



Finding of No Significant Impact
and Final Section 4(f) Evaluation

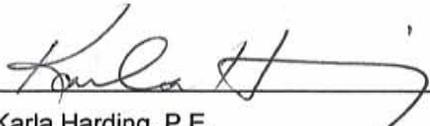
January 2008



CDOT STA 402A-003
SH 402: US 287 to I-25 INTERCHANGE
FINDING OF NO SIGNIFICANT IMPACT
and
FINAL SECTION 4(f) EVALUATION

Submitted Pursuant to
42 USC 4332(2)(c) and 49 USC 303 by the
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
COLORADO DEPARTMENT OF TRANSPORTATION

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FHWA Guidance on 23 USC 139(1)

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Section 1. Introduction

Colorado Department of Transportation (CDOT), in cooperation with Federal Highway Administration (FHWA), proposes to improve State Highway (SH) 402 between United States Highway 287 (US 287) and Interstate 25 (I-25), in Loveland, Colorado. The improvements will be located entirely in Larimer County, Colorado.

CDOT prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act of 1969 (NEPA), 40 Code of Federal Regulations (CFR) Parts 1500–1508, and 23 CFR Part 771 to assess the impact of the proposed improvements. The Section 4(f) Evaluation was prepared pursuant to Section 4(f) of the 1966 US Department of Transportation Act (49 USC 303 and 23 USC 138), and the Safe, Accountable, Flexible, Efficient Transportation Equity Act of 2005, Section 6009. Two alternatives were evaluated in the EA, and the Meander Alternative was identified as the Preferred Alternative. FHWA approved the EA and Draft Section 4(f) Evaluation on July 23, 2007.

1.1 Project Location

SH 402 is a heavily used two-lane, east-west arterial connecting US 287, also known as Lincoln Avenue, and I-25. This 4-mile highway is located south of the city of Loveland in Larimer County, Colorado. SH 402 serves local residents and businesses and is used as a commuter route to I-25. Figure 1-1 shows the project location.

Access to a carpool lot (approximately 88 spaces) located at the southwest quadrant of the SH 402 and I-25 interchange was included as part of this study. Potential improvements at the I-25 interchange are being addressed under the current *North I-25 Environmental Impact Statement*.

SH 402 begins at US 287 and ends at I-25. An existing four-lane highway extends west of US 287 and is known as 14th Street in the city of Loveland. East of I-25, a rural two-lane county highway segment extends east through the edge of Johnstown and into the town of Evans, where it ends.

1.2 Project Purpose and Need

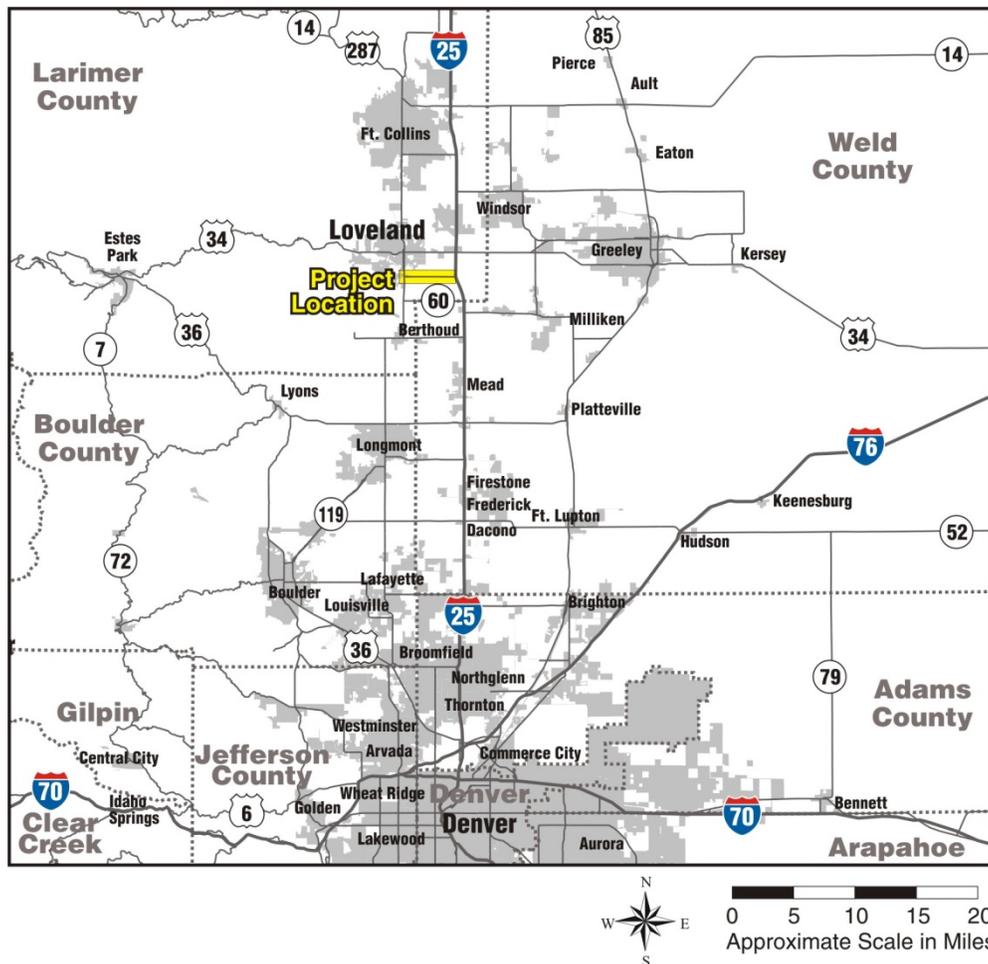
This EA encompasses the entire 4-mile length of SH 402, although improvements are not needed for the area between US 287 and County Road (CR) 13C (St. Louis Avenue), which was widened by developers in coordination with the city of Loveland and CDOT under a Categorical Exclusion dated September 18, 2003.

The EA was undertaken to investigate mobility and safety improvements along the SH 402 corridor. Analysis included assessment of both current travel conditions and projections for 2030 to identify and address both current and future travel demand needs.

The **purpose** of this project is to improve mobility and safety along the existing SH 402 from the US 287 intersection east to the I-25 interchange.

The **need** for this project is established by identifying and analyzing the 2030 travel demand and expected growth and development. The existing two-lane highway's substandard design from CR 13C to I-25 includes no turn lanes, narrow shoulders, and poor sight distances (how far ahead a driver can see from the road), resulting in mobility and safety concerns.

Figure 1-1. Project Location



Mobility and safety concerns will worsen as traffic increases between now and 2030. Currently, traffic congestion and slowing are observed during peak periods. Public experiences of safety problems are common. Failure to address these problems will result in a highway with heavy congestion, significant delays, and exacerbated safety problems before 2030.

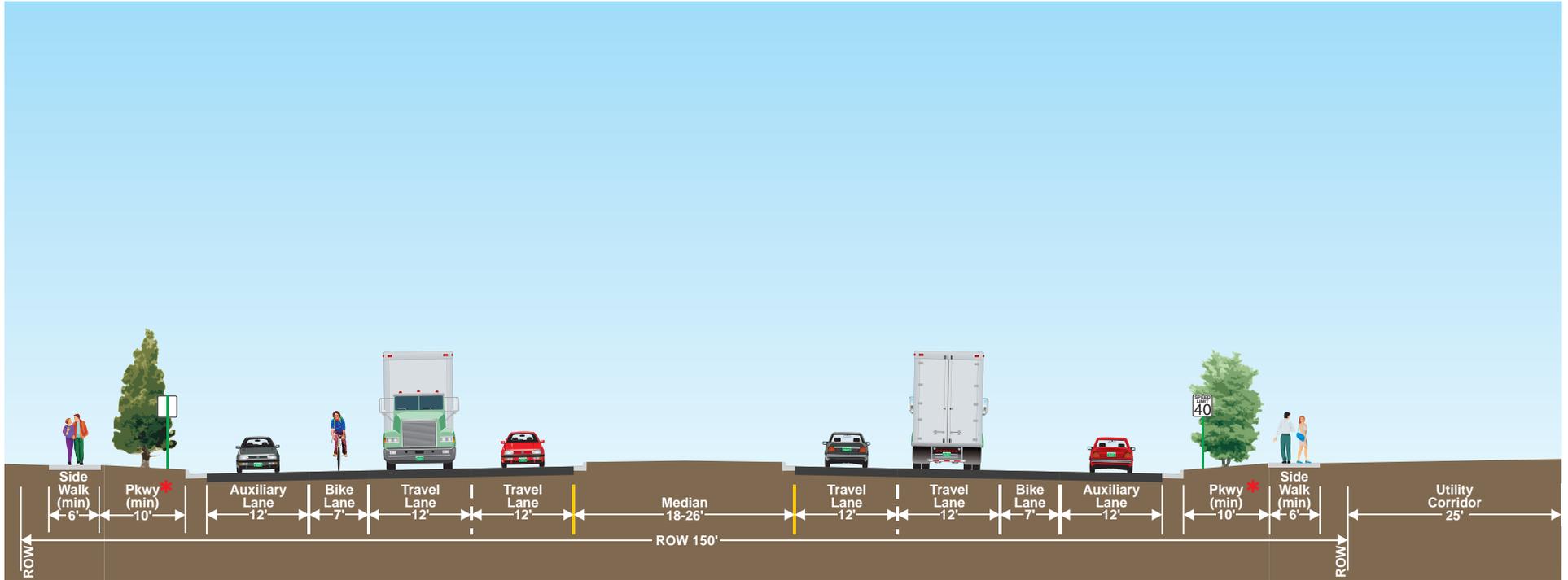
The eastbound morning peak traffic and westbound afternoon peak traffic indicate that SH 402 is used heavily by commuters for access to I-25.

1.3 Description of the Preferred Alternative

The Preferred Alternative, the Meander Alternative, consists of a 175-foot urban section between US 287 and CR 13C that is being

constructed as development occurs in this area as shown in Figure 1-2, a 160-foot section in the vicinity of the Big Thompson River, and a 175-foot rural section east of the Big Thompson River to the I-25 interchange as shown in Figure 1-3. Cross-section variation is an effort to reduce encroachment into the Big Thompson River floodplain. This is in direct response to agency comments.

During the public involvement activities, the majority of commenters preferred this alternative, recognizing that the design minimized right-of-way impacts. While this alternative did not have the least impact on wetlands, it had the fewest relocations and least number of impacts on historic properties, minimizing effects on two of the three historic properties along the south side of SH 402.



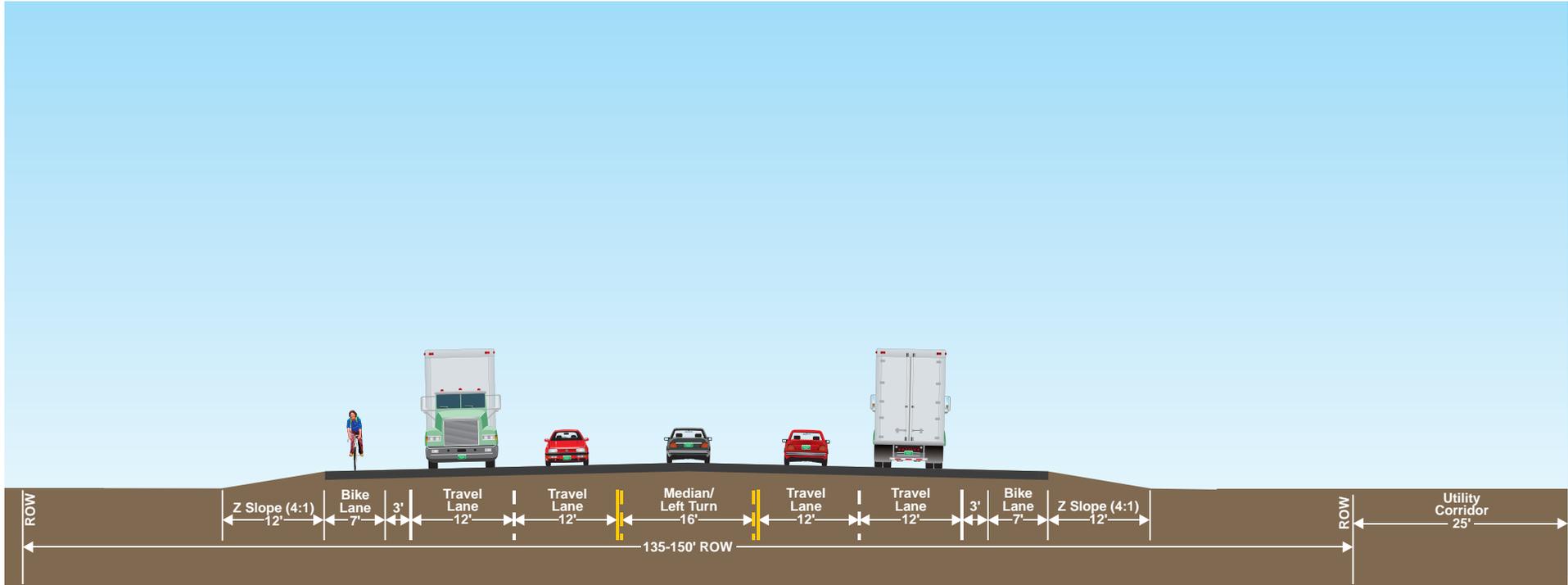
* Where space permits

Developers, in coordination with CDOT and the City of Loveland, have partially built SH 402 improvements between US 287 and St. Louis Avenue (CR 13C), improving the north or westbound side under a Categorical Exclusion dated September 18, 2003. This interim condition will remain until the development on the south side of SH 402 is completed at a future date.



**SH 402 from US 287 East to CR 13C (St. Louis Avenue):
View East - Proposed Urban Cross Section**

FIGURE 1-2



Meander Alternative, Preferred Alternative, Alignment Description

Figure 1-4 illustrates the alignment of the Meander Alternative, described below.

1. Starting at the western terminus of SH 402 at US 287, the Meander Alternative would be designed to include necessary intersection improvements such as turn lanes to accommodate 2030 traffic. The section between US 287 and CR 13C has already been partially constructed and will be completed as development on the south side of SH 402 is completed. These improvements do not preclude future improvements to the remainder of SH 402.
2. East of CR 13C the alignment would shift to the south side, away from the Big Thompson River.
3. West of CR 11H (Boise Avenue) the alignment would shift back to the north side and remain there until the highway reaches Heron Drive/Olson Drive.
4. At CR 9E, the intersection would be straightened to improve sight distance.
5. The alignment would shift slightly south again, then gradually return to the existing alignment where it would end at the I-25 interchange.

In addition to horizontal alignment shifts, the Meander Alternative would also be designed to smooth the vertical profile of the roadway near the Heron Drive/Olson Drive, Sauk Road, CR 9, and CR 9E intersections to maintain the required sight distance along the corridor. Side slopes would also be cut back to account for the increased distance from stop signs to the highway at unsignalized intersections.

The alignment shifts are the result of an extensive design effort that focused on improving roadway mobility and safety while minimizing impacts on the surrounding human and natural environments. The Meander Alternative's limited alignment shifts were developed to meet speed and safety criteria for posted speed limits (40 to 50 mph) while taking into account driver expectations. By limiting the number of alignment shifts and maintaining the right-of-way width of 160 to 175 feet, the Meander Alternative minimizes impacts on the number of relocations and historic properties while meeting the purpose and need. Additional refinements to the Meander Alternative would occur during final design.

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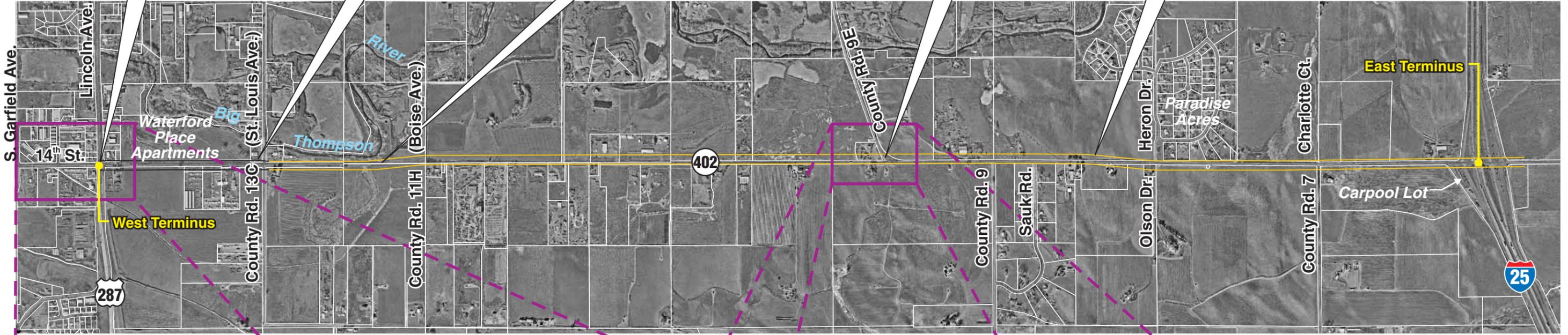
1 Starting at the western terminus of SH 402 and US 287, the Meander Alternative was designed to include necessary intersection improvements, such as turn lanes, to accommodate 2030 traffic.

2 East of CR 13C, the alignment shifts to the south side, away from the Big Thompson River.

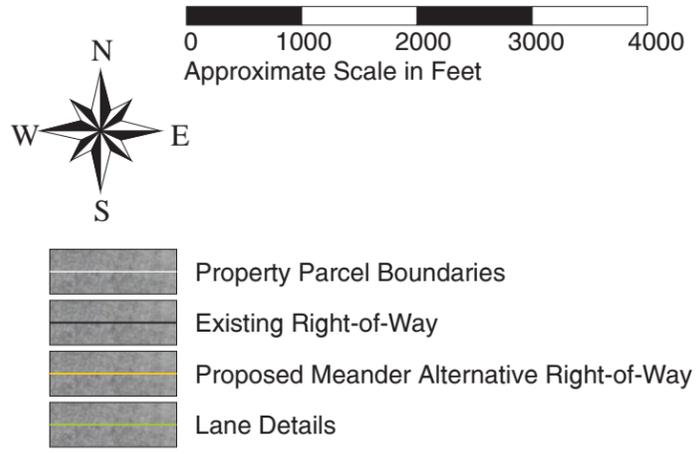
3 West of CR 11H (Boise Avenue) the alignment shifts back to the north side and remains along the north side until Heron Dr./Olson Dr.

4 At CR 9E, the intersection will be straightened to improve sight distances.

5 The Meander Alternative shifts slightly south again and then gradually returns to the existing alignment where it ends at the I-25 interchange.



0 100 200 300 400 500
Approximate Scale in Feet



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Meander Alternative Level of Service

The Meander Alternative would improve travel conditions by providing more capacity, a left turn lane in the median, and consistent shoulders. These features address mobility and safety issues, especially those associated with the difficulty of making a left turn onto or off of the highway, and allowing cars to pull off to the side of the facility on the shoulders without blocking traffic.

Intersection level of service (LOS) would vary by intersection in the urban section. US 287 and CR 13C would operate at LOS D during peak hours. All other intersections are in the rural section and would operate at LOS C or better during peak hours. Table 1-1 details LOS at intersections for the Meander Alternative (Action Alternative).

Table 1-1. Intersection LOS

Intersection	2001 No Action		2030 Action	
	AM	PM	AM	PM
US 287 (Lincoln Avenue)	C	D	D	D
CR 13C (St. Louis Avenue)	C	C	C	D
CR 11H (Boise Avenue)	C	C	A	C
CR 9E	C	C	C	B
CR 9	A	B	A	A
Heron Drive/Olson Drive	B	B	A	A
CR 7 (Charlotte Court)	A	A	C	B
Carpool Lot Access Road	A	A	A	A

Table 1-2 illustrates through traffic LOS for the Meander Alternative (Action Alternative) for morning and evening peak traffic directions. LOS C would be achieved along the entire route.

Table 1-2. Through Traffic LOS

Highway Segment	2001 No Action		2030 Action	
	AM	PM	AM	PM
US 287 to CR 13C	E	E	C	C
CR 13C to CR 11H	E	E	C	C
CR 11H to CR 9E	E	E	C	C
CR 9E to CR 9	D	E	C	C

Highway Segment	2001 No Action		2030 Action	
CR 9 to Heron Drive	E	E	C	C
Heron Drive to CR 7	D	D	C	C
CR 7 to Carpool Lot Access Road	D	D	C	C

Meander Alternative Design Features

Design features needed to achieve LOS C for through traffic on SH 402 in 2030 are shown for each intersection in Figure 1-5, Figure 1-6, and Figure 1-7. These figures show the 2001 condition and the proposed 2030 intersection designs.

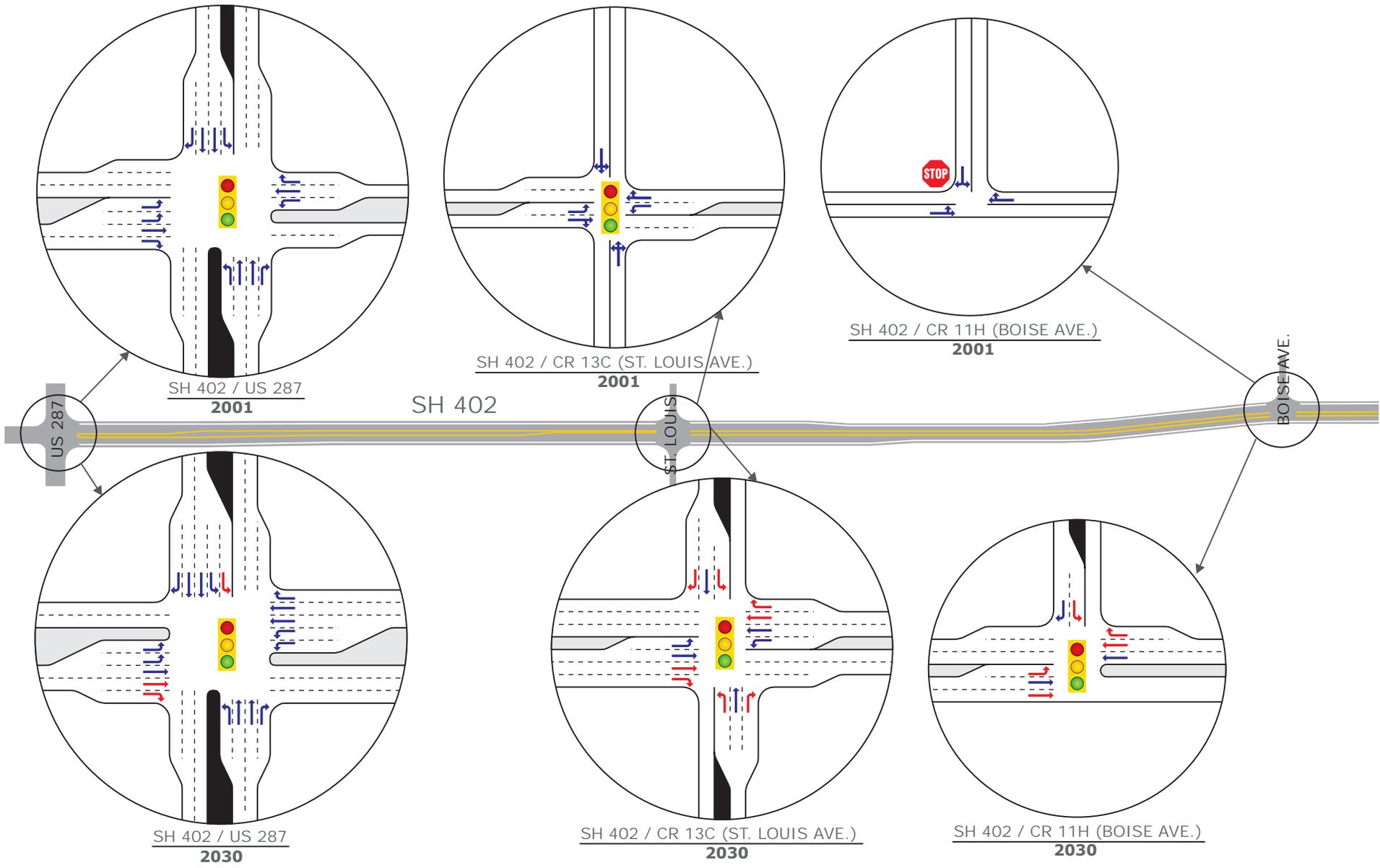
1.4 Meander Alternative Meets Project Purpose and Need

The Meander Alternative, Preferred Alternative, would meet the SH 402 project corridor mobility, safety, and travel demand requirements for 2030 in the following ways:

Mobility – The Meander Alternative would meet LOS design goals for 2030, with LOS D between US 287 and CR 13C and LOS C from CR 13C to I-25. *Chapter 1*, page 1-6, and *Chapter 2*, page 2-15, of the EA discussed LOS design goals for SH 402.

Safety – The Meander Alternative would improve travel conditions by providing intersection design improvements, sight distance improvements, a left turn lane in the median, and consistent shoulders. These factors are expected to result in a reduction in crash rates.

Travel Demand – Capacity increases provided by the expansion of SH 402 from two lanes to four lanes, together with the addition of a left turn lane in the median, would meet the 2030 travel demand.

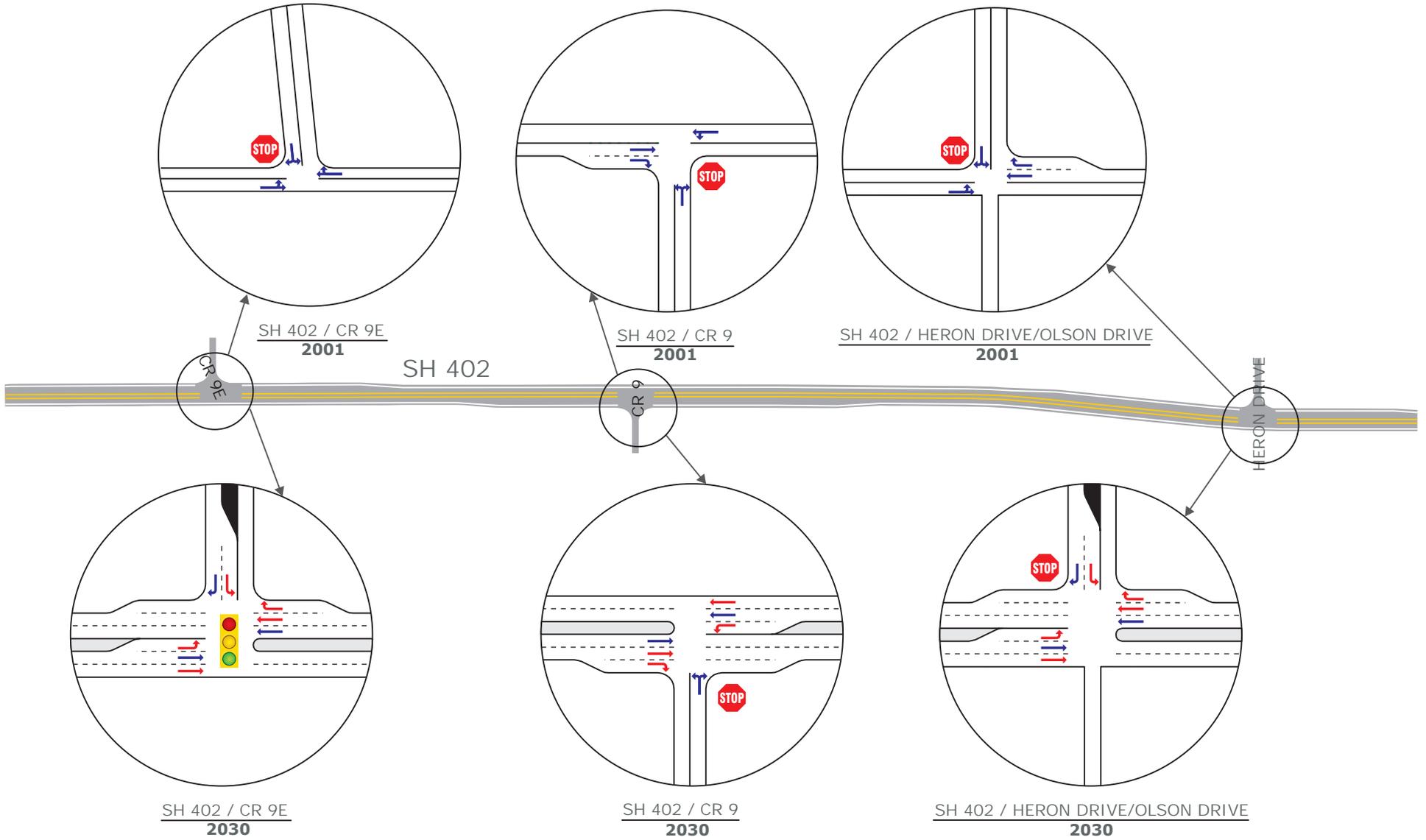


- ← Lane Additions
- ← Existing Lanes



**Existing and Meander Alternative Intersection Configuration
US 287 to CR 11H (Boise Avenue)**

FIGURE 1-5

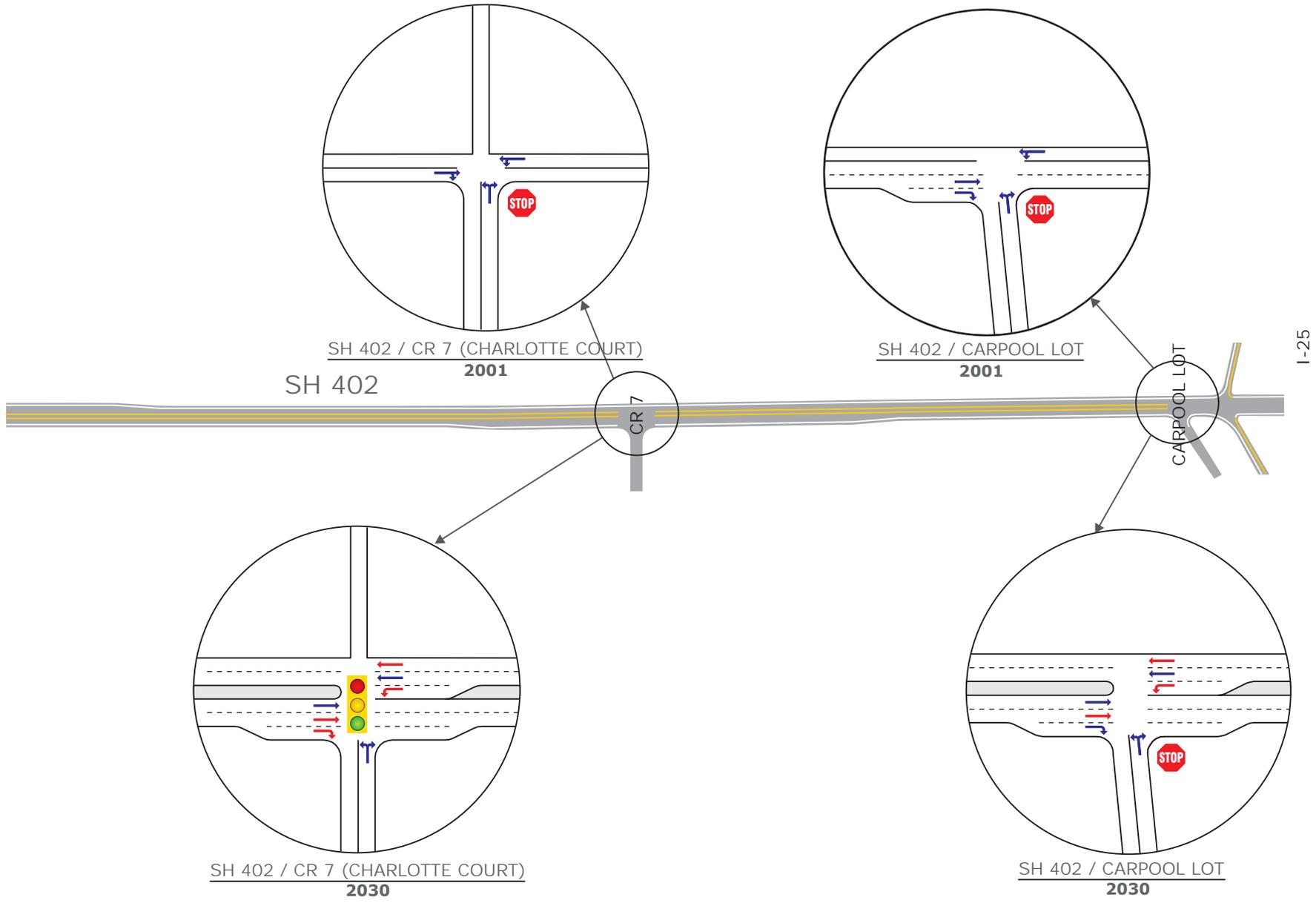


- ← Lane Additions
- ← Existing Lanes



**Existing and Meander Alternative Intersection Configuration
CR 9E to Heron Drive/Olson Drive**

FIGURE 1-6



- ← Lane Additions
- ← Existing Lanes



**Existing and Meander Alternative Intersection Configuration
CR 7 (Charlotte Court) to Carpool Lot**
FIGURE 1-7

1.5 Funding Status

Construction of the Meander Alternative would cost approximately \$17.7 million based on conceptual design.

The project is currently programmed in the CDOT 2006–2007 Statewide Transportation Improvement Program (STIP) with a total of \$1 million (STIP #NF3392) for 2009. The North Front Range 2030 Plan identifies SH 402: US 287 to I-25, two to four lanes, with a cost estimate of \$23.6 million for design and construction.

1.6 Clarification to the EA

Any construction-related mitigation requirement clarifications discussed in the bulleted comments below have also been added to Region 4's *Commitments and Mitigation Table* found in Appendix E of this document.

- The spelling of Olsen Drive has been corrected to Olson Drive.
- One outbuilding identified for relocation in *Chapter 3, Section 3.2* of the EA has burned down and will no longer be affected by the proposed project.
- Average Daily Traffic numbers for the 2030 No Action and Meander Alternative are the same. This was not clear in the discussion in *Chapter 2* of the EA.
- City of Loveland (per Tom Knostman, Loveland Engineer, email of August 17, 2007) “design for the median width for US 287 east to CR 13C will range from 4 to 16 feet as planned. The EA indicates 18 to 24 feet.” The median width for this section has been constructed as Tom Knostman stated.
- City of Loveland (per communication with Tom Knostman, Loveland Engineer, September 2007) has asked for the following clarification for LOS, “In 1996 the City of Loveland adopted a Level of Service C standard for arterial streets (City of Loveland, 2030 Transportation Plan, April 2007). CDOT has allowed for a lesser Level of Service goal west of CR 13C, at LOS D as noted in the EA page 1-6.”
- City of Loveland (per communication with Tom Knostman, Loveland Engineer, no date) noted that the Weighted Hazard Index (WHI) for the entire corridor had been less than the statewide average (-2.56) between 1998 and 2002, while the rural section between CR 13C and I-25 was worse than the statewide average (1.98) for that time period as noted on page 1-7 of the EA. Is this an error?
WHI is a number that provides a comparison of the existing accident rate on a roadway section to the statewide average accident rates on a similar highway. If the highway changes characteristics (such as going from rural to urban) through a project area, the accident rates of the two sections will be compared to two different statewide averages (rural section to rural state highways and urban section to urban state highways). For the SH 402 analysis, the entire corridor was treated as an urban minor arterial, which resulted in a WHI of -2.56, while the CR 13C to I-25 segment was run as a rural facility resulting in a WHI of 1.98. The numbers are correct for the analysis as conducted. The WHI of 1.98, which is worse than the statewide average for a rural facility, more accurately reflects the current conditions on SH 402.
- City of Loveland (per communication with Tom Knostman, Loveland Engineer, September 2007) asked about EA Tables 1-3 and 2-7, which show 2030 No Action LOS as C from US 287 east to CR 11H. This is due to the model responding to improvements between US 287 and CR 13C, not newly proposed safety improvements at Boise Avenue.
- Subsequent to the EA publication, three safety improvements have been implemented or are in progress along SH 402:
 - Boise Intersection Improvement Project
 - New Traffic Signals at SH 402 and I-25
 - Park-n-Ride Improvements (Security Camera and Lighting)
- As a result of concerns raised at the public hearing regarding noise impacts and

mitigation, CDOT will conduct an updated noise analysis for Paradise Acres along the SH 402 corridor during project design to assure that existing noise and 2030 forecast noise conditions are adequately identified and that all opportunities to consider feasible and reasonable mitigation are applied.

- Per US Environmental Protection Agency [EPA] request dated August 20, 2007, mud tracking mitigation specifics are included in the CDOT Construction Best Management Practices (BMPs) from the *Erosion Control and Stormwater Quality Guide*, as follows:

A stabilized layer of aggregate underlined with a geotextile and located where traffic enters or exits the construction site is used to reduce the amount of mud tracked onto paved public roads by vehicles or runoff leaving the construction site.

Any mud tracked on to paved surfaces will be cleaned up within 24 hours.

- Per EPA request dated August 20, 2007, diesel emission mitigation during construction should have included the following BMP in the EA on Table 3-15 under Air Quality: "Performing proper maintenance on construction equipment."
- In correspondence dated August 20, 2007, EPA requested the following acknowledgment relevant to the Mobile Source Air Toxics (MSAT) discussion in the EA. "EPA maintains that estimation of health effects on the project level is possible and performing that estimation is an important part of assessing environmental impacts, in cases where appropriate."
- Per US Department of Interior (DOI) comments dated September 14, 2007, the following additional clarification on construction practices related to the Migratory Bird Treaty Act (MBTA) are added:

Although the provisions of the MBTA are applicable year-round, most migratory bird nesting activity in eastern Colorado occurs

during the period of April 1 to August 15. However, some migratory birds are known to nest outside of the aforementioned primary nesting season. For example, raptors can be expected to nest in woodland habitats during February 1 to July 15.

If the proposed construction project is planned to occur during the primary nesting season or at any other time which may result in the take of nesting migratory birds, the Fish and Wildlife Service (FWS) recommends that the project proponent (or construction contractor) arrange to have a qualified biologist conduct a field survey of the affected habitats and structures to determine the absence or presence of nesting migratory birds. Surveys should be conducted during the nesting season. In some cases, such as on bridges or other similar structures, nesting can be prevented until construction is complete. It is further recommended that the results of field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, be thoroughly documented and that such documentation be maintained on file by the project proponent (and/or construction contractor) for potential review by the FWS (if requested) until such time as construction on the proposed project has been completed.

The FWS's Colorado Field Office should be contacted immediately for further guidance if a field survey identifies the existence of one or more active bird nests that cannot be avoided by the planned construction activities. Adherence to these guidelines will help avoid the unnecessary take of migratory birds and the possible need for law enforcement action.

Section 2. Mitigation Measures

Table 2-1 presents the mitigation measures for the Meander Alternative, which were shown in the EA as Table 3-14, beginning on page 3-63. Table 2-2 lists mitigation measures and BMPs specific to construction, shown in the EA as Table 3-15, beginning on page 3-70. Clarifications to the EA noted in Section 1.6 of this FONSI are not included in these EA tables.

Table 2-1. Mitigation Measures for the Meander Alternative

Resources and Impacts	Mitigation or Benefits
Socioeconomic	No mitigation is required.
Right-of-Way Acquisition and Relocations	Mitigation is required.
<p>Implementation of the Meander Alternative would require acquisition of six homes and two outbuildings (small barns or sheds). The locations of these acquisitions are shown in the EA in Figure 3-3. The six residential structures located in close proximity to SH 402 are on properties that would otherwise be most adversely affected by loss of yards, parking, and driveways. For the right-of-way, 47.58 acres of residential property and 7.15 acres of commercial property will need to be acquired. Due to the dispersed rural development pattern that currently exists for most of the project corridor, loss of frontage on SH 402 will most often mean loss of unimproved portions of large tracts.</p>	<p>To minimize unavoidable relocation of residents, measures to further reduce the number of relocations will be implemented as part of final design.</p> <p>CDOT will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), which provides for uniform and equitable treatment of all persons displaced from their homes, businesses, or farms. The Uniform Act is a form of compensation, not mitigation.</p> <p>The owner of real property acquired for right-of-way will be compensated based on fair market value. Assistance will be provided to any eligible owner or tenant in relocating their business or residence at the time of displacement. Benefits under the Uniform Act to which each eligible owner or tenant might be entitled will be determined on an individual basis and explained in detail.</p> <p>No relocatees will have to move from a dwelling without at least 90 days' written notice. A 90-day notice is not effective for a residential occupant unless a comparable replacement dwelling has been identified. Qualified relocatees receive monetary payments, which may include payments for moving expenses, business in lieu of payments, rent supplements, down payments, or increased interest payments. No person will be displaced by a federally assisted project unless and until adequate replacement housing has been offered to all affected persons, regardless of race, color, religion, sex, national origin, age, or disability. CDOT will assist any eligible owner or tenant to relocate a business or residence at the time of displacement. Benefits under the Uniform Act to which each eligible owner or tenant might be entitled will be determined individually and explained to the parties in detail, along with information about financial options.</p>
Environmental Justice	No mitigation is required.
Land Use	No mitigation is required.
Farmland	No mitigation is required.

Table 2-1. Mitigation Measures for the Meander Alternative

Resources and Impacts	Mitigation or Benefits
Visual	Mitigation is required.
<p>The Meander Alternative would be constructed in an area of relatively open views from dispersed rural residences and existing developments. With the exception of the widened highway and grading associated with cut-and-fill slopes, few new structural elements are proposed as part of this alternative (such as signal or street lights, retaining walls, bridges, and signage). New signalized intersections would be added at CR 11H, CR 9E, and CR 7 (Charlotte Court). Cut-and-fill slopes required to accommodate the Meander Alternative would range in height from 0 to 15 feet (average 4 feet). Landform changes associated with the Meander Alternative would be most noticeable in foreground and near middleground distance zones. Changes are expected to be subordinate to the landscape character in the setting, with low visual impacts after implementation of BMPs and mitigation measures.</p>	<p>BMPs and mitigation measures to reduce or eliminate potential visual resource impacts of construction of the Meander Alternative include the following:</p> <ol style="list-style-type: none"> 1. All disturbed slopes will be treated for erosion control and revegetated as appropriate, using native grasses and forbs. Shrubs will be included when feasible. 2. Sensitive grading techniques will blend grading with the natural terrain. Cut-and-fill slopes will be blended with the surrounding terrain to the greatest extent possible by means of slope rounding, layback, and warping techniques. BMPs for reducing slope modification and landform contrast will be developed individually for cut-and-fill slopes. Cut slopes are more easily modified than fill slopes by using slope layback, slope rounding, and slope warping techniques. These techniques will be implemented as follows: <ul style="list-style-type: none"> • Slope rounding: used at the top of all cuts except in rock. • Slope layback: degree of layback would influence motorists' visual impression and would be crucial in establishing vegetation and preventing erosion. With the gentle nature of the terrain in the project area, cut-and-fill slopes could be laid back up to a 4:1 ratio. • Slope warping: used to achieve a more natural-looking transition between two unlike surfaces by varying the pitch of the cut slopes. This provides greater variation in slope faces and allows for vegetation. This technique involves both vertical and horizontal slope rounding as a more natural extension of landform surface configurations. 3. Removal of native cottonwoods will be avoided wherever practicable, and revegetation BMPs implemented as noted in the EA in Chapter 3, <i>Section 3.17, Ecology</i>.
Recreation	No resources or impacts have been identified.

Table 2-1. Mitigation Measures for the Meander Alternative

Resources and Impacts	Mitigation or Benefits
Hazardous Materials/Waste	Mitigation is required.
<p>Proximity of the leaking underground storage tank (LUST) site at the Diamond Shamrock station and its hydrogeological upgradient location mean there is the potential that fuel-contaminated groundwater may have migrated to areas under the intersection of US 287 and SH 402 into the area of impact for the Meander Alternative. Utilities adjacent to SH 402 containing transformers would be relocated.</p>	<p>Ongoing review of semi-annual groundwater monitoring reports for the Diamond Shamrock LUST site is recommended. These reports will indicate the extent of groundwater contamination and potential offsite migration of contaminants. Pre-characterization of soils and groundwater for project personnel health and safety, materials management, and dewatering is required before disturbance of subsurface soils or groundwater by highway construction activities. Depending on the results of the pre-characterization test, coordination with various agencies and permitting may be required. If the test samples are deemed hazardous, a materials management plan will be developed describing the specifics of the hazardous waste permitting and compliance issues.</p> <p>If any of the transformers test positive for polychlorinated biphenyls (PCBs), the utility company of ownership will be responsible for handling and disposal.</p> <p>If additional hazardous materials are encountered before or during construction of the Meander Alternative, CDOT's <i>Section 250, Environmental Health and Safety Management</i> specification will be used. If necessary, a health and safety plan will be prepared and implemented to mitigate potential health and safety hazards to workers and the public.</p>
Utilities and Services	Mitigation is required.
<p>Proximity of major utilities to the existing SH 402 edge of pavement would necessitate relocation of some of these utilities. A 25-foot utility corridor easement on the south side of the Meander Alternative is proposed to accommodate existing south side utilities and new utilities. Utilities currently on the north side of SH 402 will not be moved into the 25-foot utility corridor easement along the south side. These utilities will be relocated further north and will remain within the SH 402 footprint defined by the 160-foot to 175-foot cross section. CDOT would purchase this easement and grant utility permits to the various utility companies that need to locate facilities within this easement. Utility relocation costs are estimated at approximately \$1 million, based on conceptual design. Final design will allow more exact cost estimates.</p>	<p>BMPs will be required to minimize any erosion or sediment disturbance that may be associated with utility construction within the CDOT easement. Coordination with the county and local utility owners will minimize disruption of service.</p>
Emergency Services	Mitigation is required.
<p>Better LOS associated with the addition of another travel lane, shoulders, and a center turn lane would be expected to improve traffic flow and response time.</p>	<p>Emergency services will be coordinated with the appropriate authorities during construction.</p>

Table 2-1. Mitigation Measures for the Meander Alternative

Resources and Impacts	Mitigation or Benefits
Historic Preservation	Mitigation is required.
<p>FHWA and CDOT, in consultation with the State Historic Preservation Officer (SHPO), concluded that the Meander Alternative would result in the following effects:</p> <ul style="list-style-type: none"> <input type="checkbox"/> No adverse effect <ul style="list-style-type: none"> • Big Thompson Manufacturing Ditch Segment (5LR10726.1) (see SHPO letter June 29, 2005, and again on September 13, 2006) • Propp Farm (5LR11247) (see SHPO letter August 22, 2006) • Weber Farm East (5LR11249) (see SHPO letter May 26, 2006, and again on September 13, 2006) • Mountain View Farm (5LR11242) (see SHPO letter August 22, 2006) <input type="checkbox"/> Adverse effect <ul style="list-style-type: none"> • Weber Farm (5LR10725) (see CDOT letter to SHPO March 10, 2006) 	<p>The SHPO was consulted on the impacts of the project.</p> <p>A Memorandum of Agreement to resolve adverse effects on the Weber Farm (5LR10725) was executed on February 9, 2007 (see <i>Appendix A</i> of the EA).</p> <p>The Weber Farm (5LR10725) was recorded prior to construction so that there is a permanent record of its present appearance and history. Recordation consisted of Level II Documentation as determined in consultation with the SHPO and according to the standards established in Office of Archaeology and Historic Preservation Form #1595. The SHPO accepted the Level II Documentation on May 7, 2007 (see <i>Appendix A</i> of the EA). Copies of the documentation also will be sent to a local archive designated by the SHPO.</p>
Archaeology	Mitigation could be required.
<p>Implementation of the Meander Alternative would not affect any known archaeological or prehistoric properties.</p>	<p>If cultural materials are exposed, the CDOT senior staff archaeologist will be notified immediately to ensure evaluation as required by the National Historic Preservation Act of 1966 (NHPA) and all other applicable state and federal regulations.</p>
Native American Consultation	No mitigation is required.
Sections 4(f) and 6(f)	Mitigation is required.
<p>Five Section 4(f) NRHP eligible historic properties have been identified for this project. Four will have no adverse effects under Section 106 of the NRHP and, therefore, will have <i>de minimis</i> impacts under Section 4(f) as per the FHWA <i>de minimis</i> finding of November 15, 2006:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Big Thompson Manufacturing Ditch Segment (5LR10726.1) <input type="checkbox"/> Propp Farm (5LR11247) <input type="checkbox"/> Weber Farm East (5LR11249) <input type="checkbox"/> Mountain View Farm (5LR11242) <p>A determination of adverse effect has been made for the Weber Farm (5LR10725) resulting in a use under Section 4(f).</p>	<p>Analysis of Avoidance Alternatives found that there were no prudent or feasible alternatives to the Meander Alternative. The following measures will be taken to minimize harm:</p> <p>Regarding the alignment of the Meander Alternative, measures to minimize crossing the Big Thompson Manufacturing Ditch Segment (5LR10726.1) include crossing a portion of the ditch that has low integrity. Those measures being used in association with the Meander Alternative to minimize harm to both the Weber Farm East (5LR11249) and the Propp Farm (5LR11247) result in the identification of only a utility easement across the front of these properties. Those measures being used in association with the Meander Alternative to minimize harm to the Mountain View Farm (5LR11242) include the avoidance of loss of any historic buildings. Only a modern feedlot frontage and bank of trees that is not part of the historic landscape will be affected.</p> <p>Even with a reduction in right-of-way through portions of the Weber Farm (5LR10725), there is no prudent and feasible action alternative that alleviates the use of this historic property. The SHPO was consulted and mitigation is described under Historic Preservation above.</p>
Noise	No mitigation is feasible or reasonable.
Air Quality	No mitigation is required.

Table 2-1. Mitigation Measures for the Meander Alternative

Resources and Impacts	Mitigation or Benefits
Ecology	Mitigation is required.
<p>Vegetation Permanent impacts on vegetation from the Meander Alternative were estimated at 23.7 acres. More acreage would be temporarily affected by construction activities but will be reclaimed after construction is completed in individual areas.</p> <p>Wildlife Few direct or indirect impacts on wildlife are associated with the Meander Alternative. Mitigation for impacts includes CDOT BMPs specified under Vegetation above. Clearing of vegetation should be done between September and April to reduce the effects on nesting activities and to comply with Migratory Bird Treaty Act requirements.</p>	<p>Vegetation replacement will be coordinated with landowners (city of Loveland and private property), and agricultural land mitigation will be based on crops or pastures disturbed for project implementation. Native species will be used to the greatest extent feasible, depending on designated land use, and will be specified for CDOT rights-of-way. Riparian trees will be replaced on a 1:1 basis; all other trees will be replaced when feasible.</p> <p>Techniques used by CDOT to stabilize and minimize erosion and to revegetate areas are outlined in detail in <i>Standard Specifications for Road and Bridge Construction</i> (1999), part of CDOT BMPs.</p> <p>The following measures are designed to reduce direct and indirect impacts on vegetation and to control soil erosion and noxious weeds:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Specification 207 covers salvaging and stockpiling topsoils for reuse in reclamation. No imported topsoil will be allowed. Topsoil heavily infested with noxious weeds will be removed from the site or buried under a minimum of 5 feet of fill. <input type="checkbox"/> Specification 208 directs contractors to permanently stabilize (that is, cover disturbed areas with final seed and mulch as indicated in plans) each 17-acre increment of the project immediately after grading is finished for that section. <input type="checkbox"/> Specifications 208 and 216 cover other mechanical erosion prevention methods (besides seeding, for example) and include use of soil retention blankets, placement of bales in drainages, use of silt fence, berms/diversions, slope drains, storm drain protection, check dams, channel stabilization, sediment traps or basins, and sandbag barriers. <input type="checkbox"/> Specification 212 covers seeding. <input type="checkbox"/> Specification 213 covers mulching seeded and other bare soil areas. <input type="checkbox"/> Specification 214 covers planting. <input type="checkbox"/> Specification 217 covers herbicide treatments, if needed for weed control. <p>A weed management plan has been developed and a weed survey was conducted to locate and map weed populations that may be spread by construction activities. Required construction contractor practices to minimize new weed infestations and control the spread of current weed populations are described in detail in the EA in <i>Appendix E, Noxious Weed Management Plan</i>.</p> <p>Practices include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Application of appropriate herbicides <input type="checkbox"/> Requirement that construction vehicles arrive to the construction site free of soil or vegetative plant parts capable of containing noxious weed seed/plant parts <input type="checkbox"/> Storage of weed-free topsoil and restriction on importation of topsoil <input type="checkbox"/> Use of only weed-free mulch for reclamation in accordance with the Weed Free Forage Act, CRS Title 35, Article 27.5 <input type="checkbox"/> Monitoring and care of revegetation sites <input type="checkbox"/> Restrictions on mowing and cutting weeds when seeds are ripe for dispersal

Table 2-1. Mitigation Measures for the Meander Alternative

Resources and Impacts	Mitigation or Benefits
	<p>In addition to the above required practices, sensitive areas such as riparian habitat, woodlands, and wetlands in the vicinity of project construction activities will be fenced to prevent vegetation damage from construction machinery. Construction access will be limited to fenced areas to curtail erosion, weed invasions, and damage to habitats.</p>
<p>TES Species</p>	<p>No mitigation is required.</p>
<p>Wetlands</p>	<p>Mitigation is required.</p>
<p>Approximately 0.89 acre of wetlands will be permanently affected by fill actions to expand the roadbed, of which 0.45 acre is jurisdictional. An additional area that includes 5 feet at the edge of the cut-and-fill line was included to ensure that impacts were not underestimated.</p> <p>Wetlands associated with a stock pond (Site 2, 0.23 acre) and an alkali seep (Site 4, 0.44 acre) would incur the largest losses from construction of the Meander Alternative.</p> <p>Temporary impacts will total 0.09 acre, of which 0.06 acre is jurisdictional. Temporary impacts were calculated within a 10-foot area from the construction footprint (with the 5-foot addition). This area includes impacts from exclusion fence and silt fence construction, dismantling of fences, and culvert work. This area will be reclaimed.</p>	<p>CDOT BMPs include mitigation for all jurisdictional and nonjurisdictional wetlands permanently affected by construction projects, including replacement with created wetland areas or enhancement of existing areas to achieve a replacement-to-loss ratio of 1:1. Temporary disturbances of wetland areas can be mitigated by reclamation and revegetation with appropriate species. Topsoil from disturbed wetlands can be salvaged and reused for mitigation purposes unless infested with noxious weeds.</p> <p>Mitigation measures to offset impacts on wetlands during construction are addressed by BMPs that control erosion and minimize sedimentation in wetlands adjacent to construction sites.</p> <p>General mitigation techniques include replacement plantings for native riparian species, especially trees and shrubs, between the river terrace and the highway toe-of-fill.</p> <p>Should construction access roads and work pads be constructed in wetlands, protective material (fabric or hay) will be used, and topped with aggregate and/or soil fill. When construction is completed, the protective material will be removed with the goal of preserving the original wetland plant community. Any plants damaged will be replaced with species appropriate for the site.</p> <p>A number of potential wetland mitigation sites have been identified during the Environmental Assessment process. Possible locations along SH 402 include the vicinity of Sites 2, 3, and 6.</p> <p>Should it not be possible to create replacement sites in these areas, mitigation of wetland losses are proposed at the Big Thompson Ponds State Wildlife Area (SWA), which is approximately 0.5 mile north of SH 402 near I-25. The mitigation concepts for these sites are described in the EA in <i>Appendix B, Wetland Finding Report</i>.</p> <p>Along SH 402, wetlands could be expanded by approximately 0.45 acre to account for losses of jurisdictional wetlands. Plant species such as bulrush, burreed, and sedges are suggested for this area to increase the wetland community diversity from primarily cattail-dominated marsh.</p> <p>Nonjurisdictional wetland loss (approximately 0.44 acre) will be replaced at the Big Thompson Ponds SWA. Should potential wetland replacement sites along SH 402 not provide an adequate solution due to lack of landowner cooperation or lack of a suitable site, jurisdictional wetland loss can also be mitigated at the Big Thompson Ponds SWA.</p>

Table 2-1. Mitigation Measures for the Meander Alternative

Resources and Impacts	Mitigation or Benefits
	Because the project impacts on jurisdictional wetlands are less than 0.5 acre and affect nontidal waters-wetlands, a Nationwide Permit 14 is appropriate (Carey 2004). Finalization of wetland mitigation site location and design of mitigation are required to obtain the Nationwide Permit 14 approval. Monitoring of mitigation sites will be specified in the US Army Corps of Engineers (USCOE) permit.
Floodplains	No mitigation is required.
Water Quality	Mitigation is required.
<p>Potential impacts of the Meander Alternative include increased highway stormwater runoff because of an additional 31 acres of impervious area. Increased highway runoff has the potential to impact the Big Thompson River with increased sediments, roadway deicers, metals from vehicle wear, particulates from vehicle exhaust, and petroleum products related to motor vehicles. The potential for hazardous materials spills would continue to exist with this alternative.</p> <p>The urban section of the Meander Alternative includes a complete curb and gutter drainage system and will increase highway runoff to the municipal sewer system that discharges to the Big Thompson River. However, the city's continuing drainage improvements are expected to provide adequate protection to the river's water quality. Permit compliance includes mitigation requirements discussed in the EA in <i>Chapter 3, Section 3.2.1.5</i>. In addition, the city's <i>Storm Drainage Criteria</i> and <i>Master Drainage Plan</i> include regional strategies to address growth and development effects on water quality.</p> <p>The rural section of the Meander Alternative will increase highway runoff to roadway ditches and swales. Some highway runoff in combination with other runoff will eventually discharge into the Big Thompson River. Because the rural section of SH 402 is included in the city's Growth Management Area (GMA), the city's <i>Storm Drainage Criteria</i> and <i>Master Drainage Plan</i> would be applicable tools to address growth and development effects on water quality. Larimer County's MS4 permit is currently in effect for the rural section, and the city and CDOT MS4 permits should also be considered for the rural section in light of future planning. Permit compliance includes mitigation requirements discussed in the EA in <i>Chapter 3, Section 3.2.1.5</i>.</p> <p>With the continuation of city, county, and CDOT stormwater programs, the increased highway runoff associated with the Meander Alternative is not expected to have an impact on designated uses of the Big Thompson River in the project area. Mitigation activities required by Colorado Discharge Permit System (CDPS) permits and city and county land use codes will minimize water quality impacts due to increased highway runoff and the associated increase in highway runoff pollutants resulting from the Meander Alternative.</p>	<p>City and county land use codes protect the river floodplain area from development activities. CDPS permits, city and county land use codes and storm drainage criteria, and CDOT guidance will generally specify mitigation activities. CDOT will comply with and obtain all necessary permits for protection of water resources, including CDPS and dewatering permits as necessary.</p> <p>BMPs for temporary and permanent erosion control will be implemented with the construction of the Meander Alternative to minimize the impact of disturbance on receiving waters. The CDOT project design team will seek to minimize soil disturbance impacts on irrigation ditches and other drainages in the study area as part of the final design process. In addition, the 4:1 slopes created by placement of fill materials will be reseeded to reduce erosion and sedimentation.</p> <p>Long-term drainage from highway projects may require permanent BMPs under applicable permitting to protect receiving waters from erosion, sedimentation, and other contaminants. City, county, and CDOT MS4 permits currently cover the entire project corridor. In addition, the <i>City of Loveland Storm Drainage Criteria</i>, updated in 2002, will apply to the entire project corridor and is within the city's <i>Master Drainage Plan</i> area. Drainage criteria and MS4 permits (both city and CDOT) would generally require regional and/or onsite detention that includes 100 percent capture volume for the first 0.5 inch of runoff and 80 percent capture of total suspended solids to the "maximum extent practicable" (note that project-specific requirements will vary). Other permanent BMP options such as maintenance programs, sediment traps, and flow control structures might also be implemented under MS4 requirements.</p> <p>CDOT is obligated under its MS4 permit to "...develop and implement comprehensive planning procedures and controls to reduce the discharge of pollutants after construction is completed, from areas of new highway development and significant redevelopment and associated drainages..." Project plans for the Meander Alternative will be evaluated under the criteria of the MS4 for the need to include permanent stormwater BMPs. This review will occur as early as possible during the final design process and will be guided by the CDOT MS4 <i>New Development Program</i> guidelines and procedures and the <i>CDOT Erosion Control and Stormwater Quality Guide</i>. This guide provides design and maintenance criteria for permanent BMPs. Based on the results of the design review process and in coordination with the city and county, CDOT will incorporate permanent BMPs to the maximum extent practicable and/or apply maintenance and administrative controls that provide equivalent protection for receiving</p>

Table 2-1. Mitigation Measures for the Meander Alternative

Resources and Impacts	Mitigation or Benefits
	<p>waters. During final design, highway deicing and long-term maintenance and safety policy will be evaluated to determine the applicability of permanent controls.</p> <p>The fact that CDOT, the city of Loveland, and Larimer County are all MS4 entities with separate permits will warrant interagency coordination due to potential issues of overlapping authority. This coordination will help prevent duplication of effort. According to CDPHE, a permitted MS4 entity would not be required to impose their program requirements on CDOT projects due to the MS4's limited authority to regulate CDOT, nor would an MS4 be responsible for regulating activities outside its jurisdiction. Coordination among CDOT, the city, and the county will occur during the project design phase to determine specific permanent BMPs for the project.</p>
Geology	No mitigation is required.
Paleontology	Mitigation could be required.
<p>A scientifically significant fossil locality (extremely rare, second known occurrence in the Pierre Shale bedrock unit in western North America) has been discovered in this Pierre Shale exposure. No impacts on this fossil locality are expected to occur based on conceptual design for the Meander Alternative.</p>	<p>If any subsurface bones or fossils are found in the corridor during construction, the CDOT staff paleontologist will be notified immediately to assess their significance.</p> <p>See Table 2-2 for construction mitigation.</p>
Construction Costs	No mitigation is required.

Table 2-2. Mitigation Measures for Construction—Meander Alternative

Resources and Impacts	Mitigation or Benefits
Visual Resources	Mitigation is required.
<p>Although construction impacts are short term, they usually result in some of the most noticeable visual contrast. Construction operations are highly visible activities: excavation, equipment, dust, and traffic are likely to attract the most attention. Impacts on visual resources during construction may result from removal of vegetation required to accommodate the Meander Alternative, disrupting landscape frontages of residences and businesses.</p>	<p>The short-term highly visible construction equipment related activities cannot be mitigated. Dust impacts are discussed in the EA in <i>Chapter 3, Section 3.25.6, Air Quality</i>. Access and traffic-related impacts are discussed in the EA in <i>Chapter 3, Section 3.25.3, Access/Traffic Control/Emergency Services</i>. Permanent revegetation will be completed in disturbed areas and is further discussed in the EA in <i>Chapter 3, Section 3.35.7, Ecology and Noxious Weeds</i>.</p>
Hazardous Materials/Waste	Mitigation is required.
<p>Use of heavy equipment during construction activities may result in inadvertent spillage or leakage of fuel, oil, grease, or chemicals.</p>	<p>Releases will be contained and disposed of in accordance with CDOT BMPs and all applicable laws and regulations. Known contaminated sites will be characterized and cleaned up before construction. Leaks and spills will be prevented, contained, and remediated according to all applicable laws and requirements. A Materials Management Plan may be required. If hazardous materials are encountered before or during construction, CDOT's <i>Section 250, Environmental Health and Safety Management</i> specification will be used. If necessary, a health and safety plan will be prepared and implemented to mitigate the potential health and safety hazards to workers and the public.</p>

Table 2-2. Mitigation Measures for Construction—Meander Alternative

Resources and Impacts	Mitigation or Benefits
Access/Traffic Control/Emergency Services	Mitigation is required.
Short-term disruption of residential and business accesses may occur during construction.	Although traffic movement along SH 402 may be affected during construction, these impacts will be controlled by application of standard highway construction practices for traffic management. Highway construction practices would be coordinated with local emergency service providers to ensure that construction does not disrupt emergency assistance.
Archaeology	Mitigation is required.
Buried cultural materials may be exposed during construction.	If cultural materials are exposed, the CDOT senior staff archaeologist will be notified immediately to ensure evaluation as required by NHPA and all other applicable state and federal regulations.
Noise	Mitigation is required.
Construction will generate noise and vibration from diesel-powered excavation equipment such as dump trucks and bulldozers, backup alarms on certain equipment, compressors, and pile drivers. Construction noise levels at offsite receptor locations would usually depend on the loudest piece or two of equipment operating at the same time. Noise levels from diesel-powered equipment range from 80 to 95 dB(A) at a distance of 50 feet. Impact equipment such as rock drills and pile drivers can generate even more noise.	Contractors will be encouraged to schedule construction activities during daytime hours to minimize and mitigate noise impacts. Weekend work will be discouraged, with the exception of activities best suited to off-peak hours. Temporary construction noise impacts will be reduced by requiring contractors to use well-maintained equipment (with particular attention to mufflers), adapt work hours, monitor noise during work hours, and make use of measures such as temporary noise barriers where applicable. The construction project will follow applicable sections of the <i>Ordinance Concerning Noise Levels in Unincorporated Larimer County</i> (No. 97-03).
Air Quality	Mitigation is required.
Possible construction impacts on air quality include fugitive dust that can result in elevated levels of particulates less than 10 microns without appropriate BMP mitigation.	BMPs will be implemented to reduce the project's potential for impact due to particulates less than 10 microns during construction, including: <input type="checkbox"/> spraying exposed soil and soil surfaces with water, wetting agents, and/or soil binding agents <input type="checkbox"/> covering trucks carrying fine materials <input type="checkbox"/> minimizing mud tracking from the construction area <input type="checkbox"/> controlling speed limits for trucks traveling on roads with high silt loading in the construction area

Table 2-2. Mitigation Measures for Construction—Meander Alternative

Resources and Impacts	Mitigation or Benefits
Ecology	Mitigation is required.
<p>Temporary impacts on species may include disturbances from construction activities, noise, and increased human presence in the area during construction.</p> <p>Bald eagles could use the adjacent riparian area for winter roosting. Some trees may be taken during project construction.</p>	<p>Techniques used by CDOT to stabilize and minimize erosion and to revegetate areas are outlined in detail in <i>Standard Specifications for Road and Bridge Construction</i> (1999), part of CDOT BMPs.</p> <p>The following measures are designed to reduce direct and indirect impacts on vegetation and to control soil erosion and noxious weeds:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Specification 207 covers salvaging and stockpiling topsoils for reuse in reclamation. No imported topsoil will be allowed. Topsoil heavily infested with noxious weeds will be removed from the site or buried under a minimum of 5 feet of fill. <input type="checkbox"/> Specification 208 directs contractors to permanently stabilize (that is, cover disturbed areas with final seed and mulch as indicated in plans) each 17-acre increment of the project immediately after grading is finished for that section. <input type="checkbox"/> Specifications 208 and 216 cover other mechanical erosion prevention methods (besides seeding, for example) and include use of soil coverings, placement of bales in drainages, use of silt fence, berms/diversions, slope drains, storm drain protection, check dams, channel stabilization, sediment traps or basins, and sandbag barriers. <input type="checkbox"/> Specification 212 covers seeding. <input type="checkbox"/> Specification 213 covers mulching seeded and other bare soil areas. <input type="checkbox"/> Specification 214 covers planting. <input type="checkbox"/> Specification 217 covers herbicide treatments, if needed for weed control. <p>A weed management plan has been developed, and a weed survey was conducted to locate and map weed populations that may be spread by construction activities. Required construction contractor practices to minimize new weed infestations and control the spread of current weed populations are described in detail in the EA in <i>Appendix E, Noxious Weed Management Plan</i>. Practices include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> application of appropriate herbicides <input type="checkbox"/> inspection of construction vehicles and use of designated equipment cleaning areas <input type="checkbox"/> storage of weed-free topsoil and restriction on importation of topsoil <input type="checkbox"/> use of only weed-free mulch for reclamation in accordance with the Weed Free Forage Act, CRS Title 35, Article 27.5 <input type="checkbox"/> monitoring and care of revegetation sites for three years <input type="checkbox"/> restrictions on mowing and cutting when seeds are ripe for dispersal <p>In addition to the above required practices, sensitive areas such as riparian habitat, woodlands, and wetlands in the vicinity of project construction activities will be fenced to prevent vegetation damage from construction machinery. Construction access will be limited to fenced areas to curtail erosion, weed invasions, and damage to habitats.</p> <p>Additional evaluations and surveys, if warranted, will be conducted prior to construction for any new threatened and endangered species and species of special concern (TES) identified subsequent to the current study.</p>

Table 2-2. Mitigation Measures for Construction—Meander Alternative

Resources and Impacts	Mitigation or Benefits
	<p>Should bald or golden eagles be observed at that time, recommendations to avoid or minimize impacts are as follows:</p> <ol style="list-style-type: none"> 1. Avoid unnecessary damage to the riparian area, especially cutting large trees. 2. If bald eagles frequent the area, construction should be scheduled between March 1 and November 30 to avoid disturbance. If this is not possible, then follow #3. 3. Avoid harassment of the eagle from project-generated noise and activity during the winter months. Between December 1 and April 30, if an eagle is observed perching or roosting in the riparian area, the US Fish and Wildlife Service (USFWS) recommends a buffer of 0.125 to 0.25 miles depending on the line of sight.
TES Species	Mitigation is not required.
Wetlands	Mitigation is required.
<p>Approximately 0.89 acre of wetlands will be permanently affected by fill actions to expand the roadbed, of which 0.45 acre is jurisdictional. An additional area that includes 5 feet at the edge of the cut-and-fill line was included to ensure that impacts were not underestimated.</p> <p>Temporary impacts will total 0.09 acre, of which 0.06 acre is jurisdictional. Temporary impacts were calculated within a 10-foot area from the construction footprint (with the 5-foot addition). This area includes impacts from exclusion fence and silt fence construction, dismantling of fences, and culvert work. This area will be reclaimed.</p>	<p>Because the project impacts on jurisdictional wetlands are less than 0.5 acre and affect nontidal waters-wetlands, a Nationwide Permit 14 is appropriate (Carey 2004). Construction measures must conform to the specifications and conditions of the 404 permit issued by USCOE. Site monitoring will occur as specified in the 404 permit to ensure that wetland communities are developing as required by the permit.</p> <p>Applying CDOT BMPs to construction operations will help minimize construction impacts on wetlands, including the following BMPs in <i>Standard Specifications for Road and Bridge Construction</i>, section 107.25 (Water Quality) and section 208 (Erosion Control):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Perimeter fencing will be installed to prevent access to wetlands, silt fencing will be installed to protect wetlands from sedimentation during construction, and erosion control techniques will be used whenever possible to prevent siltation and sedimentation <input type="checkbox"/> Should construction access roads and work pads be constructed in wetlands, protective material (fabric or hay) will be used, and topped with aggregate and/or soil fill. When construction is completed, the protective material will be removed with the goal of preserving the original wetland plant community. Any plants damaged will be replaced with species appropriate for the site. <input type="checkbox"/> The area adjacent to the toe-of-fill will be reclaimed when erosion control materials and fencing are removed. <input type="checkbox"/> Equipment maintenance areas and fueling locations will be at least 100 feet outside wetlands. Berms will be used and protective (absorbent) material will be available to prevent spills from reaching wetland areas.

Table 2-2. Mitigation Measures for Construction—Meander Alternative

Resources and Impacts	Mitigation or Benefits
Water Quality	Mitigation is required.
<p>Potential impacts on water quality include sedimentation associated with erosion due to construction stormwater runoff. Erosion is prevalent when the surface vegetation is disturbed as required for roadway widening.</p>	<p>Temporary erosion control and stormwater measures will be implemented during construction activities. Construction mitigation activities are specified under CDPS permitting, city and county requirements for developments, and CDOT guidelines. CDOT will obtain a National Pollution Discharge Elimination System (NPDES) Construction Discharge Permit (CDPS construction permit) from the Colorado Department of Public Health and Environment (CDPHE) for the project.</p> <p>To comply with CDOT's MS4 CDPS permit and the CDPS construction permit, CDOT requires the development and implementation of a Stormwater Management Plan (SWMP) and an Inspection and Maintenance Program. The SWMP is intended to ensure that the water quality of receiving waters is protected during construction. The SWMP protects receiving waters by including BMPs necessary to provide for erosion, sediment, and general pollution prevention controls.</p> <p>CDOT will develop a SWMP that details BMPs used for construction during the design phase. The SWMP will be prepared in accordance with the <i>CDOT Erosion Control and Stormwater Quality Guide, CDOT Standard Specifications 107.25-Water Quality and 208-Erosion Control</i>. Erosion controls will be designed and implemented to minimize or eliminate downgradient sedimentation and siltation.</p> <p>Required BMPs include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> staging construction to reduce disturbances due to storage, use, and maintenance of construction equipment <input type="checkbox"/> minimizing access to the construction area <input type="checkbox"/> temporary seeding of disturbed areas <input type="checkbox"/> early final grading and phased seeding of completed areas during construction <input type="checkbox"/> establishing clean water diversion upgradient of the construction areas <input type="checkbox"/> establishing water quality ponds before construction to intercept construction runoff <input type="checkbox"/> using soil blankets or mulch/mulch tackifier on temporarily disturbed slopes or slopes that cannot be seeded due to seasonal constraints
Geology and Soils	No mitigation is required.
Paleontology	Mitigation is required.
<p>Important fossils are associated with local outcrops of Pierre Shale and may be found during construction activities in Pierre Shale outcrops.</p>	<p>CDOT's staff paleontologist will examine project design plans to estimate the extent of disturbance of the Pierre Shale, if any, that may occur during construction. Preconstruction mitigation will be stipulated as appropriate. If any subsurface bones or other fossils are found in the corridor during construction, the CDOT staff paleontologist will be notified immediately to assess their significance.</p>

Section 3. EA Comments and Responses

This section presents comments received during the public comment period and provides a response to each comment. Subsections are as follows:

- Section 3.1 acknowledges written comments received from federal and local agencies during the 30-day document review. It also acknowledges written comments received from DOI during its 45-day document review.
- Section 3.2 provides written comments and responses to the three email comments received during the 30-day document review and the four written public hearing comment sheets received subsequent to the hearing.
- Section 3.3 summarizes comments and responses recorded during the question and answer (Q&A) portion of the public hearing.

The proposed action has been coordinated with appropriate federal, state, and local agencies to comply with NEPA and CDOT Procedures for Public Involvement and Participation. The notice of availability of the EA was published in the *Loveland Daily Reporter-Herald* on July 29, 2007, and again on August 19, 2007; and the *Johnstown Breeze* on August 2, 2007, and again on August 16, 2007. Notice was also included in a mailing to agencies, residents along Loveland Rural Routes 001 and 009 and City Route 38, and property owners located adjacent to SH 402. The entire document is available on the project website at www.sh402ea.com. The EA document was available at the locations listed in Appendix A for a review and comment period beginning July 31, 2007, and ending August 29, 2007.

A public hearing was held on August 22, 2007, at the CDOT Loveland Residency, 2207 East Highway 402, Loveland, Colorado. Thirty-eight members of the public signed the attendance sheet for the hearing. Appendix B provides a summary of the hearing transcript. Appendix C includes agency comments received during the 30-day public comment period and the 45-day

DOI comment period. Appendix D includes emails and comment sheets received during the 30-day public comment period.

3.1 Agency Comments and Responses

Appendix C includes a letter from the EPA and an email from an engineer with the city of Loveland. Suggestions requiring clarifications for the EA are included in Section 1.6.

Appendix C also includes a letter from the DOI containing two comments. The first, regarding the MBTA, is noted in clarifications for the EA in Section 1.6. The second comment acknowledged DOI review and concurrence with the Section 4(f) Evaluation. See additional discussion in Section 6 of this FONSI and Final Section 4(f) Evaluation.

Appendix C also includes a final letter from CDOT to interested tribes regarding conclusion of Section 106 tribal consultation and a memorandum from FHWA regarding completion of legal sufficiency review.

3.2 Public Comments and Responses

Three emails were received during the document review period, and four comment sheets were returned at the close of the hearing or by mail subsequent to the public hearing. Appendix D includes the complete text of these emails and comment sheets. Comments and responses are summarized below.

E-1. James M. Adell from Loveland, Colorado, expressed concern for the safety problems at SH 402 and Boise Avenue.

Response. The Boise Avenue and SH 402 intersection safety project is being designed now and is planned for construction in late 2008.

E-2. Carla Warberg Kelly, owner of two rental properties along SH 402, indicated concerns that

her property values would decrease due to noise related to the expansion of the highway bringing the highway closer to the properties. She wanted to know more about the noise differences between asphalt and concrete pavement, and she was concerned about the earthwork required between CR 9E and Sauk Road and its potential impact on the meander alignment. In conclusion, she felt that the SH 402 improvements were needed and hoped for funding ASAP.

Response. When property acquisition is involved, factors other than noise are included to address property value. FHWA does not recognize pavement type, in and of itself, as a noise abatement measure, and noise, therefore, is not a primary factor when selecting a pavement.

While it is accepted that different tires, pavements and pavement surfacing textures do result in varying noise levels, it is difficult to forecast the overall pavement surface condition 20 years into the future. Due to this fact and the requirement that noise mitigation must provide a "readily perceptible" reduction in noise levels over a long period of time, the use of different pavement types or surface textures cannot be a noise abatement measure. (See CDOT, *Noise Analysis and Abatement Guidelines*, December 1, 2002, available at the CDOT website at <http://www.dot.state.co.us/environmental>. *The Highway Traffic Noise: Effect of Pavement Types* brochure is also available on the website for additional information.)

Although preliminary earthwork calculations were included in the general layout of the Meander Alternative, earthwork will be more fully addressed during forthcoming design activities.

E-3. Evelyn King from Loveland, Colorado, noted that there does not appear to be any designation decision including pros and cons regarding the need to have major east/west highways designated as expressways or comparable limited access roadways with

grade-separated intersections. She believed that grade-separated intersections along SH 402 should be evaluated and developed into an addition to the Preferred Alternative so as to include grade-separated intersection and limited access easement plans in the SH 402 EA.

Response. Traffic analyses for 2030 for SH 402 and associated cross streets do not indicate the need for grade-separated intersections along SH 402, except at I-25. The costs associated with a fully limited access expressway/grade-separated facility along SH 402, together with associated frontage road access, cannot be justified as a reasonable expenditure of public funds.

F-1. Mark Bentley from the SH 402 corridor, immediately northeast of CR 9E, suggested moving the proposed access of CR 9E to the east to avoid relocation of existing natural gas above-ground utilities and to minimize remainder parcel impacts.

Response. Mr. Bentley's suggestion will be considered during forthcoming design activities for this intersection.

F-2. Diane Turner from Paradise Acres in the SH 402 corridor is concerned about the increasing noise and would like to see a berm or noise wall. She is also concerned that a SH 402 new turn lane extends onto her property.

Response. As a result of concerns raised at the public hearing regarding noise impacts and mitigation, CDOT will conduct an updated noise analysis for Paradise Acres along the SH 402 corridor during project design to assure that existing noise and 2030 forecast noise conditions are adequately identified and that all opportunities to consider feasible and reasonable mitigation are applied.

Ms. Turner's concern about the SH 402 existing turn lane crossing her property was discussed with her during the open house portion of the hearing.

F-3. Steve Vinal from Paradise Acres reviewed the project noise report and felt that the noise

analysis was out of date. He asked that a new analysis be done before mitigation issues are determined to be unreasonable for Paradise Acres.

Response. As a result of concerns raised at the public hearing regarding noise impacts and mitigation, CDOT will conduct an updated noise analysis for Paradise Acres along the SH 402 corridor during project design to assure that existing noise and 2030 forecast noise conditions are adequately identified and that all opportunities to consider feasible and reasonable mitigation are applied.

F-4. Julie Olson from Olson Drive and SH 402 felt that people needed to realize the opportunities and benefits of having a wider SH 402 and hoped for faster funding.

Response. The project is currently programmed in the CDOT 2006 – 2007 STIP with a total of \$1 million (STIP #NF3392) for 2009. Design will begin following the signature of this document.

3.3 Public Hearing Q&A Comments and Responses

Pre- and Post-Hearing Comments

Three pre- and post-hearing comments provided to the court reporter are included with responses. These comments are included in their entirety in Appendix B.

T-1. Jim and Bonnie Wooldridge from the SH 402 corridor provided a list of 13 concerns related to their property (see Appendix B).

Response. Many of the specific concerns will be addressed during forthcoming design, right-of-way, and utility relocation activities. Also see hearing Q&A discussion as related to Jim Wooldridge, commenter # Q-16. Concerns not acknowledged elsewhere are addressed as follows: water rights associated with irrigation ditches will not be affected even if ditches would be relocated; a sound barrier has not been found reasonable (cost-effective) for this property at this time; construction dust will be mitigated per the discussion in the EA; and although the

Wooldridge home was examined as a potential historic property, it was found to be not eligible to the National Register of Historic Places by the Colorado State Historic Preservation Officer (see letter dated March 30, 2006, in Appendix A of the EA).

T-2. Patricia Lopp of SE 14th Street (SH 402) asked if her house would be taken by this project.

Response. With the level of design CDOT currently has, it appears the Lopp house would be impacted. Additional information will become available during the design phase.

T-3. Julie Olson from Olson Drive sought ways to get the project funded more quickly and felt the project offered many benefits.

Response. See F-4 above.

Q&A Comments

Q&A comments and responses are summarized below. Commenters are numbered to match the transcript summary found in Appendix B.

Q-1. Harry Wooldridge asked for clarification about the utility easement.

Response. Utilities that are now on the south side of SH 402 will be put into the new easement on the south side. Any new utilities would also be put into that easement. Utilities that are currently on the north side would simply be moved out to the outside edge of the right-of-way on the north side.

Q-2. Don Haggerty of CR 9 asked what kind of pavement type would be used: asphalt or concrete. He felt concrete was noisier.

Response. Pavement type has not been selected at this time. For additional information on pavement types and noise, see response to E-2 above.

Q-3. Paul Ehrlich of CR 7 was also interested in a quieter type of pavement.

Response. See response to E-2 above.

Q-4. Diane Turner (also F-2 above) asked about noise related to the addition of two travel lanes and about the project design speed.

Response. See response to F-2 above. The project noise analysis was described in the EA and provided on request to hearing attendees, including Diane Turner, to clarify noise impacts. The noise analysis includes discussion on the impacts of adding travel lanes. The project design speed for the rural section will be 55 mph.

Q-5. Robert Reichert from St. Louis and SH 402 asked about the funding source for bicycle lanes and was concerned about noise levels on his property.

Response. Bicycle lane funding is expected to come from the same state and federal sources as the project widening itself.

The project noise analysis was described in the EA and was provided on request to hearing attendees, including Robert Reichert, to clarify noise impacts.

Q-6. Carla Warberg Kelly (also E-2 above) asked if access to SH 402 would be retained.

Response. Existing access points will be retained although CDOT will look for opportunities to combine or consolidate accesses when possible. CDOT will work with individual landowners during the design phase.

Q-7. Ralph Ollila from the corner of Boise and SH 402 was concerned about the relocation of the sewer line.

Response. Utility relocations will be addressed during forthcoming design activities.

Q-8. Wilma Davis from the corner of St. Louis and SH 402 asked about changes in roadway elevations associated with the widening of SH 402.

Response. Although this will be finalized during the design phase, CDOT does not anticipate changing the elevation significantly along SH 402.

Q-9. Ron Propp from the SH 402 corridor asked about the source of noise criteria and its applicability to his property.

Response. At the hearing Rod Vaughn from FHWA gave a detailed explanation of the noise evaluation process.

The project study zone for noise analysis is defined as a 500-foot distance in all directions from the proposed edge of traveled way throughout the extents of the project. This 500-foot "halo" defines the extents for the noise analysis and includes receivers on all sides of the highway.

An additional point of clarification is that for residential properties, actual noise is measured along the corridor and used to calibrate a model that maps the 66 dB(A) contour line along the corridor. Existing traffic and vehicle mix are included. To look at the future year (2030 for this project), a similar exercise includes forecast traffic and vehicle mix. Areas between the 66 dB(A) line and the highway would exceed the federal noise abatement criteria for residential properties. Areas outside that line would not be considered. This does not mean that a property owner would not experience highway noise as in the case of landowners distant from the interstate that still notice highway noise. The EA (and the noise analysis) shows the 2030 contour line as it relates to individual properties along SH 402.

Q-10. Don Haggerty (also Q-2 above) expressed concern on how to forecast noise levels 20 years ahead. He was interested in pavement type as it would relate to that forecast.

Response. See response in Q-9 above. Also note that pavement types are not factored into the accepted noise modeling process at this time. See additional discussion in E-2 response above.

Q-11. Robert Reichert (also Q-5 above) was concerned about the applicability of national or statewide noise standards and studies to SH 402.

Response. The SH 402 project-specific noise analysis was described in the EA and was

provided on request to hearing attendees, including Robert Reichert. The methodology used for the analysis is accepted by both FHWA and the highway industry.

Q-12. Paul Ehrlich (also Q-3 above) from CR 7 noted a difference in noise levels in the winter when the corn crop was gone and was interested in noise measurements being taken at that time.

Response. Discussion at the hearing included the acknowledgement that a 200-foot deep field of corn or other vegetation of similar type and/or density could result in noticeable noise reduction. This is not considered a feasible form of noise mitigation due to its temporary nature. Also see discussion under Q-9 above.

Q-13. Wilma Davis (also Q-8 above) commented that she had owned her house along SH 402 for 37 years and the noise keeps getting worse.

Response. Noise levels will increase as traffic increases.

The project noise analysis was described in the EA and was provided on request to hearing attendees, including Wilma Davis, to clarify noise impacts.

Q-14. Dale Osborn from the SH 402 corridor asked for funding clarification.

Response. Given the current funding scenario, the year 2012 is what CDOT would project as a possibility for receiving some funds, given the conditions as they are now. Also see response to F-4 above.

Q-15. Paul Ehrlich (also Q-3 and Q-12 above) inquired about future roadway elevation information.

Response. Current views of the roadway provide horizontal information on aerial photos. Also see response to Q-8 above.

Q-16. Jim Wooldridge (also see T-1 above) expressed concern about his house's proximity to the future widened SH 402 and safety issues of errant vehicles running into his home.

Response. During the CDOT design process efforts will be made to provide what is called a clear zone, which is a distance outside the edge of the roadway to allow an errant driver to re-correct.

Q-17. Wilma Weber, with ownership of two historic farm properties along SH 402, asked for clarification on the meaning of "historic" related to her properties and what protection that provides.

Response. Under Section 106 of the National Historic Preservation Act, an adverse effect on a historic property can be mitigated through recordation of information on that property and a highway project can destroy the historic building. Under Section 4(f) of the Department of Transportation Act, a historic property cannot be adversely affected without demonstration that there is no other prudent or feasible alternative to that impact.

In the case of the historic Weber Farm at St. Louis and SH 402, studies demonstrated that there was no prudent or feasible alternative (relocation of the Big Thompson River across the street was not considered an option). For additional information, read the Final Section 4(f) Evaluation located in Section 6 of this document.

Recordation of the property has been completed under Section 106 and the Section 4(f) has been reviewed and approved by the Department of Interior and the Federal Highway Administration in San Francisco.

Although CDOT is authorized to destroy the main house at the Weber Farm, the Weber family or others could choose to move this building at their own expense. (This action would not negate the Weber's rights to compensation under the Uniform Act.)

Q-18. Robert Reichert (also Q-5 and Q-11 above) asked about the effectiveness of trees and vegetation to mitigate noise.

Response. Vegetation provides more of a psychological feeling of noise protection than a

measurable decrease in noise. Also see response to Q-12 above.

Q-19. Bruce Bechtel from the SH 402 corridor concurred that he noticed the difference when the corn was cut and that, indeed, the field was probably around 200 feet deep.

Response. See responses to Q-12 and Q-18 above.

Q-20. Pam Osborn from the SH 402 corridor felt that the noise guidelines did not acknowledge SH 402 corridor residents' rural lifestyle in that high-density urban lifestyles tend to be favored.

Response. Unfortunately this is accurate. Rural lifestyles with large highway frontages and driveway access do not lend themselves to noise reduction benefits or cost-effective solutions. Highway funds are used more efficiently when a large group of people benefit. If all noise impacts were mitigated regardless of cost, there would be no funds for transportation improvements.

Q-21. Ron Propp (also see Q-9 above) wanted to see recent noise graphs for existing summer and winter noise levels along SH 402. He also wanted to know how lifestyle impacts such as noise would be compensated.

Response. The project noise analysis was described in the EA and was provided on request to hearing attendees to clarify noise impacts. Some of the requested information was in these documents.

CDOT does not compensate for lifestyle impacts through the Uniform Act.

Q-22. Robert Reichert (also Q-5, Q-11, and Q-18 above) wanted to know about the local level noise analysis, not state or national standards and issues.

Response. The SH 402 project-specific noise analysis was described in the EA and was provided on request to hearing attendees, including Robert Reichert.

Section 4. Selection of the Preferred Alternative

Based on the *SH 402: US 287 to I-25 Interchange Environmental Assessment and Draft Section 4(f) Evaluation*, the public hearing summary, and the summary of comments, FHWA

has determined that the Meander Alternative, as described in the EA in *Chapter 2, Section 2.6.1* on pages 2-12 to 2-15, is the Preferred Alternative.

Section 5. Finding of No Significant Impact (FONSI)

FHWA has prepared the attached *SH 402 US 287 to I-25 Interchange Environmental Assessment and Draft Section 4(f) Evaluation* in compliance with all applicable environmental laws and Executive Orders.

FHWA has determined that the Meander Alternative, as described in the EA in *Chapter 2, Section 2.6.1* on pages 2-12 to 2-15, will have no significant impact on the human or natural environment. This Finding of No Significant

Impact (FONSI) is based on the attached EA, which has been independently evaluated by FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an environmental impact statement is not required. FHWA takes full responsibility for the accuracy, scope, and content of the attached EA.

Section 6. Final Section 4(f) Evaluation

6.1 Section 4(f) Legislation

Section 4(f) of the 1966 US Department of Transportation Act (49 USC 303 and 23 USC 138) states that FHWA may not approve the use of land from a significant publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that:

- (i) There is no feasible and prudent alternative to the use of land from the property; and
- (ii) The action includes all possible planning to minimize harm to the property resulting from such use.

Details of Section 106 of the NHPA and its relevancy to the SH 402 project are included in *Chapter 3, Section 3.11, Historic Preservation*.

On August 10, 2005, the President signed into law the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Major provisions of Section 6009 include the first substantive revision of Section 4(f) legislation since passage of the US Department of Transportation Act of 1966.

The requirements of Section 4(f) of the Department of Transportation Act will be considered satisfied with respect to a Section 4(f) resource if it is determined that a transportation project will have only a “*de minimis* impact” on the 4(f) resource. The Agencies with jurisdiction must concur in writing with the determination. For historic properties the *de minimis* criteria are defined as “no adverse effect” or “no historic properties affected” under Section 106 of the National Historic Preservation Act.

The *Guidelines for Determining De Minimis Impacts to Section 4(f) Resources* (December 13, 2005) state:

Section 4(f) requires that the State Historic Preservation Officer (SHPO) and/or THPO

(Tribal Historic Preservation Officer), and Advisory Council on Historic Preservation (ACHP) if participating, must concur in writing in the Section 106 determination of “no adverse effect” or “no historic properties affected.” The request for concurrence in the Section 106 determination should include a statement informing the SHPO or THPO and ACHP, if participating, that the FHWA or Federal Transit Administration intends to make a *de minimis* finding based upon their concurrence in the Section 106 determination.

The FHWA Division Administrator for Colorado is responsible for determining that this project meets the criteria and procedures set forth in the federal regulations. Application of 4(f) requires a determination of whether there are prudent and feasible alternatives that avoid the use of the 4(f) resource. An alternative may be rejected as not being prudent and feasible for any of the following reasons:

1. It does not meet the project purpose and need;
2. It involves extraordinary operational or safety problems;
3. There are unique problems or truly unusual factors present with it;
4. It results in unacceptable and severe adverse social, economic, or other environmental impacts;
5. It would cause extraordinary community disruption;
6. It has additional construction costs of an extraordinary magnitude; or
7. There is an accumulation of factors that collectively, rather than individually, have adverse impacts that present unique problems or reach extraordinary magnitudes.

The determination must be made whether one or more of the alternatives to avoid the use of land

from Section 4(f) property is prudent and feasible. If such avoidance alternatives exist, one of them must be selected. If all the remaining and prudent and feasible alternatives use land from the Section 4(f) properties, then a least harm analysis must be performed to determine which alternative does the least overall harm to the Section 4(f) properties. In performing this analysis, the net harm (after mitigation) to the properties is the governing factor.

6.2 Project Purpose and Need

SH 402 is a heavily used two-lane, east-west arterial connecting US 287 (also known as Lincoln Avenue) and I-25.¹ This 4-mile highway is located south of the city of Loveland in Larimer County, Colorado. SH 402 serves local residents and businesses and is used as a commuter route to I-25. The proposed action encompasses the entire 4-mile length of SH 402. Access to a carpool lot (88 spaces) located at the southwest quadrant of the SH 402 and I-25 interchange was included as a part of this study. Potential improvements at the I-25 interchange are being addressed under the current *North I-25 Environmental Impact Statement*. Figure 6-1 illustrates the project study area and NRHP eligible properties.

The **purpose** of this project is to improve mobility and safety along the existing SH 402 from the US 287 intersection east to the I-25 interchange.

The **need** for this project was established by identifying and analyzing the 2030 travel demand and expected growth and development. The

¹ An urban cross section has been developed and partially built from US 287 east to CR 13C; the interim condition will remain until the development on the south side of SH 402 is constructed. This section was constructed by developers in coordination with the city of Loveland and CDOT under a Categorical Exclusion, dated September 18, 2003. Impacts related to widening between US 287 and CR 13C are not included in this analysis, and the existence of this developed portion of SH 402 did not restrict consideration of alternatives.

existing two-lane highway's substandard design includes no turn lanes, narrow shoulders, and poor sight distances (how far ahead a driver can see from the road), resulting in mobility and safety concerns. Key elements for identifying mobility impacts are the cross section of the highway and the level of service. See *Chapter 1, Purpose and Need*, of the EA for additional discussion.

6.3 Alternatives Evaluated

A detailed agency and public involvement process was initiated during project scoping. A range of alternatives was developed and evaluated, including alternate transportation modes, a no action alternative, and four action alternatives.

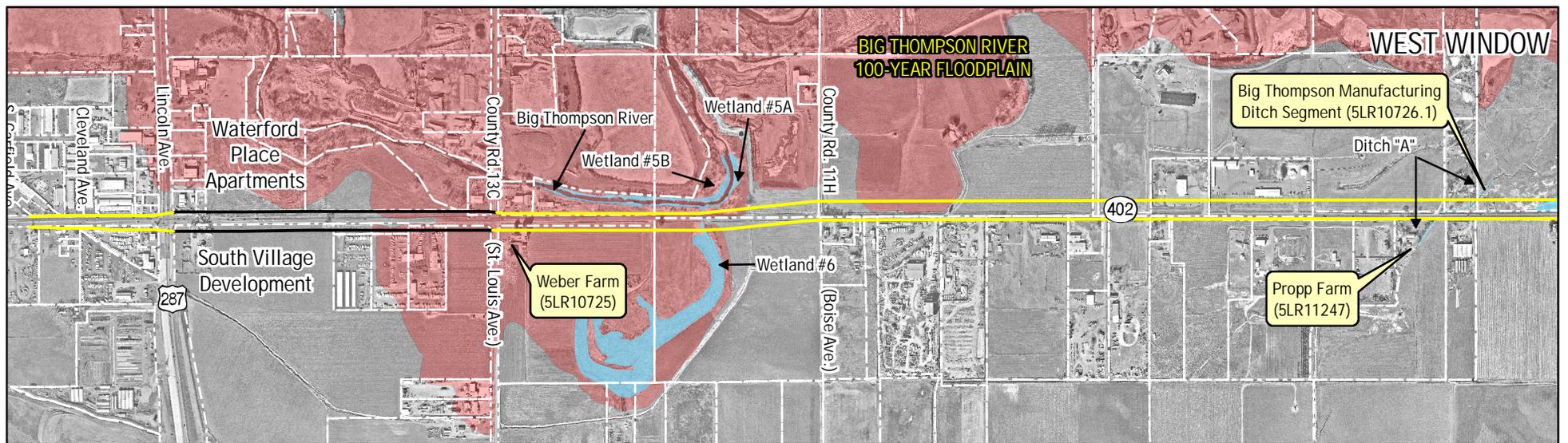
The alternatives evaluated in detail in this EA are the No Action Alternative and one action alternative (Alternative # 4 – Meander Alternative). Figure 6-1 shows the right-of-way proposed for the Meander Alternative. The Meander Alternative is the Preferred Alternative.

No Action Alternative

The No Action Alternative would result in no physical changes to the existing highway; however, standard operation and maintenance practices would continue. The existing human and natural environments bordering the highway would remain as they are, except for any development that might occur independently of improvements to the highway.

Preferred Alternative - #4 Meander Alternative

The Meander Alternative shifts between the north and south sides of the current highway alignment, minimizing impacts on the human and natural environments while meeting design criteria for a four-lane highway in this corridor.

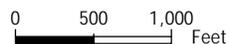


LEGEND

-  Wetlands
-  Floodplain
-  Property Parcel Boundaries
-  Proposed Meander Right-of-Way
-  Existing Right-of-Way



SCALE - 1:14,700 or 1" = 1225'



SOURCE: 2001 1/2-foot resolution aerial photography. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Floodplain information provided by FEMA. Map produced November 29, 2006 by JFSA.



Historic Property Locations

FIGURE 6-1

Individual constraints in the study area that guided the development of the Meander Alternative were identified during project scoping, then mapped, and used to develop the meander alignment. Versions of the Meander Alternative were analyzed to identify the best-fit alignment that minimized impacts while meeting design criteria.

The Meander Alternative's limited alignment shifts were developed to meet speed and safety criteria for posted speed limits (40 to 50 mph) while taking into account driver expectations. By limiting the number of alignment shifts and maintaining the right-of-way width of 160 to 175 feet, the Meander Alternative has the least number of relocations while meeting the purpose and need. While the Meander Alternative does not have the least impacts on all resources, it adversely affects only one historic property, and the lower number of relocations was also a key screening factor.

6.4 Section 4(f) Resources

Within the SH 402 project study area, the proposed action will have no impact on any existing public parks, recreation areas, wildlife refuges, or waterfowl refuges.

Five historic properties are eligible for the NRHP in the project area of potential effect (APE) as shown in Figure 6-1.

All five of these properties will have uses under Section 4(f) for the Preferred Alternative as defined by *49 USC 303* and *23 USC 138*.

For the Weber Farm (5LR10725), located in the southeast quadrant of SH 402 and CR 13C (St. Louis Avenue), a finding of adverse effect under Section 106 has been made. Due to the finding of adverse effect, the use of this property requires a full Section 4(f) evaluation.

For four properties, the Big Thompson Manufacturing Ditch Segment (5LR10726.1), the Weber Farm East (5LR11249), the Propp Farm (5LR11247), and the Mountain View Farm (5LR11242), the project will result in *de minimis* impacts.

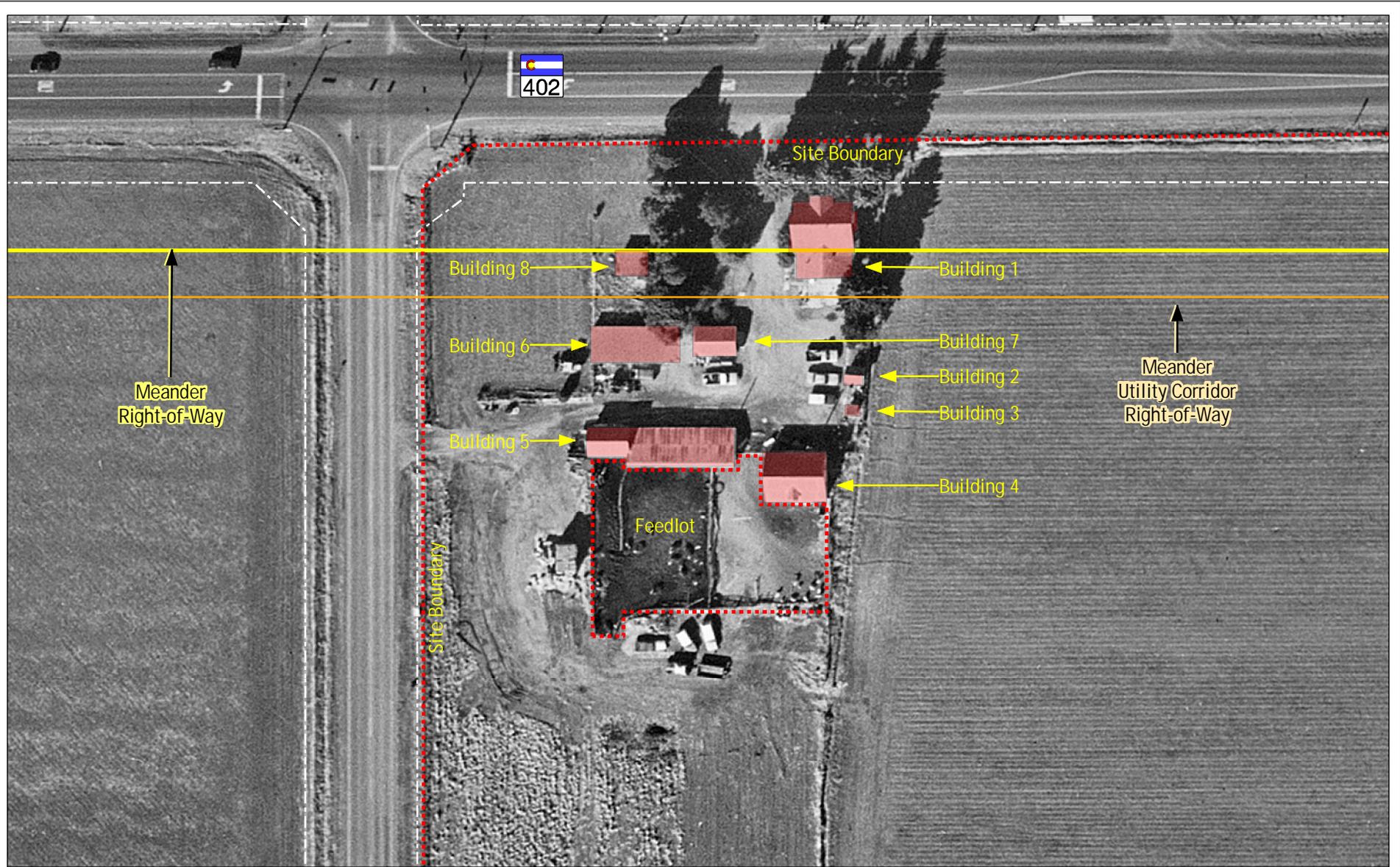
Weber Farm (5LR10725)

Property Description

The Weber Farm abuts the south side of existing SH 402 from CR 13C east to the location where CR 11H (Boise Avenue) ties into SH 402 from the north. The buildings on this 80-acre farm complex are located in the area immediately south and east of the intersection at CR 13C. Access to the property comes from both SH 402 and CR 13C.

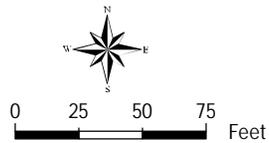
The farm complex, built during the period from 1911 to the 1930s, is an example of the early 20th century irrigated farming patterns of small land holdings and the family farm. This farm complex includes eight buildings, a feedlot, and tilled fields (see Figure 6-2). The Weber family acquired the farm property in 1926 and still owns the property. Family members operate it as a small farm. Its associations with early 20th century farming and the high level of physical integrity make the Weber Farm eligible to the NRHP under Criterion A. The house and outbuildings are aging but all retain a high degree of integrity and completeness as representative buildings of an early 20th century Larimer County farm, also resulting in NRHP eligibility under Criterion C.

The farm complex is in close proximity to the Big Thompson River that meanders along the north side of SH 402 in this area (see Figure 6-3). Additional information on the river, associated wetlands and wildlife habitat can be found in the EA in *Chapter 3, Impacts and Mitigation Measures*.



LEGEND

-  Property Parcel Boundaries
-  Meander Alternative Right-of-Way
-  Meander Alternative Utility Corridor Right-of-Way
-  Site Boundary



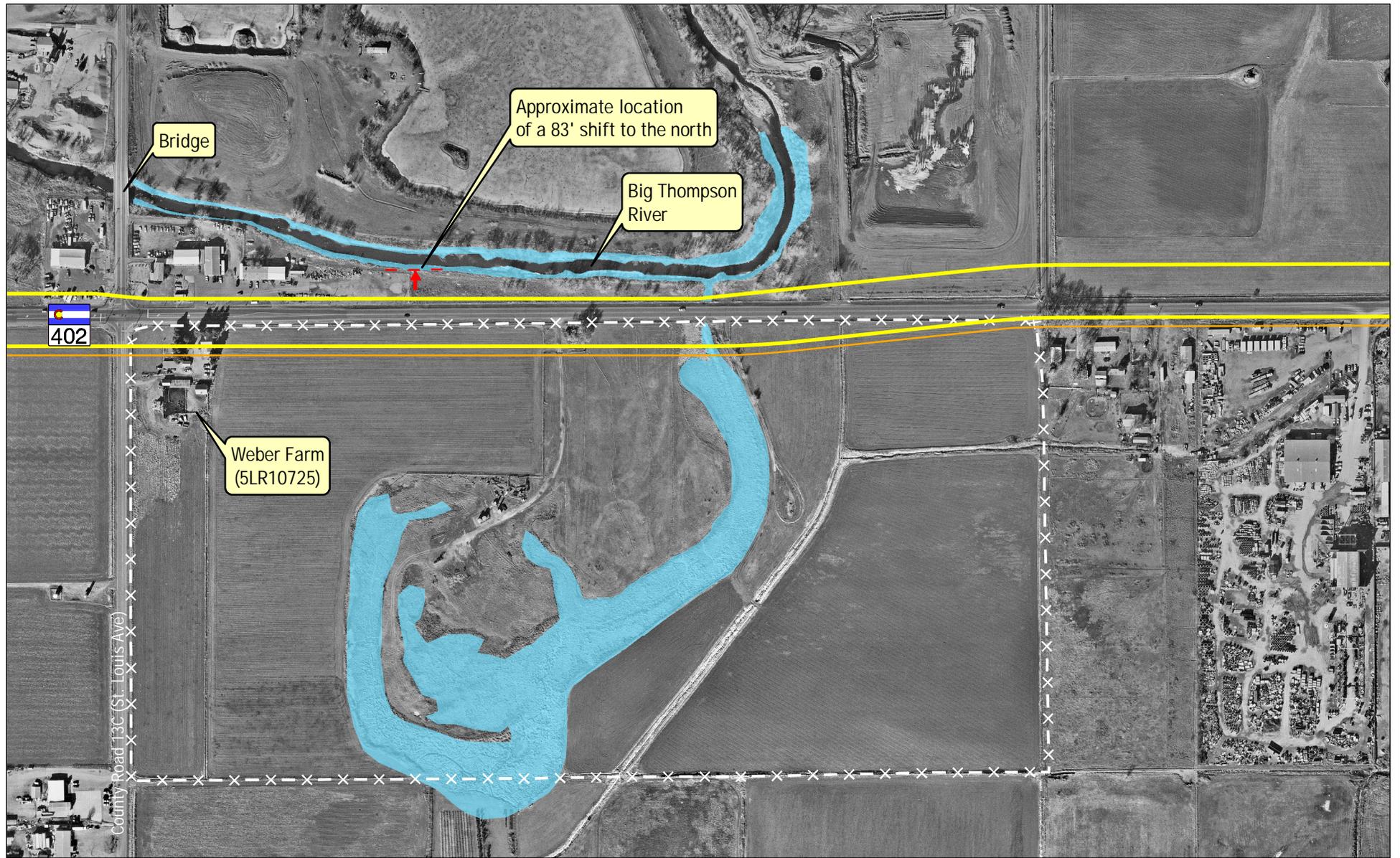
SCALE - 1:900 or 1" = 75'

SOURCE: 2001 1/2-foot pixel resolution aerial photography, provided by Wilson & Co. Land use and parcel information provided by the City of Loveland. Historic information provided by WCRM. Map produced November 2006 by JFSA.



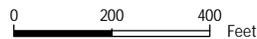
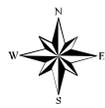
Weber Farm - Detail of Buildings
5LR10725

FIGURE 6-2



LEGEND

-  Meander Alternative Right-of-Way
-  Meander Alternative Utility Corridor Right-of-Way
-  Site Boundary
-  Jurisdictional Wetlands



SCALE - 1:4,800 or 1" = 400'

SOURCE: 2001 1/2-foot pixel resolution aerial photography provided by Wilson & Co. Land use and parcel information provided by the City of Loveland. Historic information provided by WCRM. Map produced November 2006 by JFSA.



Context Map for
Weber Farm Discussion

FIGURE 6-3

Description of Use of the Weber Farm (5LR10725)

The widening of SH 402 at this location results in the need for additional right-of-way and a permanent utilities easement from the frontage of the Weber Farm with an approximate width of 58 feet for right-of-way and an additional 25 feet for permanent easement (total of 83 feet) the entire length of the Weber Farm - SH 402 frontage.² This results in a total need for an additional 4 acres of new right-of-way for the highway widening and an additional 1.4 acres for the permanent easement. Note that the alignment veers north as SH 402 heads east past the Big Thompson River in the vicinity of a lateral ditch. This slightly reduces the right-of-way and easement requirements from the eastern 500 feet of Weber Farm frontage.

In the vicinity of the buildings on the property, the result will be the loss of the main house (building 1) and chicken brooder house (building 8). These buildings are illustrated in Figure 6-4. The magnitude of this impact is an adverse effect on the NRHP eligible Weber Farm (5LR10725). A Memorandum of Agreement to resolve adverse effects on this property was executed on February 9, 2007 (see *Appendix A* of the EA).

De Minimis Findings

Big Thompson Manufacturing Ditch Segment (5LR10726.1)

Property Description

The Big Thompson Manufacturing Ditch system extends 10 miles in length, beginning 0.25 mile east of Wilson Avenue on the Big Thompson

² Parcel data from the Larimer County Assessor's Office and City of Loveland (2003) show the Weber Farm legal boundary as located within CDOT right-of-way for approximately 1,200 feet of SH 402 frontage. The remaining legal boundary for the Weber property is shown as extending to the existing SH 402 centerline. The numbers described above treat the existing farm fence as the NRHP boundary. This discrepancy in current ownership data does not alter the adverse effect on the historic property.

River and ending just east of the resource segment 5LR10726.1. The ditch has been identified as one of the oldest in the system with rights dating back to 1863. The SHPO concurred with the determination that the overall linear feature 5LR10726 is an NRHP eligible resource under Criteria A and C and that segment 5LR10726.1 has a low degree of integrity. The segment under discussion is piped under the existing SH 402 at milepost 1.9 (see Figure 6-1).

Description of Use of the Big Thompson Manufacturing Ditch Segment (5LR10726.1)

The expansion of SH 402 will increase the length of the pipe under the highway. This would occur with all action alternatives. No other alterations to the ditch are anticipated.

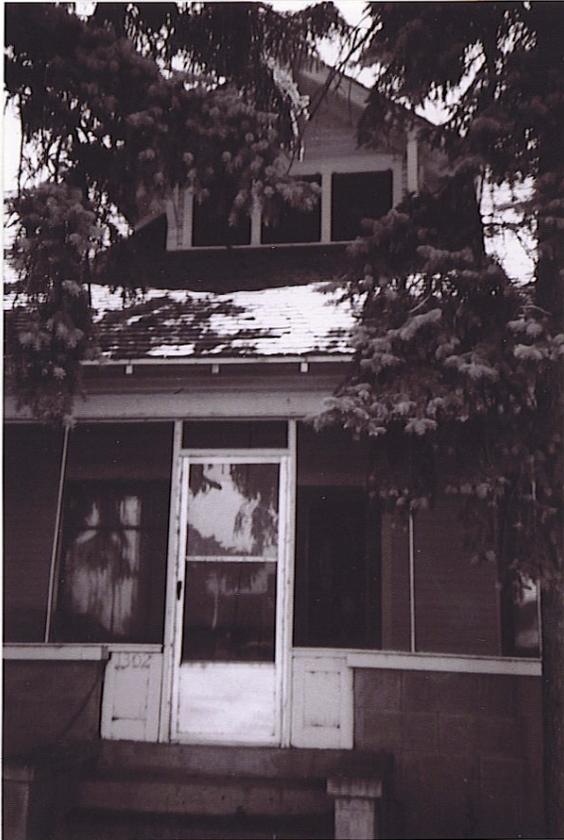
FHWA and CDOT, in consultation with the SHPO, determined that this project widening will result in a finding of no adverse effect under Section 106 of the NHPA. Subsequently, CDOT and FHWA have made a finding for *de minimis* impact under Section 4(f). SHPO concurred with the "no adverse effect" finding in correspondence dated June 29, 2005, and again on September 13, 2006. The City of Loveland Community and Strategic Planning Department was also afforded an opportunity to review the Section 106 findings. CDOT notified the SHPO of the *de minimis* determination for this property in correspondence dated March 10, 2006. FHWA signed the *de minimis* finding for the property on November 15, 2006 (see *Appendix A* of the EA for correspondence).

Weber Farm East (5LR11249)

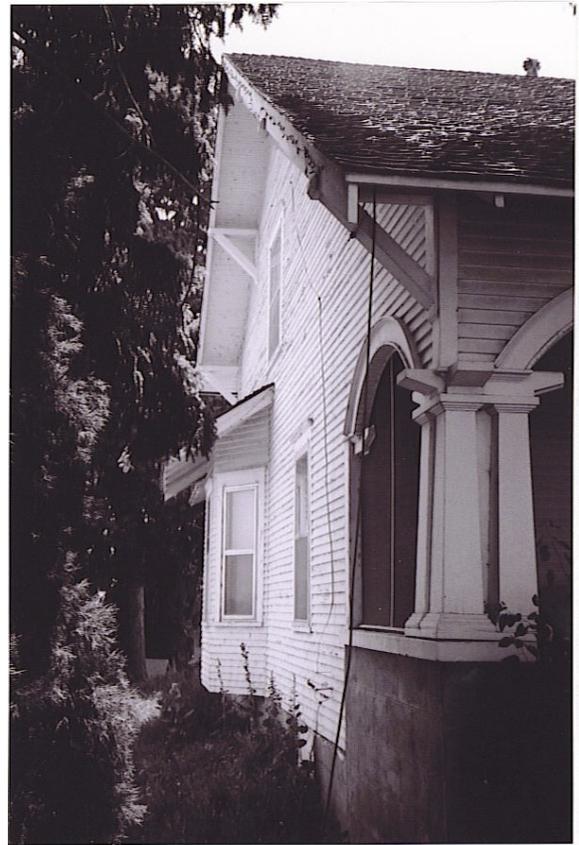
Property Description

The Weber Farm East is under the same ownership as the Weber Farm (5LR10725). The Weber Farm East abuts the south side of existing SH 402 approximately 1.6 miles to the east of the Weber Farm (see Figure 6-1). There are no cross streets in the vicinity, and the eastern boundary is approximately 870 feet west of CR 9E. This property accesses SH 402.

Figure 6-4. Weber Farm Main House and Chicken Brooder House



Main House: front door and dormer, view to south



Main House: east elevation, showing bay window, view to south



Main House: rear elevation, view to northeast



Building 8: chicken brooder house, front elevation, view to northeast

The Weber Farm East complex was built in the early 1900s with remodels to the main house. The 2.1-acre fenced complex consists of 13 buildings, a feedlot, and tilled fields.

The Weber Farm East is eligible for inclusion in the NRHP under Criterion A because it represents the typical early-to mid-20th century farming lifestyle in the Loveland and Larimer County area. The site is also considered eligible for inclusion in the NRHP under Criterion C as representative of early 20th century farm architecture in the Loveland area.

Description of Use of the Weber Farm East (5LR11249)

As a result of the identification of the Meander Alternative as the Preferred Alternative, the alignment of the expanded SH 402 remains to the north, holding the existing southern edge of right-of-way the entire length of the Weber Farm East. The only impact on the farm is the acquisition of a 25-foot permanent utility easement across the front of the property. Except for the probable loss of a cottonwood tree associated with placing utilities underground, no other physical features of the Weber Farm East property will be affected. The tree is not considered a part of the historic landscape. Utility poles are currently located in an easement along the front of this property.

FHWA and CDOT, in consultation with the SHPO, determined that this project widening will result in a finding of no adverse effect under Section 106. Subsequently, CDOT and FHWA have made a finding for *de minimis* impact under Section 4(f). SHPO concurred with the “no adverse effect” finding in correspondence dated May 26, 2006, and again on September 13, 2006. The City of Loveland Community and Strategic Planning Department was also afforded an opportunity to review the Section 106 findings. CDOT notified the SHPO of the *de minimis* determination for this property in correspondence dated March 10, 2006. FHWA signed the *de minimis* finding for the property on November 15,

2006 (see *Appendix A* of the EA for correspondence).

Propp Farm (5LR11247)

Property Description

The Propp Farm abuts the south side of existing SH 402 and is crossed on the east by the Big Thompson Manufacturing Ditch Segment (5LR10726.1). The Weber Farm East (5LR11249) is one property east of the Propp Farm.

The Propp Farm complex was built in the mid-1920s. The current 21.8 acres includes 6 historic buildings and 18.5 acres of alfalfa hayfields.

The Propp Farm is eligible for inclusion in the NRHP under Criterion A for its association with a period of significance, the Colorado Plains – Post 1900 Agricultural – Sugar Beets context. The Propp Farm was part of a larger 80-acre farm then, where sugar beets, hay, and corn were grown.

Description of Use of the Propp Farm (5LR11247)

As a result of the identification of the Meander Alternative as the Preferred Alternative, the alignment of the expanded SH 402 remains to the north, holding the existing southern edge of right-of-way the entire length of the Propp Farm. The only impact on the farm is the acquisition of a 25-foot permanent utility easement across the 410-foot front of the property.

Except for the possible loss of several trees associated with placing utilities underground, there will be no other impacts on the Propp Farm. Utility poles are currently located in an easement along the front of the property. The trees date from the 1960s and are not part of the historic landscape.

FHWA and CDOT, in consultation with the SHPO, determined that this project widening will result in a finding of no adverse effect under Section 106 of the NHPA. Subsequently, CDOT and FHWA have made a finding for *de minimis* impact under Section 4(f). SHPO concurred with

the “no adverse effect” finding in correspondence dated August 22, 2006. The City of Loveland Community and Strategic Planning Department was also afforded an opportunity to review the Section 106 findings. CDOT notified the SHPO of the *de minimis* determination for this property in correspondence dated August 15, 2006. FHWA signed the *de minimis* finding for the property on November 15, 2006 (see *Appendix A* of the EA for correspondence).

Mountain View Farm (5LR11242)

Property Description

The Mountain View Farm is located in the northwest quadrant of the SH 402 and I-25 interchange.

The Mountain View Farm complex built in the 1920s includes both the farmstead and associated fields. The farmstead includes five historic buildings, six modern buildings, and eight modern features, including a feedlot. According to the current owner, the main house was relocated and remodeled in 1964 due to the construction of I-25.

This property is eligible under Criterion A, for its association with the period of significance in the sugar beets context, even though the house has been moved. Previous owners grew hay, grain, and sugar beets and later ran a dairy at this location.

Description of Use of the Mountain View Farm (5LR11242)

The SH 402 project will taper from four to two lanes at the I-25 interchange adjacent to and east of the Mountain View Farm. The additional proposed right-of-way would take 35 feet off the front of the property for a distance of 1,935 feet. Potential physical highway improvements would generally remain south of the farm’s existing fence line. The shoulder for the expanded SH 402 will end at the current fence; however, fill slopes associated with the construction would intrude further to the north. Possible impacts on features associated with the farm within the

expanded right-of-way include loss of frontage from a modern feedlot, location adjacent to the front of the calving shed, and loss of a bank of weedy species trees located in front of the house. The field survey revealed an unkempt, dense growth of elms, sumac, and juniper. These trees, likely planted after the relocation of the house during the 1960s, are not part of the historic landscape.

FHWA and CDOT, in consultation with the SHPO, determined that this project widening will result in a finding of no adverse effect under Section 106. Subsequently, CDOT and FHWA have made a finding for *de minimis* impact under Section 4(f). SHPO concurred with the “no adverse effect” finding in correspondence dated August 22, 2006. The City of Loveland Community and Strategic Planning Department was also afforded an opportunity to review the Section 106 findings. CDOT notified the SHPO of the *de minimis* determination for this property in correspondence dated August 15, 2006. FHWA signed the *de minimis* finding for the property on November 15, 2006 (see *Appendix A* of the EA for correspondence).

6.5 Avoidance Alternatives

Table 6-1 provides a summary of avoidance alternatives.

Big Thompson River Relocation Alternative

The following discussion examines the potential for avoidance of all impacts on the Weber Farm (5LR10725). This alternative would require an adjustment to the Meander Alignment from west of CR 13C to east of CR 11H, a distance of approximately 0.75 mile, to avoid all direct use of the Weber Farm. To accommodate the widened SH 402 and associated utility easement, this segment of SH 402 would have to be shifted 83 feet to the north: 58 feet for the alignment and another 25 feet to locate the utility easement outside the Weber property (see Figure 6-3).

Table 6-1. Avoidance Alternative Discussion Summary

Alternative	Weber Farm (5LR10725)	Weber Farm East (5LR11249)	Big Thompson Manufacturing Ditch Segment (5LR10726.1)	Propp Farm (5LR11247)	Mountain View Farm (5LR11242)	Prudent and Feasible
No Action	Avoids	Avoids	Avoids	Avoids	Avoids	No (a,b)
Action Alternative #4 - Meander	Use	No Adverse Effect <i>de minimis</i>	No Adverse Effect <i>de minimis</i>	No Adverse Effect <i>de minimis</i>	No Adverse Effect <i>de minimis</i>	Yes
Big Thompson Relocation Alternative	Avoids or No Adverse Effect <i>de minimis</i>	No Adverse Effect <i>de minimis</i>	No Adverse Effect <i>de minimis</i>	No Adverse Effect <i>de minimis</i>	No Adverse Effect <i>de minimis</i>	No (c)
Parallel Route - US 34 in Lieu of SH 402 Improvements	Avoids	Avoids	Avoids	Avoids	Avoids	No (a,b)
Parallel Route - SH 60 in Lieu of SH 402 Improvements	Avoids	Avoids	Avoids	Avoids	Avoids	No (a,b)

a) Does not meet the project purpose and need because it does not address mobility concerns or meet regional travel demand

b) Does not meet project purpose and need because it does not address safety concerns

c) Does not meet USCOE permit requirements for least environmentally damaging practicable alternative (LEPDA) per CFR 40 Part 230 Section 404(b)(1). Results in excessive costs.

The USCOE will issue a permit for only the least environmentally damaging practicable alternative (LEPDA) per *CFR 40 Part 230 Section 404(b)(1)*. The Big Thompson River Relocation Alternative would not meet this requirement due to extensive river relocation (approximately 1,200 feet) and associated wetlands impacts (approximately 1 acre of moderate to high functional value jurisdictional wetlands).

The Big Thompson River Relocation Alternative is not prudent and feasible because it has adverse impacts on the river and it would not be the LEPDA per USCOE permit requirements.

Parallel Corridor Alternatives

The possibility of new or parallel alignment corridors was also considered. Parallel highway corridors already exist: US 34 and SH 60. The project purpose and need, to improve mobility and safety along SH 402 while meeting 2030 travel demand and expected growth and development for the SH 402 corridor, cannot be met by improvement to either US 34 or SH 60 because shifting the alignment to US 34 or SH 60 would not satisfy safety issues (see Figure 1-1 in the EA for parallel corridor locations).

Specific safety issues for the SH 402 corridor are identified in the EA in *Chapter 1, Section 1.2.3, Crash Analysis*, and include the following observations that are corridor-specific and cannot be remedied by improving parallel corridors:

- ❑ Substandard shoulder widths on SH 402
- ❑ Close proximity of driveway accesses to intersections and related slowing of drivers to make turns into side roads and driveways increasing risk of rear-end crashes
- ❑ Sight distance problems on SH 402 at numerous intersections.

An EA was completed in April 2007 addressing mobility on US 34 between US 287 to the west and LCR 3 east of I-25. The Action Alternative is for the widening of US 34 from four to six lanes. The proposed SH 402 widening is included in the 2030 travel demand forecast for US 34, meaning that US 34 widening alone will not meet regional travel demand.

An added concern at SH 60, located south of SH 402, is that it does not include full access to I-25. There are no plans to expand the SH 60/I-25 access, which could cost as much as

\$15 million. Assessment of the status of this interchange is included in the separate *North I-25 Front Range EIS*.

No Action Alternative

The No Action Alternative does not address FHWA and CDOT project purpose and need, mobility, and safety concerns or 2030 travel demand and expected growth and development needs. The design goal for SH 402 from US 287 to CR 13C was LOS D (based on its urban functional classification), with LOS C for the remainder of SH 402 east of CR 13C (based on its rural functional classification).

The No Action Alternative includes developer improvements between US 287 and CR 13C, which result in improved 2030 LOS for the US 287 and CR 13C intersections and through traffic LOS between US 287 and CR 11H.

SH 402 traffic volumes in 2030 under the No Action Alternative will result in LOS F at most intersections east of CR 13C. Highway through segments between intersections are projected to decline to LOS F east of CR 11H in 2030. Therefore, the No Action Alternative is not prudent and feasible.

6.6 Measures to Minimize Harm

The following discussion represents efforts made for all possible planning to minimize harm to the Weber Farm property while following the Meander Alternative alignment.

During alternatives development and screening, the cross section was narrowed to a total of 175 feet to reduce potential impacts on adjacent properties, including the Weber Farm, and to respond to public and agency comments, while maintaining desired design characteristics. Later, due to constraints related to the proximity to the Big Thompson River, the right-of-way in this segment was further reduced to 160 feet.

Even with the reduction in right-of-way through portions of Weber Farm, there is no prudent and feasible alternative that alleviates the use of the Weber Farm (5LR10725).

The SHPO was consulted on the impacts of the project. The following mitigation is recommended for the Weber Farm (5LR10725).

The Weber Farm (5LR10725) was recorded prior to construction so that there is a permanent record of its present appearance and history. Recordation consisted of Level II Documentation as determined in consultation with the SHPO and according to the standards established in Office of Archaeology and Historic Preservation Form #1595. The SHPO accepted the Level II Documentation on May 7, 2007 (see *Appendix A* of the EA). Copies of the documentation also will be sent to a local archive designated by the SHPO.

Regarding the alignment of the Meander Alternative, measures to minimize harm to crossing the Big Thompson Manufacturing Ditch Segment (5LR10726.1) include crossing a portion of the ditch that has low integrity. The ditch generally runs perpendicular to SH 402 and any substantial realignment of SH 402 could result in a crossing of a portion of the ditch that may have higher integrity, resulting in an adverse effect on this ditch, rather than the current finding of no adverse effect.

Those measures being used in association with the Meander Alternative to minimize harm to both the Weber Farm East (5LR11249) and the Propp Farm (5LR11247) result in the identification of only a utility easement across the front of these properties. Some utilities already run across the front of each of these properties in a narrower easement.

Those measures being used in association with the Meander Alternative to minimize harm to the Mountain View Farm (5LR11242) include the avoidance of loss of any historic buildings. Only a

modern feedlot frontage and bank of trees that is not considered part of the historic landscape will be affected.

6.7 Coordination

In consultation with SHPO, FHWA and CDOT have determined that this project will have adverse effects on the Weber Farm (5LR10725). FHWA, CDOT, and SHPO agreed that this project will have no adverse effects on the Big Thompson Manufacturing Ditch Segment (5LR10726.1), the Weber Farm East (5LR11249), the Propp Farm (5LR11247), and the Mountain View Farm (5LR11242). The SHPO concurred with these findings and has been informed of the determination of *de minimis* impacts. Relevant Section 106 and 4(f) related correspondence is found in *Appendix A* of the EA.

Coordination with the appropriate agencies, including the SHPO, has taken place with respect to the five historic Section 4(f) properties. Coordination efforts are described below. *Appendix A* of the attached EA contains all correspondence.

- Historic Properties Inventories documenting historic properties and archaeological properties for the SH 402 project corridor were completed and submitted to and reviewed by the SHPO between September 2004 and September 2006.
- Written concurrence from the SHPO was received regarding the NRHP eligibility status of historic and archaeological properties as documented in the Historic Properties Inventories between September 2004 and September 2006.
- A Memorandum of Agreement was signed on February 9, 2007, and is found in *Appendix A* of the EA.

- Written concurrence from the SHPO regarding project impacts and proposed mitigation measures has been obtained for the Weber Farm (5LR10725) as follows. The Weber Farm (5LR10725) was recorded so that there is a permanent record of its present appearance and history. Recordation consisted of Level II Documentation as determined in consultation with the SHPO and according to the standards established in Office of Archaeology and Historic Preservation Form #1595. The SHPO accepted the Level II Documentation on May 7, 2007 (see *Appendix A* of the EA). Copies of the documentation also will be sent to a local archive designated by the SHPO.
- Written concurrence from the DOI regarding project impacts and mitigation measures was obtained on September 14, 2007, and is included in *Appendix C*.
- A public hearing on the SH 402 project, including Section 4(f) impacts, was held on August 22, 2007, in Loveland, Colorado. Comments and responses relevant to the Section 4(f) properties are found in this document in Section 3.3 and in *Appendix B* from commenter # Q-17.

6.8 Section 4(f) Determination

Based on the above coordination and the analysis in the attached *SH 402: US 287 to I-25 Interchange Environmental Assessment and Draft Section 4(f) Evaluation*, there is no feasible and prudent alternative to the use of the Weber Farm property. The proposed action has the least harm to the Section 4(f) resources and includes all possible planning to minimize harm to the Section 4(f) properties resulting from such use.

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Appendices

Appendix A – EA Availability

The proposed action has been coordinated with appropriate federal, state, and local agencies to comply with NEPA and CDOT Procedures for Public Involvement and Participation. The notice of availability of the EA was published in the *Loveland Daily Reporter-Herald* on July 29, 2007, and again on August 19, 2007; and the *Johnstown Breeze* on August 2, 2007, and again on August 16, 2007. Beginning July 31, 2007, the EA document was available at the locations listed below for a review and comment period ending August 29, 2007:

FHWA (front desk)
12300 West Dakota Avenue, Suite 180
Lakewood, Colorado 80228

CDOT Headquarters
Public Relations Office
4201 East Arkansas Avenue, Room 277
Denver, Colorado 80222

CDOT Region 4 (front desk)
1420 2nd Street
Greeley, Colorado 80631

CDOT Region 4
Loveland Residency (front desk)
2207 East Highway 402
Loveland, Colorado 80537

Larimer County Planning Office
(front desk, main floor)
200 West Oak Street
Fort Collins, Colorado 80521

North Front Range Metropolitan Planning
Organization
419 Canyon Avenue, Suite 300
Fort Collins, Colorado 80521

City of Loveland, Public Works (front desk)
410 East 5th Street
Loveland, Colorado 80537

Loveland Chamber of Commerce
and Visitor Center
5400 Stone Creek Circle
Loveland, Colorado 80538

Loveland Public Library
300 North Adams
Loveland, Colorado 80537

Town of Johnstown, Town Hall (front desk)
101 Charlotte Street
Johnstown, Colorado 80534

A CD copy of the EA and appendices has been included with this document for your information.

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Appendix B – Transcript of Public Hearing

The following is a summary of the public hearing presentation and question and answer session that followed the CDOT public hearing for SH 402 from US 287 to the I-25 Interchange on August 22, 2007. The hearing and associated open house were held at the CDOT Region 4 Loveland Residency at 2207 East SH 402 in Loveland, Colorado, between 4:30 PM and 6:30 PM.

Pre-Hearing Questions and Comments

The court reporter received the following pre-hearing questions and comments:

T-1 Written questions by Jim and Bonnie Wooldridge, 2869 East Highway 402, Loveland, Colorado, 80537, (970) 667-5710.

1. We would like to know the actual distance between the shoulder of the road and our home and yard. Will the distance be enough to assure us of being safe in our home that close to the road?
2. Sound barrier: Cement barrier to help eliminate noise from vehicles and require no maintenance from us.
3. Irrigation ditch: We have irrigation rights in order to water our stock and keep our lawns. We do not want to lose that right.
4. Driveway access in and out of our own property.
5. Fencing across the front of our property after project is completed with the quality it is now.
6. Relocating of survey pins and the replacement markers re-established.
7. Compensation for trees and flower beds.
8. Fiber optics lines are underground in driveway, as you exit off 402.
9. Water lines, electric, telephone systems are accessing in the property.
10. Clean air control during construction. I hate to dust!
11. Water lines, affecting multiple residences, the existing line is supplying water to three residences—all water lines were put in the same ditch upon construction in 1972.
12. This home was built of log in the early 1860s—apparently the home is not eligible to be considered for the historical value of it because of the added additions to the existing house.
13. Other questions on utility easements...Electricity underground...Downtime during construction on the water and power lines, et cetera.

T-2 Pre-hearing comments by Patricia Lopp: We live at 2164 Southeast 14th and I need to know whether our house will be taken or left. Nobody can tell me and have not for six years. It has always been maybe. I would like them to investigate it as soon as possible and let me know. At the last visit, it was no.

Presentation

Dave Martinez, CDOT Region 4 Resident Engineer, opened the presentation. He thanked everyone for coming and introduced project team members present:

- Gray Currier, CDOT SH 402 Design Phase Project Manager
- Carol Parr, CDOT SH 402 Environmental Phase Project Manager

- Karla Harding, CDOT Region 4, Region Transportation Director
- Melinda Urban, Federal Highway Administration (FHWA)
- Rod Vaughn, FHWA

Other CDOT and JF Sato team members raised their hands.

Dave Martinez explained that the study began a while back in 2001. We are producing the final EA document and are in a 30-day review period right now. The following presentation was made using a PowerPoint slideshow.

EA Process and Timeline. We have gone through a lot of different things as part of the EA process or the NEPA process. And the NEPA process stands for the National Environmental Policy Act. Right now, we are in this 30-day public document review period. And it is a comment period and the end of that period is August 29.

Project Purpose and Need. The purpose is to widen SH 402 from two lanes to four lanes. And we are really aiming to improve the mobility. Basically it is to get people from Point A to Point B in less time with less congestion, and with improving safety.

As far as the need goes, we are trying to meet a 2030 travel demand. There are two alternatives. There's a no action as well as a preferred alternative—the proposed alternative, it would meet the projections for this 2030 design.

Alternatives Analyzed. We looked at alternatives, modes of transportation, bus, van pool, carpools, bicycles along the whole route as well as passenger vehicles, with which you see the most of that right now on the corridor. For alignment alternatives:

1. We had one alternative that we proposed to begin with—holding the center line of the road right where it is and then looking at impact either side.
2. The second alternative was to hold the north edge of the right-of-way line and proposed widening to the four lanes to the south, and seeing what those impacts would be.
3. The third was holding the south edge of the pavement completely along the entire project site and widening to the north.
4. And then the fourth was the Meander Alternative, which is a combination of holding the south side and moving to the north in certain areas.

Preferred Alternative Overview. Carol Parr led the presentation about the Meander Alternative, which was considered to have the least impacts of all the alternatives studied.

The Meander Alternative is the alternative that we brought forth for an action alternative. But also, under NEPA, we also had to include the No Action Alternative. The No Action Alternative is like a baseline.

The Preferred or Meander Alternative is to widen State Highway 402 to four lanes. And you have seen on one of the boards along here that some of the widening has already been completed by a developer.

Impact and Mitigation Summary. This is the impact and mitigation summary for the Meander Alternative. It has the least amount of relocations of all the action alternatives.

We have a few historic homes and farmsteads along the route. The Weber Farm is being adversely affected. And then there was some other historic properties: the Big Thompson Manufacturing Ditch, the Propp Farm, the Mountain View Farm, and the Weber Farm East that we are doing under *de minimis*, which means we are not adversely affecting the historic part of the property.

There are noise impacts along the corridor. Carol Parr explained that after the presentation, interested people could come to the table in the back of the room to review the details of the noise analysis as presented in the EA. There is no mitigation feasible or reasonable; this will be explained in more detail.

It usually means that your home is located along the corridor and you have an entrance out onto the highway. So even if we put up a noise wall, you would have an opening onto the highway. So that would not reduce the noise.

Or, it is a single home farmstead and the cost to benefit ratio is too high to reduce the noise for that one farmstead.

There were also some wetland and vegetation impacts, but mostly the impacts were the right-of-way relocations and those related to historic preservation.

Gray Currier continued the presentation.

Existing and Proposed Cross Sections. The existing Highway 402 cross section east of St. Louis Avenue is single lane eastbound and westbound, has fairly narrow shoulders, with large portions of the roadway striped for no passing due to the limited sight distances and the many accesses from farms, businesses, and residences. This is what we have now.

The proposed cross section from US 287 eastward to St. Louis is called an urban cross section, much of which is presently in place. Some portions of it, the eastbound side, are not yet constructed. Those improvements will be made when the development on the south side of Highway 402 is completed in that area.

The proposed rural cross section for the action alternative is east of St. Louis. There are two lanes eastbound and westbound here and a striped median for left turning vehicles. Having two through lanes in each direction should improve the accommodation for slow moving vehicles, which presently pose a problem because of all the no passing zones.

There will be bike lanes in each direction and broader, safer shoulders.

Existing and Future Level of Service. Level of service is basically the performance of the roadway or portions of it.

Level of service is a qualitative measure describing the operational characteristics of a traffic stream. It can be ranked from A, which is the best, to F, which is the worst. And it is determined in terms of factors such as speed and travel time, freedom to maneuver, interruptions of traffic, comfort, convenience, and safety.

With the No Action Alternative, there are a lot of Level of Service F conditions. Level of Service F is characterized by heavy congestion, significant delays, and stop-and-go traffic. Level of Service F signifies a breakdown in vehicular flow. Queues forming behind breakdown points occur because of traffic incidents

and recurring points of congestion. Level of Service F for through traffic is something that would occur if no action is taken.

The target through traffic level of service for our corridor is Level of Service C or better. That is the objective. And that is also in accordance with the City of Loveland transportation plan requirements.

Level of Service C will have noticeable traffic. Speeds will still be at or near the free flow speeds, but the freedom to maneuver is somewhat restricted. Lane changes do require vigilance, and minimum average spacing between vehicles is on the order of approximately 220 feet. Queues can form behind any significant blockage.

There is no difference shown between the action and the No Action alternatives from US 287 to Boise. The reason for that is developer improvements have already taken place and are included in these projections.

Intersection level of service is primarily characterized by the number of vehicle seconds of delay that can be experienced. At the intersections for US 287 and St. Louis, the target is Level of Service D. This implies a delay of 35 to 55 seconds at these signalized intersections.

The target level of service for the remaining rural intersections along the corridor is Level of Service C or better. This also is in accordance with the City of Loveland transportation plan requirements. This would imply a delay of 20 to 35 seconds at a signalized intersection and 15 to 25 seconds at an unsignalized intersection.

There is a board here or in the hall that depicts the anticipated action alternative intersection configurations. Some are proposed to be signalized, some not signalized.

Existing (2001) and Future (2030) Traffic. Traffic volumes are shown as ADT or average daily traffic, which is the average two-way traffic and the number of vehicles per day.

Existing traffic counts were taken in November 2001. The traffic at that time was heaviest between US 287 and St. Louis, measured at about 17,600 vehicles per day and approximately 13,700 from St. Louis eastward.

By the year 2030, the projections are for volumes approximately twice or more of the 2001 volumes, with substantial volumes both near St. Louis and from County Road 9 eastward.

Dave Martinez led the presentation for the next set of slides.

Safety Issues. SH 402 is a very unsafe roadway right now as it exists as a two-lane road, limited shoulders, limited ability to turn, no median turn lane. It is no surprise to see that the rear-end accidents are by far the worst along the whole corridor.

Interim Safety Projects. There is not enough money to be able to fund the future widening. However, there are three minor safety improvement projects.

1. The first one is Boise Avenue at County Road 11-H; that is the intersection just west of the Loveland Residency. CDOT and the City of Loveland are working on this. Design is completed and next will be an advertisement for construction. It involves moving some utilities and acquiring a little bit of right-of-

way. CDOT hopes to make this a signalized intersection by next spring. This intersection may have the most rear-end accidents along SH 402.

2. Next are the new traffic signals down at the I-25 on- and off-ramps and the Frontage Road currently being installed. Dave Martinez checked with Pete Graham to learn when these signals would be operational. Pete Graham confirmed that they should be done in the next couple of weeks.
3. The Park-n-Ride has been expanded and added some additional lighting and security cameras, and hopefully that becomes a better carpool lot. That was a part of a project where CDOT upgraded a number of the Park-n-Rides along the I-25 corridor.

Next Steps. After the completion of this 30-day public document review and comment period, a NEPA decision document will be finalized. That would be this fall. Next, CDOT would like to start the design phase. Both Dave Martinez and Gray Currier would be working on that design over the next year.

Initiation of the right-of-way phase would be in the fall of next year. And as far as construction money, there really is not any money programmed to build this project, to do the widening.

Dave Martinez and Carol Parr reminded the audience that comments must be received by the 29th of August to be part of the document although anyone can call Dave or Gray any time. They also encouraged everyone to fill out comment sheets, to speak directly to the court reporter after the question and answer session, or to make comments on the project website (www.SH402ea.com). Speakers were asked to state their names and addresses for the record.

Q-1 HARRY WOOLDRIDGE: I am Harry Wooldridge. Question I have, I was looking at your utility easement, on the south side of the highway as I understand. What utilities will be put over there? Will water lines be moved over there? They are on the north side right now. Are they going to be moved over there and then piped underneath the highway for the people on the north side?

DAVE MARTINEZ: Utilities that are on the south side of the road right now will be put into the new easement over there. And then any new utilities would be put into that easement as well.

Utilities that are currently on the north side of the road would just be moved out into the outside edge of the right-of-way on the north side.

HARRY WOOLDRIDGE: So our water lines and what have you will stay on the north side?

DAVE MARTINEZ: Yes, more than likely they will.

Q-2 DON HAGGERTY: My name is Don Haggerty. I am at 2017 South County Road 9. My question is... I am assuming that you are going to have this to be all asphalt in lieu of concrete. Is there any decision made yet? Concrete is very noisy.

DAVE MARTINEZ: We will determine the type of roadway surface when we get into the design phase.

CAROL PARR: If you live along the corridor and you have a specific question about your residence, let's talk after the presentation.

DON HAGGERTY: I was just curious about the noise in general.

CAROL PARR: The document does list the noise level to the current and what they are expecting in 2030. So that would give you some additional information.

Q-3 PAUL EHRLICH: Paul Ehrlich, 1452 South County Road 7. I agree with Don Haggerty about the concrete roadway. I live about three-quarters of a mile from I-25. And there is still a tremendous amount of noise coming from that and there is even a hill in the way. So I am concerned.

DAVE MARTINEZ: Thank you for your comment.

Q-4 DIANE TURNER: I am Diane Turner and I live at 1248 King Drive. I realize that we are going to discuss the noise. I live at Paradise Acres and there is already a high level of noise in that area. And I am wondering what adding two more lanes is going to do to it. I am also wondering if we have any idea what the speed limit is going to be along the new road.

DAVE MARTINEZ: You want to talk about the noise first?

CAROL PARR: I can say that it is in the document. We will answer your questions in the decision document. I will also go back to that table after the question and answer session and answer the question for you then.

Dave, you can answer the speed limit question?

DAVE MARTINEZ: The road is designed for 55 miles an hour.

DIANE TURNER: Thank you.

Q-5 ROBERT REICHERT: Robert Reichert at St. Louis and 402. Who is funding this for the bicycle lanes?

DAVE MARTINEZ: The funding for bicycle lanes and to do the widening would probably come out of the same pot of money. It would be through the state, or federal money would be available for that.

ROBERT REICHERT: I just think it is time the bicycles start paying some money for the use of the roads. I mean, they are out there in the middle of the road instead of using bike lanes. I am really getting pretty uptight about that stuff....But I just wonder where the money is coming from for all these bicycle lanes that they keep funding these jokers.

DAVE MARTINEZ: Thanks for your comment.

ROBERT REICHERT: I am also very concerned about the noise level on—on my property there right now. It is atrocious right now. So if we add two more lanes, it is going to get a lot worse.

Q-6 CARLA WARBERG KELLY: My name is Carla Warberg Kelly, and I live at 1807 South County Road 9. And my question is: Basically are all of the houses that are located along 402 going to still have the same access; they can just turn on 402?

DAVE MARTINEZ: County Road 9.

CARLA KELLY: No, that is where I live. But houses that are along 402 that now come in and exit off 402, is that still going to remain viable for those locations?

DAVE MARTINEZ: We will maintain the access points as they exist now. But we will look for opportunities to try to combine or consolidate accesses if we can. We would work with individual landowners or property owners when we get into the design phase to do that.

Q-7 RALPH OLLILA: I am Ralph Ollila. I own that corner of Boise and 402. What I want to know is there's a sewer line in there right now—the City of Loveland has a sewer line in, which is on a 20-foot easement that I gave them back in the '70s. And that sewer line is in there now and also goes up Boise. And they just put some manholes in there over the sewer line.

But I want to know where that sewer line is going to be in relation to that scenario you got up there. Is that road coming over that sewer line?

And another thing, my bone to pick is this. Usually these government entities do not come and ask whether they can go on my property; they just come and do their thing. I do not like that.

My dad came over here in 1898 and I will tell you what, this is not the country that it was in 1898. We have no rights. We are losing our rights day by day. And people decide that they want a highway and they just take it.

FEMA just came over recently and redirected the floodplain regulations....

I look at the road and the road is built up here like this (indicating), it is way high. So where am I going to be?...It took me a year and a half to get authorization and—when I bought that in the '70s, early '70s, to put a building up there. I did it and went through all the hoops and whistles...

Another thing is they said that they do not believe in leapfrog zoning, that's from Loveland, but as soon as Wal-mart Distribution's there, they just dove over there. But I do not have deep pockets. So they did not want to give me the commercial zoning that I wanted, see. And that just frustrates me because you decide this is what we are going to do and we do not really have a say.

DAVE MARTINEZ: When you first started you asked about the sewer line. Maybe I can say something about that. We will get into that when we get into our design phase and we look at how that sewer line relates to the way the road is constructed. And we will, you know, do our best to make sure that it is designed properly. That is probably all I can comment on that.

Q-8 WILMA DAVIS: My name is Wilma Davis, and I own the property at the corner of 402 and South St. Louis. And is that road going to be elevated when you build it or is it going to be the same elevation as the road is right now?

DAVE MARTINEZ: St. Louis itself?

WILMA DAVIS: No, I am talking about 402. That is the road you are building, isn't it?

DAVE MARTINEZ: It will be the same elevation as it is now. Approximately the same.

WILMA DAVIS: So you are not raising the elevation?

DAVE MARTINEZ: I do not believe so. When we get into our design phase, we will get into those kinds of details, but at this point in time, no, we are not anticipating that we would raise it.

Q-9 RON PROPP: My name is Ron Propp, 2754 Highway 402. Whose criteria make the noise regulations and how close can the highway get? I mean, who made that up? How did they decipher when the road is getting too close to my place?

ROD VAUGHN: I am Rod Vaughn with the Federal Highway Administration. Nationally in the area of noise, the Federal Highway Administration sets noise levels that they determine are at the threshold level. Noise levels below these levels are considered acceptable, while noise levels above are considered not acceptable. There are different decibel levels, depending on the type of property, whether it is residence, business, or a type of property like an amphitheater, something where quiet is really important.

And so when the noise analysis is done for these projects, they look at the set threshold levels. Those levels are the same for the whole country. These are discussed in the environmental document. Then, each state develops a noise policy; CDOT has developed a noise policy. CDOT has set criteria as to how much change there would have to be in order for some type of mitigation to be done, and all that is within CDOT's noise policy.

So if a noise level does not exceed what is in CDOT's noise policy and those relate to the national levels, then mitigation will not be done. But if they exceed those levels, then mitigation will be looked at. And as Carol mentioned, there are some cost-benefit ratios and there is a criterion there as to how much is reasonable to spend, like per residence. And cost exceeds that, then mitigation would not be done.

RON PROPP: What about the distance from the shoulder of the road to a fellow's house? Who deciphers that?

ROD VAUGHN: That is part of the noise analysis. There are some formulas and one of the variables in the formula is the distance from the noise source to the noise receptor.

CAROL PARR: I think I understand what you are saying, that if you live a mile off I-25, who determines if it is worth looking at your house, even though you are getting noise. And I do not have the answer to that right off. I do not know if we look 100 feet out, 500 feet, 1,000 feet out, but I will find out. But I will find out the answer and that will be related in the decision document. And that is a good question; is that what you were asking?

Q-10 DON HAGGERTY: Don Haggerty. How do you determine in advance? You are talking about the noise levels today, which is asphalt, but you do not have any clue how much noise it will be if you concrete it today.

CAROL PARR: You are correct on that. What we look at is noise levels today, and then we look at the projected traffic for the ADT 20 years out. Then we determine how much the noise levels will go up. Actually I have a person who works on my staff who is doing noise and, Ayman, if I am going in the wrong direction, let me know.

We look at the projected traffic as trucks and cars and the different types of vehicles, and we determine by that in a model what we think the noise will be. We look outside the highway pavement, but if your home has a big driveway, maybe we would look at that. We do not look at the actual surface of the roadway. We look if you have a berm in front of your house. The model looks at trees too. So we look at all that to determine the noise. But what you are specifically asking about, we do not look at pavement, do we?

AYMAN SALLOUM: No.

CAROL PARR: We do not look at pavement.

DON HAGGERTY: That was my question. Just like Paul said, I know where he lives and we live three-quarters of mile from concrete of I-25 and you can hear that. You just take, like Highway 34 now is all new asphalt is very silent. We are a mile and a half from I-25, and if the wind is in the right direction, we hear the rumble of tires on the concrete.

CAROL PARR: Yes. It also depends on atmospheric conditions and if it is a clear night or if it is not.

Q-11 ROBERT REICHERT: I am Bob Reichert again. My concern is that you are taking this off a piece of paper that is national or statewide or something like that. I would just like to see something done locally and listening to the local people about what we are saying instead of just taking this stuff off a piece of paper. Everything looks good on a piece of paper and the language on it sounds good. But we, you know, I want you to listen to us, to what we are saying.

DAVE MARTINEZ: Okay.

Q-12 PAUL EHRLICH: Paul Ehrlich, 1452 South County Road 7. You mentioned something a while ago that kind of disturbed me and it is about the noise levels. And then, you know, I am sorry, you are talking about city people when you talk about wide driveways and such. But on a farm, you know, you cannot grow corn all year long and when you cut it down, the noise really comes along.

But you said you are going to look at each application or location. And I am saying, now, will you come out in the middle of winter and measure it?

CAROL PARR: Let me clarify that some. We have a noise model; what they put into the model is, is it rolling hills or is it flat? Is there a hard surface? Like if you live in an apartment complex and you have a parking lot out in front of the complex. Or if you have vegetation because the noise travels depending on what you have.

We do not model each individual house; am I saying this correctly, Ayman? The modelers identify places along the corridor where they want to pick up the noise, the current noise levels and everything. So they do not do it in front of each home. And a noise receptor along this corridor includes a number of homes.

ROD VAUGHN: Rod Vaughn again, Federal Highways. Just as an example, and correct me if I am wrong, for a noise wall to be beneficial, they say that they have to be like eight times as long as it is from the distance from the receptor to the road. So if your house is 100 feet off the road, in order to have an effective wall, it would have to be 800 feet long just for it to do any good. In a rural area, it is really, really difficult to justify spending that kind of money for one house.

CAROL PARR: And you also have to look at your access. If you have access directly on to the highway, and you have a noise wall in front of your residence, once you have created that hole within the noise wall, you have negated what you were trying to do. Doesn't it have to drop five decibels for ...

AYMAN SALLOUM: For the barrier.

CAROL PARR: For the barrier. At least 5 decibels for the barrier. So in urban settings, there is a lot better chance that you are going to have noise walls because there are many residences close by or next to each other. But when you get in rural settings, that is not how it is. You have larger properties.

Q-13 WILMA DAVIS: So it is just tough.

CAROL PARR: I am not saying—it is tough. You know, this noise is with the traffic increase, even without adding more lanes.

WILMA DAVIS: I realize that. I have owned that house since 1970, so I know what noise has done over these past years. That is 37 years. It has changed tremendously. And not a drop in the bucket to what it is going to.

CAROL PARR: Everybody is commenting on noise and having concerns about this; it will be addressed in the decision document. I think it is good that everybody is bringing these concerns up because we knew we were going to have noise impacts. It is great that we are hearing this. This is what the public hearing is for.

Q-14 DALE OSBORN: Dale Osborn. 1933 East Highway 402. You mentioned that you do not have any funding right now and the only date you have out there is 2008, which is next year. Do you have a projection for a date?

DAVE MARTINEZ: Given the current funding scenario and the way the funding is coming into our system, the year 2012 would be what we would project as being a possibility of receiving some funds, given the conditions as they are now.

DALE OSBORN: But you do not know.

DAVE MARTINEZ: We do not know. If something changes, it could be sooner, but I do not have a good answer for that.

Q-15 PAUL EHRLICH: Getting back to your comment about the elevation of the roadway, you said it would be about where it is now. But I think one of the reasons for building this is that there are a lot of hills out there. Now, I am thinking of a couple of instances where it might mess up some people's driveways or access to their property if you either build it up or cut it down.

DAVE MARTINEZ: Right. The sight distance along the project needs to be improved to meet the design of 55 miles an hour. To do that, some of the hills will have to get looked at from a vertical perspective. We have not done that yet. But as the road is either elevated or raised in those areas in particular, then we will have to look at how the accesses come up to the roadway in those sections. We will do a specific design on those locations as they are affected by changing the vertical profile of the road.

PAUL EHRLICH: I did not notice any elevations anywhere.

DAVE MARTINEZ: These maps are horizontal versions. We are just looking down from the 30,000-foot level—do not quote me on that—it is a level really high as you can see from the aerial.

Q-16 JIM WOOLDRIDGE: Jim Wooldridge. 2869 14th Street South 402 or East 402. Our concern is that the highway is moving closer to our house. Right now we have got a nice bumper area between the highway and our house. But the highway is getting closer to our house; how can we feel secure that somebody is not going to come running into us at night, like they do all up and down this road? Is there going to be anything put in for safety for—Ron's going to live close to the highway, closer. We are going to live closer. Is there anything in there to cover stuff like that?

DAVE MARTINEZ: To answer you honestly, I do not know the answer to that yet until we actually get into the design. But for stopping errant vehicles from leaving the roadway, we do look at that during our design process in that we try to provide what is called a clear zone, which is the amount of distance outside the edge of the roadway to allow someone to be able to re-correct, and we will include in this design.

JIM WOOLDRIDGE: Just a concern that we have that we go to bed at night and somebody running in our house.

DAVE MARTINEZ: That is a very good concern.

JIM WOOLDRIDGE: Mrs. Davis down there, she has hauled a lot of rock in there to keep (cars) out of her house.

WILMA DAVIS: Big rocks.

Q-17 WILMA WEBER: Well, just like to ask, when they say historical, tell me what that really means. What can they do and what can't they do.

CAROL PARR: Your farm was eligible for the National Historic Register, right?

ROD VAUGHN: National Register of Historic Places.

CAROL PARR: Thank you. The State Historic Preservation Officer decides if it is eligible. Once it is eligible, then we have to determine if the project is going to impact it. With the State Historic Preservation Officer, we are allowed to impact your home.

WILMA WEBER: By that you mean destroy it?

CAROL PARR: Yes, destroy it. We are allowed to destroy it. However, Federal Highways has some additional regulations. That is Section 4(f). And we have to prove that there is no other way we can build the roadway, intersection, without impacting your property. So with the State Historic Preservation Officer, CDOT is allowed to destroy a property.

With Federal Highways regulations, we have to prove there is no other way. On your property, we did show that there was no other way that we could avoid your property.

WILMA WEBER: Will they just destroy it? Is that the idea?

CAROL PARR: I cannot answer that. But I know that we have had properties, like Johnson's Corner gas station, that a developer wanted. They took it over to their development. We had some bridges over the Big Thompson that our historian at headquarters was trying to get someone to purchase so we would not destroy them. They could go on being somewhere else but just not in that location.

WILMA WEBER: Someone will say to me, "They cannot destroy it," and the next person says, "Yes, they can." I just wonder what the rules really are.

CAROL PARR: We can destroy it. But if somebody came along and said they wanted to preserve it and move it somewhere else and had the money to do it, that would be...

WILMA WEBER: We will just wait and see what happens.

CAROL PARR: I guess we will have to wait to see what happens.

Q-18 ROBERT REICHERT: Back to the noise level again. You are talking about putting up these walls; that is kind of what I understood you to say. What about trees and vegetation barriers and things like that?

CAROL PARR: There have been some national studies to determine if vegetation actually does reduce the decibels, and they are showing it does not. It is a perception that it reduces noise. When people see a barrier between them and the highway, they think the noise has been reduced. But even if you have pines or evergreens that keep their needles or whatever, leaves during the winter, it does not reduce noise is what they have shown. It is just our perception as humans thinking there is a barrier there.

AYMAN SALLOUM: Unless it is 200 feet deep.

CAROL PARR: 200 feet deep. Thank you.

ROD VAUGHN: There are many different types of noise barriers, including earth berms; even when you do an earth berm, again, if you were to build one 800 feet long, if you have a gap in it for your driveway, it will negate the effectiveness of that barrier.

CAROL PARR: And I have to say I thought exactly the same thing. That when there are trees, it reduces noise. I have always believed that until I got other information.

Q-19 BRUCE BECHTEL: And I would disagree—Bruce Bechtel, 1632 Highway 402. Sometimes the field next to me is planted in corn, sometimes in wheat. When they cut that corn down, gee, why is everything so loud today. Oh, yeah, the corn is gone. But if there is corn in that field, there is a noticeable reduction in noise. Now, you know, I am pretty close to the highway, but it is not anywhere near—well, it might be 200 feet as they mentioned, in some—in that one area that is off to the west of my house and I am on the south side.

The corn gets to be 6 feet tall. Some vegetation barriers could even be taller.

KARLA HARDING: Karla Harding with CDOT. When you all are thinking about noise and what kind of areas might get a wall and what areas would not, I think a good example might be if you drive up to 287, just south of here, you can see the places that got barriers and the places that did not. Because there are some homes that are very close to the road, that doesn't have any barrier yet. The developments that have

a lot of homes, there was a barrier there. And that might be kind of a good comparison to what kind of areas might and might not get a noise wall along this corridor.

DAVE MARTINEZ: Good. Yes.

Q-20 PAM OSBORN: I am Pam Osborn, 1933 East Highway 402. This is more of a comment than a question. I am somewhat offended by your saying that the more dense areas get the sound barriers because I want you to understand that the majority of us here are living a rural lifestyle and we chose it. When my husband and I built our house, we built it far back from the road that was already there. And it was somewhat offensive to hear you say that, you know, if we lived in town and you were doing this, we would have this wall. But you are affecting our lifestyle immensely and I need you to understand that. I think everybody would agree. It is a big change for us.

CAROL PARR: I do understand what you are saying. It is just how our CDOT noise guidelines are written.

PAM OSBORN: They need to be evaluated because you are impacting all of us. We are somewhat distant. I already hear it. And this is—I mean, it is just ridiculous the change it is going to make for us.

Q-21 RON PROPP: Ron Propp. I did not see a graph though on the noise. Is there one included on what it was last year and what it is during the summer? During the winter?

CAROL PARR: It is in the EA and I have it open back there on that table. And we have a couple noise boards up there that just tell the CDOT policy and what we look for in decibels, and you are correct. When we came into this public hearing, that was not something that I thought was going to be such an issue, so we did not have it as part of PowerPoint. But I can go back to that table and talk about it to each of you before you leave here today.

RON PROPP: So like purchasing more right-of-way, it is kind of a negotiation-type deal, I assume, with CDOT on what that right-of-way is worth or what the ground is worth. But who puts the value on our lifestyle in 2030 with 35,000 cars coming by there? Is there a table or a graph that says, you know, you ought to be compensated for that or do we just buy into it when we ...

DAVE MARTINEZ: Maybe Bob Grube, you want to comment on that? How the right-of-way process works in general?

BOB GRUBE: I would have to say there is no table for putting a value on lifestyle. We get an appraisal on your property when we acquire it. We pay for you to get an appraisal on the property. We pay fair market value or the value of the property right then and there. But as far as a future value for what your lifestyle may be, that is pretty intangible. No, we do not compensate for that.

Q-22 ROBERT REICHERT: Bob Reichert again. I just wonder since it seems like all of us are concerned with the noise level, can we do a study on the noise and what it is going to do on impacting us in this area? I am sorry, those people are nice people on 287, but I want one done on here.

CAROL PARR: We do have one. And we have a whole noise study that we did in this area.

ROBERT REICHERT: But when you are determining what this noise level is, I want you to listen to us. Not those people there, not the people somewhere else in Colorado. People on 402. That is what we are concerned about.

CAROL PARR: And there are a number of residences that will be impacted by noise. And it really comes down to mitigation was not deemed prudent.

ROBERT REICHERT: That is your perception.

CAROL PARR: I understand. I am just telling you there were quite a few homes that were going to be impacted. And according to the guidelines, which I know you would like to have changed, it just says they are not prudent and feasible.

ROD VAUGHN: What the state DOTs run into is a fairness issue. If the DOTs were to build noise walls for every single residence that a road went by, there would no highway dollars to fix the roads. And also if noise barriers create a snowdrift problem in the wintertime, they would create all kinds of safety issues for ones that are next to the roads. So there are money issues that enter in and also safety issues.

DAVE MARTINEZ: Other questions? Anybody that has questions about right-of-way, if you would go to the back and see Bob Grube, he stood up just a second ago, about any of the relocations, acquisition process. The traffic folks will be back over in the corner to my right back there. And if you want to talk more about noise and specifics, Carol will go back to the first table here. Again, I encourage you to fill out a comment sheet or come up and give it to the court reporter. So I think that is it. Let's go ahead and break up. Thank you so much for your questions and concerns.

(End of presentation.)

Post-Hearing Comments

The following post-hearing comment was provided to the court reporter.

T-3 Julie Olson: I am off Olson Road. And I wanted to comment that these people in the meeting, the majority of them, I do not think they understand the benefits—they are looking at the negative instead of the positive benefits of having 402 expanded. With growth comes changes, as far as, you know, there is going to be noise. There are going to be changes. And that is—there are also a lot of good things and safety—safety concerns that will be met. How can they get the funds faster? Is there some public campaign that can be put together to get funds faster to build the road?

Note: The original official transcript of the public hearing is available upon request from CDOT.

Appendix C – Agency Comments

A-1. City of Loveland

A-2. US Environmental Protection Agency

A-3. US Department of the Interior

A-4. CDOT Letter to Interested Tribes

A-5. FHWA Legal Sufficiency Review

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A-1

Joanna Morsicato

From: Tom Knostman [knostt@ci.loveland.co.us]
Sent: Friday, August 17, 2007 10:34 AM
To: Joanna Morsicato
Subject: RE: SH 402 Public Hearing Presentation Display Preview

Joanna,

We will prepare the boards for the interim improvements at Boise Ave and the Route Study that we are pursuing at Boyd Lake Avenue.

The only issue I see with the boards is that the proposed cross sections from 287 to St. Louis the proposed median based on the design will only be 4 to 16 feet as planned. The boards show 18 to 24 feet.

Thanks,

Tom Knostman, P.E.

City of Loveland
Public Works / Engineering
970/962-2644

There is no problem that can't be solved over doughnuts!

From: Joanna Morsicato [mailto:JMorsicato@jfsato.com]
Sent: Tuesday, August 14, 2007 5:12 PM
To: Melinda.urban@fhwa.dot.gov; Tom Knostman; myron.hora@dot.state.co.us; carol.parr@dot.state.co.us; david.m.martinez@dot.state.co.us; gray.currier@dot.state.co.us; michael.frederick@dot.state.co.us; dan.michna@dot.state.co.us
Subject: SH 402 Public Hearing Presentation Display Preview

Please find attached a PDF of the displays, FYI. We will start display production Thursday of this week. If you have any questions, please contact Carol Parr. Thanks. Joanna

<<Boards2007August-01All.pdf>>

Joanna Morsicato
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8/30/2007

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
<http://www.epa.gov/region08>

AUG 20 2007

Ref: 8EPR-N

David Nicol
Division Administrator, Colorado Division
Federal Highway Administration
12300 W. Dakota Ave., Suite 180
Lakewood, Colorado 80228

Re: Environmental Assessment (EA) for SH 402,
US 287 to I-25 Interchange

Dear Mr. Nicol:

In the agreement between the Environmental Protection Agency (EPA) and the Federal Highway Administration (FHWA), dated August 28, 2000, EPA agreed to advise FHWA within 15 days of receipt of an EA whether EPA: 1) will have no comments on the document; 2) will have comments within the review period; or 3) has serious objections to the Finding of No Significant Impact (FONSI). This letter is to inform FHWA that EPA has done a preliminary review of the EA for the transportation improvements to SH 402 south of Loveland, Colorado, and offers the following minor comments. We should note that we found this EA well written, comprehensive, and easy to understand and read.

EPA requests that more information be supplied on specific mud tracking mitigation measures planned for this project. As the document stands, it is unclear what measures will be taken. Also, the EA does not discuss diesel emission mitigation during the construction phase; EPA encourages the inclusion of planning to mitigate this impact.

We also wish to note a minor reservation with the language associated with the EA's discussion of mobile air toxics, though we note that on the whole this section is commendably factual and well-grounded. EPA maintains that estimation of health effects on the project level is indeed possible, and that performing that estimation is an important part of assessing environmental impact, in cases where appropriate.



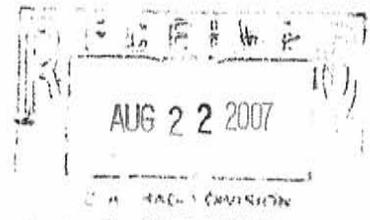
If you have questions regarding this matter, please contact me at 303-312-6004 or Charlie Lawton, the lead reviewer of this project, at 303 312-7037.

Sincerely,



Larry Svoboda
Director, NEPA Program
Office of Ecosystems Protection and Remediation

cc: Pamela Hutton, CDOT
Karla Harding, CDOT Region 4





United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240



SEP 14 2007

9043.1
PEP/NRM

ER 07/635

Mr. David A. Nicol
Federal Highway Administration
12300 West Dakota Avenue, Suite 180
Lakewood, Colorado 80228

Dear Mr. Nicol:

Thank you for the opportunity to comment on the Draft Environmental Assessment and Section 4(f) Evaluation for **SH-402 Improvements, Connecting US-287 (Lincoln Avenue) and I-25, City of Loveland, Colorado**. The Department of the Interior (Department) has reviewed the document and submits the following comments.

FISH AND WILDLIFE COORDINATION ACT COMMENTS

Under the Migratory Bird Treaty Act (MBTA) construction activities in grassland, wetland, stream, and woodland habitats, and those that occur on bridges (affecting swallow nests on bridge girders) that would otherwise result in the take of migratory birds, eggs, young, and/or active nests should be avoided. Although the provisions of MBTA are applicable year-round, most migratory bird nesting activity in eastern Colorado occurs during the period of April 1 to August 15. However, some migratory birds are known to nest outside of the aforementioned primary nesting season. For example, raptors can be expected to nest in woodland habitats during February 1 through July 15.

If the proposed construction project is planned to occur during the primary nesting season or at any other time which may result in the take of nesting migratory birds, the Fish and Wildlife Service (FWS) recommends that the project proponent (or construction contractor) arrange to have a qualified biologist conduct a field survey of the affected habitats and structures to determine the absence or presence of nesting migratory birds. Surveys should be conducted during the nesting season. In some cases, such as on bridges or other similar structures, nesting can be prevented until construction is complete. It is further recommended that the results of field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, be thoroughly documented and that such documentation be maintained on file by the project proponent (and/or construction contractor) for potential

review by the FWS (if requested) until such time as construction on the proposed project has been completed.

The FWS's Colorado Field Office should be contacted immediately for further guidance if a field survey identifies the existence of one or more active bird nests that cannot be avoided by the planned construction activities. Adherence to these guidelines will help avoid the unnecessary take of migratory birds and the possible need for law enforcement action.

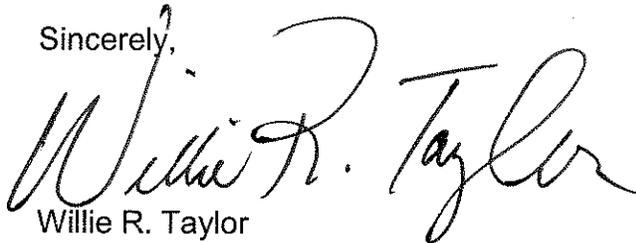
SECTION 4(f) EVALUATION COMMENTS

The Department acknowledges that five historic Section 4(f) properties will be affected by the proposed project including an adverse effect to the Weber Farm. We appreciate that you have coordinated a Memorandum of Agreement with the Colorado State Historic Preservation Officer to resolve adverse effects to the Weber Farm. The *de minimis* finding on the other four historic Section 4(f) properties is likewise acceptable.

Following our review of the Section 4(f) Evaluation, we concur that there is no feasible or prudent alternative to the Preferred Alternative selected in the document, and that all measures have been taken to minimize harm to these resources.

We appreciate the opportunity to provide these comments. If you need further assistance regarding wildlife resources, please contact Alison Michael, FWS, at (303) 236-4758. For questions concerning the Section 4(f) resources, please contact Cheryl Eckhardt, NPS, at (303) 969-2851.

Sincerely,



Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

cc:
Ms. Pamela Hutton
Colorado Department of Transportation
4201 East Arkansas Avenue
Shumate Building
Denver, Colorado 80222)

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION
 Environmental Programs Branch
 4201 East Arkansas Avenue
 Denver, Colorado 80222
 (303) 757-9259



U.S. Department
 of Transportation
**Federal Highway
 Administration**



Colorado Federal Aid Division
 12300 W. Dakota Ave., Suite 180
 Lakewood, CO 80228

October 12, 2007

Mr. Clement Frost, Chairman
 Southern Ute Indian Tribe
 P.O. Box 737
 Ignacio, CO 81137

SUBJECT: Additional Information Regarding the State Highway 402 Environmental Assessment,
 Larimer County, Colorado

Dear Mr. Frost:

In May 2004 your tribe expressed a desire to become a consulting party for the Colorado transportation project referenced above, under the terms of Section 106 of the National Historic Preservation Act. The undertaking involves improvements to a four-mile segment of State Highway 402 in Larimer County, Colorado to upgrade mobility and safety, and alleviate congestion along this narrow two-lane corridor. Since our initial correspondence regarding this project, the Environmental Assessment has been completed and we are in the process of preparing the Finding of No Significant Impact (FONSI), the last step in the environmental documentation process.

As noted in our April 7, 2004 letter regarding this project, there are no Native American sites within the project area eligible for listing on the National Register of Historic Places, and your tribe has not indicated a specific concern about any resources within the direct area of potential effect. FHWA and CDOT remain committed to addressing any issues you may have regarding the SH 402 project. However, we are concluding the environmental documentation and no further consultation actions by the agencies are planned at this time. Unless we receive notification from you within 30 days of receipt of this letter indicating your desire to extend government to government consultation, we will conclude the Section 106 tribal consultation process for this initial part of the undertaking. Your rights as a consulting tribe under Section 106 will continue throughout project construction, however, and you will be notified immediately should Native American artifacts or human remains be exposed.

If you have questions about the information outlined above, please contact me by telephone at (303)757-9631, Email at daniel.jepson@dot.state.co.us, or at the CDOT mailing address on the letterhead.

Sincerely,

Dan Jepson, Senior Staff Archaeologist
 Section 106 Tribal Liaison

cc: S. Popiel (FHWA)
 C. Parr (CDOT Region 4)
 N. Cloud (Tribal NAGPRA Rep)
 CF

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Memorandum

Office of Chief Counsel

Subject: SH 402 Final Section 4(f) Evaluation

Date: 12/5/07

From: Maryann Blouin, Agency Counsel, San Francisco, CA

In Reply Refer To:
HCC-WE

To: Melinda Urban, Operations Engineer, Colorado Division Office

I have reviewed the SH 402 Final Section 4(f) Evaluation. I have determined that this document complies with the requirements of Section 4(f) in the 1966 Department of Transportation Act, as codified at 23 U.S.C. § 138 and 49 U.S.C. § 303, and FHWA implementing regulations found at 23 C.F.R. § 771.135.

Pursuant to 23 C.F.R. § 771.135(k), I find this document to be legally sufficient.

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Appendix D – Public Comments Received During Review Period

E-1. James M. Adell

E-2. Carla Warberg Kelly

E-3. Evelyn King

F-1. Mark Bentley

F-2. Diane Turner

F-3. Steve Vinal

F-4. Julie Olson

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Joanna Morsicato

From: James Adell [jim_adell@yahoo.com]
Sent: Monday, August 27, 2007 7:44 PM
To: Joanna Morsicato
Subject: CO 402 Comment

I drove CO 402 twenty years to I25 on my way to work. The traffic has gotten terribly heavy during the rush hour.

By far the most dangerous situation that must have immediate solution is the Boise Ave left turn off of east bound CO 402. You drive 55 MPH and then slam to a stop because someone wants to turn left. Bad BAD BAD!!! Accidents are happening.

At the minimum a long left turn lane must be provided immediately!

James M. Adell
2409 Frances Dr.
Loveland, CO 80537

970-663-4779

Shape Yahoo! in your own image. [Join our Network Research Panel today!](#)

Joanna Morsicato

From: Carla Warberg Kelly [carlamwk@msn.com]
Sent: Monday, August 27, 2007 7:30 PM
To: Joanna Morsicato
Subject: Comments on SH402

Attached please find my comments. Thanks, Carla Warberg Kelly

Comments on SH402:

In addition to the numerous comments that were made at your public meeting on August 22nd in Loveland, I would like to underline the following points:

The underlying concern of the public with regard to the noise elements is very real. I own two rental properties on 402. Prior to the massive increase in traffic in recent years, the properties were sought after as rental homes. However, as the noise increases the desirability of the property goes down. With the proposed expansion of the highway including turn and bike lanes, these properties will be even closer to the noise and will suffer increased noise due to an increased volume of traffic. I do hope that you are also calculating the noise difference between Asphalt and concrete pavement.

I noticed in your "noise study" you have noted that noise mitigation for my properties was determined to be infeasible (two of the eight locations mentioned.) This will adversely affect my ability to rent these properties.

One other concern is whether the "planners" have actually walked the proposed route or if it has been plotted from aerial maps. It would appear that the landscape between CtyR 9E and Sauk Rd. will demand a massive earth moving project to cut down the hill immediately to the east of CtyR 9E and to fill in the low land north of the intersection with CtyR 9. The highway may need to meander a bit more between these locations once the actual road is plotted.

For those of us that live out in this area, the need for improvements on SH402 has been very necessary for several years. I am hopeful that the committee will continue to push this project towards funding asap.

-----Original Message-----

From: DKing49326@aol.com [mailto:DKing49326@aol.com]

Sent: Wednesday, August 29, 2007 8:58 PM

To: Parr, Carol

Cc: Martinez, David M

Subject: Comments - SH402 Environmental Assessment

Reference: Comments on SH402 Environmental Assessment and Draft Section 4(f) Evaluation

My only comment on the SH402 EA is that there does not appear to be any designation decision including pros and cons regarding the need to have major east/west highways become designated as expressways or comparable limited access roadways with grade separated intersections. At a minimum, the appropriate future need for highway easements should be included with this work so that condemnation or other problems may be avoided in the future. Property owners and developers need to be made aware of the need for future intersection grade separation accommodations.

I believe that grade separated intersections on four lane highways provide substantial safety improvements; substantial increases in mobility/drive times; they reduce the waste of fuel caused by stopping at stop-lights; they reduce air quality issues caused by stopping at stop-lights; and, they eliminate the on-going operation adjustments for stop-lights. These areas should be evaluated and developed into an addition to the preferred alternative so as to include grade separated intersection and limited access easement plans in the SH402 EA. The stop-light proposals do not provide fewer traffic interruptions, comfort, convenience or safety.

Thank You,

Evelyn King

6321 14th Street SW (the western end of SH402)

Loveland, CO 80537.

Get a sneak peek of the all-new AOL.com

<<http://discover.aol.com/memed/aolcom30tour/?ncid=AOLAOF00020000000982>>



Public Hearing

F-2

August 22, 2007, 4:30 PM to 6:30 PM
CDOT Region 4 Loveland Residency
2207 East Highway 402
Loveland, CO 80537

Public Comment Sheet

Your suggestions and/or comments are solicited at this time regarding this Environmental Assessment and Draft Section 4(f) Evaluation. Your input is very important to us. Space is provided below for your written comments.

PLEASE HAND IN THIS SHEET BEFORE YOU LEAVE TODAY - OR

- Mail this postage-paid form.
- Provide comments on the SH 402 website: www.sh402ea.com
- Call (303) 797-1200 x1313

Comments must be received no later than August 29, 2007

We live at the corner of Paradise Acres (red star on our property) 1248 King Drive. Noise level is already unbearable, and we are concerned about adding two more lanes. We definitely want a berm or noise wall.

We are also concerned that the turn lane put in went over our property line

Optional Information:

Name: Diane Turner

Address: 1248 King Dr City, State, Zip: Loveland, CO



Public Hearing

F-3

August 22, 2007, 4:30 PM to 6:30 PM
CDOT Region 4 Loveland Residency
2207 East Highway 402
Loveland, CO 80537

Public Comment Sheet

Your suggestions and/or comments are solicited at this time regarding this Environmental Assessment and Draft Section 4(f) Evaluation. Your input is very important to us. Space is provided below for your written comments.

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- Mail this postage-paid form.
- Provide comments on the SH 402 website: www.sh402ea.com
- Call (303) 797-1200 x1313

Comments must be received no later than August 29, 2007

THE ISSUE OF NOISE IS OF GREAT CONCERN, BEING A RESIDENT OF THE PARADISE ACRES SUBDIVISION WITH PROPERTY ADJOINING HW-402. MY FAMILY HAS LIVED HERE SINCE 1985 WHEN 402 WAS LITTLE MORE THAN A COUNTRY ROAD. HIGHWAY NOISE HAS BECOME A BIG PROBLEM IN RECENT YEARS.

AFTER REVIEWING YOUR NOISE ANALYSIS REPORT # 22-06-1 BY HANKARD ENVIRONMENTAL INC., I BECAME MORE CONCERNED. FIRST, SECTION 2.3 STATES THIS REPORT WAS DONE DEC 17, 2002 AND SECOND, SPEEDS WERE REPORTED TO BE AT 45-MPH. TRAFFIC HAS NOTICEABLY INCREASED ON HW-402 WITH THE OPENING OF CENTURA AND THE GENERAL POPULATION INCREASE. ALSO, AVERAGE SPEED IS NOT 45-MPH AS SHOWN IN REPORT, BUT MORE LIKE THE POSTED SPEED LIMIT OF 55-MPH. IF THE (dBA) LEVEL SHOWN IN TABLE 2-3 FROM 2002 IS AT 65.0 AT SITE M-5 IT IS SURLY HIGHER NOW AND ABOVE THE 66dBA CDOT CATEGORY B RECEPTORS NOISE LEVEL. IT SEEMS CDOT IS USING OUT OF DATE, UNRELIABLE AND UNREALISTIC NOISE ANALYSIS INFORMATION. I FEEL A NEW NOISE ANALYSIS REPORT SHOULD BE DONE BEFORE MITIGATION ISSUES ARE DETERMINED TO BE UNREASONABLE FOR OUR SUBDIVISION.

Optional Information:

Name: STEVE VINAL

Address: 1240 King DR City, State, Zip: LOVELAND CO 80537



Public Hearing

F-4

August 22, 2007, 4:30 PM to 6:30 PM
CDOT Region 4 Loveland Residency
2207 East Highway 402
Loveland, CO 80537

Public Comment Sheet

Your suggestions and/or comments are solicited at this time regarding this Environmental Assessment and Draft Section 4(f) Evaluation. Your input is very important to us. Space is provided below for your written comments.

PLEASE HAND IN THIS SHEET BEFORE YOU LEAVE TODAY - OR

- Mail this postage-paid form.
- Provide comments on the SH 402 website: www.sh402ea.com
- Call (303) 797-1200 x1313

Comments must be received no later than August 29, 2007

It is about time to build/expand Hwy 402.

The complaints about noise are stupid. These people need to realize the opportunities and benefits of having a wider 402.

I suggest CDOT campaigns to the public all the benefits of expanding 402. It is wonderful.

Let's get the funding faster!

Optional Information:

Name: Julie Olson

Address: 1462 Olson Drive City, State, Zip: Loveland, CO
80537

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Appendix E – Region 4 Commitments and Mitigation Table

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**Project Name: SH 402: US 287 to I-25 Interchange
Environmental Assessment and Section 4(f) Evaluation
Project Number: 402A-003
Environmental Mitigation Table**

(per Region 4 format requirements)
(Content from Table 3-4 and Table 3-15 in the EA with updates as noted in Section 1.6 of this document)

Category	Mitigation Measures and Commitments	Date Completed
Construction Impacts		
Visual Resources	The short-term highly visible construction equipment related activities cannot be mitigated. Dust impacts are discussed in <i>Chapter 3, Section 3.25.6, Air Quality</i> , in the Environmental Assessment (EA). Access and traffic-related impacts are discussed in the EA in <i>Chapter 3, Section 3.25.3, Access/Traffic Control/Emergency Services</i> . Permanent revegetation will be completed in disturbed areas and is further discussed in the EA in <i>Chapter 3, Section 3.35.7, Ecology and Noxious Weeds</i> .	
Hazardous Materials/Waste	Releases will be contained and disposed of in accordance with Colorado Department of Transportation (CDOT) Best Management Practices (BMPs) and all applicable laws and regulations. Known contaminated sites will be characterized and cleaned up before construction. Leaks and spills will be prevented, contained, and remediated according to all applicable laws and requirements. A Materials Management Plan may be required. If hazardous materials are encountered before or during construction, CDOT's <i>Section 250, Environmental Health and Safety Management</i> specification will be used. If necessary, a health and safety plan will be prepared and implemented to mitigate the potential health and safety hazards to workers and the public.	
Access/Traffic Control/Emergency Services	Although traffic movement along SH 402 may be affected during construction, these impacts will be controlled by application of standard highway construction practices for traffic management. Highway construction practices would be coordinated with local emergency service providers to ensure that construction does not disrupt emergency assistance.	
Archaeology	If cultural materials are exposed, the CDOT senior staff archaeologist will be notified immediately to ensure evaluation as required by National Historic Preservation Act (NHPA) and all other applicable state and federal regulations.	
Noise	Contractors will be encouraged to schedule construction activities during daytime hours to minimize and mitigate noise impacts. Weekend work will be discouraged, with the exception of activities best suited to off-peak hours. Temporary construction noise impacts will be reduced by requiring contractors to use well-maintained equipment (with particular attention to mufflers), adapt work hours, monitor noise during work hours, and make use of measures such as temporary noise barriers where applicable. The construction project will follow applicable sections of the <i>Ordinance Concerning Noise Levels in Unincorporated Larimer County</i> (No. 97-03).	
Air Quality	BMPs will be implemented to reduce the project's potential for impact due to particulates less than 10 microns during construction, including: <input type="checkbox"/> spraying exposed soil and soil surfaces with water, wetting agents, and/or soil binding agents <input type="checkbox"/> covering trucks carrying fine materials <input type="checkbox"/> minimizing mud tracking from the construction area <input type="checkbox"/> controlling speed limits for trucks traveling on roads with high silt loading in the construction area <input type="checkbox"/> performing proper maintenance on construction equipment	

**Project Name: SH 402: US 287 to I-25 Interchange
Environmental Assessment and Section 4(f) Evaluation
Project Number: 402A-003
Environmental Mitigation Table**

(per Region 4 format requirements)
(Content from Table 3-4 and Table 3-15 in the EA with updates as noted in Section 1.6 of this document)

Category	Mitigation Measures and Commitments	Date Completed
<p>Ecology</p>	<p>Techniques used by CDOT to stabilize and minimize erosion and to revegetate areas are outlined in detail in <i>Standard Specifications for Road and Bridge Construction</i> (1999), part of CDOT BMPs.</p> <p>The following measures are designed to reduce direct and indirect impacts on vegetation and to control soil erosion and noxious weeds:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Specification 207 covers salvaging and stockpiling topsoils for reuse in reclamation. No imported topsoil will be allowed. Topsoil heavily infested with noxious weeds will be removed from the site or buried under a minimum of 5 feet of fill. <input type="checkbox"/> Specification 208 directs contractors to permanently stabilize (that is, cover disturbed areas with final seed and mulch as indicated in plans) each 17-acre increment of the project immediately after grading is finished for that section. <input type="checkbox"/> Specifications 208 and 216 cover other mechanical erosion prevention methods (besides seeding, for example) and include use of soil coverings, placement of bales in drainages, use of silt fence, berms/diversions, slope drains, storm drain protection, check dams, channel stabilization, sediment traps or basins, and sandbag barriers. <input type="checkbox"/> Specification 212 covers seeding. <input type="checkbox"/> Specification 213 covers mulching seeded and other bare soil areas. <input type="checkbox"/> Specification 214 covers planting. <input type="checkbox"/> Specification 217 covers herbicide treatments, if needed for weed control. <p>A weed management plan has been developed, and a weed survey was conducted to locate and map weed populations that may be spread by construction activities. Required construction contractor practices to minimize new weed infestations and control the spread of current weed populations are described in detail in the EA in <i>Appendix E, Noxious Weed Management Plan</i>. Practices include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> application of appropriate herbicides <input type="checkbox"/> inspection of construction vehicles and use of designated equipment cleaning areas <input type="checkbox"/> storage of weed-free topsoil and restriction on importation of topsoil <input type="checkbox"/> use of only weed-free mulch for reclamation in accordance with the Weed Free Forage Act, CRS Title 35, Article 27.5 <input type="checkbox"/> monitoring and care of revegetation sites for three years <input type="checkbox"/> restrictions on mowing and cutting when seeds are ripe for dispersal <p>In addition to the above required practices, sensitive areas such as riparian habitat, woodlands, and wetlands in the vicinity of project construction activities will be fenced to prevent vegetation damage from construction machinery. Construction access will be limited to fenced areas to curtail erosion, weed invasions, and damage to habitats.</p> <p>Additional evaluations and surveys, if warranted, will be conducted prior to construction for any new threatened and endangered species and species of special concern (TES) identified subsequent to the current study.</p> <p>Should bald or golden eagles be observed at that time, recommendations to avoid or minimize impacts are as follows:</p> <ol style="list-style-type: none"> 1. Avoid unnecessary damage to the riparian area, especially cutting large trees. 2. If bald eagles frequent the area, construction should be scheduled between March 1 and November 30 to avoid disturbance. If this is not possible, then follow #3. 3. Avoid harassment of the eagle from project-generated noise and activity during the winter months. Between December 1 and April 30, if an eagle is observed perching or roosting in the riparian area, the US Fish and Wildlife Service (USFWS) recommends a buffer of 0.125 to 0.25 miles depending on the line of sight. 	

**Project Name: SH 402: US 287 to I-25 Interchange
Environmental Assessment and Section 4(f) Evaluation
Project Number: 402A-003
Environmental Mitigation Table**

(per Region 4 format requirements)
(Content from Table 3-4 and Table 3-15 in the EA with updates as noted in Section 1.6 of this document)

Category	Mitigation Measures and Commitments	Date Completed
Migratory Bird Treaty Act	<p>Although the provisions of the MBTA are applicable year-round, most migratory bird nesting activity in eastern Colorado occurs during the period of April 1 to August 15. However, some migratory birds are known to nest outside of the aforementioned primary nesting season. For example, raptors can be expected to nest in woodland habitats during February 1 to July 15.</p> <p>If the proposed construction project is planned to occur during the primary nesting season or at any other time which may result in the take of nesting migratory birds, the Fish and Wildlife Service (FWS) recommends that the project proponent (or construction contractor) arrange to have a qualified biologist conduct a field survey of the affected habitats and structures to determine the absence or presence of nesting migratory birds. Surveys should be conducted during the nesting season. In some cases, such as on bridges or other similar structures, nesting can be prevented until construction is complete. It is further recommended that the results of field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, be thoroughly documented and that such documentation be maintained on file by the project proponent (and/or construction contractor) for potential review by the FWS (if requested) until such time as construction on the proposed project has been completed.</p> <p>The FWS's Colorado Field Office should be contacted immediately for further guidance if a field survey identifies the existence of one or more active bird nests that cannot be avoided by the planned construction activities. Adherence to these guidelines will help avoid the unnecessary take of migratory birds and the possible need for law enforcement action.</p>	
TES Species	Mitigation is not required.	
Wetlands	<p>Because the project impacts on jurisdictional wetlands are less than 0.5 acre and affect nontidal waters-wetlands, a Nationwide Permit 14 is appropriate (Carey 2004). Construction measures must conform to the specifications and conditions of the 404 permit issued by US Army Corps of Engineers (USCOE). Site monitoring will occur as specified in the 404 permit to ensure that wetland communities are developing as required by the permit.</p> <p>Applying CDOT BMPs to construction operations will help minimize construction impacts on wetlands, including the following BMPs in <i>Standard Specifications for Road and Bridge Construction</i>, section 107.25 (Water Quality) and section 208 (Erosion Control):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Perimeter fencing will be installed to prevent access to wetlands, silt fencing will be installed to protect wetlands from sedimentation during construction, and erosion control techniques will be used whenever possible to prevent siltation and sedimentation <input type="checkbox"/> Should construction access roads and work pads be constructed in wetlands, protective material (fabric or hay) will be used, and topped with aggregate and/or soil fill. When construction is completed, the protective material will be removed with the goal of preserving the original wetland plant community. Any plants damaged will be replaced with species appropriate for the site. <input type="checkbox"/> The area adjacent to the toe-of-fill will be reclaimed when erosion control materials and fencing are removed. <input type="checkbox"/> Equipment maintenance areas and fueling locations will be at least 100 feet outside wetlands. Berms will be used and protective (absorbent) material will be available to prevent spills from reaching wetland areas. 	

**Project Name: SH 402: US 287 to I-25 Interchange
Environmental Assessment and Section 4(f) Evaluation
Project Number: 402A-003
Environmental Mitigation Table**

(per Region 4 format requirements)
(Content from Table 3-4 and Table 3-15 in the EA with updates as noted in Section 1.6 of this document)

Category	Mitigation Measures and Commitments	Date Completed
Water Quality	<p>Temporary erosion control and stormwater measures will be implemented during construction activities. Construction mitigation activities are specified under Colorado Discharge Permit System (CDPS), city and county requirements for developments, and CDOT guidelines. CDOT will obtain a National Pollution Discharge Elimination System (NPDES) Construction Discharge Permit (CDPS construction permit) from Colorado Department of Public Health and Environment (CDPHE) for the project.</p> <p>To comply with CDOT's MS4 CDPS permit and the CDPS construction permit, CDOT requires the development and implementation of a Stormwater Management Plan (SWMP) and an Inspection and Maintenance Program. The SWMP is intended to ensure that the water quality of receiving waters is protected during construction. The SWMP protects receiving waters by including BMPs necessary to provide for erosion, sediment, and general pollution prevention controls.</p> <p>CDOT will develop a SWMP that details BMPs used for construction during the design phase. The SWMP will be prepared in accordance with the <i>CDOT Erosion Control and Stormwater Quality Guide</i>, <i>CDOT Standard Specifications 107.25-Water Quality and 208-Erosion Control</i>. Erosion controls will be designed and implemented to minimize or eliminate downgradient sedimentation and siltation.</p> <p>Required BMPs include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> staging construction to reduce disturbances due to storage, use, and maintenance of construction equipment <input type="checkbox"/> minimizing access to the construction area <input type="checkbox"/> temporary seeding of disturbed areas <input type="checkbox"/> early final grading and phased seeding of completed areas during construction <input type="checkbox"/> establishing clean water diversion upgradient of the construction areas <input type="checkbox"/> establishing water quality ponds before construction to intercept construction runoff <input type="checkbox"/> using soil blankets or mulch/mulch tackifier on temporarily disturbed slopes or slopes that cannot be seeded due to seasonal constraints <input type="checkbox"/> using a stabilized layer of aggregate underlined with a geotextile and located where traffic enters or exits the construction site to reduce the amount of mud tracked onto paved public roads by vehicles or runoff leaving the construction site <input type="checkbox"/> cleaning up any mud tracked on to paved surfaces within 24 hours 	
Geology and Soils	No mitigation is required.	
Paleontology	<p>CDOT's staff paleontologist will examine project design plans to estimate the extent of disturbance of the Pierre Shale, if any, that may occur during construction. Preconstruction mitigation will be stipulated as appropriate. If any subsurface bones or other fossils are found in the corridor during construction, the CDOT staff paleontologist will be notified immediately to assess their significance.</p>	

**Project Name: SH 402: US 287 to I-25 Interchange
Environmental Assessment and Section 4(f) Evaluation
Project Number: 402A-003
Environmental Mitigation Table**

(per Region 4 format requirements)
(Content from Table 3-4 and Table 3-15 in the EA with updates as noted in Section 1.6 of this document)

Category	Mitigation Measures and Commitments	Date Completed
Project Related Impacts		
Socioeconomic	No mitigation is required.	
Right-of-Way Acquisition and Relocations	<p>To minimize unavoidable relocation of residents, measures to further reduce the number of relocations will be implemented as part of final design.</p> <p>CDOT will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), which provides for uniform and equitable treatment of all persons displaced from their homes, businesses, or farms. The Uniform Act is a form of compensation, not mitigation.</p> <p>The owner of real property acquired for right-of-way will be compensated based on fair market value. Assistance will be provided to any eligible owner or tenant in relocating their business or residence at the time of displacement. Benefits under the Uniform Act to which each eligible owner or tenant might be entitled will be determined on an individual basis and explained in detail.</p> <p>No relocatees will have to move from a dwelling without at least 90 days' written notice. A 90-day notice is not effective for a residential occupant unless a comparable replacement dwelling has been identified. Qualified relocatees receive monetary payments, which may include payments for moving expenses, business in lieu of payments, rent supplements, down payments, or increased interest payments. No person will be displaced by a federally assisted project unless and until adequate replacement housing has been offered to all affected persons, regardless of race, color, religion, sex, national origin, age, or disability. CDOT will assist any eligible owner or tenant to relocate a business or residence at the time of displacement. Benefits under the Uniform Act to which each eligible owner or tenant might be entitled will be determined individually and explained to the parties in detail, along with information about financial options.</p>	
Environmental Justice	No mitigation is required.	
Land Use	No mitigation is required.	
Farmland	No mitigation is required.	
Visual	<p>BMPs and mitigation measures to reduce or eliminate potential visual resource impacts of construction of the Meander Alternative include the following:</p> <ol style="list-style-type: none"> All disturbed slopes will be treated for erosion control and revegetated as appropriate, using native grasses and forbs. Shrubs will be included when feasible. Sensitive grading techniques will blend grading with the natural terrain. Cut-and-fill slopes will be blended with the surrounding terrain to the greatest extent possible by means of slope rounding, layback, and warping techniques. BMPs for reducing slope modification and landform contrast will be developed individually for cut-and-fill slopes. Cut slopes are more easily modified than fill slopes by using slope layback, slope rounding, and slope warping techniques. These techniques will be implemented as follows: <ul style="list-style-type: none"> Slope rounding: used at the top of all cuts except in rock. Slope layback: degree of layback would influence motorists' visual impression and would be crucial in establishing vegetation and preventing erosion. With the gentle nature of the terrain in the project area, cut-and-fill slopes could be laid back up to a 4:1 ratio. Slope warping: used to achieve a more natural-looking transition between two unlike surfaces by varying the pitch of the cut slopes. This provides greater variation in slope faces and allows for vegetation. This technique involves both vertical and horizontal slope rounding as a more natural extension of landform surface configurations. Removal of native cottonwoods will be avoided wherever practicable, and revegetation BMPs implemented as noted in the EA in <i>Chapter 3, Section 3.17, Ecology</i>. 	

**Project Name: SH 402: US 287 to I-25 Interchange
Environmental Assessment and Section 4(f) Evaluation
Project Number: 402A-003
Environmental Mitigation Table**

(per Region 4 format requirements)
(Content from Table 3-4 and Table 3-15 in the EA with updates as noted in Section 1.6 of this document)

Category	Mitigation Measures and Commitments	Date Completed
Recreation	No resources or impacts have been identified.	
Hazardous Materials/ Waste	<p>Ongoing review of semi-annual groundwater monitoring reports for the Diamond Shamrock leaking underground storage tank (LUST) site is recommended. These reports will indicate the extent of groundwater contamination and potential offsite migration of contaminants. Pre-characterization of soils and groundwater for project personnel health and safety, materials management, and dewatering is required before disturbance of subsurface soils or groundwater by highway construction activities. Depending on the results of the pre-characterization test, coordination with various agencies and permitting may be required. If the test samples are deemed hazardous, a materials management plan will be developed describing the specifics of the hazardous waste permitting and compliance issues.</p> <p>If any of the transformers test positive for polychlorinated biphenyls (PCBs), the utility company of ownership will be responsible for handling and disposal.</p> <p>If additional hazardous materials are encountered before or during construction of the Meander Alternative, CDOT's <i>Section 250, Environmental Health and Safety Management</i> specification will be used. If necessary, a health and safety plan will be prepared and implemented to mitigate potential health and safety hazards to workers and the public.</p>	
Utilities and Services	BMPs will be required to minimize any erosion or sediment disturbance that may be associated with utility construction within the CDOT easement. Coordination with the county and local utility owners will minimize disruption of service.	
Emergency Services	Emergency services will be coordinated with the appropriate authorities during construction.	
Historic Preservation	<p>The SHPO was consulted on the impacts of the project.</p> <p>A Memorandum of Agreement to resolve adverse effects on the Weber Farm (5LR10725) was executed on February 9, 2007 (see <i>Appendix A</i> of the EA).</p> <p>The Weber Farm (5LR10725) was recorded prior to construction so that there is a permanent record of its present appearance and history. Recordation consisted of Level II Documentation as determined in consultation with the SHPO and according to the standards established in Office of Archaeology and Historic Preservation Form #1595. The SHPO accepted the Level II Documentation on May 7, 2007 (see <i>Appendix A</i> of the EA). Copies of the documentation also will be sent to a local archive designated by the SHPO.</p>	
Archaeology	If cultural materials are exposed, the CDOT senior staff archaeologist will be notified immediately to ensure evaluation as required by NHPA and all other applicable state and federal regulations.	
Native American Consultation	No mitigation is required.	

**Project Name: SH 402: US 287 to I-25 Interchange
Environmental Assessment and Section 4(f) Evaluation
Project Number: 402A-003
Environmental Mitigation Table**

(per Region 4 format requirements)
(Content from Table 3-4 and Table 3-15 in the EA with updates as noted in Section 1.6 of this document)

Category	Mitigation Measures and Commitments	Date Completed
Sections 4(f) and 6(f)	<p>Analysis of Avoidance Alternatives found that there were no prudent or feasible alternatives to the Meander Alternative. The following measures will be taken to minimize harm.</p> <p>Regarding the alignment of the Meander Alternative, measures to minimize crossing the Big Thompson Manufacturing Ditch Segment (5LR10726.1) include crossing a portion of the ditch that has low integrity. Those measures being used in association with the Meander Alternative to minimize harm to both the Weber Farm East (5LR11249) and the Propp Farm (5LR11247) result in the identification of only a utility easement across the front of these properties. Those measures being used in association with the Meander Alternative to minimize harm to the Mountain View Farm (5LR11242) include the avoidance of loss of any historic buildings. Only a modern feedlot frontage and bank of trees that is not part of the historic landscape will be affected.</p> <p>Even with a reduction in right-of-way through portions of the Weber Farm (5LR10725), there is no prudent and feasible action alternative that alleviates the use of this historic property. The SHPO was consulted and mitigation is described under Historic Preservation above.</p>	
Noise	<p>No mitigation is feasible or reasonable based on the noise analysis conducted for the EA; however, as a result of concerns raised at the public hearing regarding noise impacts and mitigation, CDOT will conduct an updated noise analysis for Paradise Acres along the SH 402 corridor during project design to assure that existing noise and 2030 forecast noise conditions are adequately identified and that all opportunities to consider feasible and reasonable mitigation are applied.</p>	
Air Quality	<p>No mitigation is required.</p>	
Ecology	<p>Vegetation replacement will be coordinated with landowners (city of Loveland and private property), and agricultural land mitigation will be based on crops or pastures disturbed for project implementation. Native species will be used to the greatest extent feasible, depending on designated land use, and will be specified for CDOT rights-of-way. Riparian trees will be replaced on a 1:1 basis; all other trees will be replaced when feasible.</p> <p>Techniques used by CDOT to stabilize and minimize erosion and to revegetate areas are outlined in detail in <i>Standard Specifications for Road and Bridge Construction</i> (1999), part of CDOT BMPs.</p> <p>The following measures are designed to reduce direct and indirect impacts on vegetation and to control soil erosion and noxious weeds:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Specification 207 covers salvaging and stockpiling topsoils for reuse in reclamation. No imported topsoil will be allowed. Topsoil heavily infested with noxious weeds will be removed from the site or buried under a minimum of 5 feet of fill. <input type="checkbox"/> Specification 208 directs contractors to permanently stabilize (that is, cover disturbed areas with final seed and mulch as indicated in plans) each 17-acre increment of the project immediately after grading is finished for that section. <input type="checkbox"/> Specifications 208 and 216 cover other mechanical erosion prevention methods (besides seeding, for example) and include use of soil retention blankets, placement of bales in drainages, use of silt fence, berms/diversions, slope drains, storm drain protection, check dams, channel stabilization, sediment traps or basins, and sandbag barriers. <input type="checkbox"/> Specification 212 covers seeding. <input type="checkbox"/> Specification 213 covers mulching seeded and other bare soil areas. <input type="checkbox"/> Specification 214 covers planting. <input type="checkbox"/> Specification 217 covers herbicide treatments, if needed for weed control. <p>A weed management plan has been developed and a weed survey was conducted to locate and map weed populations that may be spread by construction activities. Required construction contractor practices to minimize new weed infestations and control the spread of current weed populations are described in detail in the EA in <i>Appendix E, Noxious Weed Management Plan</i>.</p>	

**Project Name: SH 402: US 287 to I-25 Interchange
Environmental Assessment and Section 4(f) Evaluation
Project Number: 402A-003
Environmental Mitigation Table**

(per Region 4 format requirements)
(Content from Table 3-4 and Table 3-15 in the EA with updates as noted in Section 1.6 of this document)

Category	Mitigation Measures and Commitments	Date Completed
	<p>Practices include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> application of appropriate herbicides <input type="checkbox"/> requirement that construction vehicles arrive to the construction site free of soil or vegetative plant parts capable of containing noxious weed seed/plant parts <input type="checkbox"/> storage of weed-free topsoil and restriction on importation of topsoil <input type="checkbox"/> use of only weed-free mulch for reclamation in accordance with the Weed Free Forage Act, CRS Title 35, Article 27.5 <input type="checkbox"/> monitoring and care of revegetation sites <input type="checkbox"/> restrictions on mowing and cutting weeds when seeds are ripe for dispersal <p>In addition to the above required practices, sensitive areas such as riparian habitat, woodlands, and wetlands in the vicinity of project construction activities will be fenced to prevent vegetation damage from construction machinery. Construction access will be limited to fenced areas to curtail erosion, weed invasions, and damage to habitats.</p>	
TES Species	No mitigation is required.	
Wetlands	<p>CDOT BMPs include mitigation for all jurisdictional and nonjurisdictional wetlands permanently affected by construction projects, including replacement with created wetland areas or enhancement of existing areas to achieve a replacement-to-loss ratio of 1:1. Temporary disturbances of wetland areas can be mitigated by reclamation and revegetation with appropriate species. Topsoil from disturbed wetlands can be salvaged and reused for mitigation purposes unless infested with noxious weeds.</p> <p>Mitigation measures to offset impacts on wetlands during construction are addressed by BMPs that control erosion and minimize sedimentation in wetlands adjacent to construction sites.</p> <p>General mitigation techniques include replacement plantings for native riparian species, especially trees and shrubs, between the river terrace and the highway toe-of-fill.</p> <p>Should construction access roads and work pads be constructed in wetlands, protective material (fabric or hay) will be used, and topped with aggregate and/or soil fill. When construction is completed, the protective material will be removed with the goal of preserving the original wetland plant community. Any plants damaged will be replaced with species appropriate for the site.</p> <p>A number of potential wetland mitigation sites have been identified during the environmental assessment process. Possible locations along SH 402 include the vicinity of Sites 2, 3, and 6.</p> <p>Should it not be possible to create replacement sites in these areas, mitigation of wetland losses are proposed at the Big Thompson Ponds State Wildlife Area (SWA), which is approximately 0.5 mile north of SH 402 near I-25. The mitigation concepts for these sites are described in the EA in <i>Appendix B, Wetland Finding Report</i>.</p> <p>Along SH 402, wetlands could be expanded by approximately 0.45 acre to account for losses of jurisdictional wetlands. Plant species such as bulrush, burreed, and sedges are suggested for this area to increase the wetland community diversity from primarily cattail-dominated marsh.</p> <p>Nonjurisdictional wetland loss (approximately 0.44 acre) will be replaced at the Big Thompson Ponds SWA. Should potential wetland replacement sites along SH 402 not provide an adequate solution due to lack of landowner cooperation or lack of a suitable site, jurisdictional wetland loss can also be mitigated at the Big Thompson Ponds SWA.</p> <p>Because the project impacts on jurisdictional wetlands are less than 0.5 acre and affect nontidal waters-wetlands, a Nationwide Permit 14 is appropriate (Carey 2004). Finalization of wetland mitigation site location and design of mitigation are required to obtain the Nationwide Permit 14 approval. Monitoring of mitigation sites will be specified in the USCOE permit.</p>	
Floodplains	No mitigation is required.	

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Category	Mitigation Measures and Commitments	Date Completed
Water Quality	<p>City and county land use codes protect the river floodplain area from development activities. CDPS permits, city and county land use codes and storm drainage criteria, and CDOT guidance will generally specify mitigation activities. CDOT will comply with and obtain all necessary permits for protection of water resources, including CDPS and dewatering permits as necessary.</p> <p>BMPs for temporary and permanent erosion control will be implemented with the construction of the Meander Alternative to minimize the impact of disturbance on receiving waters. The CDOT project design team will seek to minimize soil disturbance impacts on irrigation ditches and other drainages in the study area as part of the final design process. In addition, the 4:1 slopes created by placement of fill materials will be reseeded to reduce erosion and sedimentation.</p> <p>Long-term drainage from highway projects may require permanent BMPs under applicable permitting to protect receiving waters from erosion, sedimentation, and other contaminants. City, county, and CDOT MS4 permits currently cover the entire project corridor. In addition, the <i>City of Loveland Storm Drainage Criteria</i>, updated in 2002, will apply to the entire project corridor and is within the city's <i>Master Drainage Plan</i> area. Drainage criteria and MS4 permits (both city and CDOT) would generally require regional and/or onsite detention that includes 100 percent capture volume for the first 0.5 inch of runoff and 80 percent capture of total suspended solids to the "maximum extent practicable" (note that project-specific requirements will vary). Other permanent BMP options such as maintenance programs, sediment traps, and flow control structures might also be implemented under MS4 requirements.</p> <p>CDOT is obligated under its MS4 permit to "...develop and implement comprehensive planning procedures and controls to reduce the discharge of pollutants after construction is completed, from areas of new highway development and significant redevelopment and associated drainages..." Project plans for the Meander Alternative will be evaluated under the criteria of the MS4 for the need to include permanent stormwater BMPs. This review will occur as early as possible during the final design process and will be guided by the CDOT MS4 <i>New Development Program</i> guidelines and procedures and the <i>CDOT Erosion Control and Stormwater Quality Guide</i>. This guide provides design and maintenance criteria for permanent BMPs. Based on the results of the design review process and in coordination with the city and county, CDOT will incorporate permanent BMPs to the maximum extent practicable and/or apply maintenance and administrative controls that provide equivalent protection for receiving waters. During final design, highway deicing and long-term maintenance and safety policy will be evaluated to determine the applicability of permanent controls.</p> <p>The fact that CDOT, the city of Loveland, and Larimer County are all MS4 entities with separate permits will warrant interagency coordination due to potential issues of overlapping authority. This coordination will help prevent duplication of effort. According to CDPHE, a permitted MS4 entity would not be required to impose their program requirements on CDOT projects due to the MS4's limited authority to regulate CDOT, nor would an MS4 be responsible for regulating activities outside its jurisdiction. Coordination among CDOT, the city, and the county will occur during the project design phase to determine specific permanent BMPs for the project.</p>	
Geology	No mitigation is required.	
Paleontology	If any subsurface bones or fossils are found in the corridor during construction, the CDOT staff paleontologist will be notified immediately to assess their significance.	

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Permit	Permit Measures and Commitments	Date Received
404 NW/Individual Permit #		
401 Permit		
402 Permit		
Dewatering Permit		
Municipal Permit		
SB40		
Stormwater: CDPS Permit #		
Stormwater: MS4 Phase I/Phase II and Areas		
Well Permits from the Colorado Engineers Office		