring placement inside underground pipes and box culvert extensions | No Adverse Effect |
| 8 | 5LR.8928.2 | Near intersection of I-25 and US 34 | Farmers Ditch | Identical to 5LR.8928.1 | No Adverse Effect |

Table 29. Historic Properties Located in the ROD4 APE and Effect Determinations

| # | Site Number | Address/ Location | Name | Impact Description | Effect Determination |
|----|-------------|--|--------------------------------|--|---------------------------------|
| 9 | 5LR.8930.1 | N/A | Louden Ditch | 173 feet of open ditch placed inside a culvert | Adverse Effect |
| 10 | 5LR.11209 | 5464 E Highway 34 | Schmer Farm (Peters Farm) | 3.80-acre partial acquisition from 120-acre parcel | Adverse Effect |
| 11 | 5LR.11408 | Near Intersection of I-25 and E LCR 20 | Zimmerman Grain Elevator | 0.03-acre partial acquisition, with no impact to eligible structures | No Adverse Effect |
| 12 | 5LR.11382 | 640 SE Frontage Road | Hatch Farm (Norcross Farm) | 1.2-acre partial acquisition of open field from 107-acre farm, with no impact to eligible barn | No Adverse Effect |
| 13 | 5LR.11242 | 5531 E Highway 402 | Mountain View Farm | Widening creates 1.5-acre take from 136-acre farm | Adverse Effect |
| 14 | 5WL.841.11 | Near intersection of I-25 and SH 392 | Great Western RR | 60 additional feet of overhead coverage, no direct impact to rail | No Adverse Effect |
| 15 | 5WL.841.15 | Near intersection of I-25 and WCR 48 | Great Western RR | Roadway widening in ROW with no acquisition | No Historic Properties Affected |
| 16 | 5WL.864 | Near intersection of I-25 and WCR 48 | Buda Siding (Great Western RR) | Roadway widening in ROW with no acquisition | No Historic Properties Affected |
| 17 | 5WL.3149.1 | Near Intersection of I-25 and WCR 48 | Handy/ Home Supply Ditch | Modification of the grated culvert intake, 60-foot extension to existing culvert | No Adverse Effect |
| 18 | 5WL.5203 | 3766 County Road 48 | Bein Farm | 11.1-acre partial acquisition of open field from 288-acre farm, with no impact to structures | Adverse Effect |
| 19 | 5WL.5204 | 3807 County Road 48 | Bashor Barn | Widening creates 0.17-acre take from 1.7-acre parcel | No Adverse Effect |
| 20 | N/A | 7801 SW Frontage Road | N/A | 0.06-acre take from this 30-acre parcel | No Adverse Effect |
| 21 | N/A | 7795 SW Frontage Road | N/A | No impact; no acquisition and no change to setting | No Historic Properties Affected |
| 22 | N/A | 6228 E County Road 18 | N/A | No impact; no acquisition and no change to setting | No Historic Properties Affected |

Based on this evaluation, four properties will be adversely affected by the project. One is the Loudon Ditch (5LR.8930.1). It was shown in the FEIS as an adverse effect in 2011, as well. The current project has reduced the impact from more than 700 linear feet to only 173 linear feet. The other three (Schmer Farm (5LR.11209), Bein Farm (5WL.5203), and Mountain View Farm (5LR.11242)) were initially described as No Adverse Effect in the FEIS, but changed to Adverse Effect after SHPO consultation in October of 2011.

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.15.2 Mitigation

The North I-25 Project Programmatic Agreement (Available in Appendix G of ROD1) identifies standard mitigation for adverse effects from this project. Additional consultation will take place to identify specific mitigation. Mitigation measures identified in the Programmatic Agreement are detailed in Table 30.

Table 30. Historic Properties Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|---------------------------------------|---|
| Adverse effect to historic properties | <p>A Section 106 Programmatic Agreement, which includes stipulations for mitigating adverse effects, includes the following mitigations:</p> <ul style="list-style-type: none"> • Prepare Level II Recordation for all historic properties that have an adverse effect determination resulting from the action of this undertaking. • Submit Office of Archaeology and Historic Preservation (OAHP) Cultural Resource Reevaluation Forms (Form 1405) for any properties that will be changed or modified to document changes in the conditions of the properties for OAHP's site files. • Submit the mitigation produced for the project to SHPO and the consulting parties for review and comment. • Review and consider suggested mitigation measures from the consulting parties. CDOT and FHWA will leave open the period for the consulting parties to submit alternative mitigation strategies. • Prepare a historic context of the development and lasting significance of irrigation in Northern Colorado. The Colorado SHPO originally requested the context as a component of the Northern Colorado Historic Ditch Inventory. The historic ditch context will be accessible through the North I-25 web page. The historic ditch context will inform the public about Northern Colorado's role and importance in the development of irrigated agriculture in the western United States. This mitigation will satisfy adverse effects to all irrigation conveyance features (ditches, laterals, and related components and structures) that become eligible after the Agreement is executed. |

Table 30. Historic Properties Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|---|
| Indirect effects from construction activities, dust and debris, and/or visual, auditory, accessibility | <ul style="list-style-type: none"> • Control and minimize construction disturbances. • Return all disturbed areas to their original configuration to the extent possible. • Implement precautionary measures, such as applied palliatives to reduce impact of dust. • Implement contractor training to prevent flying debris effects. • Provide planned construction staging whenever possible. • Provide signage and well-marked alternate routes for access. • Employ landscape context sensitive design to minimize intrusive effects of transportation facilities. • Construct noise barriers as warranted. |
| Potential to impact archaeological resources | Survey all unsurveyed parcels upon acquisition, and consult with SHPO pursuant to 36 CFR 800 at that time, as required by the Section 106 Programmatic Agreement. Require the contractor to comply with 36 CFR 800.13 for unanticipated discoveries during construction. |

6.16 Paleontological Resources

There are no changes in existing paleontological resources since the FEIS. There are no changes in laws, regulations, or guidance that affect paleontological analyses.

6.16.1 Impacts of the ROD4 Selected Alternative

As stated in the FEIS, the ROD4 Selected Alternative will result in varying degrees of ground disturbance associated with construction. The 2008 *Paleontological Resources Technical Report* states that, without mitigation, potential adverse impacts are possible due to ground disturbing actions.

Impacts of Kendall Parkway Transit Center

The changes associated with the Kendall Parkway Transit Center do not change the impacts of the ROD4 Selected Alternative.

6.16.2 Mitigation

Potential adverse effects to paleontological resources can be reduced to below the level of significance with implementation of the mitigation measures listed in Table 31.

Table 31. Paleontological Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|---|---|
| Potential for paleontological resources to be uncovered during construction | <ul style="list-style-type: none"> • Follow the latest revision of the CDOT Specification 107, Archeological/ Paleontological Discoveries. • Perform all paleontological monitoring work by a qualified and state of Colorado-permitted paleontologist. 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. • Schedule monitoring to take place continuously or to consist of spot-checks of construction excavations, for Pierre Shale, Laramie Formation, and Denver Formation. 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 to permit the monitors to efficiently and professionally recover the fossil specimens and collect associated data. Make all efforts to avoid delays to project schedules. • Cease work in the immediate area and contact a paleontologist to evaluate the significance of the find if personnel find any subsurface bones or other potential fossils during construction. |

Conversely, with the application of mitigation, disturbance of newly-exposed fossils would make them available for scientific analysis and museum display, resulting in a beneficial impact (Rocky Mountain Paleontology 2008).

6.17 Hazardous Materials

An Environmental Data Resources (EDR) Regulatory Report was obtained on August 26, 2016, to determine if any new hazardous materials sites have been identified in the ROD4 study area. Based on the EDR Regulatory Report, there are no changes to the hazardous materials within the ROD4 study area since release of the FEIS. There have been no changes to laws, regulations, or guidance relative to hazardous materials.

Six sites with recognized hazardous conditions and six sites with potential hazardous conditions were identified in the FEIS within the ROD4 Selected Alternative ROD4 study area. The EDR Regulatory Report listed only five of the 12 properties that were either sites that had a history of violations or were apparently under remediation. Besides these facilities, there were no additional sites that warranted further documentation. Table 32 summarizes information on properties with potential or recognized environmental conditions with regard to hazardous materials that are associated with the ROD4 Selected Alternative. Pole-mounted electrical transformers were not identified as part of site reconnaissance activities.

6.17.1 Impacts of the ROD4 Selected Alternative

Of the sites in Table 32, the Diamond Shamrock, Johnson's Corner Inc. and the Cloverleaf Kennel Club are directly impacted.

During construction hazardous materials may be encountered that have not been previously identified or have migrated from the property.

Table 32. Summary of Sites with Potential and Recognized Hazardous Environmental Conditions

| Site Name | Site Address | Parcel ID Number | Type of Condition | Site Description |
|---------------------------------------|-----------------------------------|------------------|-------------------|--|
| Colorado Boat Center | 3850 SE Frontage Rd., Johnstown | 8535000009 | Potential | Resource Conservation and Recovery Act (RCRA) small-quantity generator with no violations reported; unknown hazardous material storage, handling, and disposal practices |
| RV America Great Colorado Marketplace | 6701 SE Frontage Rd., Johnstown | 8535209001 | Potential | RV sales; potential equipment maintenance; unknown hazardous material storage, handling, and disposal practices |
| Gardner Signs/At Home Professions | 8101 SW Frontage Rd., Ft. Collins | 8622300005 | Potential | RCRA conditionally exempt small-quantity generator with no violations reported; unknown hazardous material storage, handling, and disposal practices |
| Collins Collision Products Inc. | 5726/5710 Byrd Dr., Loveland | 8627316001 | Potential | Former RCRA large-quantity generator; unknown site conditions |
| Champion Windows | 5850 Byrd Dr., Loveland | 8627335001 | Potential | Window manufacturing facility; unknown hazardous material storage, handling, and disposal practices |
| Loaf 'n' Jug | 67 Gateway Dr., Berthoud | 106103426002 | Potential | Gas station; two active 15,000-gallon underground storage tanks (USTs) onsite, one for gasoline and one for diesel |

Table 32. Summary of Sites with Potential and Recognized Hazardous Environmental Conditions

| Site Name | Site Address | Parcel ID Number | Type of Condition | Site Description |
|------------------------|------------------------------------|-------------------------|--------------------------|---|
| Cloverleaf Kennel Club | 2527 W. Frontage Rd., Loveland | 851000003 | Recognized | RCRA small-quantity generator site with reported violations; solid waste discovered in the southwest corner of site parking lot; general debris items included waste lumber, household appliances, tires, construction debris, waste oil containers, fluorescent light fixtures, brake fluid, paint cans, etc.; soil staining identified near former waste oil storage area and near two 250-gallon above-ground storage tanks (ASTs) that contained diesel fuel and gasoline; petroleum-contaminated soils identified near both the ASTs and former waste oil areas; groundwater contamination not detected; remediation activities: removal of solid waste that had accumulated upon the surface of the site, relocation of the ASTs, and excavation and offsite disposal of stained soils; clean up completed and CDH issued a No Further Action (NFA) letter in November 1997 |
| Conoco Station | 5518 E. Eisenhower Blvd., Loveland | 851500015 | Recognized | Gas station; closed leaking underground storage tank (LUST); closed UST; four active USTs; multiple releases have occurred at this site; the most recent NFA/closure letter was issued by the Division of Oil and Public Safety (OPS) in May 2010 |
| Diamond Shamrock | 6150/6200 E HWY 34, Loveland | 851500021 | Recognized | Gas station; two active 15,000-gallon USTs onsite; four USTs were permanently closed and removed in November 2009; closed LUST site with three events reported; NFA letters issued in June 1995, June 2005, and January 2010 |

Table 32. Summary of Sites with Potential and Recognized Hazardous Environmental Conditions

| Site Name | Site Address | Parcel ID Number | Type of Condition | Site Description |
|--|-----------------------------------|------------------|-------------------|---|
| Johnson's Corner Inc. | 2842 SE Frontage Rd., Loveland | 8535211001 | Recognized | Operating truck stop and open LUST site; four active USTs onsite; four active ASTs and one liquid petroleum gas (LPG) tank; multiple releases have occurred and contamination of both soils and groundwater is present; in October 2004, 10 ASTs containing gasoline, diesel, and kerosene were permanently closed and removed; groundwater monitoring is ongoing; known petroleum-impacted soil and groundwater onsite |
| Bob Scott's RV/Harris Marine | 7301 SW Frontage Rd., Ft. Collins | 8615000009 | Recognized | Automobile dealership and service center; one active AST on the property; potential waste oil tanks; unknown hazardous material storage, handling, and disposal practices; closed LUST site |
| Power Marketing Operations/Western Area Power Administration | 5555 E Crossroads Blvd., Loveland | 8634000908 | Recognized | Closed LUST site; one 2,500-gallon UST currently in use; permanently closed USTs include two 10,000-gallon for diesel, one 10,000-gallon for gasoline, two 6,000-gallon for gasoline, and one 700-gallon for diesel; NFA letter issued on February 13, 1995 |

Oil and gas facilities (existing and planned), including oil and gas wells, were identified within the project area using data from the Colorado Oil and Gas Conservation Commission Website, which was accessed in July 2010. These facilities were identified within 100 feet, 100 to 500 feet, 500 to 1,000 feet, and 1,000 to 1,500 feet from the project area and summarized in Table 33.

Table 33. Summary of Oil and Gas Facilities Within the Study Area

| Screening Distance | Number of Wells |
|--------------------|-----------------|
| Less than 100 feet | 6 |
| 100-500 feet | 9 |
| 500-1000 feet | 24 |
| 1000-1500 feet | 14 |

Oil and gas explorations, development, and production wastes (e.g., drilling fluids) are produced during primary field operations and the potential exists for subsurface releases that may not be observable at the surface or along the associated gathering and transmission pipeline. Chronic minor leaks that would not be detected by inventory control can also release over time into the subsurface. Thus, all oil and gas facilities/associated transmission lines that could be impacted or disturbed constitute a potential environmental condition.

Relocation of overhead electrical utility lines and pole-mounted transformers if necessary will be identified in project plans and specifications.

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.17.2 Mitigation

All of the sites listed in Table 32 are within the ROD4 study area but are recommended to have an Initial Site Assessment (ISA) conducted if directly impacted by the project. Additionally, it is recommended that the Diamond Shamrock, Johnson's Corner Inc. and the Cloverleaf Kennel Club have a Preliminary Site Investigation (PSI) completed. Development of a Materials Management Plan (MMP) and Health and Safety (H&S) Plan are also advised.

Performance of the work set forth in the project plans and specifications will be conducted in accordance with state and federal regulations, and any easement agreement between CDOT and/or private landowners. All wells that are located within the proposed construction area, including any that were not previously identified, will be abandoned and plugged according to CDOT Section 202.02 in Standard Specifications for Road and Bridge Construction (CDOT, 2011) 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" (Colorado Department of Natural Resources, 2006).

The Colorado Oil and Gas Conservation Commission (COGCC) regulates the cleanup of oil and gas wells and associated facilities. The COGCC clean-up standard for petroleum contaminated soil is 1,000 parts per million (ppm) total petroleum hydrocarbons in sensitive areas with the potential to impact groundwater (COGCC, 2001). The COGCC clean-up standard for non-sensitive areas is 10,000 ppm total petroleum hydrocarbons (COGCC, 2001). A typical clean-up standard used by CDOT for materials management is the Colorado Department of Labor and Employment, Division of Oil and Public Safety (OPS) clean-up standard of 500 ppm total petroleum hydrocarbons. If petroleum-contaminated soil is identified with a concentration less than 1,000 ppm but higher than 500 ppm, CDOT would be responsible for clean-up of this soil. 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, 2011b), also is recommended for use when oil and gas facilities are encountered.

Mitigation in Table 34 is the standard mitigation for hazardous materials.

Table 34. Hazardous Materials Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| Potential to encounter hazardous materials during construction | <ul style="list-style-type: none"> • If hazardous materials are unearthed during construction, stop work and contact emergency services. • Follow CDOT Specification 250. • Manage groundwater brought to the surface according to Section 107.25 and Section 250 of the CDOT <i>Standard Specifications for Road and Bridge Construction</i> (CDOT, 2011) and permitted by the CDPHE Water Quality Control Division, if dewatering is necessary. • Manage groundwater brought to the surface according to Section 107.25 and 250.03 of the CDOT <i>Standard Specifications for Road and Bridge Construction</i> (CDOT, 2011) and permitted by the CDPHE Water Quality Control Division. • Conduct the relocations of overhead electrical utility lines and pole-mounted transformers in accordance with state and federal requirements, and any easement agreement between CDOT and/or private landowners. • Abandon and plug all wells within the proposed construction area in accordance with CDOT Section 202.02 in <i>Standard Specifications for Road and Bridge Construction</i> (CDOT, 2011) and in conformance with the Colorado Department of Natural Resources Division of Water Resources State Engineer Water Well Construction Rules, specifically Rule 16. • Perform cleanup if petroleum-contaminated soil is identified with a concentration of less than 1,000 parts per million (ppm) but higher than 500 ppm. Consider use of an MMP and H&S Plan, as required by Section 250.03 of the CDOT Specifications (CDOT, 2011), when oil and gas facilities are encountered. • Conduct an asbestos, lead-based paint, and miscellaneous hazardous materials survey at each property being acquired, where applicable. Conduct regulated materials abatement in accordance with Section 250 of the CDOT Specifications (CDOT, 2011) and relevant Occupational Health and Safety Administration (OSHA) regulatory details. • Remove regulated materials from any structures and appropriately recycle or dispose of them prior to demolition. • Coordinate with the Colorado OPS 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 ISAs. • Remove all friable asbestos-containing materials (ACM) from structures (including bridges) prior to demolition, and from soils if encountered in excavated landfill or building debris, buried utilities, or other ACM. The contractor performing the asbestos abatement is required to be licensed to perform such work and obtain permits from the CDPHE. • Remove lead-based paint 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 apply. • Prior to construction activities, develop an H&S Plan, as required by Section 250.03 of the CDOT Specifications (CDOT, 2011). Write construction specifications to include review of the H&S Plan by the CDOT Regional Environmental Manager. • Establish monitoring requirements for hazardous materials concerns during construction activities in the MMP H&S Plan, and CDOT standard and project-specific specifications. |

6.18 Parks and Recreational Resources

CDOT has issued Procedural Directive 1602.1 (CDOT, 2010) that lays out policies relative to pedestrian and bicycle facilities since the publication of the FEIS.

Since completion of the FEIS, two new trails have been identified in the ROD4 study area and include a trail proposed by Larimer County (along the Big Thompson River) and a trail under development by private developers (Hillsborough Ditch Trail). Campgrounds were not listed as a recreational resource in the FEIS. The Loveland Station Campground is located at 648 SE Frontage Road in Johnstown (approximately one-half mile south of US 34 on the north bank of the Big Thompson River).

Park and recreational resources in the ROD4 study area are listed from north to south in Table 35.

Table 35. Parks and Recreational Resources in the ROD4 Study Area

| Resource | Location |
|--|---|
| Larimer County Fairgrounds | Approximately one-half mile north of the Crossroads Boulevard interchange, immediately east of I-25 |
| McWhinney-Hahn Sculpture Park | 5400 Stone Creek Circle in Loveland, located north of US 34 and west of I-25 in the Centerra West shopping area (near the outlets of Loveland) |
| Loveland Station Campground | Privately owned campground at 648 SE Frontage Road; offers camp sites for RVs and trailers, but does not offer tent camping sites |
| Big Thompson River Corridor Wildlife Area | Located south of US 34, this wildlife area is divided into multiple sections with a section located on each side of I-25; however, neither section crosses I-25 |
| Big Thompson Ponds State Wildlife Area (SWA) | Located south of US 34 and west of I-25 |
| Proposed Larimer County Trail | Proposed trail located along the Big Thompson River west of I-25 in the Big Thompson River Corridor Wildlife Area |
| Hillsborough Ditch Trail | Developing regional trail located east of I-25 and south of the Big Thompson River; an existing trailhead is located at the intersection of I-25 Frontage Road East and Lost Lake Place |

6.18.1 Impacts of the ROD4 Selected Alternative

There are no direct or indirect impacts to parks and recreational resources from the ROD4 Selected Alternative.

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.18.2 Mitigation

No mitigation is needed.

6.19 Section 6(f)

No properties in the ROD4 study area have received LWCF Act grants.

6.19.1 Impacts of the ROD4 Selected Alternative

There are no additional impacts.

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.19.2 Mitigation

No mitigation is needed.

6.20 Farmlands

The FEIS used data from the 2009 Natural Resources Conservation Service (NRCS) Soil Data Mart database to identify whether any prime or unique farmland soils or farmland soils of statewide or local importance were present in the North I-25 regional study area. Any soils located within 2000 census “urbanized areas” were removed from the analysis. Urbanized areas generally are developed with impermeable (paved) surfaces that are not available for agricultural production. ROD4 analysis used 2010 census “urbanized areas” to identify lands committed to urban development.

Lands that are committed to urban development also are not considered farmland. To identify lands committed to urban development, existing and future land use data were obtained from Larimer County, Weld County, and NFRMPO. These data then were compared to aerial imagery for verification.

The acreage of farmland has decreased since the FEIS due to the increase in census urbanized areas and residential and commercial development along the I-25 corridor. There are 2,610 acres of farmland with prime and unique soils located in existing agricultural land use that is not within a census urban area within the ROD4 study area.

6.20.1 Impacts of the ROD4 Selected Alternative

Approximately 130 acres of farmland with prime and unique soils will be converted from an agricultural use to a transportation use.

As noted in a letter dated April 25, 2011, from the NRCS (see FEIS Appendix E, Page E-621), “Once a Federal agency has performed an analysis under the [Farmland Protection Policy Act] FPPA for the conversion of a site, that agency’s determination with regard to additional assistance or actions on the same site do not require additional redundant FPPA analysis.”

While conversion of farmland with prime and unique soils is anticipated, during final design of the project, the conversion of non-prime farmland will be considered before converting prime farmland to minimize overall impacts to prime farmland.

Impacts of Kendall Parkway Transit Center

The Kendall Parkway transit center results in conversion of 0.3 acres of prime and unique farmlands to transportation use which are included in the ROD4 Selected Alternative impacts.

6.20.2 Mitigation

Potential impacts to farmlands and mitigation measures are listed in Table 36.

Table 36. Farmlands Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| Impacts to farmlands and agricultural features | <ul style="list-style-type: none"> • Consider conversion of non-prime farmland before converting prime farmland during final design to minimize overall impacts to prime farmland • Consider replacing irrigation ditches and pipes as appropriate if important agricultural features are affected. • Compensate loss or damage to crops resulting from construction activities • Keep construction materials, tools, and vehicles within the proposed right-of-way to reduce impacts. |

6.21 Energy

There are no changes in laws, regulations, or guidance that affect energy analyses.

Energy usage will be generated for both construction of I-25 improvements, and the movement of vehicles transporting people and goods along the improved corridor. The previous energy analysis in Section 3.21 of the FEIS used the forecast year 2035 to project energy consumption. Since the release of the FEIS, the North I-25 Regional Travel Demand Model was updated using the forecast year 2040. The energy consumption analysis was revised to reflect the new projections and is discussed in the following sections.

6.21.1 Impacts of the ROD4 Selected Alternative

This section evaluates and compares energy consumption and greenhouse gas emissions of the No Action Alternative and the ROD4 Selected Alternative using the following methodology:

- The forecast year used was 2040.
- VMT data were estimated using the North I-25 revised traffic study for ROD4.
- VMT was converted to miles per gallon of fuel consumed using vehicle splits from the FEIS and miles per gallon data from the Department of Energy's *Transportation Energy Data Book*.
- Fuel consumption in gallons was converted to carbon dioxide (CO₂) produced using the gasoline CO₂ factor from the Federal Register (8,877 grams of CO₂ per gallon of gasoline consumed).

Passenger miles of the total regional annual VMT were assumed to be 96.6 percent automobiles, 3.0 percent heavy trucks, and 0.4 percent buses. Table 37 through Table 39 below summarize the energy analysis using the methodology above. The trends and rationale described in the FEIS remain the same.

Table 37. Daily VMT

| Alternative | Total Daily VMT (Auto, Truck, and Bus) |
|---------------------------|--|
| Existing | 1,230,420 |
| No Action | 1,490,590 |
| ROD4 Selected Alternative | 1,969,740 |

Table 38. Energy Consumption by Alternative (Daily BTU)

| Alternative | BTUs Consumed (millions) | Difference from Existing (millions) | Percent Difference |
|---------------------------|--------------------------|-------------------------------------|--------------------|
| Existing | 6,771 | N/A | N/A |
| No Action | 8,203 | 1,432 | 17.5% |
| ROD4 Selected Alternative | 10,840 | 4,069 | 37.5% |

Table 39. Daily CO₂ Production by Alternative

| Alternative | CO ₂ Produced (tons) | Difference from Existing (tons) | Percent Difference |
|---------------------------|---------------------------------|---------------------------------|--------------------|
| Existing | 648 | N/A | N/A |
| No Action | 786 | 137 | 17.5% |
| ROD4 Selected Alternative | 1,038 | 390 | 37.5% |

Impacts of Kendall Parkway Transit Center

There are no additional impacts.

6.21.2 Mitigation

Mitigation of energy consumption during operations will focus on a reduction in daily VMT. This reduction can be achieved through successful transit-oriented development, congestion management, and effective improvements to the roadways. These measures all work to reduce overall traffic time by increasing travel efficiency. Table 40 summarizes the energy consumption impacts and mitigation measures to alleviate these impacts.

Table 40. Energy Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--------------------------------------|---|
| Increased VMT and Energy Consumption | Reduce daily vehicle miles of travel through effective improvements to the roadways. These measures all work to increase travel efficiency and save energy. |

6.22 Public Safety and Security

There are no changes to the public safety and security analysis from those described in the FEIS.

6.22.1 Impacts of the ROD4 Selected Alternative

In addition to the impacts listed in the FEIS there is a potential for increased theft during the construction phase.

Impacts of Kendall Parkway Transit Center

The changes associated with the Kendall Parkway Transit Center do not change the impacts of the ROD4 Selected Alternative.

6.22.2 Mitigation

Mitigation measures for temporary public safety and security impacts during construction are listed in Table 41.

Table 41. Public Safety and Security Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| Potential losses at construction sites | <ul style="list-style-type: none"> • Provide fencing and on-site security • Follow all OSHA requirements applicable to construction site safety. Construction contractors will be responsible for safety at their respective sites. • Approval of each contractor's site safety plans will be given by the appropriate agencies or a construction management consultant, if chosen. The appropriate agencies will provide a site safety officer to monitor site safety. |

6.23 Construction

6.23.1 Impacts of the ROD4 Selected Alternative

Construction-related impacts are similar to those described in the FEIS. They would be short term and isolated in extent depending upon the types and location of construction. Construction of the ROD4 Selected Alternative will result in temporary changes in traffic patterns and short-term increases in noise, air pollution, water pollution, and visual quality.

Both northbound and southbound lanes on I-25 will remain open during construction, including cross-roads and ramps, except for intermittent closures allowed per the CDOT Region 4 Lane Closure Strategy.

Transportation

Construction detours and delays can create short-term impacts on local traffic circulation and congestion and inter- and intra-state travelers using the I-25 corridors for commuting. These impacts may include delays or the need for alternative travel routes to reach residences and community facilities. Emergency service response may be negatively impacted as a result of construction, as well. A primary goal of CDOT during construction of the project would be to

minimize inconvenience to the public through construction traffic planning during final design, and by monitoring and adjusting these plans throughout the construction phase.

Overall construction impacts to roadway crossings are expected to be minor with employment of mitigation measures.

Pedestrian and bicycle mobility is important within the corridor. Construction activities could temporarily affect local residents who use these facilities and those who use the corridor for commuting and recreation.

Land Use

Construction of the ROD 4 Selected Alternative would temporarily affect access to the different land uses within the area throughout the duration of the project. These impacts would mostly be limited to areas that are in close proximity to large-scale construction activities, generally not greater than 300 feet outside of the work areas.

Economic Conditions

By implementing the ROD 4 Selected Alternative, the economic benefit of additional employment within the area due to construction would be evident. This additional employment includes construction-related jobs that are directly and indirectly related to the project. Jobs created that are directly related would include jobs that pertain to the actual construction activities of the project. Jobs that are indirectly related would include positions that would help support the construction efforts by supplying goods and services to construction workers.

Right-of-Way

Some additional land would be required in areas adjacent to the existing rights-of-way for construction staging purposes. These staging areas would be used to store equipment and materials and would also be used to provide parking for construction workers. These necessary areas would be purchased or leased, usually as temporary construction easements, before the start of construction.

Air Quality

Without mitigation, excavation, grading, and fill activities associated with construction could increase local fugitive dust emissions.

Construction activity would increase emissions from additional traffic and detouring. Also, construction would require the disturbance of soil, which would produce fugitive dust or particulate pollution. Construction-related activities that may cause soil material to become airborne include the following:

- Digging and dumping of soil and discarded construction materials (asphalt, concrete, etc.)
- Material hauling
- Wind erosion over exposed construction sites
- Re-entrainment of construction dirt deposited on local streets by vehicular traffic on the streets

The length of time that any particular receptor would be exposed to construction-related dust would be relatively short, lasting only during construction activities. Construction would likely proceed in a linear fashion with site excavation, bed preparation, and track installation beginning at one or more locations and working along the alignment.

Construction vehicles and equipment would generate the same exhaust emissions as motor vehicles on area roadways. The emissions contribution of these vehicles would be short-term and minor when compared to usual emission levels from day-to-day traffic in the project area.

Additionally, construction equipment would generally be diesel-powered, emitting relatively low levels of carbon monoxide, but higher levels of particulate emissions. Exhaust emissions could temporarily impact sensitive receptors located adjacent to the areas of construction.

Noise and Vibration

Construction noise would present the potential for short-term impacts to receptors located along the existing rights-of-way and along the designated construction access routes. The primary source of construction noise is expected to be diesel-powered equipment, such as trucks, earth-moving machinery, and demolition equipment.

Demolition and pile driving could be the loudest construction operations.

The impact levels from construction noise would depend on the sensitivity of the noise receptor, the magnitude of noise during each construction phase, the duration of the noise, the time of day the noise occurs, and the distance from the construction activities.

Construction vibration impacts would result from the use of construction equipment such as a pile driver, a bulldozer, or a jack hammer. The vibration would be generally intermittent and temporary, and therefore, would not result in an appreciable impact to receivers along the alignment with the exception of properties in close proximity to construction activities.

Ecosystems

Wildlife habitats adjacent to the roadway improvements would be impacted during construction. Some wildlife would be driven away during construction activities due to the increased noise. These impacts would be primarily limited to the undeveloped areas of the project area.

Farmlands

Farmlands adjacent to the alignments would be impacted if construction activities are required to extend beyond the right-of-way or if access must be modified. Also, dust generated from construction activities could settle on agricultural lands, possibly temporarily altering soil composition.

Cultural Resources

Construction could damage or remove archaeological or paleontological resources that have become buried beneath the soil surface. The amount of damage would vary, depending upon soil strata, type, and condition, materials, and type of structure.

Construction could have both short- and long-term impacts on cultural landscapes by introducing intrusive elements into the landscape, or by removing character-defining elements of that landscape, such as large trees, irrigation features, or open spaces.

Visual Setting

Short-term construction-related visual impacts would likely occur. These impacts would include the presence of construction equipment and material storage, temporary barriers, guardrail, detour pavement and signs, temporary shoring and retaining walls, lighting for night construction, and removal of existing vegetative cover in the construction zone. Residential areas near construction activities could experience visual impacts resulting from construction activities.

The greatest visual impacts during construction would be associated with construction lay-down yards (staging areas), construction traffic/equipment along I-25, clearing/demolition of the bridge structures, safety barriers, and signage and flag-persons. The impacts would be visible both to residents along the I-25 corridor as well as travelers on the roadway network within the project area.

Floodplains and Water Resources

During construction, stormwater runoff could present the potential for violations of water quality standards if discharge occurs without the application of best management practices. Without mitigation measures, stormwater runoff could cause erosion and sedimentation and transport spilled fuels or other hazardous materials off the construction site. Dewatering and treatment could be required where groundwater is present. The construction of the ROD4 Selected Alternative would cause an increased risk to surface water quality due to proximity of construction to Cache la Poudre River and Big Thompson River tributaries. Final design would include runoff prevention measures to minimize the amount of sediment reaching surface water bodies as a result of rail or road construction.

Wetlands and Waters of the U.S.—Section 404

Temporary impacts to wetlands could occur within the drainages of Big Thompson River. These impacts would primarily be from construction equipment adjacent to wetland areas. Wetlands would be restored to the extent possible if damage from the equipment occurs.

Hazardous Materials

Hazardous materials could be encountered during construction in several ways. The movement of earth, particularly excavation, could uncover sites with hazardous chemicals or petroleum products. Former or current gas stations can frequently contain petroleum contamination that could be encountered during construction.

During construction, it is expected that there would be excavation and drilling for caissons to support underpasses, overpasses, and bridge development. Any of these activities could cause an impact to soils or groundwater containing hazardous waste and, possibly, a potential impact to human health and safety.

Prior to construction and right-of-way acquisition, soil sampling would be performed to determine the nature and extent of contamination at sites with recognized environmental conditions. The results of this sampling would be incorporated into a health and safety plan that would be implemented during construction to minimize the potential exposure of workers to contaminants and hazards. Stormwater Management Plans would be developed to minimize runoff and impacts to uncontaminated soils. Contaminated materials would be disposed according to Colorado Department of Public Health and Environment (CDPHE) requirements.

Utilities

Construction would require excavation, grading, boring and other activities that would have short-term effects on utilities. This would include crossing existing lines, relocation, modification, and usage of temporary easements. The process of relocating these utilities could cause temporary planned or accidental disruptions in service to local residents in the area.

Energy

The construction would require substantial one-time energy expenditures related to the manufacture of construction materials, transporting of materials to the site, and construction of new facilities. Construction energy consumption is based on the number of lane-miles proposed for each construction type; at-grade and on elevated structure.

Impacts of Kendall Parkway Transit Center

The changes associated with the Kendall Parkway Transit Center do not change the impacts of the ROD4 Selected Alternative.

6.23.2 Mitigation

CDOT's *Construction Manual* (2014, revised in 2016) outlines some BMPs that contractors are encouraged to use on all construction projects. See Table 42 for a summary of construction-related mitigation strategies for the project.

Table 42. Construction Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--------|--|
| Noise | <ul style="list-style-type: none"> • Use enhanced signing. • Implement construction best management practices. • Use noise blankets on equipment and quiet-use generators. • Combine noisy operations to occur in the same time period. • Use alternative construction methods, such as sonic or vibratory pile-driving in sensitive areas, when possible. • In residential areas, minimize construction activities during the evening, nighttime, weekends, and holidays when receptors are usually in these areas. • Implement nighttime construction when desirable (e.g., commercial areas where businesses may be disrupted during daytime hours) or necessary to avoid major traffic disruption. • Use commercially available effective mufflers and enclosures on all engines, as possible. • Use modern equipment with improved noise muffling and evaluate all equipment items to ensure that they have the manufacturers' recommended noise abatement measure, such as mufflers, engine covers, and engine vibration isolators intact and operational. Inspect all construction equipment at periodic intervals to ensure proper maintenance and presence of noise-control devices (e.g., mufflers and shrouding). • Avoid the use of impact pile driving near noise sensitive areas, where possible. Use alternative foundation preparation technologies, such as vibratory pile driving or cast in drilled hole. |

Table 42. Construction Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|---|---|
| | <ul style="list-style-type: none"> • Use temporary barriers, as required, to protect sensitive receptors from excessive construction noise. Make noise barriers of heavy plywood or moveable insulated sound blankets. • Conduct truck loading, unloading, and hauling operations so that noise will be kept to a minimum. Carefully select routes to avoid going through residential neighborhoods to the greatest possible extent. • Maintain good public relations with the community to minimize objections to unavoidable construction noise. Provide frequent updates of all construction activities to the public. Keep residents informed so they may plan around periods of particularly high noise levels and provide a conduit for residents to express any concerns or complaints about noise. |
| Access | <ul style="list-style-type: none"> • Use enhanced signing. • Use alternate access enhancements. • Use advertising/public relations. • Do not close multiple interchanges concurrently. |
| Highway <ul style="list-style-type: none"> • Traffic Detours • Lane closures • Congestion • Construction vehicles on local streets • Safety of lane shifts | <ul style="list-style-type: none"> • 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. • Use enhanced signing. • Phase construction to limit traffic in neighborhoods. • Comply with American Association of State Highway and Transportation Officials (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 Regional Transportation District (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. |

Table 42. Construction Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|--|--|
| Pedestrian/ Bicycle mobility | <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Dust/air quality • Hazardous waste • Water quality • Resource use/ recycling material | <ul style="list-style-type: none"> • 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. • Prepare well-defined stormwater management plan. • Conduct monitoring. • Institute resource reuse and allocation. • Ensure regulatory compliance. • 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 (2011), including sections regarding water quality control, erosion control, and environmental health and safety. • As soon as practicable after construction activities have been completed in a disturbed area, begin permanent stabilization to limit further erosion of soil. • 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. |

Table 42. Construction Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|---------------------------------|--|
| Floodplains and Water Resources | <ul style="list-style-type: none"> Implement best management practices as part of the stormwater management plan to abate and control suspended soil loading from erosion. Use best management practices that are 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, Revised Chapter 5 EC 5&6 July 2014). Include such measures as silt fences and detention ponds. Use riprap slope protection where necessary to prevent erosion. Ensure that any impacts to surface water quality as a result of construction are temporary. (Mitigation measures for contaminated groundwater potentially encountered during construction are discussed in Section 6.7 Water Quality. Section 107.25 of CDOT's Standard Specifications for Road and Bridge Construction (2011) deals with contractor's requirements for water quality control.) |

6.24 Short-Term Uses versus Long-Term Productivity

The approach this project is using by identifying a Preferred Alternative for the entire North I-25 Corridor provides a systematic approach to minimize short-term uses and gain the most for long-term productivity. By knowing what kinds of improvements are planned, the investment and impacts to resources can be minimized through implementing coordinated solutions for long-term benefits.

6.24.1 Impacts of the ROD4 Selected Alternative

There are no changes in short-term uses of resources and long-term productivity since the FEIS. The short-term uses of the environment include:

- Loss of soil through erosion and fugitive dust
- Temporary disruption of traffic and businesses in the proposed construction areas
- Temporary visual impacts during construction
- Temporary noise and vibration impacts
- Temporary use of land for construction staging and storage of materials

The long-term benefits include:

- Improving travel safety within the regional study area
- Increasing the efficiency of movement within large and critical transportation corridors
- Decreasing the overall travel times throughout the corridor
- Improving product and material distribution
- Improving access to businesses within the travel corridor
- Improving emergency vehicle access
- Modernizing existing transportation infrastructure to accommodate future demands
- Creating more environmentally sound and aesthetically pleasing transportation corridors
- Improving air quality within the corridors by reducing traffic congestion

Impacts of Kendall Parkway Transit Center

The changes associated with the Kendall Parkway Transit Center do not change the impacts of the ROD4 Selected Alternative.

6.24.2 Mitigation

No mitigation is required.

6.25 Irreversible and Irrecoverable Commitments of Resources

The term “irreversible and irretrievable” refers to commitments of resources that cannot be corrected or reversed; cannot be retrieved; are impossible to recoup, repair, or overcome (Reinke and Swartz 1999). Natural resources would be incorporated permanently into the project, such as aggregate, concrete, and asphalt.

6.25.1 Impacts of the ROD4 Selected Alternative

There are no changes to irreversible and irretrievable commitments of resources since the FEIS. Irrecoverable and irreversible commitments of labor, funding, energy, and materials would occur during construction of ROD4 Selected Alternative and the full build out of the North I-25 project. Some improvements to North I-25 would occur in phases prior to construction of the entire FEIS Preferred Alternative and would need to be reconstructed as part of the implementation of the entire FEIS Preferred Alternative. As a result, some elements of the FEIS Preferred Alternative would need to be reconstructed as phases are completed, which would result in irretrievable losses of labor, funding, energy, and materials. However, the decision to proceed this way was made due to existing funding limitations. The elements of ROD4 Selected Alternative are anticipated to provide a substantial benefit to corridor users and would therefore offset the irreversible impacts.

Kendall Parkway Transit Center

The changes associated with the Kendall Parkway Transit Center does not change the impacts due to ROD4 Selected Alternative.

6.25.2 Mitigation

Mitigation measures for irreversible and irretrievable commitments of resources are listed in Table 43.

Table 43. Irreversible and Irrecoverable Impacts and Mitigation for the ROD4 Selected Alternative

| Impact | Mitigation |
|---|---|
| Potential reconstruction of parts of the project due to phasing | Minimize to the greatest extent possible the amount of the project that needs to be reconstructed as the project is constructed in phases due to funding constraints. |

6.26 Cumulative Impacts

This section examines the cumulative impact on resources of concern. A cumulative impacts analysis considers all aspects of the environment affected by project alternatives in the context of other past, present, and reasonably foreseeable future actions in an area. Leading up to the FEIS in 2011, agency scoping and coordination efforts identified six resources of concern to be evaluated for cumulative impacts, including: land use, water quality, wildlife, wetlands, air

quality, and historic properties and districts. This section evaluates the cumulative impacts to these resources.

Land Use

The FEIS documented a general trend of increasing urbanization. Since the FEIS in 2011, new commercial, residential, and retail developments have occurred in several locations adjacent to I-25, replacing agricultural land uses. A substantial increase in oil and gas development, particularly in Weld County has occurred. The towns of Berthoud and Windsor and the City of Loveland have adopted comprehensive land use plans. It is expected that the general trend of urbanization will continue.

Water Quality

Since the 2011 FEIS, there has been a change in CDOT's MS4 permit that allows the use of new alternative water treatment technologies. Water treatment techniques can successfully mitigate surface runoff. The continued urbanization and highway widening in the ROD4 study area will result in additional impervious surfaces. Water that runs off impervious surfaces has the potential to carry pollutants into bodies of water as a result of highway widening.

Wildlife

The increased residential and commercial land uses and highway construction can displace wildlife, fragment wildlife habitat and alter wildlife movement. The urbanization trend will continue to impact wildlife.

Wetlands

Wetlands are directly and indirectly impacted as urbanization and development occurs in the ROD4 study area. As described in the land use section above, development is expected to continue into the foreseeable future and wetlands will continue to be impacted.

Air Quality

The area has experienced degradation in air quality since the 2011 FEIS due primarily to increased oil and gas development, producing methane, volatile organic compounds, and benzene gases. This has resulted in higher ozone concentrations. Effective November 20, 2007, the EPA designated the Denver metro area and the North Front Range as a non-attainment area for the 8-hour ozone (O₃). This designation was re-affirmed in 2012 when the EPA designated the region as a "marginal" nonattainment area for the more stringent ozone standard adopted by EPA in 2008.

Changes in air quality laws, policies, and guidance since publication of the FEIS in 2011 include:

- On August 2, 2016, the CEQ issued Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, which describes how agencies should address climate change in NEPA reviews.
- The MOVES 2014a model was released in November 2015. This was a major update to MOVES2010 and its minor revisions that corrected errors and added the ability to evaluate additional air toxics (MOVES2010a and MOVES2010b). MOVES2014 includes three new emission control programs associated with regulations promulgated since the release of MOVES2010b, and its minor revision, MOVES2014a, incorporates significant

improvements in calculating on-road and non-road equipment emissions. Technical and policy guidance in the use of MOVES2014 for a variety of purposes and pollutants has also been updated.

- The NAAQS for Ozone was lowered from 75 ppb to 70 ppb in October 2015 (EPA's nonattainment designations will be made in late 2017).
- Carbon Monoxide Categorical Hot-Spot Finding (February 2014) allows project sponsors the option to rely on the categorical hot-spot finding in place of doing a carbon monoxide hot-spot analysis as part of a project-level conformity determination in carbon monoxide maintenance areas.
- Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas (EPA, November 2013) was released to be used by state and local agencies to conduct quantitative PM (particulate matter) hot spot analyses for new highway and transit projects.
- FHWA's Interim Guidance Update on Mobile Source Air Toxics Analysis in NEPA was updated on December 6, 2012, from the original guidance published in September 2009. The revised guidance reflects changes in methodology for conducting emissions analysis and updates various research topics in mobile source air toxics analyses.
- Transportation Conformity Regulations as of April 2012 (PDF) (EPA, April 2012) includes updated requirements for the preparation, adoption, and submittal of implementation plans.
- In 2016, the Denver-Metro/North Front Range Region was downgraded to a moderate non-attainment area for air quality.

Historic

An updated field survey and file search was completed for ROD4. Through the file search, six additional properties were identified in the ROD4 study area. None of these properties indicates an adverse effect resulting from ROD4 Selected Alternative implementation.

6.26.1 Impacts of the ROD4 Selected Alternative

Land Use

Plans for land development in the foreseeable future demonstrate that the pattern of urbanization is continuing regardless of whether ROD4 is implemented and, therefore, the project will not contribute to cumulative land use impacts.

Water Quality

The construction of ROD4 will modestly increase impervious surfaces as a result of the new travel lane, the Kendall Parkway underpass, and the carpool lot. The improvements identified in ROD4 are not anticipated to result in an increase of pollutants in ROD4 study area streams. Future impacts to water quality could arise from maintenance activities, such as snow plowing, sanding, and deicing. Because of the BMPs and other mitigation, the cumulative effects to water quality remain the same as determined in the 2011 FEIS.

Wildlife

The increase of land development in Weld and Larimer counties affects wildlife movement and habitat in those areas. As reported earlier in the section, land use changes are expected to

occur regardless of ROD4 highway expansion. As a result, no cumulative impacts to wildlife associated with land use development will result from ROD4 improvements.

Black-tailed prairie dogs will be impacted by the construction of ROD4. The wildlife crossing at the Big Thompson River will be temporarily impacted by construction. Because the impact is temporary, no cumulative impacts will result.

Highway construction may have an impact on raptors. The implementation of mitigation measures will provide relief from some of the highway construction and expansion impacts. This mitigation, coupled with the impact's brief occurrence within the past and foreseeable future timeframe, will minimize impacts to raptor nesting so as not to cause cumulative impacts.

Wetlands

The incremental impact to wetlands from the project represents a very small percentage of the total wetlands in the FEIS study area. In addition, development that impacts wetlands is expected to continue into the foreseeable future regardless of the implementation of the ROD4 Selected Alternative. The ROD4 Selected Alternative is not expected to change development patterns. Because development is expected to continue expanding irrespective of ROD4 Selected Alternative implementation, no development-related cumulative impacts to wetlands will be caused by the project.

With mitigation, no cumulative impacts to wetlands result from the ROD4 Selected Alternative. Therefore, there would be no net loss of wetlands as a result of the impacts associated with the ROD4 Selected Alternative.

Air Quality

The project is located in the moderate non-attainment area for the Denver-North Front Range Area for the 2008 ozone standard. Since ozone is a regional pollutant, there is no requirement to analyze potential impacts and no possibility of localized violations of ozone to occur at the project level. No cumulative impacts to ozone are expected.

None of the other six criteria pollutants are of a concern to this project. Concentrations of lead, sulfur dioxide, and nitrogen dioxide are not significantly affected by transportation projects. The project is located outside of any non-attainment or maintenance areas for PM₁₀, PM_{2.5}, or carbon monoxide.

During construction, dust and other emissions will cause temporary and localized air pollution generated by construction vehicles and earth disturbances. Construction activities associated with the ROD4 Selected Alternative will be temporary, with none lasting longer than the construction period.

The analysis done for this ROD4 confirms the original finding from the 2011 FEIS, which is that no carbon monoxide or PM₁₀ violations of the NAAQS are expected to occur as a result of implementation of the ROD4 project. The project provides a reduction in traffic congestion sooner than was anticipated in the 2011 ROD, which will reduce air pollution associated with congestion.

Based on emissions estimates from EPA's Motor Vehicle Emissions Simulator (MOVES) model, and global carbon dioxide (CO₂) estimates and projections from the Energy Information Administration, CO₂ emissions from motor vehicles in the entire state of Colorado contributed less than one tenth of one percent of global emissions in 2010 (0.0348 percent). These

emissions are projected to contribute an even smaller fraction (0.0261 percent) in 2040. Vehicle miles traveled (VMT) in the ROD4 study area represents 0.159 percent of total Colorado travel activity; and the project itself would increase statewide VMT by 16.544 percent. (Note that the ROD4 study area, as defined for the MSAT analysis, includes travel on many other roadways in addition to the proposed project.) As a result, based on the build alternative with the highest VMT, FHWA estimates that the proposed project could result in a potential increase in global CO₂ emissions in 2040 of 0.0002 percent (less than one thousandth of one percent), and a corresponding increase in Colorado's share of global emissions in 2040 of 0.0009 percent. This very small change in global emissions is well within the range of uncertainty associated with future emissions estimates.

Historic Properties

The ROD4 Selected Alternative will have four adversely affected historic properties. Historic properties will continue to be impacted into the foreseeable future due to urbanization and limited local historic preservation regulations. Planned transportation and development actions will, over time, result in the additional loss of historic properties and will alter the historic character of small farming communities. These impacts will occur regardless of whether ROD 4 is implemented. Accordingly, the ROD4 Selected Alternative has no significant cumulative impacts to historic properties or districts.

Impacts of Kendall Parkway Transit Center

The changes associated with the Kendall Parkway Transit Center do not change the impacts of the ROD4 Selected Alternative.

6.26.2 Mitigation

Unmitigated, the ROD4 Selected Alternative has the potential to contribute to cumulative impacts for several resources. The implementation of the mitigation measures presented in Table 44 will reduce the potential for the ROD4 Selected Alternative to contribute to cumulative impacts.

Table 44. Cumulative Impacts and Mitigation of Selected Alternative

| Impact | Mitigation |
|--|---|
| <p>Water Quality</p> <p>Increased impervious surfaces and highway maintenance activities will increase run-off into streams.</p> | <p>Reduce impacts to water quality through implementation of maintenance programs and best management practices in both construction and design. Include several BMPs to reduce impacts to water resources and improve water quality conditions. Implement a combination of mitigation measures consisting of permanent structural, non-structural, and temporary construction in the project area. Incorporate all BMPs stated in the FEIS.</p> |
| <p>Wildlife</p> <p>Raptor nests and song birds will be directly and indirectly impacted by construction. Black-tailed prairie dogs will be impacted by the construction of ROD 4.</p> | <ul style="list-style-type: none"> • Follow the MBTA to mitigate for impacts to migratory birds. Provide relief from some of the highway construction and expansion impacts by following CDOT's proposed special provisions creating a new Standards and Specification Section 240—Protection of Migratory Birds to address the requirements of the MBTA. • Follow CDOT's Impacted Black-Tailed Prairie Dog Policy (CDOT, 2009). Carry out any prairie dog relocation or removal activities in accordance with CRS 35-7-203, as well as any other applicable laws or regulations, and with close coordination with Colorado Parks and Wildlife. |

Table 44. Cumulative Impacts and Mitigation of Selected Alternative

| Impact | Mitigation |
|--|---|
| <p>Wetlands</p> <p>The incremental impact to wetlands of the project represents a very small percentage of the total wetlands in the FEIS study area.</p> | <p>Mitigate any wetland impact, regardless of jurisdictional status, on a one-to-one basis, per CDOT's requirements. Ensure there would be no net loss of wetlands as a result of the impacts associated with the ROD4 Selected Alternative.</p> |
| <p>Air Quality</p> <p>Incremental emissions impacts to air quality will be small compared to current pollutant levels.</p> | <ul style="list-style-type: none"> • Reduce the growth of single occupancy vehicle use, lowering vehicle miles traveled and traffic emissions, by increasing transit facilities and transit service in addition to incentives for high occupant vehicles in the express lanes. • Utilize the existing transportation mobility network by supporting and expanding Transportation Demand Management (TDM) efforts, including the North Front Range MPO's ride-sharing program, Van Go. • Develop truck routes/restrictions with the goal of limiting truck traffic in proximity to facilities, including schools, with sensitive receptor populations. • Continue researching pavement durability opportunities with the goal of reducing the frequency of resurfacing and/or reconstruction project. • Develop air quality educational materials, specific to transportation issue, for citizens, elected officials, and schools. • Offer outreach to communities to integrate land use and transportation decisions to reduce growth in VMT, such as smart growth techniques, buffer zones, transit-oriented development, walkable communities, access management plans, etc. • Commit to research additional concrete additives that would reduce the demand for cement. • Continue to diversify the CDOT fleet by retrofitting diesel vehicles, specifying the types of vehicles and equipment contractors may use, purchasing low-emission vehicles, such as hybrids, and purchasing cleaner burning fuels through bidding incentives where feasible. • Explore congestion and/or right-lane-only restrictions for motor carriers. • Fund truck parking electrification (note: mostly via exploring external grant opportunities). • Research additional ways to improve freight movement and efficiency statewide. • Commit to incorporating ultra-low sulfur diesel for non-road equipment statewide most likely by using incentives during bidding. • Develop a Low-Volatile Organic Compounds (VOC) emitting tree landscaping specification. |

7.0 SECTION 4(F)

There are no changes to the Revised Section 4(f) Evaluation as appended to ROD1 for the resources evaluated for ROD4.

Since publication of the Revised Section 4(f) Evaluation, the Section 4(f) Policy Paper was published in July 2012, which replaces the FHWA's 2005 edition of the document. Additionally, Fixing America's Surface Transportation Act (FAST Act) was signed in December 2015, which modifies Section 4(f) provisions regarding historic sites, railroads, and bridges. The changes in provisions do not constitute a change in the ROD4 Selected Alternative Section 4(f) evaluation.

7.1 Impacts of the ROD4 Selected Alternative

Bashor Barn and 7801 SW Frontage Road are *de minimis* uses that have been added since the Revised Section 4(f) Evaluation; however, the rest of the Section 4(f) historic resources and their determinations have not changed since the Revised Section 4(f) Evaluation. Use and *de minimis* determinations for Section 4(f) properties are included in Table 45.

Table 45. Section 4(f) Historic Sites and Section 4(f) Use for ROD4 Selected Alternative

| Site Number | Address/Location | Name | Section 4(f) Use |
|--|--|-----------------------------|---|
| 5LR.503 (includes 5LR.503.2) | Near intersection of I-25 and US 34 | Loveland-Greeley Canal | <i>De minimis</i> |
| 5LR.850 (includes 5LR.850.1 and 5LR.850.3) | Near intersection of I-25 and E LCR 20 | Great Western Railroad (RR) | <i>De minimis</i> |
| 5LR.8927.1 | Near intersection of I-25 and E LCR 18 | Hillsboro Ditch | <i>De minimis</i> |
| 5LR.8928.1 (includes 5LR.8928.2) | Near intersection of I-25 and US 34 | Farmers Ditch | <i>De minimis</i> |
| 5LR.8930.1 | N/A | Louden Ditch | Use due to 173 feet of open ditch placed inside a culvert |
| 5LR.11209 | 5464 E Highway 34 | Schmer Farm (Peters Farm) | Use due to acquisition of 3.8 acres |
| 5LR.11408 | Near intersection of I-25 and E LCR 20 | Zimmerman Grain Elevator | <i>De minimis</i> |
| 5LR.11382 | 640 SE Frontage Road | Hatch Farm (Norcross Farm) | <i>De minimis</i> |
| 5LR.11242 | 5531 E Highway 402 | Johnston Mountain View Farm | Use due to acquisition of 1.5 acres |
| 5WL.841.11 | Near intersection of I-25 and SH 392 | Great Western RR | Temporary occupancy |

Table 45. Section 4(f) Historic Sites and Section 4(f) Use for ROD4 Selected Alternative

| Site Number | Address/Location | Name | Section 4(f) Use |
|-------------|--------------------------------------|-------------------------|--------------------------------------|
| 5WL.3149.1 | Near Intersection of I-25 and WCR 48 | Handy/Home Supply Ditch | <i>De minimis</i> |
| 5WL.5203 | 3766 County Road 48 | Bein Farm | Use due to acquisition of 11.1 acres |
| 5WL.5204 | 3807 County Road 48 | Bashor Barn | <i>De minimis</i> |
| N/A | 7801 SW Frontage Road | N/A | <i>De minimis</i> |

There are no impacts to parks, recreation, and wildlife areas within the limits of the ROD4 Selected Alternative.

Impacts of the Kendall Parkway Transit Center

There are no additional impacts.

7.2 Mitigation/Minimization of Harm

The mitigation measures to minimize harm to the impacted properties has not changed since the FEIS. The following mitigation measures included in the FEIS (shown below in Table 46) are still applicable.

Table 46. Section 4(f) Historic Resources Uses and Mitigation of Selected Alternative

| Impact | Mitigation |
|---|--|
| Direct use of Loudon Ditch | <ul style="list-style-type: none"> • Create detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation. • Maintain operation of the irrigation ditch during construction. • Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. • Reseed disturbed areas with native grasses. |
| Direct use of Schmer Farm, Johnston Mountain View Farm, and Bein Farm | <ul style="list-style-type: none"> • Complete property acquisition under the Uniform Relocation Act. • Work with SHPO during final design to formulate acceptable aesthetic treatment of highway ramps and flyways (facades, pier treatments, elevation changes, landscaping, etc.). • Maintain operation of farm during construction. • Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. • Reseed disturbed areas with native grasses. |

7.3 Least Overall Harm

Because there have been no changes to the Section 4(f) uses, the previous least overall harm determination still applies.

There has been no change in the FHWA determination that there is no feasible and prudent avoidance alternative and the FEIS Preferred Alternative includes all possible planning to minimize harm to the Section 4(f) properties resulting from such use. In addition, Section 6.8 of the *North I-25 Revised Section 4(f) Evaluation* (CDOT & FHWA, 2011c) concludes that the FEIS Preferred Alternative is the alternative with the least overall harm to the Section 4(f) properties.

8.0 STATUS OF FEDERAL AND STATE APPROVALS

This chapter presents the status of federal and state approvals for the ROD4 Selected Alternative.

8.1 Air Quality Conformity

The project is located in the moderate nonattainment area for the 2008 ozone standard for the Denver-North Front Range Area. Since ozone is a regional pollutant, conformity is based on a regional analysis. The project is included in the conforming, fiscally constrained NFRMPO 2016–2021 Transportation Improvement Program (TIP) and the 2040 RTP, as amended and adopted on February 2, 2017, which were found to conform to the ozone State Implementation Plan (SIP). Additional information can be found in the Air Quality Technical Memorandum in Appendix B.

This project has been determined to not cause an exceedance of any NAAQS. The proposed project will not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the NAAQS or any required interim emissions reductions or other milestones. This project complies with the transportation conformity regulations in 40 CFR §93 and with the conformity provisions of Section 176(c) of the CAA.

8.2 Section 106 Consultation

The lead agencies signed a Section 106 Programmatic Agreement in December 2011. It is included in Appendix G of ROD1. The Programmatic Agreement defines a process whereby CDOT will reevaluate effects to existing and new cultural resources as construction projects are funded and designs are refined. The ROD4 Selected Alternative has complied with these measures and consulted with SHPO and the consulting parties on determinations of eligibility and effects for the ROD4 Selected Alternative. By letter dated March 7, 2017, SHPO concurred with eligibility and effects.

8.3 Section 404 Permit

Impacts to wetlands and waters of the U.S. have been submitted to the USACE and approval has been granted by receipt of a Section 404 Permit. This permit requires certain information to be submitted to the USACE prior to construction of an individual project. This will be done during the final design process. All requirements of the Clean Water Act have been met.

8.4 Endangered Species Act Consultation

The lead agencies signed a PBO (USFWS and FHWA, 2011), which is contained in Appendix E of ROD1. This stipulates that as individual projects are proposed, the lead agencies will provide information to the USFWS that describes the proposed action, the species that may be affected, results of habitat assessments, an updated baseline of the project area, a description of how the action may affect the species, a determination of effects, a cumulative total of incidental take that has occurred to date, a description of any additional actions or effects not considered in the programmatic consultation, and a description of conservation measures or mitigation activities already implemented and their effectiveness. The lead agencies also will develop revegetation success criteria for revegetated sites.

The information required as part of the PBO for the ROD4 Selected Alternative was submitted to USFWS on March 23, 2017 and concurred upon on April 7, 2017 and are included in Appendix L, Correspondence, of this document.

8.5 Interchange Modification Approvals

The minor interchange modifications along the corridor require submittals of Minor Interchange Modification Requests to FHWA. These are being prepared and will be submitted to FHWA for concurrence in 2017.

Relative to the CDOT 1601 process, these same interchanges need approval as Type 2 interchanges since the proposed modifications are minor. This process will be completed as the final design process proceeds and these approvals will be submitted to the CDOT Chief Engineer for review.

An Interchange Access Request (IAR) has been prepared for the bus ramps at Kendall Parkway and will be submitted to FHWA for approval in 2017.

9.0 CLARIFICATIONS AND CORRECTIONS FOR THE FEIS

There are no clarification or corrections for the FEIS pertaining to the ROD4 Selected Alternative.

10.0 MONITORING AND ENFORCEMENT PROGRAM

Transportation projects must comply with a wide range of federal and state environmental laws and regulations, permits, reviews, notifications, consultations, and other approvals. This section summarizes the permits that may be potentially applicable to regulated project activities. It is not an all-inclusive list nor does it include reviews, consultations, and other types of approval that do not involve granting or denial of a permit. The following permits and coordination activities may be required to support the construction of the proposed build packages, including the FEIS Preferred Alternative.

In addition, CDOT and FHWA will ensure the mitigation commitments outlined in this document will be implemented as part of the project design, construction, and post-construction monitoring. These commitments will be incorporated, as appropriate, into the construction plans and specifications for this project. CDOT and FHWA will ensure that these commitments are implemented through review of the project construction plans and specifications, as well as periodic inspections during construction. Inspections during construction will involve both a review of project construction documentation and observation of construction activities.

CDOT and FHWA will monitor mitigation effectiveness and success through a combination of field reviews, pre-construction and post-construction inspections and post-construction monitoring, as appropriate. CDOT will be preparing annual reports, by agreement with some resource agencies. Reporting of effectiveness will be done by CDOT and FHWA, in accordance with agency requirements. If mitigation is not successful or mitigation commitments are not met, CDOT will rectify as needed.

10.1 Water Quality/Water Resources

10.1.1 Colorado Discharge Permit System

A Colorado Discharge Permit System (CDPS) permit is required by state and federal regulations for stormwater discharged from any construction activity that disturbs at least one acre of land. This discharge permit is required to ensure the quality of stormwater runoff from the construction site. Under CDPS permit stipulations, a site-specific stormwater management plan would be prepared that outlines in detail specific BMPs for inclusion in project plans and implementation in the field. Included in the stormwater management plan are such aspects as BMP locations, turbidity and monitoring requirements, seed mix, concrete wash-out provisions, and other relevant information. Permits would be obtained from CDPHE's Water Quality Control Division.

10.1.2 Section 404 Permit

A Section 404 Permit, which is issued by the USACE, has been obtained. All requirements in this permit will be followed, including the requirement to submit additional information to the USACE for individual projects. This will be done during the final design process.

10.1.3 Section 402 Permit

A Section 402 permit is required for dewatering of construction areas, if necessary. The following activities would likely require a Section 402 permit:

- If construction dewatering operations are planned in association with utility excavation, bridge pier installation, foundation or trench digging, or other subsurface activities

- If discharge from a point source is expected to occur due to vehicle washing, or from industrial discharges

A Section 402 permit would be obtained from CDPHE's Water Quality Control Division.

10.1.4 Section 401 Water Quality Certification

A Section 401 Water Quality Certification is required in conjunction with an Individual Section 404 Permit (dredge and fill permit) for any transportation construction project or maintenance activity where work occurs below the ordinary high water line or adjacent to wetlands. As part of its Section 401 Certification, Regulation No. 82 states that CDOT is required to notify the CDPHE and the owners and operators of municipal and domestic water treatment intakes or diversions downstream if potential impacts to nearby receiving waters may occur during construction, e.g., when blasting occurs near receiving streams. Unless specified by the Water Quality Control Division of CDPHE, in-stream turbidity monitoring typically is not required. The Section 401 Certification must be obtained from the Water Quality Control Division of the CDPHE.

10.2 Floodplain Permits

Floodplain permits—including a floodplain development permit, Conditional Letter of Map Revision (CLOMR), and Letter of Map Revision—are required for any floodplain encroachment.

10.3 Air Quality

10.3.1 Stationary Source Permitting and Air Pollution Emissions Notice Requirements

A stationary source permit and Air Pollution Emissions Notice (APEN) requirements stipulate that a construction permit must be obtained from CDPHE for any and all emissions associated with construction activities, including operation of portable sources. CDOT will submit an APEN to the CDPHE Air Pollution Control Division if more than 25 acres of land would be impacted and/or project construction would last longer than six months. CDPHE will respond regardless of whether a permit would be required prior to CDOT commencing construction.

10.3.2 Other Air Quality Permits

A portable source construction permit would likely need to be obtained from CDPHE for the operation of portable sources (e.g., asphalt plants, generators, rock crushers).

A fugitive dust permit and bridge demolition permit will be required for construction projects. Additionally, an asbestos abatement permit from the CDPHE also would be required for demolition of structures that potentially have friable asbestos-containing material (see Section 3.17, Hazardous Materials, of the FEIS).

10.4 Biological Resources

10.4.1 Senate Bill 40 Certification

An SB 40 certification will be required by CPW for the crossing of streams or adjacent stream banks to avoid adverse effects to waterways, stream banks, or associated tributaries. This legislation is designed to protect fishing waters and to recognize the importance of the entire stream ecosystem, including wetland and riparian areas. An SB 40 wildlife certification application would need to be submitted to CPW 60 days before construction begins.

10.4.2 Prairie Dog Relocation Permit

A prairie dog relocation permit, issued by CPW, will be required for the relocation, transportation, or donation of any prairie dog(s) or colonies that may be affected by project activities. Local permits also may be needed for this activity.

10.4.3 Threatened and Endangered Species

Mitigation for impacts to threatened and endangered species will be monitored by consultation with USFWS in accordance with the PBO contained in the ROD1 Appendix E. As described in the PBO:

1. FHWA/CDOT will monitor and report on the progress of implementation of the proposed action including all conservation measures.
2. FHWA/CDOT will monitor all temporarily disturbed sites.

10.5 Access

10.5.1 State Access Permit

A state Access Permit, issued by CDOT, would be required for all requests for new or modified access to all state highway roadways. Owners of any existing accesses adversely affected by the project would be notified of the proposed changes.

10.5.2 Construction Access Permit

Construction access permits likely would be required for temporary access needs outside the project limits.

10.5.3 Other Local Permits

Other local permits likely would be required by cities and counties as needed, such as construction, grading, erosion control, utility, or survey permits either prior to the beginning of or during construction phases.

11.0 PUBLIC AND AGENCY INVOLVEMENT

11.1 Comments from the FEIS

The *North I-25 Final Environmental Impact Statement/Final Section 4(f) Evaluation* (CDOT & FHWA, 2011c) was released on August 19, 2011. The notice of availability of the FEIS was published in the Federal Register on August 19, 2011, indicating a 30-day review period ending on September 19, 2011. Subsequently, an extension to this comment period was announced in the Federal Register (September 9, 2011), extending the end of the comment period to October 3, 2011 (i.e., 45 days total). Public comment was solicited and received through a variety of sources, including the North I-25 Environmental Impact Statement website, email, fax, mail, and verbal and written comments submitted at the three public hearings. In total, comments were submitted by 301 individuals, two public interest organizations, six agencies (federal, state, tribal, or regional) and six local governments.

The 301 comments that were received from the general public were received in the following manner:

- 287 comments were submitted through the project website or through email
- 9 written comments were submitted during a public hearing, mailed in, or faxed to CDOT
- 5 verbal comments were made at one of the three public hearings

The public comments received on the FEIS reflected the following community sentiments:

- 21 specifically supported the FEIS Preferred Alternative
- 1 specifically supported Package A
- 2 specifically supported Package B or an element included only in Package B
- 213 supported commuter rail or rail transit without mentioning an alternative
- 171 supported an expedited schedule for completion of improvements
- 57 expressed support for some other project phasing/prioritization scheme
- 7 did not support rail transit
- 22 did not support highway improvements
- 20 supported only highway improvements
- 17 supported improving bus transit
- 2 did not support improving bus transit
- 3 expressed concern about potential construction impacts
- 1 expressed concern about entering/exiting tolled express lanes (now called express lanes) at Mead, Colorado
- 1 expressed displeasure about the public hearing locations and lack of public transportation availability
- 1 expressed concern about the energy consumption and greenhouse gas emissions associated with all build alternatives

Many of the comment submittals addressed multiple topics. The lead agencies have responded to each comment and topic individually and each comment received is presented next to the corresponding response in Appendix B of ROD1.

11.2 Agency and Business Coordination

CDOT has been coordinating with the NFRMPO, local governments, and business owners during the life of the project.

In 2013, elected officials from three counties and 14 communities along the northern I-25 corridor came together to form the I-25 Coalition. The goal of the coalition is to advocate for an additional lane on I-25. The I-25 Coalition holds monthly meetings. CDOT regularly attends meetings and provides frequent updates about all the improvements to I-25, and about this project specifically.

The NFRMPO is an association of 15 local governments. A representative of the NFRMPO Technical Advisory Committee is a member of the North I-25 design-build team and serves as a liaison between the local governments and CDOT. The NFRMPO receives updates about the project at strategic milestones.

Many Colorado municipalities and businesses are united in their support of this project and as a result, the following stakeholders have pledged their financial support to the project:

- Town of Berthoud
- City of Fort Collins
- Town of Johnstown
- Larimer County
- City of Loveland
- Town of Timnath
- Town of Windsor
- Weld County
- McWhinney Development

11.3 Public Involvement

CDOT is committed to providing opportunity for frequent and meaningful public input at every step of the process. CDOT has committed to foster open lines of communication, develop mutually beneficial relationships, and act in a responsive manner to all groups and individuals interested in this project.

The public has been afforded several opportunities to comment on the ROD4 Selected Alternative, including proposed mitigation measures, and FHWA worked with the public and agencies to avoid and minimize impacts. The distribution of the DEIS and FEIS documents provided the primary opportunity to inform the public on the proposed project and the environmental analysis associated with each identified alternative. Following the distribution of each document, a public comment period was provided. Further opportunities for public information and involvement include updated information provided on the CDOT website, and

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through public involvement activities that will be initiated during the design and construction phases.

A robust website is maintained that provides information about the North I-25 Corridor. The website provides fact sheets for the various projects and locations along I-25. The project has a dedicated email and hot-line voice mail where messages can be left for the project team. The project team promptly responds to messages. A Speaker's Bureau is available to provide a presentation about the project upon request.

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