









December 2011

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North I-25 Environmental Impact Statement Record of Decision

FHWA-CO-EIS-08-01-F

Federal Highway Administration

December 2011



STATUTE OF LIMITATIONS

- 2 This Record of Decision (ROD) will be published in the Federal Register, pursuant to 23
- ³ United States Code §139(I), indicating that the Federal Highway Administration has taken
- 4 the final action to approve Phase 1 of this transportation project; and future RODs may be
- 5 published for future phases of the transportation project. Claims seeking judicial review of
- 6 this Federal action must be filed within 180 days after the date of the notice.

7 INFORMATION AVAILABILITY

- 8 The following individuals may be contacted for further information regarding the North I-25 9 ROD:
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21 NORTH I-25 FINAL ENVIRONMENTAL

²² IMPACT STATEMENT AVAILABILITY

- ²³ The North I-25 Final Environmental Impact Statement (CDOT, August 2011) is available
- electronically at http://www.coloradodot.info/projects/north-i-25-eis or on CD-ROM. Please
 contact either of the individuals listed above to obtain a CD.
- DEVICED CECTION 4/E) EVALUATIO

REVISED SECTION 4(F) EVALUATION

- A *Revised Section 4(f) Evaluation* was completed in October 2011, and is incorporated into
- this ROD by reference. Please contact either of the above individuals to obtain a copy.
- 29



LIST OF ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
AM	morning
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
APCD	Air Pollution Control Division
APE	Area of Potential Effect
APEN	Air Pollution Emissions Notice
BMP	best management practice
BNSF	Burlington Northern and Santa Fe Railway
BRT	bus rapid transit
CAA	Clean Air Act
CBC	concrete box culvert
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
CER	Cost Estimate Review
CFR	Code of Federal Regulations
CO	carbon monoxide
CPW	Colorado Parks and Wildlife
CR	County Road
DIA	Denver International Airport
DRCOG	Denver Regional Council of Governments
E-470	Extended 470 (E-470 is an extension of C-470)
EIS	Environmental Impact Statement
EOC	Executive Oversight Committee
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GWRR	Great Western Rail Road
HOT	high-occupancy toll
HOV	high-occupancy vehicle



LIST OF ACRONYMS AND ABBREVIATIONS (CONT'D)

Interstate # (e.g., I-25)
Initial site assessment
Larimer County Road
least environmentally damaging practicable alternative
level of service
Migratory Bird Treaty Act
Materials Management Plan
memorandum of understanding
metropolitan planning organization
National Ambient Air Quality Standards
northbound
National Environmental Policy Act of 1969
North Front Range Metropolitan Planning Organization
National Register of Historic Places
Office of Archaeology and Historic Preservation
Division of Oil and Public Safety (Colorado Department of Labor and Employment)
Programmatic Agreement
Programmatic Biological Opinion
evening
particulate matter less than 10 microns in diameter
particulate matter less than 2.5 microns in diameter
Regional Air Quality Council
Regional Coordination Committee
Record of Decision
Regional Transportation District
Regional Transportation Plan
Colorado Senate Bill
southbound
State Highway
State Historic Preservation Officer



LIST OF ACRONYMS AND ABBREVIATIONS (CONT'D)

SIP	State Implementation Plan
STIP	Statewide Transportation Improvement Program
SWMP	Stormwater Management Plan
TAC	Technical Advisory Committee
TEL	tolled express lane
THPO	Tribal Historic Preservation Officer
TIP	Transportation Improvement Program
UFRRPC	Upper Front Range Regional Planning Commission
UPRR	Union Pacific Railroad
US #	United States Highway number (e.g., US 36)
USACE	U.S. Army Corps of Engineers
USDOI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
WCR	Weld County Road

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RECORD OF DECISION

2 A. BACKGROUND

The Federal Highway Administration (FHWA) and Colorado Department of Transportation 3 (CDOT) (the lead agencies) published a Notice of Intent to prepare an Environmental 4 Impact Statement (EIS) in 2003, in accordance with the Council on Environmental Quality 5 and FHWA regulations for implementing the National Environmental Policy Act of 1969 6 (NEPA), to identify and evaluate multi-modal transportation improvements along 7 approximately 61 miles of the I-25 corridor from the Fort Collins-Wellington area to Denver. 8 This Record of Decision (ROD) has been prepared in compliance with 23 Code of Federal 9 Regulations (CFR) 771 and 774, Council on Environmental Quality Regulations 40 CFR 10 1500-1508, and the requirements of NEPA, as amended. 11

In 2008, the lead agencies released a Draft EIS. After a comment period and consideration
 of public and agency comments received on the 2008 Draft EIS, CDOT engaged the two

14 stakeholder committees [the Technical Advisory Committee (TAC) and Regional

15 Coordination Committee (RCC)], in 2009 to participate in a collaborative decision-making

¹⁶ process with the lead agencies to identify a Preferred Alternative.

In August 2011, the lead agencies released a Final EIS. The Final EIS presents the final 17 evaluation of improvements and associated environmental and social impacts of the 18 alternatives evaluated including the Preferred Alternative and a fundable Phase 1 for the 19 NEPA process. The Final EIS is incorporated into this ROD by reference. Information about 20 its availability is included in this ROD on the back of the title page. The Final EIS describes, 21 in detail, the decision-making process and summarizes the analysis of considerations for 22 identifying the alternatives that were fully evaluated in the Final EIS, their impacts, and 23 ability to meet the Purpose and Need. In addition, the Final EIS includes an evaluation of 24 the potential impacts to Section 4(f) resources. The Section 4(f) Evaluation was 25 subsequently revised (October 27, 2011) as described in Section G of this document and is 26 incorporated herein by reference. Information about its availability is included in this ROD 27 on the back of the title page. Appendix A and Appendix B of the Final EIS also include a 28 full accounting of all comments received on the Draft EIS and the lead agencies' responses 29 to those comments. 30

As described in the Final EIS, the lead agencies intend to work toward implementing the 31 Preferred Alternative in its entirety. Due to current funding limitations and federal 32 requirements that require the project to be in the fiscally constrained Regional 33 Transportation Plans (RTPs) prepared by the Denver Regional Council of Governments 34 (DROCG), the North Front Range Metropolitan Planning Organization (NFRMPO), and the 35 Upper Front Range Regional Planning Commission (UFRRPC) before a decision document 36 can be approved, only a portion of the Preferred Alternative, Phase 1, can be selected for 37 implementation in this ROD. Subsequent phases or portions of phases can be implemented 38 as additional funding is identified and included in the fiscally constrained RTP(s), enabling 39 the lead agencies to work toward implementation of the entire Preferred Alternative. For 40 each subsequent phase or portion of a phase, a ROD will be issued detailing the phase to 41 be implemented. A phase may or may not be consistent with the phasing presented in the 42 Final EIS. However, any portion of the Preferred Alternative approved in a ROD must be 43 consistent with the fiscally constrained RTP(s). The lead agencies will review the information 44



provided in the Final EIS, current conditions, any changes that have occurred over time, this

- 2 ROD and any other RODs associated with the Preferred Alternative in preparing each
- ³ subsequent ROD.
- ⁴ This ROD is the final step in the NEPA process for Phase 1 of the Preferred Alternative.

B. BASIS FOR THE IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The Preferred Alternative was developed through a collaborative process among the lead 7 agencies and stakeholders to develop an effective transportation solution with long-term 8 broad support. A collaborative decision-making process was used to help the lead 9 agencies shape a Preferred Alternative that met the Purpose and Need and was 10 acceptable to stakeholders. A collaborative decision-making process was used because 11 of the benefits of broad community support and limited financial resources available for 12 transportation improvements in the region. Broad community support sets the stage for 13 local agency participation, partnerships, and commitment to implementation through 14 policies, zoning, adoption of complementary land use and transportation plans. Broad 15 community support is also more likely to attract funding. 16

B.1 DESCRIPTION OF PROCESS

A wide range of alternatives was initially developed that included multiple transit technologies on various feasible alignments and highway improvements on both existing and new alignments. The process of developing and screening alternatives took into account the following:

- State and federal requirements
- ²³ The Purpose and Need for the project
- > The reasonableness of an alternative
- Ability to avoid or minimize environmental impacts
- 26 The regional planning context
- Public input

A substantial proactive public and local agency involvement program was conducted to gather input to the alternatives development and evaluation process. This program included:

- Executive Oversight Committee (EOC). An EOC was established, consisting of
 representatives from the lead agencies (FHWA and CDOT) that met to determine policy
 decisions relating to the project. The Federal Transit Administration (FTA) was a part of
 the EOC until after the Draft EIS was released. At that point in time, their role on the
 project changed to a Cooperating Agency, so they no longer participated on the EOC.
 The EOC met at key project milestones.
- RCC. The RCC was established at the beginning of the project. It consisted of elected officials from the 45 municipalities and counties that chose to participate as well as Regional Transportation District (RTD) and the metropolitan planning organizations (MPOs) in the North I-25 regional study area. The RCC met about every other month



throughout the study. Between the Draft EIS and the Final EIS, the RCC meetings were combined with the TAC meetings and were held on an as-needed basis.

TAC. The TAC was established at the beginning of the project. It included staff
 representatives from the 45 municipalities and counties in the regional study area that
 chose to participate, as well as representatives from RTD, EPA, MPOs, and a number of
 state and federal resource agencies as described in Section 9.2.2, *Technical Coordination* of the Final EIS. The TAC met approximately monthly throughout the early

- ⁸ part of the study and every other month beginning in 2007 until the Draft EIS was
- released. Between the Draft EIS and the Final EIS, TAC meetings were combined with
 the RCC meetings and held on an as-needed basis.
- Project Website. A project website was established in 2004 and has been updated throughout the project.
- Newsletters. Seven issues of the NorthLink (prepared for this project) newsletter were
 prepared and distributed to a mailing list of 5,007 people. In addition, six issues of an
 electronic newsletter, E-Link, were e-mailed to an electronic mailing list of 1,632 people.
- > Public Meetings and Working Groups. To date, 33 public meetings or working group 16 meetings have been held; 11 in 2004, four in 2005, 12 in 2006, three public hearings 17 after the release of the Draft EIS, and three public hearings after the release of the 18 Final EIS, in addition to the TAC and RCC meetings. In addition, 45 interchange working 19 group meetings were held with adjacent property owners between spring and fall 2006 to 20 solicit input regarding interchange layout options. Eight transit station working group 21 meetings were held to solicit input regarding locations for bus and rail transit stations. In 22 2008, during the Draft EIS process, three public hearings were held to solicit comments 23 from the community. During development of the Final EIS, in 2009 and 2010, other 24 meetings were held to solicit input from the public, including targeted populations and 25 various city council meetings. The three Final EIS public hearings were held in 26 September 2011. 27
- Other Community Meetings. A total of 47 small group meetings were held to gather input from civic organizations, such as Kiwanis, Rotary, and Lions clubs, and other community groups. A total of 11 meetings were held specifically to solicit input about the EIS process from low income and minority groups.
- Community Events. Project representatives had booths or participated in a total of
 17 community events, such as the Taste of Fort Collins and the Milliken Beef and Bean
 Festival.

B.2 ALTERNATIVES CONSIDERED AND NOT SELECTED

An extensive process was undertaken to identify a range of alternatives that could be developed to meet the Purpose and Need of the project. A summary of the range of alternatives that was initially developed is included in **Section B.2.1** of this document. These alternatives were then screened and combined to produce two build packages, Package A and Package B, which were evaluated in the Draft EIS. The evaluation of these two packages, as well as input from the project's advisory committees and the public, was used to develop the Preferred Alternative.



Package A, Package B, and the Preferred Alternative, together with the No-Action

- 2 Alternative, are considered to represent the full range of all reasonable alternatives. All of
- 3 these alternatives were fully evaluated in the Final EIS.

4 **B.2.1 RANGE OF ALTERNATIVES INITIALLY CONSIDERED**

5 A range of alternatives was initially developed, from input received from the scoping

6 process as well as input from previous studies. The range of alternatives included

7 numerous different highway alignments, rail transit alignments, bus transit alignments,

⁸ different transit modes (such as light rail, high speed rail, personal rapid transit) and

different types of highway facilities (such as a robust frontage road system or double
 decking I-25). Each of these was subject to a screening process. Some were advanced to

decking I-25). Each of these was subject to a screening process. Some were advanced to future levels of development and screening, as discussed in the next sections and some

were screened out, primarily because they did not respond to the Purpose and Need of the

project. **Section 2.3**, *Other Alternatives Considered*, of the Final EIS contains more

information about these initial alternatives. A summary of that information is provided below.

15 Alternative Development

¹⁶ Initially more than 50 potential transportation improvements were considered. These

included a variety of bus and rail technologies, highway capacity improvements such as

18 widening I-25 or constructing a new facility parallel to I-25, congestion management

¹⁹ measures as well as bike and pedestrian improvements. Each improvement alternative was

20 initially subjected to a qualitative screening process then evaluated on a progressively more

21 detailed quantitative analysis.

22 Alternative Screening

²³ Most alternatives were retained through the Level One screening. Alternatives were

eliminated from further consideration that were not practicable for implementation based on

substantial faults related to cost, logistics, technology reliability or other characteristics that

made them unreasonable in the study area, for example, not meeting the project's Purpose

and Need.

Alternatives retained during Level One screening were subject to a more rigorous screening process in Level Two. This analysis was based on separating alternatives into categories by improvement type (highway general purpose lanes, truck lanes, high-occupancy vehicle (HOV), toll or HOT(high-occupancy toll) lanes, light rail, commuter rail, bus etc). This level of

- analysis concluded the following:
- Freeway alternatives along I-25 would provide the most potential to improve safety,
 accommodate growth in freight traffic, address aging infrastructure, and address mobility
 needs and therefore have the best potential to address the project's Purpose and Need.
 Freeway alternatives along I-25 were retained for additional evaluation.
- Variation in travel demand along the corridor indicated that some sections of I-25 might be adequately served by six lanes while others may require a wider, eight-lane cross section to address the mobility piece of the project's Purpose and Need. However, congestion on six or eight-lane freeway alternatives would eventually occur as a result of the population growth anticipated in northern Colorado. Managed lanes would provide the ability to mitigate congestion and maintain travel time reliability along the corridor.



- 1 They would provide long-term reliability as tolls and/or management policies can be 2 adjusted over time and relative to congestion to maintain reliable travel times.
- New highways had the greatest potential to adversely affect natural resources such as water quality, wetlands, wildlife and vegetation, especially those between US 85 and I-25. New arterials did not serve existing populations as well or comply with future land use plans. Express lanes had the least potential to adversely impact social and natural resources and would provide long term, reliable travel times. New highway alignments were dropped from further consideration because of their potential to adversely affect natural resources. Express lanes were retained for additional evaluation.
- Robust improvement on the highway alone would not meet the Purpose and Need. The
 Purpose and Need identifies the deficiency of transportation choices in northern
 Colorado and the need to provide a multimodal solution.
- Transit improvements alone would not address the safety, aging and functionally 13 obsolete infrastructure, and mobility needs identified in the project's Purpose and Need. 14 These needs contribute to the need for improvements on I-25. Even with the large 15 increases in population anticipated, the total number of trips between the North Front 16 Range and downtown Denver is small; therefore, although transit attracts a high 17 percentage of the trips, total ridership is relatively small. As a result, none of the transit 18 alternatives were recommended as stand-alone alternatives for implementation. 19 However, several of them were recommended for further consideration when packaged 20 with highway improvements. 21
- Both bus and passenger rail transit service would be more feasible where there are a
 greater number of large and dense communities that will benefit from the service; the
 land use patterns favor either a western or central alignment over an eastern alignment
 for that reason.
- Connections to FasTracks corridors increase mobility while decreasing capital costs and aid with mandatory coordination with the railroads.
- Commuter rail, which is typically used to serve medium to long distance intra-city trips,
 was found to have the most positive effect on economic and social resources when it
 was placed along a western alignment (the Burlington Northern and Santa Fe [BNSF] rail
 alignment generally paralleling US 287). For this reason, it was retained for additional
 evaluation.
- High-speed rail, which typically serves long distance intraregional trips, would not serve
 population centers in northern Colorado well and had the most potential to adversely
 impact natural resources. For these reasons, it was not retained for additional evaluation.
- Light rail, which typically serves short to medium distance intercity travel, had the least
 potential to impact environmental resources but did not meet the mobility needs identified
 in the project's Purpose and Need statement due to the long travel times. In addition, it
 would cost substantially more than other comparable technologies. For these reasons, it
 was not retained for additional evaluation.
- Although the congestion management strategies did not provide sufficient capacity either
 independently or as a group to meet the mobility needs identified in the project's Purpose
 and Need statement, several strategies were retained for future consideration to
 complement build alternatives. These include carpooling, vanpooling, telecommuting,
 ramp metering, and real-time transportation information.



- Ultimately, the Level Two Screening determined that neither transit nor highway
- ² improvements alone could be implemented as the sole improvement in the North I-25
- ³ regional study area to meet the project's Purpose and Need. As a result, transit and
- 4 highway improvements were packaged in Level Three Screening to evaluate how the
- ⁵ different transit and highway improvements would work together and to determine which
- 6 improvements would best address the project's Purpose and Need. Eight improvement
- 7 packages were developed and evaluated during Level Three Screening and are described
- 8 below in **Table 1**.



Package Number	Highway Improvements	Transit Improvements	Pros	Cons	Improvements Retained for Detailed Evaluation in EIS	
1	8 general purpose lanes SH 14 to E-470	Commuter bus service Fort Collins to Denver via Harmony and I-25 	 Least impact to resources, because much of the improvement could occur on existing right-of-way Fastest private auto travel time from Fort Collins to downtown Denver Lowest capital cost 	 Highest increase in vehicle miles of travel Second lowest increase in accessibility to economic and employment centers Fewest transit users 	 8 general purpose lanes for a portion of the corridor 	
2	Add two toll lanes in each direction between SH 14 and E-470	 Commuter bus service Fort Collins to Denver via Harmony and I-25 Fort Collins to Longmont via US 287 Greeley to Denver and DIA via US 85 and E-470 	 Second least increase vehicle miles of travel 	 Second highest hours of congestion in general purpose lanes Not as well utilized at HOT lanes 	 Commuter bus Greeley to Denver and DIA via US 85 and E-470 	
3	Add two HOT lanes in each direction between SH 14 and US 36	 Bus rapid transit (BRT) Fort Collins to Denver via Harmony and I-25 HOT lanes Commuter bus service Fort Collins to Longmont via US 287 Greeley to Denver via US 85 	 Fastest transit travel time from Fort Collins to downtown Denver Better utilized than Toll lanes or HOV lanes 	 Second highest capital cost 	 HOT lanes between SH 14 and US 36 BRT Fort Collins to Denver via Harmony and I-25 Commuter bus Greeley to Denver via US 85 	
4	Two limited access lanes and two general purpose lanes in each direction between SH 14 and E-470	Commuter bus service Fort Collins to Denver and DIA via Harmony, I-25 and E-470 	 Largest decrease in vehicle hours of travel 	 Second fewest transit users Comparable to eight general purpose lanes but higher capital cost 		
5	Three general purpose lanes and one express lane in each direction between SH 14 and US 36	 BRT service Fort Collins to Denver via Harmony and I-25 managed lanes Commuter bus service Fort Collins to Longmont via US 287 	 Fastest transit travel time from Fort Collins to downtown Denver Relatively high increase in accessibility to economic and employment centers 	 Second highest annual transit operating cost 	 Three general purpose lanes and one express lane in each direction between SH 14 and US 36 BRT service Fort Collins to Denver via Harmony and I-25 	
Nor	North I-25 FIS					

Table 1. Level Three Screening Summary



Table 1.	Level Three	Screening	Summary	(cont'd)
I ubic I.	Level Hince	ocicening	Summary	(come a)

Package Number	Highway Improvements	Transit Improvements	Pros	Cons	Improvements Retained for Detailed Evaluation in EIS
5 (cont'd)		 Greeley to Denver via US 85 			 Commuter bus Greeley to Denver via US 85
6	Three general purpose lanes in each direction SH 14 to E-470	 Central commuter rail Fort Collins to Longmont and Thornton generally along I-25 and SH 119 	 Relatively high percentage of transit market share captured 	 Relatively high private auto travel time Second highest annual transit operating cost Relatively high miles of congestion than the first five alternatives Lowest increase in accessibility to economic and employment centers 	 Three general purpose lanes in each direction SH 14 to E-470
7	Three general purpose lanes in each direction SH 14 to E-470	 Western commuter rail Fort Collins to Longmont along the BNSF Commuter bus service Greeley to Denver and DIA via US 85 and E-470 	 Most increase in accessibility to economic and employment centers Captures largest share of work trips on transit Second lowest capital cost 	 Second highest cost per new trip 	 Three general purpose lanes in each direction SH 14 to E-470 Western commuter rail Commuter bus Greeley to Denver and DIA via US 85 and E-470
8	Add one HOV lane in each direction between SH 14 and US 36	 Western commuter rail Fort Collins to Longmont and Thornton along the BNSF, SH 119, and I-25 Bus rapid transit Fort Collins to Denver via Harmony and I-25 HOT lanes Commuter bus service Greeley to Denver and DIA via US 85 and E-470 	 Fastest transit travel time from Fort Collins to downtown Denver Most increase in accessibility to economic and employment centers in the study area Least increase in vehicle miles of travel Most NFR transit users 	 Most miles of congestion and hours of congestion between SH 14 and E-470 Most hours of congestion in general purpose lanes Smallest decrease in vehicle hours of travel Highest capital and annual operating cost Highest cost per new trip Most potential impacts to resources 	 Western commuter rail Bus rapid transit Fort Collins to Denver via harmony and I-25 Commuter bus Greeley to Denver and DIA via US 85 and E-470



1 Package Evaluation

2 Each package was evaluated on its ability to address the project's Purpose and Need and

its potential to impact environmental resources. The results of the package evaluation are summarized below.

 Limited access lanes would provide capacity comparable to eight general purpose lanes but would not be as well utilized and would cost more than general purpose lanes. Capital cost for the limited-access lanes was \$1.44 billion. The comparable eight general purpose lanes were \$1.10 billion. Limited access lanes were dropped from further consideration because they would not be utilized as well and would cost more than the comparable eight-lane cross section. Where needed to provide acceptable operation, eight general purpose lanes was retained in Package A.

For managed-lanes, two barrier-separated lanes may be necessary along sections of the corridor but a single buffer-separated lane in each direction provides adequate capacity along much of the corridor and costs less than a barrier-separated section. Managed lanes were retained for further evaluation in Package B because they could reduce future congestion, improve mobility, address aging infrastructure and safety needs identified in the project's Purpose and Need.

- Of the managed-lane alternatives, the tolled express lanes (TELs; also known as HOT 18 lanes) would provide the most congestion relief and would have the highest utilization. 19 Other managed lane alternatives that were considered, but eliminated, were HOV lanes 20 and toll lanes. HOV lanes would experience seven to 14 miles of congestion in the PM 21 peak hour northbound and southbound, respectively in 2035. A comparable six general 22 purpose lane cross section would have about half as much congestion. TELs provide the 23 ability to manage demand and travel time reliability along the corridor for the I-25 express 24 bus service, HOV, and toll paying users. TELs would provide long-term reliability as tolls 25 can be adjusted over time and relative to congestion to maintain reliable travel times 26 within the TELs. HOV only and Toll only lanes were dropped from further consideration 27 because they did not address the mobility needs as well as the comparable HOT lane 28 alternative. HOT lanes were retained for further evaluation in Package B and the 29 Preferred Alternative. 30
- Western commuter rail attracted similar ridership as well as transit market share to
 Denver when compared to central commuter rail, but the transit elements cost less and
 attracted more riders to Boulder. For these reasons, Western commuter rail was retained
 as part of Package A and included in the Preferred Alternative; the central commuter rail
 alignment was dropped from further consideration because it did not address the largest
 northern Colorado travel patterns, was more expensive than the comparable western rail
 alignment and was not as compatible with northern Colorado communities' land use
 plans.
- I-25 bus rapid transit (BRT) attracted 30 percent fewer riders than rail alternatives but
 also cost about 80 percent less and therefore BRT along I-25 was retained for evaluation
 in the EIS as part of Package B. A reduced BRT transit service, called express bus, was
 included as part of the Preferred Alternative. The service was reduced slightly because it
 was paired with a reduced commuter rail service on the western alignment.

Of the three commuter bus alignments considered (US 287, I-25 and US 85), the I-25 alignment attracted the least ridership. Commuter bus on US 85 attracted the highest ridership of the alignments evaluated. Commuter bus service on US 287 attracted the



- least of all the transit components. Therefore, the US 287 and I-25 commuter bus 1 alignments were dropped from further consideration, but commuter bus service along 2
- US 85 was retained for evaluation in Package A and the Preferred Alternative. 3
- When transit elements along I-25 are combined with transit service along US 85 or 4 US 287, each service attracts fewer riders. Though overall ridership could increase, it 5 was determined that to maintain maximum ridership and efficiency on any one transit 6 line, transit service should be offered on I-25 only or on the BNSF and US 85 corridors 7 only. 8
- In summary, the following improvements were retained for additional evaluation in the EIS: 9
- General purpose lanes on I-25 10
- TELs on I-25 (high occupancy/toll lanes) 11
- Commuter rail western alignment 12
- BRT on I-25 13
- Commuter bus on US 85 14

Packaging Alternatives for Evaluation in EIS 15

Packaging alternatives together began by ensuring that highway capacity needs would be 16

met because any combination of transit services was found to not reduce I-25 volumes 17

enough to meet 2035 demand without additional highway improvements. Similarly, highway 18

improvements alone would not address the project's multi-modal Purpose and Need. 19

Based on the evaluation of modes and alignments, commuter rail service along the 20

BNSF rail line performed well and was paired with general purpose highway 21

improvements. For equity throughout the regional study area, commuter bus service 22

along US 85 with end points of both downtown Denver and Denver International Airport 23

(DIA) was added to this package of improvements. I-25 transit improvements were not 24

included in this package of improvements because the proximity of the three services 25 would reduce ridership on each line and therefore reduce the overall cost effectiveness. 26

This combination of improvements is Package A. 27

BRT was optimized by utilizing TELs on I-25. The use of these semi-exclusive lanes, that 28 have less congestion, result in more reliable travel and faster travel times for the BRT 29

service. In order to directly serve the communities which are offset from the interstate, 30

BRT service on mixed-use lanes to Fort Collins and Greeley was provided. BRT 31

destinations include both DIA and downtown Denver. This combination of improvements 32

is Package B. 33

A third alternative was developed through a collaborative decision making process with 34

the project's two advisory committees. The process considered input received from the 35

- public and the results of the Draft EIS evaluation of Packages A and B. The third 36
- combination is referred to as the Preferred Alternative and was evaluated in the Final 37
- EIS. It combines commuter rail service along the BNSF with tolled express lanes along 38
- I-25. Express Bus would travel on I-25 in the TELs and commuter bus would operate on 39
- US 85. To minimize the impact of competition between transit lines on the three parallel 40 corridors (I-25, BNSF and US 85) the service provided along each line was reduced
- 41



- Packages A and B. These reductions helped to maintain a comparable level of cost
- ² effectiveness. This package of improvements is the Preferred Alternative.
- 3 These three build alternatives along with the No-Action Alternative package represent
- 4 the full range of all reasonable alternatives and were fully evaluated in the EIS.

5 **B.2.2 NO-ACTION ALTERNATIVE**

The No-Action Alternative (see **Figure 1**) would include those transportation projects that 6 have not been built, but for which funding has been committed, including the two FasTracks 7 corridors. The bridge over I-25 at 84th Avenue is currently being reconstructed as part of a 8 separate project expected to be completed in 2012. The I-25/SH 392 interchange will also 9 be reconstructed as part of a separate project. Construction on this interchange has started 10 and is expected to be completed in 2012. In addition, CDOT will be replacing the I-25 11 frontage road bridge over the Little Thompson River as separate project, for safety reasons. 12 This separate project was initiated because an inspection conducted in 2008 found advance 13 deterioration of the bridge superstructure, floor beams, and stringers, resulting in a structure 14 sufficiency rating of 45.3 (in the "poor" category). A separate action request for replacement 15 of this bridge was submitted by CDOT, and FHWA concurred on November 21, 2011. The 16 No-Action Alternative also would include replacement of pavement on I-25, installation of 17 signals at five interchange ramp termini, and widening of I-25 off-ramps at the 18 Prospect/I-25 interchange. 19

20 **B.2.3 PACKAGE A**

Package A (see Figure 2) would include adding one additional general purpose lane on 21 I-25 in each direction, for a total of six lanes from SH 66 to SH 14 (plus auxiliary lanes 22 between Harmony Road and SH 60) and a total of eight lanes from E-470 to SH 52. 23 Interchange reconstructions would be included. Package A also includes a double-tracked 24 commuter rail line using the existing BNSF railroad track plus adding one new track from 25 Fort Collins to downtown Longmont. The new second track was eliminated for a 500-foot 26 segment of the corridor in Loveland to avoid the historic Loveland Depot and also adjacent 27 to a historic residential property at 122 8th Avenue in Longmont. In these two locations, this 28 would result in bi-directional service along the existing single-track BNSF line near the 29 proposed Loveland station and adjacent to the residential property in Longmont. 30

Also included in Package A would be a new double-tracked commuter rail line that would 31 connect Longmont to the FasTracks North Metro end-of-line station in Thornton. Because 32 Package A commuter rail includes a double-tracked system, a parallel maintenance road 33 would not be needed. Maintenance access would be provided by the second track. 34 Package A also would include nine commuter rail stations and a commuter rail maintenance 35 facility, a commuter bus maintenance facility and feeder bus routes along five east-west 36 routes, and commuter bus service along US 85 between Greeley and downtown Denver 37 and along E-470 from US 85 to DIA. 38









Figure 2. Package A





B.2.4 PACKAGE B

2 Package B (see Figure 3) would include adding one buffer-separated TELs to I-25 except

³ for the section between SH 60 and Harmony Road, where two barrier-separated TELs

4 would be added. TELs would extend from SH 14 to just north of US 36 in Thornton. TELs

would be used by HOVs for free, by single-occupancy vehicles if they pay a toll, and by
 buses. Interchange reconstructions would be included. Package B would also provide a

buses. Interchange reconstructions would be included. Package B would also provide a
 BRT system including 12 bus stations providing service along I-25, along US 34 into

6 Greeley, and along Harmony Road into Fort Collins. Along US 34 and Harmony Road, the

9 buses would travel in mixed traffic. Package B also would include a bus maintenance facility

and feeder bus routes along five east-west streets. In addition, bus service would be

11 provided along E-470 from I-25 to DIA.



1 Figure 3. Package B









B.3 BASIS FOR IDENTIFICATION OF THE PREFERRED ALTERNATIVE

2 The Preferred Alternative was identified based on the Purpose and Need. In addition to

³ meeting the elements of the Purpose and Need, a number of other factors support

4 identification of the Preferred Alternative. These other supporting factors included land use,

5 system benefits, livability, and cost. Each new or revised element of the Preferred

6 Alternative has been carefully considered and either has the same or reduced impacts

7 compared to the comparable element of Package A or Package B analyzed in the Final EIS

8 or creates only minor new impacts. The following discussion characterizes the ability of all

9 the alternatives to meet the Purpose and Need and other factors supporting the

¹⁰ identification of the Preferred Alternative.

Chapter 2, *Alternatives*, of the Final EIS and **Section B.2** of this document describe the other action alternatives that were considered.

13 **B.3.1 PURPOSE AND NEED**

The Preferred Alternative meets the project Purpose and Need to a greater extent than the other two build alternatives.

16 B.3.1.1 Need to Address the Increased Frequency and Severity of Crashes

All three build alternatives have been designed to be safe. All three build alternatives would 17 reduce the frequency and severity of crashes on I-25, when compared to the No-Action 18 Alternative. Considering only I-25 in 2035, Package B would result in fewer crashes 19 (4,061 average per year) than the Preferred Alternative (4,399) and fewer average crashes 20 per vehicle miles traveled (VMT) (1.32) than the Preferred Alternative (1.37). However when 21 considering the entire regional system, the Preferred Alternative has the greatest reduction 22 of crashes because of the reduced daily VMT on arterials compared to Package A or 23 Package B. This reduced VMT is a result of the higher capacity provided by the Preferred 24 Alternative on I-25 making I-25 a more attractive route than the adjacent arterial network. 25 The crash rate on arterials is higher than the crash rate on access controlled facilities such 26 as I-25. This results in improved safety under the Preferred Alternative for the entire 27 regional transportation system because of the transfer of VMT from arterials to I-25. 28

The Preferred Alternative would result in 11 average annual transit injuries compared to Package A and Package B, which would have 8 and 24 average annual injuries on transit, respectively. Package A would result in the fewest transit injuries per 1,000 revenue hours of service at 0.15; the Preferred Alternative is very similar with 0.16 injury per 1,000 revenue hours of service. Package B would result in the highest transit injury rate at 0.32 injury per 1,000 revenue hours of service.

B.3.1.2 Need to Address the Increasing Traffic Congestion on I-25, Leading to Mobility and Accessibility Problems

³⁷ The Preferred Alternative provides the most efficient operations for I-25 compared to

- ³⁸ Packages A and B. A comparison of the traffic elements of the mobility portion of the
- ³⁹ Purpose and Need demonstrates that the Preferred Alternative provides the highest benefit:



- Its remaining congested miles on I-25 general purpose lanes in the evening (PM) peak
 hour would be noticeably less at 17 miles, compared to 45 miles with Package B and
 44 miles with Package A in 2035.
- In the morning (AM) peak hour, its remaining congested miles on general purpose lanes are only 11, compared to 30 with Package B and 16 with Package A in 2035.
- In 2035, it has the fewest number of interchange ramp merge/diverge locations operating at LOS E or F. The Preferred Alternative would have 13 of these in the AM peak period and 26 in the PM. Package B would have 34 in the AM and 52 in the PM. Package A would have 30 in the AM and 34 in the PM.
- It has the fastest highway travel time from SH 1 to 20th Street in the general purpose
 lanes (107 minutes compared to 117 minutes with the other two alternatives in 2035).
- It has the fastest travel time from SH 1 to 20th Street in the tolled express lanes in 2035 (64 minutes compared to 65 minutes with Package B and 102 minutes with Package A, which only uses a short section of existing tolled express lanes in the Denver metro area and the remaining trip is in general purpose lanes).
- It provides the most travel choices on I-25 allowing a motorist to pay a toll or carpool to
 avoid congestion, or choose to travel toll free in the general purpose lanes, or choose
 express bus.
- It has the fastest bus transit service from the South Transit Center to 20th Street at
 63 minutes for an express bus, compared to 70 minutes for BRT with Package B.
- Similar to Package B the tolled express lanes provide an opportunity to maintain reliable travel time for buses, HOVs and toll paying users in perpetuity.
- Because the Preferred Alternative would have the best level of service in the general purpose lanes, it would have the best overall mobility for freight traffic.
- It would serve the highest number of users on I-25 at over 990,000 users (number of vehicles entering this length of I-25 multiplied by vehicle occupancy. See Section 4.2.5, *Highway Users,* of the Final EIS for an explanation of the calculation).
- It captures the second highest percentage of transit market share between the northern front range area and the downtown Denver Central Business District at 50 percent in 2035. Package A captures the highest percentage at 55 percent and Package B
 captures 45 percent.
- It has the second highest ridership with 6,500 daily riders while Package B captures the highest ridership at 6,800 daily riders as a result of its frequent and robust BRT service.
 Package A captures the fewest riders with 5,850 daily.
- Regional vehicle hours of travel are the least with the Preferred Alternative at 1.68 million
 compared to 1.69 million with Package B and 1.70 million with Package A in 2035.
- It produces the highest amount of vehicle miles of travel at 52.81 million as a result of its
 higher capacity than the other two packages. Package B produces the least amount of
 regional VMT at 52.62 million and Package A produces 52.76 million.
- Its regional average speed (including freeways and other facilities) in 2035 is the highest
 (31.4 miles per hour) compared to 31.1 with the other two build alternatives—a notable
 increase considering the magnitude of the number of miles and number of hours in the
- region used to calculate average miles per hour.



B.3.1.3 Need to Replace Aging and Functionally Obsolete Infrastructure

² The Preferred Alternative and Package B both provide the most new structures which

replace aging structures: 94, compared to 87 with Package A. All of the alternatives would replace all of the pavement that has exceeded its useful life.

5 **B.3.1.4** Need to Provide Modal Alternatives

6 The Preferred Alternative provides the most opportunity for improved mode choice 7 throughout the regional study area. In addition, it allows the ability to implement transit

8 service with minimal initial infrastructure investment. Overall the Preferred Alternative

⁹ addresses this element of Purpose and Need in the following ways:

- The Preferred Alternative would provide the most opportunity to use multiple modes of travel, since two or more modes would be provided along three separate corridors: commuter rail would be provided on the US 287 corridor; express bus and carpooling on TELs on I-25; and commuter bus service would be provided on US 85. Package A would provide multiple modes on only two corridors and Package B would provide multiple modes on only one corridor.
- The express bus service provided as a part of the Preferred Alternative could be fairly
 easily implemented and implemented in phases, providing near term multimodal options
 to commuters traveling the North I-25 and US 85 corridors. BRT service provided as a
 part of Package B would be harder to implement in phases because stations are located
 in the median, requiring reconstruction of I-25.
- Given the uncertainty of the schedules for the FasTracks North Metro and Northwest Rail
 corridors, express bus service provided as a part of the Preferred Alternative could
 provide an additional mode choice that would first supplement and then complement the
 FasTracks commuter rail corridors.
- It would attract the highest level of special event ridership (transit trips to sporting events, the theater and other activities in downtown Denver), due to the range of transit options that can be accessed for these discretionary trips.

28 **B.3.2** OTHER SUPPORTING FACTORS

In addition to meeting the elements of the Purpose and Need, a number of other factors
 support identification of the Preferred Alternative. These other supporting factors include

land use, system benefits, livability, and cost. These are described below.

32 Land Use

³³ The three build alternatives meet the goals of the community land use plans to varying

³⁴ degrees. Western communities generally have a desire to revitalize and concentrate growth

- in the central core areas of their towns. This goal is reflected in the master plans for Larimer
- County and the cities of Fort Collins, Loveland, Berthoud and Longmont. Some of these
- 37 same communities are also supporting development along the I-25 corridor in addition to
- ³⁸ within the core areas generally along the US 287 corridor. The eastern communities,
- ³⁹ although more dispersed, also have goals to revitalize growth along US 85.



- 1 The Preferred Alternative provides transit services along all three major corridors. The
- 2 location of new transit stations, particularly for commuter rail and to a lesser extent for
- express bus and commuter bus, will focus growth in proximity to the station. This will help
- 4 communities realize plans for downtown redevelopment or higher density, mixed use
- ⁵ development. For this reason, it best supports the land use goals of the communities.
- ⁶ While Package A also includes commuter rail along the BNSF corridor thus supporting the
- 7 western communities land use plans and commuter bus along the US 85 corridor, it does
- 8 not support goals for higher density, mixed use development along I-25 because it provides
- ⁹ no transit service along I-25.
- ¹⁰ Package B focuses all improvements along I-25 and therefore does not support land use
- goals of revitalizing downtown areas within the western communities or along US 85.
- Package B could have a detrimental effect on downtown areas, tending to pull growth away
- from them and focusing it along I-25.

14 System Benefits

- ¹⁵ There are a variety of system benefits: regional connectivity, regional safety, and travel
- reliability. An assessment of the three build alternatives demonstrates the difference among
- 17 system benefits.

18 Regional Connectivity

- Regional connectivity to the greater Denver metropolitan transportation system is most
 improved with the Preferred Alternative. The Preferred Alternative:
- Connects to two planned RTD rail lines serving Denver Union Station as a hub for the
 entire metropolitan area.
- Extends the managed lane facility on I-25 from US 36 to the northern Colorado communities increasing travel options and improving travel reliability.
- Provides commuter bus service on US 85 connecting the eastern communities to the
 RTD transit system thereby increasing connectivity to employment and activity centers in
 the Denver metro area.
- Provides reliability through inclusion of multiple transit lines connecting the northern
 Colorado communities to the Denver metropolitan area.
- ³⁰ Provides multiple avenues to expand transit service as demand warrants.
- Package A connects to the two RTD rail lines; but does not extend the managed lane facility north from US 36.
- ³³ Package B extends the managed lane north from US 36. However, it does not provide any
- connection to the RTD rail lines nor does it improve the multimodal connections on US 85.
- ³⁵ Package B focuses all of the improvements along I-25 and therefore has less system wide
- 36 benefits.

37 Regional Safety

- Regional safety is improved the most with the Preferred Alternative. Accident rates are
- ³⁹ higher on the arterial street system than on controlled access facilities. Under the Preferred
- ⁴⁰ Alternative VMT on the arterial system is less than the other two build alternatives.



- 1 Therefore, there will be fewer system wide crashes with the Preferred Alternative compared
- to Package A and Package B. For the same reason, the Preferred Alternative will result in
- ³ less congestion on the arterial system.
- ⁴ Package A and Package B also reduce travel on the arterial network but to a lesser degree.

5 Travel Reliability

- ⁶ The Preferred Alternative also provides reliable travel times through 2035 and beyond
- 7 because of the inclusion of both commuter rail and the managed lanes. The commuter rail
- is not affected by highway congestion or inclement weather. Managed lanes can also
- ⁹ maintain a high level of service through pricing and vehicle occupancy requirements. In
- 10 contrast, travel time reliability is not guaranteed on general purpose lanes beyond 2035.
- Package A offers travel time reliability through the commuter rail system but not on the
- highway. In contrast, Package B offers travel time reliability only on the managed lanes.

13 Livability

- Livability concepts refer to the synergy between transportation, land use and the
- environment. A livability evaluation of the three build alternatives accounts for the mobility
- issues surrounding transit dependent populations, the need for sustainable land use
- 17 patterns, potential higher fuel prices, decreased availability of fossil fuels, and green house
- gas emissions. The three alternatives address these concepts to varying degrees.
- ¹⁹ The Preferred Alternative provides the greatest mix of transportation improvements in
- support of the livability concepts. In addition to traditional highway travel, the Preferred
- Alternative provides choices including commuter rail, commuter bus, express bus,
- carpooling, vanpooling, and tolled travel options. The livability concepts are addressed
- through the depth of alternative modes offered by the Preferred Alternative. In addition,
- these modal alternatives support the goals of the land use plans across the regional study
- 25 area.
- Package A also provides commuter rail and commuter bus travel options. However, it only
- provides general purpose lanes on I-25 and therefore does not provide an incentive for
- carpooling and vanpooling. In addition, it is geographically more limited than the Preferred
- 29 Alternative for accessibility to transit dependent users.
- ³⁰ Package B provides advantages for using express bus service, carpooling, and vanpooling
- via the managed lanes. All of these improvements are focused on I-25 and is therefore far
- more geographically limited than Package A and the Preferred Alternative. This limits
- accessibility for the transit dependent population and requires more supporting transit
- 34 service be provided by the local communities feeding the BRT on I-25. In addition, it does
- not support goals for land use plans of the western and eastern communities.
- ³⁶ Energy consumption is a key livability concept. Over time (after 2035) it would be expected
- that the rail components of Package A and the Preferred Alternative would provide more
- ³⁸ options for lower energy consumption because train capacity could be readily expanded.
- ³⁹ The transit stations associated with the rail would serve as a stimulus to transit oriented
- development. This is also true of the Package B BRT stations along I-25 but to a lesser
- degree. This transit oriented development would potentially reduce energy consumption due
- to mixed use and higher density development, which would reduce trips.



1 Cost

- 2 A tabulation of costs for the three build alternatives shows that the Preferred Alternative
- 3 costs more than the other two build alternatives. Package A capital cost is \$1.96 billion,
- ⁴ Package B capital cost is \$1.72 billion and the Preferred Alternative is \$2.18 billion.
- 5 However, the Preferred Alternative provides benefits that the other two alternatives do not.
- 6 The Preferred Alternative:
- 7 Better improves regional safety compared to the other two build alternatives.
- 8 Reduces congestion more effectively than Package A or Package B.
- Is similar to the other alternatives in replacing aging and obsolete infrastructure.
- 10 Is superior to the other alternatives in providing modal options.
- Better addresses goals of the land use plans in the northern Colorado communities.
- Achieves system wide benefits that Package A and B do not provide such as regional connectivity and travel reliability.
- Better supports livability concepts than Package A and Package B by providing a more comprehensive multimodal system of transportation improvements.

16 **B.3.3 ENVIRONMENTAL IMPACTS**

17 **Table 2** summarizes the social and environmental consequences that would result from the

- No-Action Alternative and the three build packages (Package A, Package B, and the
 Preferred Alternative).
- 20 The Preferred Alternative has been determined to cause the least overall harm to

21 Section 4(f) properties based on the definition contained in 23 CFR 774.3(c)(1). The

22 Preferred Alternative is the most responsive to land use goals of stimulating growth around

transit stations, since 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 Preferred
- ²⁵ Alternative to conserve energy and reduce air 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 Preferred Alternative also has the least impact to aquatic resources, including
- wetlands, other jurisdictional waters, aquatic habitat, and impacts to Preble's meadow
- 30 jumping mouse habitat.



Table 2.Summary of Direct and Indirect Impacts

No-Action Alternative	Package A	Package B	Preferred Alternative					
	Land Use and Zoning							
 Growth would continue to occur largely on undeveloped agricultural land at the fringe of the regional study area's urbanized areas. Development would likely be pushed towards outlying areas to avoid I-25 congestion, which would hasten the conversion of agricultural land. The more dispersed development pattern would result in greater land consumption and a broader potential impact to the regional study area's environmental resources. Continuation of leap-frog type growth practices in southern portions of the regional study area east of I-25 would further fragment remaining agricultural lands. 	 Under Package A, commuter rail would shift growth towards urban centers, especially in Fort Collins. Longmont would increase in density and size. Feeder bus routes along east-west corridors designed to serve commuter rail stations could also stimulate increased levels of development. Improvements to existing interchanges could stimulate some growth, but not as would be the case if completely new interchanges were proposed. 	 BRT along I-25 would provide less incentive for transit-oriented development than commuter rail. Market-driven growth would continue to be focused along I-25. Communities west of I-25 would continue to expand towards the east. Some concentration of growth could occur near BRT stations along I-25. Improvements to existing interchanges would have the same impacts as Package A. 	 Under the Preferred Alternative, commuter rail would shift growth towards urban centers, especially in Fort Collins. Longmont would increase in density and size. Feeder bus routes along east-west corridors designed to serve commuter rail stations could also stimulate increased levels of development. Improvements to existing interchanges would have the same indirect impacts as Package A and Package B. Because they are off to one side of the interstate, the express bus stations are more likely to attract new development to that side of the interstate. 					



Table 2. Summary of Direct and Indirect Impacts (cont'd)

No-Action Alternative	Package A	Package B	Preferred Alternative			
Social Conditions						
Potential direct and indirect impacts on communities caused by traffic congestion and impaired mobility would include: Increased air emissions and noise. Longer travel times. Traffic queues at key interchanges. Neighborhood traffic intrusion. Deteriorating safety conditions. Lengthened emergency response times.	 Adverse impacts associated with Package A would include: Relocation of 59 residences. Increased noise and vibration, out-of- direction travel, and travel time delays associated with commuter rail. Air emissions and visual impacts to residents near carpool lots, commuter rail, transit stations, bus stations, and maintenance facilities. Exacerbated "barrier effect" in Fort Collins, Loveland, Berthoud, and Longmont. Temporary construction-related impacts, such as noise, dust, out-of- direction travel, and travel-time delays. Potential re-distribution of population in response to highway capacity or transit improvements. Beneficial impacts associated with Package A would include: Regional connections between communities. Improved mobility for transportation- disadvantaged populations. 	 Adverse impacts associated with Package B would include: Relocation of 24 residences. Increased noise, air emissions, and visual impacts to residents near frontage roads, parking lots, bus routes, transit stations, and maintenance facilities. Temporary construction-related impacts such as noise, dust, out-of-direction travel, travel-time delays, and access revisions. Beneficial impacts associated with Package B would include: Regional connections between communities. Overall improvements in safety, mobility, and emergency response, but no improvements in emergency response where toll lanes are barrier-separated. Moderate improvements in mobility for transportation-disadvantaged populations. 	 Adverse impacts associated with the Preferred Alternative would include: Relocation of 49 residences. Increased noise and visual impacts. Out-of-direction travel, and travel time delays associated with commuter rail. An increase in air emissions [though below National Ambient Air Quality Standards (NAAQS)]. Air emissions and visual impacts to residents near carpool lots, commuter rail, transit stations, bus stations, and maintenance facilities. An exacerbated barrier effect for communities located along the commuter rail alignment (although, to a lesser degree than Package A). Temporary construction-related impacts, such as noise, dust, out-of-direction travel, and travel-time delays. Potential re-distribution of population in response to highway capacity or transit improvements. Beneficial impacts associated with the Preferred Alternative would include: Enhanced regional connections between communities. Improvements in mobility, safety, and emergency response. Improved mobility for transportation- disadvantaged populations. 			



Table 2.	Summary	of Direct and	Indirect Imp	oacts (cont'd))
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No-Action Alternative	Package A	Package B	Preferred Alternative					
Social Conditions (cont'd)								
Environmental Justice Adverse effects (highway noise) to minority residents of the Mountain Range Shadows subdivision would exceed those experienced by the general population. However, the increase in noise level would be very small and would not be noticeable to most people. Low-income and minority populations would not receive more severe impacts than non low-income and minority populations. The No-Action Alternative would not provide local communities with the accessibility benefits associated with transit services.	 Environmental Justice Adverse effects to minority and low- income residents associated with Package A include: Of the 35 residential relocations required for the commuter rail component, 16 are in areas that contain minority and/or low-income populations, all in Longmont. There would also be visual impacts, and the potential for community disruption. There is no evidence these impacts would be disproportionately high and adverse due to mitigation commitments and offsetting benefits. Beneficial impacts associated with Package A would include: Commuter rail would improve access to community facilities, provide broader opportunities for employment, facilitate participation in regional social and cultural events, promote interaction between communities, and stimulate business activity. Express bus and commuter bus transit would result in moderate improvements in mobility and would improve regional connectivity. Safety and emergency response time would improve. Shoulders and sidewalks would better accommodate bicycle and pedestrian travel 	 Environmental Justice Adverse effects to minority and low-income residents associated with Package B would include: Relocation of 7 residences in minority and low-income areas. There is no evidence these impacts would be disproportionately high and adverse due to mitigation commitments and offsetting benefits. Beneficial impacts associated with Package B include: Short-term and long-term employment opportunities would occur during the construction of the facilities as well as their ongoing operation and maintenance. Transit components would result in moderate improvements in mobility and would improve regional connectivity. Minority and low-income populations are concentrated around transit improvements and would better accommodate bicycle and pedestrian travel. Impacts to minority and low-income populations associated with all other components of Package B would not exceed those experienced by the general population. 	 Environmental Justice Adverse effects to minority and low-income residents associated the with Preferred Alternative include: Of the 18 residential relocations required for the highway improvements, 5 are in areas that contain minority and/or low-income populations. Of the 31 residential relocations required for the commuter rail component, 14 are in areas that contain minority and/or low-income populations, all in Longmont. In Longmont, there would be noticeable visual impacts; however, less than Package A and there is no evidence these impacts would be disproportionately high and adverse due to mitigation commitments and offsetting benefits. Beneficial impacts associated with the Preferred Alternative would include: Commuter rail would improve access to community facilities, provide broader opportunities for employment, facilitate participation in regional social and cultural events, promote interaction between communities, and stimulate business activity. Express bus and commuter bus transit would result in moderate improvements in mobility and would improve regional connectivity. Safety and emergency response time would improve. Short-term and long-term employment opportunities as well as their ongoing operation and maintenance. 					


No-Action Alternative	Package A	Package B	Preferred Alternative
	Social	Conditions (cont'd)	
	 Minority and low-income populations are concentrated around transit improvements and would benefit from the transit-related components. Impacts to minority and low-income populations associated with all other components of Package A would not exceed those experienced by the general population. 		 Shoulders and sidewalks would better accommodate bicycle and pedestrian travel Minority and low-income populations are concentrated around transit improvements and would benefit from the transit-related components. Impacts to minority and low-income populations associated with all other components of the Preferred Alternative would not exceed those experienced by the general population.
	Eco	nomic Conditions	
 Would not require relocation of any existing businesses. Would be no loss to property tax base and revenues. Would be increasingly difficult to access businesses. Future economic growth would most likely concentrate along the I-25 corridor and in the southern end of the regional study area. 	 Adverse impacts associated with Package A would include: Relocation of 33 businesses. \$5,079,960 loss in the tax base and \$150,290 loss of tax revenues. Temporary construction-related detours, delays, and out-of-direction travel. Temporary impacts to existing freight operations during construction. Beneficial impacts associated with Package A would include: Potential for long-term growth of property tax base and revenues as a result of transit-oriented development. Some access revisions; transit would improve access to businesses and expand employment opportunities. Creation of 10,800 temporary jobs over the six-year construction period; permanent employment created by 	 Adverse impacts associated with Package B would include: Relocation of 16 businesses. \$2,814,220 loss in the tax base and \$88,720 loss of tax revenues. Temporary construction-related detours, delays, and out-of-direction travel. Temporary impacts to existing freight operations during construction. Beneficial impacts associated with Package B would include: Some potential for long-term growth of property tax base and revenues as a result of transit- oriented development. Some access revisions; transit would improve access to businesses and expand employment opportunities. Creation of 10,200 temporary jobs over the six-year construction period; permanent employment created by transit operation and maintenance 	 Adverse impacts associated with the Preferred Alternative include: Relocation of 22 businesses. The loss in tax base would be approximately 17% less than Package A and approximately 1% more than Package B. Temporary construction-related detours, delays, and out-of-direction travel. Temporary impacts to existing freight operations during construction. Beneficial impacts associated with the Preferred Alternative would include: Potential for long-term growth of property tax base and revenues as a result of transit-oriented development. Some access revisions; transit would improve access to businesses and expand employment opportunities. Creation of 11,400 temporary jobs over the construction period; permanent employment created by transit operation and maintenance



No-Action Alternative	Package A	Package B	Preferred Alternative
		Right-of-Way	
Would not require acquisition of property or any relocations.	 Highway components would require 23 residential relocations and 12 business relocations. Transit components would require 36 residential relocations and 21 business relocations. All property impacts, including displacements and partial acquisitions, would total 1,068 acres, 719 acres for highway components and 349 acres for transit components. 	 Highway components would require 24 residential relocations and 15 business relocations. Transit components would require one additional business relocation and no residential relocations. All property impacts, including displacements and partial acquisitions, would require a total of 913 acres, 833 acres for highway components and 80 acres for transit components. 	 Highway components would require 18 residential relocations and 10 business relocations. Transit components would require 31 residential relocations and 12 business relocations. All property impacts, including displacements and partial acquisitions, would require a total of 889 acres, 635 acres for highway components and 254 acres for transit components.
		Air Quality	
 No substantive impacts. Total emissions per day of 1700.033 tons. This includes carbon monoxide (CO), volatile organic compounds, nitrous oxides, particulate matter less than 10 microns in diameter (PM₁₀), and mobile source air toxics. Growth and development changes would affect traffic patterns and air quality. Benefits include: (1) emissions for all pollutants from mobile sources would be reduced from existing levels; and (2) continued conversion of agricultural land uses would lessen nitrogen deposition effects to Rocky Mountain National Park. 	 No substantive impacts. Total emissions per day of 1713.98 tons. This includes carbon monoxide, volatile organic compounds, nitrous oxides, PM₁₀, and mobile source air toxics. No exceedances of standards or thresholds due to mobile sources Growth and development changes would affect traffic patterns and air quality. In areas of transit oriented development, air quality could improve due to more efficient travel patterns. This improvement would be more noticeable with Package A than Package B and the Preferred Alternative. 	 No substantive impacts. Total emissions per day of 1700.397 tons. This includes carbon monoxide, volatile organic compounds, nitrous oxides, PM₁₀, and mobile source air toxics. No exceedances of standards or thresholds due to mobile sources. Growth and development changes would affect traffic patterns and air quality. In areas of transit oriented development, air quality could improve due to more efficient travel patterns. Benefits include: (1) emissions for all pollutants from mobile sources would be reduced from existing levels; and (2) continued conversion of agricultural land uses would lessen nitrogen deposition effects to Rocky Mountain National Park. 	 No substantive impacts. Total emissions per day of 1713.005 tons. This includes carbon monoxide, volatile organic compounds, nitrous oxides, PM₁₀, and mobile source air toxics. No exceedances of standards or thresholds due to mobile sources. Growth and development changes would affect traffic patterns and air quality. In areas of transit oriented development, air quality could improve due to more efficient travel patterns. Benefits include: (1) emissions for all pollutants from mobile sources would be reduced from existing levels; and (2) continued conversion of agricultural land uses would lessen nitrogen deposition effects to Rocky Mountain National Park.



Table 2.	Summary of Direct and Indirect Impacts (c	cont'd)
		,

No-Action Alternative	Package A	Package B	Preferred Alternative
	Ai	r Quality (cont'd)	
	 Benefits include: (1) emissions for all pollutants from mobile sources would be reduced from existing levels; and (2) continued conversion of agricultural land uses would lessen nitrogen deposition effects to Rocky Mountain National Park. 		
	Noise and Vibra	tion (from Final EIS Analysis)	
 An estimated 661 Category B receivers and 155 Category C receivers would be impacted by traffic noise. 	 An estimated 673 Category B receivers and 153 Category C receivers would be impacted by traffic noise without recommended mitigation measures. 2,192 residences, 15 schools, and 7 churches would experience moderate or severe impacts from rail transit noise. Forty residences would experience vibration impacts due to commuter rail. 	 An estimated 685 Category B receivers and 163 Category C receivers would be impacted by traffic noise without recommended mitigation measures. 	 An estimated 679 Category B receivers and 161 Category C receivers would be impacted by traffic noise without recommended mitigation measures. 2,192 residences, 15 schools, and 7 churches would experience moderate or severe impacts from rail transit noise. Forty residences would experience vibration impacts due to commuter rail. Note: For Phase 1 only, noise impacts have been reanalyzed in accordance with new FHWA noise regulations and CDOT guidelines (2011), see Section F of this ROD.
 Highway Impacts Would result in 1,257 acres of impervious surface area. Direct effects on surface water quality from increases in stormwater runoff velocity and volume would be negligible. The majority of stormwater runoff from I-25 would continue not to be treated prior to discharging to water bodies. 	 Highway Impacts Would result in 1,946 acres of impervious surface area, with the greatest impacts expected in the Cache la Poudre and St. Vrain Watersheds. Would require relocation of as many as 105 wells within the right-of-way. Modifications to the existing drainage system or a new system could improve drainage compared to the No-Action Alternative 	 Highway Impacts Would result in 2,001 acres of impervious surface area, with the greatest impacts expected in the Cache la Poudre River and Big Thompson River watersheds. Would require relocation of as many as 111 wells within the right-of-way. Modifications to the existing drainage system or a new system could improve drainage compared to the No-Action Alternative. 	 Highway Impacts Would result in 1,982 acres of impervious surface area, with the greatest impacts expected in the Cache la Poudre River, Big Thompson River, and St. Vrain River watersheds. Would require relocation of as many as 112 wells within the right-of-way. Modifications to the existing drainage system or a new system could improve drainage compared to the No-Action Alternative.



Table 2.	Summary of Direct and Indirect Impacts (cont'd)
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No-Action Alternative	Package A	Package B	Preferred Alternative
		Wetlands	
 Would generally not affect existing wetland resources, except those associated with development activities and rehabilitation of major and minor structures. With continuing development in the regional study area, some affects to wetlands would be expected. 	 Would result in total direct impacts of: 18.33 acres for wetlands. 3.54 acres of jurisdictional open water. Indirect Impacts Indirect mpacts in impervious surfaces caused by additional lanes or added road shoulders. 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. New flows could contain pollutants associated with roadway runoff. Sediment from winter sanding operations accumulating in wetlands. De-icers, petroleum products, and other chemicals would also likely degrade water quality and impacting wetland plants. Additional sediment and erosion would be expected during and after construction until exposed fill and cut slopes could be successfully revegetated. Other indirect effects include the decrease or elimination of upland tree and/or shrub buffers between the proposed roadway/rail corridor and wetlands adjacent to other aquatic sites. 	Would result in total direct impacts of: • 19.01 acres for wetlands • 2.28 acres of jurisdictional open water • Indirect wetland effects would be the same as Package A.	 Would result in total direct impacts of: 15.31 acres for wetlands 2.87 acres of jurisdictional open water Indirect wetland effects would be the same as Package A and Package B.



Table 2.	Summary of Direct and Indirect Impacts (cont'd)
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No-Action Alternative	Package A	Package B	Preferred Alternative		
	Floodplains				
 Existing conditions would continue. Floodplain impacts would be addressed during the final design phases of each CDOT project along I-25 within the regional study area, such as rehabilitation of various drainage structures. 	 Would impact a total of 12.8 acres of floodplains, 10.8 acres from highway components and 2.0 acres from transit components. Would result in seven I-25 crossings of floodplains and nine drainage structure replacements. Would result in 11 commuter rail crossings of floodplains. Would result in two floodplains impacted by queue jumps for commuter buses. 	 Would impact a total of 13.5 acres of floodplains, all from highway components. Would result in twelve I-25 crossings of floodplains and 15 drainage structure replacements. Would not have any floodplain impacts beyond those for the highway components. None of the bus facilities would impact a floodplain. 	 Would impact a total of 13 acres of floodplains, 11 acres from highway components and 2.0 acre from transit components. Would result in twelve I-25 crossings of floodplains and replacement or rehabilitation of 13 drainage structures along I-25. Would result in 10 commuter rail crossings of floodplains. None of the bus facilities would impact a floodplain. 		
		Vegetation			
 Would only have a minimal effect on existing vegetation resources. Effects from increasing development on vegetation could include population fragmentation, reductions in riparian zones, and ground and soil disturbance which could promote increased germination of noxious weed populations. Would not contribute to the spread of noxious weeds. 	 Results in 927 acres of vegetation impacts. Results in 305 acres of soil disturbance which can result in the potential disturbance to natural resources due to spread and establishment of noxious weeds. Sensitive wildlife species including Preble's meadow jumping mouse will be affected by the spread of noxious weeds in riparian areas. The potential for noxious weeds to establish and spread onto public lands such as parks and open spaces, and agricultural areas exists. 	 Results in 819 acres of vegetation impacts. Results in 271 acres of soil disturbance which can result in the potential disturbance to natural resources due to spread and establishment of noxious weeds. Sensitive wildlife species including Preble's meadow jumping mouse will be affected by the spread of noxious weeds in riparian areas. The potential for noxious weeds to establish and spread onto public lands such as parks and open spaces, and agricultural areas exists. 	 Results in 818 acres of vegetation impacts. Results in 269 acres of soil disturbance which can result in the potential disturbance to natural resources due to spread and establishment of noxious weeds. Sensitive wildlife species including Preble's meadow jumping mouse will be affected by the spread of noxious weeds in riparian areas. The potential for noxious weeds to establish and spread onto public lands such as parks and open spaces, and agricultural areas exists. 		



No-Action Alternative	Package A	Package B	Preferred Alternative
		Wildlife	
 Existing conditions would continue. Increased traffic on secondary roads would increase mortality of wildlife from collisions. 	 Would impact 2.01 acres of sensitive wildlife habitat. Would impact 1.82 acres of aquatic habitat. Would impact 13 wildlife movement corridors and 49 raptor nests. 	 Would impact 2.35 acres of sensitive wildlife habitat. Would impact 2.25 acres of aquatic habitat. Would impact 7 wildlife movement corridors and 43 raptor nests. 	 Would impact 1.94 acres of sensitive wildlife habitat. Would impact 1.54 acres of aquatic habitat. Would impact 14 wildlife movement corridors and 57 raptor nests.
	Threatened, Endangered, Other F	ederally-Protected and State Sensitive Spec	ies
Would not affect threatened and endangered species. Existing conditions would continue.	 Inreatened, Endangered, Other F Direct impact to 0.81 acre of potential Preble's habitat. Direct impact to 204 acres of bald eagle foraging habitat. Direct impact to 60 acres of black- tailed prairie dog colonies. Indirectly affect Western Burrowing Owl habitat associated with prairie dog colonies. Direct impact to 20 acres of habitat for northern leopard frogs and common gartersnakes. Direct impact to 0.4 acre of habitat for state threatened, endangered, or special concern aquatic species. Direct impact to 7 acres of habitat for bald eagle roost sites. 	 Direct impact to 0.80 acre of potential Preble's habitat. Direct impact to 231 acres of bald eagle foraging habitat. Direct impact to 97 acres of black-tailed prairie dog colonies. Indirectly affect Western Burrowing Owl habitat associated with prairie dog colonies. Direct impact to 21 acres of habitat for northern leopard frogs and common gartersnakes. Direct impact to 0.4 acre of habitat for state threatened, endangered, or special concern aquatic species. Direct impact to 2 acres of habitat for bald eagle roost sites. 	 Direct impact to 0.72 acre of potential Preble's habitat. Direct impact to 231 acres of bald eagle foraging habitat. Direct impact to 86 acres of black-tailed prairie dog colonies. Indirectly affect Western Burrowing Owl habitat associated with prairie dog colonies. Direct impact to 17 acres of habitat for northern leopard frogs and common gartersnakes. Direct impact to 0.4 acre of habitat for state threatened, endangered, or special concern aquatic species. Direct impact to 5 acres of habitat for bald eagle roost sites.



Table 2.	Summary of Direct and Indirect Impacts (cont'd)
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No-Action Alternative	Package A	Package B	Preferred Alternative
		Visual Quality	
 Would generally have minimal effect on visual resources. Growth would continue to occur on undeveloped agricultural land. This would change the landscape character along the I-25, BNSF, and US 287 corridors, and alter views and perception of visual character. 	 Most of the proposed improvements would not have a substantial effect to the visual quality of the corridors. Long-term impacts would include relocation of businesses and residences, rebuilt interchanges, increased right-of-way, additions of station amenities, and changes to the surrounding landscape through the use of overpasses, bridges, retaining walls, medians, as well as alterations to the existing roadway grade. Indirect impacts of the proposed improvements could encourage development that is more compact and denser, especially within walking distance of a commuter rail station. The addition of stations and a maintenance facility would generate lighting that would be seen by motorists, as well as from adjacent businesses and residences. Short-term impacts would include detours, increased roadway congestion in and around the area, the presence of large equipment, and dust from construction. 	 Most of the proposed improvements would not have a substantial effect to the visual quality of the corridors. Package B would have the same basic visual impacts as described for Package A, except that BRT elements would occur along I-25 instead of the commuter rail and bus elements along other rights-of-way. 	 Most of the proposed improvements would not have a substantial effect to the visual quality of the corridors. The Preferred Alternative would have the same basic visual impacts as described for Package A and Package B. Many elements of the express bus have the same visual impacts as the BRT associated with Package B.



Table 2.	Summary of Direct and Indirect Impacts (cont'd)
Table 2.	Summary of Direct and multect impacts (cont d)

No-Action Alternative	Package A	Package B	Preferred Alternative	
Historic Preservation				
 Would generally not affect significant (NRHP-eligible) historic resources. The present trend of conversion of much of the remaining farmsteads (many of which are historic) into residential, industrial and commercial development would continue. No significant (NRHP-eligible) archaeological resources would be affected within the Area of Potential Effect. 	 <u>Direct Impacts</u> Adverse effects from direct impacts to nine NRHP-eligible or listed properties. 	 Direct Impacts Four adverse effect from direct impacts to NRHP-eligible or listed properties. 	 <u>Direct Impacts</u> Adverse effects from direct impacts to seven NRHP-eligible or listed properties. 	
	Paleor	ntological Resources		
No impacts.	 Construction along the existing BNSF rail-line between Fort Collins and Longmont, and along I-25 between E-470 and US 36, especially where cuts are necessary to expand rail alignments, highways, and interchanges, has the highest likelihood of adversely impacting paleontological resources. Ground disturbance associated with the construction of commuter rail lines and facilities is anticipated to be greater than that required for BRT facilities. Package A would generally require 2,877 acres of ground disturbance and has the lowest potential for impacts on paleontological resources. 	 Construction along I-25 between E-470 and US 36, especially where cuts are necessary to expand highways and interchanges, has the highest likelihood of adversely impacting paleontological resources. Package B would generally require 2,959 acres of ground disturbance. 	 Construction along I-25 between E-470 and US 36, especially where cuts are necessary to expand highways and interchanges, has the highest likelihood of adversely impacting paleontological resources. Disturbances associated with the commuter rail facilities would be noticeably less than Package A. The Preferred Alternative would generally require 3,224 acres of ground disturbance and has the highest potential for impacts on paleontological resources. 	



Table 2.	Summary of Direct and Indirect Impacts (cont'd)

No-Action Alternative	Package A	Package B	Preferred Alternative		
	Hazardous Materials				
 No direct impacts. Indirect impacts include the potential to encounter contaminated soil and/or groundwater during structure maintenance activities or during safety improvements that require ramp terminal widening. 	 38 parcels with potential environmental conditions and 16 parcels with recognized environmental conditions are associated with the highway components. 58 parcels with potential environmental conditions and 2 parcels with recognized environmental conditions are associated with the transit components. 	 40 parcels with potential environmental conditions and 16 parcels with recognized environmental conditions are associated with the highway components. 	 67 parcels with potential environmental conditions and 20 parcels with recognized environmental conditions are associated with the Preferred Alternative. Forty parcels with potential environmental conditions and 16 parcels with recognized environmental conditions are associated with highway components. Twenty-seven parcels with potential environmental conditions and four parcels with recognized environmental conditions and four parcels with recognized environmental conditions are associated with the preferred with the preferred at the pref		
	Parl	ks and Recreation			
 Portions of three parks, a wildlife area, and one golf course will continue to receive noise impacts. 	 Direct use of eight properties, seven having minor impacts. McWhinney Hahn Sculpture Park would need to be acquired. Benefits would include improved access and mobility to and from these recreational resources. 	 Direct use of six properties, five having minor impacts. McWhinney Hahn Sculpture Park would need to be acquired. Benefits would include improved access and mobility to and from these recreational resources. 	 Direct use of six properties, five having minor impacts. McWhinney Hahn Sculpture Park would need to be acquired. Benefits would include improved access and mobility to and from these recreational resources. 		
		Section 6(f)			
Would have no impacts on any of the Section 6(f) properties.	Would have no impacts on any of the Section 6(f) properties.	Would have no impacts on any of the Section 6(f) properties.	Would have no impacts on any of the Section 6(f) properties.		



Table 2.	Summary of Direct and Indirect Impacts (cont'd)
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No-Action Alternative	Package A	Package B	Preferred Alternative	
Farmlands				
 Would not directly impact prime farmland, farmland of statewide importance, or farmland of local importance. The more dispersed development pattern would further fragment remaining agricultural lands, reducing their long-term viability. 	 Package A would result in the direct conversion of 977.13 total acres, if certain farming conditions are present. This would include: 1.80 acres of farmland of local importance. 44.52 acres of farmland of statewide importance. 930.81 acres of farmland that would be considered prime if four certain conditions are present. No farms would be severed or lose access. As a result of commuter rail, the rate at which environmental resources (including farmlands) would be affected in undeveloped and suburban areas within the regional study area would likely be slowed, especially near I-25. 	 Package B would result in the direct conversion of 925.36 total acres, if certain farming conditions are present. This would include: 1.66 acres of farmland of local importance. 35.39 acres of farmland of statewide importance. 888.31 acres of farmland that would be considered prime if four certain conditions are present. No farms would be severed or lose access. Most of the farmland impact is associated with the widening of I-25 to accommodate additional buffer or barrier separated express lanes in each direction. 	 The Preferred Alternative would result in the direct conversion of 977.16 total acres, if certain farming conditions are present. This would include: 5.05 acres of farmland of local importance. 46.61 acres of farmland of statewide importance. 925.50 acres of farmland that would be considered prime if four certain conditions are present. No farms would be severed or lose access. Most of the farmland impact is associated with the widening of I-25 to accommodate general purpose lanes and buffer separated tolled express lanes in each direction. 	
		Energy		
 Annual energy consumption from operations would be 403,220 million BTUs. Energy demand would be directly proportionate to the increase in population as land development occurs. Population is anticipated to increase at the same rate for all four alternatives. 	 Would use approximately 0.8 percent more energy than the No-Action Alternative, as a result of increase in annual vehicle miles of travel within the regional study area. 	 Would use approximately 0.4 percent more energy than the No-Action Alternative, as a result of increase in annual vehicle miles of travel within the regional study area. 	 Would use approximately 0.9 percent more energy than the No-Action Alternative, as a result of increase in annual vehicle miles of travel within the regional study area. 	



Table 2.	Summary of Direct and Indirect Impacts (cont'd)
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No-Action Alternative	Package A	Package B	Preferred Alternative		
	Public Safety and Security				
 As congestion increases, there would be a greater likelihood of both highway and railway crashes; and emergency response times would be negatively affected. The likely higher number of crashes also could affect the likelihood of a crash involving a transporter of hazardous materials. 	 A 70 percent reduction in accidents associated with trains and other vehicles is predicted. An increased security presence would be needed on trains, buses, and at existing and proposed stations and associated existing park-n-Rides. There is a potential for modest increases to police services in response to increases in crime. There is a potential for increased theft during the construction phase (a temporary impact). 	 An increased security presence would be needed on trains, buses, and at existing and proposed stations and associated existing park -n-Rides. There is a potential for modest increases to police services in response to increases in crime. There is a potential for increased theft during the construction phase (a temporary impact). 	 Impacts would be similar to those described for Package A for the commuter rail. The highway and express bus service impacts would be similar to Package B. 		
		Construction			
 Would result in no construction or utility impacts aside from those associated with the currently programmed projects 	 Would have the greatest construction impacts (noise, air quality, transportation) to residential areas since construction of the double-track commuter rail would extend through residential areas. The double-track commuter rail would use the existing BNSF railroad track plus one new track from Fort Collins to downtown Longmont, and a new double-track commuter rail line would connect Longmont to the FasTracks North Metro end-of-line station in Thornton. Construction of all build packages would cause varying temporary impacts to traffic patterns and congestion, noise and vibration, air quality, and visual presence 	 Would have fewer impacts than Package A because there is no rail component, and I-25 widening occurs along a corridor that consists primarily of commercial, industrial, and agricultural development Construction of all build package would cause varying temporary impacts to traffic patterns and congestion, noise and vibration, air quality, and visual presence Construction impacts would be short- term and isolated in extent depending upon the types and location of construction. 	 The Preferred Alternative would have construction impacts greater than Package B because it includes commuter rail, but less than Package A because it has a single track, rather than double track. Construction of all build package would cause varying temporary impacts to traffic patterns and congestion, noise and vibration, air quality, and visual presence Construction impacts would be short-term and isolated in extent depending upon the types and location of construction. 		



No-Action Alternative	Package A	Package B	Preferred Alternative
	Cor	nstruction (cont'd)	
	 Construction impacts would be short- term and isolated in extent depending upon the types and location of construction 		
		Section 4(f) *	
No substantive impacts.	 Historic 1 ditch: 316 linear feet—Adverse effect 1 railroad: 2.9 miles—Adverse effect 7 properties: 45.35 acres—Adverse effect 8 properties: 20.78 acres— De minimis** 14 ditches: 4,418.5 linear feet— De minimis 2 railroads: 4.92 miles—De minimis Parks and Recreation 5 parks: 8.69 acres—De minimis** 1 park: 1.21 acres—Adverse Effect 1 recreation trail: 1,510 linear feet— De minimis 	 <u>Historic</u> 1 ditch: 357 linear feet—<i>Adverse effect</i> 3 properties: 32.32 acres—<i>Adverse effect</i> 4 historic properties: 18.41 acres— <i>De minimis</i> 8 ditches: 3,959.5 linear feet— <i>De minimis</i> 1 railroad: 0.05 mile—<i>De minimis</i> <u>Parks and Recreation</u> 4 parks: 7.52 acres—<i>De minimis</i> 1 park: 1.21 acres—<i>Adverse Effect</i> 3 recreation trail: 1,857 linear feet— <i>De minimis</i> 	 <u>Historic</u> 1 ditch: 1,084 linear feet—Adverse effect 1 railroad: 2.9 miles—Adverse effect 5 properties: 38.04 acres—Adverse effect 7 properties: 10.99 acres—De minimis** 14 ditches: 4,236 linear feet—De minimis 2 railroads: 4.92 miles—De minimis Parks and Recreation 3 parks: 5.83 acres—De minimis** 1 park: 1.21 acres—Adverse Effect 3 recreation trail: 1,857 linear feet—De minimis The Preferred Alternative causes the least overall harm to Section 4(f) properties.
	Total Uses (not including <i>de minimis</i>) = 10	Total Uses (not including <i>de minimis</i>) = 5	Total Uses (not including <i>de minimis</i>) = 8

*Section 4(f) impacts are summarized in this table and explained in detail in the Revised Section 4(f) Evaluation dated October 27, 2011.

**De Minimis impacts to Sandstone Ranch are included under both the Parks and Recreation as well as Historic totals.



C. PHASE 1 OF THE PREFERRED ALTERNATIVE

² The lead agencies identified a Preferred Alternative for the project in the Final EIS, which is

described in Section 2.2.4, Preferred Alternative, of the Final EIS. Appendix A of this ROD

⁴ includes a figure of the Preferred Alternative.

⁵ In this ROD, FHWA approves the selection of Phase 1 of the Preferred Alternative as

6 described in this section.

7 CDOT and FHWA collaborated on a process to determine the overall philosophical

8 approach to phasing. The engineering team developed various scenarios for consideration.

9 These scenarios were evaluated in comparison to the amount of funding in the fiscally

10 constrained DRCOG 2035 RTP, NFR 2035 RTP, and UFR 2035 RTP, the project Purpose

and Need, and input from the local jurisdictions.

12 C.1 DECISION-MAKING PROCESS

A phased approach is being taken because the solution to the identified transportation

problems costs more to implement than is available in the fiscally constrained RTP(s). The

identification of an initial phase for implementation is consistent with FHWA requirements to

have funding for projects identified before final decisions are made. The first phased ROD is

consistent with projects and funding in the fiscally constrained DRCOG 2035 RTP, NFR

18 2035 RTP, UFR 2035 RTP.

19 To develop the phasing plan, the first discussion with the stakeholders described the

²⁰ funding limitations in detail, and also described the implications of phasing. The first phase

needs to identify a subset of components that amount in cost equal to the identified project

funds in the fiscally constrained, conforming long range plans (2035). It was also clarified

that staging of components in subsequent phases could be re-evaluated as funding and

needs change over time regardless of the phase that the improvements have been

- included. Given this information, the stakeholders were first tasked with identifying phasing
- criteria. The stakeholders developed the phasing criteria by referring to the defined
- elements of Purpose and Need, as well as their community and agency values. In addition,
- 28 CDOT provided guidance regarding the need for a cohesive system for each major phase.

A collaborative decision-making process ensued with the stakeholders over a series of

meetings. In the end, consensus was achieved on a recommended three phase

31 implementation plan.

³² More detail describing the development of the phasing plan is provided below and in

Appendix B of the Final EIS.

34 C.2 PROJECT PRIORITIZATION PROCESS

The RCC and the TAC provided a prioritized list of guiding principles that were important to their communities when developing a phasing plan for the Preferred Alternative. These

- 37 included:
- 38 1) Replace infrastructure.
- 39 2) Address safety concerns.



- 1 3) Improve mobility.
- 2 4) Coordinate with community plans.
- 5) Consider long-term with near-term implementation.
- 4 6) Implement cost effective solution.

5 The first three are consistent with the project's Purpose and Need (described in **Chapter 1**,

Purpose and Need of the Final EIS). The project's Purpose and Need statement identifies a
 need to replace aging infrastructure on I-25, address safety concerns on I-25, improve

8 mobility and provide modal options. The last three reflect the communities' desire to ensure

9 consistency with their current plans and consideration of commuter rail in the Preferred

10 Alternative.

Following identification of these guiding principles for prioritization, the RCC/TAC and other agencies involved in this effort (CDOT, FHWA, FTA, and the U.S. Army Corps of Engineers [USACE]) prioritized projects as near-, mid- or long-term improvements. See **Appendix B** of the Final EIS for further information regarding decision making process. FHWA, as the lead federal agency, was involved throughout the decision making process. Key results of this exercise were:

- I-25 widening and reconstruction of the interchanges north of SH 66 were the most strongly supported near-term improvements due to a desire to address critical safety, mobility, and aging infrastructure problems in this part of the corridor.
- Bus services included in the Preferred Alternative (express bus on I-25 and commuter 20 bus on US 85) had substantial support for inclusion as a near-term project due to the 21 lack of immediate funding availability for commuter rail and the expected timeframe for 22 implementation of RTD's North Metro and Northwest Rail Lines. The expected time 23 frame for the RTD rail lines was important because the Preferred Alternative connects to 24 these two rail lines for a complete trip between Fort Collins and Denver Union Station or 25 DIA. I-25 widening in the form of tolled express lanes is a critical component of express 26 bus service that is competitive with general purpose lane travel time. 27
- Commuter rail projects included in the Preferred Alternative were rated as longer-term
 improvements due to the lack of immediate funding availability and the delay in
 scheduled implementation of RTD's North Metro and Northwest Rail Lines.
- Widening I-25 between SH 66 and SH 7 was identified by the RCC/TAC as a mid- or
 long-term priority because this section of I-25 has recently been widened and
 reconstructed and therefore has relatively new pavement and infrastructure, so that more
 improvements are not required in the near term.
- Consequently, the following guidance for identification of Phase 1 of the Preferred Alternative was developed:
- Address concerns on I-25 north of SH 66–This principle is consistent with the project's
 Purpose and Need and the committees' strong desire to address safety, capacity and
 infrastructure issues on this stretch of I-25.
- Include bus transit—This is consistent with the project's Purpose and Need to increase
 modal options, and the committees' desire to see bus service implemented in the near term.



- Include a commitment to commuter rail—This is also consistent with the project's Purpose
 and Need to increase modal options, and the committees' desire to ensure that near-
- ³ term solutions are considering the long-term vision.

4 C.3 REASONS FOR SELECTING SPECIFIC ELEMENTS

- Based on the guiding principles identified above, the following Phase 1 improvements have
 been selected with reasons listed that indicate their relationship to the guiding principles.
- 7 1) Reconstruct and widen I-25 between SH 56 and SH 66 with one TEL in each direction.
 8 This would:
- Replace and widen seven miles of pavement with no remaining service life.
 - Reconstruct two substandard interchanges (I-25/SH 56 and I-25/CR 34).
- Address geometric safety concerns.

- ¹² Improve mobility by increasing capacity.
- Increase modal options and provide a competitive travel time advantage by providing
 a lane for carpools and bus service.
- Address the committees' desire to improve safety and mobility north of SH 66 in the near-term.
- Reconstruct and widen I-25 between SH 14 and SH 392 with continuous
 acceleration/deceleration lanes that would ultimately become part of the eight-lane
 cross-section. This would:
- Replace seven miles of pavement with no remaining service life.
- Reconstruct two substandard interchanges (I-25/SH 14 and I-25/Prospect).
- Address geometric safety concerns.
- Improve mobility by increasing capacity.
- Address the committees' desire to improve safety and mobility north of SH 66 in the
 near-term.
- 3) Construct an interchange at US 34/Centerra Parkway [Larimer County Road (LCR) 5],
 which is part of the Preferred Alternative configuration for the I-25/US 34 interchange.
- 4) Widen I-25 between 120th Avenue and approximately US 36 with one buffer-separated
 TEL in each direction. This would:
- Address geometric safety concerns along I-25.
- Improve mobility by increasing capacity.
- Increase modal options and provide a competitive travel time advantage by providing
 a lane for carpools and bus service.
- 5) Interchange reconstruction at I-25/SH 7, which would be constructed to its ultimate
 configuration. This would:
- Improve accessibility and mobility by improving interchange operation.



Increase modal options by providing bus service.

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- Address the committees' desire to see bus service implemented in the near-term.
- 7 7) US 85 commuter bus service—Commuter bus service along US 85 connecting Greeley to downtown Denver would be implemented in Phase 1. This would:
- Increase modal options by providing bus service.
- Address committees' desire to see bus service implemented in the near-term.

Phase 1 would cost approximately \$670 million (2009 dollars) and is planned to be completed by 2035. A Cost Estimate Review (CER) was conducted on the Preferred

Alternative by CDOT with guidance from FHWA. The results of the CER are described in

more detail in **Chapter 6**, *Financial Analysis*, of the Final EIS and in the *North I-25 Project*

- 15 Cost Estimate Review Report (FHWA and CDOT, 2010). The CER included construction of
- the interchange at US 34/Centerra Parkway (LCR 5), in the Preferred Alternative configuration for the I-25/US 34 interchange, but did not include it in Phase 1 as it was
- 17 configuration for the I-25/US 34 interchange, but did not include it in Phase 1 as it was
- added to Phase 1 after the CER was completed. Moving the improvements at
 US 34/Centerra Parkway into Phase 1 from a later phase does not affect the reliability of the
- US 34/Centerra Parkway into Phase 1 from a later phase does not affect the reliability of the CER. In the CER, the cost of these improvements was accounted for in a later phase and
- 20 CER. In the CER, the cost of these improvements was accounted for in a later phase and 21 represents a very small percentage of the overall project cost. The CER assesses cost
- risks, and one of the largest risk factors in the assessment was inflation uncertainty and the
- impact on overall construction cost. Completing additional work sooner would have the net
- result of lowering risk in terms of overall project cost, therefore the reliability of the CER has
- not been reduced by moving the US 34/Centerra Parkway improvements into Phase 1. The
- ²⁶ CER will need to be updated during preparation of the project financial plans.
- ²⁷ The Clean Air Act (CAA) requires air quality conformity to be demonstrated for major
- transportation projects in non-attainment and/or maintenance areas. Regional air quality
- 29 conformity for Phase 1 is demonstrated in its inclusion in the fiscally constrained DRCOG
- 2035 RTP, NFR 2035 RTP, and UFR 2035 RTP. The regional emissions analysis
- conducted for the Preferred Alternative is discussed in **Section 3.5**, *Air Quality*, of the
- ³² Final EIS. The fiscally constrained RTP, Transportation Improvement Program (TIP) and
- 33 Statewide Transportation Improvement Program (STIP) must identify all projects that are
- expected to receive federal funds or that will require FHWA or FTA approval.

Regarding commuter rail right-of-way preservation, all right-of-way necessary to construct the ultimate commuter rail configuration would be purchased as part of Phase 1, which

- 37 would address the committees' desire to consider the long-term vision in the near-term. It is
- important to note that the purchase of right-of-way for commuter rail is not eligible for
- federal aid funding until construction funds for commuter rail have been identified in a
- 40 fiscally constrained RTP and, therefore, it is not included in this ROD.



C.4 DESCRIPTION OF ELEMENTS

Phase 1 includes the following elements and is shown in **Figure 4**. This ROD only 2 addresses the elements of Phase 1 that are under the jurisdiction and control of the FHWA. 3 The commuter rail right-of-way purchase, which is included in Phase 1 by the consensus of 4 the stakeholders, would not be constructed until future funds for design and construction are 5 identified. State funds will be used for the purchase of commuter rail right-of-way in 6 Phase 1. Therefore, this right-of-way preservation is not included in the ROD because it is 7 not eligible for federal funds until the construction of the commuter rail project is included in 8 the fiscally-constrained, air quality conforming plan. State expenditures for this purpose may 9 become eligible for use as a credit towards the state's share of a federal aid project in the 10 future at the time of commuter rail implementation if funds for construction are not identified 11 prior to purchasing the right-of-way, in accordance with applicable federal regulations 12 [23CFR710.501(b); 23CFR630.112(c)(1)]. 13

14 The elements of Phase 1 included in this ROD are:

Widening I-25 between SH 14 and SH 392 (approximately seven miles). This 15 improvement would include full reconstruction of the existing cross section plus 16 pavement to accommodate the Preferred Alternative TELs. While the additional 17 pavement would ultimately be used for TELs, it will be used as continuous 18 acceleration/deceleration lanes as an interim improvement. This would avoid potential 19 operational problems associated with a southbound lane drop at SH 392. Widening 20 would include water quality ponds and median barrier features necessary to 21 accommodate this improvement. Right-of-way purchase associated with the ultimate 22 Preferred Alternative cross-section is also included. 23

- Widening I-25 between SH 56 and SH 66 (approximately seven miles) with one TEL in
 each direction. Widening would include water quality ponds and median barrier features
 as well as the right-of-way purchase associated with the ultimate Preferred Alternative
 cross-section.
- Widening I-25 between approximately US 36 and 120th Avenue (approximately six miles) with one buffer-separated TEL in each direction and interchange modifications, as necessary. Widening would include noise abatement walls, water quality ponds, and median barrier features as well as the right-of-way purchase associated with the ultimate Preferred Alternative cross-section.
- Replacement and reconstruction of interchanges–I-25/SH 14, I-25/Prospect, I-25/SH 56,
 I-25/CR 34, and I-25/SH 7 would be constructed to their ultimate configurations. SH 392
 and 84th Avenue would be completed as part of separate projects. A first phase of
 improvements to the I-25/US 34 interchange would be completed, which includes a
 single point urban interchange SPUI at the US 34/Centerra Parkway intersection.
- Replace or construct forty-six structures, modify two existing structures, and rehabilitate
 (minor) two structures (see Table 3).
- Installation of six carpool lots at I-25 interchanges (I-25/SH 14, I-25/Prospect Road, I 25/Harmony Road, I-25/SH 56/Weld County Road (WCR) 44, Firestone, and
 I-25/SH 7). Several of these carpool lots are shared with the I-25 express bus transit stations.



- I-25 express bus—Regional express bus service connecting Fort Collins and Greeley to downtown Denver and DIA would be initiated. Four transit stations would be constructed as part of Phase 1: I-25/Harmony Road, US 34/83rd Avenue, Firestone (I-25/SH 119), and I-25/SH 7. Two on-street stops are assumed and 27 buses would be purchased.
- US 85 commuter bus—Commuter bus along US 85 connecting Greeley to downtown
 Denver would be implemented in Phase 1. This would include construction of five
 stations and the purchase of five buses. The entire US 85 commuter bus system
 identified in the Preferred Alternative would be implemented in Phase 1.
- The decisions of what elements to include in Phase 1 were based on funding constraints,
 the project Purpose and Need, and concerns of the local jurisdictions. The elements of
 Phase 1, including the tolled express lanes, continuous acceleration/deceleration lanes, and
 interchange improvements, are anticipated to provide a substantial benefit to corridor users
- and would offset irreversible impacts.



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Figure 4. Phase 1





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Table 3.Phase 1 - Structures

Replacement or Reconstruction
I-25 over Niver Creek (CBC)
RTD Pedestrian Overpass
 88th Avenue over I-25
 Pedestrian Overpass between 104th Ave and 112th Ave.I-25 over Farmers Highline Canal
 Pedestrian Underpass (CBC) south of 120th Ave.
 I-25 over S. Fork Preble Creek (CBC)
 Bull Canal (CBC) between 160th Ave and SH 7
SH 7 over I-25
I-25 NB over WCR 32
 I-25 SB over WCR 32
WCR 34 over I-25
 I-25 over North Creek (CBC)
I-25 NB over GWRR
I-25 SB over GWRR
 I-25 over Drainage (CBC), south of WCR 38
 WCR 38 over I-25
 I-25 NB over Valley Road
 I-25 SB over Valley Road
 I-25 over Draw (CBC)
 I-25 NB over Little Thompson River
I-25 SB over Little Thompson River
 I-25 NB over SH 56
 I-25 SB over SH 56
 US 34 WB By-Pass over LCR 5
 US 34 over LCR 5
US 34 EB By-Pass over LCR 5
I-25 over Cache la Poudre Floodway (CBC)
I-25 SB on Ramp over Cache la Poudre Floodway (CBC)
LCR 36 (Kechter Road) over I-25
LCR 36 over Cache la Poudre Floodway (CBC)
 Kechter Rd over Cache la Poudre Floodway (CBC)
 I-25 over Cache la Poudre Floodway (CBC)
Harmony Road over I-25
I-25 NB over Cache la Poudre River
I-25 SB over Cache la Poudre River
I-25 NB over GWRR
I-25 SB over GWRR
Prospect Road over I-25



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Table 3.	Phase 1 – Structures	(cont'd)
		(

Replacement	or Reconstruction	(cont'd)
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- Lake Canal (CBC) north of Prospect Road
- Timnath Ditch (Cache la Poudre Reservoir Inlet) (CBC)
- Box Elder Creek (CBC)
- SH 14 over I-25
- SH 14 over Frontage Road Connector
- I-25 NB over GWRR
- I-25 SB over GWRR

Modification

- Wagon Road HOV Ramp
- I-25 over Preble Creek (CBC)

Rehabilitation

- Community Center Drive over I-25
- Wagon Road HOV Ramp

1 C.5 ESTIMATED COST

2 **Table 4** summarizes the estimated cost by Phase 1 element.

Table 4. Phase 1 - Estimated Cost by Element

Element	Estimated Cost (2009 dollars)
Widen I-25 between SH 392 and SH 14, including Prospect interchange	\$133.3 million
Widen I-25 between SH 66 and SH 56	\$119.7 million
Widen I-25 between approximately US 36 and 120th Avenue	\$138.3 million
Replace and reconstruct interchanges—I-25/SH 14, I-25/SH 56, and I-25/SH 7	\$157.1 million
Construct intersection at US 34/ Centerra Parkway (LCR 5)	\$29.7 million
Install six carpool lots at I-25 interchanges	\$2.3 million
Initiate I-25 express bus and US 85 commuter bus	\$63.1 million
Preserve commuter rail right-of-way*	\$26.4 million
Total	\$669.9 million

* This element has been included to indicate total cost for Phase 1 but it is not a part of this ROD.

3 C.6 RESPONSIVENESS TO PURPOSE AND NEED

- ⁴ The project Purpose and Need, as described in **Chapter 1**, *Purpose and Need*, of the
- 5 Final EIS would be addressed by implementation of the Preferred Alternative in its entirety.
- 6 Phases 1, 2 and 3 individually would not fully address the Purpose and Need, but each
- 7 phase would contribute by incrementally addressing elements of the Purpose and Need.

8 Phase 1 would incrementally contribute to addressing elements of the project Purpose and

9 Need as follows.



- Need #1: Address increased frequency and severity of crashes on I-25.
 Widening I-25 between SH 56 and SH 66 would correct existing substandard shoulders and stopping sight distance to provide continuous, safe refuge for stopped vehicles and emergency use and would correct deficiencies in the horizontal alignment.
 - Widening I-25 between SH 392 and SH 14 would correct deficiencies in the horizontal alignment between SH 392 and Harmony Road.
- Need #2: Address increasing traffic congestion on I-25, leading to mobility and accessibility problems.
 - Reconstructing the I-25/SH 7 interchange would replace an interchange that does not have the capacity to safely or efficiently accommodate the higher traffic volumes anticipated by 2035.
- Reconstructing the I-25/SH 14, I-25/Prospect, I-25/SH 56, and I-25/CR 34
 interchanges would improve capacity and therefore enhance accessibility at these
 locations.
- Widening I-25 between SH 66 and SH 56, SH 392 and SH 14, and 120th Avenue and approximately US 36 would improve mobility along the I-25 corridor.
- Need #3: Replace aging and functionally obsolete infrastructure.
- Reconstructing the I-25/SH 14, I-25/Prospect, I-25/SH 56, and I-25/CR 34
 interchanges would replace structures that were constructed prior to 1985, which,
 based on a 50-year design life and a design year of 2035, is the cut-off date for
 replacement of aging structures.
- Need #4: Provide modal alternatives.

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Constructing six carpool lots at I-25 interchanges, initiating express bus service along I-25, building express bus and commuter bus stations, and implementing commuter bus service along US 85 would provide modal alternatives.

These improvements are considered a reasonable expenditure of funds and would 27 incrementally contribute to addressing the Purpose and Need of the project, even if no 28 additional transportation improvements are made in the area. The improvements proposed 29 in Phase 1 would not restrict consideration of alternatives for other reasonably foreseeable 30 transportation improvements. The transportation improvements to be constructed in 31 Phase 1 would have independent utility in that they would provide transportation benefits, 32 be a reasonable expenditure even if no additional improvements are made in the area, and 33 each element has logical termini. Because the EIS addressed the regional transportation 34

needs, the study considered environmental resources on a broad scope.

C.7 TRAFFIC ANALYSIS

A traffic analysis for Phase 1 for the year 2035 was completed. The traffic analysis evaluates traffic conditions at the completion of Phase 1 in 2035, since all of Phase 1 is not expected to be constructed until 2035.

Figure 5 presents the level of service (LOS) for each segment of I-25 during the AM and
 PM peak hours for Phase 1. A total of 25 freeway segments were analyzed. Forecasted



- volumes result in 15 segments in one or both directions operating at LOS E or F in the AM
- 2 peak hour and 17 segments in the PM peak hour. In the No-Action Alternative most of the
- 3 corridor would operate with LOS E and F conditions. Under Phase 1, travel demand
- ⁴ forecasts are similar to the No-Action Alternative, but I-25 capacity would be enhanced at
- 5 selected locations, resulting in a reduction in the number of miles of the corridor operating at
- 6 LOS E and F conditions and improved travel times, relative to the No-Action Alternative.
- 7 These improvements to the I-25 corridor are part of incrementally addressing Need #2
- 8 (mobility and accessibility), and also Need #1 (safety), described in **Section C.6** above.

Table 5 correlates congested segments to miles of I-25 operating with congested conditions 9 and compares Phase 1 miles of congestion to miles of congestion for the No-Action 10 Alternative. As shown in the table, Phase 1 capacity enhancements provide some reduction 11 in miles operating at LOS E or F, with a reduction from 56 miles to 42 miles in the AM peak 12 hour and from 75 miles to 63 miles in the PM peak hour. Improved operations occur from 13 SH 14 to SH 392 where continuous auxiliary lanes would be implemented, between SH 56 14 and SH 66 where tolled express lanes and improved geometric conditions would provide 15 some additional capacity, and between 120th Avenue and US 36 where tolled express 16 lanes would be added. 17

18 Table 5. Miles of I-25 Operating at LOS E or F (General Purpose Lanes)

Component	AM Peak Hour		PM Peak		
Component	No-Action	Phase 1	No-Action	Phase 1	
SH 1 to SH 14	0	0	0	0	
SH 14 to SH 60	22	17	29	20	
SH 60 to E-470	17	10	24	21	
E-470 to US 36	17	15	22	22	
Total	56	42	75	63	









1 Travel Time

- 2 **Table 6** illustrates travel time anticipated for users in the general purpose lanes and for
- users of the tolled express lanes (where available) with the completion of Phase 1. As
- 4 shown, travel in the general purpose lanes would be improved by eight minutes between
- 5 SH 1 and 20th Street in the AM peak hour southbound. Travel in the tolled express lanes
- 6 would improve from 116 minutes to 107 minutes over that same section of I-25.

	Travel Time in Minutes				
	No-Action	Phase 1			
General Purpose Lanes					
SH 1 to E-470	69	69			
E-470 to 20th Street	64	56			
Total	133	125			
TEL Lanes where available					
SH 1 to E-470	69	69			
E-470 to 20th Street	47	38			
Total	116	107			

Table 6. 2035 Phase 1 Travel Time

7 Transit Ridership

- 8 **Table 7** summarizes the anticipated regional transit ridership with the completion of
- 9 Phase 1. As shown, the initial I-25 bus service is expected to attract 2,000 boardings daily.
- 10 The US 85 commuter bus would attract an additional 200 riders daily. These numbers
- represent about one third of the regional transit ridership anticipated with the Preferred
- 12 Alternative.

Table 7.2035 Weekday Transit Ridership – Phase 1

Phase 1	Daily Riders
US 85 Commuter Bus to/from Downtown Denver	200
Initial I-25 Express Bus: North Front Range to/from Downtown Denver and DIA	2,000
Total Regional Riders	2,200

13 C.8 ENVIRONMENTAL IMPACTS

14 The environmental impacts of Phase 1 are discussed in **Section 8.5**, *Environmental*

15 *Impacts and Mitigation*, of the Final EIS and provided in **Table 8**.



Resource	Phase 1
	Improvements to existing interchanges could stimulate some growth, but not as much as would be the case if completely new interchanges were proposed.
Land Use	Because they are beside I-25, the express bus stations are more likely to attract new development.
	Non-urban stations would help realize plans for more urban development that otherwise would not occur.
	Impacts associated with Phase 1 would include:
	 Relocation of 39 residences.
	Increased noise and visual impacts.
	 A slight increase in air emissions (but below NAAQS) relative to the No-Action Alternative.
	Benefits associated with Phase 1 would include:
	 Enhanced regional connections between communities.
	 Improvements in mobility, safety, and emergency response.
	Improved mobility for transportation-disadvantaged populations.
Social Conditions	Environmental Justice
	Impacts to minority and low-income residents include 14 residential displacements.
	Benefits associated with the Phase 1 would include:
	 Express bus and commuter bus transit would result in moderate improvements in mobility and would improve regional connectivity.
	 Safety and emergency response time would improve.
	 Short-term and long-term employment opportunities would occur during the construction of the facilities as well as their ongoing operation and maintenance.
	 Shoulders and sidewalks would better accommodate bicycle and pedestrian travel.
	Impacts associated with Phase 1 include:
	 Relocation of 16 businesses.
	 The loss in tax base associated with right-of-way acquisitions.
	 Temporary construction-related detours, delays, and out-of-direction travel.
	 Temporary impacts to existing freight operations during construction.
Economics	Benefits associated with Phase 1 would include:
	 Potential for long-term growth of property tax base and revenues as a result of transit-oriented development.
	 Some access revisions; transit would improve access to businesses and expand employment opportunities.
	 Creation of 3,500 temporary jobs over the construction period.
Right-of-Way	Would require 39 residential relocations and 16 business relocations.
(Acquisitions and Displacements)	All property impacts, including displacements and partial acquisitions, would require a total of 568 acres for the implementation of Phase 1 of the Preferred Alternative.
	No exceedances of standards or thresholds due to mobile sources.
	Growth and development changes would affect traffic patterns and air quality. In areas of transit oriented development, air quality could improve due to more efficient travel patterns.
Air Quality	Benefits include:
-	 Emissions for all pollutants from mobile sources would be reduced from existing levels.
	Continued conversion of agricultural land uses would lessen nitrogen deposition effects to Rocky Mountain National Park.

Table 8.Resources Impacted by Phase 1



December	Dhase 4
Resource	Phase 1
(from noise re-analysis	recommended mitigation measures
and without mitigation)	No residences, schools, or churches would experience impacts from rail transit noise or vibration.
	Highway Impacts:
	 Would result in 815 acres of impervious surface area.
Water Resources	 Would require relocation of as many as 76 wells within the right-of-way.
	 Modifications to the existing drainage system or a new system could improve drainage compared to the No-Action Alternative.
	Would result in total direct impacts of 7.75 acres of wetlands and jurisdictional open water.
	Indirect wetland effects would result from the increase in impervious surfaces caused by additional lanes or added road shoulders. 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.
Wetlands and Waters	New flows could contain pollutants associated with roadway runoff. Sediment from winter sanding operations accumulating in wetlands.
	De-icers, petroleum products, and other chemicals would also likely degrade water quality and impacting wetland plants.
	Additional sediment and erosion would be expected during and after construction until exposed fill and cut slopes could be successfully re-vegetated.
	Other indirect effects include the decrease or elimination of upland tree and/or shrub buffers between the proposed roadway/rail corridor and wetlands adjacent to other aquatic sites.
	Would impact a total of 7.8 acres of floodplains.
Floodplains	Would result in six I-25 crossings of floodplains and replacement or rehabilitation of six drainage structures along I-25.
	Results in 337 acres of vegetation impacts.
Vegetation	The potential for noxious weeds to establish and spread onto public lands such as parks and open spaces, and agricultural areas exists.
Noxious Weeds	Results in 111 acres of soil disturbance which can result in the potential disturbance to natural resources due to spread and establishment of noxious weeds.
	Would impact 1.41 acres of sensitive riparian/wetland habitat.
Wildlife	Would impact 0.71 acres of aquatic habitat.
	Would impact 3 wildlife movement corridors and 28 raptor nests.
	Direct impact to 0.25 acre of occupied Preble's habitat.
Threatened.	Direct impact to 194 acres of bald eagle foraging habitat.
Endangered, Other	Direct impact to 48 acres of black-tailed prairie dog colonies.
Federally-Protected,	Indirect impact to Western Burrowing Owl habitat associated with prairie dog colonies.
Species	Direct impact to 8 acres of habitat for northern leopard frogs and common gartersnakes.
	Direct impact to 0.15 acre of habitat for state threatened, endangered, or sensitive aquatic species.
	Most of the proposed improvements would not have a substantial effect to the visual quality of the corridors.
Visual Quality	Long-term impacts would include relocation of businesses and residences, rebuilt interchanges, increased right-of-way, additions of station amenities, and changes to the surrounding landscape through the use of overpasses, bridges, retaining walls, medians, as well as alterations to the existing roadway grade.

Table 8.	Resources I	mpacted b	by Phase 1	(cont'd)	
			,	· /	



Resource	Phase 1	
	Indirect impacts of the proposed improvements could encourage development that is more	
	compact and denser, especially within walking distance of a transit station.	
Visual Quality (cont'd)	The addition of transit stations and a maintenance facility would generate lighting that would be seen by motorists, as well as from adjacent businesses and residences.	
	Short-term impacts would include detours, increased roadway congestion in and around the area, the presence of large equipment, and dust from construction.	
	"Adverse effects" to NRHP eligible or listed properties:	
	 0 "Adverse effect" determinations 	
Historic Preservation	"No adverse effect" to NRHP eligible or listed properties:	
	6 "No adverse effect" determinations	
	 No NRHP-eligible archaeological resources would be affected within the Area of Potential Effect 	
	Construction along I-25 between E-470 and US 36, especially where cuts are necessary to	
Dele entele sie el	expand highways and interchanges, has the highest likelihood of adversely impacting	
Resources	Ground disturbance associated with the construction of commuter rail lines and facilities.	
	Phase 1 of the Preferred Alternative would generally require 1.328 acres of ground disturbance	
	and has the potential for impacts on paleontological resources.	
Hazardous Materials 50 parcels with potential environmental conditions and 15 parcels with recognized conditions are associated with the Preferred Alternative.		
Parks and Recreation	Two park and recreation properties (Arapahoe Bend Natural Area and Little Thompson River Corridor) would be impacted through acquisition of small strips of land directly adjacent to I-25. Widening of bridges over the Cache la Poudre and Little Thompson Rivers would also occur creating additional shading over future trail locations.	
	Benefits would include improved access and mobility to and from these recreational resources.	
Section 6(f) Resources	Would have no impacts on any of the 6(f) properties.	
	The Preferred Alternative would result in the direct conversion of 402.8 total acres, if certain farming conditions are present.	
Farmlands	No farms would be severed or lose access.	
	Most of the farmland impact is associated with the widening of I-25 to accommodate buffer separated tolled express lanes.	
Energy	Would use approximately 0.9 percent more energy than the No-Action Alternative, as a result of increase in annual vehicle miles of travel within the regional study area.	
Public Safety and	An increased security presence would be needed on buses, and at existing and proposed stations and associated existing park-n-Rides.	
Security	There is a potential for modest increases to police services in response to increases in crime.	
	There is a potential for increased theft during the construction phase (a temporary impact).	
	The Preferred Alternative would have construction impacts greater than Package B because it includes commuter rail, but less than Package A because it has a single track, rather than double track.	
Construction	Construction of all build packages would cause varying temporary impacts to traffic patterns and congestion, noise and vibration, air quality, and visual presence.	
	Construction impacts would be short-term and isolated in extent depending upon the types and location of construction.	

Table 8.Resources Impacted by Phase 1 (cont'd)



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Resource	Phase 1
	Section 4(f) resource uses:
	 No Section 4(f) non-de minimis uses.
Section 4(f) Properties	 Three park Section 4(f) de minimis uses.
	 Three trail Section 4(f) de minimis uses.
	 Six NRHP listed or eligible sites with <i>de minimis</i> uses.

Table 8.Resources Impacted by Phase 1 (cont'd)

1 The Phase 1 impacts presented in **Table 8** include residential and business relocations

associated with the purchase and preservation of right-of-way needed for commuter rail.
 Commuter rail right-of-way will be purchased with State funds in Phase 1, and this action is

not part of this ROD. Of the total Phase 1 relocations shown in **Table 8**, 31 residential and

13 business relocations are associated with purchase/preservation of right-of-way for

6 commuter rail.

7 C.9 TIMING OF ADDITIONAL PHASES

8 The timing of implementation for additional phases or specific projects within those phases

9 will be determined through the statewide planning and programming process, which is

carried out by CDOT in accordance with 23 CFR 450. Under those regulations, a project

that involves federal funding can be implemented only if the project is included in the STIP.

12 The Colorado Department of Transportation uses 4P (Project Priority Programming

Process) to prioritize projects. Federal regulations (23 CFR 450.216[a] through [o]) require

all states to develop a STIP. Colorado develops its STIP in cooperation with the rural

15 Transportation Planning Regions (TPRs) and MPOs, who have their own processes that

¹⁶ include stakeholder outreach. Colorado Department of Transportation Engineering Regions

initiate 4P, conduct priority programming, and submit projects for inclusion in the STIP. The

¹⁸ governor, MPOs, and the Transportation Commission have roles in approving the STIP.

¹⁹ The final step in STIP approval is when FHWA and FTA approve the STIP.

20 Stakeholders have a role during the statewide planning process by providing input on

21 project priorities. Phased project design processes can be amended into the STIP between

formal planning cycles by the Colorado Transportation Commission. As conditions change,

either through new legislation or changes in identified funding, the Colorado Transportation

24 Commission may include additional projects in the STIP.

D. ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The Council on Environmental Quality regulations (40 CFR 1505.2[b]) require the ROD to identify the environmentally preferable alternative. The environmentally preferable

alternative is the alternative that will promote the national environmental policy as

expressed in NEPA's Section 101. The Council on Environmental Quality 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

³⁴ environmentally preferable alternative.



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- Package A requires relocation of the most number of residences and businesses, results in
- 2 slightly higher total air emissions than the other packages, results in the most acres of
- 3 vegetation impacts and soil disturbance, the most acreage of impact to potential Preble's
- 4 meadow jumping mouse habitat, the highest numbers of adverse effects to properties on
- 5 the National Register of Historic Places (NRHP) and the most number of parcels with
- 6 potential or recognized hazardous material conditions. Package A also exacerbates an
- 7 existing freight rail barrier between neighborhoods in some areas and creates a new barrier
- 8 in other areas. Package A improves transit related mobility on two corridors in the regional
- 9 study area. The addition of general purpose lanes to I-25 does not provide an opportunity to
- ¹⁰ manage congestion over time, as volumes grow.
- Package B results in the largest number of residences and commercial buildings that would 11 be impacted by highway noise, the most acreage of new impervious surface area, the most 12 wetland impact, the most acreage of floodplain impact, the greatest acreage of impact to 13 sensitive wildlife habitat and aquatic habitat, and the most acres of impact to black-tailed 14 prairie dog habitat. Package B concentrates both highway and transit improvements on a 15 single corridor, I-25. It therefore does not have the negative community impacts the other 16 two alternatives have on noise, visual and community cohesion. It requires the least number 17 of residential and business relocations. It could also tend to provide a growth stimulus to 18 areas along I-25, farther away from the downtown areas located along the US 287 corridor. 19
- 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 Preferred Alternative has fewer impacts to the habitat for the Preble's meadow jumping mouse, a federally threatened species. The Preferred Alternative also has the least impacts to aquatic resources. On the other hand, the 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 Preferred Alternative has been determined to cause the least overall harm to 27 Section 4(f) properties. The Preferred Alternative is most responsive to land use goals of 28 stimulating growth around transit stations, since it includes commuter rail along US 287, 29 express bus along I-25 and commuter bus along US 85. Over time, there is a greater 30 potential with the Preferred Alternative to conserve energy and reduce air emissions 31 because of the easier expansion capabilities of transit service provided on more corridors 32 and because of the potential for transit oriented development around commuter rail, express 33 bus and commuter bus stations. The Preferred Alternative also has the least impact to 34 aquatic resources, including wetlands, other jurisdictional waters, aquatic habitat, and 35 impacts to Preble's meadow jumping mouse habitat. For these reasons, the Preferred 36 Alternative is considered to be the Environmentally Preferable Alternative. 37
- 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 2035 would, however, be lower than existing levels for all pollutants and in all alternatives.



E. LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE (LEDPA)

The Preferred Alternative has fewer impacts to aquatic resources and threatened and endangered species than Packages A or B, as described above and in **Table 2**.

5 The USACE, in their letter dated August 16, 2011 (included in Appendix C of this ROD),

6 stated that the Preferred Alternative appears to be the LEDPA. Concurrence from the

7 USACE that the mitigation meets the regulatory requirements will be granted when a

8 Section 404 permit is issued. The application for the Section 404 permit has been made to

9 the USACE.

F. RE-ANALYSIS OF NOISE IMPACTS

Traffic noise analyses were previously conducted for both the Draft EIS and Final EIS. The 11 study corridors were evaluated for noise impacts and abatement actions following CDOT's 12 2002 noise guidelines. A number of traffic noise impacts were identified and several noise 13 abatement actions were recommended, which were described in those documents. Since 14 that time, new traffic noise regulations have been promulgated by FHWA (CFR Title 23 15 Part 772) and CDOT has completed the Noise Analysis and Abatement Guidelines (2011), 16 so a re-analysis of the Phase 1 improvements was needed to comply with the changed 17 requirements. The full re-analysis is included in **Appendix F** of this ROD. 18

The 2011 CDOT guidelines fundamentally changed the way receptors are considered in noise impact analyses. For example, Land Use Categories B and C from the 2002 CDOT guidelines (the land uses of primary importance in the previous noise analyses) were substantively changed in the 2011 guidelines. The more important of these are the former Category B land uses (residential), which have been split between the new Categories B, C and E. In addition, the upper floors of multi-story multi-family buildings were analyzed under the new guidelines.

The re-analysis focused on methods and results that are new or changed in the Phase 1 regional study areas since the Final EIS. Note that noise issues unchanged or untouched by

Phase 1 were not revisited and can be found in the previous technical reports. Phase 1

does not include construction of any commuter rail components; therefore, rail

noise/vibration is not a consideration for this ROD. In addition, there have been no changes

to the rail noise/vibration guidance since the Final EIS was completed, so those conclusions

do not need to be re-evaluated at this time. This noise analysis will need to be updated per

³³ latest guidance prior to approval of any subsequent ROD(s).

The results from the re-analysis are similar to the results from the Final EIS (see **Table 9**),

even with the methodology changes. The same areas are impacted at essentially the same

noise levels for both analyses. No new impacted areas or substantive noise impacts were

identified by the re-analysis that were not already identified for the Final EIS. The total

³⁸ number of impacts appear to differ because of the way receptors are examined under

³⁹ CDOT's 2002 guidelines versus the 2011 guidelines.



1 25 Segment	Number of Impacted Receptors from Final EIS (CDOT 2002 Land Use Category B)			Number of Impacted Receptors from ROD (CDOT 2011 Land Use Categories B/C/E)		
i-25 Segment	Existing (2005)	No-Action (2035)	Phase 1 (2035)	Existing (2005)	No-Action (2035)	Phase 1 (2035)
SH 14 to SH 60	7	9	9	6/3/0	9/3/1	8/4/1
SH 60 to E-470	7	14	14	15/1/0	19/2/0	19/2/0
E-470 to US 36	215	407	417	393/8/4	529/8/4	558/10/5
Total	229	430	440	414/12/4	557/13/5	585/16/6

Table 9. Summary and Comparison of Phase 1 Area Traffic Noise Impacts

2 Because of the impacts listed in **Table 9**, traffic noise abatement actions were considered.

³ Several of these abatement actions were found to be feasible and reasonable and were,

4 therefore, recommended for construction in Phase 1, which were the same mitigation

⁵ locations recommended for Phase 1 in the Final EIS. Four noise abatement walls were

⁶ recommended and these are described in **Table 11** in **Section K**.

7 G. SECTION 4(f)

A Revised Section 4(f) Evaluation dated October 27, 2011, was prepared and circulated 8 after publication of the North I-25 Final Environmental Impact Statement/Final Section 4(f) 9 Evaluation, August 2011. This Revised 4(f) Evaluation is incorporated by reference into this 10 ROD. After the Final EIS and Final Section 4(f) Evaluation were circulated, CDOT and 11 FHWA, based on consultation with the State Historic Preservation Officer (SHPO), changed 12 the effect determinations under Section 106 of the National Historic Preservation Act for 13 three properties: the Bein Farm, the Mountain View Farm and the Schmer Farm to adverse 14 effects. This in turn changed the analysis required under Section 4(f). The previous 15 no adverse effect determination, as discussed in the Final EIS would have resulted in a 16 de minimis use allowing the use of a Section 4(f) resource without requiring an avoidance 17 analysis, and would not have, by definition, contributed to harm in the Least Overall Harm 18 Analysis. For this project, because these properties will be *adversely affected*, a Revised 19 Section 4(f) Evaluation that considers additional avoidance alternatives for the three historic 20 agricultural properties and any unavoidable uses that these Section 4(f) properties may 21 contribute to the overall harm of the alternatives being considered was prepared and 22 submitted to the USDOI for review per 23 CFR 774. 23

Although the effects determinations for the three properties of issue are changing from 24 "no adverse effect" to "adverse effect," the impacts as described in the Final EIS are the 25 same. The impacts the alternatives have on the properties are described in **Section 3.15.2**, 26 Historic Preservation, of the Final EIS. A supplemental EIS per 23 CFR 771.130 would not 27 be required because the impacts as described in the Final EIS have not changed and do 28 not result in significant environmental impacts that were not evaluated in the EIS. The actual 29 impacts to these properties are relatively small, primarily constituting the taking of a narrow 30 strip of land from a relatively large agricultural property and include visual intrusions to the 31 Schmer Farm and the Mountain View Farm. 32

33



- This new information was incorporated into the October 27, 2011 Revised Section 4(f)
- 2 Evaluation (information on the availability of the Revised Section 4(f) Evaluation can be
- ³ found on the back of the title page of this ROD).
- 4 The Preferred Alternative uses 8 Section 4(f) properties and has a *de minimis* impact on
- 5 29 Section 4(f) properties. The historic properties for which a *de minimis* impact will occur
- are listed in **Table 5** of the *Revised Section 4(f) Evaluation*, October 27, 2011 and include:
 - Larimer County Ditch (5LR.8932)
 - Einarsen Farm (5LR.11396)
 - Cache la Poudre Reservoir Inlet (5LR.11409)
 - Boxelder Ditch (5LR.2160)
 - Loveland and Greeley Canal (5LR.503.2)
 - Farmers Ditch (5LR.8928)
 - Handy Ditch (5LR.1710.1)
 - McDonough Farm (5LR.11210)
 - Zimmerman Grain Elevators (5LR.11408)
 - Great Western Railway (5LR.850, 5WL.841, 5BL.514)
 - Hatch Farm (5LR.11382)

- Handy/Home Supply Ditch Confluence (5WL.3149)
- Olson Farm (5WL.5198)
- Bull Canal/Standley Ditch (5WL.1966, 5BF.76, 5BF.72, 5AM.457)
- Supply Ditch (5BL.3449)
- Rough & Ready Ditch (5BL.3113)
- Oligarchy Ditch (5BL.4832)
- Kitely House (5BL.9163)
- Sandstone Ranch (5WL.712)
- Boulder & Weld County Ditch (5WL.5461)
- Rural Ditch (5WL.1974)
- UPRR-Dent Branch (5WL.1317)

- Hillsboro Ditch (5LR.8927)
- 7 The criteria below must be met for a *de minimis* finding to be made by FHWA for the use of
- 8 these properties. For each of the historic properties recommended for a *de minimis* impact,
- ⁹ in all cases, the Preferred Alternative has a *no adverse effect* on the historic property, the
- 10 SHPO was notified of the intent of the FHWA to make a *de minimis* impact finding, and
- consulting parties were provided multiple opportunities to give their view. Each of the
- properties above has met these criteria and FHWA, with the approval of this ROD finds that the uses associated with the above properties are *de minimis*.
- The impacts of a transportation project on a historic property that qualifies for Section 4(f)
- 15 protection may be determined to be *de minimis* if:



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 The process required by Section 106 of the National Historic Preservation Act¹ results in the determination of "*no adverse effect*" or "no *historic properties affected*" with the concurrence of the SHPO and/or Tribal Historic Preservation Officer (THPO), and Advisory Council on Historic Preservation (ACHP) if participating in the Section 106 consultation;

2) The SHPO and/or THPO, and ACHP if participating in the Section 106 consultation, is
 informed of FHWA's or FTA's intent to make a de minimis impact finding based on their
 written concurrence in the Section 106 determination; and

- S) FHWA or FTA has considered the views of any consulting parties participating in the
 Section 106 consultation.
- The park, recreational area and wildlife and waterfowl refuge area properties for which a *de minimis* impact will occur are listed in **Table 6** of the *Revised Section 4(f) Evaluation*, October 27, 2011 and include:
- Arapaho Bend Natural Area
- 15 Little Thompson River Corridor
- 16 Sandstone Ranch
- 17 120th Avenue Transit Station Underpass
- 18 Farmers Highline Canal Trail
- 19 Niver Creek Open Space/Niver Creek Trail
- The impacts of a transportation project on a park, recreation area, or wildlife and waterfowl refuge that qualifies for Section 4(f) protection may be determined to be *de minimis* if:
- The transportation use of the Section 4(f) resource, together with any impact avoidance,
 minimization, and mitigation or enhancement measures incorporated into the project,
 does not adversely affect the activities, features, and attributes that qualify the resource
 for protection under Section 4(f);
- 26 2) The official(s) with jurisdiction over the property are informed of FHWA's or FTA's intent
 27 to make the de minimis impact finding based on their written concurrence that the
 28 project will not adversely affect the activities, features, and attributes that qualify the
 29 property for protection under Section 4(f); and
- 3) The public has been afforded an opportunity to review and comment on the effects of
 the project on the protected activities, features, and attributes of the Section 4(f)
 resource.
- For the park and recreation properties recommended for the *de minimis* impact finding, in all cases, the impacts will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f). The Officials with Jurisdictions have agreed to this impact assessment, and letters confirming this are included in **Appendix E** of the
- Final EIS. The public had an opportunity to review and comment on the effects of the project on these resources through the public involvement process associated with the EIS.

¹ 16 U.S.C. 470f, with implementing regulation at 36 CFR part 800



- and Section 4(f) Evaluation. The FHWA, with the approval of this ROD, finds that the uses associated with the above properties are *de minimis*.
- 3 The FHWA has determined that there is no feasible and prudent avoidance alternative and
- 4 the 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 *Revised Section 4(f) Evaluation,* concludes that the Preferred Alternative is the alternative with the least overall
- *Evaluation,* concludes that the Preferred Alternative is the alternative with the least overall harm to the Section 4(f) properties. The FHWA, with the approval of this ROD, based on
- consultation with the officials with jurisdictions and the public finds that the uses associated
- 9 with the above 29 Section 4(f) properties are *de minimis*.
- 10 The *Revised Section 4(f) Evaluation* was submitted to the U.S. Department of the Interior
- (USDOI) on October 28, 2011 for their review. USDOI responded on December 6, 2011
- indicating their concurrence with the Revised Section 4(f) Evaluation, pending execution of
- the Section 106 Programmatic Agreement, which was executed December 15, 2011 and is
- included as **Appendix G** of this ROD.

15 H. STATUS OF FEDERAL AND STATE APPROVALS

16 The following descriptions are of federal or state approvals that have been made following 17 publication of the Final EIS.

18 H.1 AIR QUALITY

19 Transportation conformity, as a provision of the CAA Amendments of 1990 applies to

- ²⁰ federally funded projects. Conformity requires that these actions be included in a fiscally
- constrained RTP and TIP that meet statutory and regulatory tests. A conformity
- determination includes a regional emissions analysis at the RTP and TIP level, and
- demonstrates that emissions are within the limits set by the State Implementation Plan
- (SIP). Federal projects require a separate project level conformity determination.

H.1.1 PROJECT LEVEL AIR QUALITY CONFORMITY FOR THE PROPOSED ACTION (PHASE 1)

27 The Final EIS in Sections 3.5.3.3, *Project–Level CO Analysis,* and 3.5.3.4, *Project–Level*

- PM_{10} Analysis, provide the analysis needed to demonstrate that the project would meet the
- transportation conformity requirements because Phase 1 would not cause or contribute to
- any new localized CO or PM₁₀ violations, or increase the frequency or severity of any
- existing violations, or delay timely attainment of the CO, PM₁₀ or ozone NAAQS.
- The Air Pollution Control Division (APCD) of the Colorado Department of Public Health and
- Environment (CDPHE), in its concurrence letter signed October 19, 2011 (see Appendix C
- of this ROD), has concurred with the findings of the Phase 1 project level conformity
- analyses that were done.

36 H.1.2 REGIONAL AIR QUALITY EVALUATION FOR THE PREFERRED 37 ALTERNATIVE

To ensure that air quality conformity would not be an issue if money were to become

available to completely build out the Preferred Alternative, conformity analyses were performed.



- To demonstrate that the North I-25 project would not cause significant air quality impact and
- 2 would comply with the current SIP when it is fully constructed, the entire North I-25
- ³ Preferred Alternative, with all of the proposed improvements, was modeled in a separate,
- 4 non-fiscally constrained 2035 regional travel demand modeling run prepared using a
- ⁵ combined travel model covering the entire scope of the regional study area.
- ⁶ The use of a project-defined travel model, which combined the DRCOG and NFRMPO
- 7 coverage of the entire regional study area, was determined to be the appropriate course of
- 8 action in an interagency air quality consultation meeting held on November 17, 2009. The
- ⁹ results of this travel modeling effort were submitted to the state agency that regulates air
- pollution, the APCD, on October 26, 2010, emissions modeling conducted by APCD, and
- emissions modeling results transmitted to CDOT on November 9, 2010.
- 12 These modeling results indicated that all currently applicable conformity emissions tests
- 13 would still be met if the Preferred Alternative were to be constructed in its entirety before
- 14 2035. The APCD has concurred with the finding that there would not be any significant
- regional air quality impacts once all phases of the project are funded and completed for the
- ¹⁶ North I-25 Preferred Alternative. See **Appendix C** of this ROD for this concurrence.

17 H.1.3 REGIONAL AIR QUALITY CONFORMITY FOR PHASE 1

- ¹⁸ Phase 1 of the Preferred Alternative is incorporated into the following RTPs:
- DRCOG Fiscally Constrained 2035 RTP amendment adopted by the DRCOG board on August 17, 2011.
- North Front Range Fiscally Constrained 2035 Plan Update adopted September 1, 2011
 by NFR Council.
- Upper Front Range 2035 Fiscally Constrained Regional Transportation Plan adopted by
 UFRRPC January 2008.
- ²⁵ Portions of Phase 1 are included in TIPs/STIP as follows:
- Initial preconstruction phases, design and ROW, in *DRCOG TIP* adopted
 August 17, 2011 as 2008-081. The TIP covers a time period of 2012 to 2017. This
 includes design and ROW for I-25 improvements between SH 56 and WCR 38.
- Initial preconstruction phases, design and ROW, in *NFR TIP Strategic Program* as SSP4028 adopted on March 3, 2011, and readopted September 1, 2011, and in the *CDOT 2012-2017 STIP* as SSP4028 for current fiscal year (which begins July 1, 2011), and SR41001 for 2013 to 2015 (which begins July 1, 2012). This includes design and ROW for I-25 improvements from WCR 38 to SH 66 and from Crossroads to SH 14, and design and ROW for Phase 1 of the US 34/I-25 interchange. The TIP covers a time period of 2012 to 2017.
- Initial preconstruction phases, design and ROW in the CDOT 2012-2017 STIP as SSP4028 for current fiscal year (which begins July 1, 2011, and ends June 30, 2012), and SR41001 for 2013 to 2015. This includes design and ROW for I-25 improvements from SH 66 to SH 56 and from Crossroads to SH 14, and for Phase 1 of the US 34/I-25 interchange. The STIP covers a time period of 2012 to 2017.
- 2035 traffic data were sent to APCD containing Phase 1 of the Preferred Alternative. APCD
 was then able to make a determination that Phase 1 demonstrates regional conformity with


- respect to the transportation conformity rule and therefore is not expected to cause
- 2 significant regional air quality impacts. APCD and MPO conformity determinations were
- ³ made as noted below:
- The DRCOG / APCD Conformity Determination for carbon monoxide (CO) and PM₁₀, as adopted by the DRCOG Board on August 17, 2011 is available at
- 6 http://www.drcog.org/documents/final%20-%202011%20Cycle1%20-
- 7 %20DRCOG%20CO_PM10%20conformity.pdf
- The DRCOG / APCD Conformity Determination for Ozone, as adopted by the DRCOG
 Board on August 17, 2011 is available at http://www.drcog.org/documents/final%20 %202011%20Cycle1%20-%20Southern%20Subarea%208-
- hour%20Ozone%20conformity.pdf
- 12 The NFRMPO Plan and TIP conformity findings were made on September 1, 2011
- FHWA official conformity determinations were made on October 24, 2011, for both the
 NFRMPO Plan and TIP and the DRCOG Plan and TIP.

15 H.2 SECTION 106 CONSULTATION

The lead agencies have consulted with the SHPO and Consulting Parties on determinations 16 of eligibility and effects. As documented in the North I-25 Final Environmental Impact 17 Statement/Section 4(f) Evaluation, CDOT, August 2011, Section 3.15, Historic Preservation 18 consultation has consisted of arranging with the SHPO to substitute the project's NEPA 19 documents (Draft and Final EIS) in lieu of separate correspondence, in order to accomplish 20 the effects determination part of the Section 106 consultation process, per 36 CFR 800.8(c). 21 The partial document substitution process is intended to reduce the time and complexity of 22 the review process involving the SHPO and other Section 106 consulting parties, by 23 providing detailed information about project impacts associated with the various alternatives 24 in the EIS rather than additional documents. 25 For the North I-25 EIS, the Section 106 consultation step involving determinations of NRHP 26 eligibility for all historic and archaeological resources was accomplished by the traditional 27 method of submitting survey reports and site forms to the SHPO and other Section 106 28

- 29 consulting parties. The survey reports and site forms included the eligibility determinations
- ³⁰ proposed by the lead agencies for SHPO concurrence. A number of resources within the
- North I-25 project Area of Potential Effect (APE) were determined eligible for inclusion on
- the NRHP as a result of past studies and were assumed eligible for this project. After the
- ³³ Draft EIS was released, four additional properties were identified as eligible through
- consultation. Concurrence on eligibility was received from the SHPO on January 3, 2011.
- The Final EIS provides the formal documentation for consultation on effects for all the alternatives. In addition, the Final EIS includes responses to comments received on the
- 37 Draft EIS.
- ³⁸ By letter dated October 3, 2011 and a follow-up letter dated October 14, 2011 (see
- Appendix B of this ROD), the SHPO concurred with findings of effect for all properties
- 40 except for three findings of *no adverse effect*. FHWA and CDOT, based on consultation with
- the SHPO, changed the effect determinations for three properties (the Schmer Farm,
- 42 Mountain View Farm, Bein Farm) from *no adverse effect* to *adverse effect*. FHWA notified
- the ACHP of these three new *adverse effect* findings (see letter dated November 9, 2011, in



- Appendix C of this ROD). These new effect determinations are included in Appendix D of this ROD.
- ³ Following consultation on the effects, the resolution of adverse effects has been
- 4 documented in a Programmatic Agreement (PA) signed by the lead agencies and the
- 5 SHPO. Consulting parties were invited to sign the PA, but all declined.

⁶ The lead agencies and the SHPO have executed the PA dated December 2011. This is

- 7 included in **Appendix G** of this ROD. The PA sets forth a process by which CDOT, on
- 8 behalf of FHWA where applicable, will re-evaluate effects to existing and new cultural resources as construction projects are funded and designs are refined. The research this D
- resources as construction projects are funded and designs are refined. The reason this PA
 is needed is because of the length of time that may pass between the signing of this ROD
- is needed is because of the length of time that may pass between the signing of this ROD and the implementation of various phases of the Preferred Alternative. The signatories to
- the PA have agreed to certain measures to accommodate changes in the design, changes
- in perceptions of significance, or other changes that may occur due to the length of time
- 14 before full project implementation.
- ¹⁵ Mitigation measures are documented in the PA. In addition, **Section K** of this ROD lists
- 16 mitigation measures.
- 17 All Section 106 consultation has been finalized for this project.

18 **H.3 CDOT 1601 PROCESS**

- 19 The CDOT 1601 process (required by Policy Directive 1601, which addresses new
- 20 interchanges or interchange modifications on all state and federal highways) is required for
- all interchange modifications. This analysis was signed by the CDOT Chief Engineer on
- August 8, 2011, addressing five of the six interchanges identified for Phase 1.
- ²³ The sixth location is for a new interchange on US 34, east of I-25 at LCR 5. This is the first
- phase of a multi-phase, major interchange for I-25 at US 34 and will only involve
- improvements east of I-25 at LCR 5. No improvements are included on I-25 itself. Approval
- ²⁶ for this sixth location was provided by the CDOT Chief Engineer on October 5, 2011.
- Because all six modifications are Type 2, (which means the improvements proposed are
 minor, including adding lanes to an on-ramp, changing acceleration or deceleration lanes on
 I-25, changing ramp termini or moving gore points closer to an adjacent interchange) no
- action is needed by the Colorado Transportation Commission.

H.4 SECTION 404 PERMIT

- The North I-25 EIS was conducted using a NEPA/Section 404 merger process as
- documented in a letter dated February 5, 2004 from FHWA and FTA to the USACE. This
- included coordination with the USACE, U.S. Environmental Protection Agency (EPA), and
- U.S. Fish and Wildlife Service (USFWS).
- ³⁶ Formal concurrence from the USACE has been received for three concurrence points:
- Agreement with Purpose and Need
- Agreement with the Alternatives for Detailed Analysis
- Agreement that the Preferred Alternative appears to be the LEDPA



- The USACE will provide their concurrence with the final step (the Compensatory Mitigation
- ² Plan) at the same time they issue the Section 404 permit for the project. A Section 404
- ³ Permit will be obtained prior to any construction activities.

4 H.5 BIOLOGICAL OPINION

- ⁵ The Programmatic Biological Opinion (PBO), dated October 13, 2011, is included in
- 6 Appendix E of this ROD. This PBO provides concurrence from the USFWS with the
- ⁷ findings of effect for threatened or endangered species.

I. APPROVALS FOR INTERCHANGE MODIFICATIONS

10 These approvals from FHWA still need to be made prior to any final design or construction 11 of I-25 interchange modifications.

- 12 The following Phase 1 interchanges include substantial modifications to the existing 13 configuration and, therefore, required Interchange Access Requests:
- 15 SH 7
- The following Phase 1 interchanges only include minor modifications to the existing configuration and, therefore, required Minor Interchange Modification Requests:
- 19 **•** WCR 34
- 20 120th Avenue
- 21 104th Avenue
- ▶ 84th Avenue

J. CLARIFICATIONS AND CORRECTIONS FROM FINAL EIS

This section includes clarifications or corrections to specific items in the Final EIS. These issues were brought up during the public and agency review process for the Final EIS.

J.1 CLARIFICATIONS RELATED TO THE DESCRIPTION OF THE DRCOG 2035 RTP

The DRCOG 2035 RTP was adopted in February 2011, and was amended on August 17, 2011, which was after the North I-25 Final EIS was released. The DRCOG RTP, as amended in August 2011, is consistent with the Preferred Alternative and Phase 1 as identified in this ROD. The following paragraphs summarize the DRCOG 2035 RTP, as amended in August 2011, with regard to North I-25.



- 1 The 2035 Metro Vision Plan (unconstrained) identifies HOT/HOV lanes that would continue
- 2 north from US 36 to SH 66. The *DRCOG 2035* fiscally-constrained and air quality
- 3 conformity *RTP* was amended in August 2011, from adding two general purpose lanes on
- 4 I-25 from US 36 to Thornton Parkway to adding two TELs from US 36 to 120th Avenue.
- 5 Revised costs and funding including interim staging elements were included in the project
- 6 description. Also amended was the RTP description for the segment of I-25 from SH 66 to
- 7 WCR 138, from adding two general purpose lanes to adding two TELs and interchange
- ⁸ reconstruction at WCR 34.

In Final EIS Chapter 8, Phased Project Implementation, the text notes that the DRCOG 9 Fiscally Constrained 2035 RTP identifies \$268 million in funding for the improvements along 10 I-25 and \$58 million for the I-25/SH 7 interchange, which is accurate relative to the general 11 purpose lane widening indicated in the February 2011-adopted 2035 RTP. It should be 12 clarified that, as amended in August 2011, the DRCOG 2035 fiscally-constrained and air 13 quality conforming RTP identifies \$286 million in costs and funding identified by CDOT for 14 adding TELs and related improvements along I-25 in addition to \$58 million in locally 15 derived funding for the I-25/SH 7 interchange. This clarification also applies to Chapter 7, 16 Financial Analysis, of the Final EIS. 17

Since these clarifications are simply changes in wording to reflect the latest DRCOG Plan
 Amendment language, there are no new significant impacts that were not identified in the
 Final EIS.

J.2 CLARIFICATIONS REGARDING THE MASON CORRIDOR AND SPECIFIC DETAILS RELATED TO IT

The Final EIS contains various references in the text, maps, and callout boxes related to 23 Mason Corridor. The correct reference to this corridor is "Mason Corridor," not "Mason 24 Street Corridor" or "Mason Street Transportation Corridor." The correct location for the 25 South Transit Center is "Mason Street and West Fairway Lane" (which is a more precise 26 location description preferred by the City of Fort Collins, rather than the more general 27 Harmony Road). All station locations are correctly illustrated in Table 2-18 of the Final EIS. 28 The station description on the figures in **Appendix A** of this ROD have been revised to 29 "Mason Street and West Fairway Lane". 30

Also, the opening day for the Mason Corridor MAX BRT service is now 2014 based on the latest schedule information from the City's engineering department. For more details regarding the MAX BRT project, contact Helen Migchelbrink, City Engineer, at (970) 218-1409 or via e-mail at hmigchelbrink@fcgov.com

These clarifications are related only to labeling used on maps or in the text. The station location that was analyzed in the impact assessment process is correct. The change in date for opening of the Mason Corridor MAX BRT does not influence any impact analysis. For these reasons, these minor changes do not result in new significant impacts that were not identified in the Final EIS.



J.3 CLARIFICATIONS REGARDING FLEX BUS ROUTE FROM FORT COLLINS TO RTD'S TRANSIT SYSTEM IN LONGMONT

³ The Regional "Foxtrot" route is now referred to as "Flex" and connects from Fort Collins

4 through Loveland to Longmont where it connects into RTD's transit system. This

5 clarification is a wording change only – for the name of a bus route. It does not result in any

6 new significant impact that was not identified in the Final EIS.

7 J.4 CLARIFICATION REGARDING ACCESS CONTROL PLANS

The list of Access Control Plans listed in the Final EIS (see Section 2.1.3, *Regional Planning Context*) should have also included the two access plans for US 287—North
College and South College Access Controls Plans. The list of Access Control Plans in
Chapter 2 was included for reference only. Adding two more plans to this list does not result
in a new significant impact that was not identified in the Final EIS.

J.5 DESCRIPTION OF THE NORTHERN TERMINUS OF THE 14 COMMUTER RAIL LINE

On page 2-20 of the Final EIS, the description of the Package A Commuter Rail service is
 inaccurate in terms of where the northern end of service would begin. The description
 should have read: "...downtown Fort Collins at Mason and Maple Streets" (not at University)

18 Avenue).

¹⁹ The change noted is a description in **Chapter 2**, *Alternatives*, of the Final EIS. The change

is consistent with the information shown on the commuter rail plans, which shows a

commuter rail platform and a small park and ride at Mason and Maple. Since this location is

22 what was analyzed for impacts, the change in description does not constitute a new

significant impact that was not identified in the Final EIS.

24 J.6 REVISIONS TO MUNICIPAL PLANS

On **page 3.1-4** of the Final EIS, the City of Fort Collins should have been included in the list of I-25 corridor municipal plans and not just on the US 287 list of communities. Also, the City Plan's title should have been "Plan Fort Collins," which includes both the City Plan and the Transportation Master Plan. These plans were updated in 2010-2011.

Regarding land use (on **page 3.1-11** of the Final EIS), the City of Fort Collins' adopted

30 comprehensive plan (City Plan) calls for higher density, mixed use, infill and redevelopment

along US 287 and Mason Corridor. This is the area covered by the TOD Overlay Zone. Fort

³² Collins' city plans do not envision this corridor as built out or remaining the same as today. It

- is a focus area for targeted infill and redevelopment supported by high-quality transit service
- ³⁴ and multimodal transportation choices.
- ³⁵ The list of municipal plans was provided for reference only and adding the correct name of
- the Fort Collins plan to the 287 corridor plans and to those along I-25 is not a significant
- 37 change nor does it represent a new significant impact that was not identified in the
- 38 Final EIS.



1 The information about the TOD Overlay Zone in Fort Collins is consistent with the

2 information in **Section 3.1**, *Land Use* that "future land use would include densification of

³ land use in the urban centers". This information also does not represent a new significant

⁴ impact that was not identified in the Final EIS.

5 J.7 CORRECTION TO LOCATION OF PM 2.5 MONITORING STATION

On Table 3.5-2 of the Final EIS, the address for the particulate matter less than 2.5 microns
 in diameter (PM_{2.5}) monitoring station in Fort Collins should have been 708 South Mason
 Street. The address for the PM _{2.5} monitoring station was provided in the Final EIS for
 information purposes only. Correcting that location does not result in a new significant
 impact that was not identified in the Final EIS.

J.8 CORRECTIONS TO THE FIGURES SHOWING THE LOCATION OF THE END OF LINE FOR THE NW RAIL STATION IN LONGMONT

Figures ES-3, ES-5, 2-6, 2-34, 8-3, 8-5 and 8-6 of the Final EIS all show an incorrect
 location for the end of line station for the NW Rail Corridor. That location is correctly shown
 on the Preferred Alternative figure in Appendix A of this ROD.

The incorrect location for the station at the end of the line for the NW Rail Corridor which was shown on several graphics was used for illustrative purposes. The correct location is shown on the commuter rail plans. This is the location that was used for impact analysis so the change in the graphics in the Final EIS does not result in a new significant impact that was not identified in the Final EIS.

I.9 LOCATION OF AN EXPRESS BUS STATION ALONG US 34

This location is incorrect as described in **Chapter 8**, *Phased Project Implementation*, page 8-10, line 37 of the Final EIS. The location is correctly shown on **Figure 8-3**. The correct location is on US 34 at 83rd Avenue. The Phase 1 graphic in **Appendix A** of this ROD shows the correct location.

The correct location of the express bus station along US 34 was illustrated in graphics and was used for the Final EIS analysis. The incorrect information was simply in the text; the correct information was used in the analysis. This change does not result in a new

significant impact that was not identified in the Final EIS.

J.10 CORRECTIONS AND CLARIFICATIONS TO THE NUMBERS OF HISTORIC PROPERTIES AFFECTED

Table 10 is a corrected version of Table 3.15-3 from the Final EIS. Changes were made to
 respond to the October 3, 2011, letter from the SHPO. Table 10 reflects three adverse
 effects to Bein Farm, the Mountain View Farm, and the Schmer Farm. Other minor
 corrections have also been made to this table.

- Changes in the numbers of historic properties and their correct Section 106 effect
- determinations was a recent change that is fully documented in **Section H.2** of this
- document. This change in effect determinations does not alter the original discussion of
- ³⁹ impacts in the Final EIS since the actual impacts have not changed only how they are



categorized within Section 106. The change has been fully acknowledged and mitigation

2 developed as defined in the PA signed in December 2011 and contained in **Appendix G** of

3 this ROD. No new significant impacts that were not identified in the Final EIS have occurred

4 as a result of this change.

5 J.11 CORRECTIONS AND CLARIFICATIONS TO THE NUMBER OF 6 SECTION 4(f) PROPERTIES USED BY THE PROJECT

Since the Final EIS was published, there have been changes and corrections made to the
 number of Section 4(f) properties used by the project. Corrections and clarifications were
 required for historic properties only. A full description of these changes can be found in the
 Revised Section 4(f) Evaluation, dated October 27, 2011, which has been finalized and
 circulated to the USDOI. A summary of the changes can be found in Table 10.

12 This information does not change the conclusion that the Preferred Alternative causes the

least overall harm to Section 4(f) properties and is the most responsive to project Purpose
 and Need.

¹⁵ Changes in the numbers of historic properties and their correct Section 106 effect

determinations also affected the Section 4(f) Evaluation. This resulted in a *Revised*

17 Section 4(f) Evaluation, dated October 27, 2011, which has been discussed in Section G of

this ROD and incorporated herein by reference. These changes do not alter the preliminary

19 findings in the Final EIS related to significance of impacts and the conclusions in Section G

of this ROD reflect that. No new significant impacts that were not identified in the Final EIS

²¹ have occurred as a result of this change.

J.12 CLARIFICATIONS TO TEXT DESCRIBING THE HISTORIC IMPACT TO THE LITTLE THOMPSON RIVER BRIDGE

Section 3.15, Historic Preservation of the Final EIS describes the impact of the action 24 alternatives on the Little Thompson River Bridge (5WL.2985) on the I-25 frontage road as 25 "no historic properties affected." The replacement of this bridge is being pursued by CDOT 26 as a separate action for safety reasons, as described above in this ROD in Section B.2.2 27 No-Action Alternative and would be needed regardless of any of the alternatives being 28 considered in the Final EIS of the North I-25 project. Recent information supporting the 29 need for this bridge replacement would have applied to all of the alternatives being 30 evaluated in the Final EIS. The impacts would apply to all the build alternatives in the same 31 way. 32

The new information provided in this section regarding the Little Thompson River Bridge has been evaluated in a separate categorical exclusion. Based on this analysis it does not result in new significant impacts that were not identified in the Final EIS.

J.13 LOCATION OF COMMUTER BUS STATION ON FIGURE

³⁷ During the North I-25 Final EIS review, it was discovered that the Preferred Alternative and ³⁸ the Phase 1 project maps in the **Executive Summary** (page ES-8 and ES-18), **Chapter 2**,

Alternatives (page 2-54), **Chapter 8**, *Phased Project Implementation* (pages 8-2 and 8-11),

and in the Alternatives Development and Screening Report (page 6-52) had labeling error



- (station shown on the wrong side of US 85). This labeling error was corrected. The updated
- 2 maps can be found in **Appendix A**, Figures of Preferred Alternative and Phase 1, of this
- 3 ROD.
- ⁴ The correct location of the commuter bus station illustrated on the Final EIS graphics does
- 5 not affect the analysis that was done for the Final EIS. The correct location was used for all
- 6 environmental analysis. For this reason, this new information does not result in new
- 7 significant impacts that were not identified in the Final EIS.

8 J.14 DESIGNATION OF LONGVIEW OPEN SPACE

A comment was received that the Longview Open Space was incorrectly noted as agriculture. Longview Farm is shown correctly as Open Space/Parks on all these figures (Figure 3.1-3 and Figure 3.1-4 through Figure 3.1-7). No change necessary. The newly designated Longview Open Space is noted. Since the Longview Farm was shown correctly as open space/parks on the figures and this designation is what was used for analysis purposes, no new significant impacts were identified as a result of the name change to Longview Open Space.

16 J.15 CORRECTIONS TO THE NUMBER OF DISPLACEMENTS

Table 2 of this document correctly states the number of residential and business 17 displacements for the Preferred Alternative. The correct number is 49 residential 18 displacements, instead of 51, and 22 business displacements, instead of 23 as reported in 19 the Final EIS. The changes result from the review between the Final EIS and this ROD 20 which identified an error in the total displacements in the summary in the Final EIS. The 21 evaluation was based on the correct individual properties and not the total number of 22 properties. The reduced number of displacements does not result in a new significant 23 impact that was not identified in the Final EIS. 24

25 J.16 CLARIFICATION OF USE OF THE ACRONYMS GP AND GPL

In Table 6-7 of the Final EIS, the abbreviation GPL should have been used instead of GP.
 The incorrect use of an acronym does not constitute a new significant impact that was not
 identified in the Final EIS.

J.17 CLARIFICATION OF THE ROLE OF THE FEDERAL TRANSIT ADMINISTRATION

As described in **Section B.1** of this document, the FTA served as a joint lead agency along

with FHWA and CDOT through preparation of the Draft EIS. Before the Final EIS was

released, FTA determined that they would not continue as a lead agency but rather would

- be cooperating agency. FTA, therefore, is not part of the ROD at this time but they could
- participate a future ROD or RODs if appropriate. FTA's change of role from a lead agency
 to cooperating agency was explained in the Final EIS; however, in **Chapter 6**, *Financial*
- to cooperating agency was explained in the Final EIS; however, in **Chapter 6**, *Financial Analysis* (page 6-1) of the Final EIS (and possibly other locations in the Final EIS document
- Analysis (page 6-1) of the Final EIS (and possibly other locations in the Final EIS document or technical reports) FTA continued to be referred to as a lead agency. This was incorrect.
- The changed status of the FTA was reflected in other locations in the Final EIS. Clarifying
- this in **Chapter 6**, *Financial Analysis* does not result in a new significant impact that was not
- identified in the Final EIS



Table 10. Summary of Historic Properties Affected by Component

		PACK	AGE A	PACKA	GE B	PREFERRED ALTERNATIVE		
		General Purpose I Rail ar	∟anes + Commuter nd Bus	Tolled <i>Express</i> Lan Trans	es + Bus Rapid sit	General Purpose and Tolled Express Lanes + Commuter Rail and Bus		
Component	Historic Property	Direct Impacts?	Effect	Direct Impacts?	Effect	Direct Impacts?	Effect	
		Package A High	way Components	Package B Highwa	y Components	Preferred Alter Comp	native Highway onents	
SH 1 to SH 14	5LR.8932.1 Larimer County Ditch	Yes	No adverse effect*	Yes	No adverse effect*	Yes	No adverse effect*	
	5LR.11396 Einarsen Farm	Yes	No adverse effect*	Yes	No adverse effect*	Yes	No adverse effect*	
	5LR.863.2 Larimer and Weld Canal	No	No adverse effect	No	No adverse effect	No	No adverse effect	
	5LR.1731.2 Colorado & Southern Railroad, Black Hollow Branch	No	No adverse effect	No	No adverse effect	No	No adverse effect	
SH 1 to SH 145LR.863.2 Larimer and Weld CanalNoNo adverse effectNo5LR.1731.2 Colorado & Southern Railroad, Black Hollow BranchNoNo adverse effectNo5LR.1327., 5LR.1731., 5BL.400., Colorado & Southern Railroad**NoNo adverse effectNo	No adverse effect	No	No adverse effect					
Commuter Rail: Fort Collins to Longmont	5LR.1327., 5LR.1731., 5BL.400., Colorado & Southern Railroad**		No adverse effect			No	No adverse effect	



		PAC	KAGE A	PACKA	GE B	PREFERRED ALTERNATIVE		
		General Purpose Lanes + Commuter Rail and Bus		Tolled <i>Express</i> La Tran	nes + Bus Rapid Isit	General Purpose and Tolled Express Lanes + Commuter Rail and Bus		
Component	Historic Property	Direct Impacts?	Effect	Direct Impacts?	Effect	Direct Impacts?	Effect	
			Package A Highway Components		ay Components	Preferred Alternative Highway Components		
	5LR.11409.1 Cache la Poudre Reservoir Inlet	Yes	No adverse effect*	Yes	No adverse effect*	Yes	No adverse effect*	
SH 14 to SH 60	5LR.2160.1 Boxelder Ditch	Yes	No adverse effect*	Yes	No adverse effect*	Yes	No adverse effect*	
	5LR.8930 Louden Ditch	Yes	Adverse effect	Yes	Adverse effect	Yes	Adverse effect	
	5LR.1815 Union Pacific Railroad, Fort Collins Branch	No	No adverse effect	No	No adverse effect	No	No adverse effect	
	5LR.503 Loveland and Greeley Canal	Yes	No adverse effect*	Yes	No adverse effect*	Yes	No adverse effect*	
	5LR.8928 Farmers' Ditch	Yes	No adverse effect*	Yes	No adverse effect*	Yes	No adverse effect*	
SH 14 to SH 60	5LR.11209 Schmer Farm	Yes	Adverse effect	Yes	Adverse effect	Yes	Adverse effect	
	5LR.11210 McDonough Farm	Yes	No adverse effect*	Yes	No adverse effect*	Yes	No adverse effect*	
	5LR.850, 5WL.841, 5BL.514 Great Western Railway**	Yes	No adverse effect*	Yes No adverse effect*		Yes	No adverse effect*	



		PACK	AGE A	PACK	AGE B	PREFERRED ALTERNATIVE			
		General Purpose I Rail a	Lanes + Commuter nd Bus	Tolled <i>Express</i> Lanes + Bus Rapid Transit		General Purpose a Lanes + Commu	and Tolled Express Iter Rail and Bus		
Component	Historic Property	Direct Impacts?	Effect	Direct Impacts?	Effect	Direct Impacts?	Effect		
		Package A High	way Components	Package B High	way Components	Preferred Alter Comp	native Highway onents		
GP/TEL Highway Widening:	5LR.850, 5WL.841, 5BL.514 Great Western Railway**	No	No adverse effect	No	No adverse effect	No	No adverse effect		
SH 60 to E-470	5WL.3149.1 Handy/Home Supply Ditch Confluence	Yes	No adverse effect*	Yes	No adverse effect*	Yes	No adverse effect*		
			Package A Transit Components		nsit Components	Preferred Alternative Transit Components			
Commuter Rail: Fort Collins to	5LR.850, 5WL.841, 5BL.514 Great Western Railway**	No	No adverse effect				No adverse effect		
Longmont									
		Package A Highway Components		Package B High	way Components	Preferred Alter Comp	Preferred Alternative Highway Components		
	5LR.11408 Zimmerman Grain Elevator	No	No adverse effect	No	No adverse effect	Yes	No adverse effect*		
SH 14 to SH 60	5LR.11382 Hatch Farm	Yes	No adverse effect*	Yes	No adverse effect*	Yes	No adverse effect*		
	5LR.8927.1 Hillsboro Ditch	Yes	No adverse effect*	Yes	Yes No adverse effect*		No adverse effect*		



		PACK	AGE A	PACKA	GE B	PREFERRED ALTERNATIVE		
		General Purpose I Rail a	Lanes + Commuter nd Bus	Tolled <i>Express</i> La Tran	nes + Bus Rapid sit	General Purpose and Tolled Expres Lanes + Commuter Rail and Bus		
Component	Historic Property	Direct Impacts?	Effect	Direct Impacts?	Effect	Direct Impacts?	t Impacts? Effect	
		Package A High	way Components	Package B Highway Components Preferred Alternative Highway Components		rnative Highway ponents		
	5LR.11242 Mountain View Farm	Yes	Adverse effect	Yes	Adverse effect	Yes	Adverse effect	
SH 60 to E-470	5WL.5203 Bein Farm	Yes	Adverse effect	Yes	Adverse effect	Yes	Adverse effect	
	5WL.5198 Olson Farm	198 Yes No adverse effect* Yes No adverse effect* Farm Yes No adverse effect* Yes No adverse				Yes	No adverse effect*	
GP/TEL Highway Widening: SH 60 to E-470	5BF.76., 5BF.72. 5AM.457., 5WL.1966. Bull Canal/Standley Ditch**	Yes	No adverse effect*	Yes	Yes No adverse effect*		No adverse effect*	
		Package A Tran	sit Components	Package B Trans	ackage B Transit Components		Preferred Alternative Transit Components	
Commuter Rail: Longmont to FasTracks North Metro	5BF.76., 5BF.72. 5AM.457., 5WL.1966. Bull Canal/Standley Ditch**	Yes	No adverse effect*			No	No adverse effect*	
		Package A High	way Components	Package B Highw	ay Components	Preferred Alte Comp	Preferred Alternative Highway Components	
Structural	5AM.2073 North Glenn First Filing	73 North Glenn No		No	No adverse effect	No	No adverse effect	
E-470 to US 36	5AM.2074 North Glenn Second Filing	No	No adverse effect	No	No adverse effect	No	No adverse effect	



		PACK	AGE A	PACKA	GE B	PREFERRED ALTERNATIVE		
		General Purpose I Rail a	Lanes + Commuter nd Bus	Tolled <i>Express</i> La Tran	nes + Bus Rapid sit	General Purpose Lanes + Comm	and Tolled Express uter Rail and Bus	
Component	Historic Property	Direct Impacts?	Effect	Direct Impacts?	Effect	Direct Impacts?	Effect	
		Package A Tran	sit Components	Package B Trans	it Components	Preferred Alternative Transit Components		
Commuter Rail: Fort Collins to Longmont Commuter Rail: Fort Collins to Longmont	5LR.11330 Public Service Company of Colorado–Fort Collins Substation	No	No adverse effect			No	No adverse effect	
	5LR.10819.2 Larimer County Canal No 2	Yes	No adverse effect			No	No adverse effect	
	5LR.1729.2 Big Thompson Ditch	Yes	No adverse effect*			Yes	No adverse effect*	
	5LR.1710.1 Handy Ditch	No	No historic properties affected			Yes	No adverse effect*	
	5BL.9163 Kitely House	Yes	No adverse effect*			Yes	No adverse effect*	
Fort Collins to Longmont	5BL.10636 Boggs Residence	No	No adverse effect			No	No adverse effect	
Commuter Rail: Fort Collins to	5BL.3449.2 Supply Ditch	Yes	No adverse effect*			Yes	No adverse effect*	
Longmont	5BL.3113.67 Rough & Ready Ditch	Yes	No adverse effect*			Yes	No adverse effect*	
	5LR.488 Colorado and Southern Railway Depot/Loveland Depot	Yes	No adverse effect*			No	No adverse effect	



		PACK	AGE A	PACKA	GE B	PREFERRED ALTERNATIVE			
		General Purpose I Rail a	Lanes + Commuter nd Bus	Tolled <i>Express</i> La Tran	nes + Bus Rapid sit	General Purpose Lanes + Comm	and Tolled Express uter Rail and Bus		
Component	Historic Property	Direct Impacts?	Effect	Direct Impacts?	Effect	Direct Impacts?	Effect		
		Package A Tran	nsit Components	Package B Trans	it Components	Preferred Alte Comp	Preferred Alternative Transit Components		
Commuter Rail: Longmont to FasTracks North Metro	5BL.4832 Oligarchy Ditch	Yes	No adverse effect*			Yes	No adverse effect*		
	5BL.1245 Old City Electric Building	Yes	Adverse effect			No	No Adverse Effect		
	5BL1244 Colorado & Southern /BNSF Depot	Yes	Adverse effect			No	No Adverse Effect		
	5BL.513 Great Western Sugar Factory	Yes	No adverse effect*			No	No Adverse Effect		
Commuter Rail: Longmont to FasTracks North	5BL.7606 Novartis Seeds/ Syngenta Seeds	No	No adverse effect			No	No Adverse Effect		
Metro	5WL.712 Sandstone Ranch	Yes	No adverse effect*			Yes	No adverse effect*		
	5WL.5461.1 Boulder and Weld County Ditch	Yes	No adverse effect*			Yes	No adverse effect*		
	5WL.5263 Hingley Farm	Yes	Adverse effect			Yes	Adverse effect		
	5WL.6564 Jillson Farm	Yes	Adverse effect			Yes	Adverse effect		



		PACK	AGE A	PACKA	GE B	PREFERRED ALTERNATIVE		
		General Purpose I Rail a	Lanes + Commuter nd Bus	Tolled <i>Expr</i> ess La Tran	nes + Bus Rapid sit	General Purpose and Tolled Express Lanes + Commuter Rail and Bus		
Component	Historic Property	Direct Impacts?	Effect	Direct Impacts?	Effect	Direct Impacts?	Effect	
		Package A Tran	sit Components	Package B Trans	it Components	Preferred Alternative Transit Components		
Commuter Rail: Longmont to	5WL.1974.3 Rural Ditch	Yes	No adverse effect*			Yes	No adverse effect*	
Component Commuter Rail: Longmont to FasTracks North Metro Commuter Rail: Longmont to FasTracks North Metro Commuter Rail: Longmont to FasTracks North Metro Commuter Rail: Longmont to FasTracks North Metro	5WL.2247.11 Community Ditch	No	No adverse effect			No	No adverse effect	
	5WL.1970.7 Lower Boulder Ditch	No	No adverse effect			No	No adverse effect	
Commuter Rail:	5WL1317, 5AM.472 UPRR-Dent Branch**	Yes	No adverse effect*			Yes	No adverse effect*	
Longmont to FasTracks North Metro	5WL1969., 5BF.130. Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder Valley Branch	Yes	Adverse effect			Yes	Adverse effect	
	5LR.488 Colorado & Southern Railroad Depot, Loveland	No	No adverse effect			No	No adverse effect	
Stations	5LR.530 Bimson Blacksmith Shop	No	No adverse effect			No	No adverse effect	

2



Table 10.Summary of Historic Properties Affected by Component (cont'd)

		Р	ACKAGE A	PACKA	GE B	PREFERRED ALTERNATIVE			
		General Purp R	ose Lanes + Commute ail and Bus	r Tolled <i>Express</i> Lar Trans	nes + Bus Rapid sit	General Purpose and Tolled Express Lanes + Commuter Rail and Bus			
Component	Historic Property	Direct Impact	s? Effect	Direct Impacts?	Effect	Direct Impac	cts? Effect		
		Package A	Transit Components	Package B Trans	it Components	nents Preferred Alternative Transit Components			
Alternative Totals									
	PACKAGE A		PACKAGE B			PREFERRED ALTERNATIVE			
Ger Co	eral Purpose Lanes + mmuter Rail and Bus		Tolled Express Lane	s + Bus Rapid Transit	General	Purpose and To Commuter R	olled Express Lanes + ail and Bus		
Direct Impac	ct Effect		Direct Impact	Effect	Direct	mpact	Effect		
34 propertie directly Impac	9 adverse eff s propertie ted 39 no adverse o propertie	ects to s, effects to es	17 properties directly impacted	4 adverse effect, 20 no adverse effects to properties	31 prop directly in	perties npacted	7 adverse effect, 42 no adverse effects to properties		

*Properties would be considered for *de minimis* Section 4(f) status.

** Segments of these properties are impacted by separate components and listed accordingly in the table. However, these are counted as one property in the Alternative Totals.



K. MITIGATION MEASURES 1

This section summarizes the mitigation measures identified by CDOT and FHWA to 2

eliminate or minimize social and environmental impacts for Phase 1 of the Preferred 3

Alternative. The impacts of Phase 1 were summarized in Table 8. 4

Mitigation measures that warrant monitoring have also been identified below. Monitoring 5

has been identified where it is appropriate for specific resources to ensure implementation, 6

meet permitting requirements and/or help identify trends and possible means for 7

improvement. As described in this section, monitoring has been identified for air quality 8

(during construction), water quality (per CDOT Region and statewide program/permit 9

requirements), wetlands (per Section 404 permit requirements), noxious weeds (during 10 construction and revegetation), hazardous materials (during construction), paleontology

11 (during construction), and a number of construction activities (see **Table 11**). Monitoring 12

and permitting are also discussed in Section L of this document. 13

14 CDOT and FHWA will ensure the mitigation commitments outlined herein will be

implemented as part of the project design, construction, and post-construction monitoring. 15

These commitments will be incorporated, as appropriate, into the construction plans and 16

specifications for this project. CDOT and FHWA will ensure that these commitments are 17

implemented through review of the project construction plans and specifications, as well as 18

periodic inspections during construction. Inspections during construction will involve both a 19

review of project construction documentation and observation of construction activities. 20

CDOT and FHWA will monitor mitigation effectiveness and success through a combination 21

of field reviews, pre-construction and post-construction inspections and post-construction 22

monitoring, as appropriate. CDOT will be preparing annual reports, by agreement with some 23

resource agencies. Reporting of effectiveness will be done by CDOT and FHWA, in 24

accordance with agency requirements. If mitigation is not successful or mitigation 25

commitments are not met, CDOT will rectify as needed. 26

The public has been afforded a number of opportunities to comment on proposed mitigation 27

measures, including public meetings, newsletters and the project website. CDOT and 28

FHWA worked with the public and agencies to avoid and minimize impacts. The distribution 29

of the Draft and Final EIS documents have provided the primary opportunity to inform the 30

public on the proposed project and the environmental analysis associated with each 31

identified alternative. Following the distribution of each document, a public comment period 32

was provided. Further opportunities for public information and involvement will exist through 33

updated information provided on the CDOT website, and through public involvement 34

activities that will be initiated during the design and construction phases. 35

All practicable mitigation measures have been adopted to avoid or minimize environmental 36

harm from the selected alternative. In general, mitigation requested by local, regional and 37

state agencies has been included in the mitigation commitments listed below. It should be 38

noted that the City of Fort Collins asked that wetland impacts within their City be mitigated 39

onsite or within the city limits. As described in Appendix B response to Fort Collins 40

Comment #5, the temporarily impacted wetlands will be mitigated onsite while permanent 41 impacts are expected, at this time, to be mitigated through the development and

42

enhancement of wetlands at St. Vrain State Park. The USACE, EPA, and the USFWS are 43



- all supportive of the mitigation plan that concentrates mitigation at St Vrain State Park. This
- 2 site possesses many positive attributes for not only wetland mitigation, but for a possibility
- of interpretive trails adjacent to the mitigation and will create wildlife corridors. St. Vrain
- 4 State Park was selected based on the following:
- It is a large area allowing the mitigation of wetland impacts for the entire project (i.e., all
 three phases) at one location. Smaller mitigation areas typically have low success rates.
- It allows for wetland mitigation for the entire project (all three phases) to be completed up front and not delayed as subsequent phases or specific projects are implemented.
- It has a better chance of succeeding because all mitigation is concentrated at one site
 and because the State Park personnel stationed onsite can easily monitor the success of
 the wetlands daily.
- Groundwater levels will be monitored conveniently and frequently by park personnel.
- The mitigation will enhance wildlife habitat connectivity, including habitat for threatened and endangered species.
- 15 It provides an opportunity to develop and enhance interpretive trail for visitor education.
- Wetland mitigation plans allow the creation of a buffer zone between SH 119 and
 St. Vrain State Park.

Table 11. Phase 1 Mitigation and Monitoring Summary

Phase 1 Mitiga	tion M	easui	res							
Land Use										
No mitigation re	equired									
Social Conditi	ons									
OD OT III									1.41	1.11

- CDOT will provide advance notice to emergency service providers, local schools, home owners associations, and the public
 of upcoming activities that are likely to result in traffic disruption. Such notifications will be accomplished through radio and
 public announcements, newspaper notices, on-site signage, and CDOT's website.
- Where feasible, retaining walls have been identified for construction along I-25 to minimize impacts to residential development.
- Mitigation for construction related impacts to minority and low-income populations could include the provision of reduced price bus passes during construction, acceptable access modifications, and translated information on construction processes and alternate modes available during construction and pre-opening day.

Economic Conditions

- New access will be provided for properties where existing accesses are removed. To avoid disruption of business activities during construction, the new access will be provided before the existing access is removed.
- To minimize disruption to traffic and local businesses, construction activities will be staged and work hours varied. Throughout the construction stage, access will be preserved for each affected business.
- Where feasible, retaining walls have been identified for construction along I-25 to minimize impacts to commercial development.

Right of Way

- Acquisition of those property interests required for the project will comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (the Uniform Act) and other applicable relocation assistance programs.
- The Uniform Act also provides for numerous benefits to individuals who occupy improvements that must be acquired, to assist them both financially and with advisory services related to relocating their residence or business operation to a replacement site.



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Air Quality

The following mitigation measures are recommended for construction activities associated with Phase 1:

- An air quality mitigation plan will be prepared describing all feasible measures to reduce air quality emissions from the project. CDOT staff must review and endorse construction mitigation plans prior to work on a project site.
- Acceptable options for reducing emissions could include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, and after-treatment products.
- The contractor will ensure that all construction equipment is properly tuned and maintained.
- Idling time will be minimized to 10 minutes—to save fuel and reduce emissions.
- Hauling and trucking operations will be consolidated as much as possible to reduce fuel consumption.
- An operational water truck will be on site at all times. Water will be applied to control dust as needed to prevent dust impacts off site.
- There will be no open burning of removed vegetation. Vegetation will be chipped or delivered to waste energy facilities.
- Existing power sources or clean fuel generators will be utilized rather than temporary power generators.

Obstructions of through-traffic lanes will be minimized. A flag person will be provided to guide traffic properly minimizing congestion and to ensure safety at construction sites.

The following mitigation measures were identified which could be included (for others to implement) to help reduce ammonia emissions within the regional study area:

- Choose a nitrogen fertilizer appropriate for a given cropping system that will have the lowest nitrogen volatilization on the soil type to which it is applied.
- Properly store and manage commercial fertilizer to minimize emissions of ammonia from leaks, spills, or other problems.
- The use of feed additive and supplemental hormones in animal production has proven to greatly improve nutrient utilization, resulting in more efficient milk and meat production. Use of these products may decrease nitrogen excretion per day and/or reduce the total number of days on feed, thereby reducing overall nitrogen excretion and subsequent ammonia volatilization.
- Ammonia volatilization occurs soon after manure is deposited on barn floors. Best management practices (BMPs) should be implemented such as scraping and flushing the floors and alleyways, drying manure and cooling barn temperatures, install filters/scrubbers on air exchange systems, etc.

Areas such as lawns, open spaces, parks, and golf courses require large amounts of water as well as significant amounts of fertilizers to help them stay lush green. Therefore, appropriate fertilizers should be applied and BMPs for re-treatment of wastewater run-off should be implemented.

Noise and Vibration (from noise re-analysis results)

There are several existing traffic noise barriers in the regional study area. If any of these barriers must be removed for construction, the old barrier will be replaced with an equivalent or better barrier as part of the Preferred Alternative.

From the feasibility and reasonableness evaluations for the barriers, new traffic noise barriers are recommended for the following locations along the Preferred Alternative in Phase 1:

- Brittany Ridge extension...... (12-foot barrier) 1,000 feet

Construction Noise

Construction noise would be subject to relevant local regulations and ordinances, and any construction activities would be expected to comply with them. To address the temporary elevated noise levels that may be experienced during construction, standard mitigation measures would be incorporated into construction contracts, where it is feasible to do so. These would include:

- Exhaust systems on equipment would be in good working order. Equipment would be maintained on a regular basis, and equipment may be subject to inspection by the project manager to ensure maintenance.
- Properly designed engine enclosures and intake silencers would be used where appropriate.



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Noise and Vibration (from noise re-analysis results)

- New equipment would be subject to new product noise emission standards.
- Stationary equipment would be located as far from sensitive receivers as possible.
- Most construction activities in noise-sensitive areas would be conducted during hours that are least disturbing to adjacent and nearby residents.

Water Resources

 A combination of mitigation measures consisting of permanent structural, nonstructural, and temporary construction BMPs will be implemented in the regional study area, in compliance with the Clean Water Act and CDOT's MS4 permit requirements. BMPs will include water collection and passive treatment of stormwater, which is currently being directly discharged into existing water systems.

Structural BMPs

- Extended detention/retention ponds have been identified as the primary structural BMP for this project. The Preferred Alternative would provide water quality ponds with a capacity to treat 2,009 acres (101%) of the total impervious area. Locations of water quality ponds have been identified throughout the regional study area. Placement of the BMPs is provided in the Water Quality and Floodplain Technical Report (FHU, 2008b) and Addendum (FHU, 2010) and the Concept Plans Technical Report (FHU, 2010x).
- Stormwater management plans (silt fence, inlet protection, containerization of wastes, etc.) will be developed during design, implemented during construction, and updated as needed.
- Riprap will be placed at bridge abutments, piers, and at critical portions of channels or floodplains.
- When possible, passive BMPs (e.g., grass swales or natural infiltration) will be used for ephemeral streams.

Temporary Construction BMPs

- A Spill Prevention Plan will be prepared.
- In-stream activities will be minimized.
- CDOT's specifications for managing stormwater at a construction site (currently specifications 107.25, 208, 212, 213, and 216) will be followed.
- A Senate Bill 40 (SB40) permit from the CPW will be obtained. It will include measures to protect existing riparian areas, such as mitigating stormwater runoff or replacing riparian vegetation.
- Vegetation or other erosion control techniques (as indicated by CDOT erosion control practices) will be established to prevent sediment loading in compliance with the general stormwater construction permit.

Construction activities will be phased to minimize effects associated with large areas of exposed ground and with soil compaction from heavy machinery use.

Groundwater Quality

- If groundwater is encountered during activities associated with excavations for caisson/retaining walls, the discharge of groundwater is authorized when the following conditions are met:
 - 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.
 - Source is identified in the Stormwater Management Plan (SWMP).
 - Dewatering BMPs are included in the SWMP.
 - Discharges do not leave the site as surface runoff or to surface waters.

If these conditions are not met, then a separate Clean Water Act Section 402 Construction Dewatering Permit or Individual Construction Dewatering Permit will be required to be obtained by CDOT's contractor from the CDPHE's Water Quality Control Division

 If dewatering is necessary, groundwater brought to the surface will be managed according to Section 107.25 of the CDOT Standard Specifications for Road and Bridge Construction (CDOT, 2011).

If active wells are present prior to construction, status of groundwater well use will have to be determined. Active wells within the right-of-way will be relocated, replaced, or supplemented if a reduction in the water table is anticipated.



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Wetlands and Waters of the U.S.

Impacts to wetlands and jurisdictional open water will be avoided and minimized to the greatest extent possible during preliminary and final design. The following mitigation goals are appropriate for unavoidable impacts to wetlands for Phase 1:

- All impacted wetlands and jurisdictional open waters would be mitigated in accordance with the USACE mitigation policies, and the conditions of the USACE Section 404 Permit. All mitigation plans would be developed in coordination with the USACE and other appropriate agencies during the Section 404 permitting process. In addition, all mitigation for the wetlands as a result of the North I-25 project would be done in accordance with CDOT and FHWA (23 CFR 777). Current mitigation plans are that all wetland impacts will be mitigated at St. Vrain State Park.
- During construction, BMPs will be used to avoid indirect construction impacts to wetlands. Materials and equipments will be stored a minimum of 50 feet from wetlands, drainages, and ditches that could carry toxics materials into wetlands. Construction fencing and appropriate sediment control BMPs will be used to mark wetland boundaries and sensitive habitats during construction.
- Sediment and erosion control will be required to be placed during all phases of construction and will remain in place until all disturbed areas have reached 70% of preconstruction vegetative cover.

Floodplains

The following measures will be taken to mitigate floodplain impacts to the extent practicable:

- Designs will comply with federal, state, and local agency requirements.
- Design will consider the maximum allowable backwater as allowed by FEMA.
- 100-year FEMA design flows will be used for freeboard determinations, scour design, and to ensure that flow velocities are acceptable.
- 500-year design flows will be used for the scour design and to determine the depths of piles or caissons.
- Impacts to downstream areas must be assessed during preliminary and final design by using the guidelines described in Section 3.9 Floodplains, of the Final EIS.
- Design flows will be based on the current level of development, and it will not be assumed that any inadvertent detention facilities will lower them.
- A bridge deck drainage system that controls seepage at joints should be considered. If possible, bridge deck drains will be piped to a water quality feature before being discharged into a floodplain.
- CDOT policy, to obey the Natural Flow Rule of Colorado and to hold others to the same standard (CDOT Drainage Design Manual, 2004, sec. 2.5.2 and 12.1.1), will be followed.
- Sediment and erosion will be controlled by implementing appropriate structural and non-structural BMPs during each phase of construction to avoid potential pollutants from entering state waters.
- Disturbed land will be seeded and re-vegetated in accordance with current CDOT standards and specifications.
- SB 40 requirements will be met for applicable areas.

Vegetation

Specific BMPs will be determined during final design. Mitigation measures are anticipated to include:

- An acceptable revegetation plan will be developed with the CDOT landscape architect and with county personnel in Adams, Boulder, Broomfield, Denver, Larimer, and Weld counties. The revegetation plan must also be acceptable to municipalities, such as Fort Collins and Longmont, within their jurisdictional areas.
- A SB 40 certification for stream crossings or adjacent stream banks will be obtained. In these areas, it is recommended that
 trees and shrubs be replaced on a 1:1 basis (trees) and square-foot basis (shrubs).
- CDOT standard specifications for the amount of time that disturbed areas are allowed to be non-vegetated will be followed.
- Existing trees, shrubs, and vegetation will be avoided to the maximum extent possible, especially wetlands and riparian plant
 communities. The project team will coordinate with the CDOT landscape architect before construction to determine the types
 of vegetation that will be protected during construction.
- Weed-free topsoil will be salvaged for use in seeding.
- Erosion control blankets will be used on steep, newly seeded slopes. Slopes should be roughened at all times.



Table 11.Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Vegetation (cont'd)

- All disturbed areas will be re-vegetated with native grass and forb species.
- Seed, mulch, and mulch tackifier will be applied in phases throughout construction

Noxious Weeds

An integrated weed management plan or project-specific CDOT 217 Specification, will be incorporated into the project design and implemented during construction. Specific BMPs will be required during construction to reduce the potential for introduction and spread of noxious weed species. These will include:

- Noxious weed mapping will be included in the construction documents along with appropriate weed control methods.
- Highway right-of-way areas will be inspected periodically by the associated city or its consultants during construction and during post-construction weed monitoring for invasion of noxious weeds.
- Weed management measures will include removal of heavily infested topsoil, herbicide treatment of lightly infested topsoil as well as other herbicide and/or mechanical treatments, limiting disturbance areas, phased seeding with native species throughout the project, and monitoring during and after construction.
- Use of herbicides will include selection of appropriate herbicides and timing of herbicide spraying and use of a backpack sprayer in and adjacent to sensitive areas, such as wetlands and riparian areas.
- Certified weed-free hay and/or mulch will be used in all revegetated areas.
- No fertilizers will be allowed on the project site.

Preventative control measures for project design and construction may include:

- Only native species will be used to revegetate sites.
- Materials used for revegetating will be inspected and regulated in accordance with provisions of the Weed Free Forage Act, Title 35, Article 27.5, CRS.
- When salvaging topsoil from on-site construction locations, the potential for spread of noxious weeds will be considered. Importing topsoil onto the project site will not be allowed.
- Equipment will remain on designated roadways and stay out of weed-infested areas until the areas are treated. All equipment
 will be cleaned of all soil and plant parts before its arrival at a project site.

Wildlife

CDOT mitigation measures associated with wildlife impacts will include:

- An application for SB 40 Certification will be submitted to CPW.
- Requirements of the Migratory Bird Treaty Act (1918) (MBTA) will be followed. CDOT has proposed special provisions
 creating a new Standards and Specification Section 240—Protection of Migratory Birds to address the requirements of the
 MBTA. These provisions will ensure that consistent, appropriate and reasonable measures are taken to prevent injury to and
 death of migratory birds and the CDOT activities are compatible with current federal and state wildlife laws and regulations.
- CDOT will implement three mitigation measures for projects that will have an impact to migratory birds: (1) tree trimming
 and/or removal activities, (2) bridge or box culvert work that may disturb nesting birds, and (3) clearing and grubbing of
 vegetation that may disturb ground nesting birds will all be completed before birds begin to nest or after the young have
 fledged.
- A raptor nest survey will be conducted prior to project construction to identify raptor nests and nesting activity in the vicinity of the proposed project. CPW recommended buffers and seasonal restrictions will be implemented if active raptor nests are found.
- If impacts to raptor nests are unavoidable, specific mitigation measures will be developed prior to construction.
- To maximize use of movement corridors by wildlife, bridge spans and culverts should have the following features: a minimum clearance of 10 feet and width of 20 feet for deer and a minimum "openness ratio" of 0.75.
- Shrubs and vegetative cover will be placed at bridge underpass openings to attract wildlife and provide a "funnel effect."
- For structures that periodically convey water, ledges or shelves will provide passage alternatives during high water.
- To avoid human disturbance to wildlife, trails should not be placed near wildlife crossing structures.



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Wildlife (cont'd)

To maximize use of bridges and culverts by wildlife, other recommended design elements include:

- The placement of lighting should be avoided near the crossing structures.
- Roadside vegetation height should be kept to a minimum.
- Along the commuter rail corridor, CDOT/FHWA will seek permission from the regional transit authority to minimize the use of chain-link fencing in areas that are heavily used by wildlife.

The following design measures may be implemented to mitigate potential impacts to aquatic species, including native fish:

- Riffle and pool complexes should be maintained and/or created.
- Natural stream bottoms will be maintained.
- Culverts should be partially buried and the bottom should be covered with gravel/sand and have a low gradient.
- Culverts to be replaced should be replaced with one of equal or greater size.
- Culverts will not have grates, impact dissipaters, or any other features that would impede fish movement.
- Access points to streams during construction will be limited to minimize degradation of the banks.
- No new fish passage barriers will be created.
- Existing drop structures that create a barrier to fish movements will be removed or redesigned where possible.

Threatened, Endangered, Other Federally Protected, and State-Sensitive Species

- The following mitigation measures address impacts to the threatened and endangered species:
- An integrated weed management plan will be incorporated into project design and implemented during construction to control the infestation and spread of noxious weeds.
- Visible barriers will be used to limit the area of construction.
- Construction materials will be stockpiled in bare areas rather than on top of existing vegetation in known occupied and suitable habitats.
- Construction workers will be informed 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.
- Work will be supervised on a daily basis to ensure that conditions established by the USFWS are met.
- Water quality BMPs will be implemented to prevent sediment loading and impacts to Colorado butterfly plant, Ute ladies' tresses orchid, and Preble's meadow jumping mouse habitats.
- Concurrent revegetation will be implemented during construction to the maximum extent practicable.
- A report will be provided to the USFWS that includes photographic documentation of site conditions prior to and at the completion of construction.
- Pre-construction habitat assessments and/or surveys for the Colorado butterfly plant will be conducted 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, specific conservation measures will be developed during site-specific consultation.
- Suitable Ute ladies'-tresses orchid habitat will be surveyed prior to time of construction in accordance with the most recent guidelines for the species. Should the plant occur within the construction footprint, specific conservation measures will be developed during site-specific consultation.
- CDOT's Shortgrass Prairie Initiative addresses impacts to the Colorado butterfly plant and the Ute ladies'-tresses orchid in
 portions of the project area. In those portions of the project area covered by the Shortgrass Prairie Initiative, no additional
 conservation measures for the Colorado butterfly plant or Ute ladies' -tresses orchid will be necessary provided that the
 Shortgrass Prairie Initiative is still in effect when construction begins.
- Pre-construction habitat assessments and/or trapping surveys for the Preble's meadow jumping mouse will be conducted where appropriate.
- Impacts to occupied Preble's meadow jumping mouse habitat at the Little Thompson and Big Thompson rivers and any areas found to be occupied by Preble's meadow jumping mouse by future surveys will be limited to their inactive season (November through April).



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Threatened, Endangered, Other Federally Protected, and State (cont'd)

- If culverts in occupied or suitable Preble's meadow jumping mouse habitat are replaced or upgraded, the new culverts will
 incorporate ledges to facilitate small mammal passage.
- Lighting within and near Preble's meadow jumping mouse habitat will incorporate current technology and standards (e.g., Dark Skies) at the time of design to reduce lighting impacts to Preble's meadow jumping mouse.
- During construction, nighttime work within 0.25 mile of Preble's meadow jumping mouse habitat will be minimized.
- Where impacts to habitat occupied by Preble's meadow jumping mouse are unavoidable, compensatory mitigation will be provided through enhancement or replacement with suitable habitat. Permanent impacts will be mitigated at a 3: 1 mitigation to impact ratio; temporary impacts will be mitigated at a 1: 1 ratio. Mitigation measures for Preble's meadow jumping mouse could be combined with wetland mitigation. Wetland mitigation measures also may replace any impacts to suitable unoccupied habitat. Coordination with the USFWS will occur prior to mitigation implementation to determine the appropriateness of mitigation.
- Any inadvertent Preble's meadow jumping mouse mortalities during construction will be reported as specified in current trapping guidelines. CDOT will 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 Preble's mouse (dead, injured, or otherwise) is located during construction, the Colorado Field Office of the USFWS will be contacted immediately to identify additional measures, as appropriate, to minimize impacts to Preble's.
- A raptor nest survey will be conducted 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, the buffers and seasonal restrictions recommended by CPW will be established during construction to avoid nest abandonment.
- No construction will occur within 0.25 mile of active nocturnal roosts between November 15 and March 15. If perch or roost
 trees are removed during construction, they will be replaced at a 2:1 ratio with native cottonwood trees.
- Prairie dog colonies will need to be resurveyed prior to construction. In areas where avoidance of prairie dogs is not possible, CDOT will follow its Impacted Black-tailed Prairie Dog Policy. Any prairie dog relocation or removal activities will be carried out in accordance with CRS 35-7-203, as well as any other applicable laws or regulations, and with close coordination with CPW.
- Burrowing owl surveys will be conducted prior to any work in prairie dog colonies between March 15 and October 31. If burrowing owls are present, prairie dog removal will be scheduled to occur outside this time period. If burrowing owls are found within the construction footprint during preconstruction surveys, nests will be left undisturbed and additional avoidance measures will be developed in coordination with CPW. Direct impacts to burrowing owls will be avoided by covering or destroying prairie dog burrows prior to construction (prior to March 15).Direct impacts to nesting great blue herons will be avoided by prohibiting work within the 500-meter (0.31-mile) buffer from nest sites recommended by CPW. Impacts within this buffer will be limited during the nesting season, which occurs from mid-March through July.
- Mitigation measures for wetlands and Preble's, including wetlands replacement and riparian enhancement, will also mitigate impacts to northern leopard frogs and common gartersnakes.

Visual Quality

- Mitigation measures to address visual effects of highway widening will include incorporating landscaping at interchanges and along the highway.
- Mitigation measures to address visual effects of structural elements will include providing architectural interest or color into
 retaining walls and sound walls, and reducing the effect of overpasses by providing architectural detailing of the railings and
 other features.
- Mitigation measures to address the visual effects of carpool lots will include the use of trees in combination with shrubs to
 filter views to the carpool lots, provide a human scale, and present a positive image. Landscape islands with shade trees
 would be placed in parking lots to break up the expanse of pavement and parked vehicles.
- Mitigation measures to soften and enhance the visual effects of slip ramps will include incorporating landscaping, providing
 architectural interest or color in retaining wall and limiting lighting to only what is required for safety and security.
- Potential mitigation measures to soften and enhance the visual effect of the proposed commuter rail service will include fencing types, landscaping, and architectural features.



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Visual Quality (cont'd)

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

Historic Preservation

1. Standard Mitigation:

- a. CDOT shall prepare Level II Recordation for all historic properties that have an adverse effect determination resulting from action of this undertaking.
- b. CDOT shall submit Office of Archaeology and Historic Preservation (OAHP) Cultural Resource Re-evaluation Forms (Form#1405) for any properties that will be changed or modified in order to document changes in the conditions of the properties for OAHP's site files.
- c. CDOT shall submit the mitigation produced for the project to SHPO and the consulting parties for review and comment.
- d. CDOT and FHWA will 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.

2. Creative Mitigation:

a. CDOT shall coordinate with Jillson family members and if the Jillsons would like to pursue designation as a Centennial Farm, CDOT will assist in the preparation of all application material and documentation necessary for pursuing such designation for their farm.

CDOT-Region 4 is preparing 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 to 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.

Paleontological Resources

- The latest revision of the CDOT Specification 107 Archeological/Paleontological shall be followed. All paleontological monitoring work will be performed by a qualified and State of Colorado-permitted paleontologist. Paleontological monitoring will include inspection of exposed rock units and microscopic examination of matrix to determine if fossils are present. This work would take place during surface disturbing activities, such as excavations for the construction of roads, railways, bridges, underpasses, and buildings.
- Monitoring will be scheduled to take place continuously or to consist of spot-checks of construction excavations, depending upon the paleontological sensitivity of the regional study area based on its geology and the types and significance of potential fossils that could be present in subsurface sedimentary deposits. Paleontological monitors will follow earth-moving equipment and examine excavated sediments and excavation sidewalls for evidence of significant paleontological resources. At the request of the monitors, the project engineer will order temporary diversion of grading away from exposed fossils in order to permit the monitors to efficiently and professionally recover the fossil specimens and collect associated data. All efforts to avoid delays to project schedules will be made.
- If any subsurface bones or other potential fossils are found by construction personnel during construction, work in the immediate area will cease immediately, and the CDOT paleontologist will be contacted to evaluate the significance of the find.



Table 11.Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Hazardous Materials

- A Materials Management Plan (MMP), as required by Section 250.03 of the CDOT Standard Specifications for Road and Bridge Construction (CDOT, 2011), will be prepared for areas with known soil and groundwater contamination. Construction specifications will be written to include review of the MMP by the CDOT Regional Environmental Manager.
- If dewatering is necessary, groundwater brought to the surface will be managed according to Section 107.25 of the CDOT Standard Specifications for Road and Bridge Construction (CDOT, 2011) and permitted by the CDPHE's Water Quality Control Division.
- Relocation of overhead electrical utility lines and pole-mounted transformers will be conducted in accordance with any
 easement agreement between CDOT and/or private landowners.
- All wells within the proposed construction area will be abandoned and plugged according to CDOT Section 202.02 in Standard Specifications for Road and Bridge Construction (CDOT, 2011) and in conformance with the Colorado Department of Natural Resources Division of Water Resources State Engineer Water Well Construction Rules, specifically Rule 16.
- If contaminated soil is encountered and a responsible party is not identified, CDOT will be responsible for the clean-up in
 accordance with state and federal regulations. 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, 2011), also is recommended for use when oil and
 gas facilities are encountered.
- Prior to demolition of any structures, an asbestos, lead-based paint, and miscellaneous hazardous materials survey will be conducted at each parcel, where applicable. Regulated materials abatement will be conducted in accordance with Section 250, Environmental, Health, and Safety Management, of the CDOT Standard Specifications for Road and Bridge Construction (CDOT, 2011) and relevant Occupational Health and Safety (OSHA) regulatory details.
- Prior to demolition, regulated materials must be removed from any structures and appropriately recycled or disposed.
- Coordination with the Colorado Department of Labor and Employment Division of Oil and Public Safety (OPS) will be required as soon as possible for any parcel that is or will be acquired, is regulated by OPS and is found to have contaminated the environment. If site characterization and/or remediation have not been completed, the OPS may require CDOT to complete these activities after acquisition. During the right-of-way acquisition process, additional properties may require other actions depending on the results of the Initial Site Assessments (ISAs). By law, all friable asbestos-containing materials (ACM) must be removed from structures, including bridges, prior to demolition, and soils if encountered in excavated landfill or building debris, buried utilities, or other ACM. The contractor performing the asbestos abatement is required to be licensed to perform such work and obtain permits from the CDPHE.
- Lead-based paint may need to be removed prior to demolition if the lead is leachable at concentrations greater than regulatory levels. Where lead-based painted surfaces will be removed via torching, additional health and safety monitoring requirements are applicable.
- Prior to construction activities, a Health and Safety Plan, as required by Section 250.03 of the CDOT Standard Specifications for Road and Bridge Construction (CDOT, 2011), will be developed. Construction specifications shall be written to include review of the Health and Safety Plan by the CDOT Regional Environmental Manager.
- If abandoned landfills or coal mines are present below and/or within 1,000 feet of construction activities, the Health and Safety
 Plan will need to include provisions for assessing and monitoring air quality at all utility trenches, drainage structures, and
 similar underground construction (i.e., caissons) areas prior to and during intrusive activities to ensure worker safety

Parks and Recreation

- All ground disturbing and debris generating construction processes will be contained by erosion and sediment control BMPs designed as part of approved stabilization and stormwater management plans.
- All disturbed areas will be returned to their original contour, vegetation, and landscape appearance in cooperation with and direction from the resource jurisdictional authorities.

Some techniques that may be used to mitigate impacts will include, but not be limited to:

- Coordinating with the local jurisdiction to prepare for construction at the site, including public safety and security measures and providing signed detour and alternate access information;
- Replacing vegetation will be with native grass and shrubs or irrigated turf as pre-construction conditions dictate (mitigation ratios and plant selection and placement will be determined through coordination with local jurisdictional agencies).



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Parks and Recreation (cont'd)

- Using BMPs to limit erosion during construction.
- Compensating for acquisition of the resource (location of any lost access will be negotiated with park representatives during final design).
- Rebuilding park features, such as trails, elsewhere on the park site.
- Fencing will be included in all areas where pedestrian safety is a concern

Section 6(f)

No mitigation is required.

Farmlands

If any important agricultural features are affected as design is further defined, mitigation measures, such as replacement of irrigation ditches and pipes, will be considered as appropriate. Loss or damage to crops resulting from construction activities will be compensated.

Energy

Mitigation of energy consumption during operations will focus on a reduction in daily vehicle miles of travel. This reduction can be achieved through successful transit-oriented development, congestion management, and effective improvements to the roadways. These measures all work to increase travel efficiency and save energy.

Public Safety and Security

Mitigation measures for temporary impacts during construction include:

- The design of bus stations will incorporate life-safety standards, similar to RTD's Comprehensive Safety Certification Program. To ensure consistency of service across the transit corridor, the commuter rail operating authority will be expected to adhere to these same standards. These include measures such as fencing to protect patrons from the track area; well-designed pedestrian underpasses; lighting as a deterrent to crime and to ensure good visibility in stations and parking areas; and, where walls and elevator shafts are constructed, the use of transparent materials to provide better sight lines and reduce concealment areas for criminals.
- Prior to operation of commuter rail the operational authority will host training sessions for all affected police, fire, emergency response teams, schools, and employers who either are responsible for police or emergency response or are located in the immediate project corridor. These training sessions will cover the details of commuter train and bus operations, potential security issues, and agency responsibilities.
- Potential losses at construction sites will be mitigated through fencing and on-site security provided by contractors. All
 construction contractors will be responsible for safety at their respective sites and will be required to follow all OSHA
 requirements applicable to construction site safety. The appropriate agencies will provide a site safety officer to monitor site
 safety.

Construction

CDOT's Standard Specifications for Road and Bridge Construction (2011) and CDOT's Construction Manual (2002a) outline basic mitigation measures that contractors are required to take on any construction project. Appropriate application of these mitigation strategies will be defined during the final engineering phase of this project.

Noise

- Implement construction BMPs.
- 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, construction activities will be minimized during the evening, nighttime, weekends, and holidays when receptors are usually in these areas.
- Nighttime construction will be desirable (e.g., commercial areas where businesses may be disrupted during daytime hours) or necessary to avoid major traffic disruption.
- The major noise source on construction sites is typically diesel motors; therefore, all engines will use commercially available effective mufflers and enclosures, as possible.



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Construction (cont'd)

- Modern equipment will be used with improved noise muffling and all equipment items will be evaluated to ensure that they
 have the manufacturers' recommended noise abatement measure, such as mufflers, engine covers, and engine vibration
 isolators intact and operational. Generally, newer equipment would create less operational noise than older equipment. All
 construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise-control
 devices (e.g., mufflers and shrouding).
- The use of impact pile driving will be avoided near noise-sensitive areas, where possible. Alternative foundation preparation technologies will be used, such as vibratory pile driving or cast in drilled hole.
- Temporary barriers will be used and relocated, as required, to protect sensitive receptors from excessive construction noise. Noise barriers should be made of heavy plywood or moveable insulated sound blankets.
- Plans will be made to conduct truck loading, unloading, and hauling operations so that noise will be kept to a minimum.
- Frequent updates of all construction activities will be provided to the public.
- A community noise and vibration monitoring plan and a noise and vibration control plan will be prepared before initiating any construction.

<u>Access</u>

- Use enhanced signing.
- Use alternate access enhancements.
- Use advertising/public relations.
- Do not close multiple interchanges concurrently.

<u>Highway</u>

- 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 AASHTO guidance and Manual on Uniform Traffic Control Devices.
- Coordinate work activities to ensure they do not coincide with sporting, school, or special events.
- Implement advanced traffic diversion.
- Use intelligent management systems and variable message signs to advise/redirect traffic. Work with RTD to offer enhanced
 operations during peak construction.
- Develop traffic management plans.
- Maintain access to local businesses/residents.
- Coordinate with emergency service providers to minimize delay and ensure access to properties.

Pedestrian/Bicycle Mobility

- Provide well-defined detours for pedestrians/bicyclists.
- Enhance safety through the use of adequate signing, fencing, and lighting.
- Implement a public relations program.
- Comply with American Disability Act requirements.
- Construct new bike/pedestrian overpass as a detour before old is demolished.



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Construction (cont'd)

Environmental Impacts

- Use wetting/chemical inhibitors for dust control.
- Provide early investigation of subsurface conditions.
- Prepare a well-defined materials handling plan.
- Employ educated contractor with trained personnel.
- Require prompt and safe disposal of waste products.
- Implement water quality BMPs.
- 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 (2005), including sections regarding water quality control, erosion control, and environmental health and safety.
- Prepare or revegetate exposed areas as soon as possible after construction.
- Remove soil and other materials from paved streets.
- Incorporate recommendations as appropriate from the Regional Air Quality Council (RAQC) report, Reducing Diesel Emissions in the Denver Area (RAQC, 2002).
- Operate equipment mainly during off-peak hours.
- Limit equipment idling time.
- Use recycled materials for project activities to the extent allowed by good practice and CDOT construction specifications. Use construction equipment that use ultra-low sulfur fuels to the extent practicable.

Floodplains and Water Resources

- BMPs used will be consistent with the MS4 permitting requirements, requirements of Northern Front Range flood control districts, as well as practices mentioned in CDOT's Erosion Control and Stormwater Quality Guide (CDOT, 2002b).
- Section 107.25 of CDOT's Standard Specifications for Road and Bridge Construction (2011) deals with contractor's requirements for water quality control.

Section 4(f)

Mitigation measures to address impacts to Section 4(f) park resources will include:

- Coordinating with the local jurisdiction to prepare for construction at the site including public safety and security measures, and providing detour and alternative access information.
- Replacing vegetation with native grass and shrubs or irrigated turf as pre-construction conditions dictate. Mitigation ratios and plant selection and placement will occur through coordination with the local agencies having jurisdiction.
- Using BMPs to limit erosion during construction.
- Compensating for acquisition of the resource. Location of any lost access will be negotiated with park representative during final design.
- Rebuilding park features, such as trails, elsewhere on the park site.



Table 11. Phase 1 Mitigation and Monitoring Summary (cont'd)

Phase 1 Mitigation Measures

Section 4(f)

Fencing will be included in all areas where pedestrian safety is a concern.

 Mitigation measures to address impacts to Section 4(f) historic resources are identical to those listed under the Historic Preservation section of this table.

1 L. MONITORING AND ENFORCEMENT PROGRAM

2 Transportation projects must comply with a wide range of federal and state environmental 3 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

6 types of approval that do not involve granting or denial of a permit. The following permits

7 and coordination activities may be required to support the construction of the proposed build

8 packages, including the Preferred Alternative.

9 L.1 WATER QUALITY/WATER RESOURCES

10 L.1.1 COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

A CDPS permit is required by State and Federal regulations for stormwater discharged from 11 any construction activity that disturbs at least one acre of land. This discharge permit is 12 required to ensure the quality of stormwater runoff from the construction site. Under CDPS 13 permit stipulations, a site-specific stormwater management plan would be prepared that 14 outlines in detail specific BMPs for inclusion in project plans and implementation in the field. 15 Included in the stormwater management plan are such aspects as BMP locations, turbidity 16 and monitoring requirements, seed mix, concrete wash-out provisions, and other relevant 17 information. Permits would be obtained from CDPHE's Water Quality Control Division. 18

19 **L.1.2 SECTION 404 PERMIT**

A Section 404 permit, which is issued by the USACE, is required whenever construction projects or maintenance activities require filling that would occur below the ordinary high water line in any body of water considered a water of the U.S. (navigable waters of the U.S. and adjacent wetlands; all tributaries to navigable waters and adjacent wetlands; interstate waters and their tributaries and adjacent wetlands). An individual permit is required if an excess of 0.5 acre or 300 linear feet of waterway are to be filled; a nationwide permit is required where lesser amounts of waterway are to be filled.

This project is being accomplished under a merger agreement with the USACE. A Section 404 permit application has been submitted.

²⁹ **L.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:



- Construction dewatering operations associated 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.
- 5 A Section 402 permit would be obtained from CDPHE's Water Quality Control Division.

6 L.1.4 SECTION 401 WATER QUALITY CERTIFICATION

A Section 401 Water Quality Certification is required in conjunction with an Individual 7 404 Permit (dredge and fill permit) for any transportation construction project or 8 maintenance activity where work occurs below the ordinary high-water line or adjacent to 9 wetlands. As part of its 401 Certification, Regulation No. 82 states that CDOT is required to 10 notify the CDPHE and the owners and operators of municipal and domestic water treatment 11 intakes or diversions downstream if potential impacts to nearby receiving waters may occur 12 during construction, e.g., when blasting occurs near receiving streams. Unless specified by 13 the Water Quality Control Division of CDPHE, in-stream turbidity monitoring is not typically 14 required. The 401 Certification must be obtained from the Water Quality Control Division of 15 the CDPHE. 16

17 **L.1.5 FLOODPLAIN PERMITS**

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

20 L.2 AIR QUALITY

L.2.1 STATIONARY SOURCE PERMITTING AND AIR POLLUTION EMISSIONS NOTICE (APEN) REQUIREMENTS

A stationary source permit and APEN requirements stipulate that a construction permit must be obtained from CDPHE for any and all emissions associated with construction activities, including operations of portable sources. CDOT will submit an APEN to CDPHE's APCD if more than 25 acres of land would be impacted and/or project construction would last longer than six months. CDPHE will respond whether or not a permit would be required prior to commencing construction.

²⁹ L.2.2 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 would also be required for
- demolition of structures that potentially have friable asbestos containing material (see
- 35 **Section 3.17**, *Hazardous Materials*, of the Final EIS).



2 L.3 BIOLOGICAL RESOURCES

1

3 L.3.1 SENATE BILL (SB) 40 CERTIFICATION

Senate Bill (SB) 40 certification would be required by the Colorado Parks and Wildlife (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. A SB 40 wildlife certification application would need to be submitted to CPW 60 days before construction begins.

Based on the Memorandum of Understanding (MOU) signed by CPW and CDOT in 2004, it
 was established that all future transportation, construction, and maintenance activities that
 satisfy the requirements for use of the Programmatic SB 40 Wildlife Certification as

described in the Guidelines of the MOU may be taken without written certification from
 CPW.

15 **L.3.2 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 may also be needed for this activity.

19 L.3.3 THREATENED AND ENDANGERED SPECIES

20 Mitigation for impacts to threatened and endangered species will be monitored with

consultation with USFWS in accordance with the PBO which is included as **Appendix E** of this ROD. As described in the PBO:

- FHWA/CDOT will monitor and report on the progress of implementation of the proposed action including all conservation measure.
- 25 2) FHWA/CDOT will monitor all temporary disturbed sites.

26 L.4 ACCESS

27 L.4.1 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.

31 L.4.2 CONSTRUCTION ACCESS PERMIT

³² Construction access permits would likely be required for temporary access needs outside

33 the project limits.



1 L.4.3 OTHER LOCAL PERMITS

² Other local permits would likely be required by cities and counties as needed, such as

construction, grading, erosion control, utility, or survey permits either prior to the beginning

4 or during construction phases.

5 M. COMMENTS ON FINAL EIS

6 The North I-25 Final Environmental Impact Statement and Final Section 4(f) Evaluation

7 (FHWA and CDOT, 2011) was released on August 19, 2011. The notice of availability of the

8 Final EIS was published in the Federal Register on August 19, 2011, indicating a 30-day

⁹ 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

13 Statement website, mail, fax, and verbal and written comments submitted at the three public

14 hearings.

¹⁵ In total, comments were submitted by 301 individuals, two public interest organizations, six

agencies (federal, state, tribal or regional) and six local governments. Comments were

received via the project website, fax, mail, or as verbal and written comments at the three

¹⁸ public hearings. 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 this ROD.

- During the Final EIS comment period, a total of 301 comments were received from the general public in the following manner:
- ▶ 287 comments were submitted through the project Web site or through e-mail.
- ▶ 9 written comments were submitted during a public hearing, mailed or faxed to CDOT.
- ▶ 5 verbal comments were made at one of the three public hearings.
- The public comments received on the Final EIS reflected the following community sentiments:
- ▶ 21 specifically supported the Preferred Alternative.
- 1 specifically supported Package A.
- 30 > 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 at Mead.
- 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.

Some comments required minor revisions and clarifications to the Final EIS; these revisions are noted in the corresponding comment responses and identified in **Section J** of this document.

N. DECISION

Based on the information provided in the *North I-25 Final EIS* and Section 4(f) Evaluation (August 2011) and Revised Section 4(f) Evaluation (October 2011), which have been incorporated by reference into this ROD, and information contained in this ROD, the FHWA concludes that selecting Phase 1 of the Preferred Alternative, as 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. Based on the considerations identified in the *Revised Section 4(f) Evaluation* dated October 27, 2011, the FHWA also concludes that there are no feasible and prudent alternatives to the use of Section 4(f) protected lands and that the Proposed Action includes all possible planning to minimize harm to the identified Section 4(f) properties resulting from such use.

12/29/2011

NORTH I-25

EIS information. cooperation. transportation.

Douglas E∕Bennett, PE Acting Di∜ision Administrator