

## CHAPTER 5 SECTION 4(F) EVALUATION

### 5.1 APPLICATION OF SECTION 4(f)

#### 5.1.1 Introduction

Section 4(f) of the United States Department of Transportation (USDOT) Act of 1966, as amended, and codified in 49 United States Code (USC) § 303, declares that "(I)t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Congress amended Section 4(f) in 2005 when it enacted the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users (Public Law 109-59, enacted August 10, 2005) (SAFETEA-LU). Section 6009 of SAFETEA-LU added a new subsection to Section 4(f), which authorizes US DOT agencies to approve a project that results in a *de minimis* impact to a Section 4(f) resource without the evaluation of avoidance measures typically required in a Section 4(f) evaluation.

On April 11, 2008, the USDOT put in effect a final rule that clarifies factors to consider both in determining if avoidance alternatives are feasible and prudent, and when all alternatives use Section 4(f) property. In addition, the final rule also establishes procedures for determining when use has a *de minimis* impact, updates the regulations to recognize exceptions for use and applying a programmatic evaluation, and moves the regulation to 23 CFR 774.

FHWA regulations (23 CFR 774.3) state:

"The Administration may not approve the use, as defined in Sec. 774.17, of a Section 4(f) property unless a determination is made under paragraph (a) or (b) of this section.

(a) The Administration determines that:

There is no feasible and prudent avoidance alternative, as defined in Sec. 774.17, to the use of land from the property; and

The action includes all possible planning, as defined in Sec. 774.17, to minimize harm to the property resulting from such use; or

(b) The Administration determines that the use of the property, including any measure(s) to minimize harm (such as avoidance, minimization, mitigation, or enhancement measures) committed to by applicant, will have a *de minimis* impact, as defined in Sec. 774.17, on the property."

#### What's In Chapter 5?

##### Chapter 5 Section 4(f) Evaluation

- 5.1 Application of Section 4(f)
- 5.2 Section 4(f) Project Information
- 5.3 Project Process & Identification of Section 4(f) Resources
- 5.4 Use of Section 4(f) Resources
- 5.5 *De minimis* Impacts
- 5.6 Least Harm Analysis

1 According to the Section 4(f) Final Rule (23 CFR 774.17) a feasible and prudent avoidance  
2 alternative is defined as:

3 “(1) A feasible and prudent avoidance alternative avoids using Section 4(f) property  
4 and does not cause other severe problems of a magnitude that substantially  
5 outweighs the importance of protecting the Section 4(f) property. In assessing  
6 the importance of protecting the Section 4(f) property, it is appropriate to  
7 consider the relative value of the resource to the preservation purpose of the  
8 statute.

9 (2) An alternative is not feasible if it cannot be built as a matter of sound engineering  
10 judgment.

11 (3) An alternative is not prudent if:

12 (i) It compromises the project to a degree that it is unreasonable to proceed  
13 with the project in light of its stated purpose and need;

14 (ii) It results in unacceptable safety or operational problems;

15 (iii) After reasonable mitigation, it still causes:

16 (a) Severe social, economic, or environmental impacts;

17 (b) Severe disruption to established communities;

18 (c) Severe disproportionate impacts to minority or low income populations;  
19 or

20 (d) Severe impacts to environmental resources protected under other  
21 Federal statutes;

22 (iv) It results in additional construction, maintenance, or operational costs of an  
23 extraordinary magnitude;

24 (v) It causes other unique problems or unusual factors; or

25 (vi) It involves multiple factors in paragraphs (3)(i) through (3)(v) of this  
26 definition, that while individually minor, cumulatively cause unique problems  
27 or impacts of an extraordinary magnitude.”

28 Section 4(f) further requires consultation with the Department of Interior and, as appropriate,  
29 the involved offices of the United States Department of Agriculture and the United States  
30 Department of Housing and Urban Development, and relevant state and local officials, in  
31 developing transportation projects and programs that use lands protected by Section 4(f).

32 The proposed action, as described in **Chapter 2 Alternatives**, is a transportation project that  
33 may receive federal funding and/or discretionary approvals through USDOT; therefore,  
34 documentation of compliance with Section 4(f) is required.

35 This Section 4(f) evaluation has been prepared in accordance with the joint FHWA/FTA  
36 regulations for Section 4(f) compliance codified as Title 23 Code of Federal Regulations  
37 (CFR) §774. Additional guidance has been obtained from the FHWA Technical  
38 Advisory T 6640.8A (1987) and the revised FHWA Section 4(f) Policy Paper (2005).  
39 Consultation with officials with jurisdiction will continue through the National Environmental  
40 Policy Act (NEPA) process.

## 5.1.2 Section 4(f) “Use”

As defined in 23 CFR 774.17 and 774.15, where applicable and not excepted, the “use” of a protected Section 4(f) resource can be classified as a direct use, a temporary use, a constructive use, or *de minimis*. These are defined in the following sections.

### *Direct Use*

A direct use of a Section 4(f) resource takes place when the land is permanently incorporated into a transportation facility.

### *Temporary Occupancy*

A temporary occupancy results in a use of a Section 4(f) resource when there is a brief impact to the Section 4(f) resource that is considered adverse in terms of the preservationist purposes of the Section 4(f) statute.

Historic properties with no permanent adverse physical effects or incorporation of land into the transportation project, but would require temporary occupancy for construction, are not evaluated in this Section 4(f) evaluation pending agreement with SHPO on the “no adverse effect” determination.

Properties that may incur a temporary occupancy, specifically trails, are addressed in **Section 5.4.3 Temporary Occupancy of Trails**.

### *Constructive Use*

Constructive use occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the resource are substantially diminished. This determination is made through:

- ▶ Identification of the current activities, features, or attributes of the resource that may be sensitive to proximity impacts;
- ▶ Analysis of the proximity impacts on the resource
- ▶ Consultation with the appropriate officials having jurisdiction over the resource

### *De Minimis*

The SAFETEA-LU amendment to the Section 4(f) requirements allows the USDOT to determine that certain uses of Section 4(f) land would have no adverse effect on the protected resource. When this is the case, the use is considered *de minimis*, and compliance with Section 4(f) is greatly simplified. Section 6009 (a) of the SAFETEA-LU P. L. 109-59, amended existing Section 4(f) legislation at Section 138 of Title 23 and Section 303 of Title 49 USC to simplify the processing and approval of projects that only have *de minimis* (trivial or minimal) impacts on lands protected by Section 4(f). The *de minimis* subsection authorizes the FHWA to approve a project that results in a *de minimis* impact to a Section 4(f) resource without the evaluation of avoidance alternatives typically required in a Section 4(f) evaluation.

A finding of *de minimis* use may be made for historic sites when no historic property is affected by the project or the project will have “no adverse effect” on the historic property in question. For parks, recreation areas, and wildlife and waterfowl refuges a finding of *de minimis* use may

1 be made when impacts will not adversely affect the activities, features, and attributes that  
2 qualify the resource for protection under Section 4(f). *De minimis Findings* are discussed in  
3 **Section 5.5 *De Minimis Impacts*** of this 4(f) evaluation.

## 4 **5.2 SECTION 4(f) PROJECT INFORMATION**

### 5 **5.2.1 Purpose and Need**

6 The purpose of the project is to meet long-term travel needs between the Denver Metro  
7 Area and the rapidly growing population centers along the I-25 corridor north to the Fort  
8 Collins-Wellington area. The need for the project, directly related to the purpose, is  
9 explained through the four following categories:

10 *Improve safety*—Over the last decade, the number of crashes along I-25 has increased,  
11 and a number of locations on I-25 currently experience less than expected safety  
12 performance. There is a need to reduce crashes on the portions of I-25 that have a high  
13 potential for crash reduction.

14 *Improve mobility and accessibility*—2035 projections in the regional study area show an  
15 increase of 75 percent in households and employment over the 2000 levels. This growth  
16 would result in increases in travel demand throughout the regional study area. There is a  
17 need for transportation improvements to address 2030 transportation demand that  
18 balances mobility and accessibility along the I-25 corridor.

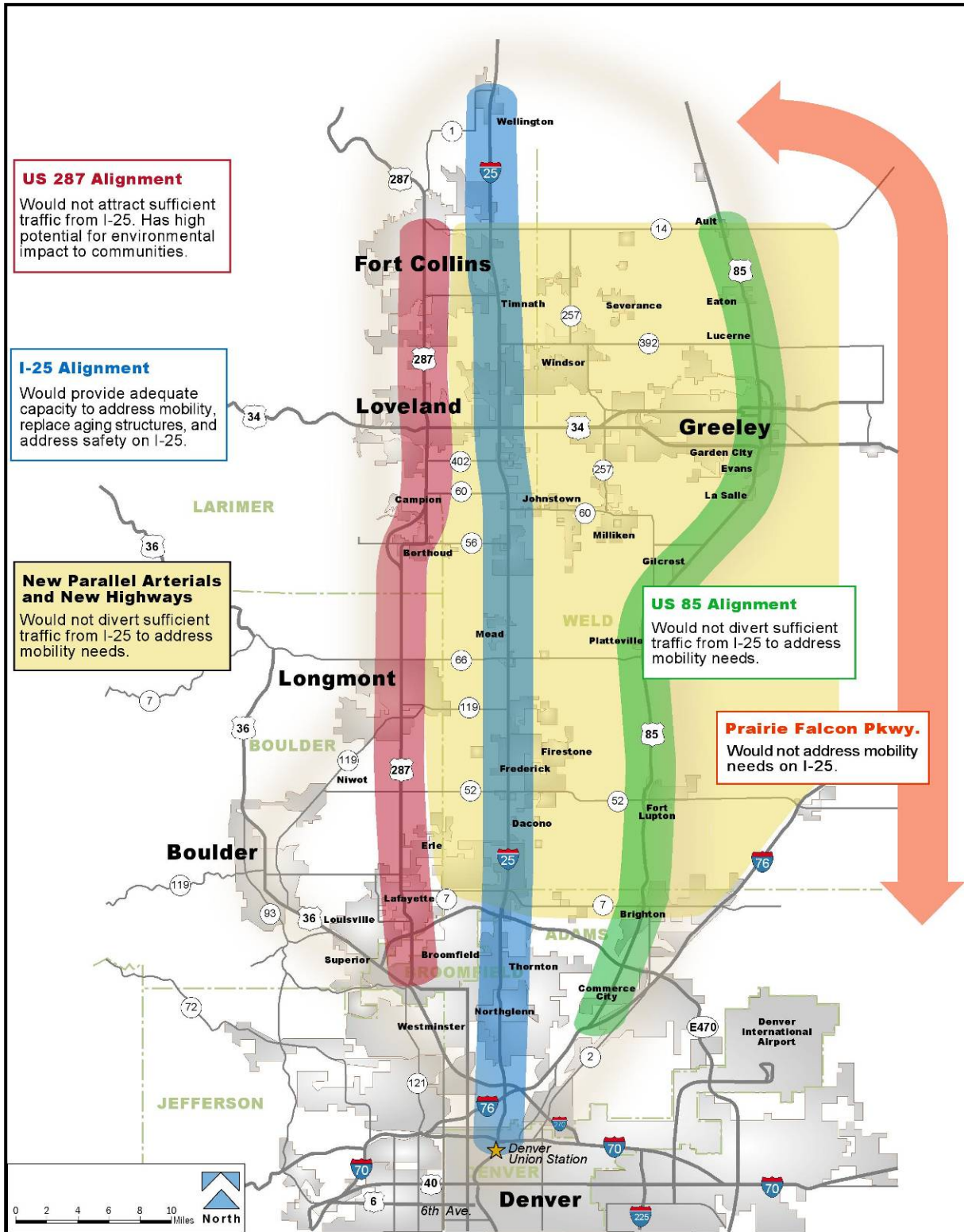
19 *Replace aging and obsolete highway infrastructure*—A number of structures along I-25  
20 are currently structurally deficient or are expected to be deficient by 2035. Segments of  
21 pavement on I-25 are reaching the end of the pavement's life expectancy, and surface  
22 conditions are deteriorating rapidly. There is a need to replace the aging infrastructure  
23 along I-25.

24 *Provide for modal alternatives and interrelationships*—Modal alternatives are very limited  
25 in northern Colorado and between northern Colorado and the Denver metro area. There  
26 is a need to increase the number of transportation choices and avoid improvements that  
27 would preclude future transportation options.

28 For more detailed information regarding the project refer to **Chapter 1 *Purpose and Need***  
29 of this EIS.



1 Figure 5-1 Highway Alignments Considered



## 5.2.2 Corridor-Wide Alternatives

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

- ▶ State and federal requirements
- ▶ Responsiveness to the purpose and need for the project
- ▶ Feasibility of being constructed
- ▶ Ability to avoid or minimize environmental and community impacts
- ▶ The regional planning context
- ▶ Public input

A full description of alternatives considered is included in **Chapter 2 Alternatives, Sections 2.3, 2.4 and Section 2.5**. The following text summarizes the findings of this analysis specific to the ability of each corridor-wide alternative to act as a feasible and prudent avoidance alternative as defined under Section 4(f) (see **Section 5.1.1**).

It was determined that no true feasible and prudent avoidance alternative existed for the project. This is likely due to the current and historic development patterns throughout the regional study area and the relationship of the project purpose and need to the communities located within that study area. Any alternative located far enough away from the identified corridors to possibly avoid the use of all Section 4(f) resources would not have the ability to meet the project purpose and need because of that relationship. Of the corridor-wide alternatives discussed below, only the No-Action Alternative would have the ability to entirely avoid the use of Section 4(f) resources. The remaining alternatives are discussed for their ability to avoid the Section 4(f) resources within the identified project corridor; however, these would undoubtedly result in use of other Section 4(f) resources not identified within this document.

### *No-Action Alternative*

The No-Action Alternative makes no substantial improvement to mobility and safety along I-25. This alternative does not meet the purpose and need for the project of improving safety, improving mobility and accessibility, replacing aging infrastructure, and enhancing modal alternatives. Therefore, this alternative is not a feasible and prudent avoidance because it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need.

### *New Freeways on a New Alignment*

Freeway alternatives were evaluated that were located on an alignment other than along I-25. These options are illustrated in **Figure 5-1**, and include freeways along US 287, US 85 and farther east (called the Prairie Falcon Parkway). None of these three alternatives was found to meet purpose and need because they would not improve mobility, improve safety or replace aging infrastructure along the I-25 corridor. The three alternatives that were studied would divert less than 20 percent of the 55,000 daily trips, so they would not reduce congestion along I-25. In addition, since no changes would be made to I-25, current safety, problems would

1 continue and aging infrastructure would not be replaced. Therefore, this alternative is not a  
2 feasible and prudent avoidance alternative because it compromises the project to a degree  
3 that it is unreasonable to proceed with the project in light of its stated purpose and need.

#### 4 *Widening Existing Highways*

5 A combination of widening to US 287, US 85, and I-25 was studied. This alternative would  
6 meet the mobility-related purpose and need factor but would not meet the need to provide for  
7 modal alternatives. In addition, widening US 287 would, after mitigation, result in severe  
8 disruptions to the established communities of Fort Collins, Loveland, Berthoud, and Longmont  
9 and severe impacts to historic properties and parks. These severe impacts would include the  
10 demolition of businesses, civic buildings, and parks throughout the old downtown areas of  
11 these three communities most of which are avoided by Packages A and B, or the Preferred  
12 Alternative. Therefore, this alternative is not a feasible and prudent avoidance alternative for  
13 the following reasons:

- 14 ▶ It compromises the project to a degree that it is unreasonable to proceed with the project in  
15 light of its stated purpose and need.
- 16 ▶ After reasonable mitigation it still causes:
  - 17 ○ Severe disruption to established communities.
  - 18 ○ Severe impacts to environmental resources protected under other Federal  
19 statutes.
- 20 ▶ It involves multiple factors that cumulatively cause unique problems or impacts of an  
21 extraordinary magnitude.
- 22 ▶ It does not provide avoidance of Section 4(f) resources.

23 Widening US 85 alone was developed as an alternative. This alternative would not meet the  
24 purpose and need factor related to mobility and safety because it would divert less than  
25 20 percent of the daily trips, and it would not address safety problems on I-25. Therefore, this  
26 alternative is not a feasible and prudent avoidance alternative because it compromises the  
27 project to a degree that it is unreasonable to proceed with the project in light of its stated  
28 purpose and need.

29 A combination widening of US 85 and widening of I-25 was studied. This alternative would  
30 meet the mobility-related purpose and need factor, but would not meet the need to provide for  
31 modal alternatives. Therefore, this alternative is not a feasible and prudent avoidance  
32 alternative because it compromises the project to a degree that it is unreasonable to proceed  
33 with the project in light of its stated purpose and need.

#### 34 *Advanced Technology Transit Alternatives*

35 A number of advanced technology transit alternatives were considered, such as magnetic  
36 levitation, automated guideway transit, high-speed rail, personal rapid transit, and subway or  
37 elevated systems. Some of these could potentially have fewer impacts on Section 4(f)  
38 resources. None of these alternatives was found to meet purpose and need because they did  
39 not provide accessibility or connectivity to regional study area communities. They would not  
40 provide accessibility or connectivity because in order to meet the definition of advanced  
41 technology, the number of stations would be reduced to two or three instead of eight or nine.  
42 Because of this, these alternatives would not improve access to many regional study area  
43 communities. In addition, other transit technologies were found to provide a similar or greater

1 level of transportation service at one-third to one-fifth the cost and complexity of the advanced  
2 technology alternatives. Therefore, advanced technology transit alternatives are not a feasible  
3 and prudent avoidance alternative because they compromise the project to a degree that it is  
4 unreasonable to proceed with the project in light of its stated purpose and need.

### 5 *Commuter Rail or Light Rail on an Eastern or Central Alignment*

6 There were eight potential commuter rail or light rail transit alignments considered, as shown  
7 on **Figure 5-2**. Three of these transit alignments were located along the western side of the  
8 regional study area and were ultimately included as a part of both Package A and the  
9 Preferred Alternative, because they would meet purpose and need when combined with  
10 improvements to I-25. These three include the Burlington Northern/Santa Fe (BNSF) to  
11 Regional Transportation District (RTD) Northwest Rail, BNSF to RTD North Metro, and US 287  
12 to FasTracks Northwest Rail.

13 Commuter rail alignments in the central part of the corridor were also studied. These  
14 alignments would likely adversely affect and result in a direct use of seven historic farms and  
15 result in a direct use of two recreation areas. Additionally, these alignments would cause  
16 severe impact to known habitat and populations of Preble's Meadow Jumping Mouse, a  
17 federally threatened species protected by the Endangered Species Act. Because the new rail  
18 alignment would cross rivers and wetlands resulting in severe impacts to 48 acres of wetlands  
19 and other Waters of the U.S., even if the impacts were mitigated, it would be difficult to fully  
20 replace the current habitat value. It was also determined that these alignments would provide  
21 access to 30 percent less population and employment. As a result, transit ridership would be  
22 30 percent lower and the residents and employees served by the western alignments would  
23 not have access to a public transit mode. Therefore, these alignments are not feasible and  
24 prudent avoidance alternatives for the following reasons:

- 25 ▶ They would compromise the project to a degree that it is unreasonable to proceed with the  
26 project in light of its stated purpose and need.
- 27 ▶ After reasonable mitigation they still cause severe impacts to environmental resources  
28 protected under other Federal statutes.
- 29 ▶ They involve multiple factors that cumulatively cause unique problems or impacts of an  
30 extraordinary magnitude.
- 31 ▶ They do not provide avoidance of Section 4(f) resources.

32 Three transit alignments were considered along the eastern side of the regional study area.  
33 The future work trips between the eastern communities and the Denver metropolitan area are  
34 estimated to be just over 9,000 a day. By comparison, the future work trips between the  
35 western communities and the Denver metropolitan area are estimated to be almost 15,000 a  
36 day. This difference in future work trips is substantial. As a result, the eastern side transit  
37 alignments were determined not to be feasible and prudent avoidance alternatives because it  
38 would compromise the project to a degree that it is unreasonable to proceed with the project in  
39 light of its stated purpose and need element of improving mobility or accessibility.

1 *Light Rail Technology*

2 Light rail technology was studied on various alignments. This technology would result in a  
3 projected travel time double that of other potential transit modes because the speeds of light  
4 rail are not as great as those under other transit technologies. Travel time is a substantial  
5 component in estimating transit ridership. A doubling of travel times would reduce transit  
6 ridership by at least half. Therefore, this technology was determined not to be a feasible and  
7 prudent avoidance alternative because it would compromise the project to a degree that it is  
8 unreasonable to proceed with the project in light of its stated purpose and need.

9 *Modal Alternatives as a Stand-Alone*

10 The possibility of advancing only commuter rail or BRT (including the BRT stations), or just  
11 I-25 improvements as a stand-alone alternative was explored. Making only commuter rail  
12 improvements without any improvements to I-25 would result in:

- 13 ▶ Insufficient reductions in I-25 traffic volumes to meet the purpose and need objective of  
14 addressing future congestion and mobility.
- 15 ▶ Continued and worsening safety problems on I-25, thus not meeting the safety objective of  
16 the purpose and need.
- 17 ▶ No replacement of aging infrastructure along I-25, thus not meeting this purpose and need  
18 objective.

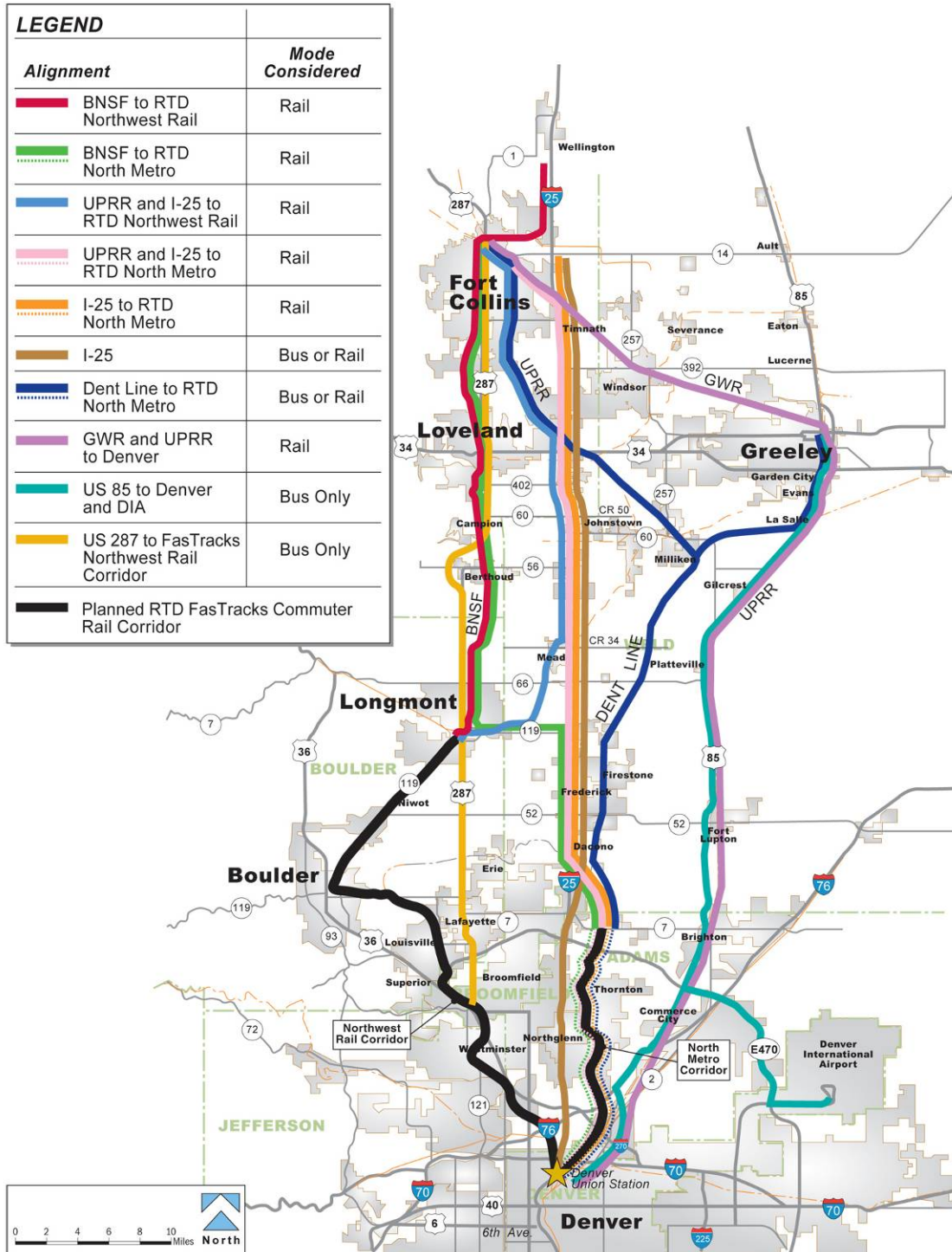
19 Making only BRT improvements along I-25 would do nothing to improve mobility for  
20 automobile and truck drivers on I-25.

21 Making only highway improvements would not address the aspect of purpose and need to  
22 provide additional modal options for travelers. Therefore, these alternatives were determined  
23 not to be feasible and prudent avoidance alternatives because they would compromise the  
24 project to a degree that it is unreasonable to proceed with the project in light of its stated  
25 purpose and need.

26



1 Figure 5-2 Transit Alignments Considered





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## 1 5.2.3 Alternatives

2 Following is a brief description of the alternatives examined in this Final EIS. For more detailed  
3 information please see **Chapter 2 Alternatives**.

### 4 5.2.3.1 PACKAGE A

5 Package A includes the addition of general purpose (GP) plus auxiliary lanes along I-25,  
6 commuter rail from Fort Collins to the proposed FasTracks North Metro end-of-line station, and  
7 commuter bus along US 85 with alternating service to Denver International Airport (DIA).

8 Package A also includes interchange improvements, feeder bus, stations, maintenance facility,  
9 and carpool lots. See **Figure 5-3** for an overview of Package A.

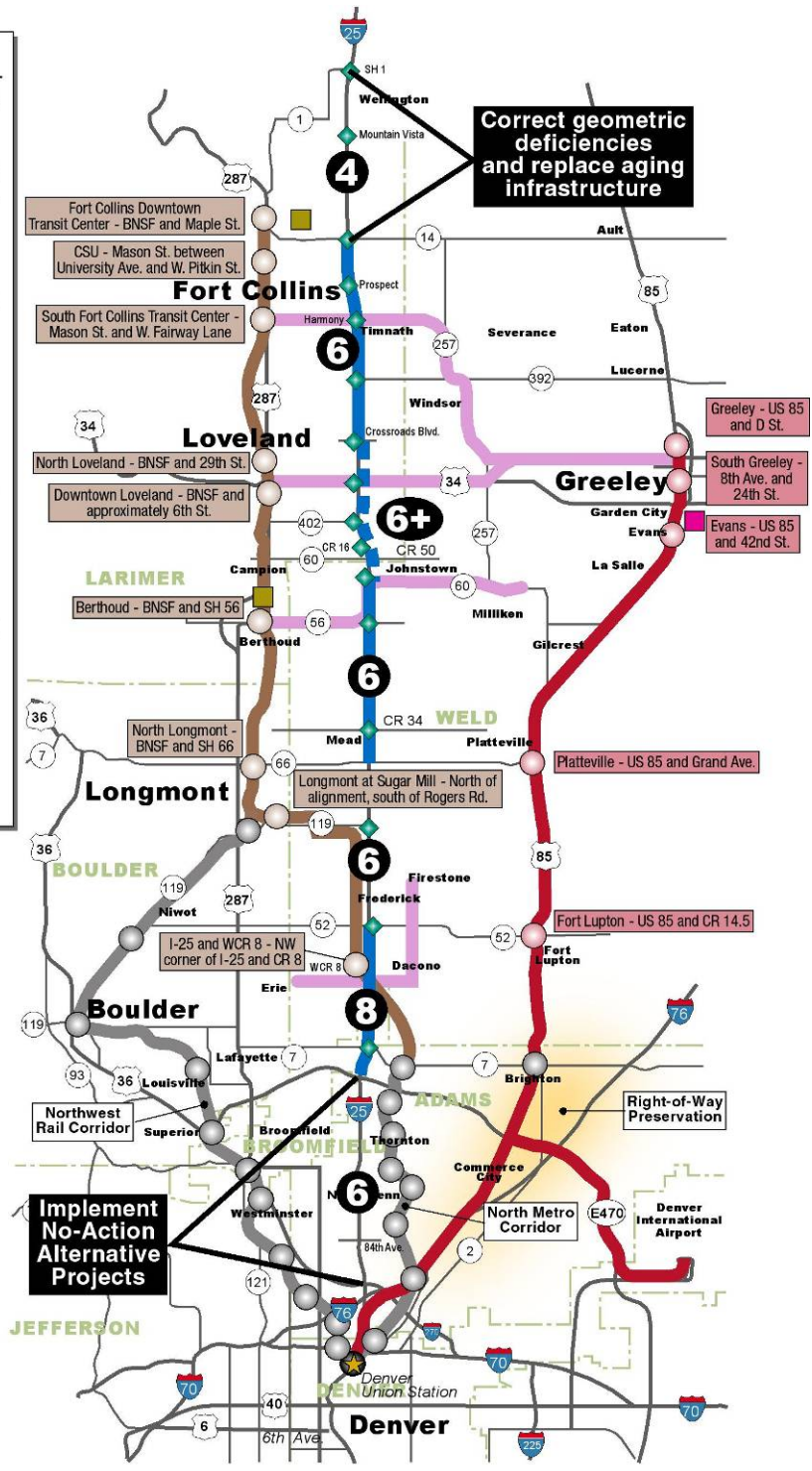
10 Components associated with Package A are as follows:

- 11 ▶ A-H1 Safety Improvements: I-25, State Highway 1 (SH 1) to SH 14
- 12 ▶ A-H2 GP Highway Improvements: I-25, SH 14 to SH 60
- 13 ▶ A-H3 GP Highway Improvements: I-25, SH 60 to E-470
- 14 ▶ A-H4 Structure Upgrades: I-25, E-470 to US 36

1 Figure 5-3 Package A

**LEGEND**

- 1 New General Purpose Lane (GPL) in Each Direction
- 1 New General Purpose Lane (GPL) + Auxiliary Lane in Each Direction
- Commuter Rail (CR)
- Commuter Bus (CB) Service on US 85
- Feeder Bus Service
- Interchange Upgrades
- X Number of Lanes
- Commuter Bus Station / Stop
- Commuter Rail Station
- FasTracks Rail Line
- FasTracks / RTD Transit Station
- Potential Commuter Rail Operational & Maintenance Facility
- Potential Commuter Bus Operational & Maintenance Facility



- 1 ▶ A-T1 Commuter Rail: Fort Collins to Longmont
- 2 ▶ A-T2 Commuter Rail: Longmont to FasTracks North Metro
- 3 ▶ A-T3 Commuter Bus: Greeley to Denver
- 4 ▶ A-T4 Commuter Bus: Greeley to Denver Union Station (DUS)

5 One additional GP lane would be added to I-25 in each direction from SH 14 south to SH 66.  
6 The segment of I-25 from SH 66 south to SH 52 is under construction and scheduled for near-  
7 term completion, therefore, it is not addressed as part of this project. From SH 52 south to  
8 E-470, an additional lane would be added to make an eight-lane cross-section.

9 Interchanges would be upgraded or modified if necessary to accommodate future traffic  
10 volumes at Level of Service (LOS) D. LOS is a rating of traffic operating conditions determined  
11 by calculating delay and average speed and comparing traffic volumes to available capacity  
12 along a roadway. LOS A is the best rating, while LOS F is the worst rating. Interchanges  
13 considered to be aging would be completely replaced. The Alternatives Development and  
14 Screening Report, August 2007, includes more detail on the proposed interchange  
15 configurations.

16 Double-tracked commuter rail service would be in place from downtown Fort Collins at  
17 University Avenue and Maple Street along the BNSF right-of-way to the FasTracks Northwest  
18 Rail corridor end-of-line station at 1st Street and Terry Street in Longmont. New commuter rail  
19 tracks would be added east of the existing freight rail tracks, and both sets of tracks would be  
20 used by commuter rail and freight rail. On the alignment's northern end in Fort Collins, from  
21 Mason Street and University Avenue to Mason Street and Maple Street, commuter rail service  
22 would be added to the existing freight rail tracks. In addition, a new double track line would be  
23 built from the 3rd Street in Longmont (connecting to the FasTracks Northwest Rail corridor and  
24 to the commuter rail to Fort Collins) to the FasTracks North Metro end-of-line station in  
25 Thornton. A 500-foot section of single tracking would be built in the vicinity of the historic  
26 Loveland Depot.

27 The primary reasons this option was not retained in Package A include:

- 28 ▶ Single tracking limited flexibility associated with track maintenance that could result in  
29 stranding transit dependent populations as there is no other regional transit service. Single  
30 tracking compromises the train schedule reliability with potential closures and schedule  
31 adjustments because of the reliance on passing track and sharing the infrastructure with  
32 freight. This issue does not affect the Preferred Alternative because of the express bus  
33 service provided along the I-25 corridor, if needed could accommodate regional commuter  
34 rail passengers for short-term durations.
- 35 ▶ Single tracking for Package A precludes the ability to expand transit service with more  
36 frequent train service because the amount of service relies on the length and location of  
37 passing track, which once in place does not allow much flexibility in scheduling.
- 38 ▶ Reduced rail service to downtown Fort Collins, necessitated because of single tracking to  
39 avoid the historic properties, did not satisfy the transit travel demand generated by the  
40 area.
- 41 ▶ Single tracking in Package A, does not respond to the projected transit demand from the  
42 Fort Collins area for the I-25 and US 287 corridors. The level of service that could be  
43 provided would result in unmet transit demand along these two corridors.

44

1 In conclusion, a rail service scenario with only single tracking and no transit service along I-25  
2 would not meet the project purpose and need. The element of purpose and need related to  
3 mode choice and meeting projected demand for transit service along both the I-25 and the US  
4 287 corridors is not met.

5 The commuter rail service would run every 30 minutes during the AM and PM peak periods  
6 when demand is highest and every hour in the off-peak periods. Service to Denver would  
7 travel through Longmont to the FasTracks North Metro end-of-line station where it would  
8 continue on to DUS; a transfer would not be necessary. To reach Boulder, northern Colorado  
9 riders would transfer to the FasTracks Northwest Rail corridor line at the Sugar Mill station in  
10 Longmont, which would use the new rail segment extending from the proposed Northwest Rail  
11 Corridor end-of-line station at 1st and Terry Streets to connect to the Sugar Mill Station. Two  
12 sites are being evaluated for a commuter rail maintenance facility: Vine and Timberline in Fort  
13 Collins or CR 46 and US 287 in Berthoud. Nine station locations are planned for commuter rail.  
14 They are detailed in **Section 2.2.2.4** of this Final EIS.

15 Package A also includes a commuter bus service along US 85 connecting Greeley to DUS and  
16 DIA. This service would operate every 30 minutes in the AM and PM peak hours and every  
17 hour during the off-peak periods. Queue jumps, allowing buses to bypass queued traffic at  
18 signalized intersections, would be included to help achieve reliable speeds for bus service.  
19 Two maintenance facilities are being evaluated in conjunction with the commuter bus service:  
20 Portner Road and Trilby in Fort Collins, and 31st Street and 1st Avenue in Greeley. In addition,  
21 five commuter bus stations are proposed. Four feeder bus routes are proposed to enable  
22 riders to access the commuter rail and the commuter bus via local bus service.

23 Many potential congestion management measures are included as enhancements to the  
24 packages, including carpool and vanpools, supportive land use policies, signal coordination,  
25 incident management, and increased use of bicycle and pedestrian facilities.

### 26 **5.2.3.2 PACKAGE B**

27 Package B includes Tolled Express Lanes (TEL) and Bus Rapid Transit (BRT) operating on  
28 the TEL. This improvement package consists of adding one buffer-separated express lane in  
29 each direction along the entire I-25 corridor, except between SH 60 and Harmony Road where  
30 two barrier-separated lanes would be added in each direction. The Tolled Express Lanes  
31 would be managed similarly to other toll lanes currently within the Colorado Department of  
32 Transportation (CDOT) system. Electronic payment via transmitter is required. There are no  
33 tollbooths and no cash would be accepted. Similar to Package A, interchanges would be  
34 upgraded or modified if necessary to accommodate future traffic volumes at LOS D.  
35 Interchanges considered to be aging would be completely replaced. See **Chapter 2**  
36 *Alternatives* and **Figure 5-4** for an overview of this Package.

37 Components associated with Package B are as follows:











- 38 ▶ B-H1 Safety Improvements: I-25, SH 1 to SH 14
- 39 ▶ B-H2 Tolled Express Lanes: I-25, SH 14 to SH 60
- 40 ▶ B-H3 Tolled Express Lanes: I-25, SH 60 to E-470
- 41 ▶ B-H4 Tolled Express Lanes: I-25, E-470 to 70th Avenue
- 42 ▶ B-T1 Bus Rapid Transit: Fort Collins/Greeley to DUS
- 43 ▶ B-T2 Bus Rapid Transit: Fort Collins to DIA

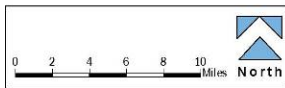
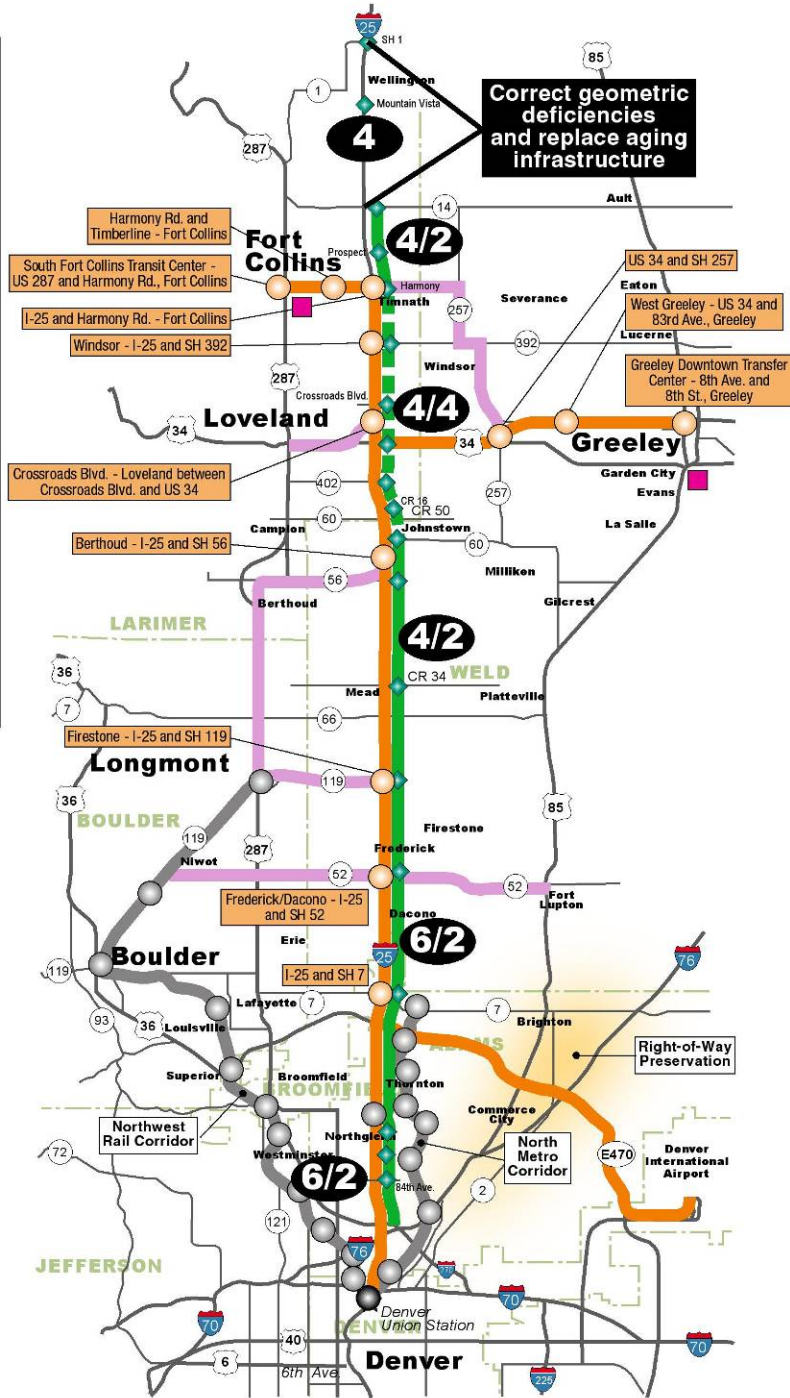
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- 1 BRT services would operate from Fort Collins and Greeley to DUS, utilizing the express lanes  
2 along I-25. The service from Fort Collins would begin at the Fort Collins South Transit Center,  
3 and operate along Harmony Road in mixed traffic until accessing I-25 at its interchange with  
4 Harmony Road. In addition, BRT service would operate from Fort Collins to DIA. During peak  
5 hours, buses would depart every 20 minutes with two going to DUS and one going to DIA.  
6 During off-peak hours, buses would depart every 30 minutes: one to DUS and one to DIA.
- 7 Service from Greeley would begin at the 8th Street and 8th Avenue Transit Center in  
8 downtown Greeley, and include stops along US 34, in mixed traffic, until turning north to serve  
9 the BRT station at Crossroads. The bus would operate in shared general-purpose lanes along  
10 with mixed traffic along US 34. Queue jumps, allowing buses to bypass queued traffic at  
11 signalized intersections, would be included to help achieve reliable speeds for bus services.  
12 Two maintenance facilities are being evaluated in conjunction with the bus service, as well as  
13 12 bus rapid transit stations.
- 14 Many potential congestion management measures are included as enhancements to the  
15 packages, including carpool and vanpools, supportive land use policies, signal coordination,  
16 incident management, and increased use of bicycle and pedestrian facilities.
- 17



1 Figure 5-4 Package B

**LEGEND**

-  1 Buffer-Separated Tolled Express Lane (TEL) in Each Direction
-  2 Barrier-Separated Tolled Express Lanes (TEL) in Each Direction
-  Bus Rapid Transit (BRT) Route (Uses TELs on I-25)
-  Feeder Bus Service
-  Interchange Upgrades
-  Number of Lanes: General Purpose/Tolled Express Lanes
-  Bus Rapid Transit Station
-  FasTracks Rail Line
-  FasTracks / RTD Transit Station
-  Potential Commuter Bus Operational & Maintenance Facility





### 5.2.3.3 PREFERRED ALTERNATIVE

The Preferred Alternative is a combination of components presented in Packages A and B including multimodal improvements on multiple corridors. These involve the addition of GP lanes, auxiliary lanes, and TEL along I-25; commuter rail from Fort Collins to the proposed FasTracks North Metro end-of-line station, commuter bus along US 85 with alternating service to Denver International Airport (DIA), and express bus operating in the TEL along I-25 between Ft Collins and Denver. The Preferred Alternative also includes interchange improvements, feeder bus, stations, maintenance facilities, and carpool lots. See **Figure 5-5** for an overview of the Preferred Alternative.

Components associated with the Preferred Alternative are as follows:

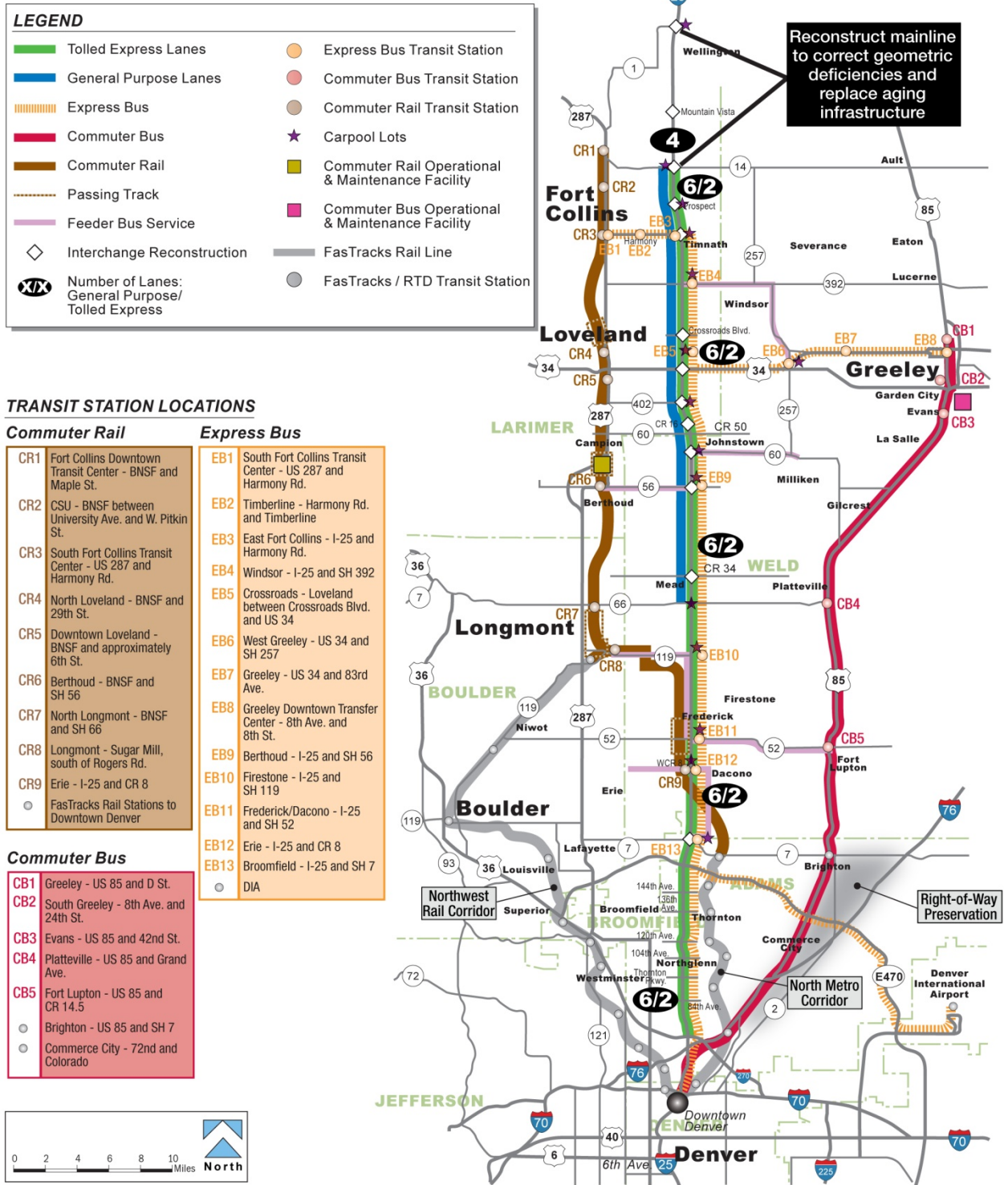
- ▶ I-25 Improvements: SH 1 to US 36
- ▶ Commuter Rail: Fort Collins to FasTracks North Metro
- ▶ I-25 Express Bus: Ft. Collins/Greeley to DUS/DIA
- ▶ US 85 Commuter Bus: Greeley to DUS

One additional GP lane would be added to I-25 in each direction from SH 14 south to SH 66. One additional TEL would be added to I-25 in each direction from SH14 south to US 36. The segment of I-25 from SH 66 south to SH 52 has been completed; therefore, it is not addressed as part of this project. From SH 52 south to E-470, an additional lane would be added to make an eight-lane cross-section. Interchanges would be upgraded or modified if necessary to accommodate future traffic volumes at LOS D. Interchanges considered to be aging would be completely replaced.

Single-tracked commuter rail service would be in place from downtown Fort Collins at University Avenue and Maple Street along the BNSF right-of-way to the FasTracks Northwest Rail corridor end-of-line station at 1st Street and Terry Street in Longmont. New commuter rail passing tracks would be added adjacent to the existing freight rail tracks in four separate locations (totaling approximately 28 percent of the corridor) and both sets of tracks would be used by commuter rail and freight rail. A maintenance road would also be constructed adjacent to the rail tracks as necessary. This maintenance road is required throughout the BNSF corridor between Ft. Collins and Longmont where there is currently no access such as a public road. A new single track line would be built from the 3rd Street in Longmont (connecting to the FasTracks Northwest Rail corridor and to the commuter rail to Fort Collins) to the FasTracks North Metro end-of-line station in Thornton.

The commuter rail service would run every 30 minutes during the AM and PM peak periods when demand is highest and every hour in the off-peak periods. Service to Denver would travel through Longmont to the FasTracks North Metro end-of-line station where it would continue on to DUS; a transfer would not be necessary. To reach Boulder, northern Colorado riders would transfer to the FasTracks Northwest Rail corridor line at the Sugar Mill station in Longmont, which would use the new rail segment extending from the proposed Northwest Rail Corridor end-of-line station at 1st and Terry Streets to connect to the Sugar Mill Station. A commuter rail maintenance facility is proposed at CR 46 and US 287 in Berthoud. Nine station locations are planned for commuter rail. They are detailed in **Section 2.2.4.5** of this Final EIS.

1 Figure 5-5 Preferred Alternative



1 The Preferred Alternative also includes a commuter bus service along US 85 connecting  
2 Greeley to DUS. This service would operate every 30 minutes in the AM and PM peak hours  
3 and every hour during the off-peak periods. Queue jumps, allowing buses to bypass queued  
4 traffic at signalized intersections, would be included to help achieve reliable speeds for bus  
5 service. A maintenance facility is proposed in conjunction with the commuter bus service to  
6 be located at 31st Street and 1st Avenue in Greeley. In addition, five commuter bus stations  
7 are proposed. Four feeder bus routes are proposed to enable riders to access the commuter  
8 rail and the commuter bus via local bus service.

9 Express bus services would operate from Fort Collins and Greeley to DUS, utilizing the  
10 TELs along I-25. The service from Fort Collins would begin at the Fort Collins South Transit  
11 Center, and operate along Harmony Road in mixed traffic until accessing I-25 at its  
12 interchange with Harmony Road. In addition, express bus service would operate from Fort  
13 Collins to DIA. During peak hours, buses would depart every 20 minutes with two going to  
14 DUS and one going to DIA. During off-peak hours, buses would depart every 30 minutes:  
15 one to DUS and one to DIA.

16 Service from Greeley would begin at the 8th Street and 8th Avenue Transit Center in  
17 downtown Greeley, and include stops along US 34, in mixed traffic. The bus would operate  
18 in shared general-purpose lanes along with mixed traffic along US 34. Queue jumps,  
19 allowing buses to bypass queued traffic at signalized intersections, would be included to  
20 help achieve reliable speeds for bus services. Two maintenance facilities are being  
21 evaluated in conjunction with the bus service, as well as 12 express bus stations.

22 Many potential congestion management measures are included as enhancements to the  
23 packages, including carpool and vanpools, supportive land use policies, signal coordination,  
24 incident management, and increased use of bicycle and pedestrian facilities.

## 25 **5.3 PROJECT PROCESS AND IDENTIFICATION OF** 26 **SECTION 4(f) RESOURCES**

27 The Section 4(f) resources in the vicinity of the regional study area include publicly owned  
28 parks and recreation areas, including recreation trails, wildlife and waterfowl refuges, and  
29 significant historic sites. First, parks and recreation areas, recreation trails, wildlife and  
30 waterfowl refuges, and historic sites were identified within the regional study area. The  
31 recreational uses of the public parks and recreation areas were then evaluated to determine if  
32 they are considered to be properties protected under Section 4(f). Management plans and  
33 agencies were consulted to evaluate if the waterfowl and wildlife refuges were actively  
34 managed as refuges. Historic sites were identified through an intensive level of cultural  
35 resources survey and evaluated for significance in terms of eligibility for inclusion in the  
36 National Register of Historic Places (NRHP). NRHP-listed or eligible historic sites qualify for  
37 protection under Section 4(f). NRHP-listed or eligible archaeological sites that warrant  
38 preservation in place also qualify for Section 4(f) protection.

39

### 5.3.1 Consultation and Coordination

Consultation for purposes of this Section 4(f) evaluation has been initiated and is expected to continue through the final design and engineering phase. The consultation and coordination efforts that have occurred thus far are described below. Public involvement and community outreach for the project as a whole is documented in **Chapter 9 Comments and Coordination**.

#### *Public Parks, Recreation Areas, and Wildlife and Waterfowl Refuge Stakeholders Consultation*

Consultation and coordination has occurred with jurisdictions in which public parks, recreation areas, and the wildlife and waterfowl refuge are considered significant resources by Section 4(f) criteria. Site mapping, amenities, and activities of the resource associated with affected properties were verified. Meetings were held to describe the project, the alternatives analysis, and the nature and severity of impacts to affected resources. Coordination consisted of numerous meetings and correspondence. The officials with jurisdiction include:

- ▶ City and County of Denver
- ▶ Town of Berthoud
- ▶ City of Fort Collins
- ▶ City of Longmont
- ▶ City of Loveland
- ▶ City of Northglenn
- ▶ City of Thornton
- ▶ City and County of Boulder
- ▶ City of Westminster
- ▶ Larimer County
- ▶ Wellington
- ▶ Colorado Division of Wildlife (now the Division of Parks and Wildlife)
- ▶ Colorado State Parks

After impacts associated with each of the packages were determined, consultation continued with the jurisdictions for which Section 4(f) resources could be potentially affected by the build alternatives. The potential *de minimis* findings, possible measures to minimize harm, and general mitigation strategies were discussed with a commitment to explore these strategies in more detail after identification of the Preferred Alternative. Coordination meetings have been held with Fort Collins, Northglenn, Loveland and Boulder County. Coordination will continue to occur throughout the EIS process.

Appendix D contains letters from all jurisdictions concurring with the proposed *de minimis* findings.

### 5.3.2 Identification of Section 4(f) Resources

#### *Historic Resources*

In accordance with the FHWA/FTA regulations, Section 4(f) requirements are applicable only to significant historic resources (i.e., those sites listed on or eligible for listing on the NRHP, or sites otherwise determined significant by the FHWA Administrator (23 CFR Section 774.17) and the FHWA Section 4(f) Policy Paper [3. Historic sites, Section 4(f) Significance]) that are subject to use by the transportation project. The historic resources considered in this evaluation include all resources that were listed on the NRHP or determined officially eligible for listing on the NRHP. Only those Section 4(f)-protected resources that are determined to have a use by the proposed transportation improvements are discussed in this chapter. There are additional Section 4(f)-eligible historic resources located within the Area of Potential Effect (APE), which would not have a Section 4(f) use.



1 All of the significant historic resources within the APE, whether impacted or not, are described  
2 in **Section 3.15 Historic Preservation** of this Final EIS. For purposes of this Section 4(f)  
3 evaluation, only properties subject to use by the project are detailed and documented.

4 **Table 5-1** lists resource specifics, including location and type of resource, and the reason each  
5 property is considered a Section 4(f) resource. **Figure 5-6** shows the location of these  
6 resources. There are five direct uses of historic properties and 26 *de minimis* uses.

### 7 ***Public Parks, Recreation Areas, and Wildlife and Waterfowl Refuge Areas***

8 Data on parks and recreation sites was gathered from municipalities in the regional study area  
9 by requesting data on properties, including parks and recreation areas, open space and trails,  
10 and wildlife and waterfowl refuges. A Geographic Information Systems (GIS) database was  
11 created using this information and verified with the use of relevant comprehensive plans, parks  
12 and recreation master plans, open space management plans, and calls to the relevant  
13 jurisdictions.

14 The current and planned public parks, recreation areas, and wildlife and waterfowl refuge  
15 areas were identified within the regional study area. The complete list of all public parks,  
16 recreation areas, and wildlife and waterfowl refuge areas identified within 500 feet of any  
17 corridor proposed for improvements is provided in **Section 3.18 Parks and Recreation**. For  
18 purposes of this Section 4(f) evaluation, only Section 4(f) resources having a Section 4(f) use  
19 by any of the build packages are discussed (see **Table 5-2** and **Figure 5-7**).

20 The initial evaluation of parks and recreation areas, public trails, and wildlife and waterfowl  
21 refuges identified all resources within 100 feet of a proposed improvement. The corridor  
22 development and evaluation process identified these properties as protected resources to be  
23 avoided, which resulted in approximately 30 park and recreation resources being avoided by  
24 the build alternatives. One park would have a direct use and ten park and recreation properties  
25 and wildlife and waterfowl refuges would have *de minimis* use as a result of the build  
26 alternative transportation improvements.

27 Two properties identified as impacted in the Parks and Recreation section were determined to  
28 not qualify for Section 4(f) protection. The Larimer County Fairgrounds do not qualify because  
29 it is not open to the public during normal operating hours. Boulder Creek Estates was  
30 determined to be a joint planning opportunity between the City of Longmont and CDOT. This  
31 area does not currently have any recreation amenities and design of the commuter rail line and  
32 recreation development will be coordinated between the agencies. A letter from the City of  
33 Longmont to CDOT agreeing to joint planning is in **Appendix D**.

34 Only one wildlife refuge property met certain criteria and has been studied as part of this  
35 Section 4(f) evaluation. The criteria include the following:

- 36 ▶ Have full public ownership or public easement.
- 37 ▶ Have a management plan and are actively managed as a wildlife or waterfowl refuge.
- 38 ▶ There is a use of the land.

1 **Table 5-1 Section 4(f) Resources – Historic Properties**

ID Number	Resource	Type	Affected Segments	NRHP Eligibility Status
5LR.8932	Larimer County Ditch	Historic Irrigation Ditch	5LR.8932.1	Eligible under Criterion A-Segment 5LR.8932.1 does not support the eligibility of the entire historic linear resource
5LR.11396	Einarsen Farm	Historic Farm	NA	Eligible under Criteria A and C.
5LR.488	Colorado and Southern Railway Depot—Loveland Depot	Historic Railway Depot	NA	Listed on NRHP under Criteria A and C
5LR.11409	Cache la Poudre Reservoir Inlet	Historic Irrigation Ditch	5LR.11409.1	Eligible under Criteria A and C-Segment 5LR.11409.1 does not support the eligibility of the entire historic linear resource
5LR.2160	Boxelder Ditch	Historic Irrigation Ditch	5LR.2160.1	Eligible under Criterion A-Segment supports eligibility of entire historic linear resource
5LR.8930	Louden Ditch	Historic Irrigation Ditch	5LR.8930.1	Eligible under Criterion A-Segment supports eligibility of entire historic linear resource
5LR.503	Loveland & Greeley Canal	Historic Irrigation Ditch	5LR.503.2	Eligible under Criterion A-Segment supports eligibility of entire historic linear resource
5LR.8928	Farmers Ditch	Historic Irrigation Ditch	5LR.8928.1, 5LR.8928.2	Eligible under Criterion A-Segment 5LR.8928.1 supports the eligibility of the entire resource; segment 5LR.8932.2 does not support the eligibility of the entire historic linear resource
5LR.11209	Schmer Farm	Historic Farm	NA	Eligible under Criteria A and C
5LR.11210	McDonough Farm	Historic Farm	NA	Eligible under Criterion C
5LR.850, 5WL.841, 5BL.514	Great Western Railway	Historic Railroad	5LR.850.1	Eligible under Criterion A-Segment supports eligibility of entire historic linear resource
5LR.11408	Zimmerman Grain Elevators	Historic Factory	NA	Eligible under Criteria A and C
5LR.11382	Hatch Farm	Historic Farm	NA	Eligible under Criterion C
5LR.8927	Hillsboro Ditch	Historic Irrigation Ditch	5LR.8927.1	Eligible under Criterion A-Segment supports eligibility of entire historic linear resource
5LR.11242	Mountain View Farm	Historic Farm	NA	Eligible under Criteria A and C
5WL.5203	Bein Farm	Historic Farm	NA	Eligible under Criterion A
5WL.3149	Handy/Home Supply Ditch Confluence	Historic Irrigation Ditch	5WL.3149.1	Eligible under Criterion A-Segment does not support the eligibility of the entire historic linear resource
5WL.5198	Olson Farm	Historic Farm	NA	Eligible under Criterion A

2



1 **Table 5-1 Section 4(f) Resources – Historic Properties (cont’d.)**

ID Number	Resource	Type	Affected Segments	NRHP Eligibility Status
5WL.1974	Rural Ditch	Historic Irrigation Ditch	5WL.1974.3	Eligible under Criterion A
5BF76, 5WL.1966, 5AM.457	Bull Canal/Standley Ditch	Historic Irrigation Ditch	5WL.76.2, 5WL.1966.8, 5AM.457.3	Eligible under Criteria A and C-Segments 5WL.76.2, and 5AM.457.3 do not support the eligibility of the entire historic linear resource; segment 5WL.1966.8 supports the eligibility of the entire historic linear resource
5LR.1729	Big Thompson Ditch	Historic Irrigation Ditch	5LR.1729.2	Eligible under Criterion A-Segment does not support the eligibility of the entire historic linear resource
5LR.1710	Handy Ditch	Historic Irrigation Ditch	5LR.1710.1	Eligible under Criterion A
5BL.9163	Kitely House	Historic Residence	NA	Eligible under Criteria A, B, and C
5BL.3449	Supply Ditch	Historic Irrigation Ditch	5BL.3449.2	Eligible under Criterion A-Segment supports the eligibility of the entire historic linear resource
5BL.3113	Rough & Ready Ditch	Historic Irrigation Ditch	5BL.3113.67	Eligible under Criterion A-Segment supports the eligibility of the entire historic linear resource
5BL.4832	Oligarchy Ditch	Historic Irrigation Ditch	5BL.4832.26, 5BL.4832.28	Eligible under Criterion A-Both segments support the eligibility of the entire historic linear resource
5BL.1245	Old City Electric Building	Historic Factory	NA	Eligible under Criteria A and C
5BL.1244	Colorado & Southern/BNSF Depot	Historic Railway Depot	NA	Eligible under Criteria A and C
5WL.5461	Boulder & Weld County Ditch	Historic Irrigation Ditch	5WL.5461.1	Eligible under Criterion A
5WL.712	Sandstone Ranch	Historic Ranch	NA	Eligible under Criteria A, B, and C
5WL.5263	Hingley Farm	Historic Farm	NA	Eligible under Criterion A
5WL.6564	Jillson Farm	Historic Farm	NA	Eligible under Criteria A and C
5WL.1317	UPRR-Dent Branch	Historic Railroad	5WL.1317.11	Eligible under Criterion A
5WL.1969, 5BF.130	Denver Pacific/ Kansas Pacific/ Union Pacific Railroad, Denver & Boulder Valley Branch	Historic Railroad	5WL. 1969.1, 5WL. 1969.41, 5BF.130.1	Eligible under Criterion A

2

1 Table 5-2 Section 4(f) Resources – Public Parks, Recreation Areas, and Wildlife and Waterfowl Refuge Areas

Resource	Address/ Location	Size (acres)	Amenities	Official with Jurisdiction	Type of Resource
Arapaho Bend Natural Area	West of I-25, north of Harmony Road, Fort Collins	278 acres	Multi-use with public access. Fishing ponds, boating, trails, parking areas. Along Cache la Poudre River.	City of Fort Collins	<b>Recreation Resource:</b> <i>Land Conservation &amp; Stewardship Master Plan (2004)</i> identifies activities while maintaining protected natural area habitat. Acquired by City of Ft. Collins's <i>Natural Areas Program</i> in 1995.
Big Thompson Ponds State Wildlife Area	Larimer County northeast of Highway 402 & I-25 Frontage Road.	51 acres	Hunting, fishing, picnicking and wildlife viewing.	CDOW	<b>Wildlife and Waterfowl Refuge:</b> State Wildlife Areas are properties owned or managed by the DOW for the benefit of wildlife and wildlife related recreation. The primary purpose is to benefit wildlife. They not only protect wildlife habitat but provide the public with opportunities to hunt, fish, & watch wildlife.
Little Thompson River Corridor	Adjacent to I-25, Berthoud	100.92 acres	Trails alongside Little Thompson River	Town of Berthoud	<b>Recreation Resource:</b> <i>Town of Berthoud I-25 Sub-Area Draft Land Use Plan, 2001</i>
McWhinney Hahn Sculpture Park	West of I-25, north of US 34, Loveland	4.2 acres	Public access and restrooms, drinking fountain, public telephone, sculpture, Visitors center, "gateway" to the City	City of Loveland	<b>Park:</b> <i>Parks and Recreation Master Plan, City of Loveland, 2001</i>
Sandstone Ranch	West of I-25, south of SH 119	313 acres	Public access, softball fields, soccer fields, trails, picnic tables, playground, skate park, restrooms, BBQ grills, concession stand	City of Longmont	<b>Park:</b> <i>1998 Sandstone Ranch Master Plan and Longmont Wildlife Management Plan</i>
Archery Range Natural Area	West of I-25, Fort Collins	50 acres	Multi-use with public access Trailhead, parking area, archery circuit station located around natural area.	City of Fort Collins	<b>Recreation Resource:</b> <i>Land Conservation &amp; Stewardship Master Plan (2004)</i> identifies activities while maintaining majority of sites in protected natural area habitat. Acquired and managed by City of Ft. Collins's Parks Dept.

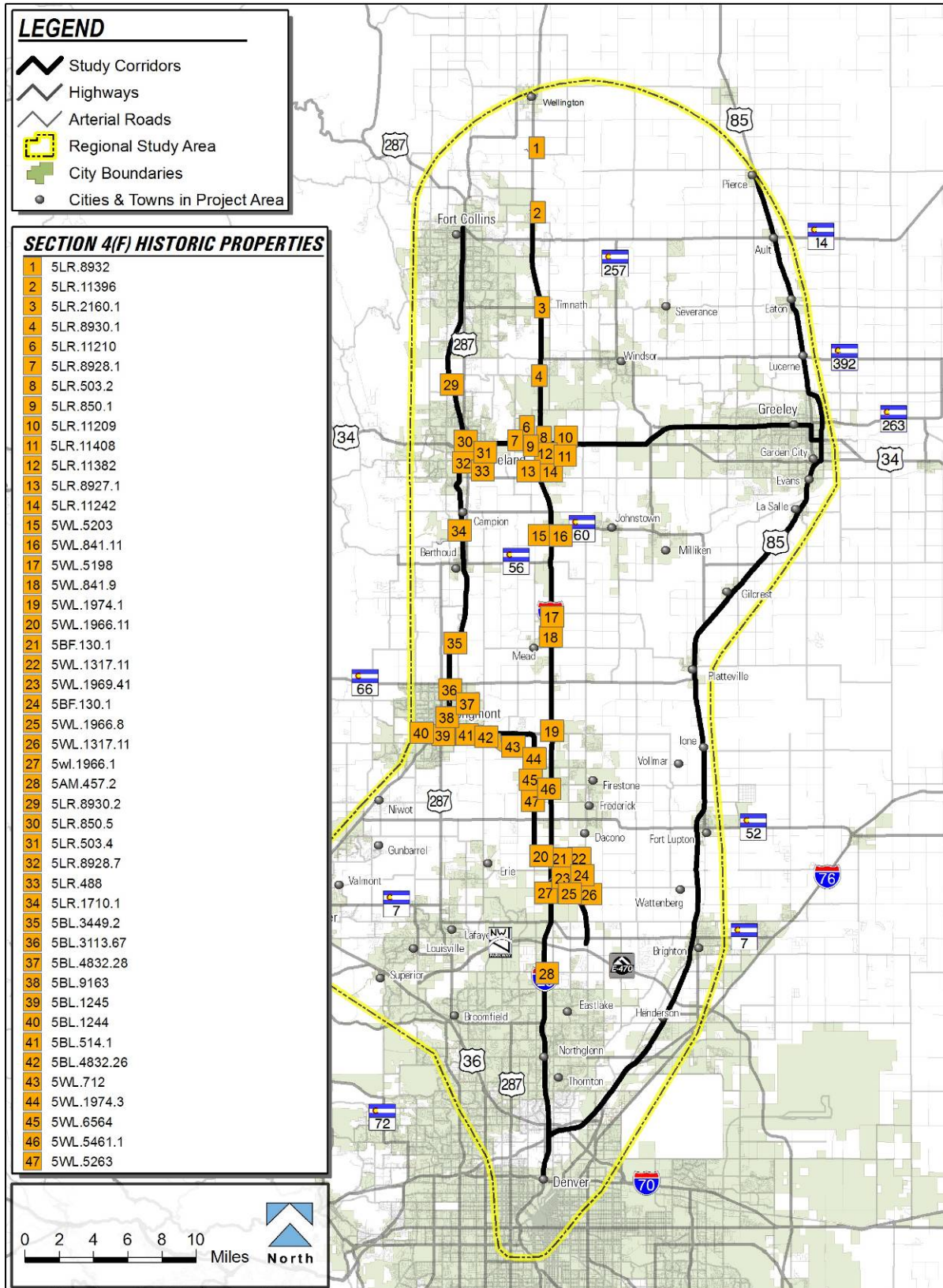
2

1 Table 5-2 Section 4(f) Resources – Public Parks, Recreation Areas, and Wildlife and Waterfowl Refuge Areas

Resource	Address/ Location	Size (acres)	Amenities	Official with Jurisdiction	Type of Resource
120th Avenue Transit Station Underpass	Runs east to west from Huron Street, through Wagon Road park-n-Ride, under I-25 to Malley Drive	0.97 mile	Trail	City of Northglenn	<b>Recreation Resource:</b> Trail
Niver Creek Open Space/Niver Creek Trail	Starts at Zuni Street and travels southeast and east of I-25, following Coronado Parkway	1.12 miles	Trail	Adams County / City of Thornton	<b>Recreation Resource:</b> Trail
RR Alignment (21st Street to Hwy 66) Trail	Follows Colorado and Southern RR alignment between 21 <sup>st</sup> and Hwy 66, terminating just south of Hwy 66.	0.5 mile	Trail	City of Longmont	<b>Recreation Resource:</b> Trail
Farmers Highline Canal Trail	Standley Lake east to Northglenn's EB Rains Park (10.3 miles) and beyond into Thornton	10.3 miles	Trail	City of Westminster	<b>Recreation Resource:</b> Trail

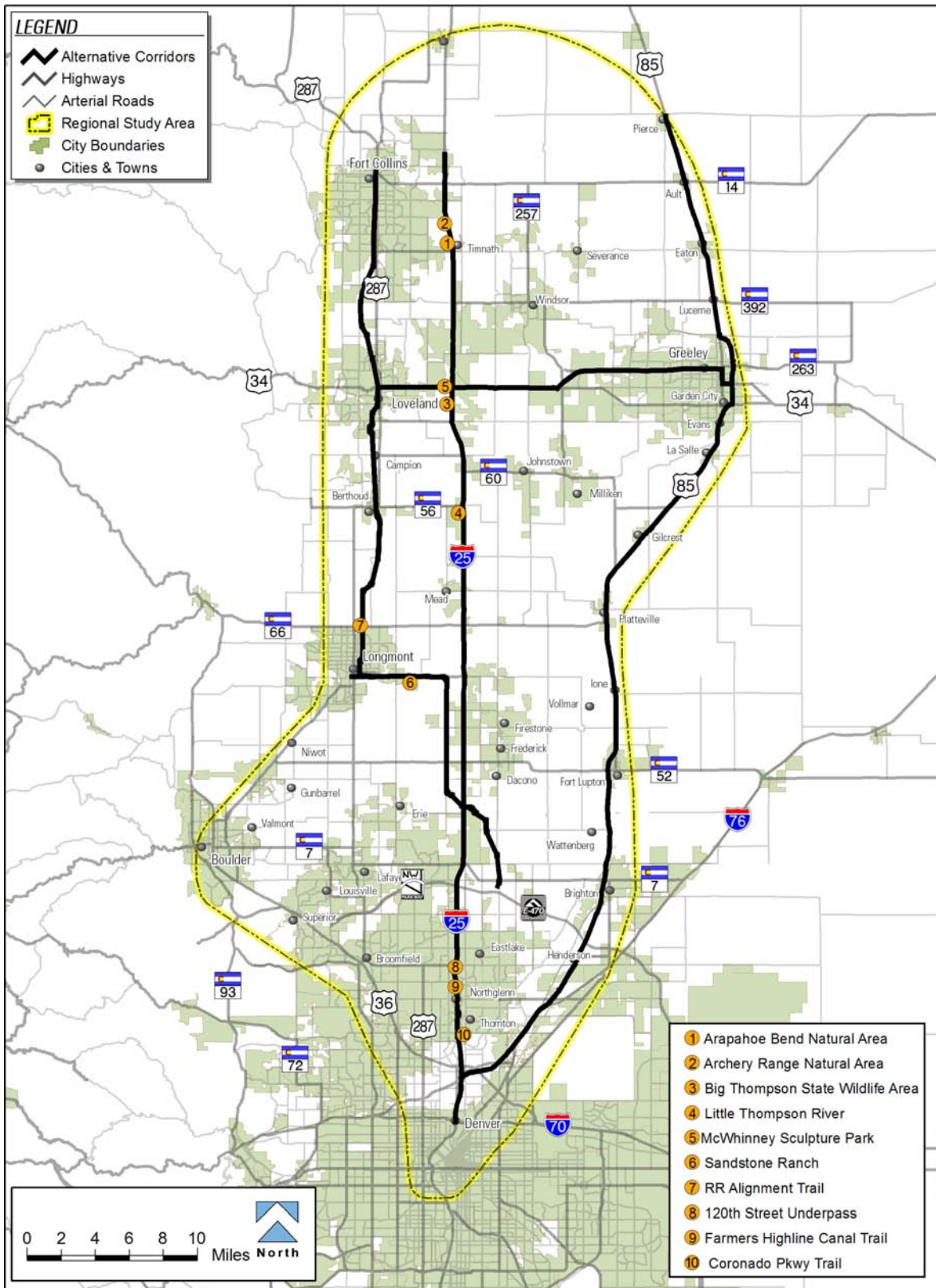
\*Properties identified as meeting criteria for temporary occupancy exception are not listed

1 Figure 5-6 Section 4(f) Historic Properties





1 **Figure 5-7 Section 4(f) Park, Recreation Areas, and Wildlife and Waterfowl Refuge Resources**  
2



1 In order to ascertain the primary purpose of the properties, applicable management plans and  
2 jurisdictions have been consulted. Only the one property that met the above-mentioned  
3 requirements has been determined a Section 4(f) wildlife and waterfowl resource. One wildlife  
4 and waterfowl refuge would be used by all alternatives (see **Figure 5-7**).

## 5 **5.4 Use of Section 4(f) Resources**

### 6 **5.4.1 Introduction**

7 **Chapter 2 Alternatives**, details the alternatives under consideration. The alternatives  
8 evaluated in this document are combinations of improvements that satisfy the Purpose and  
9 Need for the project. All of the build alternatives (Packages A, B, and the Preferred Alternative)  
10 would use portions of Section 4(f) resources. The effects from the alternatives are described  
11 with each Section 4(f) resource category.

### 12 **5.4.2 Approach/Methodology**

13 This section describes how the proposed project results in a use of Section 4(f) resources. For  
14 each of the resources, an overview of Section 4(f) uses is provided, followed by a description  
15 of avoidance alternatives, measures to minimize harm, and mitigation measures that have  
16 been considered. In the instances where *de minimis* applies, the process did not require the  
17 identification of avoidance alternatives.

#### 18 **Evaluation of any feasible and prudent alternatives to avoid use of the Section 4(f) resource**

19 The discussion of feasible and prudent avoidance alternatives for each resource specifically  
20 addresses potential avoidance alternatives for that particular resource. **Section 5.2.2**  
21 discusses corridor-wide alternatives that were evaluated in an attempt to identify alternatives  
22 that would entirely avoid all identified Section 4(f) resources. The corridor-wide alternatives  
23 were eliminated primarily because they did not meet the Purpose and Need of the project.  
24 These alternatives would also likely have resulted in the use of Section 4(f) resources not  
25 identified in this document.

26 In the following sections, feasible and prudent avoidance alternatives are evaluated based on  
27 the definition provided in 23 CFR 774.17 (see **Section 5.1**).

#### 28 **Identification of measures to minimize harm to Section 4(f) resources**

29 When a Section 4(f) resource is used, all planning to minimize harm, including development of  
30 mitigation measures, must be undertaken in coordination with the officials having jurisdiction  
31 over the resource.

32 In instances where there are no feasible and prudent avoidance alternatives, a least harm  
33 analysis was completed for each Section 4(f) resource by alternative.

34 The results of the analysis are detailed in this chapter for each identified resource.

### 35 **5.4.3 Temporary Occupancy of Trails**

36 As stated earlier, temporary occupancy of Section 4(f) resources may result in a Section 4(f)  
37 use. However, under FHWA regulations [23 § 774.13(d)], temporary occupancies of land that  
38 are so minimal as to not constitute a use within the meaning of Section 4(f) are excepted from  
39 the requirement of Section 4(f) approvals when the following conditions are satisfied:



- 1 ▶ The occupancy must be of temporary duration (i.e., shorter than the period of construction)  
2 and not involve a change in ownership of the property;
- 3 ▶ The scope of work must be minor, with only minimal changes to the protected resource;
- 4 ▶ There are no permanent adverse physical effects to the protected resource, and there will  
5 be no temporary or permanent interference with activities or purpose of the resource;
- 6 ▶ The property being used must be fully restored to a condition that is at least as good as  
7 that which existed prior to the proposed project; and
- 8 ▶ There must be documented agreement of the appropriate officials having jurisdiction over  
9 the resource regarding the foregoing requirements.

10 Five trails identified as Section 4(f) resources were determined to meet these criteria and  
11 therefore are not considered Section 4(f) uses. These include the following:

- 12 ▶ Big Dry Creek Trail – The existing underpass that carries the trail beneath I-25 will be  
13 reconstructed to accommodate the wider highway profile under both Package B and the  
14 Preferred Alternative. Impacts to the trail include extension of the underpass by  
15 approximately 80 feet and temporary closure of this segment of the trail during construction  
16 of the bridge. A detour is available that would make use of Huron St. and either  
17 136th Avenue or 128th Avenue depending on whether the user is connecting to the Big Dry  
18 Creek Trail or the Farmers Highline Canal Trail.
- 19 ▶ Big Thompson River Corridor Trail – Under Package A, a temporary closure of the trail  
20 would be required for construction of a new bridge accommodating a parallel track that  
21 would carry the commuter rail over the existing trail. The only effect to the trail would be  
22 temporary closure during construction with a reasonable detour provided that would make  
23 use of 1st Street and South Railroad Ave.
- 24 ▶ Box Elder Creek Trail – This proposed trail currently has no potential crossing opportunities  
25 for I-25. As part of the highway improvements a culvert is being constructed at this location.  
26 If the trail is constructed prior to highway improvements proposed under Package B and  
27 the Preferred Alternative there is a possibility that short term closures would be required.  
28 The nearest opportunity for a highway crossing is located approximately one mile south at  
29 CR 58.
- 30 ▶ Fossil Creek Drive Trail – This is a proposed trail that would pass under the existing rail  
31 line at the Red-tail Grove Natural Area. Under Package A, a parallel rail line would be  
32 constructed requiring a new bridge over Fossil Creek at this location. If the trail is  
33 constructed prior to rail improvements proposed under Package A there is a possibility that  
34 short term closures would be required. The nearest crossing is located one mile north at  
35 Harmony Road.
- 36 ▶ Spring Creek Trail – This trail currently passes under the existing rail line at Creekside Park  
37 in Ft. Collins. Construction of the new parallel rail track proposed under Package A would  
38 require a new bridge structure at this location. Impacts to the trail would include the  
39 extension of the existing underpass and temporary closure during construction of the  
40 underpass. A detour would provided that would cross the rail line on Prospect Road a  
41 quarter-mile north of the existing trail underpass.

42 Each of these five trails meets the requirements for temporary occupancy as described above.  
43 Letters requesting concurrence from the officials with jurisdiction over the resources have been  
44 sent and are included along with the official's responses in **Appendix D**.

#### 1 **5.4.4 Use of Historic Properties**

2 The uses of the significant historic Section 4(f) resources sorted by component are shown in  
3 **Table 5-3**. There was no use of Section 4(f) resources resulting from transportation  
4 improvements included in other Package A and B components. Additionally, the table lists the  
5 type of Section 4(f) use of each resource. Properties with a use and no adverse effect  
6 determination in consultation with SHPO have been evaluated as *de minimis* findings in  
7 **Section 5.5**. These properties are addressed in **Section 5.5 De Minimis Impacts**. This project  
8 would result in a use and a full Section 4(f) evaluation for six historic properties.

9 Indirect effects to Section 4(f) resources were evaluated based on the current activities, features, or  
10 attributes of the resource that may be sensitive to proximity impacts. None of the indirect effects  
11 identified for the following resources rose to a level where the protected activities, qualities, or  
12 features would be substantially impaired.

13

1 Table 5-3 Use of Section 4(f) Historic Resources

ID Number	Resource	Section 4(f) Use		
		Package A	Package B	Preferred Alternative
		<b>A-H2 General-Purpose Lanes: SH 14 to SH 60</b>	<b>B-H2 Tolled Express Lanes: SH 14 to SH 60</b>	<b>I-25 Improvements</b>
5LR.8930	Louden Ditch	316 linear feet of open ditch placed inside new (90 feet) and extended existing (225 feet) culverts	357 linear feet of open ditch placed inside new (87 feet) and extended (270 feet) culverts	1,084 linear feet of ditch (5LR.8930.1: 788 feet & 5LR.8930.2: 296 feet) used through being placed inside new and extended existing culverts or being capped or moved
		<b>A-T2 Commuter Rail: Longmont to FasTracks North Metro</b>	No Use	<b>Commuter Rail</b>
5BL.1245	Old City Electric Building	0.85 acre and demolition of property	No Use	No Use
5BL.1244	Colorado and Southern/BNSF Depot	0.51 acre and demolition of property	No Use	No Use
5WL.5263	Hingley Farm	7.34 acres of property; incorporation of 2,585 feet by 125-foot strips of farmland into project and demolition of the farmhouse	No Use	7.40 acres of property incorporated into transportation infrastructure and demolition of the farmhouse
5WL.6564	Jillson Farm	7.34 acres of property incorporated into transportation infrastructure	No Use	7.34 acres of property incorporated into transportation infrastructure
5WL.1969, 5BF.130	Denver Pacific/ Kansas Pacific/ Union Pacific Railroad, Denver & Boulder Valley Branch	2.9-mile abandoned segment modernized for double-track commuter rail operations; demolition of 2 historic bridges	No Use	2.9-mile abandoned segment modernized for single-track commuter rail operations; demolition of 2 historic bridges

2

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## Louden Ditch (5LR.8930)

### Description

<b>Location:</b>	T6N/R68W, N½ Sec. 27; T6N/R69W, SW¼ Sec. 26
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	Adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Louden Ditch by Alternative

<b>Package A</b>	<b>Package B</b>
<b>A-H2 GP Highway Improvements: SH 14 to SH 60</b>	<b>B-H2 Tolled Express Lanes: SH 14 to SH 60</b>
Total 316 feet of open ditch placed inside new (90 feet) and extended existing (225 feet) culverts.	Total 357 feet of open ditch placed inside new (87 feet) and extended existing (270 feet) culverts.
<b>Preferred Alternative</b>	
<b>I-25 Highway Improvements and Commuter Rail:</b>	
Total 1,084 linear feet of ditch used between segment 5LR.8930.1 (788 feet) and segment 5LR.8930.2 (296 feet). Ditch will be placed inside new and extended existing culverts with other portions being capped or moved .	

### Resource Description

The ditch was originally built in 1871. The entire ditch is approximately 23.25 miles long. Two segments of the historic Louden Ditch are located in proximity of Package A and B transportation improvements. Segment 5LR.8930.1 crosses I-25 and the existing frontage road at Larimer County Road 30 (LCR 30) East. The excavated earthen ditch is approximately 20 feet wide. The portion of the ditch that crosses under I-25 and the frontage road was altered when I-25 was constructed in the 1960s and the ditch was placed inside a concrete box culvert. The documented segment (5LR.8930.1) is 3,316 feet long. Heavy riparian growth exists along the northwest banks of the ditch. The remainder of the ditch has been dredged within the project area and no vegetation is present along the ditch levee. The surrounding area includes agricultural and residential development.

### Eligibility Determination

The entire Louden Ditch (5LR.8930) is eligible for listing on the NRHP under Criterion A for its important association with the development of water rights and agriculture in Larimer County. Both segments have experienced modifications near the highway and railway, but much of the ditch remains in its original alignment. Both segments (5LR.8930.1 and 5LR.8930.2) were found to retain sufficient integrity of location, setting, feeling, and use to support the eligibility of the entire linear resource.

2

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## Section 4(f) Use

### Package A

Only segment 5LR.8930.1 of the Loudon Ditch experiences a direct use as a result of Package A transportation improvements. This segment is presently conveyed beneath I-25 inside a box culvert measuring approximately 260 feet long. At this location, Package A involves re-alignment of the I-25 northbound and southbound lanes approximately 90 feet to the east of existing highway and widening each direction from two lanes to three lanes. The new corridor footprint would include relocating the east frontage road farther east of the current alignment. To provide adequate space for the re-aligned northbound lanes and east frontage road, an additional 225 feet of open ditch would be enclosed inside a box culvert underneath the new roadways. The new culvert would be extended from the end of the existing box culvert located on the east flank of the existing east frontage road.

LCR 30 on the west side of I-25 would be rebuilt along the same alignment, although the template would be widened slightly to the north. The west frontage road would be abandoned south of the interchange. A new road (Byrd Road) would run south from LCR 30 and is functionally intended to replace the west frontage road. At this location, the historic ditch follows a parallel course close to the south edge of existing LCR 30. A 91-foot-long segment of open ditch would be enclosed inside a new box culvert to pass beneath the new Byrd Drive connection to LCR 30.

Construction of the new culverts would likely require temporary occupancy of the historic property for equipment access and culvert installation activities. The ditch would possibly be temporarily diverted during construction, but would remain operational. Ditch waters would be protected from all sediment and physical encroachment by construction.

The direct use of 316 feet of open ditch, or less than one percent of the total ditch length, being placed into a new box culvert extension on the east side of I-25, and a short culvert beneath Byrd Drive, do not affect its historic alignment or function. The physical integrity of the channel of the ditch segment would be compromised by placing it in culverts. Although these changes affect a relatively small portion of the overall linear resource, they would result in an *adverse effect* to the entire Loudon Ditch. See **Figure 5-8** for uses associated with Package A.

### Package B

The uses of the Loudon Ditch under Package B are similar to those described for Package A, although an additional 45 feet of open ditch for a total use of 270 feet on the east side of I-25 would be placed in a box culvert extension due to the wider I-25 template. There would also be a new culvert enclosing 87 feet of open ditch beneath the proposed Byrd Drive. Package B would directly use 357 feet, or less than 1 percent of open ditch, as opposed to 316 feet of open ditch under Package A.

The direct uses resulting from Package B are similar in nature but slightly greater than those resulting from Package A and would result in an *adverse effect* to the entire Loudon Ditch. See **Figure 5-9** for uses associated with Package B.

### Preferred Alternative

Under the Preferred Alternative, Segment 5LR.8930.1 of the Loudon Ditch would experience a direct use similar to Packages A and B except that the portions adjacent to East LCR 30 east of Byrd Drive would also experience toe-of-slope impacts that would require capping or moving the ditch an additional 524 linear feet. Only 173 feet of open ditch would be enclosed inside the extended box culvert underneath the new northbound lanes and east frontage road, less than under the other Packages. The new culvert beneath the proposed Byrd Drive would be 91 feet for a total of 1,084 linear feet of use to this segment.

Segment 5LR.8930.2 would also experience direct uses of 296 feet to accommodate the maintenance road required to parallel the Commuter Rail line under the Preferred Alternative. See **Figures 5-10 and 5-11** for uses associated with the Preferred Alternative.



## **Avoidance Alternatives**

### **Packages A, B and the Preferred Alternative**

Avoidance alternatives for Louden Ditch were examined and it was determined that no feasible and prudent avoidance alternatives existed for the following reasons.

Avoiding use of Louden Ditch at the Byrd Road intersection with East LCR 30 would require raising the grade of the intersection by several feet in order to bridge the ditch at this location. The grade of the roads to accommodate this solution would be raised several feet creating an elongated impact to the existing and planned roadways. This would result in additional physical and noise intrusion at 14 to 25 residence locations north of Byrd Road, which is an identified community of Environmental Justice concern. Therefore this is not a feasible and prudent avoidance alternative because it results in severe disproportionately high and adverse impacts to minority populations.

Avoidance of Louden Ditch where it passes under I-25 is not possible because the ditch currently flows underneath and perpendicular to I-25 inside a concrete culvert structure. This pre-existing condition precludes avoidance of the resource because any change from the existing conditions would not represent a satisfactory change in historic setting or integrity.

## **All Possible Planning To Minimize Harm**

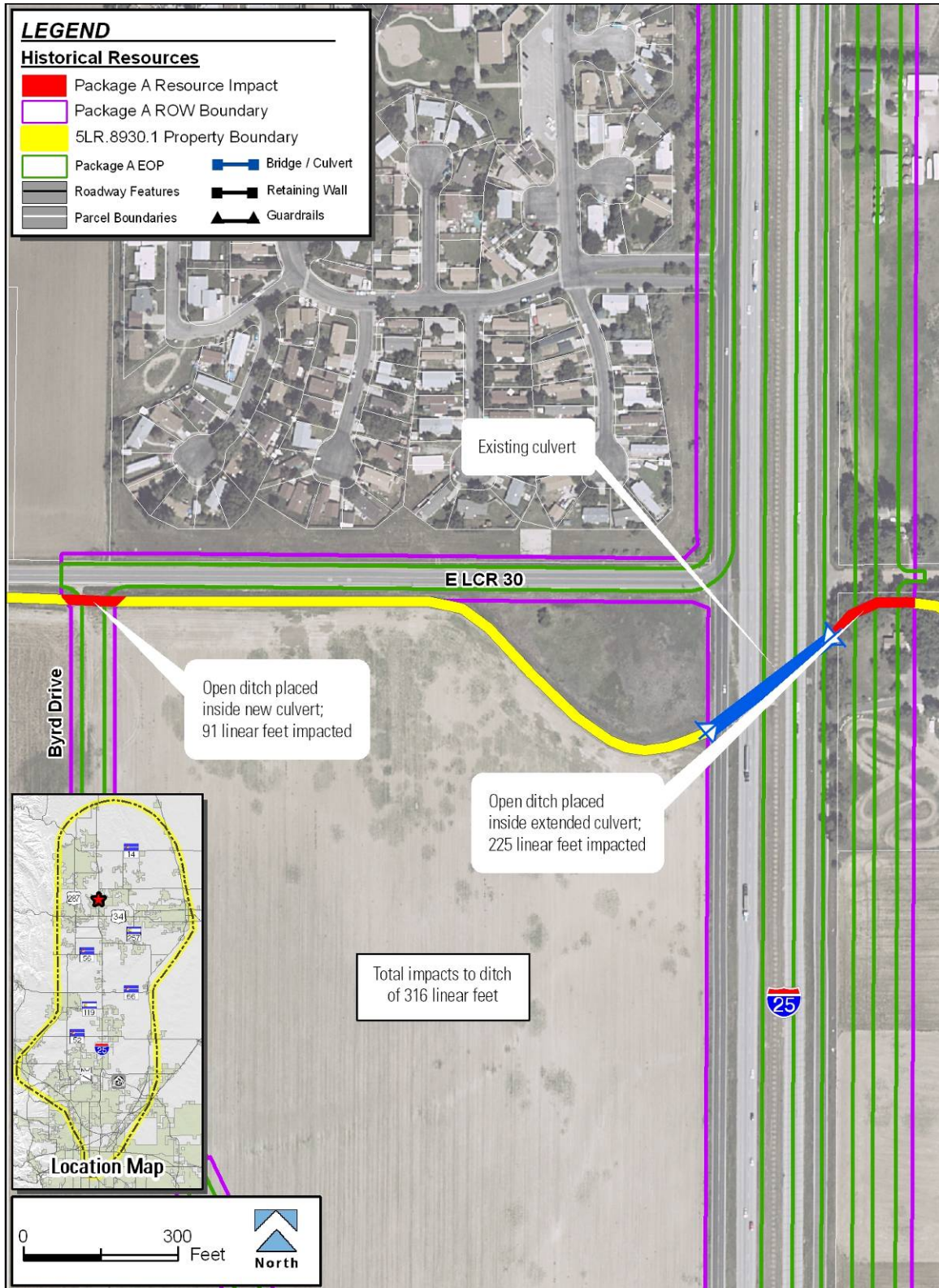
### **Packages A, B and Preferred Alternative**

The proposed design includes a retaining wall along the east edge of the frontage road that was intended to limit impacts to a wetland area; this retaining wall also minimizes the length of ditch subject to direct uses. No other minimization, mitigation, or enhancement measures were possible. Although the Preferred Alternative involves a greater expansion of highway infrastructure in this area, additional use of that segment of the ditch were avoided through a design alteration that involved widening the highway into the median as opposed to outward from the existing highway.

## **Mitigation Measures for Louden Ditch**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Operation of irrigation ditch maintained during construction.
- Appropriate erosion and sediment control Best Management Practices (BMPs) employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

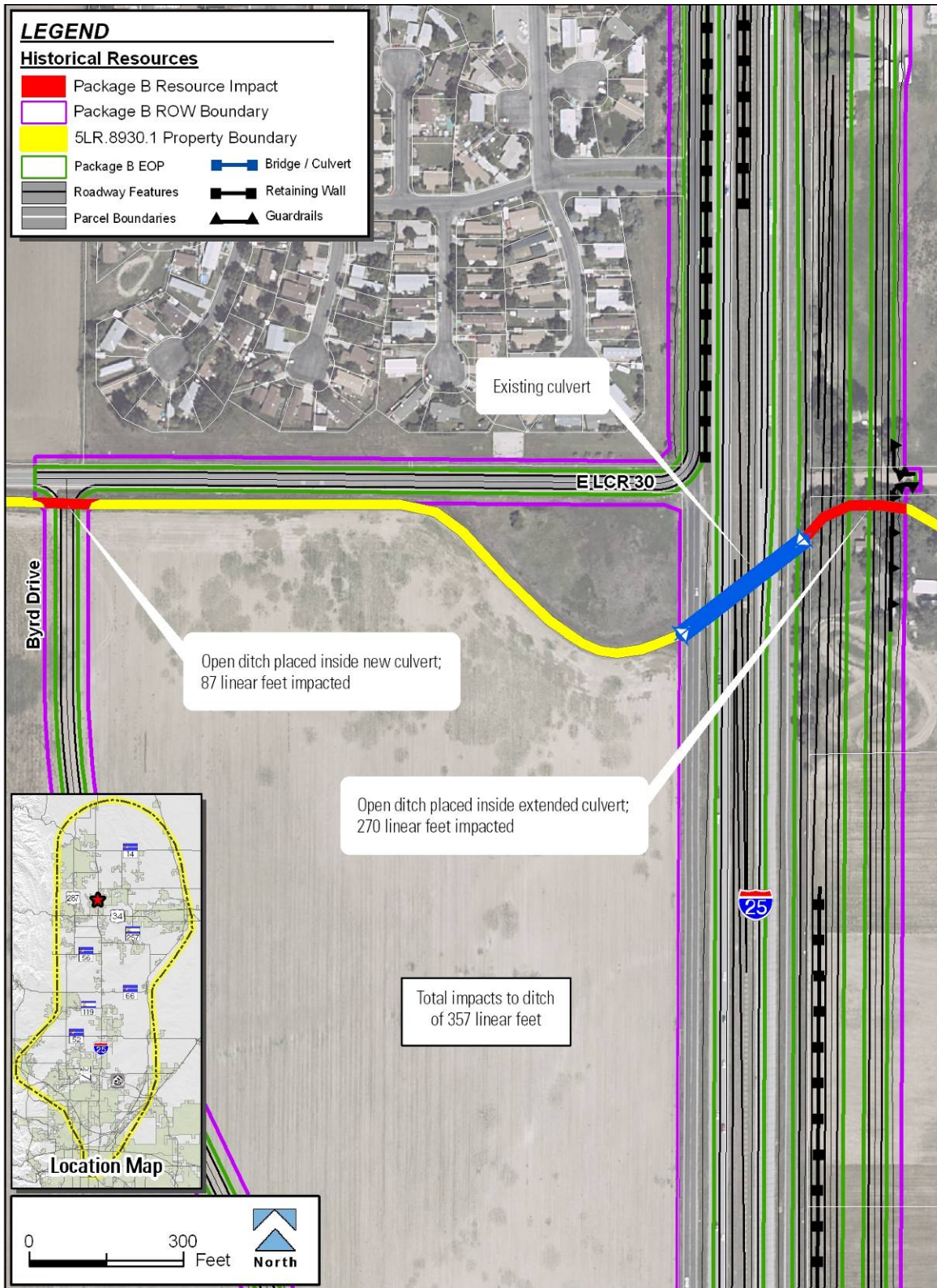
1 Figure 5-8 Louden Ditch Package A Use



2 Note: EOP—Edge of Pavement  
3



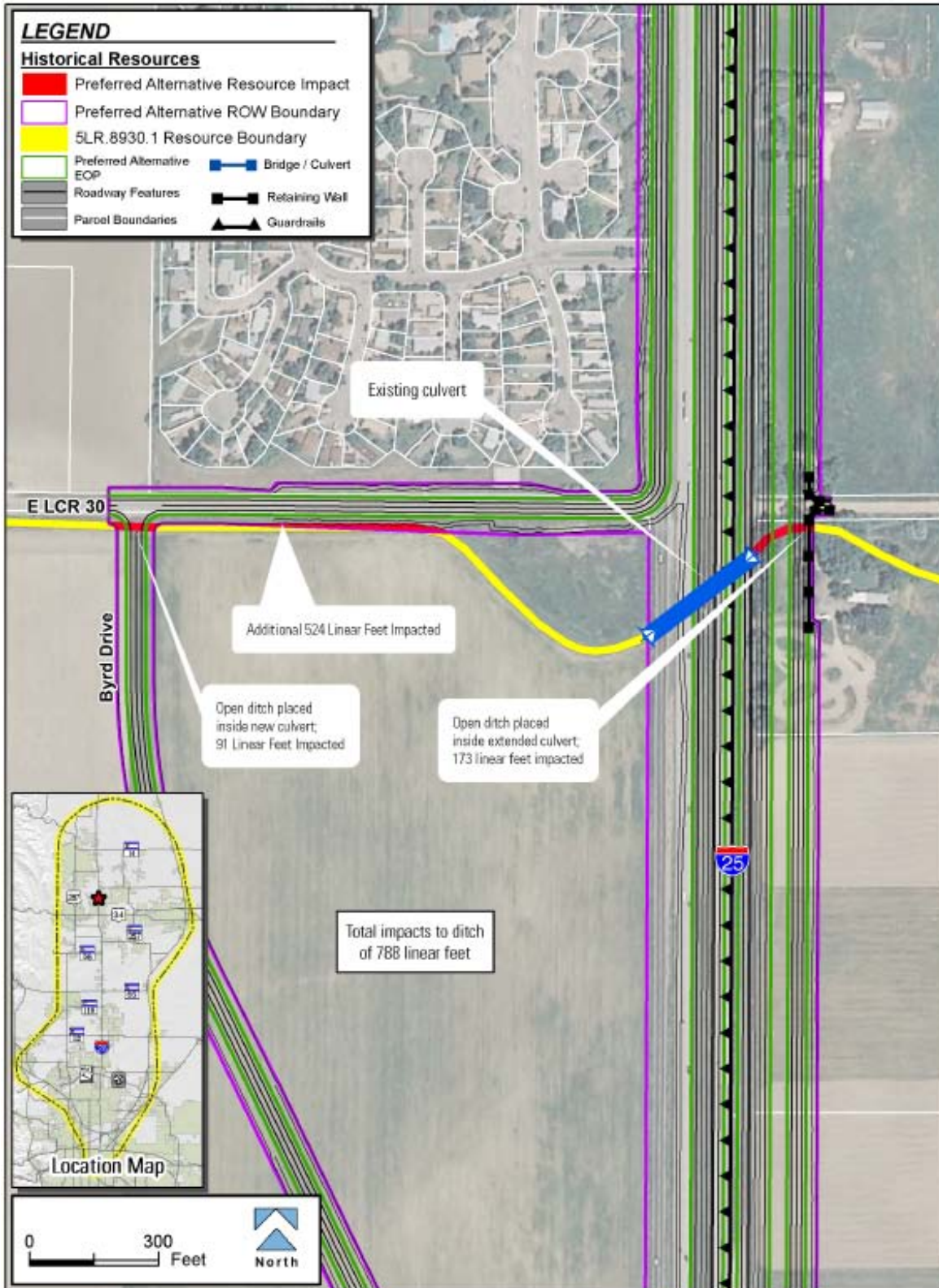
1 Figure 5-9 Louden Ditch Package B Use



2 Note: EOP—Edge of Pavement

3

1 Figure 5-10 Louden Ditch Preferred Alternative Use

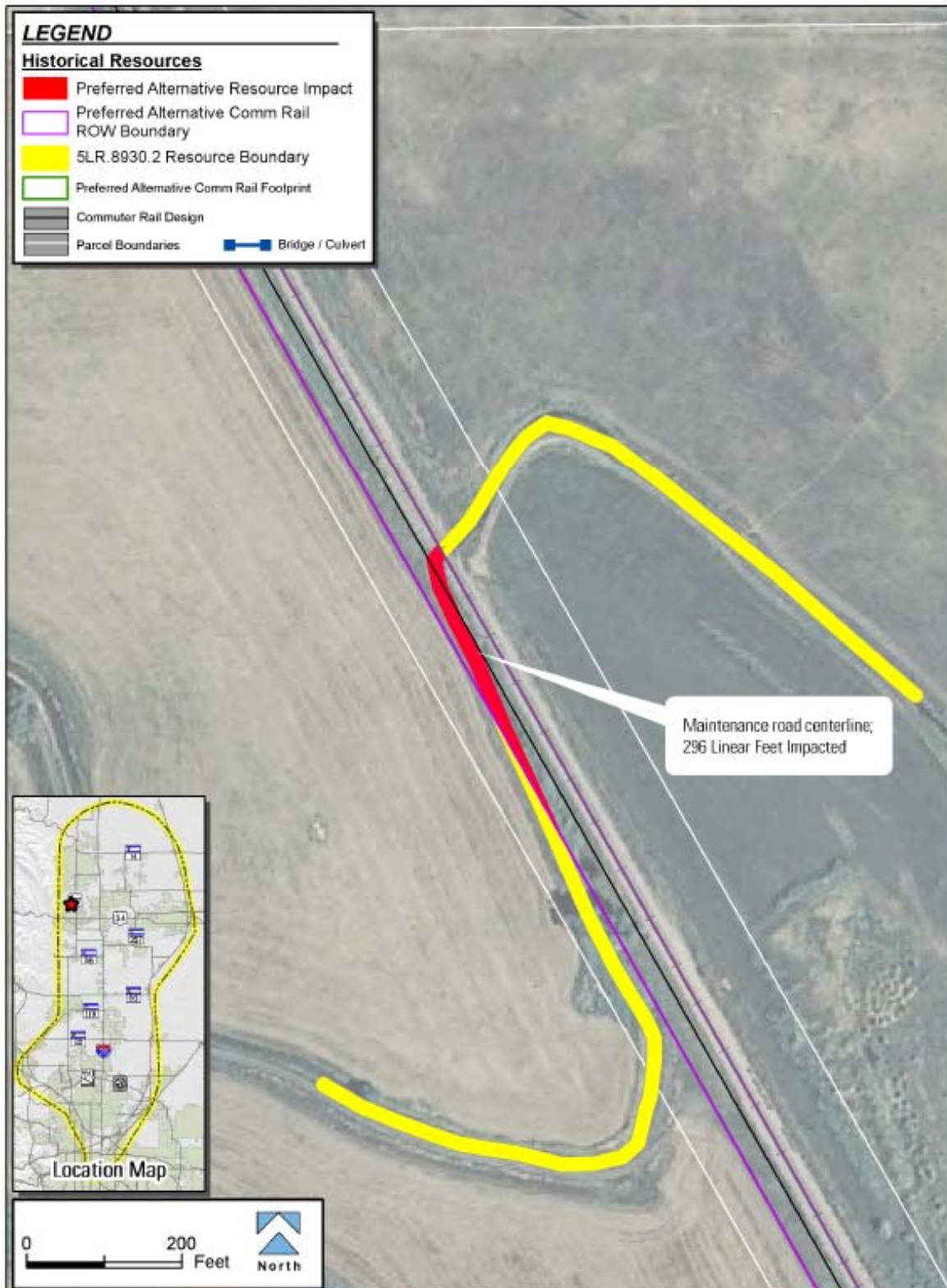


2 Note: EOP—Edge of Pavement

3



1 Figure 5-11 Louden Ditch Preferred Alternative Use



2 Note: EOP—Edge of Pavement



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## Old City Electric Building (5BL.1245)

### Description

<b>Location:</b>	103 Main Street, Longmont
<b>Type:</b>	Historic building/local landmark
<b>Section 106 Effect Finding:</b>	Adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criteria A and C

### Use of Old City Electric Building by Alternative

Package A A-T2 Transit Component-Commuter Rail: Longmont to FasTracks North Metro	Package B B-T2 Transit Component-BRT: Fort Collins to DIA
0.85 acre/demolition of property	No use

### Preferred Alternative Commuter Rail:

No use

### Resource Description

The Old City Electric Building (5BL.1245) is located at 103 Main Street in Longmont. It is an excellent example of 1930s industrial architecture featuring large windows, an open plan, and solid brick construction. This building served the city's power needs from 1931 to 1969. Longmont was one of the first cities in Colorado to develop a municipally owned electric generation plant.

### Eligibility Determination

The Old City Electric Building is eligible for the NRHP under Criterion A for its significant role in the development of Longmont, and under Criterion C as an excellent, intact example of industrial architecture. This early power generation plant has also been designated as a Local Landmark by the City of Longmont.

### Section 4(f) Use

#### Package A

Construction of a new commuter railroad line alongside the existing commercial rail line on the north side of 1st Avenue in Longmont would require right-of-way acquisition and demolition of the entire 0.85-acre property, including a portion of the parcel containing this historic building. The building would need to be demolished or moved to a new location to accommodate the new rail line and associated construction activities. This direct use would result in the loss of integrity of this resource; therefore CDOT and FHWA have determined that Package A would result in an *adverse effect* under Section 106, and a use under Section 4(f). See **Figure 5-12** for use associated with Package A.

#### Package B

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

#### Preferred Alternative

There is no direct use of any portion of this resource resulting from the Preferred Alternative.

## **Avoidance Alternatives**

### **Package A**

In order to tie into the FasTracks design at the 1st Avenue and Terry Street location, the new track requires location on the west (or north) of the existing BNSF track. The narrow corridor where the existing track is located passes directly along the south side of the Old City Electric Building. A variety of alternatives were examined in an attempt to avoid use of this property under Package A.

An avoidance alternative was considered that would terminate the commuter rail line at the Sugarmill Station and not connect to the FasTracks Northwest rail line, removing the possibility for potential riders to continue on to Boulder from the proposed northern commuter rail. This alternative would cause potential transit ridership to drop by approximately 6 percent. Therefore this is not considered feasible and prudent because it would compromise the project in light of the stated purpose and need to provide for modal alternatives.

The location of the 1st Avenue and Terry Street Station in an urbanized area of Longmont, and the relatively short distance of two miles between it and the proposed Sugar Mill Station, allows for very few alternative corridor alignments for this segment. To avoid the historic property, the existing rail alignment would have to be realigned to the south side of 1st Avenue, encroaching on approximately 85 feet of property for approximately 2,000 linear feet. Construction of the railway at this location would require the acquisition, demolition, and relocation of approximately seven businesses. Businesses at this location are industrial in nature and include needs that require large lots, such as recreational vehicle and boat storage, automotive sales, and warehouse operations. Finding vacant property to accommodate these space intensive businesses nearby would be difficult. Relocation of these businesses to a new location outside the local district would jeopardize the businesses' sustainability. This alignment would also create two additional at-grade crossings, decreasing the overall level of safety for the motoring public within this heavily traveled area. Therefore, this is not a feasible and prudent avoidance alternative because it would result in unacceptable safety problems, and severe economic impacts. Cumulatively, these factors would cause impacts of an extraordinary magnitude, making the avoidance alternative not feasible and prudent.

Allowing the BNSF railway to remain in place and re-routing the new commuter rail alignment north of the Old City Electric Building would result in several impacts. The Butterball processing facility, located in the northeast quadrant of the 1st Street and Main Street intersection, would be removed. This is one of seven major processing facilities in the company and is Longmont's fifth largest employer, with 920 employees. Additionally, part of the electrical substation located at 1st Street and Coffman Street would be removed, causing the site to be reconfigured. This alignment would also generate an additional at-grade rail crossing on US 287/Main Street, 200 feet from the existing crossing, decreasing the overall level of safety. This alternative is not a feasible and prudent avoidance alternative because it would result in unacceptable safety problems and severe economic impacts. Cumulatively, these factors would cause impacts of an extraordinary magnitude, making the avoidance alternative not feasible and prudent.

### **Package B and the Preferred Alternative**

These alternatives avoid the use of the Old City Electric Building.

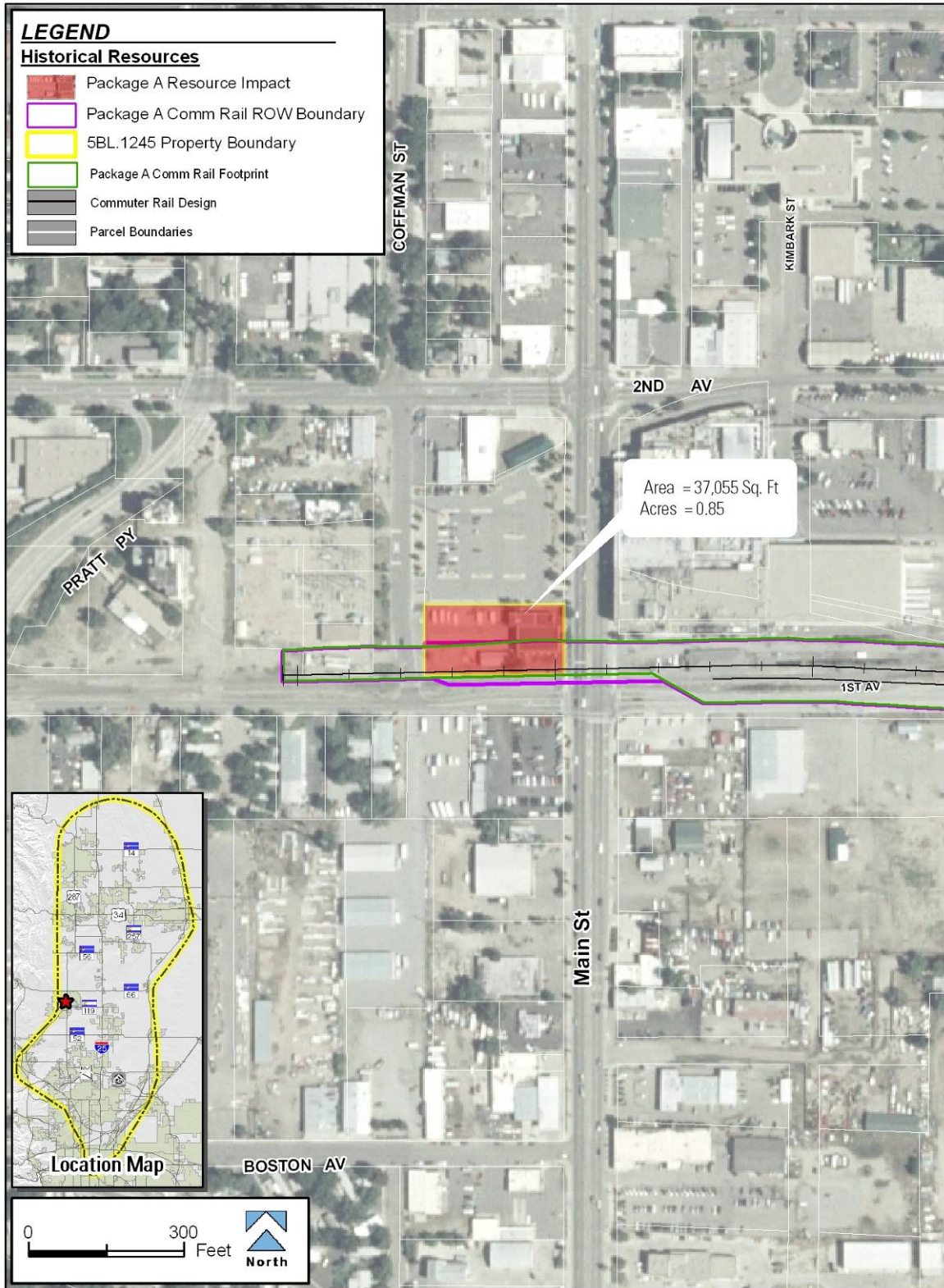
### **All Possible Planning to Minimize Harm**

Under Package A, a property acquisition would be necessary to accommodate the commuter rail track and alignment.

### **Mitigation Measures for Old City Electric Building**

- Property acquisition will be completed under the Uniform Relocation Act.
- Continued consultation with SHPO is recommended prior to final design to implement possible revised design elements to facilitate historic preservation.
- Detailed recording of the building, in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended.
- All mitigation measures are pending SHPO concurrence.

1 Figure 5-12 Old City Electric Building Package A Use



## Colorado and Southern/BNSF Depot (5BL.1244)

### Description

<b>Location:</b>	100 Main Street, Longmont
<b>Type:</b>	Historic building
<b>Section 106 Effect Finding:</b>	Adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criteria A and C

### Use of Colorado & Southern/BNSF Depot by Alternative

#### Package A

**A-T2 Transit Component-Commuter Rail:  
Longmont to North Metro Corridor End-of-  
Line Station**

0.51 acre/demolition of property

#### Package B

**B-T2 Transit Component-BRT:  
Fort Collins to DIA**

No use

#### Preferred Alternative

##### Commuter Rail:

No use

### Resource Description

The historic Colorado & Southern/BNSF Depot (5BL.1244) is located at 100 Main Street in Longmont. The depot was built in 1905. It is one of the two early railroad depots in Longmont and is one of the finest small masonry depots in the state. The depot is the only existing Richardsonian Romanesque style building in Longmont.

### Eligibility Determination

This depot (5BL.1244) is NRHP-eligible under Criterion A for its association with railroad transportation and its contribution to the development of Longmont. The building is also NRHP-eligible under Criterion C as an excellent and well preserved example of masonry railroad depot architecture in Colorado.

### Section 4(f) Use

#### Package A

Construction of a new commuter railroad line alongside the existing commercial rail line on the north side of 1st Avenue in Longmont would require right-of-way acquisition and demolition of the entire 0.51-acre property, including the area occupied by this historic building. The building would need to be demolished or moved to a new location to accommodate the new commuter rail tracks and associated construction activities. This direct use would result in the loss of integrity of this resource; therefore, CDOT and FHWA have determined that Package A would result in an *adverse effect* under Section 106, and a use under Section 4(f). See **Figure 5-13** for use associated with Package A.

#### Package B

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

#### Preferred Alternative

There is no direct use of any portion of this resource resulting from the Preferred Alternative.



## Avoidance Alternatives

### Package A

In order to tie into the FasTracks design at the 1st Avenue and Terry Street location, the new track requires location on the west (or north) of the existing BNSF track. The narrow corridor where the existing track is located passes directly along the south side of the Colorado and Southern/BNSF Depot. A variety of alternatives were examined in an attempt to avoid use of this property under Package A.

An avoidance alternative was considered that would terminate the commuter rail line at the Sugarmill Station and not connect to the FasTracks Northwest rail line, removing the possibility for potential riders to continue on to Boulder from the proposed northern commuter rail. This alternative would cause potential transit ridership to drop by approximately 6 percent. Therefore this is not considered feasible and prudent because it would compromise the project in light of the stated purpose and need to provide for modal alternatives.

The location of the 1st Avenue and Terry Street Station in an urbanized area of Longmont, and the relatively short distance of two miles between it and the proposed Sugar Mill Station, allows for very few alternative corridor alignments for this segment. To avoid the historic property, the existing rail alignment would have to be realigned to the south side of 1st Avenue, encroaching on approximately 85 feet of property for approximately 2,000 linear feet. Construction of the railway at this location would require the acquisition, demolition, and relocation of approximately seven businesses. Businesses at this location are industrial in nature and include needs that require large lots, such as recreational vehicle and boat storage, automotive sales, and warehouse operations. Finding vacant property to accommodate these space intensive businesses nearby would be difficult. Relocation of these businesses to a new location outside the local district would jeopardize the businesses' sustainability. This alignment would also create two additional at-grade crossings, decreasing the overall level of safety for the motoring public within this heavily traveled area. Therefore, this is not a feasible and prudent avoidance alternative because it would result in unacceptable safety problems, and severe economic impacts. Cumulatively, these factors would cause impacts of an extraordinary magnitude, making the avoidance alternative not feasible and prudent.

Allowing the BNSF railway to remain in place and re-routing the new commuter rail alignment north of the Colorado and Southern/BNSF Depot would result in several impacts. The Butterball processing facility, located in the northeast quadrant of the 1st Street and Main Street intersection, would be removed. This is one of seven major processing facilities in the company and is Longmont's fifth largest employer, with 920 employees. Additionally, part of the electrical substation located at 1st Street and Coffman Street would be removed, causing the site to be reconfigured. This alignment would also generate an additional at-grade rail crossing on US 287/Main Street, 200 feet from the existing crossing, decreasing the overall level of safety. This alternative is not a feasible and prudent avoidance alternative because it would result in unacceptable safety problems and severe economic impacts. Cumulatively, these factors would cause impacts of an extraordinary magnitude, making the avoidance alternative not feasible and prudent.

### Package B and the Preferred Alternative

These alternatives avoid the use of the Colorado and Southern/BNSF Depot.

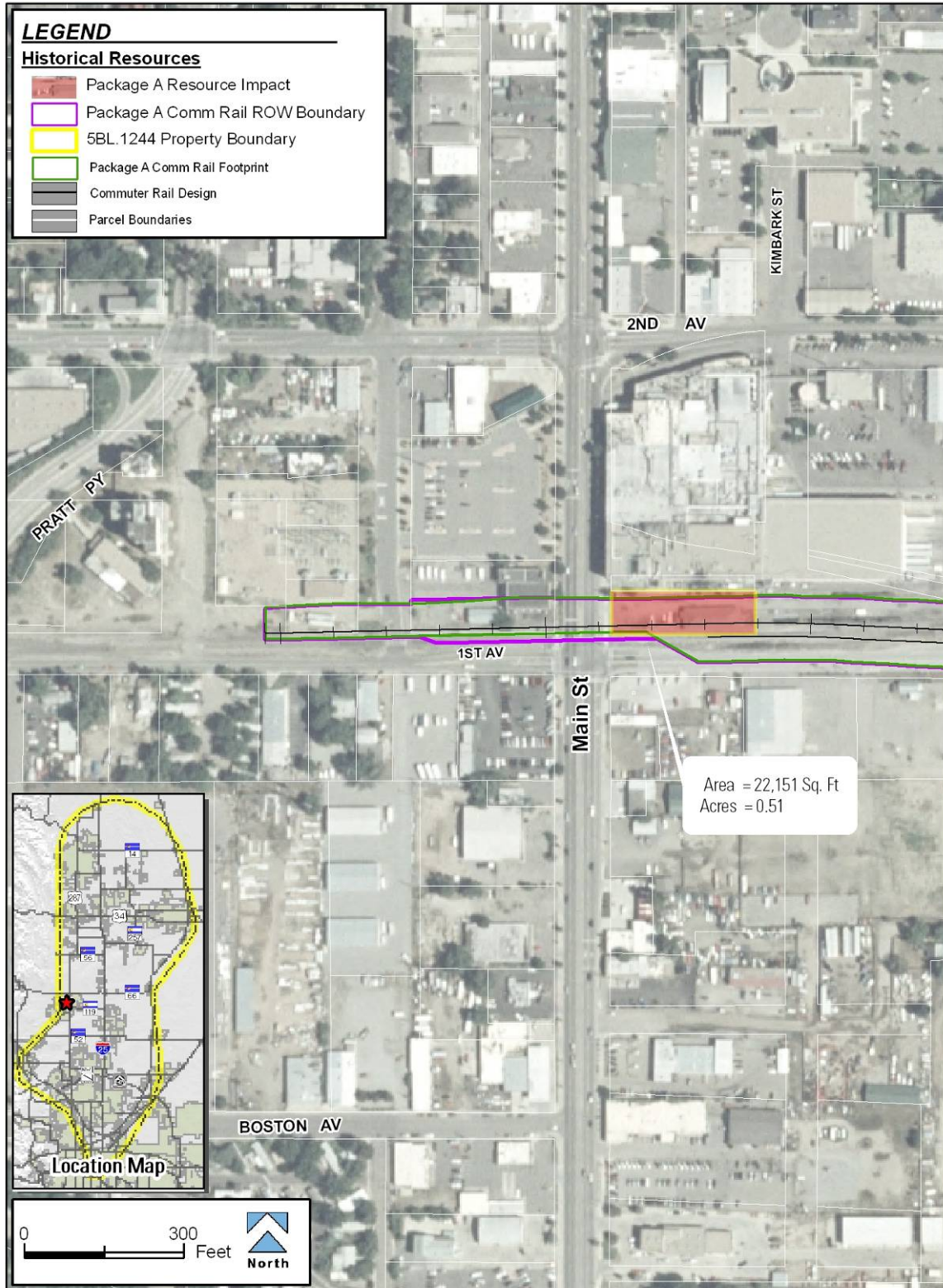
## All Possible Planning to Minimize Harm

Under Package A, relocation of the historic structure to another site would minimize the destructive nature of the use. No other minimization measures would reduce the Section 4(f) use.

**Mitigation Measures for the Colorado & Southern/BNSF Depot**

- Property acquisition will be completed under the Uniform Relocation Act.
- Continued consultation with SHPO is recommended prior to final design to implement possible revised design elements to facilitate historic preservation.
- Detailed recording of the building, in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended.
- All mitigation measures are pending SHPO concurrence.

1 Figure 5-13 Colorado and Southern/BNSF Depot Package A Use



## Hingley Farm (5WL.5263)

### Description

<b>Location:</b>	7523 Weld County Road 7, Erie
<b>Type:</b>	Historic farm
<b>Section 106 Effect Finding:</b>	Adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criteria A and C

### Use of Hingley Farm by Alternative

#### Package A

#### A-T2 Transit Component-

#### Commuter Rail:

#### Longmont to FasTracks North Metro

7.34 acres; incorporation of 2,585 feet by 125 feet strip of farmland into project and demolition of the farmhouse

#### Package B

#### B-T2 Transit Component-BRT: Fort Collins to DIA

No use

#### Preferred Alternative

#### Commuter Rail:

7.40 acres; incorporation of 2,585 feet by 125 feet strip of farmland into project and demolition of the farmhouse

### Resource Description

The farmstead is located at 7523 Weld County Road (CR) 7 in Erie. This farm is a very intact example of a historic agricultural operation in Weld County. Built in 1900, the hipped roof farmhouse is an intact example of the Classic Cottage domestic architectural style in a rural context.

### Eligibility Determination

This farmstead is eligible for the NRHP under Criterion A because of its important association with early settlement and agricultural development in Weld County, and under Criterion C for its significance as an intact early farmhouse and farmstead.



## Section 4(f) Use

### **Package A**

Proposed development of a new commuter rail alignment within a 125-foot-wide right-of-way corridor parallel to CR 7 would cause direct use of this historic farm. A strip of land within the historic property, measuring 2,585 feet long and 125 feet wide, would be acquired and converted from agricultural to transportation use. The area to be acquired comprises 7.34 acres. An entirely new transportation feature would be introduced into the rural, agricultural setting.

The majority of this affected land is currently utilized as cultivated fields. The proposed rail corridor would pass through the original farmstead complex at the southeast corner of the property, and would require removal of the contributing, architecturally significant farmhouse. The property, if the farmhouse were either rebuilt or replaced elsewhere on the property, could still serve its present agricultural function, albeit in diminished capacity due to the loss of arable land. These direct and indirect effects would result in the major reduction or loss of integrity of this resource; therefore, FHWA and CDOT have determined that an *adverse effect* under Section 106 would result. **Figure 5-14** depicts the uses associated with Package A.

### **Package B**

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

### **Preferred Alternative**

Proposed development of a new commuter rail alignment including passing track, parallel to CR 7 would cause direct use of this historic farm. A strip of land within the historic property, would be acquired and converted from agricultural to transportation use. The area to be acquired comprises 7.4 acres. An entirely new transportation feature would be introduced into the rural, agricultural setting.

The majority of this affected land is currently utilized as cultivated fields. The proposed rail corridor would pass through the original farmstead complex at the southeast corner of the property, and would require removal of the contributing, architecturally significant farmhouse. The property, if the farmhouse were either rebuilt or replaced elsewhere on the property, could still serve its present agricultural function, albeit in diminished capacity due to the loss of arable land (see **Figure 5-15**).

## Avoidance Alternatives

### **Package A and the Preferred Alternative**

Avoidance Alternatives for the Hingley Farm were explored in detail, and it was determined that it could only be avoided if the commuter rail alignment were placed on the east side of CR 7 in this area. If this alignment were used, there would be severe environmental impacts, including impacts to approximately 21 acres of prairie dog towns, and 18 more acres of habitat than a western alignment. There would also be an increase in impacts to wetlands of 0.25 acres, for a total of 0.36 acres of impacts, some of which are higher quality wetlands than those found on the western alignment. The western alignment would also avoid impacts to ponds.

Additionally, there would be an increase in social impacts, increased disruption to established communities, and increased impacts to minority populations. These include impacts to 66 properties and 55 structures, 18 more properties and 22 more structures than are impacted with the western alignment. Twenty-two of these properties are located in areas identified as minority, resulting in 16 relocations.

To shift the alignment only for the length of the Hingley Farm property would require two crossing structures over CR 7, at an approximate cost of \$5 million (\$2.5 million per structure).

Therefore, due to severe environmental impacts, including increased impacts to wetlands that are a federally protected resource, disruption to established communities and severe impacts to minority populations, it was decided that avoidance of the Hingley Farm by rerouting the alignment to the eastern side of CR 7 is not a feasible and prudent avoidance alternative.

### **Package B**

Package B would avoid use of Hingley Farm.

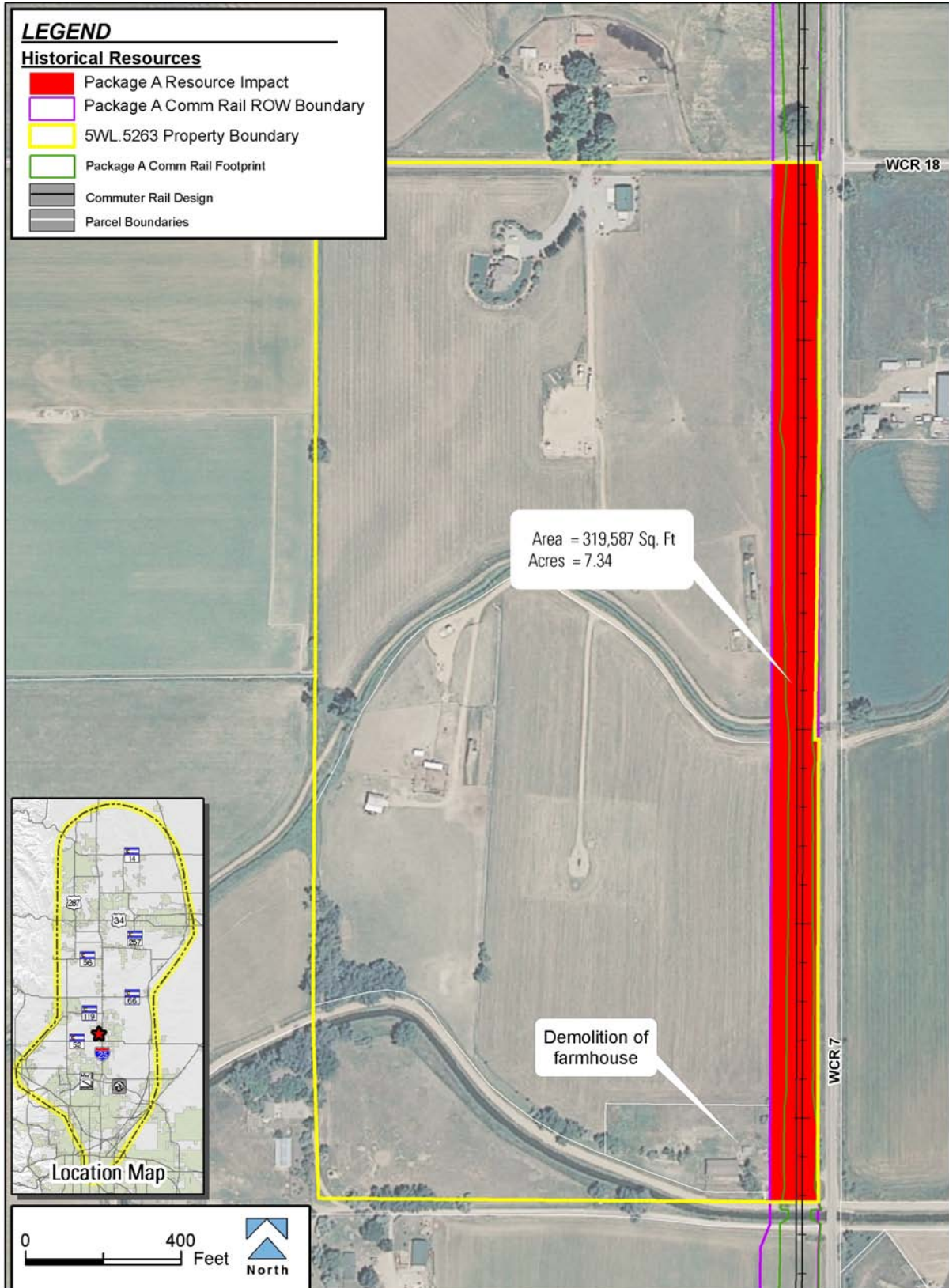
## **All Possible Planning to Minimize Harm**

The location of the rail line to the west side of CR 7 makes avoidance, minimization, and mitigation of the use of the farm not feasible and prudent because it would require either the crossing of CR 7 twice or the re-alignment of the road, and result in greater impacts to environmental resources as noted above. This solution would increase the cost of the project in addition to affecting properties on the east side of CR 7.

## **Mitigation Measures for Hingley Farm**

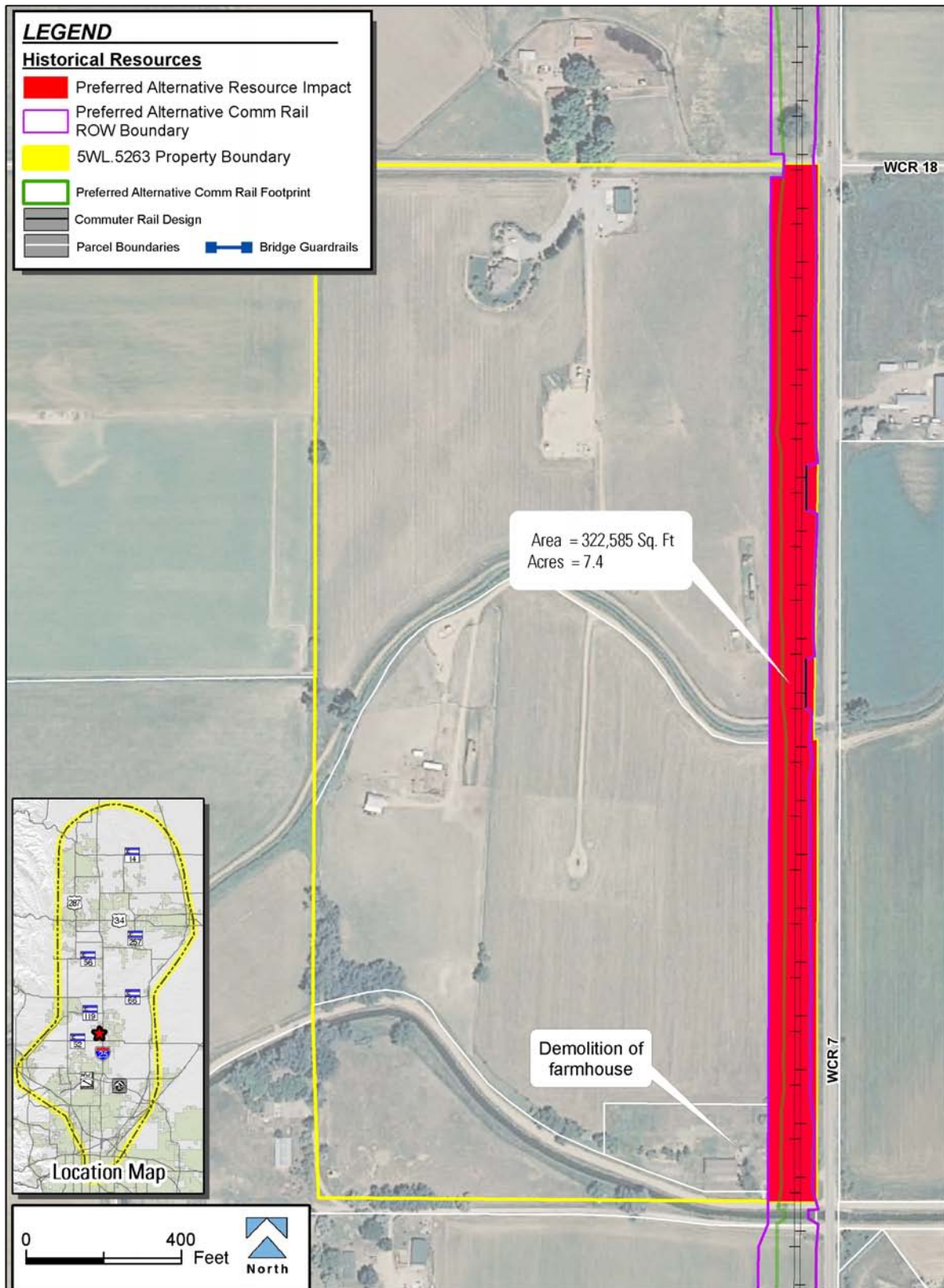
- Property acquisition will be completed under the Uniform Relocation Act.
- Continued consultation with SHPO is recommended prior to final design to implement possible revised design elements to facilitate historic preservation.
- Detailed recording of the building in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended.
- All mitigation measures are pending SHPO concurrence.

1 Figure 5-14 Hingley Farm Package A Use





1 Figure 5-15 Hingley Farm Preferred Alternative Use



**Jillson Farm (5WL.5263)**

**Description**

**Location:** 2877 WCR 18, Longmont  
**Type:** Historic farm  
**106 Effect Finding:** Adverse effect  
**Ownership:** Private  
**Significance:** NRHP-Eligible, Criteria A and C

**Use of Jillson Farm by Package**

Package A A-T2 Transit Component- Commuter Rail: Longmont to FasTracks North Metro	Package B B-T2 Transit Component-BRT: Fort Collins to DIA
7.34 acres incorporated into transportation infrastructure	No use
<p><b>Preferred Alternative</b>  <b>Commuter Rail:</b></p> <hr/> <p>7.34 acres incorporated into transportation infrastructure</p>	

**Resource Description**

The farm is significant as an important example of one of the northern Colorado farms from the late 19th century. It played an important role in the agricultural development and settlement of the region. The farm remains in the Jillson family after more than 120 years of continuous production. The house on the property is also architecturally significant as an excellent intact example of the Craftsman style with a wide, recessed porch, tapered supports and bracketed eaves.

**Eligibility Determination**

In the summer of 2010, the Jillson Farm was field assessed as eligible for inclusion on the NRHP under Criterion A for its importance in the agricultural development and settlement of the region for more than 120 years. It was also assessed as eligible under Criterion C as a good intact example of a Craftsman style house.



## Section 4(f) Use

### Package A

The Jillson farm includes 153 acres on the west side of WCR 7 and 80 acres on the east side. The use associated with Package A would occur along the western edge of WCR 7. A strip of 7.34 acres adjacent to the roadway would be needed for construction of the rail alignment. This strip of land goes roughly through the center of the farm which is currently bisected by the roadway. This part of the farm is currently used as pasture for the Jillson herd of about 70 cattle. The farm buildings would not be directly affected by this project as they are located approximately 500 feet west of WCR7

### Package B

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

### Preferred Alternative

Use of the Jillson Farm as a result of the Preferred Alternative would be identical to those described under Package A. **Figure 5-16** depicts the uses associated with the Preferred Alternative.

## Avoidance Alternatives

### Package A and the Preferred Alternative

Avoidance Alternatives for the Jillson Farm were explored in detail, and it was determined that it could only be avoided if the commuter rail alignment were placed on the east side of CR 7 in this area. If this alignment were used, there would be severe environmental impacts, including impacts to approximately 21 acres of prairie dog towns, 18 more acres of habitat than a western alignment. There would also be an increase in impacts to wetlands of 0.25 acre, for a total of 0.36 acre of impacts, some of which are higher quality wetlands than those found on the western alignment. The western alignment would also avoid impacts to ponds.

Additionally, there would be an increase in social impacts, increased disruption to established communities, and increased impacts to minority populations. These include impacts to 66 properties and 55 structures, 18 more properties and 22 more structures than are impacted with the western alignment. Twenty-two of these properties are located in areas identified as minority, resulting in 16 relocations.

To shift the alignment only for the length of the Jillson Farm property would require two crossing structures over CR 7, at an approximate cost of \$5 million (\$2.5 million per structure).

Therefore, due to severe environmental impacts, including increased impacts to wetlands that are a federally protected resource, disruption to established communities and severe impacts to minority populations, it was decided that avoidance of the Jillson Farm by rerouting the alignment to the eastern side of CR 7 is not a feasible and prudent avoidance alternative.

### Package B

Package B would avoid use of Jillson Farm.

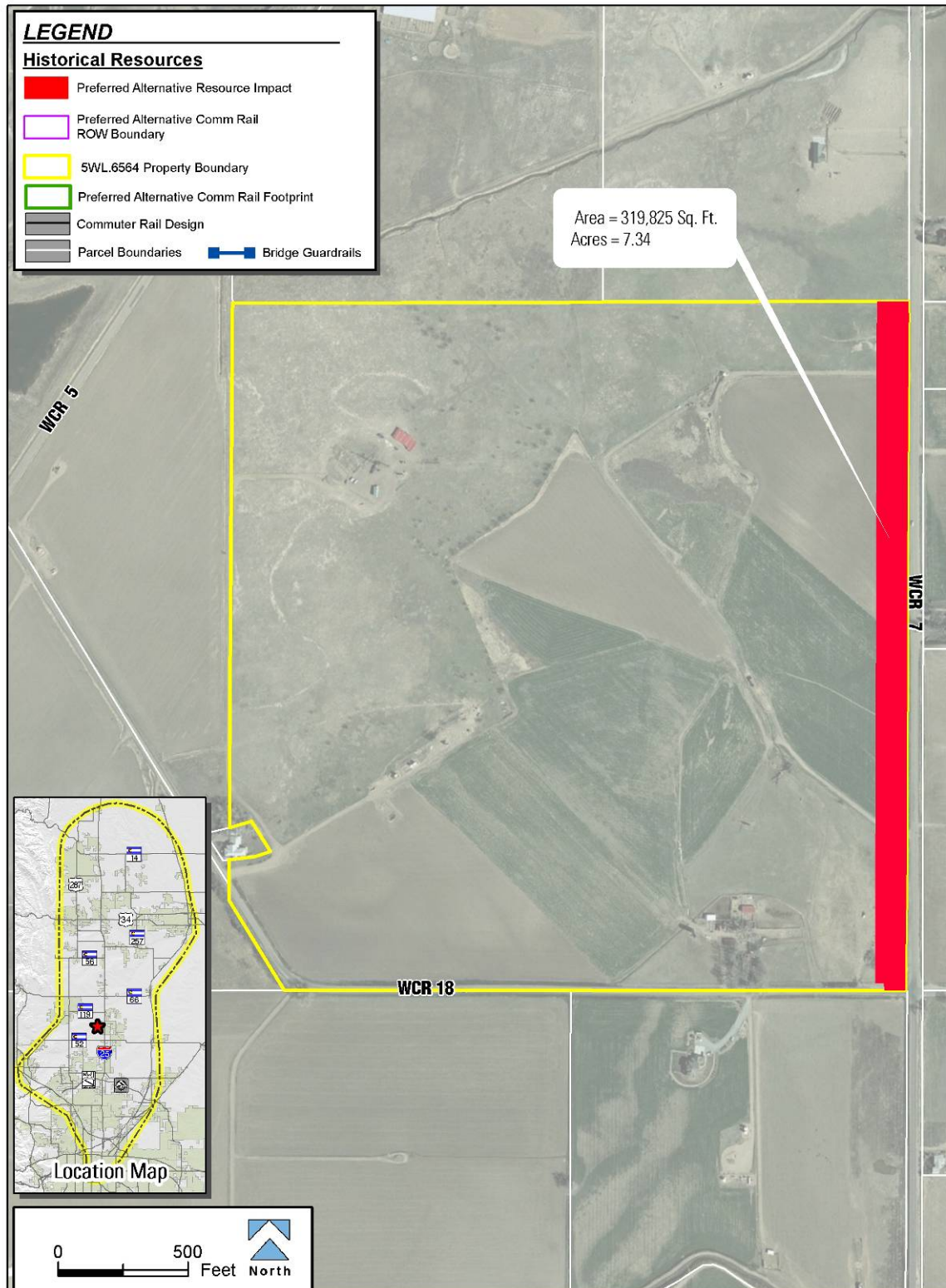
## All Possible Planning to Minimize Harm

The location of the rail line to the west side of CR 7 makes avoidance, minimization, and mitigation of the use of the farm not feasible and prudent because it would require either the crossing of CR 7 twice or the re-alignment of the road, and result in greater impacts to environmental resources as noted above. This solution would increase the cost of the project in addition to affecting properties on the east side of CR 7.

### **Mitigation Measures for Jillson Farm**

- Property acquisition will be completed under the Uniform Relocation Act.
- Continued consultation with SHPO is recommended prior to final design to implement possible revised design elements to facilitate historic preservation.
- Detailed recording of the building in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended.
- All mitigation measures are pending SHPO concurrence.

1 Figure 5-16 Jillson Farm Package A and Preferred Alternative Use



## Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder Valley Branch (5WL.1969, 5BF.130)

### Description

<b>Location:</b>	T1N/R68W, NW ¼ Sec 24
<b>Type:</b>	Historic railroad
<b>Section 106 Effect Finding:</b>	Adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of UPRR-Denver & Boulder Valley Branch by Package

Package A	Package B
<b>A-T2 Transit Component-Commuter Rail: Longmont to FasTracks North Metro</b>	<b>B-T2 Transit Component-BRT: Fort Collins to DIA</b>
2.9-mile abandoned segment modernized for double-track commuter rail operations; demolition of two historic bridges	No use
<b>Preferred Alternative Commuter Rail:</b>	
Demolition of two historic bridges.	

### Resource Description

This linear historic resource is the abandoned Denver Pacific/Kansas Pacific/Union Pacific, Denver & Boulder Valley Branch (UPD&BVB) that ran a distance of 26 miles from Boulder to Brighton. The rail line was originally built in 1870. Two segments of this rail line in Weld County enter the project APE, including 2,310-foot-long (0.44-mile) segment 5WL.1969.41, and 11,620-foot-long (2.2-mile) segment 5WL.1969.1, both of which follow the original alignment. Both segments are in a deteriorated state. One 2,083-foot-long (0.39-mile) segment of the same rail line in Broomfield County is designated 5BF.130.1, and includes a contributing wooden trestle bridge that carries the rails over Little Dry Creek.

Segment 5WL.1969.1 runs east-west 2,000 feet north of CR 8. The segment is 2.2-mile-long part of abandoned UPD&BVB between Boulder and Brighton. Construction started in 1870. Rails and ties have been removed near I-25 and parts have been paved over by county roads. This abandoned portion of the railroad includes a wooden trestle bridge located east of CR 7 and west of I-25. The railroad bridge crossing I-25 was removed soon after 1999.

### Eligibility Determination

The OAH has officially determined that the UPD&BVB is eligible for the NRHP under Criterion A because of its important role in the development of the agricultural economy of the Front Range of Colorado. Segments 5WL.1969.41 and 5BF.130.1 retain sufficient integrity of location and association to support the eligibility of the entire linear resource. Segment 5WL.1969.1 does not retain enough integrity to support the eligibility of the entire resource.

## Section 4(f) Use

### Package A

The proposed new commuter rail would utilize the existing track alignment and add a parallel track alignment following the historic UPD&BVB in this area before joining the Dent Branch (5WL.1317.11) and turning southward. Where the new commuter rail line would cross onto the Dent Branch, there would be direct use of as much as 260 feet of track by the replacement of existing “through rail” with switching tracks and associated apparatus (see **Figure 5-17**). The existing historic bed, ballast, and grade along the entire affected extent of the historic railway (segments 5WL.1969.1, 5WL.1969.41, and 5BF.130.1) would be preserved. Deteriorated ties and abandoned rail would be replaced as required to meet safety and design standards.

Where the abandoned railroad crosses I-25, the commuter rail would require a new 470-foot-long bridge spanning I-25. The original railroad bridge was demolished during a previous I-25 highway widening project. A new bridge crossing would not be expected to negatively affect the historic setting beyond its already diminished integrity at this location (see **Figure 5-18**).

Additionally, the new double-track rail alignments would require a new supporting structure over an unnamed drainage at the historic wooden timber and log footer bridge (5WL.1969.1 Feature 1). This 47-foot-long by 17-foot-wide historic bridge would be demolished to allow for construction of a new railroad bridge measuring approximately 60 feet-long and 70 feet-wide (see **Figure 5-18**).

The installation of the double-track configuration for the commuter rail would also require a new supporting structure over Little Dry Creek. The existing 69 foot long by 27 foot wide, wooden trestle bridge (5BF.130.1 Feature 1) would be demolished and a new bridge measuring approximately 75 feet long and 70 feet wide would be constructed at that site. Although new rail would be placed upon existing bed, ballast, and grade, and a new track placed adjacent to the historic alignment, this is a compatible effect with the historic use and setting of the historic railroad line, and would be expected to preserve an otherwise deteriorating resource (see **Figure 5-19**).

A continuous 2.9 miles of the entire linear resource would be re-occupied with new track on the existing bed, grade, and ballast, and an additional new track located 15 feet away and parallel to the existing historic alignment. New commuter rail tracks along the transportation corridor would introduce new but compatible rail infrastructure elements to the historic setting. Demolition of two historic bridge features along the Boulder Valley Branch would result in a use of the resource.

These direct and indirect effects would result in the major reduction or loss of integrity of this resource; therefore, FHWA and CDOT have determined that an *adverse effect* under Section 106 would result to the historic Denver Pacific/Kansas Pacific/UPD&BVB railroad line (5WL.1969 and 5BF.130).

### Package B

This segment originally bridged I-25, but the structure has been removed. Because Package B improvements occur at ground level within the span of the original bridge, there would be no use of the railroad segment by improvements associated with Package B. No direct or indirect impacts would occur at any segment locality. FHWA CDOT therefore have determined that the improvements would result in *no historic properties affected* with respect to the historic UPD&BVB (5WL.1969 and 5BF.130).

### Preferred Alternative

The proposed new commuter rail would utilize the existing track alignment following the historic UPD&BVB in this area before joining the Dent Branch (5WL.1317.11) way and turning southward. The existing historic bed, ballast, and grade along the entire affected extent of the historic railway (segments 5WL.1969.1, 5WL.1969.41, and 5BF.130.1) would be preserved. Deteriorated ties and abandoned rail would be replaced as required to meet safety and design standards.

Where the abandoned railroad crosses I-25, the commuter rail would require a new 470-foot-long bridge spanning I-25. The original railroad bridge was demolished during a previous I-25 highway widening project. A new bridge crossing would not be expected to negatively affect the historic setting beyond its already diminished integrity at this location (see **Figure 5-18**).



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Additionally, the new single-track rail alignment would require a new supporting structure over an unnamed drainage at the historic wooden timber and log footer bridge (5WL.1969.1 Feature 1). This 47-foot-long by 17-foot-wide historic bridge would be demolished to allow for construction of a new railroad bridge measuring approximately 60-feet-long and 70-feet-wide (see **Figure 5-18**). The installation of the single-track configuration for the commuter rail would also require a new supporting structure over Little Dry Creek. The existing 69-foot-long by 27-foot-wide, wooden trestle bridge (5BF.130.1 Feature 1) would be demolished and a new bridge measuring approximately 75 feet long and 70 feet wide would be constructed at that site. Although new rail would be placed upon existing bed, ballast, and grade, and a new track placed adjacent to the historic alignment, this is a compatible effect with the historic use and setting of the historic railroad line, and would be expected to preserve an otherwise deteriorating resource (see **Figure 5-19**).

A continuous 2.9 miles of the entire linear resource would be re-occupied with new track on the existing bed, grade, and ballast, and an additional new track located 15 feet away and parallel to the existing historic alignment. New commuter rail tracks along the transportation corridor would introduce new but compatible rail infrastructure elements to the historic setting. Demolition of two historic bridge features along the Boulder Valley Branch would result in use of the resource.

These direct and indirect effects would result in the major reduction or loss of integrity of this resource; therefore, FHWA and CDOT have determined that an *adverse effect* under Section 106 would result to the historic Denver Pacific/Kansas Pacific/UPD&BVB railroad line (5WL.1969 and 5BF.130).

## **Avoidance Alternatives**

### **Package A and Preferred Alternative**

A variety of avoidance alternatives were considered under Package A and the Preferred Alternative. Shifting the alignment of the commuter rail tracks off the historic railway alignment would require substantial acquisition of non-transportation corridor land from private and public ownership along a 3.03-mile distance. There are no vacant, adjacent, or parallel linear corridors onto which the rail could be relocated.

Environmental impacts include impacts to prairie dog colonies, and an additional 0.3 acre of high quality wetlands, which are a Federally protected resource. Social impacts include impacts to three residential properties, which would require relocation. Economic impacts would include those resulting from approximately 36 acres of farm and ranch land impacted by the realignment of the rail tracks. This farm and ranch land is located in an area that contains Prime Farmland and Farmland of Statewide Importance, increasing farmland impacts if the alternative alignment were used.

These measures would also result in use of other Section 4(f) resources including an additional 70 linear feet of impacts to each of the historic and Section 4(f) protected Bull Canal/Standley Ditch (5WL.1966) and Community Ditch (5WL.2247). Bull Canal/Standley Ditch is currently eligible for listing on the NRHP because of its important association with the development of water rights and agriculture in northeastern Colorado and as an important example of irrigation engineering. The Community Ditch is eligible for inclusion on the NRHP for its important association with the development of water rights and agriculture in Weld County. Impacts to the Bull Canal/Standley Ditch are currently *de minimis* under Section 4(f). There are currently no permanent impacts expected to Community Ditch. Impacts to these two resources as a result of avoidance of the single resource of the UPD&BVB, which has been recorded as being in a deteriorated state, would have the potential to increase the impacts to these two resources to adverse levels.

Therefore, this alternative is not a feasible and prudent avoidance alternative for the following reasons:

- After reasonable mitigation it still causes:
  - Severe social, economic, or environmental impacts.
  - Severe impacts to environmental resources protected under other Federal statutes.
- It involves multiple factors that cumulatively cause unique problems or impacts of an extraordinary magnitude.
- It does not provide avoidance of Section 4(f) resources.

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***Package B***

This alternative would avoid the use of the Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder Valley Branch.

**All Possible Planning to Minimize Harm**

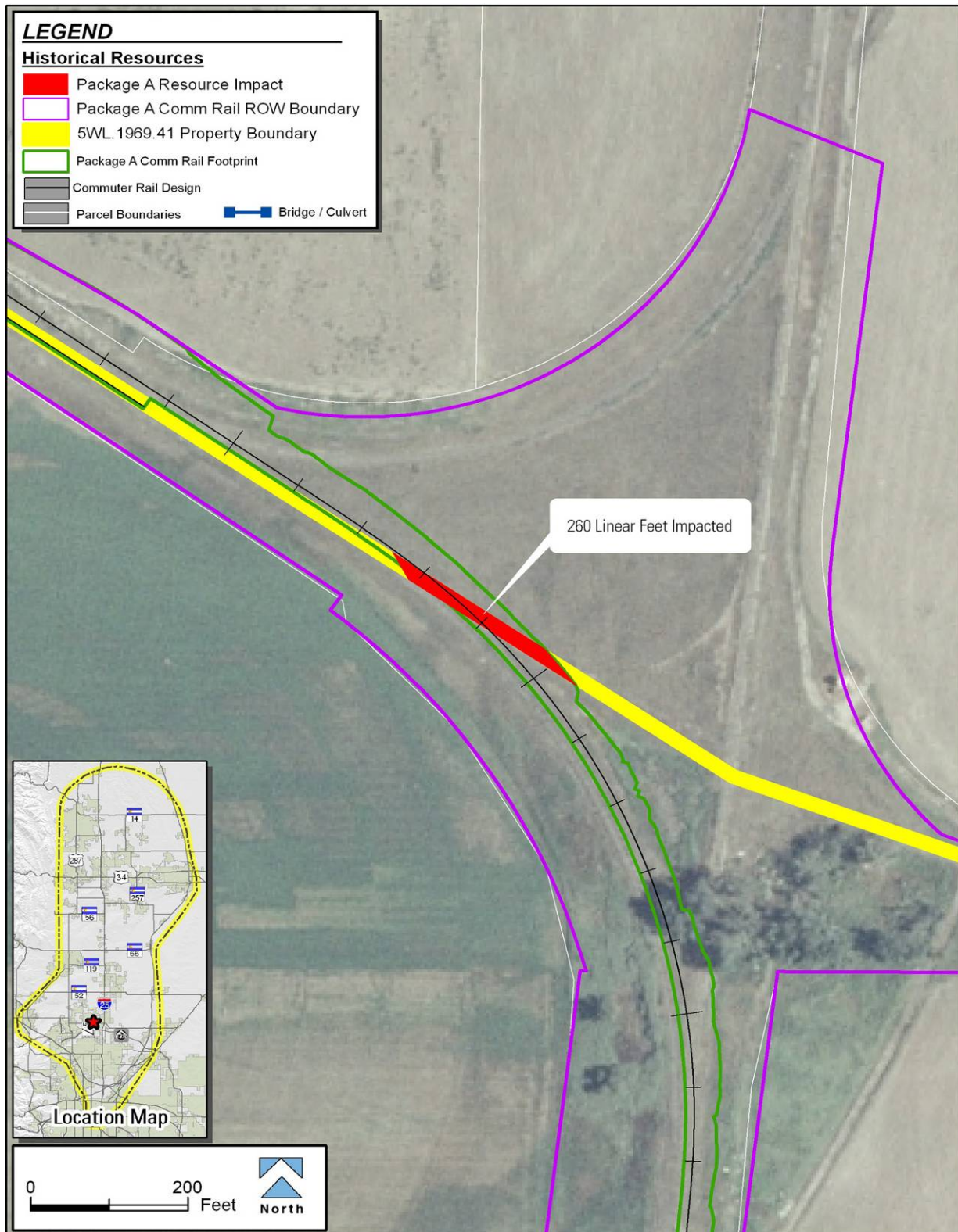
The physical railway template for a new double-track rail configuration has been reduced to the minimum width necessary to meet Federal Railroad Administration (FRA) and FTA design and safety standards. This minimizes the dimensions of new bridges and culverts. Re-utilization of abandoned historic track, bed, and ballast helps to preserve the historic rail alignment. Also, the commuter rail analysis indicates that use of this rail alignment allows for tie-in to the Dent Branch of the Union Pacific Railroad, which is the most cost effective manner to terminate at the proposed FasTracks North Metro Corridor end-of-line station.

**Mitigation Measures for UPD&BVB**

- Detailed recording of the affected railway, in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended pending SHPO concurrence.
- Continued consultation with SHPO is recommended prior to final design to implement possible revised design elements to facilitate historic preservation.

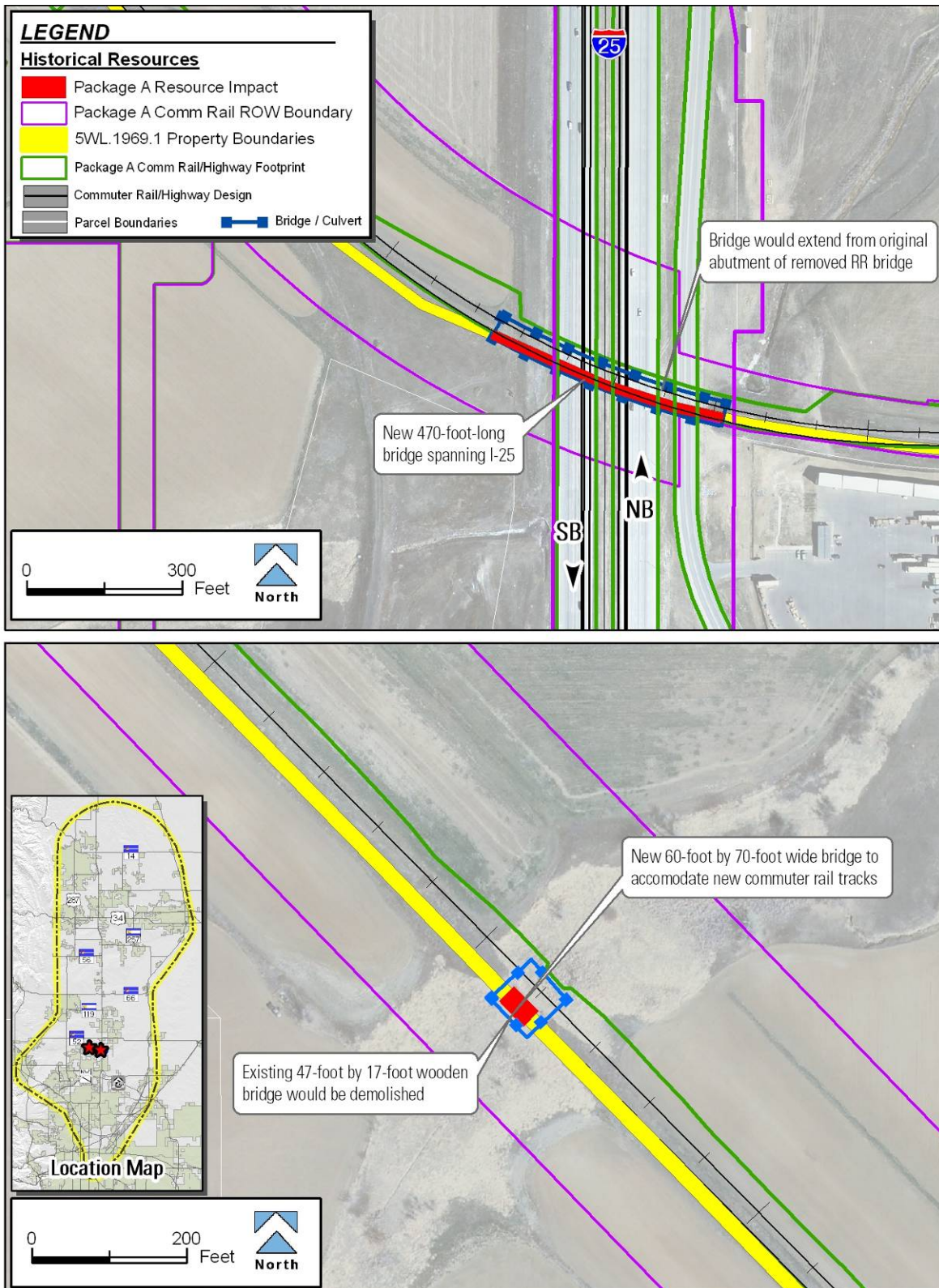
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- 1 Figure 5-17 Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder Valley Branch – Package A Use
- 2

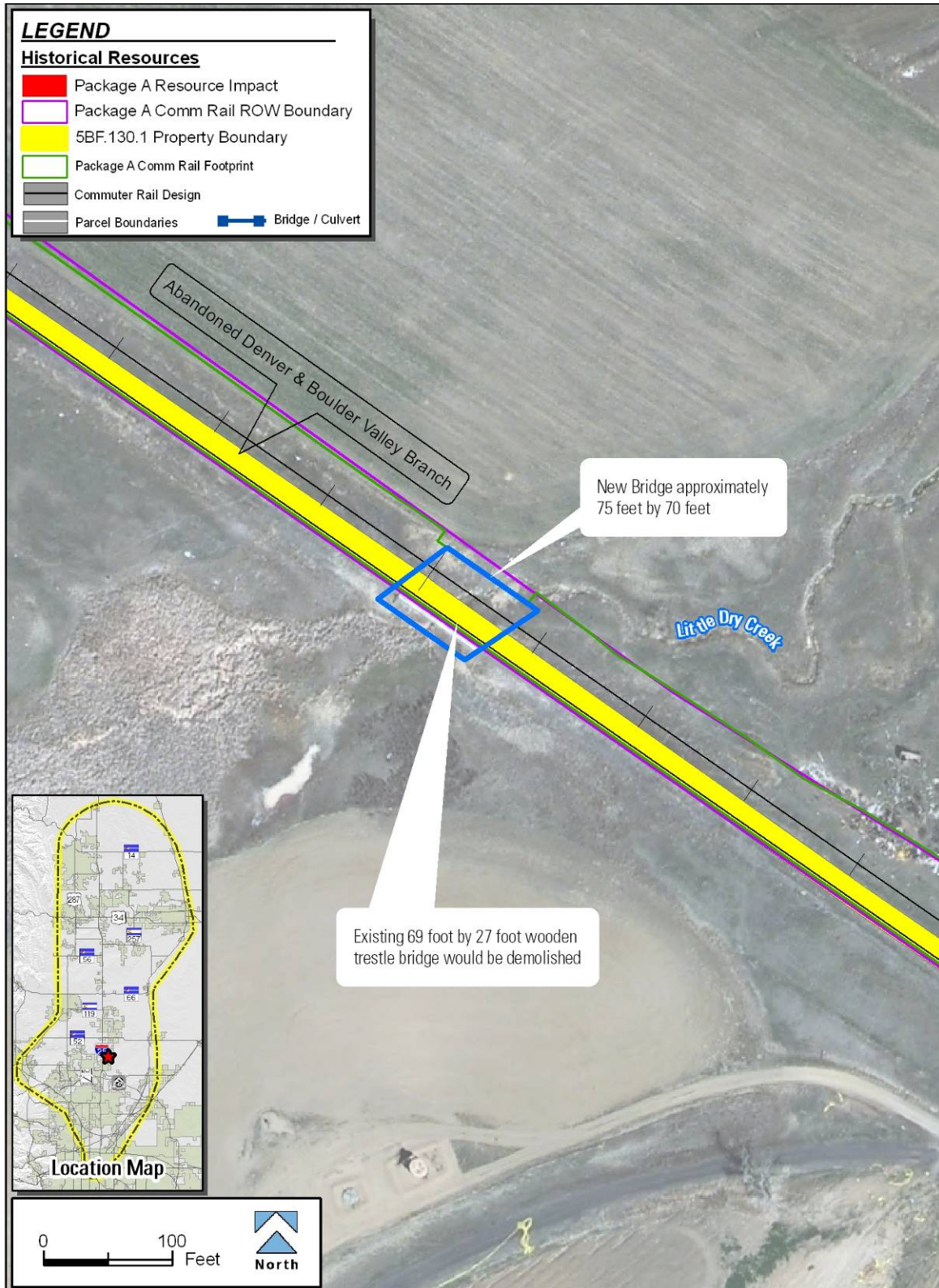




1 **Figure 5-18 Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder**  
2 **Valley Branch – Package A and Preferred Alternative Use**



1 **Figure 5-19 Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder**  
2 **Valley Branch – Package A and Preferred Alternative Use**





1 **5.4.5 Use of Public Parks, Recreation Areas, and Wildlife and**  
2 **Waterfowl Refuge Resources**

3 **Table 5-4** summarizes the proposed use of the individual parks, recreation areas, and wildlife  
4 and waterfowl refuge Section 4(f) resources in the regional study area.

**Table 5-4 Use of Parks, Recreation Areas, Wildlife and Waterfowl Section 4(f) Resources**

ID Number	Resource	Section 4(f) Use		
		Package A	Package B	Preferred Alternative
		<i>A-H2 GP Highway Improvements: SH 14 to SH 60</i>	<i>B-H2 Tolled Express Lanes: SH 14 to SH 60</i>	<i>I-25 Highway Improvements</i>
5	McWhinney Hahn Sculpture Park	A total of 1.21 acres of park used for placement of new ramps	A total of 1.21 acres of park used for placement of new ramps	A total of 1.21 acres of park used for placement of new ramps

5

**McWhinney Hahn Sculpture Park (Map ID Number 7)**

**Description**

<b>Location:</b>	West of I-25, north of US 34, Loveland
<b>Size:</b>	4.5 acres
<b>Type:</b>	Park
<b>Access:</b>	Public access
<b>Facilities/Amenities:</b>	Visitor's center, sculpture park, houses the Chamber of Commerce, restrooms, gateway to the City branding the City as an "Art City," drinking fountain, public telephone.
<b>Usage/Patronage:</b>	3,200/year
<b>Relationship to Other Resources:</b>	One of 27 developed parks in Loveland; Loveland Chamber of Commerce Visitor Center is located adjacent to the park.
<b>Ownership/Jurisdiction:</b>	City of Loveland
<b>Significance:</b>	As a Community Park, McWhinney Hahn serves the community of Loveland as a whole by providing a special use area for art exhibition and serving as "gateway" to the City. Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

## Use of McWhinney Hahn Sculpture Park by Package

### A-H2 GP Highway Improvements:

#### SH 14 to SH 60

A total of 1.21 acres (approximately 875-foot by 60-foot strip of land) of park used for placement of new ramps; includes impacts to sculptures, trails, and access. Serves as “gateway” to the city.

### B-H2 Tolled Express Lanes:

#### SH 14 to SH 60

A total of 1.21 acres (approximately 875-foot by 60-foot strip of land) of park used for placement of new ramps; includes impacts to sculptures, trails, and access. Serves as “gateway” to the city.

### Preferred Alternative

#### SH 14 to SH 60

A total of 1.21 acres (approximately 875-foot by 60-foot strip of land) of park used for placement of new ramps; includes impacts to sculptures, trails, and access. Serves as “gateway” to the city.

## Resource Description

This public park is included in the *Parks and Recreation Master Plan* prepared by the City of Loveland, 2001. The park includes an artificial pond, trail, and picnic tables. A special use is provided to display art and sculptures in a public setting. The Chamber of Commerce/Visitor Center building and parking lot are included in the park’s total acreage. The City has placed the art and sculpture in the park so that they are visible to motorists to signify a “gateway” to the city and promote visitation to the Visitors Center. The park also provides visitors with a direct view of the Front Range of the Rocky Mountains.

## Section 4(f) Use

### Package A

Use at this location would result from reconfiguration of the US 34 interchange from a fully directional cloverleaf to a three-quarter directional interchange. The northbound off-ramp from I-25 to westbound US 34 would affect the southernmost portion of the park, resulting in the use of 1.21 acres. The interchange ramps adjacent to the park would be elevated 20 feet to 30 feet on retaining walls. The US 34/I-25 northbound-to-westbound interchange ramp and new grade-separated interchange at US 34 and Rocky Mountain Avenue would directly use land from this Section 4(f) property. The land used at this property includes sculpture exhibit area and the trail around the man-made pond. Access to the park is from Foxtrail Drive, which is likely to be closed because of the proximity to the US 34/Rocky Mountain Avenue interchange ramps.

The City describes the property as serving as a “gateway” to the city and was planned to be oriented to the Front Range with views of the mountains. A park planning goal was to place art in highly visible locations and the identified use would decrease that visibility. The use would be of such magnitude that the function of the park would be largely lost. See **Figure 5-20** for park use.

### Package B

Uses of the Section 4(f) resource or park at this location would be the same as those associated with Package A resulting in 1.21 acres directly incorporated into the project.

### Preferred Alternative

Uses of the Section 4(f) resource or park at this location would be the same as those associated with Package A resulting in 1.21 acres directly incorporated into the project. See **Figure 5-21** for park use.

## Avoidance Alternatives

### Package A, B, and Preferred Alternative

A direct interchange at the crossing of US 34 and I-25, two major regional transportation facilities, is necessary for each facility to function in a manner that meets purpose and need. Avoidance of this use could occur if this interchange was closed and no connection was provided. This is not considered feasible and prudent because it would not meet the purpose and need factor of improving accessibility.

The McWhinney Hahn Sculpture Park could be avoided if the regional interchange facility could be moved further to the north or to the south of its existing location. Moving the facility 500 feet to the north to avoid using the McWhinney-Hahn Sculpture Park would substantially increase the total impacts throughout the development in the northwest and northeast quadrants of the I-25 and US 34 interchange. Approximately 50 retail and restaurant establishments, many as part of the newly constructed Centerra Marketplace, would be demolished, as would three office buildings, three hotels, and the Loveland Chamber of Commerce. This shopping center is designed to have immediate access to I-25; prices at the Marketplace are dependent on the easy access of goods to and from the Marketplace from I-25. Additionally there are a number of restaurants that offer “fast-food service,” making them appealing to those utilizing the Marketplace primarily for shopping. The “fast-food” restaurants are also appealing for those traveling through the region on I-25 seeking a convenient meal. Demolishing 50 buildings in the newly constructed Centerra development would result in a severe loss of property tax revenue to the City of Loveland. Relocation of the large number of resources with the same access to I-25 and proximity to each other would cause a unique problem.

Additional affected resources include the Medical Center of the Rockies, high-functioning wetlands, riparian areas harboring high quality habitat, and the two NRHP-eligible features—the Loveland and Greeley Canal and the Farmers Ditch. The Loveland and Greeley Canal is NRHP eligible under Criterion A for its important contribution to agricultural development in the Loveland Area. The segment near the interchange retains integrity, and avoiding the park would impact approximately 180 linear feet of this historic canal. Farmers Ditch is NHRP eligible under Criterion A for its important contribution to water rights and agriculture in Larimer County. Moving the facility to the north would impact approximately 2,800 linear feet of the ditch.

Avoidance of use of the park by moving the facility to the north would still require new on-ramps to be built as part of the existing interchange to accommodate future traffic volumes at this location. These proposed on-ramps would be elevated 30 feet higher than the existing highway on-ramps. This change to vertical profile, while not causing direct use to the park, would substantially affect the values that provide the basis for the function of the park as a “gateway” to the City. The addition of the walls would impede the views of the park users to the Front Range of the Rocky Mountains and would impede the views from passing motorists to the park showcasing the art. Both of these views constitute attributes that serve the primary function of the park as a “gateway” to the city, thus the function of the park would be largely lost. In a meeting held August 2007 with the City of Loveland (the agency with jurisdiction), the City cited both the views of the mountains and the view to the sculptures as the reason for locating the Visitors Center there and touting it as the “gateway” to the City. The City expressed concern that the proposed walls would impair the view to the Visitors Center as well, and the new interchange would move people quickly through the area making them less likely to stop at the Visitors Center. The City asked for additional meetings to discuss the possibility of moving the Sculpture Park and Visitors Center in their entirety to a location that would function more as a “gateway.” Mitigating the land lost by replacing it with adjacent land in the same location would not effectively address the uses of the park. Cumulatively, the severe and unique impacts to wetlands, riparian areas, two eligible ditches and 50 buildings make moving the interchange (and US 34) to the north not feasible and prudent.

Moving the facility to the south to avoid the sculpture garden would create additional use at the Section 4(f)-protected Schmer Farm. This historic farm is eligible for the NRHP under Criterion A for its association with early agriculture and under Criterion C for containing excellent examples of agricultural architecture. The property is one of the last remaining intact examples of a Larimer County Farm from the turn of the century. A field trip was conducted in the North I-25 corridor in June 2006 with the SHPO's office and CDOT historian for the purpose of assessing historic properties in the study area. The Schmer Farm was one of the properties assessed. It was found that the Schmer Farm maintains a very high level of integrity because the land area of the farm has remained essentially unchanged since 1916, and the farmhouse and outbuildings exhibit very little alteration. Within two months of that field visit, the SHPO recommended that the property be officially assessed as eligible for inclusion on the NRHP. Moving the interchange at this location to the south to avoid the park would create an additional 3.7 acres of use, and require demolition of the farmhouse and associated outbuildings. The use at the farm would be elevated from a *de minimis* to an adverse effect. Due to the high level of architectural integrity, loss of this resource would undermine the intent of Section 4(f) to preserve significant historic sites.

Avoiding the sculpture garden by moving the alignment to the south would also result in impacts to low- to medium-function wetlands and riparian areas associated with a man-made feature in the southeast quadrant, impacts to high-quality wetland and riparian areas associated with the Big Thompson River, impacts to potential Preble's meadow jumping mouse habitat and impacts to the NHRP-eligible properties of the Loveland and Greeley Canal and Farmers Ditch. Impacts to the NRHP properties of the Loveland and Greeley Canal and Farmers Ditch would be new compared to the impacts associated with the original alignment. Cumulatively, the severe and unique impacts to the Schmer Farm, wetlands and riparian areas associated with the Big Thompson River, potential Preble's meadow jumping mouse habitat and two eligible ditches of moving the interchange south would make this alternative not feasible and prudent.

Similar to the northern avoidance alternative, total avoidance of the park by moving the interchange south would still severely impact the features and attributes (views to and from the park) of the park that make the park achieve the City's goals. This impact would severely affect the park basically rendering the park unusable for its intended purpose, as a gateway feature.

The use of the sculpture garden can be effectively mitigated by moving the sculpture garden to a location more suited to its primary purpose as a gateway to the City of Loveland. A new location would provide better access and better visibility so the sculpture gardens features, attributes and activities are consistent with the City's goals for the park. Moving the eligible farmhouse and associated out buildings on the Schmer Farm would destroy the integrity of this property. The SHPO views this property as a unique significant property with a high degree of integrity since it has remained essentially unchanged since 1916.

### **All Possible Planning to Minimize Harm**

The US 34/I-25 interchange has been designed to accommodate major movements between these regional facilities as well as accommodate safe and efficient local system traffic. Previous interchange design configurations were much wider and would have used a greater area of the McWhinney Hahn Sculpture Park and the Schmer Farm. The US 34/I-25 interchange is the most compact design possible to minimize right-of-way acquisition. Retaining walls have been included to minimize direct impacts.

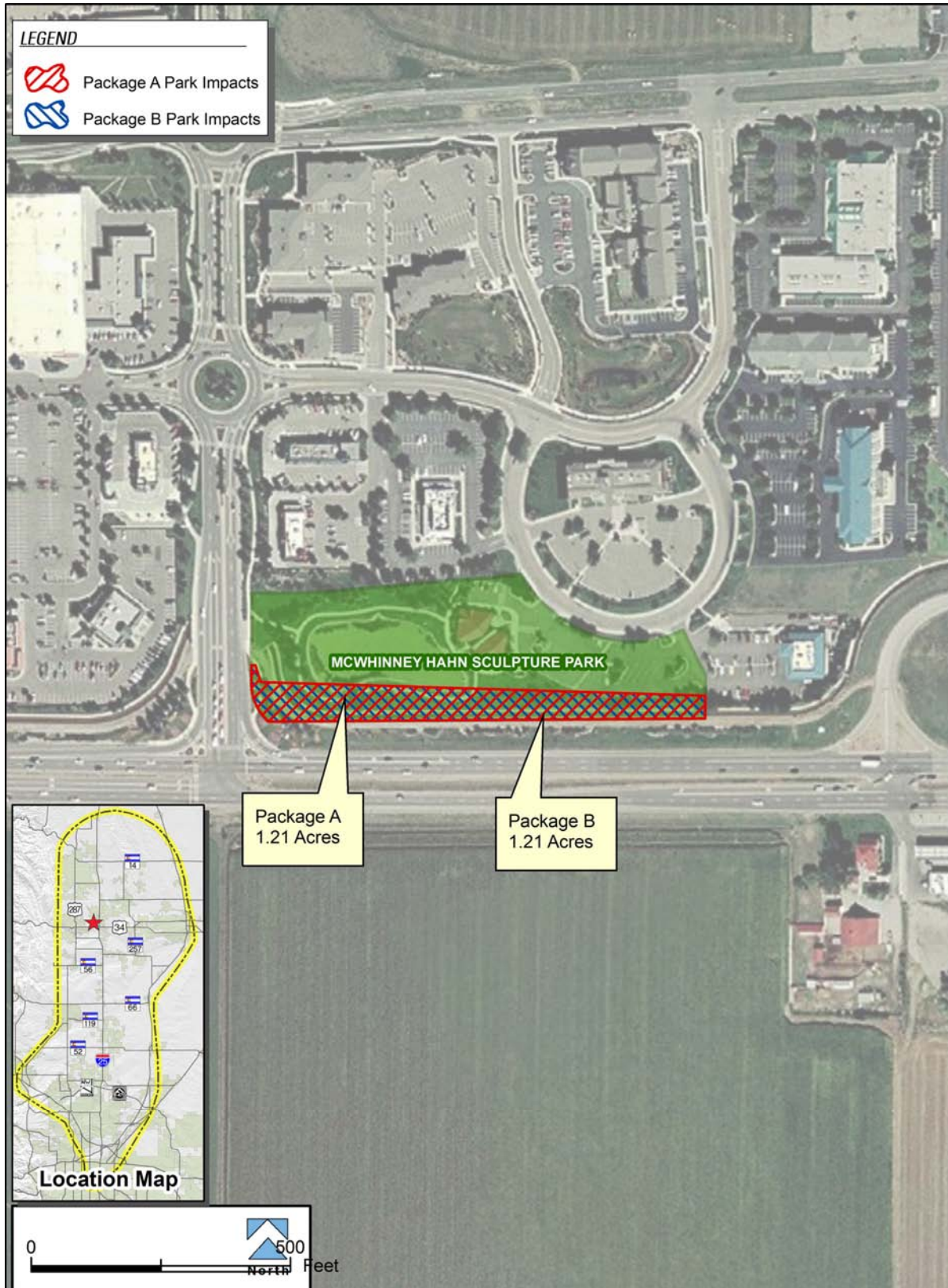
CDOT would pursue replacing acquired park land with a suitable replacement property of similar size for the McWhinney Hahn Sculpture Park due to the magnitude and character of parkland lost as a result of Packages A and B.

### **Mitigation Measures for McWhinney Hahn Sculpture Park**

- Coordinate with City of Loveland to relocate park to new location.
- Coordinate with City of Loveland to identify new park, gateway, and visitors center location.
- Continue coordination with City of Loveland into final design to assure no disruption of services

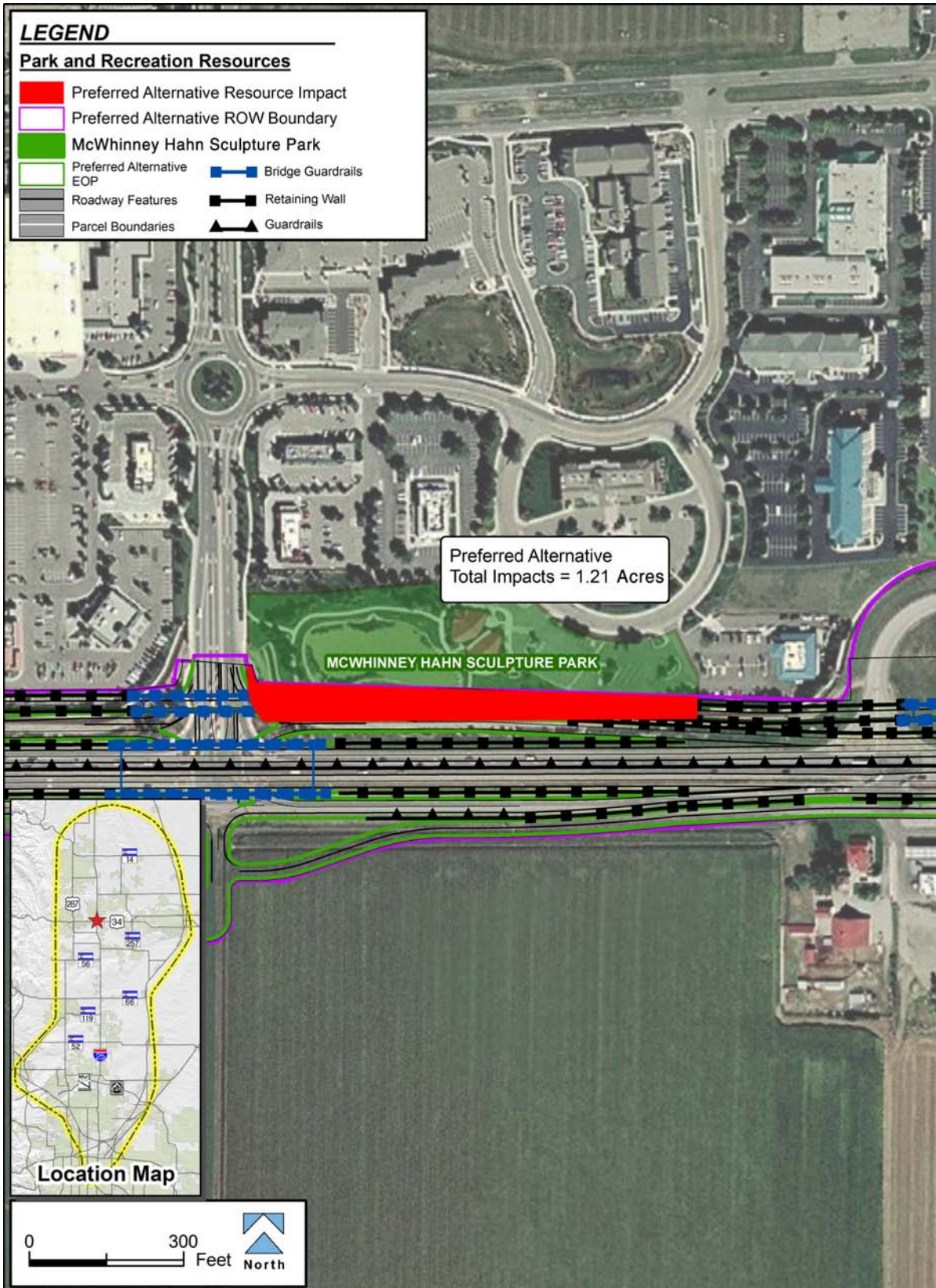


1 Figure 5-20 McWhinney Hahn Sculpture Park Packages A and B Use





1 Figure 5-21 McWhinney Hahn Sculpture Park Preferred Alternative Use



2

## 5.5 DE MINIMIS IMPACTS

SAFETEA-LU was enacted in August 2005. Guidance for addressing *de minimis* was provided in December 2005. This guidance authorizes the FHWA to approve a project that results in a *de minimis* impact to a Section 4(f) resource without the evaluation of avoidance alternatives typically required in a Section 4(f) evaluation. Section 6009 of SAFETEA-LU amended 23 USC 138 which now states:

“[T]he Secretary shall not approve any program or project (other than any project for a park road or parkway under Section 204 of this title) which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance as determined by the Federal, State, or local officials having jurisdiction thereof, or any land from an historic site of national, State, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use.”

“(b) *De Minimis* Impacts.—

(1) Requirements.—

(A) Requirements for historic sites.— The requirements of this section shall be considered to be satisfied with respect to an area described in paragraph (2) if the Secretary determines, in accordance with this subsection, that a transportation program or project would have a *de minimis* impact on the area.

(B) Requirements for parks, recreation areas, and wildlife or waterfowl refuges.— The requirements of subsection (a) (1) shall be considered to be satisfied with respect to an area described in paragraph (3) if the Secretary determines, in accordance with this subsection, that a transportation program or project will have a *de minimis* impact on the area. The requirements of subsection (a) (2) with respect to an area described in paragraph (3) shall not include an alternatives analysis.

(C) Criteria.— In making any determination under this subsection, the Secretary shall consider to be part of transportation program or project any avoidance, minimization, mitigation, or enhancement measures that are required to be implemented as a condition of approval of the transportation program or project.”

There are different processes for evaluating *de minimis* for historic resources and park and recreational resources. These processes are outlined below.

## 5.5.1 *De Minimis* for Historic Resources

Historic sites qualifying for Section 4(f) protection must be officially listed on or eligible for inclusion in the NRHP. The NRHP eligibility is established through the Section 106 process. Section 6009 of SAFETEA-LU amended Title 23 USC Section 138(b)(2) which now states:

“With respect to historic sites, the Secretary may make a finding of *de minimis* impact only if—

(A) the Secretary has determined, in accordance with the consultation process required under Section 106 of the National Historic Preservation Act (16 U.S.C 470f), that—

(i) the transportation program or project will have no adverse effect on the historic site; or

(ii) there will be no historic properties affected by the transportation program or project;

(B) the finding of the Secretary has received written concurrence from the applicable State historic preservation officer or tribal historic preservation officer (and from the Advisory Council on Historic Preservation if the Council is participating in the consultation process; and

(C) the finding of the Secretary has been developed in consultation with the parties consulting as part of the process referred to in subparagraph (A).”

The following Section 4(f) properties are recommended for *de minimis* determination. These properties are shown on **Figure 5 22** through **Figure 5 53**. Use of the properties has been evaluated based on current engineering design. The EIS and Section 4(f) Evaluation is documentation and notification to SHPO that FHWA intends to make *de minimis* findings for the properties outlined in this section. Final *de minimis* findings cannot be made until SHPO has concurred with the effect determinations outlined in **Section 3.15 Historic Preservation** of this EIS. Although some consultations on effects for Packages A and B have occurred, this document provides the opportunity for consultation on all of the alternatives. The Final *de minimis* Finding will be included in the Record of Decision pending consultation outcome with the SHPO. Informal coordination with the SHPO has been ongoing. Concerns raised to date by the SHPO have been addressed.

As described in **Section 5.2.2**, a *de minimis* finding for significant historic resources is recommended when the Section 4(f) use is minimal or trivial. The *de minimis* impact finding is based on the degree or level of use, including any avoidance, minimization and mitigation, or enhancement measures that are included in the project to address the Section 4(f) use. *De minimis* impact findings must be expressly conditioned upon the implementation of any measures that were relied upon to reduce the use to a *de minimis* level.

**Table 5-5, *De Minimis* Uses of Section 4(f) Historical Resources by Component**, summarizes the effects on the individual historical resources. Additionally, the table lists the type of Section 4(f) use of each resource.



1 Table 5-5 *De Minimis* Use of Section 4(f) Historical Resources

ID Number	Resource	Section 4(f) Use		
		Package A	Package B	Preferred Alternative
		<b>A-H1 Safety Improvements: SH 1 to SH 14</b>	<b>B-H1 Safety Improvements: SH 1 to SH 14</b>	<b>I-25 Improvements</b>
5LR.8932	Larimer County Ditch	83 feet placed in two culvert extensions.	83 feet placed in two culvert extensions.	55 feet placed in two culvert extensions.
5LR.11396	Einarsen Farm	1.76 acres of property as incorporation of 1,600-foot by 50-foot strip of farmland into project.	1.76 acres of property as incorporation of 1,600-foot by 50-foot strip of farmland into project.	1.9 acres of property as incorporation of 1,600-foot by 50-foot strip of farmland into project.
		<b>A-H2 GP Highway Improvements: SH 14 to SH 60</b>	<b>B-H2 Tolled Express Lanes: SH 14 to SH 60</b>	<b>I-25 Improvements</b>
5LR.11409	Cache la Poudre Reservoir Inlet	A total length of 85 feet of open ditch in culvert extensions.	A total length of 85 feet of open ditch in culvert extensions.	A total length of 85 feet of open ditch in culvert extensions.
5LR.2160	Boxelder Ditch	A total of 137.5 feet of total ditch length incorporated into a new 62.5-foot-long culvert and a 75-foot-long culvert extension.	A total of 137.5 feet of total ditch length incorporated into a new 62.5-foot-long culvert and a 75-foot-long culvert extension.	A total of 194 feet of total ditch length incorporated into a new 124-foot-long culvert and a 70-foot-long culvert extension.
5LR.503.2	Loveland and Greeley Canal	A total of 70 feet of total ditch length in culvert extension.	A total of 70 feet of total ditch length in culvert extension.	A total of 65 feet of total ditch length in culvert extension.
5LR.8928	Farmers Ditch	A total of 2,539 linear feet would be placed inside culvert extension.	A total of 2,539 linear feet would be placed inside culvert extension.	A total of 2,532 linear feet would be placed inside culvert extension.

2

1 Table 5-5 *De Minimis* Use of Section 4(f) Historical Resources (cont'd)

ID Number	Resource	Section 4(f) Use		
		Package A	Package B	Preferred Alternative
5LR.11209	Schmer Farm	A total of 6.61 acres of the total acreage of the historic farm subject to direct use, including an approximately 1,800-foot by 124-foot strip (5.09 acres) of farmland incorporated into new elevated and at-grade ramps, and 1.52 acres for construction of new access from US 34 to the frontage road leading to the Schmer farmhouse and businesses on the southwest corner of the interchange.	A total of 7.0 acres of the total acreage of the historic farm subject to direct use, including an approximately 1,800-foot by 134-foot strip (5.48 acres) of farmland incorporated into new elevated and at grade ramps, and 1.52 acres for construction of new access from US 34 to the frontage road leading to the Schmer farmhouse and businesses on the southwest corner of the interchange.	A total of 5.48 acres of the total acreage of the historic farm subject to direct use, including a 3.86 acres strip of farmland incorporated into new elevated and at-grade ramps, and 1.52 acres for construction of new access from US 34 to the frontage road leading to the Schmer farmhouse and businesses on the southwest corner of the interchange.
5LR.11210	McDonough Farm	A total of 1.64 acres by incorporation of a thin strip of farmland adjacent to US 34.	A total of 1.64 acres by incorporation of a thin strip of farmland adjacent to US 34.	A total of 1.64 acres by incorporation of a thin strip of farmland adjacent to US 34.
5LR.850 5WL.841 5BL.514	Great Western Railway	A total of 170 feet of total railroad length incorporated into a new bridge.	A total of 240 feet of total railroad length incorporated into a new bridge.	A total of 155 feet of total railroad length incorporated into a new bridge.
5LR.11382	Hatch Farm	A total of 2.1 acres of total property by incorporation of narrow 850-foot and 450-foot strips of farmland into two water quality ponds.	A total of 2.2 acres of total property by incorporation of narrow 850-foot and 450-foot strips of farmland into two water quality ponds.	A total of 1.33 acres of total property by incorporated into the transportation infrastructure.
5LR.8927	Hillsboro Ditch	A total of 135 feet of total ditch length would be incorporated into culvert extensions.	A total of 135 feet of total ditch length would be incorporated into culvert extensions.	A total of 55 feet of total ditch length would be incorporated into culvert extensions.
5LR.11242	Mountain View Farm	A total of 4.76 acres of the property by incorporation of a 65-foot by 3,200-foot strip of farmland adjacent to I-25 and SH 402.	A total of 5.28 acres of the property by incorporation of a 60-foot by 3,900-foot strip of farmland adjacent to I-25 and SH 402.	A total of 1.82 acres of the property adjacent to I-25 and SH 402 incorporated into transportation.

1 Table 5-5 *De Minimis* Use of Section 4(f) Historical Resources (cont'd)

ID Number	Resource	Section 4(f) Use		
		Package A	Package B	Preferred Alternative
		<b>A-H3 GP Highway Improvements: SH 60 to E-470</b>	<b>B-H3 Tolled Express Lanes: SH 60 to E-470</b>	<b>Preferred Alternative: I-25 Improvements</b>
5WL.5203	Bein Farm	A total of 17.94 acres by incorporation of a 4,600-foot by 150-foot strip of farmland adjacent to I-25 and an 800-foot by 110-foot strip of farmland adjacent to SH 60.	A total of 20.04 acres by incorporation of a 4,600-foot by 170-foot strip of farmland adjacent to I-25 and an 800-foot by 110-foot strip of farmland adjacent to SH 60.	A total of 16.10 acres adjacent to I-25 or SH 60 incorporated into transportation infrastructure.
5WL.3149	Handy/Home Supply Ditch Confluence	A total of 60 feet incorporated into culvert extensions.	A total of 60 feet incorporated into culvert extensions.	A total of 74 feet incorporated into culvert extensions.
5WL.5198	Olson Farm	A total of 12.74 acres by incorporation of land from both sides of I-25.	A total of 12.81 acres by incorporation of land from both sides of I-25.	A total of 4.63 acres by incorporation of land from both sides of I-25.
5LR.488	Colorado & Southern Railway Depot – Loveland Depot	A total of 0.03 acres total property	No Use	No Use
5WL.1966, 5BF.76, 5BF.72, 5AM.457	Bull Canal/ Standley Ditch	A total of 908 feet of the total ditch length would be placed into three culvert extensions.	A total of 850 feet of the total ditch length would be placed into two culvert extensions.	A total of 736 feet of the total ditch length would be placed into two culvert extensions.
		<b>A-T1 Transit Component-Commuter Rail: Fort Collins to Longmont</b>	<b>B-T1 Transit Component-BRT: Fort Collins/Greeley to Denver</b>	<b>Preferred Alternative: Commuter Rail</b>
5BL.3449	Supply Ditch	A total of 65 feet of total ditch length would be placed into a culvert extension.	No use	A total of 45 feet of total ditch length would be placed into a culvert extension.
5BL.3113	Rough & Ready Ditch	A total of 35 feet of total ditch length placed into a culvert extension.	No use	A total of 45 feet of total ditch length placed into a culvert extension.
5BL.4832	Oligarchy Ditch	Culvert extension of 48 feet.	No use	Culvert extension of 64 feet.

2

1 Table 5-5 *De Minimis* Use of Section 4(f) Historical Resources (cont'd)

ID Number	Resource	Section 4(f) Use		
		Package A	Package B	Preferred Alternative
		<b><i>A-T2 Transit Component-Commuter Rail: Longmont to FasTracks North Metro</i></b>	<b><i>B-T2 Transit Component-BRT: Fort Collins to DIA</i></b>	<b><i>Preferred Alternative: Commuter Rail</i></b>
5BL.9163	Kitely House	A small strip of land totaling 385 square feet on the eastern edge of the property would be acquired for construction of a retaining wall that would prevent greater use of the property.	No use	A small strip of land totaling 385 square feet on the eastern edge of the property would be acquired for construction of a retaining wall that would prevent greater use of the property.
5LR.1729	Big Thompson Ditch	A total of 60 feet of total ditch length, placed into a culvert extension.	No use	No Use
5BL.513	Great Western Sugar	A total of 0.33 acre of the property would be used for pedestrian walkway.	No use	No use
5WL.712	Sandstone Ranch	A total of 2.17 acres of unused land within the historic district used for new railroad right-of-way.	No use	A total of 1.45 acres of unused land within the historic district used for new railroad right-of-way.
5WL.5461	Boulder & Weld County Ditch	A total of 63 feet of open ditch would be placed into a new culvert.	No use	A total of 63 feet of open ditch would be placed into a new culvert.
5WL.1974	Rural Ditch	A total of 130 feet of open ditch would be placed into a new culvert.	No use	A total of 108 feet of open ditch would be placed into a new culvert.
5WL.1317	UPRR-Dent Branch	4.89-mile abandoned segment modernized for double-track commuter rail operations. 200-foot sections modified to install switching tracks.	No use	4.89-mile abandoned segment modernized for single-track commuter rail operations.



1

## Larimer County Ditch (5LR.8932.1)

### Description

<b>Location:</b>	I-25, north of Larimer County Road (CR 56)
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Water supply and storage company
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Larimer County Ditch by Package

Package A	Package B
<b>A-H1 Highway Component: Safety Improvement: SH 1 to SH 14</b>	<b>B-H1 Highway Component: Safety Improvement: SH 1 to SH 14</b>
83 feet of open ditch would be placed inside new culvert extensions	83 feet of open ditch would be placed inside new culvert extensions

### Preferred Alternative

#### SH 1 to SH 14

55 feet placed in two culvert extensions

### Resource Description

The Larimer County Ditch crosses I-25 approximately 900 feet north of Larimer County Road (CR) 56, south of the Town of Wellington. The ditch has been owned and operated by the Water Supply and Storage Company since 1892. The open ditch crosses underneath I-25 and the east frontage road inside two almost continuous concrete culverts. The earthen ditch segment is approximately 20 feet wide with grassy levees, and traverses rural terrain.

### Eligibility Determination

In 2001, the Larimer County Ditch (5LR.8932) was determined to be eligible for the NRHP under Criterion A for its important contribution to irrigation in Larimer County. Segment 5LR.8932.1 does not support the eligibility of the greater ditch resource because of past modifications to its structure at the culvert crossings underneath I-25 and the existing east frontage road.

### Section 4(f) Use

#### Package A

Package A improvements include a wider frontage road along the existing alignment parallel to the southbound I-25 mainline, requiring a 38-foot-long culvert extension to the west side of the existing 35-foot-long culvert. A new 40-foot-wide frontage road would be built parallel to the east side of the northbound I-25 mainline, requiring a new concrete box culvert crossing of the ditch at that location. The new culvert would place 45 feet of open ditch within a concrete culvert. The length of open ditch placed inside new culvert extensions would total 83 feet. There would be no mainline I-25 improvements in this area (see **Figure 5-22**).

Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of I-25 and frontage road, and Package A improvements are minor in relative extent, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the Larimer County Ditch.

### **Package B**

Package B improvements include the same uses as Package A. Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of I-25 and frontage road, and Package B improvements are minor in relative extent, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the Larimer County Ditch (see **Figure 5-22**).

### **Preferred Alternative**

Preferred Alternative improvements include a wider frontage road along the west side of the existing alignment parallel to the southbound I-25 mainline and a new 40-foot-wide frontage road parallel to the east side of the northbound I-25 mainline. The Preferred Alternative also includes one new travel lane and a buffer separated TEL in each direction. The overall footprint for improvements has been reduced from Packages A and B as a result of moving the additional highway lanes to the center median as opposed to outside the existing highway footprint. The resulting use of this resource is the addition of a 25-foot-long culvert extension to the west side and a 30-foot-long culvert extension on the east side of the existing 35-foot-long culvert under I-25. The length of open ditch placed inside new culvert extensions would total 55 feet (see **Figure 5-23**).

Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of I-25 and the frontage road and Preferred Alternative improvements are minor in relative extent, FHWA and CDOT therefore have determined that the Preferred Alternative would result in *no adverse effect* to the Larimer County Ditch. It is the intent of FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

## **Planning and Measures Included to Reach a *De Minimis* Finding**

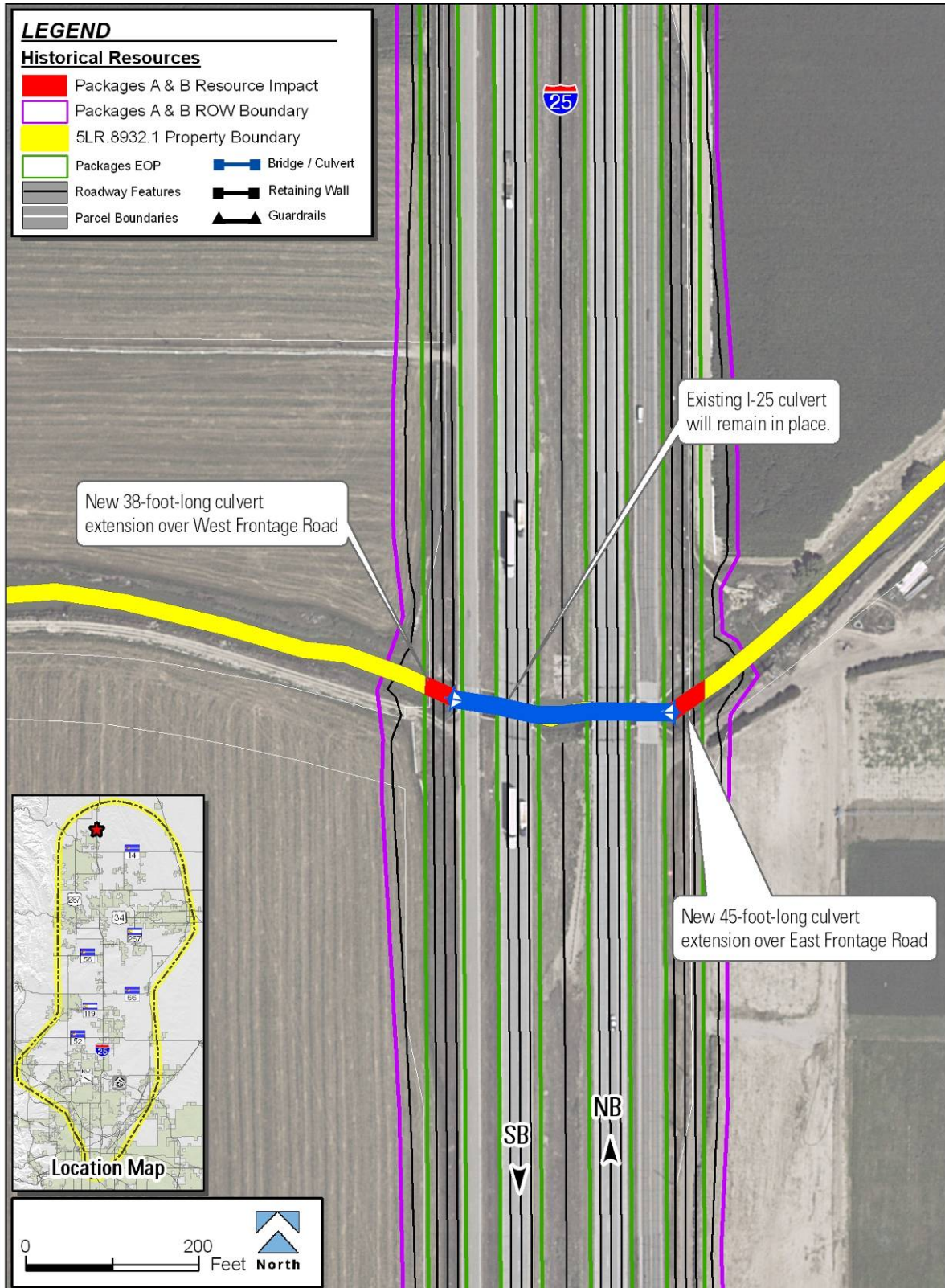
### **Packages A, B, and Preferred Alternative**

The I-25 frontage road improvements incorporate safety shoulder widening in conformance with standard engineering design, and have been moved outside of the safety clear zone for the mainline I-25 travel lanes.

### **Mitigation Measures for Larimer County Ditch**

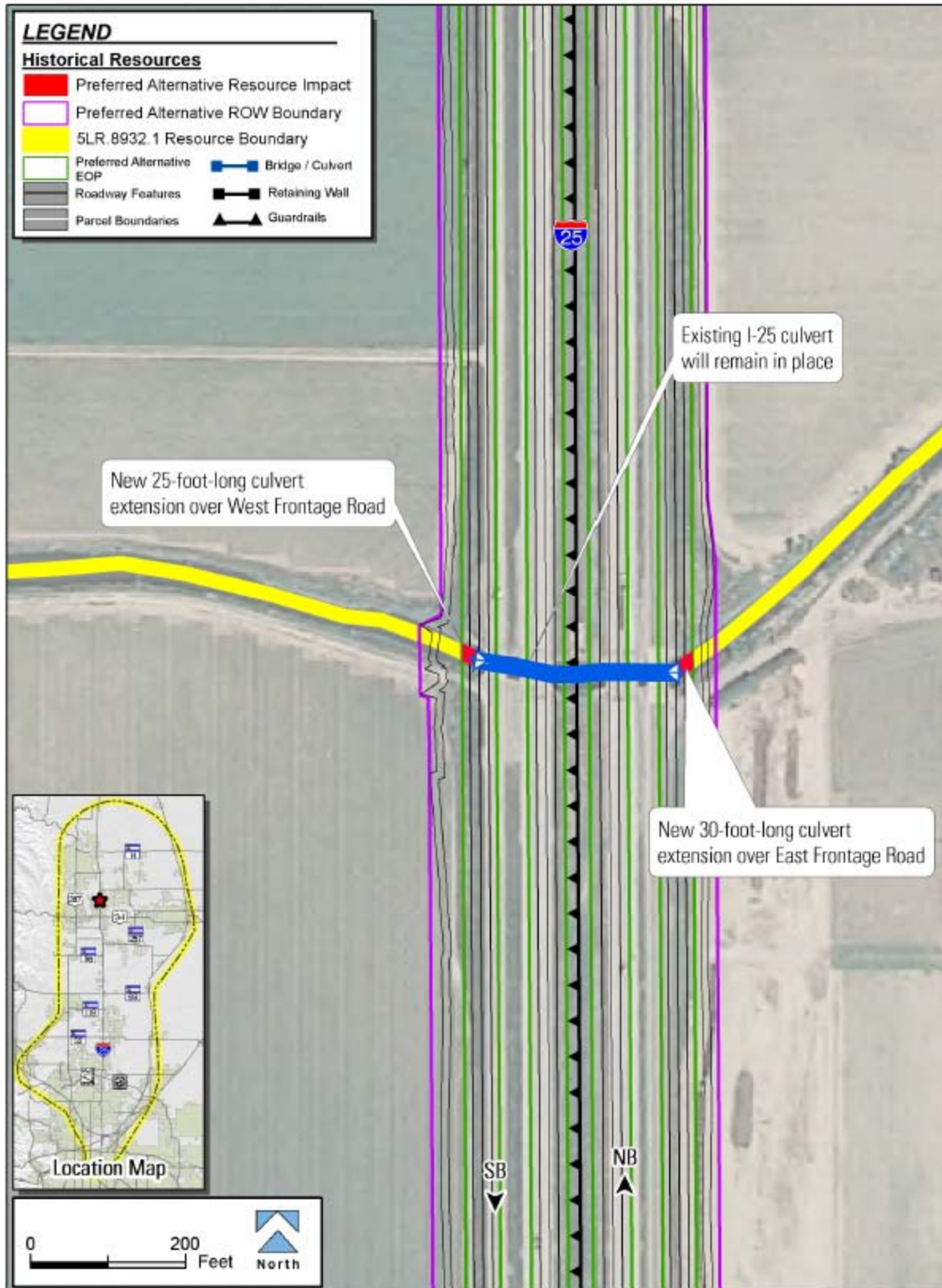
- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

1 Figure 5-22 Larimer County Ditch – Packages A and B Use





1 Figure 5-23 Larimer County Ditch – Preferred Alternative Use





### Einarsen Farm (5LR.11396)

#### Description

<b>Location:</b>	1320 Northeast Frontage Road
<b>Type:</b>	Historic farm
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criteria A and C

#### Use of Einarsen Farm by Package

Package A	Package B
<b>A-H1 Highway Component:</b>	<b>B-H1 Highway Component:</b>
<b>Safety Improvement:</b>	<b>Safety Improvement:</b>
<b>SH 1 to SH 14</b>	<b>SH 1 to SH 14</b>
<hr/>	<hr/>
1.76 acres of property as incorporation of 1,600-foot by 50-foot strip of farmland into project	1.76 acres of property as incorporation of 1,600-foot by 50-foot strip of farmland into project
<b>Preferred Alternative</b>	
<b>SH 1 to SH 14</b>	
<hr/>	
1.9 acres of property as incorporation of 1,600-foot by 50-foot strip of farmland into project.	

#### Resource Description

The historic Einarsen Farm (5LR.11396) is located on the east side of I-25 at 1320 Northeast Frontage Road. The farm, which was established in 1890, consists of an intact barn and hipped roof cottage-style farmhouse.

#### Eligibility Determination

Based on its association with 19<sup>th</sup> century Larimer County agriculture and the good integrity of the farm structures built during the period of significance (1880s to 1940s), this farm has been determined to be eligible for listing on the NRHP under Criterion A and C.

#### Section 4(f) Use

##### Package A

At this location, the existing configuration of two general-purpose lanes in each direction would be maintained and the east frontage road would be widened to add paved shoulders. Realignment and widening of the east frontage road and associated right-of-way expansion would encroach upon the southwestern edge of this historic farm property. Under Package A, a narrow strip of land extending north from East Vine Drive would be permanently incorporated into the transportation right-of-way. This acquired right-of-way would allow construction of wider roadway shoulders and would permanently bury open farmland along the southwestern edge of this historic farm property under fill slopes associated with the wider frontage road. This strip of land measures approximately 1,600 feet in length, and 50 feet at its widest extent near the East Vine Drive intersection, tapering to zero feet wide at the northernmost point near the ranch access road. The used area is along the edge of a cultivated field and contains 1.76 acres within the historic boundary. No historical buildings are located near the proposed improvements. See **Figure 5-24** for Package A uses of this property.

The historical farm setting was permanently altered in the 1960s by initial construction of I-25 and introduction of the highway and associated traffic noise. Currently, the farmhouse is located 80 feet from the east edge of the existing frontage road. Changes in noise and physical setting and atmosphere are not expected to diminish the function, character, feel, or attributes that render the farm or farm buildings and farmhouse NRHP-eligible.

A temporary construction easement could be necessary along the western edge of the property for haul roads, construction access, and staging areas to facilitate roadway widening and slope building. No permanent impacts would be anticipated from this temporary occupancy of the farmland property, and no farm structures would be affected. Construction-related noise generated by construction equipment and trucks would be temporary in nature, and would not permanently affect the atmosphere of the farm setting. Thus, indirect effects caused by temporary construction activities would occur, but would not be expected to significantly diminish the function, character, or attributes that render the farm, farm structures and farmhouse NRHP-eligible.

Because of the small amount of farmland directly used, its proximity to the existing non-historic frontage road, and the fact that no historic farm buildings are located in this vicinity, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the Einarsen Farm. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-24** for Package A uses of this property.

#### **Package B**

Use of this historical farm under Package B are very similar in nature and extent to those anticipated under Package A. A slightly shorter segment of the east frontage road would be realigned and widened. The acquired right-of-way to allow construction of wider roadway shoulders would permanently bury open farmland along the southwestern edge of this historical farm property under fill slopes associated with the wider frontage road. The used strip of land measures approximately 1,600 feet in length, and 50 feet at its widest extent near the East Vine Drive intersection tapering to zero feet wide at the northernmost point. The used 1.76 acres are located along the edge of a cultivated field within the historic boundary. No historical buildings are located near the proposed improvements.

Because of the small amount of farmland impacted, its proximity to the existing non-historic frontage road, and the fact that no historic farm buildings are located in this vicinity, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the Einarsen Farm. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-25** for Package B uses of this property.

#### **Preferred Alternative**

The Preferred Alternative would add one general purpose lane and one TEL in each direction. A narrow sliver of land extending along and north from East Vine Drive would be permanently incorporated into the transportation right-of-way to accommodate these improvements and construct wider shoulders along the eastern frontage road. This acquired right-of-way would permanently bury open farmland along the southwestern edge of this historic farm property under fill slopes associated with the wider frontage road and at the intersection with East Vine Drive. The area of use is along the edge of a cultivated field within the historic boundary. No historical buildings are near the proposed improvements (see **Figure 5-26**).

With the Preferred Alternative improvements, the farmhouse would be 70 feet away from the east edge of the frontage road as opposed to the 80 feet away it currently sits. Noise levels associated with increased traffic levels on I-25 and the frontage road would result in a two decibel increase over existing conditions. This noise increase is barely perceptible. The changes to the local terrain are minimal and there are no highway features introduced by the proposed improvements that would indirectly affect the historic farm or visual context of the farm. Changes in noise and physical setting and atmosphere are not expected to diminish the function, character, feel, or attributes that render the farm or farm buildings and farmhouse NRHP-eligible.

A temporary construction easement could be necessary along the western edge of the property for haul roads, construction access, and staging areas to facilitate roadway widening and slope building. No permanent use would be anticipated from this use of the farmland property, and no farm structures would be affected. Construction related noise generated by construction equipment and trucks would be temporary in nature, and would not permanently affect the atmosphere of the farm setting. Thus indirect effects caused by temporary construction activities would occur, but would not be expected to significantly diminish the function, character, or attributes that render the farm, farm structures and farmhouse NRHP-eligible.

Due to the small amount of farmland impacted, its proximity to the existing non-historic frontage road, and the fact that no historical farm buildings are located in this vicinity, FHWA and CDOT have determined that the Preferred Alternative would result in *no adverse effect* to the Einarsen Farm. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

#### **Packages A, B, and Preferred Alternative**

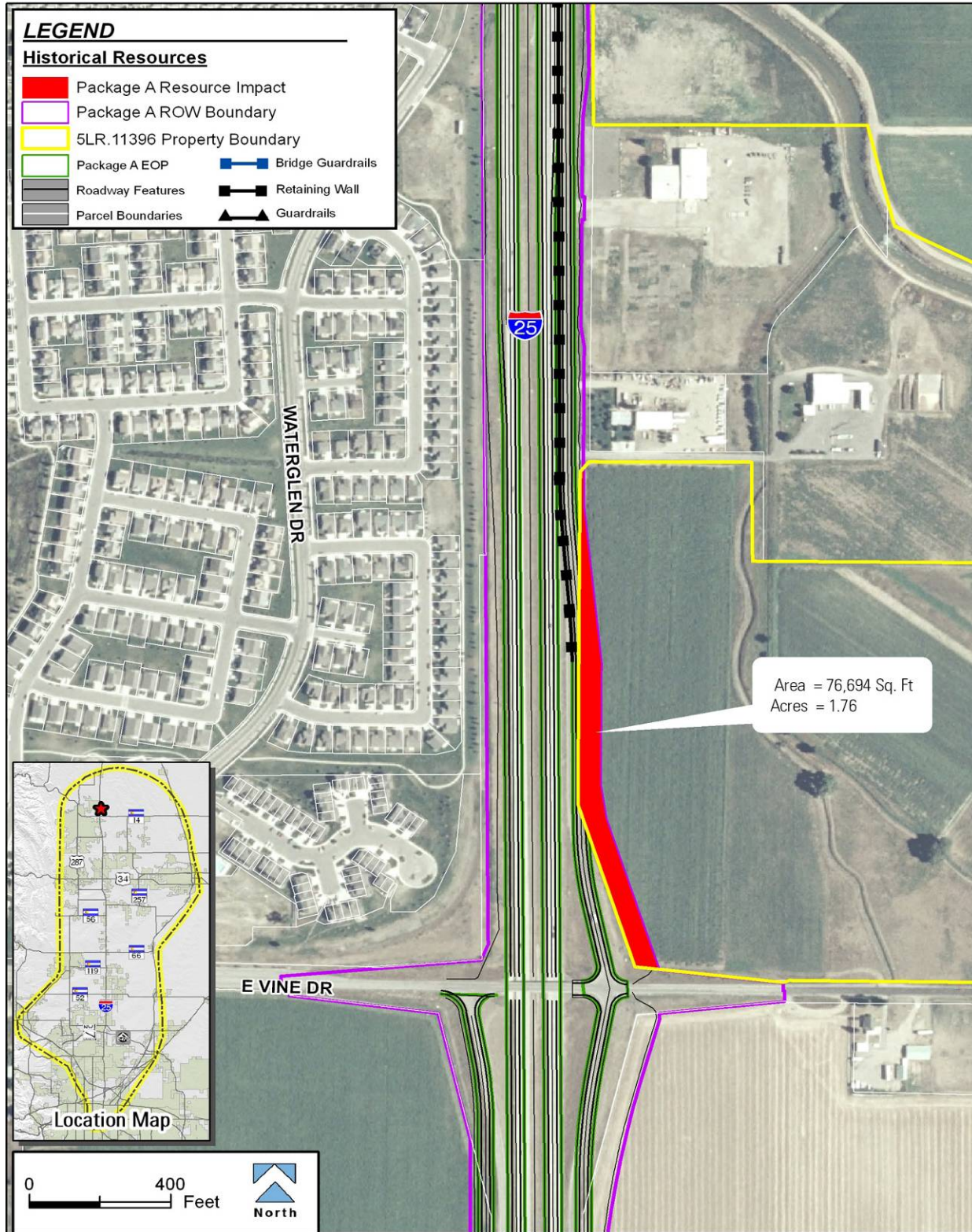
The design of the transportation improvements was dictated by safety requirements for the intersections of the frontage roads and Vine Drive on either side of I-25. All possible measures to minimize harm were included.

#### **Mitigation Measures for Einarsen Farm**

- Property acquisition will be completed under the Uniform Relocation Act.
- Maintain operation of farm during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.



1 Figure 5-24 Einarsen Farm Package A Use

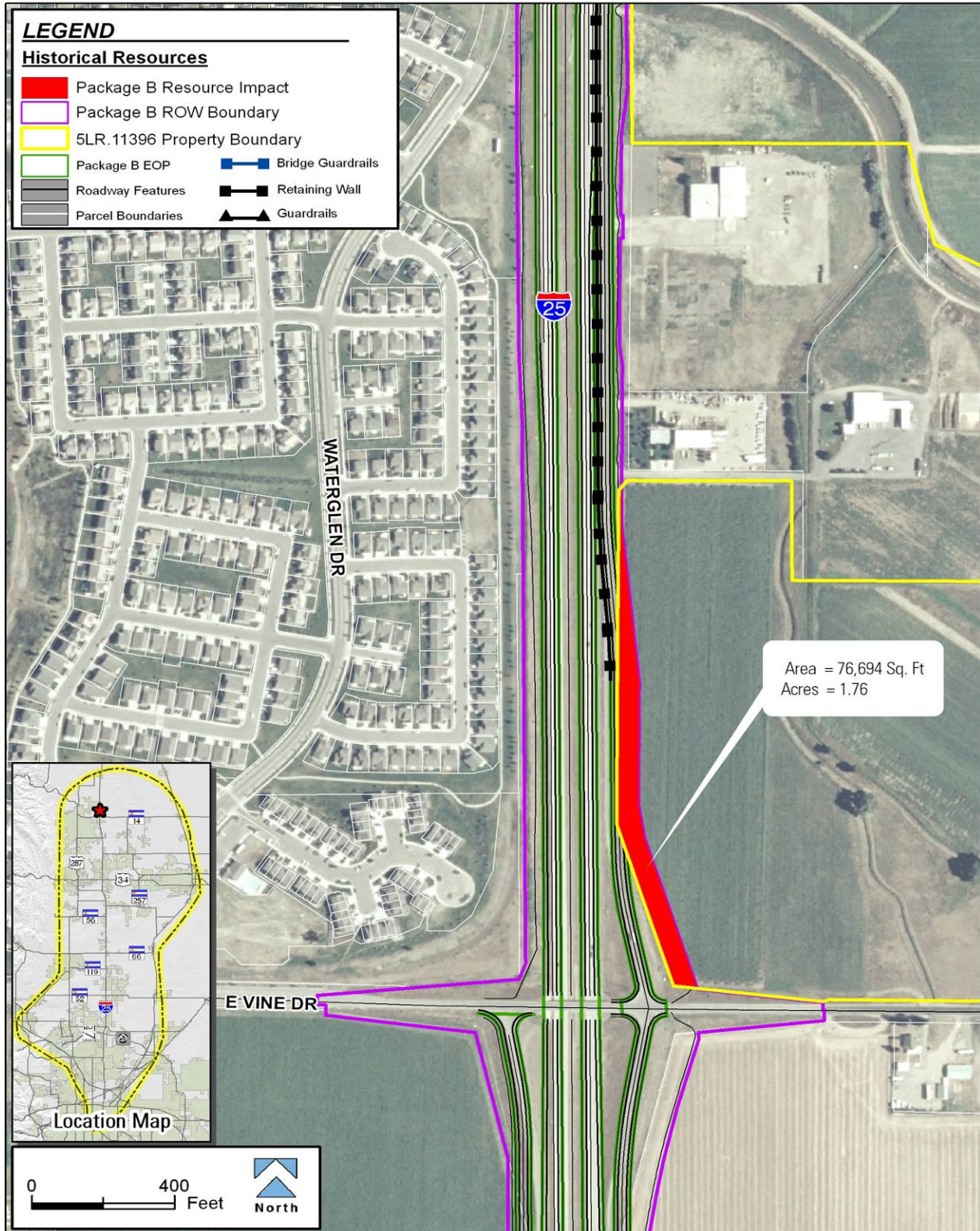


2 Note: EOP—Edge of Pavement

3



1 Figure 5-25 Einarsen Farm Package B Use

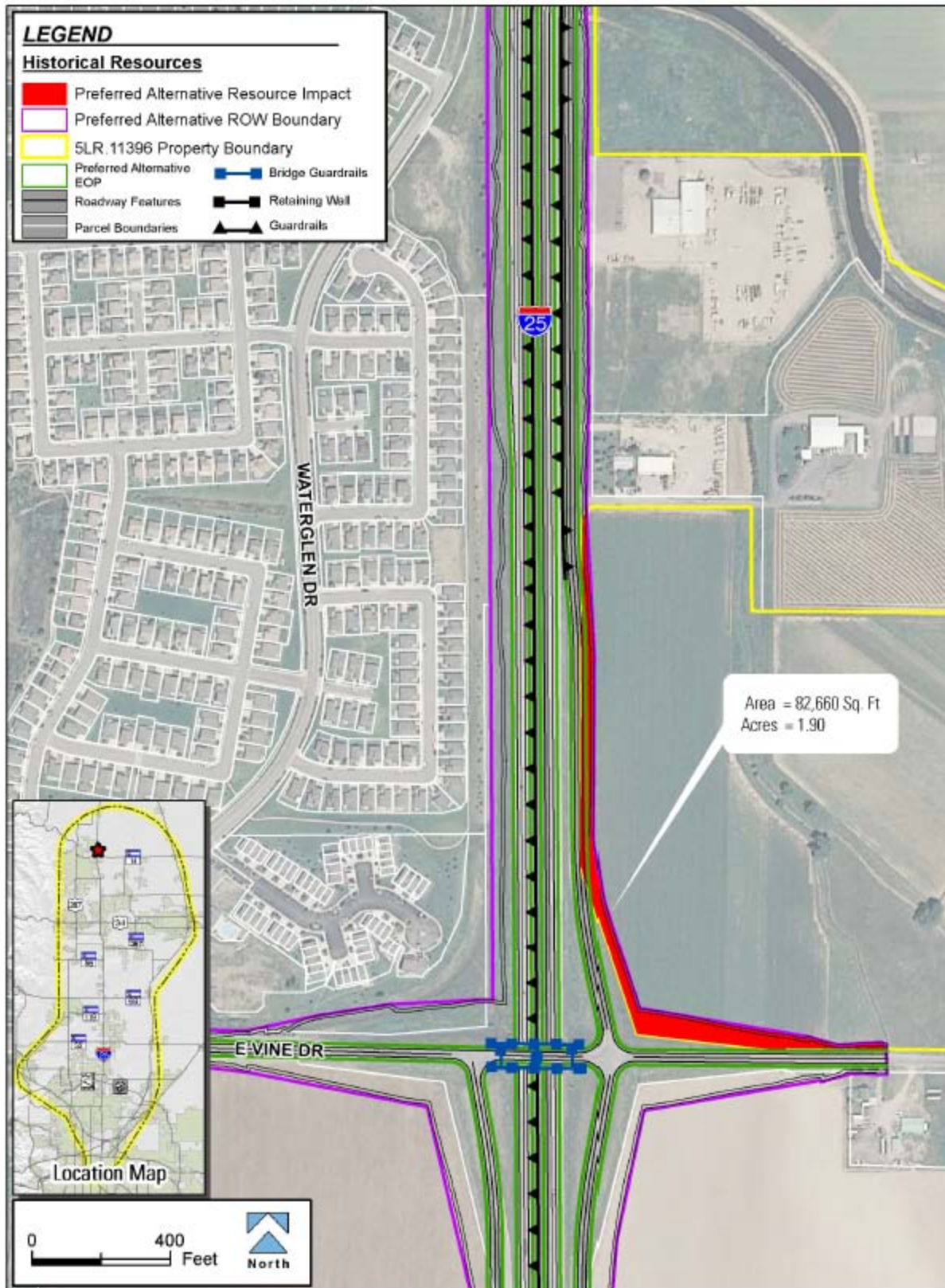


2 Note: EOP—Edge of Pavement

3



1 Figure 5-26 Einarsen Farm – Preferred Alternative Use



## Cache la Poudre Reservoir Inlet (5LR.11409) Lake Canal (5LR.995.4)

### Description

<b>Location:</b>	North I-25 and Prospect Road
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criteria A and C

### Use of Cache la Poudre Reservoir Inlet by Package

Package A	Package B
<b>A-H2 GP Highway Improvements:</b>	<b>B-H2 Tolled Express Lanes:</b>
<b>SH 14 to SH 60</b>	<b>SH 14 to SH 60</b>
A total length of 85 feet of open ditch in culvert extensions	A total length of 85 feet of open ditch in culvert extensions

#### Preferred Alternative

##### SH 14 to SH 60

A total length of 85 feet of open ditch in culvert extensions.

### Resource Description

The entire inlet ditch was built as part of a larger irrigation system developed in 1892. The ditch is 10 miles long ending at Cache la Poudre Reservoir. The ditch crosses I-25 approximately 1,400 feet north of Prospect Road. The ditch crosses I-25 at a drop box that runs east under I-25. It continues southeast, terminating at a point where the ditch parallels Prospect Road. The well maintained segment is 3,750 feet long, 36 feet wide, and 10 feet deep. The ditch segment is concrete lined and contains a modern drop box, control house, and complex system of gated box culverts that are interactive with Lake Canal. The ditch traverses cultivated fields and is sporadically lined with riparian habitat of shrubs, willows, and cottonwoods.

### Eligibility Determination

The entire feature (5LR.11409) is eligible under Criteria A and C. The Cache la Poudre Reservoir Inlet is eligible under Criterion A for its association with a period of intensive development of successful agriculture. The inlet ditch is significant as part of an engineered water storage and delivery system associated with corporate irrigation projects in Colorado prior to the sugar beet industry. The portion of the inlet ditch crossing I-25 (5LR.11409.1) is non-supporting due to earlier modifications including piping under I-25 and other improvements.

### Section 4(f) Use

#### Package A

Package A would require an extended culvert at Station 4050. A 75-foot-long extension of a culvert farther east of the existing concrete box culvert outflow and a 10-foot-long extension west of the intake at the same culvert would be needed to carry the widening of existing west frontage road shoulders and the Prospect Road interchange widened northbound I-25 on-ramp. The total length of the inlet ditch placed inside a new culvert extensions would be 85 feet.

Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of the I-25 ramps and frontage road, and Package A improvements are minor in relative extent, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the Cache la Poudre Reservoir Inlet. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-27** for uses associated with Package A.

### **Package B**

Package B would require an extended culvert at Station 4050. A 75-foot-long extension of double concrete box culvert farther east of the existing culvert outflow and a 10-foot-long extension west of the intake at the same double concrete box culvert would be needed to carry the widening of west frontage road shoulders and Prospect Road interchange widened northbound I-25 on-ramp. The total length of the inlet ditch placed inside new culvert extensions would be 85 feet.

Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of the I-25 ramps and frontage road, and Package B improvements are minor in relative extent, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the Cache la Poudre Reservoir Inlet. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-27** for uses associated with Package B.

### **Preferred Alternative**

The Preferred Alternative would require an extended culvert at STA 4050. A 75-foot-long extension of double CBC farther east of the existing culvert outflow and a 10-foot-long extension west of the intake at the same double CBC would be needed to carry the widening of west frontage road shoulders and the widened Prospect Road interchange northbound I-25 on-ramp.

Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of the I-25 ramps and frontage road and the Preferred Alternative improvements are minor in relative extent, FHWA and CDOT therefore, have determined that the Preferred Alternative would result in *no adverse effect* to the Cache la Poudre Reservoir Inlet. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. (see **Figure 5-28**)

## **Planning and Measures Included to Reach a *De Minimis* Finding**

### **Packages A, B, and Preferred Alternative**

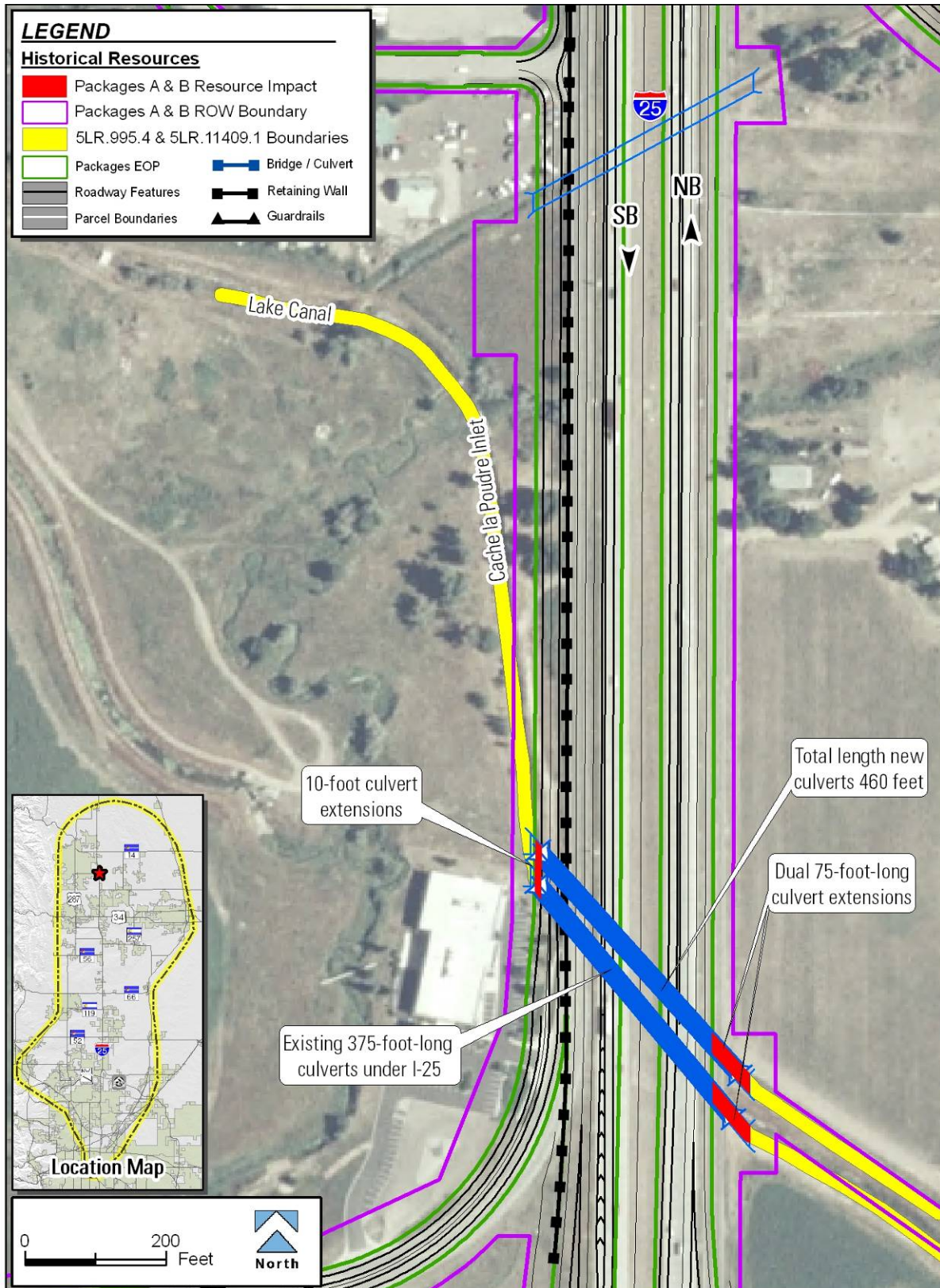
The existing Cache la Poudre Reservoir Inlet passes underneath I-25 in a concrete box culvert and has lost its historic integrity. Use of retaining walls to minimize the need for culvert extensions along the west side of I-25 are incorporated into the proposed 10-foot extension. Because the integrity of this segment has already been compromised, the eastern outfall of the ditch would not be modified.

### **Mitigation Measures for the Cache la Poudre Reservoir Inlet**

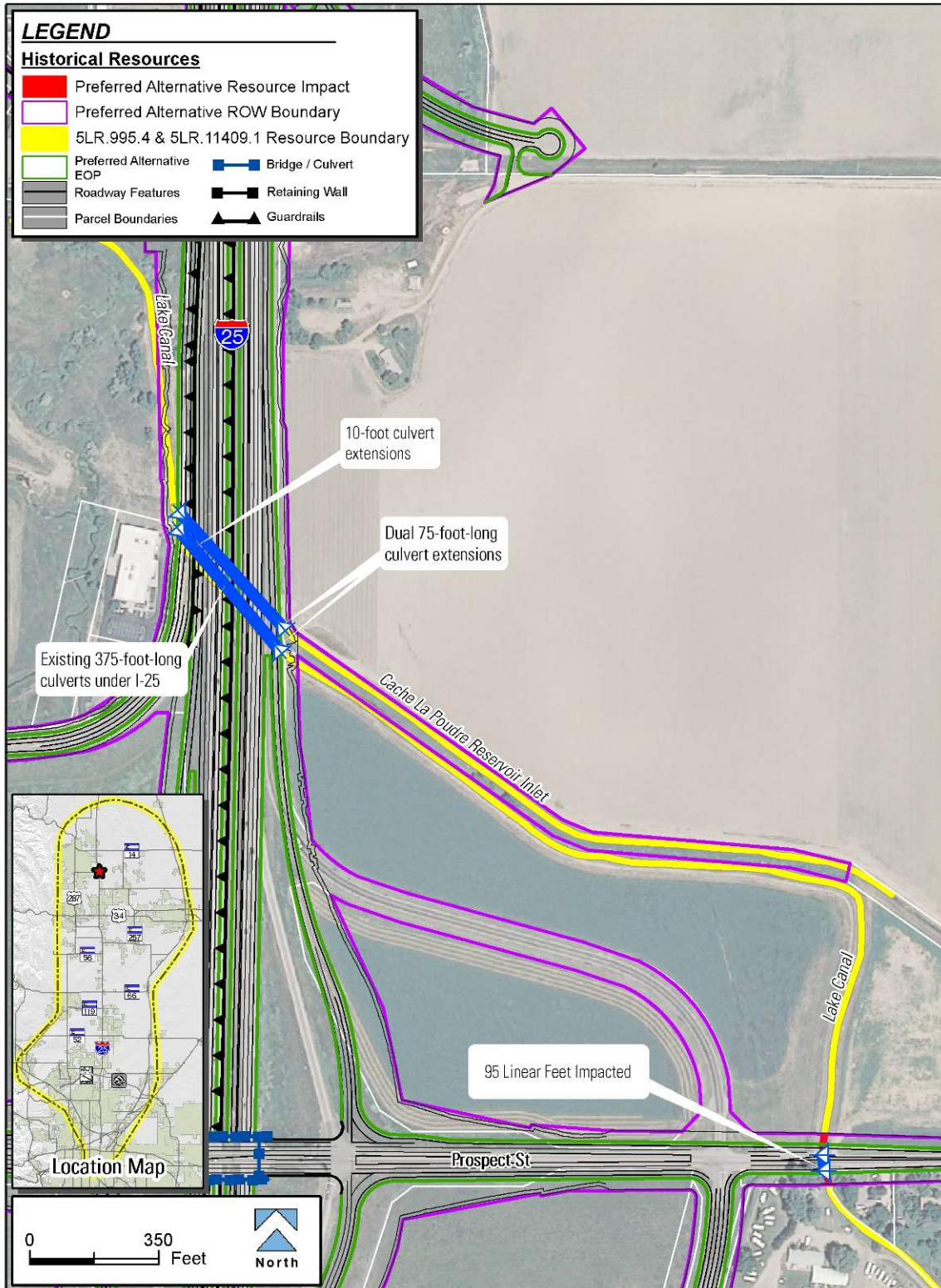
- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.



1 Figure 5-27 Cache la Poudre Reservoir Inlet – Packages A and B Use



1 Figure 5-28 Cache la Poudre Reservoir Inlet – Preferred Alternative Use





## Boxelder Ditch (5LR.2160)

### Description

<b>Location:</b>	North I-25 and SH 68 (Exit 265)
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Boxelder Ditch by Package

Package A	Package B
<b>A-H2 GP Highway Improvements: SH 14 to SH 60</b>	<b>B-H2 Tolled Express Lanes: SH 14 to SH 60</b>
<hr/> A total of 137.5 feet incorporated into a new 62.5-foot-long new culvert and a 75-foot-long culvert extension	<hr/> A total of 137.5 feet incorporated into a new 62.5-foot-long new culvert and a 75-foot-long culvert extension

### Preferred Alternative

#### I-25 Highway Improvements:

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 A total of 194 feet incorporated into a new 124-foot-long culvert and a 70-foot-long culvert extension. A greater length of ditch is used because of the wider highway footprint.

### Resource Description

The ditch was originally built in the mid-1880s. The entire ditch is approximately 5 miles long. Boxelder Ditch crosses I-25, Harmony Road, and the northbound highway ramp at the Harmony Road interchange. The recorded segment in the project APE (5LR.2160.1) is 3,194 feet, or approximately 0.6-mile long. The earthen ditch is approximately 12 feet wide. The portion of the ditch that crosses under the existing roadways was altered when the highway was constructed and is routed through a steel pipe culvert. Grassy vegetation exists along both banks of the ditch in most areas. The surrounding area includes agricultural and residential development.

### Eligibility Determination

The Boxelder Ditch (5LR.2160) was officially determined to be NRHP-eligible by the OAH in 1996. The ditch is eligible for listing on the NRHP under Criterion A for its important association with the development of water rights and agriculture in Larimer County. The segment within the project APE retains sufficient integrity of location, design, and use to support the eligibility of the entire linear resource.

### Section 4(f) Use

#### Package A

Under Package A, the I-25/Harmony Road interchange would be realigned, including widening of the on- and off-ramps. Boxelder Ditch is currently enclosed inside a pipe underneath the existing ramps, fill slopes, and mainline I-25 traffic lanes. To accommodate construction of a new southbound off-ramp from I-25, which would be situated 90 feet west of the existing ramp alignment, a 75-foot-long section of the open Boxelder

Ditch would need to be enclosed inside a box culvert beneath the ramp. The remainder of the ditch located within the area proposed for Package A highway improvements is already piped under I-25, the northbound on-ramp to I-25, and Harmony Road, and no new direct use would occur in those locations.

A small direct use would occur where the ditch would pass beneath a new property access road on the southeast side of the interchange. This new access road would terminate at a cul-de-sac and is required to replace an existing access from the abandoned east frontage road. A total of 62.5 feet of open ditch would have to be enclosed inside a box culvert beneath the proposed cul-de-sac.

Installation of the new culvert would likely require a temporary use of the historic property for equipment access and construction activities. The ditch would remain operational and irrigation water would be protected from all sediment and physical encroachment by construction.

The two box culverts required under Package A would enclose a total of 137.5 feet of open ditch that retain integrity, but would not alter its historic alignment. Because these direct uses constitute less than one percent of the entire length of the Boxelder Ditch, and would not significantly diminish or alter characteristics that render the ditch eligible for NRHP, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-29** for uses associated with Package A.

### **Package B**

This use is identical to Package A. CDOT has determined that Package B would also result in *no adverse effect* to the Boxelder Ditch. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-29** for uses associated with Package B.

### **Preferred Alternative**

Under the Preferred Alternative, the I-25/Harmony Road interchange would be modified, including widening of the on- and off-ramps. Boxelder Ditch is currently enclosed inside a pipe underneath the existing ramps, fill slopes and mainline I-25 traffic lanes. To accommodate construction of a new southbound off-ramp from I-25, which would be situated 90 feet west of the existing ramp alignment, a 124-foot-long section of the open Boxelder Ditch would need to be enclosed inside a box culvert beneath the ramp. The remainder of the ditch located within the area proposed for Preferred Alternative highway improvements is already piped under I-25, the northbound on-ramp to I-25, and Harmony Road, and no new direct impacts would occur in those locations (see **Figure 5-30**).

A small use would occur where the ditch would pass beneath a new property access road on the southeast side of the interchange. This new access road is a cul-de-sac, required to replace the existing access from the abandoned east frontage road. A total of 70 feet of open ditch would have to be enclosed inside a box culvert beneath the proposed cul-de-sac.

Installation of the new culvert would likely require a temporary use of the historic property for equipment access and construction activities. The ditch would remain operational and irrigation water would be protected from all sediment and physical encroachment by construction. All disturbances caused by construction equipment or construction activities would be temporary in nature and affected areas would be restored to the original condition and appearance.

The two box culverts required under the Preferred Alternative would enclose a total of 194 feet of open ditch that retain integrity, but would not alter its historic alignment. A greater quantity of ditch length is used because of the wider highway footprint. These direct impacts constitute less than one percent of the entire length of the Boxelder Ditch, and would not significantly diminish or alter characteristics that render the ditch eligible for NRHP, and FHWA and CDOT have determined that the Preferred Alternative would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.



## Planning and Measures Included to Reach a *De Minimis* Finding

### Packages A, B, and Preferred Alternative

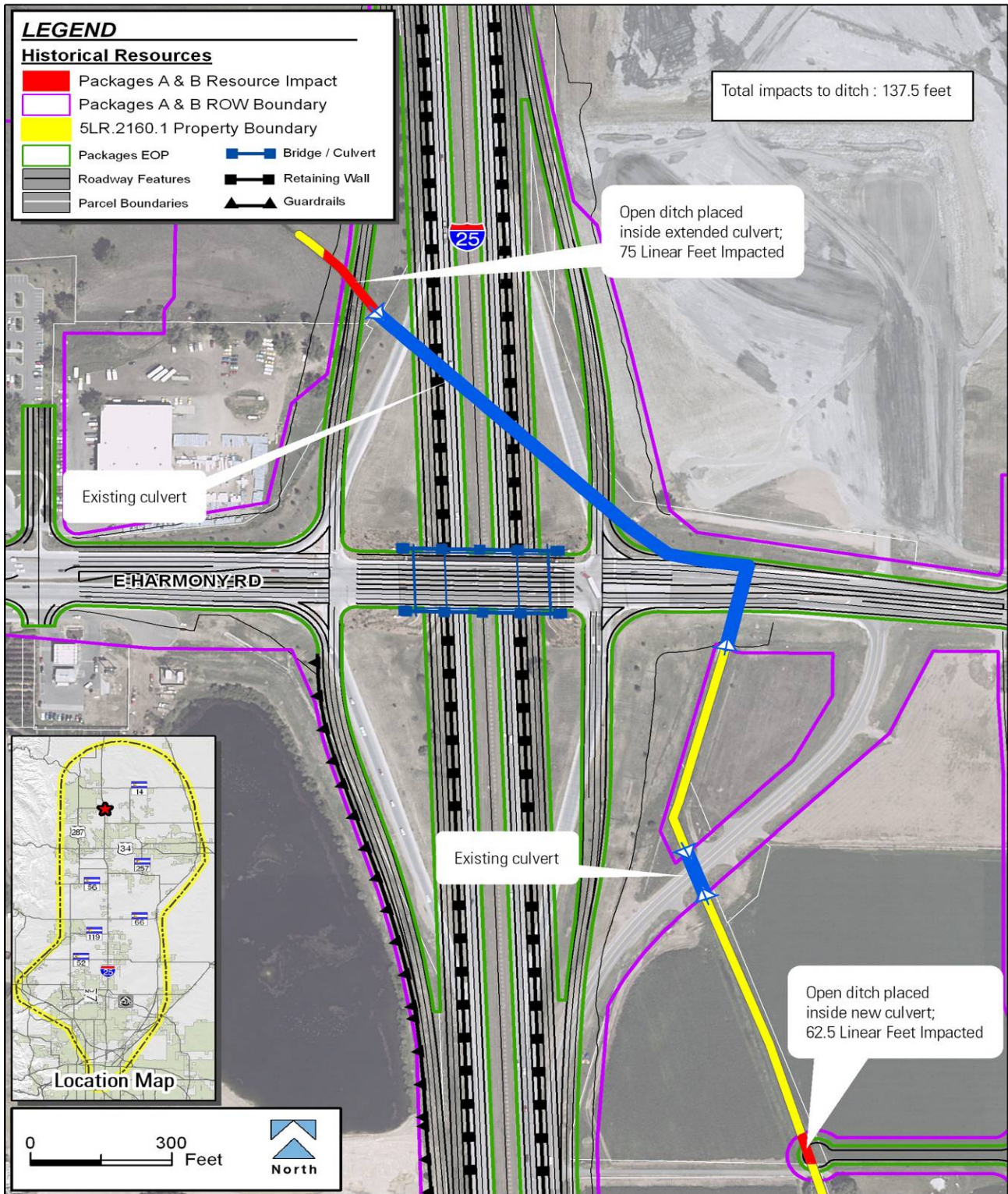
Impacts to the ditch in the northwest quadrant were minimized by adding a retaining wall along the west edge of the southbound off-ramp. Realigning the southbound off-ramp to avoid the ditch would result in a substandard design with regard to design speed and sight distance.

Impacts to the ditch in the southeast quadrant were minimized by realigning the northbound off-ramp. Realignment of this ramp to avoid use of the ditch was not possible without compromising accepted design standards.

### **Mitigation Measures for Boxelder Ditch**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

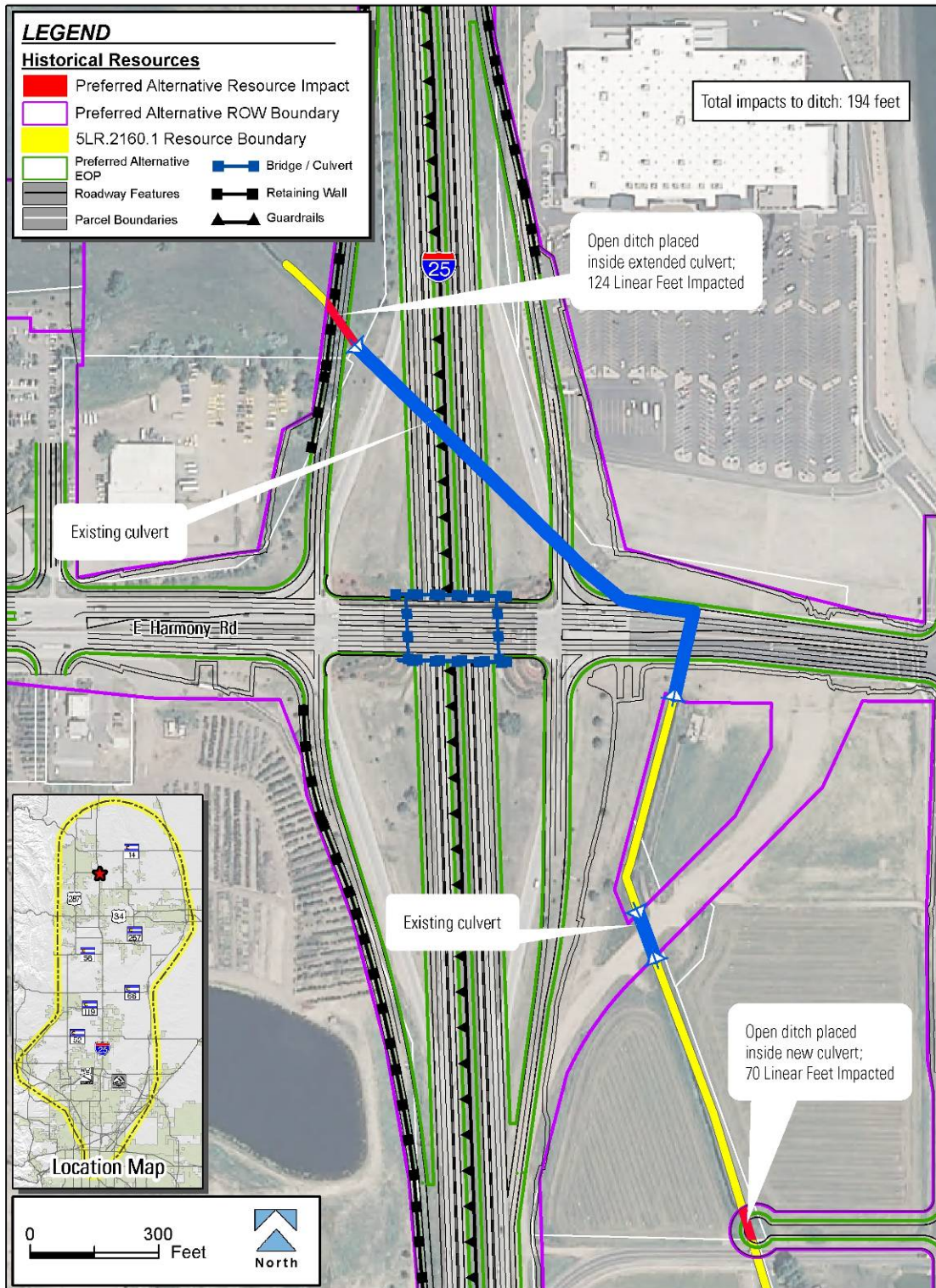
1 Figure 5-29 Boxelder Ditch Packages A and B Use



2 Note: EOP—Edge of Pavement



1 Figure 5-30 Boxelder Ditch Preferred Alternative Use



## Loveland and Greeley Canal (5LR.503.2)

### Description

<b>Location:</b>	Crosses project corridor at various points in the vicinity east of I-25 along US 34
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Loveland and Greeley Canal by Package

Package A	Package B
<b>A-H2 GP Highway Improvements: SH 14 to SH 60</b>	<b>B-H2 Tolloed Express Lanes: SH 14 to SH 60</b>
A total of 70 feet in culvert extension	A total of 70 feet in culvert extension
<b>Preferred Alternative</b>	
<b>I-25 Highway Improvements:</b>	
A total of 65 feet in culvert extension.	

### Resource Description

The canal was originally built in 1861. The entire canal is approximately 31 miles long. Two documented segments are in the project APE. Segment 5LR.503.2 of the historic Loveland and Greeley Canal crosses I-25, as well as the parallel frontage road, and is 2.62 miles long. The canal is approximately 39 feet wide and 26 feet deep. During the construction of I-25 in the 1960s, the original canal alignment was preserved but the integrity of the canal in this location was compromised by placing it within a concrete box culvert under the highway. The three-sided, pre-cast concrete box culvert measures 23 feet wide and 402.6 feet long. Both banks of the canal are grass-covered, and riprap is used for bank stabilization in many areas. The area surrounding the canal segment includes retail and residential development.

The earthen ditch segment 5LR.503.4 follows the historic channel alignment through the old town area of Loveland. The surrounding area includes retail and residential development.

### Eligibility Determination

In 1984, the Loveland & Greeley Canal was evaluated by the OAHP as NRHP-eligible under Criterion A for its important contribution to agricultural development in the Loveland area. The Loveland and Greeley Canal is nearly 150 years old and evokes the historic agricultural era and conveys the important contribution that irrigation canals made to local history. Segment 5LR.503.2 retains physical integrity except where it was placed in a culvert beneath I-25. Segment 5LR.503.4 retains sufficient integrity of location, setting, feeling, and use to support the eligibility of the entire linear resource.

### Section 4(f) Use

#### Package A

**Segment 5LR.503.2:** Package A involves the widening of I-25 through this area, changing it from the existing configuration of two northbound and two southbound traffic lanes to a new section containing three general purpose lanes in each direction for a total of six traffic lanes. Although more mainline travel lanes would be constructed on I-25, they would fit within the existing CDOT right-of-way without affecting the existing culvert conveying the canal underneath the highway.



A new US 34 interchange northbound I-25 on-ramp would be constructed outside the existing highway right-of-way and would cross the Loveland and Greeley Canal east of the existing culvert opening. The existing box culvert must be extended an additional 70 feet on the east side of I-25 and the northbound I-25 on-ramp would be built over the top of the new extended culvert.

Construction of the new culvert would likely require temporary use of the historic property for equipment access. The ditch would likely be diverted temporarily during culvert construction but would remain operational, and irrigation water would be protected from construction-related sedimentation.

The 70-foot culvert extension and temporary construction impacts required under Package A would enclose a very short section of open canal with integrity, and would not alter the canal's historic alignment. This change would affect only a fraction of the 31-mile-long channel, and would not substantially diminish or alter characteristics that render it NRHP-eligible.

**Segment 5LR.503.4:** None of the proposed improvements would cause changes to this historic property.

The 70-foot culvert extension and temporary construction impacts required under Package A would enclose a very short section of open canal with integrity, and would not alter the canal's historic alignment. Because this change would not diminish or alter characteristics that render it NRHP-eligible, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-31** for uses associated with Package A.

#### **Package B**

**Segment 5LR.503.2:** Package B involves the widening of I-25 through this area, changing it from the existing configuration of two northbound and two southbound traffic lanes to a new section containing a total of eight lanes: two managed lanes plus two general purpose lanes in each direction. Although more lanes would be constructed, they would fit within the existing CDOT right-of-way with the exception of a new US 34 to north-bound I-25 on-ramp. Effects to the historic canal would be the same as would occur under Package A, and involves extending the existing three-sided concrete box culvert beneath I-25 an additional 70 feet to the east to accommodate the proposed new I-25 on-ramp. Temporary impacts due to construction of the US 34 ramp and installation of the new culvert would be the same as Package A.

Although 70 feet of canal with integrity on the east side of I-25 would be placed in a culvert extension, this change would not diminish or alter characteristics that render the canal eligible for the NRHP; therefore, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-31** for uses associated with Package B.

#### **Preferred Alternative**

**Segment 5LR.503.2:** The Preferred Alternative involves the widening of I-25 through this area, changing it from the existing configuration of two northbound and two southbound traffic lanes, to a new section containing three general purpose lanes and a buffer-separated TEL in each direction for a total of eight traffic lanes. Although more mainline travel lanes would be constructed on I-25, they would fit within the existing CDOT right-of-way without affecting the existing culvert conveying the canal underneath the highway.

A new US 34 interchange northbound I-25 on-ramp would be constructed outside the existing highway right-of-way and would cross the Loveland and Greeley Canal east of the existing culvert opening. The existing box culvert must be extended an additional 65 feet on the east side of I-25 and the north-bound I-25 on-ramp would be built over the top of the new extended culvert (see **Figure 5-32**).

Construction of the new culvert would likely require temporary use of the historic property for equipment access. The ditch would likely be diverted temporarily during culvert construction but would remain operational, and irrigation water would be protected from construction-related sedimentation. All disturbance caused by construction equipment or construction activities would be temporary in nature and affected areas would be restored to their original condition and appearance.

The 65-foot culvert extension and temporary construction impacts required under Package A would enclose a very short section of open canal with integrity, and would not alter the canal's historic alignment. This change would affect only a fraction of the 31-mile-long channel, and would not substantially diminish or alter characteristics that render it NRHP-eligible.

**Segment 5LR.503.4:** None of the proposed improvements would cause changes to this historic property.

The 65-foot culvert extension and temporary construction impacts required under the Preferred Alternative would enclose a very short section of open canal with integrity, and would not alter the canal's historic alignment. Because this change would not diminish or alter characteristics that render it NRHP-eligible, FHWA and CDOT have determined that the Preferred Alternative would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-32** for uses associated with the Preferred Alternative.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

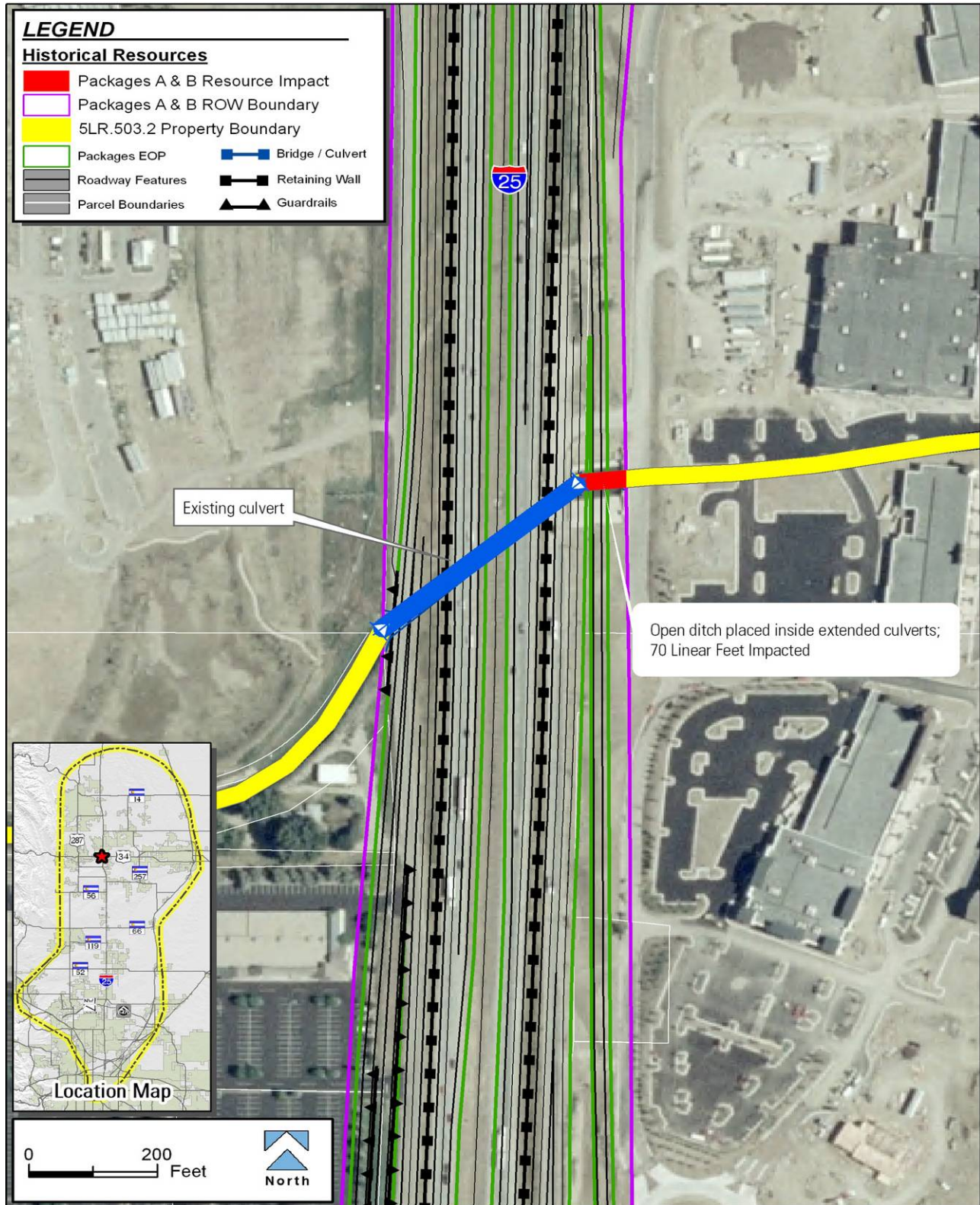
#### **Packages A,B, and Preferred Alternative**

The northbound on-ramp was shifted closer to the I-25 mainline in order to avoid encroachment on the Centerra Shopping Center on the northeast quadrant of the I-25/US 34 interchange. This design change also resulted in a shorter length of the ditch being subject to direct uses. No other minimization, mitigation, or enhancement measures were possible.

#### **Mitigation Measures for the Loveland and Greeley Canal**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

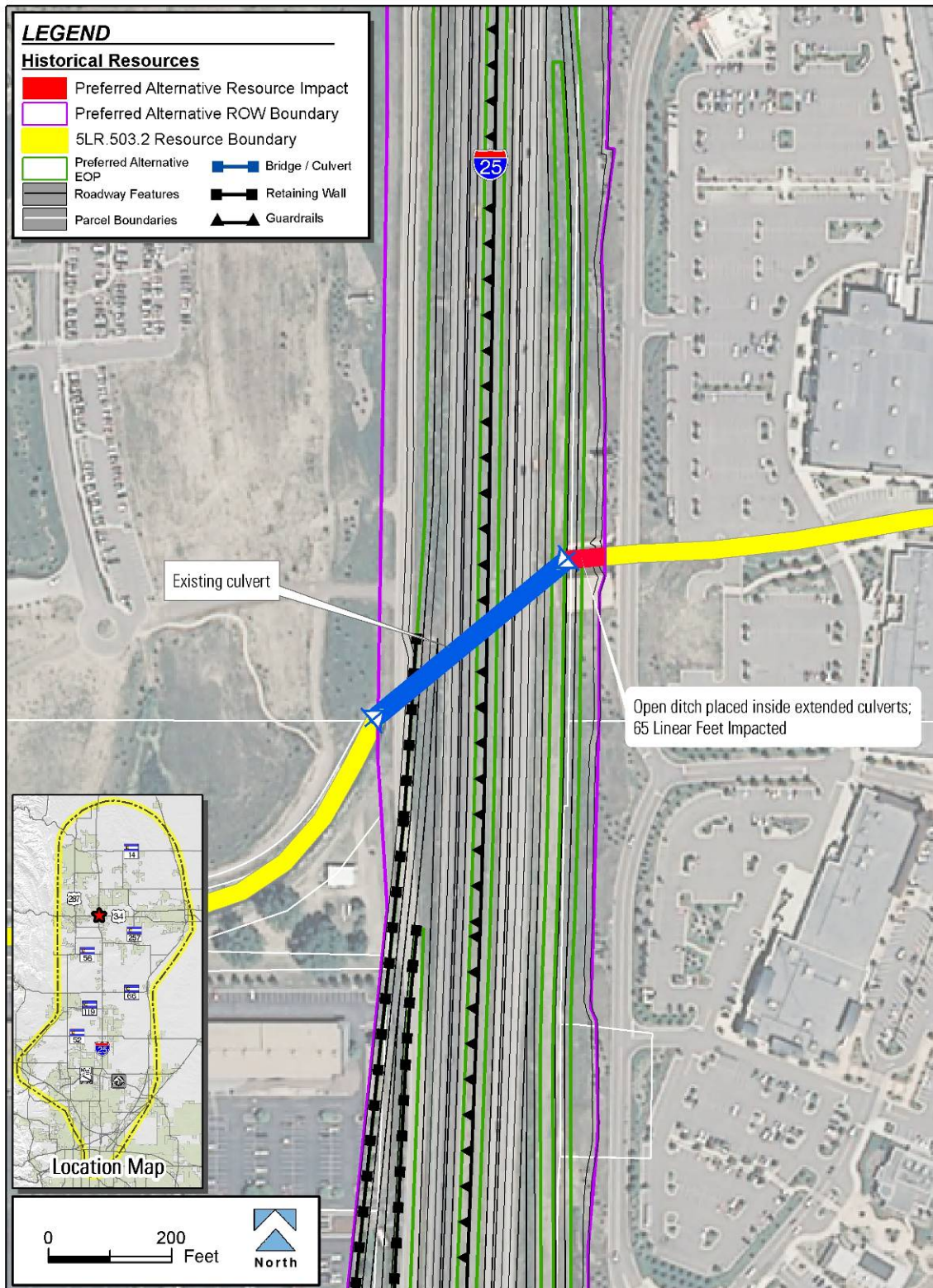
1 Figure 5-31 Loveland and Greeley Canal Package A and B Use



2 Note: EOP—Edge of Pavement



1 Figure 5-32 Loveland and Greeley Canal Preferred Alternative Use





### Farmers Ditch (5LR.8928.1)

#### Description

<b>Location:</b>	US 34, immediately east of I-25/US 34 interchange
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

#### Use of Farmers Ditch by Package

Package A	Package B
<b>A-H2 GP Highway Improvements: SH 14 to SH 60</b>	<b>B-H2 Tolled Express Lanes: SH 14 to SH 60</b>
A total of 2,539 linear feet would be placed inside culvert extensions	A total of 2,539 linear feet would be placed inside culvert extensions

#### Preferred Alternative I-25 Highway Improvements:

A total of 2,532 linear feet would be placed inside culvert extension.

#### Resource Description

This irrigation ditch was originally built in 1864. The entire Farmers Ditch is approximately 15 miles long. Three segments of the ditch are present within the APE (see **Figure 5-33**). Segment 5LR.8928.1 of the Farmers Ditch crosses I-25 parallel to US 34 in the vicinity of the I-25 and US 34 interchange. Here, the earthen canal is approximately 16 feet wide and 1.49 miles long. The levees and banks along both sides of the ditch are grass-covered. The surrounding area includes retail and residential development.

Segment 5LR.8928.2 is the portion of the irrigation ditch located west of I-25 and within the northeast quadrant of the interchange where Farmers Ditch crosses US 34. The ditch has been lined with concrete and realigned and modified by commercial development and construction of I-25 and US 34. The segment is 1.8 miles long.

Segment 5LR.8928.7 of the historic Farmers Ditch generally runs perpendicular to I-25 and crosses the proposed Package A commuter railway alignment. The earthen ditch is 151 feet long and 9 feet wide. Grassy vegetation lines both banks of the ditch in many areas. The surrounding area includes industrial and residential development.

#### Eligibility Determination

The entire Farmers Ditch (5LR.8928) is eligible for listing on the NRHP under Criterion A because of its important association with the development of water rights and agriculture in Larimer County. Segments 5LR.8928.1 and 5LR.8928.7 retain visual and structural integrity within a semi-rural setting, and both segments support the eligibility of the entire linear resource. Segment 5LR.8928.2 of Farmers Ditch has been modified to the point that its remaining features no longer support the eligibility of the entire resource.

#### Section 4(f) Use

##### **Package A**

**Segment 5LR.8928.1:** Under Package A, the Farmers Ditch segment that currently passes underneath US 34 in a concrete box culvert would be conveyed an additional 65 feet inside an extended culvert, south of US 34 to allow widening of the US 34 roadway. The new road would overly the ditch culvert. **Figure 5-34** illustrates the US 34 culvert extension. Temporary construction activities associated with installation of new ditch culverts and nearby highway improvements would result in temporary occupancy of the ditch. A temporary construction easement may be acquired.

**Segment 5LR.8928.2:** The Farmers Ditch segment 5LR.8928.2 runs parallel to the north side of US 34 until it reaches the west frontage road of I-25, where it flanks the north side of that roadway as an open ditch for several hundred feet. The ditch enters a pipe where it crosses underneath the west frontage road, I-25, and I-25 ramps. The ditch remains underground inside a culvert pipe until it daylights at the east frontage road. Under the Package A improvements, direct use of the ditch would occur in four places along this ditch segment. Direct uses would occur at two locations on the west side of I-25 where this historic ditch parallels the north side of US 34. Approximately 1,225 feet of open ditch west of, and an 1,090-foot-long stretch of open ditch east of Rocky Mountain Avenue lies within the proposed wider US 34 roadway template. The open ditch would be encased inside an underground pipe to allow construction of the wider pavement and side slope.

Two direct uses would occur on the east side of I-25. These include a 115-foot-long portion of open ditch on the northeast quadrant of the I-25/US 34 interchange, which would require the ditch to be encased inside a culvert beneath the proposed new northbound I-25 on-ramps. A short distance farther to the east, the same ditch flows under US 34 inside a concrete box culvert. Proposed widening of the US 34 roadway in this location would require culvert extensions of approximately 44 feet on the north side of US 34 and 65 feet on the south side (5LR.8928.1) of US 34, totaling 109 feet more open ditch that would be conveyed inside a concrete culvert (see **Figure 5-34**).

**Segment 5LR.8928.7:** None of the proposed commuter rail improvements would cause changes to this historic property.

Ditch segments 5LR.8928.1 and 5LR.8928.2 would experience temporary construction impacts during culvert installation and highway construction activity. The use of these same segments cumulatively amount to 2,539 linear feet, or 0.48 mile, of open ditch, requiring placement inside underground pipes and box culvert extensions. Because the physical integrity of the channel of the ditch segment in much of the I-25/US 34 interchange area has already been compromised by numerous culvert installations, realignments and other modifications, and no longer supports the qualities that make the entire ditch NRHP-eligible, FHWA and CDOT have determined that the Package A transportation improvements would result in *no adverse effect* with respect to the entire Farmers Ditch (5LR.8928). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Package B**

**Segment 5LR.8928.1:** Under Package B, the Farmers Ditch segment that currently passes underneath US 34 in a concrete box culvert would be conveyed an additional 65 feet inside an extended culvert, south of US 34 to allow widening of the US 34 roadway. The new road would overlie the ditch culvert. **Figure 5-35** illustrates the US 34 culvert extension. Temporary construction impacts would be the same as Package A.

**Segment 5LR.8928.2:** Package B improvements to the I-25/US 34 interchange, as well as US 34 and the Rocky Mountain Avenue intersection, would result in very similar use of the historic Farmers Ditch as Package A.

The proposed transportation improvements would result in temporary and direct impacts identical to those associated with Package A. The use of these same segments cumulatively amount to 2,539 linear feet, or 0.48 mile, of open ditch, requiring placement inside underground pipes and box culvert extensions. FHWA and CDOT have determined that the Package B transportation improvements would result in a *no adverse effect* with respect to the entire Farmers Ditch (5LR.8928). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Preferred Alternative**

**Segment 5LR.8928.1:** Under the Preferred Alternative, the Farmers Ditch segment that currently passes underneath US 34 in a CBC would be conveyed an additional 78 feet inside an extended culvert, south of US 34 to allow widening of the US 34 roadway. The new road would overlay the ditch culvert. **Figure 5-36** illustrates the US 34 culvert extension.

Temporary construction activities associated with installation of new ditch culverts and nearby highway improvements would result in temporary impacts to the ditch. A temporary construction easement may be acquired.

**Segment 5LR.8928.2:** The Farmers' Ditch segment 5LR.8928.2 runs parallel to the north side of US 34 until it reaches the west frontage road of I-25 where it flanks the north side of that roadway as an open ditch for several hundred feet. The ditch enters a pipe where it crosses underneath the west frontage road, I-25, and I-25 ramps. The ditch remains underground, inside a culvert pipe, until it daylights at the east frontage road.

Under the Preferred Alternative improvements, uses of the ditch would occur in four places along this ditch segment. Direct use would occur at two locations on the west side of I-25 where this historic ditch parallels the north side of US 34. Approximately 1,225 feet of open ditch west of, and a 1,090-foot-long stretch of open ditch east of Rocky Mountain Avenue, lies within the proposed wider US 34 roadway template. The open ditch would be encased inside an underground pipe to allow construction of the wider pavement and side slope.

Two direct uses would occur on the east side of I-25. These include a 95-foot-long portion of open ditch on the northeast quadrant of the I-25/US 34 interchange, which would require the ditch to be encased inside a culvert beneath the proposed new northbound I-25 on-ramps. A short distance farther to the east, the same ditch flows under US 34 inside a CBC. Proposed widening of the US 34 roadway in this location would require culvert extensions of approximately 44 feet on the north side of US 34 and 78 feet on the south side (5LR.8928.1) of US 34, totaling 109 feet more open ditch that would be conveyed inside a concrete culvert (see **Figure 5-36**).

**Segment 5LR.8928.7:** None of the proposed commuter rail improvements would cause changes to this historic property.

Ditch segments 5LR.8928.1 and 5LR.8928.2 would experience temporary construction impacts during culvert installation and highway construction activity. The use of these same segments cumulatively amount to 2,532 linear feet, or 0.48 mile, of open ditch, requiring placement inside underground pipes and box culvert extensions. Because the physical integrity of the channel of the ditch segment in much of the I-25/US 34 interchange area has already been compromised by numerous culvert installations, realignments and other modifications, and no longer supports the qualities that make the entire ditch NRHP-eligible, FHWA and CDOT have determined that the Preferred Alternative transportation improvements would result in *no adverse effect* with respect to the entire Farmers Ditch (5LR.8928). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

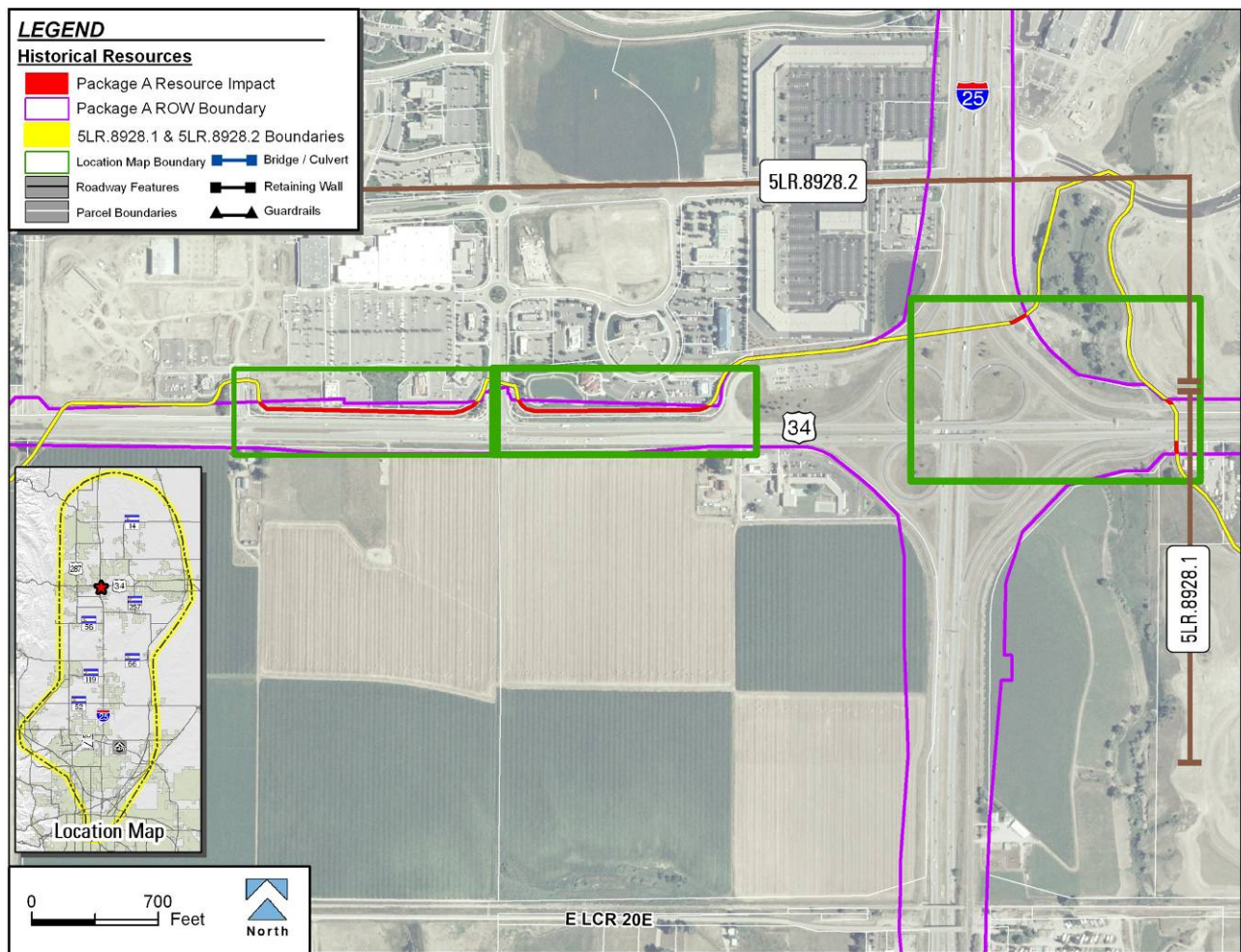
At the US 34 Interchange, the roadway template has been minimized as much as possible, and has utilized retaining walls throughout the interchange system (i.e., along all ramps, I-25 and US 34) to avoid and minimize impacts to the Schmer Farm and other environmental resources. It is the least harmful design without lanes and changing the level of service of the interchange system. The interchange design has balanced many system issues to accommodate both highway to regional arterial roadway movements, directly connecting ramps, and accommodating local traffic movements with the least amount of impact not only to environmental resources but also to existing developments in the northwest, northeast, and southeast quadrants.

All possible measures to minimize harm were taken to minimize impacts to other resources surrounding the I-25/US 34 interchange. These resources include McWhinney Hahn Sculpture Park in the northwest quadrant, the historic Schmer Farm in the southwest quadrant, as well as wetlands located in all quadrants of the interchange. The wetland complex located in the northeastern quadrant of the interchange is classified as a moderate wetland function and value rating based on its association with an existing waterway, mature riparian zone, and high diversity of vegetative species, which provide food and habitat for various wildlife species. The wetland complexes in the remaining quadrants are comprised of three man-made detention ponds and one emergent wetland complex located adjacent to an irrigation ditch, all of which contain a *low* wetland function and value rating.

### Mitigation Measures for Farmers Ditch

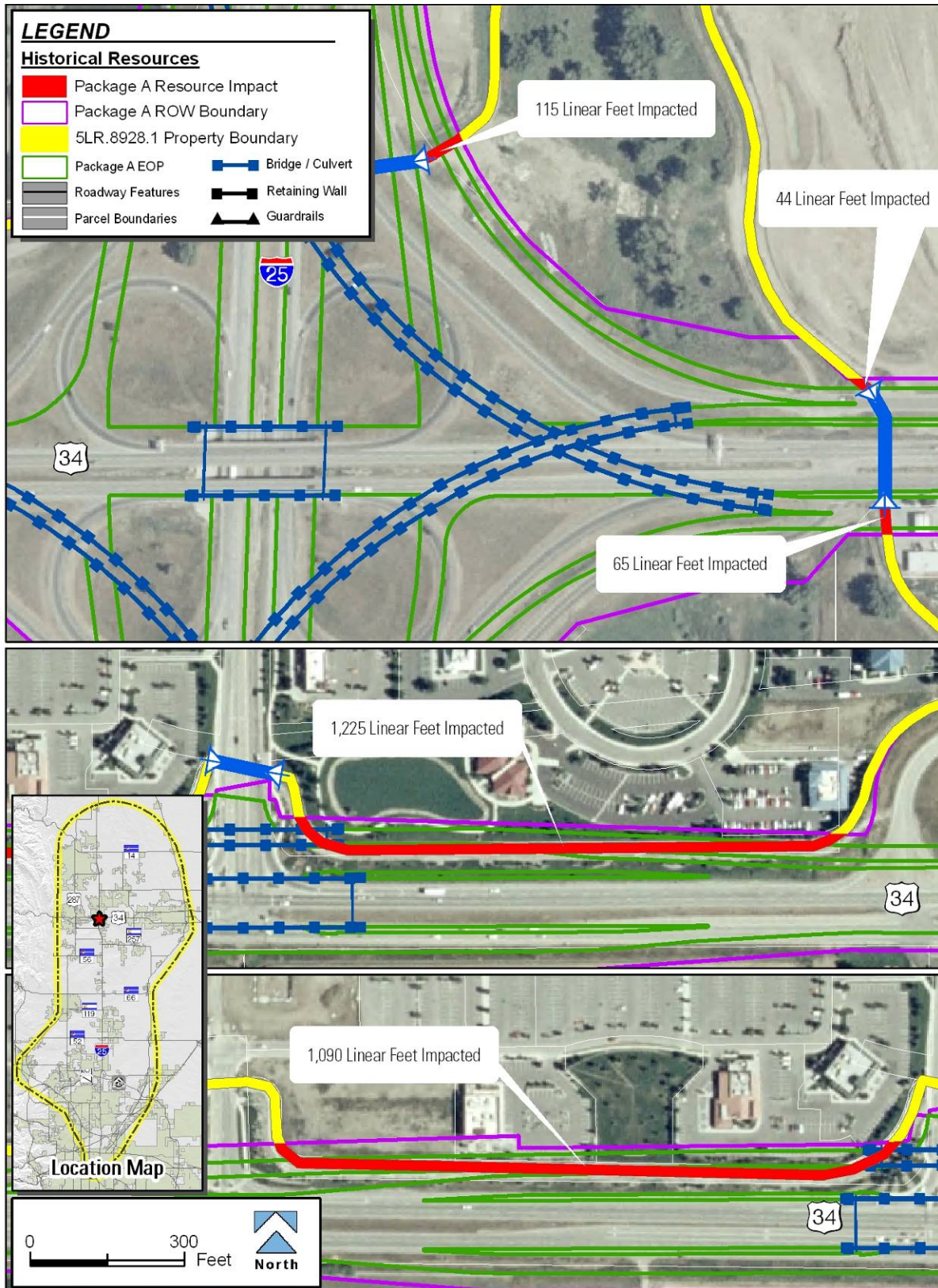
- Detailed recording of the affected ditch in accordance with the Colorado Historical Society/standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

1 Figure 5-33 Farmers Ditch Packages A and B Location Map





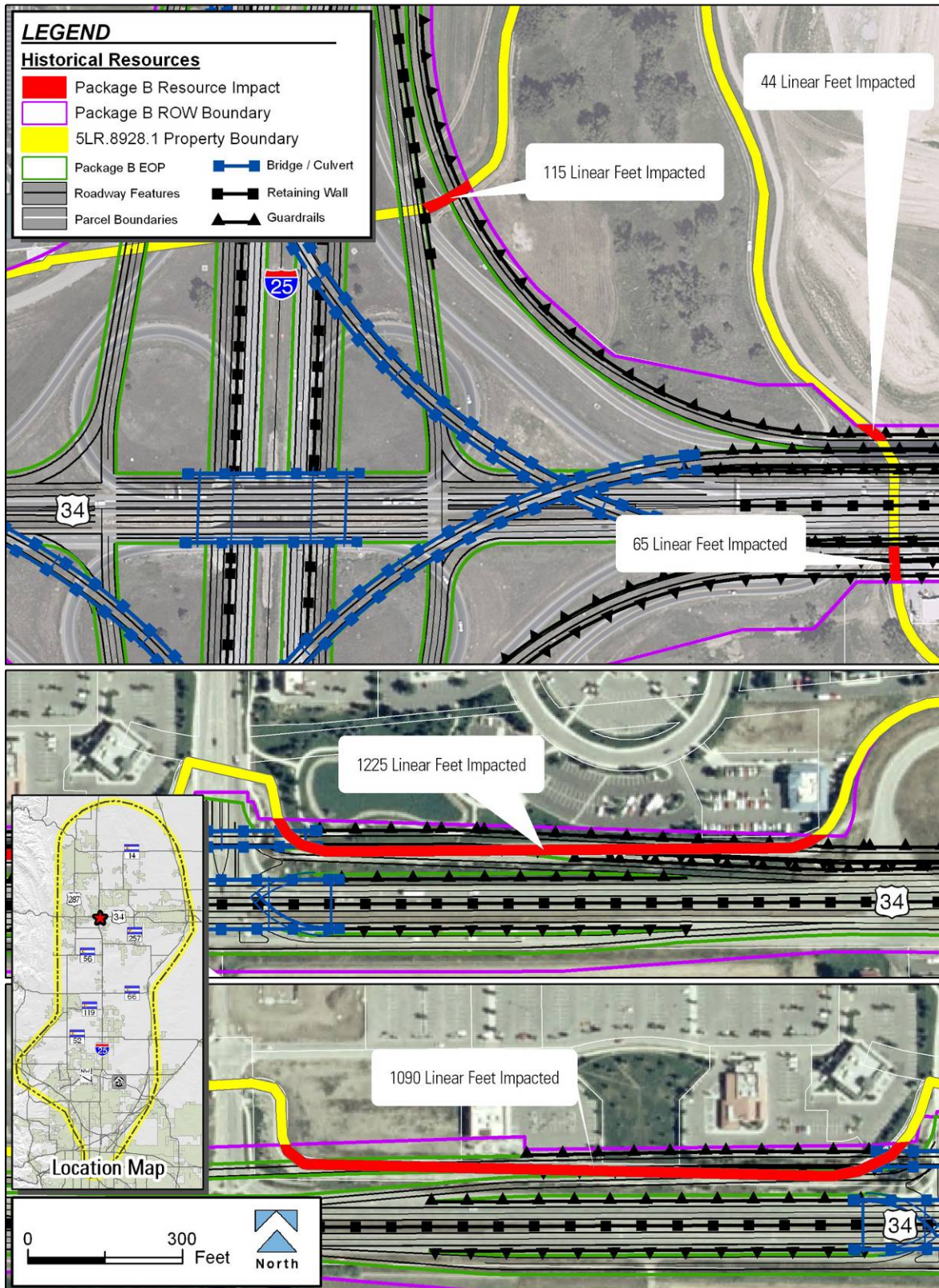
1 Figure 5-34 Farmers Ditch Package A Use



2 Note: EOP—Edge of Pavement



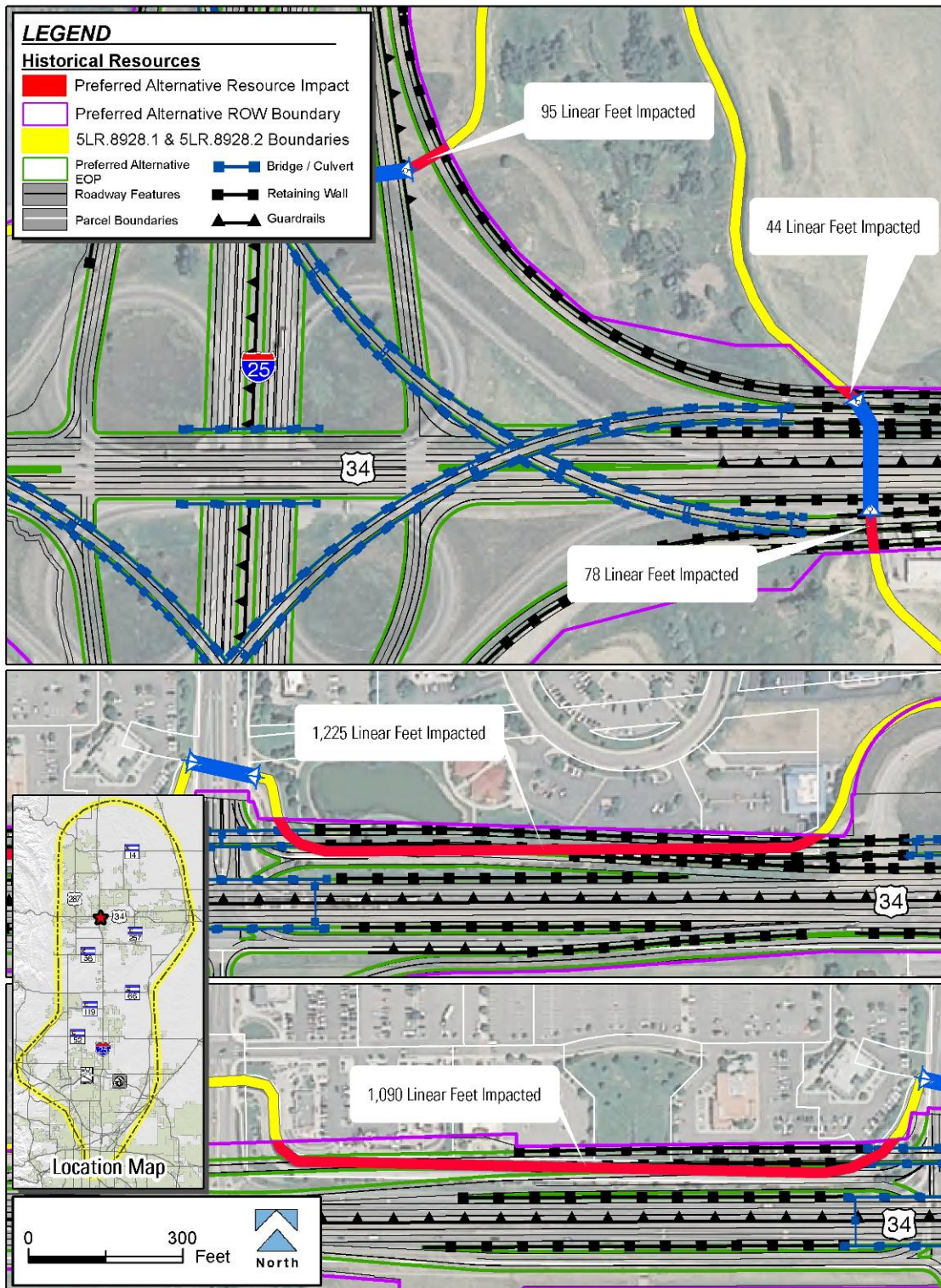
1 Figure 5-35 Farmers Ditch Package B Use



2 Note: EOP—Edge of Pavement



1 Figure 5-36 Farmers Ditch Preferred Alternative Use



## Schmer Farm (5LR.11209)

### Description

Location:	5464 E. US 34
Type:	Historic farm
Section 106 Effect	No adverse effect
Finding:	
Ownership:	Private
Significance:	NRHP-Eligible, Criteria A and C

### Use of Schmer Farm by Package

#### Package A A-H2 GP Highway Improvements: SH 14 to SH 60

A total of 6.61 acres of the historic farm subject to direct use, including an approximately 1,800-foot by 124-foot strip (5.09 acres) of farmland incorporated into new elevated and at-grade ramps, and 1.52 acres for construction of new access from US 34 to the frontage road leading to the Schmer farmhouse and businesses on the southwest corner of the interchange.

#### Package B B-H2 Tolled Express Lanes: SH 14 to SH 60

A total of 7.0 acres of the historic farm subject to direct use, including an approximately 1,800-foot by 134-foot strip (5.48 acres) of farmland incorporated into new elevated and at-grade ramps, and 1.52 acres for construction of new access from US 34 to the frontage road leading to the Schmer farmhouse and businesses on the southwest corner of the interchange.

#### Preferred Alternative I-25 Highway Improvements:

A total of 5.48 acres of the historic farm subject to direct use, including a 3.86-acre strip of farmland incorporated into new elevated and at-grade ramps, and 1.52 acres for construction of new access from US 34 to the frontage road leading to the Schmer farmhouse and businesses on the southwest corner of the interchange.

### Resource Description

The Schmer Farm is located at 5464 East US 34 and dates to the early 1900s. The property is a fairly complete example of a Larimer County farm from the turn of the century. The 124-acre farm is operational and includes a well-preserved farmhouse, barn, and outbuildings.

### Eligibility Determination

This historic farm is NRHP-eligible under Criterion A because of its association with early agriculture around the Loveland area, including sugar beet cultivation. It is also NRHP-eligible under Criterion C for containing excellent examples of agricultural architecture.



## Section 4(f) Use

### **Package A**

This historic farm would be directly used by proposed improvements to the I-25/US 34 interchange associated with Package A. Direct uses of the site would occur in two locations, including along the east edge of the site as well as a small area on the northern edge of the property.

One direct use would result from the construction of new interchange ramps, including a long curving ramp from westbound US 34 to southbound I-25, and a new southbound on-ramp from eastbound US 34 on the southwest quadrant of the interchange, which replaces the existing loop ramp.

Land acquired from the farm would provide the foundation for support piers for the new elevated flyover ramps between US 34 and I-25. Additionally, land would be acquired from the farm to allow construction of fill slopes used to support the widened highway lanes and near-grade ramps located just west of the existing southbound on-ramp. Farmland acquisition related to construction of these new ramps would use as many as 5.14 acres of land along the east edge of the property. Another small area of direct use would occur west of the farmhouse, where a new access would be constructed from US 34 to the frontage road leading to the Schmer farmhouse, gas station, and hotel on the southwest corner of the interchange. A total of 1.52 acres of farmland would be used in this location. A total of 6.61 acres of open farmland would be subject to direct use under Package A. No direct impacts to the historic farm building complex along US 34 would occur under Package A.

Indirect effects include the on-ramp, which would bring westbound US 34 traffic directly to southbound I-25. It would be elevated 30 feet higher than the existing highway feature in the area and introduce an additional transportation element into the setting of the Schmer Farm. Transportation features have been part of the rural atmosphere and setting of the Schmer Farm since the 1960s, when I-25 and US 34 were completed. The new indirect effects to the farm setting would not substantially impair the function, setting, or architectural qualities that render the farm NRHP-eligible. The farm would remain operational and would be protected from encroachment during construction.

Because the transportation improvements associated with Package A would not substantially diminish or alter characteristics that render the site eligible for the NRHP, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-37** for uses associated with Package A.

### **Package B**

Uses resulting from Package B transportation improvements are similar in nature to those expected under Package A. This historic farm would be directly impacted by proposed improvements to the I-25/US 34 interchange associated with Package B. Use of the site would be slightly more than in Package A because of the additional managed lanes on I-25, creating a slightly wider highway footprint. Farmland acquisition related to construction of these new ramps would create use of 5.48 acres of land along the east edge of the property. Another small area of direct use would occur west of the farmhouse, where a new access would be constructed from US 34 to the frontage road leading to the Schmer farmhouse, gas station, and hotel on the southwest corner of the interchange. A total of 1.52 acres of farmland would be used in this location. A total of 7.0 acres of open farmland would be subject to direct use under Package B. No use of the historic farm building complex along US 34 would occur under Package B. Indirect effects would be the same as Package A.

Because the transportation improvements associated with Package B would not substantially diminish or alter characteristics that render the site eligible for the NRHP, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-38** for uses associated with Package B.

### **Preferred Alternative**

This historic farm would be used by proposed improvements to the I-25/US 34 interchange associated with the Preferred Alternative. Use of the site would result from the construction of new interchange ramps, including long curving, elevated ramps from westbound US 34 to southbound I-25, and a new southbound on-ramp from eastbound US 34 on the southwest quadrant of the interchange, replacing the existing loop ramp. Land taken from the farm would be necessary to provide a foundation for support piers for the new elevated flyover ramps between US 34 and I-25. Additionally, land would be needed from the farm to allow construction of fill slopes used to support the widened highway lanes and near-grade ramps, located just west of the existing southbound on-ramp. Construction of these new ramps would create use of as many as 3.86 acres of land along the east edge of the property. Another small area of direct use would occur west of the farmhouse, where a new access would be constructed from US 34 to the frontage road leading to the Schmer farmhouse, gas station, and hotel on the southwest corner of the interchange. A total of 1.52 acres of farmland would be used in this location. A total of 5.38 acres of open farmland would be subject to use under the Preferred Alternative. No use of the historic farm building complex along US 34 would occur under the Preferred Alternative (see **Figure 5-39**).

FHWA and CDOT have determined that the loss of an additional 5.38 acres of land for construction of the Preferred Alternative would result in *no adverse effect* to this farm because the characteristics that define the integrity of the rural landscape would not be compromised. The location, design, materials and workmanship of the farm would remain the same. The Preferred Alternative would not affect any of the farm buildings. The setting would not be affected by the Preferred Alternative. The mountains to the west of the farm continue to be a key element of its historic setting. The setting of the land to the north of the Schmer farm has changed significantly. What was once all agricultural land has been developed over the last decades into commercial development with the Loveland Outlet Stores and other retail businesses directly north of the Schmer Farm and the large Promenade Shops at Centerra to the northeast of the farm. The highways on both the north and east have been there for over forty years and were a part of the setting when the property was determined eligible for the NRHP. The feeling would remain one of an active farm established in the early part of the 20th century. The association is still strong as it is clear that this is still an active farm. The Schmer Farm was determined eligible under Criterion A for its association with 20th century Loveland area farming, including its history of sugar beet growing. That association would not change as a result of this project. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

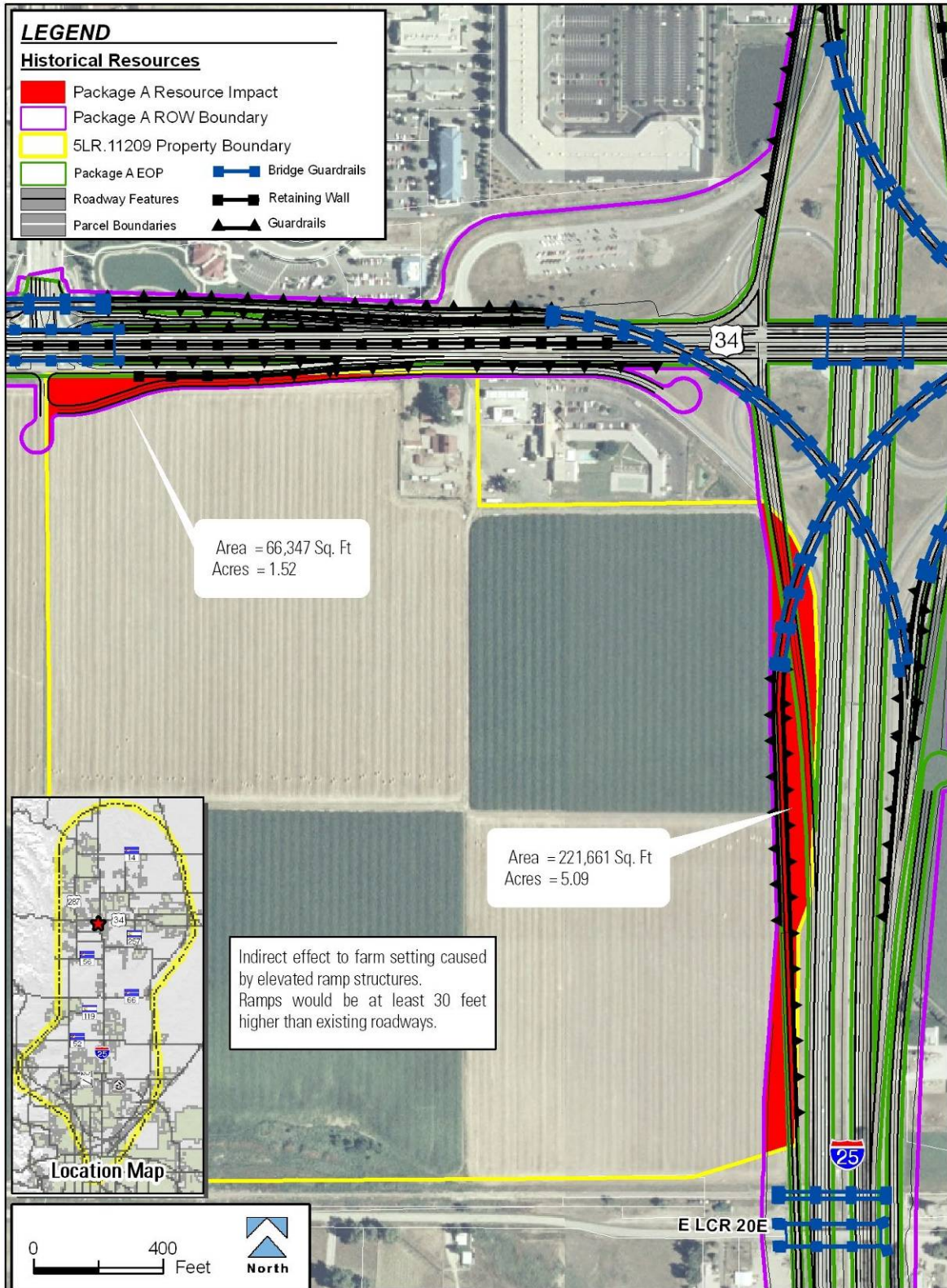
#### **Packages A, B, and Preferred Alternative**

Options to the directional interchange mainline ramps to identify alignment and measures to minimize harm have been evaluated. Traffic analysis indicated that there was some flexibility in phasing the directional ramp improvements to address the movements that are critical to maintaining the operational capacity of the diamond interchange at I-25/US 34. The eastbound-to-northbound flyover ramp would likely have required the removal of the Schmer Farm buildings on the south side of US 34. The original design also involved an on-ramp to southbound I-25 departing from the elevated US 34 flyover that would have caused direct use of the east edge of the Schmer Farm. It was confirmed that the eastbound-to-northbound directional ramp could be eliminated and an adequate level-of-service for 2035 traffic volumes could still be provided. As such, this modified design is serving as a measure to minimize harm for this property. This would result in a \$40 million cost reduction.

#### **Mitigation Measures for Schmer Farm**

- Property acquisition will be completed under the Uniform Relocation Act.
- Work with SHPO during final design to formulate acceptable aesthetic treatment of highway ramps and flyways (facades, pier treatments, elevation changes, landscaping, etc.).
- Maintain operation of farm during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

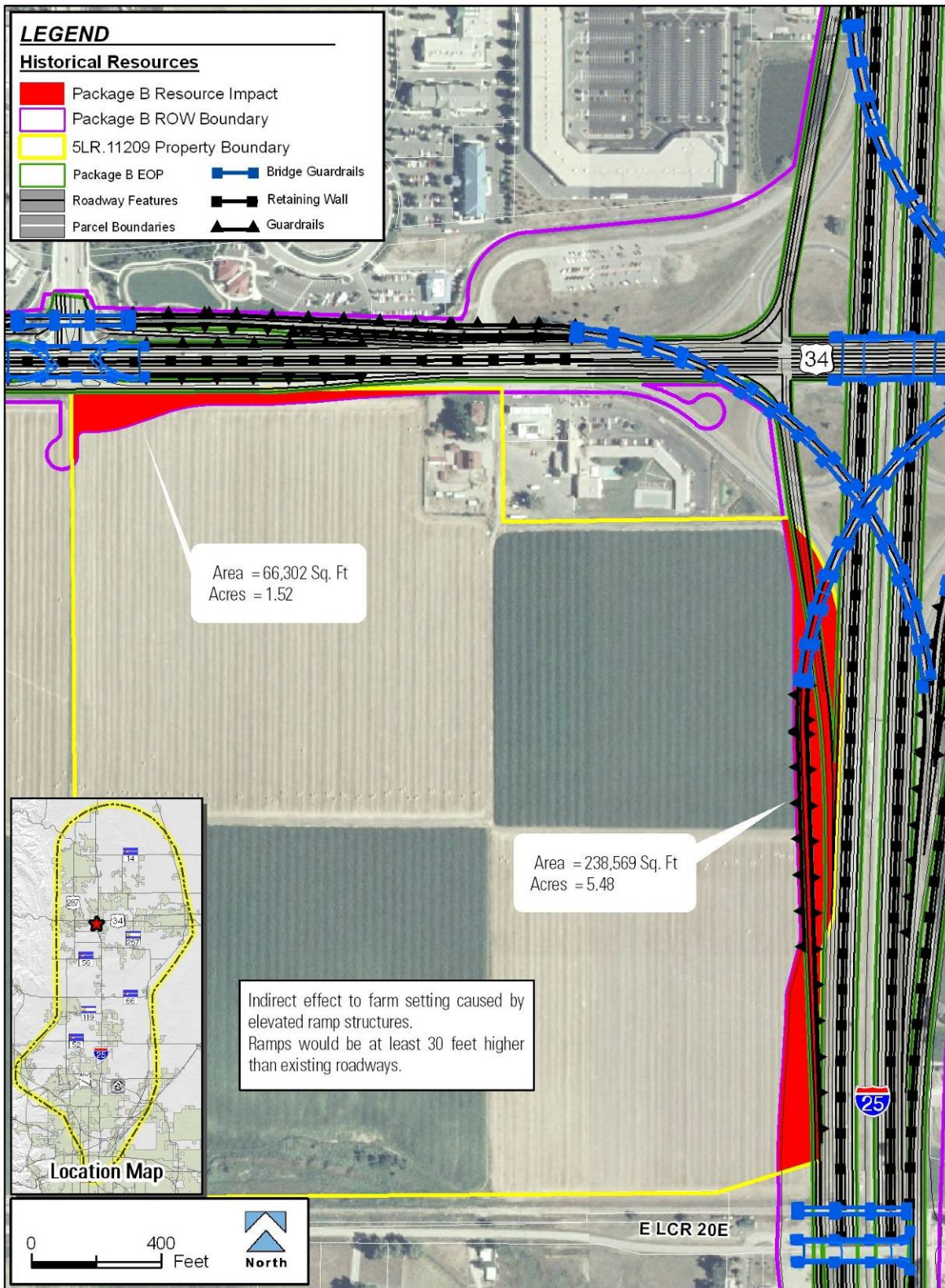
1 Figure 5-37 Schmer Farm Package A Use



2 Note: EOP—Edge of Pavement



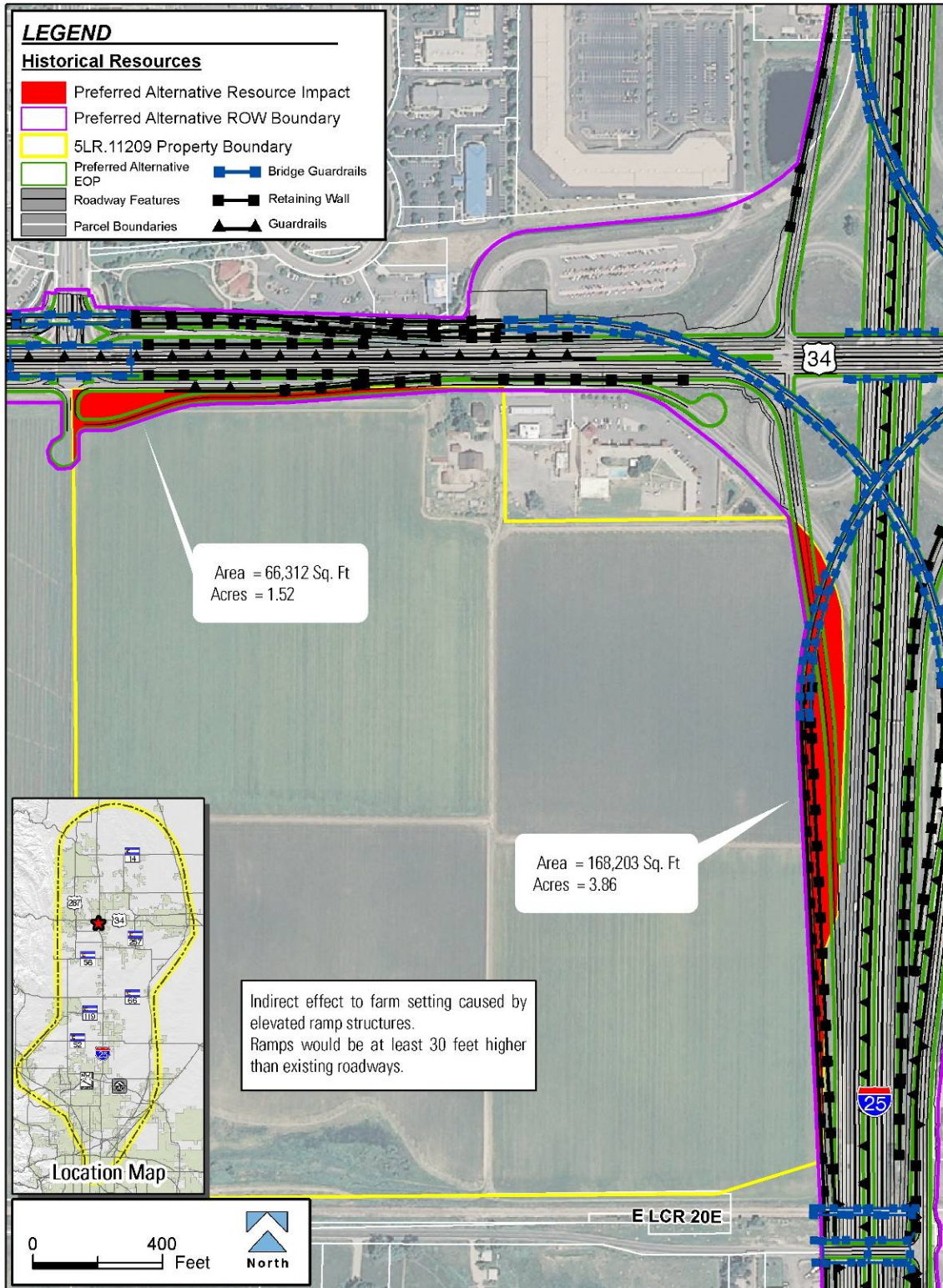
1 Figure 5-38 Schmer Farm Package B Use



2 Note: EOP—Edge of Pavement



1 Figure 5-39 Schmer Farm Preferred Alternative Use



## McDonough Farm (5LR.11210)

### Description

**Location:** 4856 E. Highway 34, Loveland  
**Type:** Historic farm  
**Section 106 Effect Finding:** No adverse effect  
**Ownership:** Private  
**Significance:** NRHP-Eligible, Criterion C

### Use of McDonough Farm by Package

**Package A**  
**A-H2 GP Improvements:**  
**SH 14 to SH 60**

A total of 1.64 acres by incorporation of a thin strip of farmland adjacent to US 34

**Package B**  
**B-H2 Tolled Express Lanes:**  
**SH 14 to SH 60**

A total of 1.64 acres by incorporation of a thin strip of farmland adjacent to US 34

**Preferred Alternative Highway:**

A total of 1.64 acres by incorporation of a thin strip of farmland adjacent to US 34.

### Resource Description

This property is located east of Loveland on the south side of US 34 approximately one mile west of I-25. The farm is historically important because of the architectural significance of its barn. The barn is a good example of early 20th century barn architecture in the Loveland and Larimer County area. The farm still continues in production and the barn continues to convey significance under Criterion C.

### Eligibility Determination

In August 2006, the McDonough Farm was determined officially eligible for inclusion on the NRHP under Criterion C because of the architectural significance of its barn.

### Section 4(f) Use

#### Package A

The use associated with Package A would occur along the northern edge of the farm adjacent to US 34 where 1.64 acres of land would be acquired in a thin strip of land along portions of the north and east borders of the farm. It appears that a pumphouse adjacent to US 34 would be removed. On the 2006 survey of this property, the pumphouse was evaluated as not unique, utilitarian in nature, and not adequately representing the architecture typically associated with Loveland area farms during the first half of the 20th century. This farm would remain a working farm whose barn conveys significance under Criterion C. The barn and other farm buildings would not be directly affected, agricultural production would continue and the barn would continue to convey architectural significance. See **Figure 5-40** for uses associated with Package A.

The material, workmanship, location and design of the barn would retain integrity and not be affected by a use of land from the site. Due to the fact that there would be no direct impact to the barn, FHWA and CDOT have determined that Package A would result in no adverse effect to the resource.



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### **Package B**

The impacts associated with Package B are identical to those described under Package A. This farm would remain a working farm whose barn conveys significance under Criterion C. The barn and other farm buildings would not be directly affected, agricultural production would continue and the barn would continue to convey architectural significance. The material, workmanship, location and design of the barn would retain integrity and not be affected by a loss of land from the site. Due to the fact that there would be no direct impact to the barn, FHWA and CDOT have determined that Package B would result in no adverse effect to the resource. See **Figure 5-40** for uses associated with Package B.

### **Preferred Alternative**

The impacts associated with the Preferred Alternative would occur along the northern edge of the farm adjacent to US 34 where 1.64 acres would be removed in a thin strip of land along portions of the north and east borders of the farm. It appears that a pumphouse adjacent to US 34 would be removed. On the 2006 survey of this property, the pumphouse was evaluated as not unique, utilitarian in nature, and not adequately representing the architecture typically associated with Loveland area farms during the first half of the 20th century. This farm would remain a working farm whose barn conveys significance under Criterion C. The barn and other farm buildings would not be directly affected, agricultural production would continue and the barn would continue to convey architectural significance. See **Figure 5-40** for uses associated with the Preferred Alternative.

The material, workmanship, location and design of the barn would retain integrity and not be affected by a loss of land from the site. Due to the fact that there would be no direct impact to the barn, FHWA and CDOT have determined that the Preferred Alternative would result in no adverse effect to the resource.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

#### **Packages A, B, & Preferred Alternative**

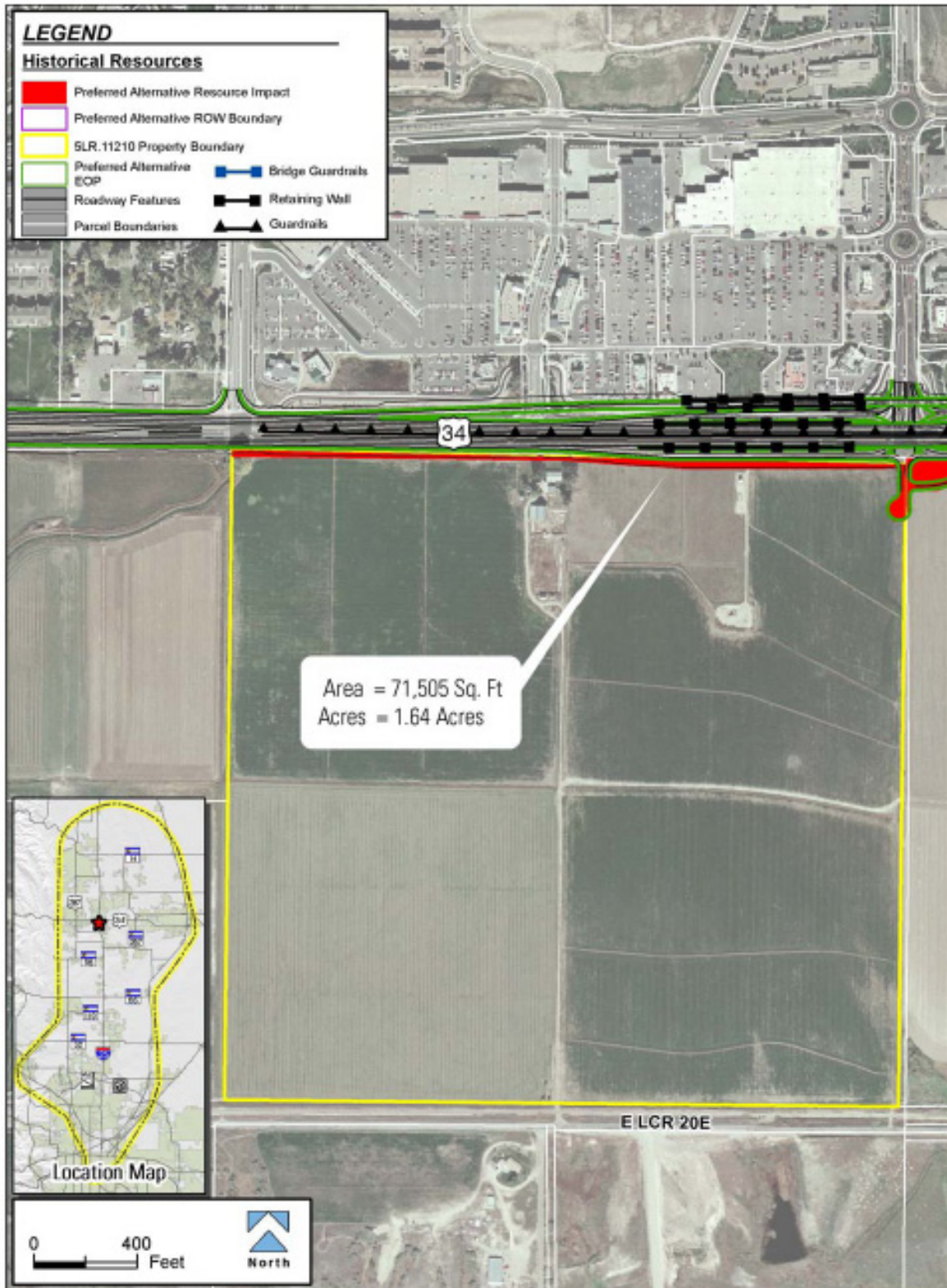
The farm is located directly adjacent to US 34 just west I-25. The US 34/I-25 interchange has been designed to accommodate major movements between these regional facilities as well as accommodate safe and efficient local system traffic. Previous interchange design configurations were much wider and would have used a greater area of McDonough Farm. The US 34/I-25 interchange is the most compact design possible to minimize right-of-way acquisition. Retaining walls have been included to minimize direct impacts. Impacts caused by expansion of US 34 would result from the new overpass. Because of the overpass height, the toe slopes would have a longer reach into the farm property.

#### **Mitigation Measures for the McDonough Farm**

- Property acquisition will be completed under the Uniform Relocation Act.
- Maintain operation of farm during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

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1 Figure 5-40 McDonough Farm Use



## Great Western Railway (5LR.850)

### Description

<b>Location:</b>	T5N/R68W, C Sec, 15
<b>Type:</b>	Historic railroad
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Great Western Railway by Package

<b>Package A</b>	<b>Package B</b>
<b>A-H2 GP Highway Improvements: SH 14 to SH 60</b>	<b>B-H2 Tolled Express Lanes: SH 14 to SH 60</b>
A total of 170 feet of railroad length incorporated into a new bridge	A total of 240 feet of railroad length incorporated into a new bridge

### Preferred Alternative I-25 Highway Improvements:

A total of 155 feet of railroad length  
incorporated into a new bridge.

### Resource Description

The total length of the entire historic Great Western Railway (GWR) is 110 miles. Six segments of the GWR resource in Larimer, Weld, and Boulder counties pass through the North I-25 EIS APE.

The 15.7-mile-long GWR Loveland to Buda section (5LR850) was built in 1902 to 1903 by the Loveland Construction Company and contains Larimer County segments 5LR.850.1 and 5LR.850.5, as well as Weld County segment 5WL.841.11. Segment 5LR.850.1 is approximately 1,241 feet long. The GWR is conveyed over I-25 in this portion of the APE by a non-historic bridge. Segment 5LR.850.5 is approximately 551 feet long. Segment 5WL.841.11 is the first end-of-track point for the Loveland to Buda section, and the portion within the project APE is 784 feet long.

The GWR Johnstown to Liberty section was built in 1905 to 1906 and is 12 miles long. Within the APE in Weld and Boulder counties, this section contains segments 5WL.841.9 and 5BL.841.1. Segment 5WL.841.9 is 1,241 feet long, and Segment 5WL.841.1 is 784 feet long. The Boulder County segment (5BL.514.1) of the GWR Johnstown to Longmont section was constructed in 1903 and is approximately 2.1 miles long.

### Eligibility Determination

The entire GWR in Larimer County (5LR.850), Weld County (5WL841), and Boulder County (5BL.514), is eligible for the NRHP under Criterion A because of its important role in the economic development of the Colorado Front Range. All of the segments passing through the APE (5LR.850.1, 5LR.850.5, 5WL.841.11, 5WL.841.9, 5WL.841.1, and 5BL.514.1) retain sufficient integrity of location and association to support the eligibility of the entire linear resource; however, those portions of the railroad spanning I-25 have been modified and have lost integrity of design and workmanship by being placed on a bridge during the 1960s.



## Section 4(f) Use

### Package A

**Segment 5LR.850.1:** Presently, this historic railroad segment spans I-25 via a non-historic 210-foot-long steel girder railroad bridge. Package A involves the widening of I-25 through this area, changing it from the existing configuration of two northbound and two southbound traffic lanes to a new section containing three general purpose lanes in each direction, or a total of six traffic lanes. To accommodate this wider section, it would be necessary to replace the existing bridge carrying the GWR over I-25 with a 295-foot-long bridge structure. The new bridge would be 85 feet longer than the existing structure spanning I-25. The proposed new bridge would be either of post-tensioned concrete or steel plate girder construction, and would remain at the same vertical height as the existing railroad bridge

In order to replace the existing bridge with a longer structure, it would be necessary to construct a temporary "shoo-fly" structure, whereby a section of railroad would be temporarily re-aligned to cross I-25 on the north side of the existing railroad bridge. This measure would prevent a disruption in rail service, while the old bridge is demolished and the new bridge structure is being constructed in its place. A new rail crossing would be constructed north of the existing bridge. The shoo-fly structure would require altering the existing historic railroad grade at either end of the existing bridge (approximately 85 feet at each end to provide a smooth transition to the new alignment), curving to form the bypass of the existing bridge. Once the latter step has been completed, the shoo-fly would be removed, and rail traffic would be restored to its historic east-west alignment.

The bridge replacement under Package A would place an additional 85 feet of historic railroad line on a bridge structure similar to its current configuration. By placing that portion of the railroad already modified by the original construction of I-25 on a bridge, only 170 feet of the railroad retaining good physical integrity would be used by placement on a longer bridge structure. The new bridge would be similar in terms of elevation and the location where it spans I-25, and thus would not introduce a new and different visual element into the railroad's setting. This change would not substantially diminish or alter characteristics that render it eligible for the NRHP (see **Figure 5-41**).

**Segment 5WL.841.11:** In this location, the existing I-25 northbound and southbound roadways span this historic railroad with twin 82-foot-long, 38-foot-wide concrete slab bridges (C-17-CE and C-17-CD). Neither bridge is historic. Under Package A, the northbound and southbound roadways would be realigned to the west of their current alignments, and would be wider, containing three general purpose lanes in each direction. The new northbound and southbound roadways would span the historic railway on new pre-stressed concrete girder-type bridge structures that would be approximately 24 feet wider and 79 feet long. The old bridges would be demolished. The new bridge piers would be placed outside the limits of this historic railway so that no direct use would occur. The existing east frontage road would be slightly widened but would remain in its existing alignment, and the existing at-grade railroad crossing would be maintained.

Removing the old bridges and returning most of the associated fill slopes to a more natural terrain shape and elevation would partially restore the historic landscape of the railway setting. A temporary construction easement would be necessary to demolish and regrade slopes within the railroad right-of-way and would result in a temporary occupancy.

**Segment 5LR.850.5:** This rail line would remain in its current historic alignment and would continue to tie into the railroad mainline corridor west of Cleveland Avenue that would contain the proposed commuter rail line. No direct use of the historic railroad ballast, bed, and track would occur. The installation of an adjacent set of tracks supporting the new commuter rail line would indirectly affect the historic setting of the historic railroad line, but would not be expected to substantially harm the function, alignment, character, or other attributes that render the railroad NRHP-eligible.

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**Segment 5WL.841.9:** Under Package A, the I-25 northbound and southbound roadways would be re-aligned approximately 50 to 60 feet west of their current alignments, and would be widened from two lanes to three general purpose lanes in each direction. The new northbound and southbound roadways would span the historic railway on new pre-stressed concrete girder-type bridge structures that would be 82 feet long and 63 to 75 feet wide. The old (but non-historic) 103-foot long, 38-foot wide rolled I-beam bridges (D-17-DB and D-17-DA) which spanned the railroad would be demolished. The new bridge piers would be placed outside the limits of this historic railway, so that no direct use would occur. The two new bridges would be a combined 62 feet wider than the existing bridges, thus the railroad would have an additional 62 feet of overhead cover. The existing east frontage road would be slightly widened but would remain in its existing alignment, and the existing at-grade railroad crossing would be maintained.

Removing the old bridges and returning most of the associated fill slopes to a more natural terrain shape and elevation would partially restore the historic landscape of the railway's setting. A temporary construction easement would be necessary to demolish and re-grade slopes within the railroad right-of-way and would result in a temporary occupancy. The new bridges would place a portion of the railway underneath the highway bridges. This increased overhead cover due to the new bridge decks would not result in a direct use.

**Segment 5BL.514.1:** The commuter rail improvements in this area call for the addition of a dedicated commuter rail track parallel to the existing commercial railroad track. In all cases the existing rail line would remain in its current historic alignment. No use of the historic railroad ballast, bed, and track would occur. The installation of an adjacent set of tracks supporting the new commuter rail line would indirectly affect the historic setting of the historic railroad line, but that is not expected to substantially harm the function, alignment, character, or attributes that render the railroad NRHP-eligible.

Approximately 170 feet of railroad track at Segment 5LR.850.1 would experience a direct use as a result of new bridge construction. Temporary construction occupancy and indirect effects due to expanded overhead coverage by the highway bridges would affect two segments of the railroad (5WL.841.11 and 5WL.841.9). New commuter rail track along the transportation corridor would contribute to modern but compatible rail infrastructural elements to the historic setting at two locations (5BL.514.1 and 5LR.850.5). Because the use of these segments associated with the proposed Package A transportation improvements would not substantially diminish the integrity of the resource or the characteristics that render the property eligible for the NRHP, FHWA and CDOT have determined that the Package A transit improvements would result in *no adverse effect* with respect to the entire GWR in Larimer, Weld, and Boulder counties (5LR.850, 5WL.841, and 5BL.514). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-41** for uses associated with Package A.

### **Package B**

**Segment 5LR.850.1:** Presently, this historic railroad segment spans I-25 via a (non-historic) 210-foot-long steel girder railroad bridge. Package B involves widening of I-25 through this area, changing it from the existing configuration of two northbound and two southbound traffic lanes to a new section containing a total of eight lanes: two managed lanes plus two general purpose lanes in each direction. To accommodate this much wider section, it would be necessary to replace the existing bridge carrying the GWR over I-25 with a 330-foot-long bridge structure. The new bridge would be 120 feet longer than the existing structure spanning I-25. The proposed new bridge would be either of post-tensioned concrete or steel plate girder construction, and would remain at the same vertical height as the existing railroad bridge.

Similar to Package A, construction of a shoo-fly would be needed during construction.

The bridge replacement under Package B would place an additional 240 feet of historic railroad line on a bridge structure relatively similar to its current configuration. By placing that portion of the railroad already modified by the original construction of I-25 on a bridge, 240 feet of the railroad retaining good physical integrity would be altered by placement on a longer bridge structure. The new bridge would be similar in terms of elevation and the location where it spans I-25, and thus would not introduce a new and different visual element into the railroad's setting. This change would not substantially diminish or alter characteristics that render it eligible for the NRHP.

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**Segment 5WL.841.11:** Under Package B, this section of I-25 is in the transition zone between a highway section containing two general purpose lanes with one buffer-separated managed lane in each direction, to a wider section containing two general purpose lanes plus two barrier-separated managed lanes in each direction. The northbound and southbound roadways would be realigned to the west of their current alignments, and these new roadways would span the historic railway on two new pre-stressed concrete girder-type bridge structures similar to those proposed for Package A that would be approximately 70 feet wider and 79 feet long. The bridge piers would be placed outside the limits of this historic railway, and no direct use would occur. The old bridges would be demolished. The existing east frontage road would be slightly widened but would remain in its existing alignment, and the existing at-grade railroad crossing would be maintained, and no direct use would result.

Removing the old bridges and returning most of the associated fill slopes to a more natural terrain shape and elevation would partially restore the historic landscape of the railway setting. However, the new bridges would place an additional 140-foot-long portion of the railway underneath the new bridge decks. This increased overhead cover due to the wider bridge deck would be an indirect effect to the historic setting of the railway; however, this change is not expected to substantially diminish or alter the function, alignment, character, or other attributes that render the railway NRHP-eligible.

**Segment 5WL.841.9:** Under Package B, the northbound and southbound roadways would be realigned approximately 50 to 60 feet west of their current alignments, and would be wider, containing two general purpose lanes plus one buffer-separated managed lane in each direction. The new northbound and southbound roadway alignments would span the historic railway on new 82-foot-long pre-stressed concrete girder-type bridge structures. The two new bridges would be a combined 62 feet wider than the existing bridges, thus the railroads would have an additional 62 feet of overhead cover. The bridge piers would be placed outside the limits of this historic railway, and no direct use would occur. The existing east frontage road would be slightly widened but would remain in its existing alignment, and the existing at-grade railroad crossing would be maintained.

Removing the old bridges and returning most of the associated fill slopes to a more natural terrain shape and elevation would partially restore the historic landscape of the railway's setting. A temporary construction easement would be necessary to demolish and regrade slopes within the railroad right-of-way. The new bridges would place an additional portion of the railway underneath the bridge deck. This increased overhead cover due to the wider bridge deck would be an indirect effect to the historic setting of the railway; however, this change is not expected to substantially diminish or alter the function, alignment, character, or other attributes that render the railway NRHP-eligible.

Approximately 240 feet of railroad track at Segment 5LR.850.1 would be directly impacted as a result of new bridge construction. Temporary construction occupancy and indirect effects due to expanded overhead coverage by the highway bridges would affect two segments of the railroad (5WL.841.11 and 5WL.841.9). Because the impacts to these segments associated with the proposed Package B transportation improvements would not substantially diminish the integrity of the resource or the characteristics that render the property eligible for the NRHP, FHWA and CDOT have determined that Package B would result in *no adverse effect* with respect to the entire GWR in Larimer and Weld counties (5LR.850 and 5WL.841). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-42** for uses associated with Package B

#### **Preferred Alternative**

**Segment 5LR.850.1:** Presently, this historic railroad segment spans I-25 via a non-historic 210-foot-long steel girder railroad bridge. The Preferred Alternative involves the widening of I-25 through this area, changing it from the existing configuration of two northbound and two southbound traffic lanes, to a new section containing three general purpose lanes and one TEL in each direction or a total of eight traffic lanes. To accommodate this wider section, it would be necessary to replace the existing bridge carrying the GWR over I-25 with a 295-foot-long bridge structure. The new bridge would be 85 feet longer than the existing structure spanning I-25. The proposed new bridge would be either of post-tensioned concrete or steel plate girder construction, and would remain at the same vertical height as the existing railroad bridge (see **Figure 5-43**).

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To replace the existing bridge with a longer structure, it would be necessary to construct a temporary “shoo-fly” structure, whereby a section of railroad would be temporarily re-aligned to cross I-25 on the north side of the existing railroad bridge. This measure would prevent a disruption in rail service, while the old bridge is demolished and the new bridge structure is being constructed in its place. A new rail crossing would be constructed north of the existing bridge. The shoo-fly structure would require altering the existing historic railroad grade at either end of the existing bridge (approximately 70 feet on the west end and 85 feet at the east end to provide a smooth transition to the new alignment), curving to form the bypass of the existing bridge. Once the latter step has been completed, the shoo-fly would be removed, and rail traffic would be restored to its historic east-west alignment.

The bridge replacement under the Preferred Alternative would place an additional 85 feet of historic railroad line on a bridge structure similar to its current configuration. By placing that portion of the railroad already modified by the original construction of I-25 on a bridge, only 85 feet of the railroad retaining good physical integrity would be altered by placement on a longer bridge structure. The new bridge would be similar in terms of elevation and the location where it spans I-25, and thus would not introduce a new and different visual element into the railroad’s setting. This change would not substantially diminish or alter characteristics that render it eligible for the NRHP

**Segment 5WL.841.11:** At this location, the existing I-25 northbound and southbound roadways span this historic railroad with twin 82-foot-long, 38-foot-wide concrete slab bridges. Neither bridge is historic. Under the Preferred Alternative, the northbound and southbound roadways would be re-aligned to the west of their current alignments, and would be wider, containing three general purpose lanes and a TEL in each direction. The new northbound and southbound roadways would span the historic railway on new, approximately 24-foot-wide, 79-foot-long pre-stressed concrete girder-type bridge structures. The old bridges would be demolished. The new bridge piers would be placed outside the limits of this historic railway, so that no direct impacts would occur. The existing east frontage road would be slightly widened but would remain in its existing alignment, and the existing at-grade railroad crossing would be maintained (see **Figure 5-43**)

Removal of the old bridges and returning most of the associated fill slopes to a more natural terrain shape and elevation would partially restore the historic landscape of the railway setting. A temporary construction easement would be necessary to demolish and re-grade slopes within the railroad right-of-way. The new bridges would place a portion of the railway underneath the bridge deck. This increased 48 feet of overhead cover due to a wider bridge decks would be an indirect effect to the historic setting of the railway; however, would not substantially diminish or alter the function, alignment, character, or other attributes that render the railway NRHP-eligible.

**Segment 5LR.850.5:** This rail line would remain in its current, historic alignment, and would continue to tie into the railroad mainline corridor west of Cleveland Avenue that would contain the proposed commuter rail line. No use of the historic railroad ballast, bed and track would occur. The installation of an adjacent passing track would indirectly affect the historic setting of the historic railroad line, but would not to be expected to substantially harm the function, alignment, character, or other attributes that render the railroad NRHP-eligible.

**Segment 5WL.841.9:** Under the Preferred Alternative, the I-25 northbound and southbound roadways would be re-aligned approximately 50 to 60 feet west of their current alignments, and would be widened from 2-through lanes to three general purpose lanes and TEL in each direction. The new northbound and southbound roadways would span the historic railway on new 82-foot-long, 63 - to 75-foot-wide, pre-stressed concrete girder-type bridge structures. The old (but non-historic) 103-foot-long, 38-foot-wide, rolled I-beam bridges, which spanned the railroad, would be demolished. The new bridge piers would be placed outside the limits of this historic railway, so no direct impacts would occur. The two new bridges would be a combined 62 feet wider than the existing bridges, thus the railroad would have 62 feet more overhead cover. The existing east frontage road would be slightly widened but would remain in its existing alignment, and the existing at-grade railroad crossing would be maintained (see **Figure 5-43**).

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Removal of the old bridges and returning most of the associated fill slopes to a more natural terrain shape and elevation would partially restore the historic landscape of the railway's setting. A temporary construction easement would be necessary to demolish and re-grade slopes within the railroad right-of-way. The new bridges would place a portion of the railway underneath the highway bridges. This increased overhead cover due to the new bridge decks would indirectly affect the historic setting of the railway, however; this change is not expected to substantially diminish or alter the function, alignment, character, or other attributes that render the railway NRHP-eligible.

**Segment 5BL.514.1:** The commuter rail improvements associated with the Preferred Alternative in this area call for the commuter rail to run on the existing freight railroad track. The existing rail line would remain in its current, historic alignment. No use of the historic railroad ballast, bed and track would occur. The addition of the commuter rail would indirectly affect the historic setting of the historic railroad line, but would not expect to substantially harm the function, alignment, character, or attributes that render the railroad NRHP-eligible. 155 feet of railroad track at segment 5LR.850.1 would be directly impacted as a result of new bridge construction. Temporary construction impacts and indirect effects due to expanded overhead coverage by the highway bridges would affect two segments of the railroad (5WL.841.11 and 5WL.841.9). Commuter rail traffic, along the transportation corridor would contribute to modern, but compatible rail elements to the historic setting at two localities (5BL.514.1 and 5LR.850.5). The impacts to these segments associated with the Preferred Alternative would not substantially diminish the integrity of the resource or the characteristics that render the property eligible for the NRHP. FHWA and CDOT therefore have determined that the Preferred Alternative would result in no adverse effect with respect to the entire GWR in Larimer, Weld and Boulder counties (5LR.850, 5WL.841, and 5BL.514). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-43** for uses associated with the Preferred Alternative

### **Planning and Measures Included to Reach a *De Minimis* Finding Package A, B, and Preferred Alternative**

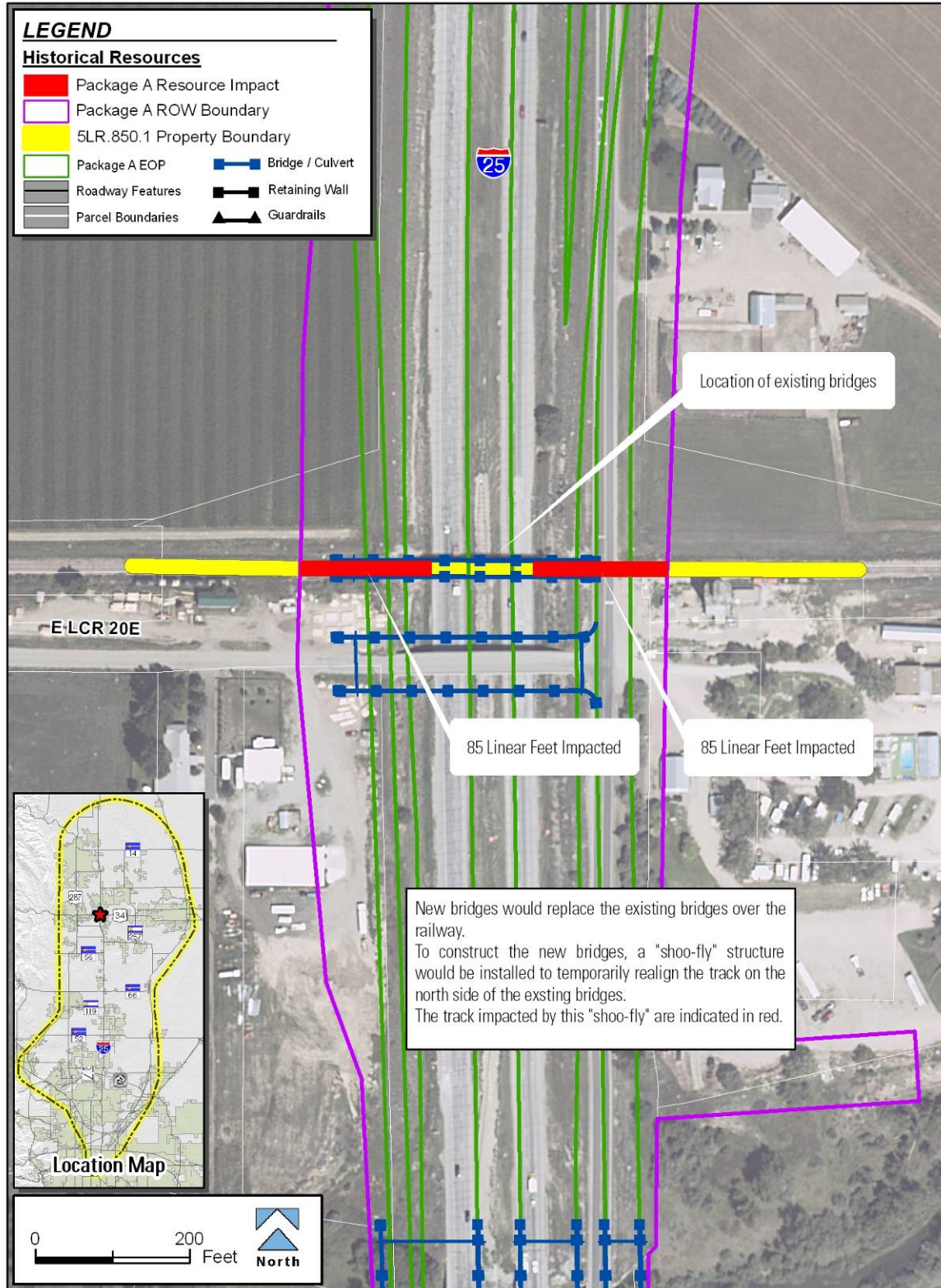
The bridge for Package A cannot be reduced in length because a retaining abutment that is the minimum distance allowed from the edge of I-25 is already included in the design. All measures to reduce impact have been considered.

#### **Mitigation Measures for the Great Western Railway**

- Permanent easements or acquisition will be completed under the Uniform Relocation Act.
- Maintain rail operations during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

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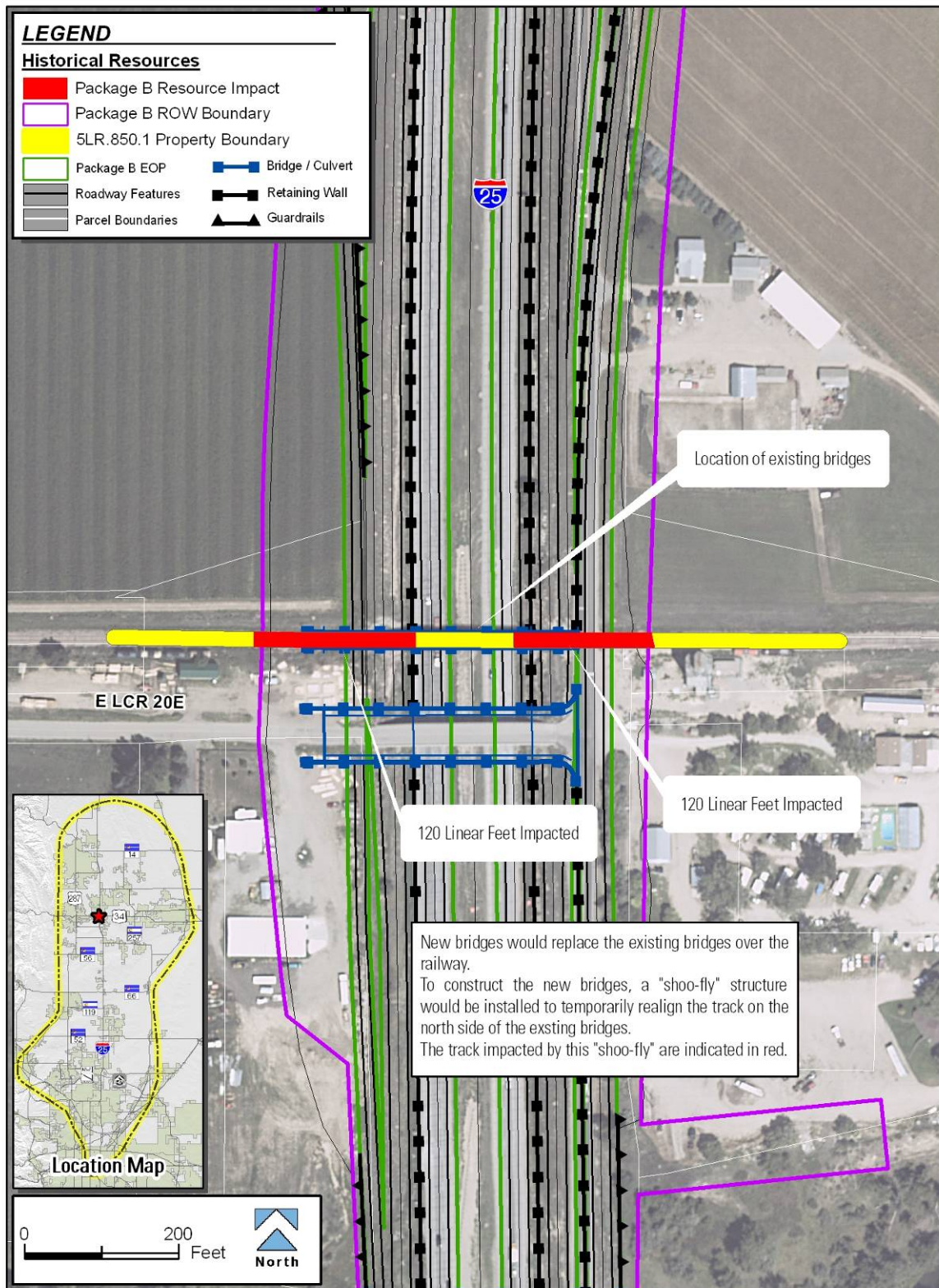
1 Figure 5-41 Great Western Railway Package A Use



2 Note: EOP—Edge of Pavement

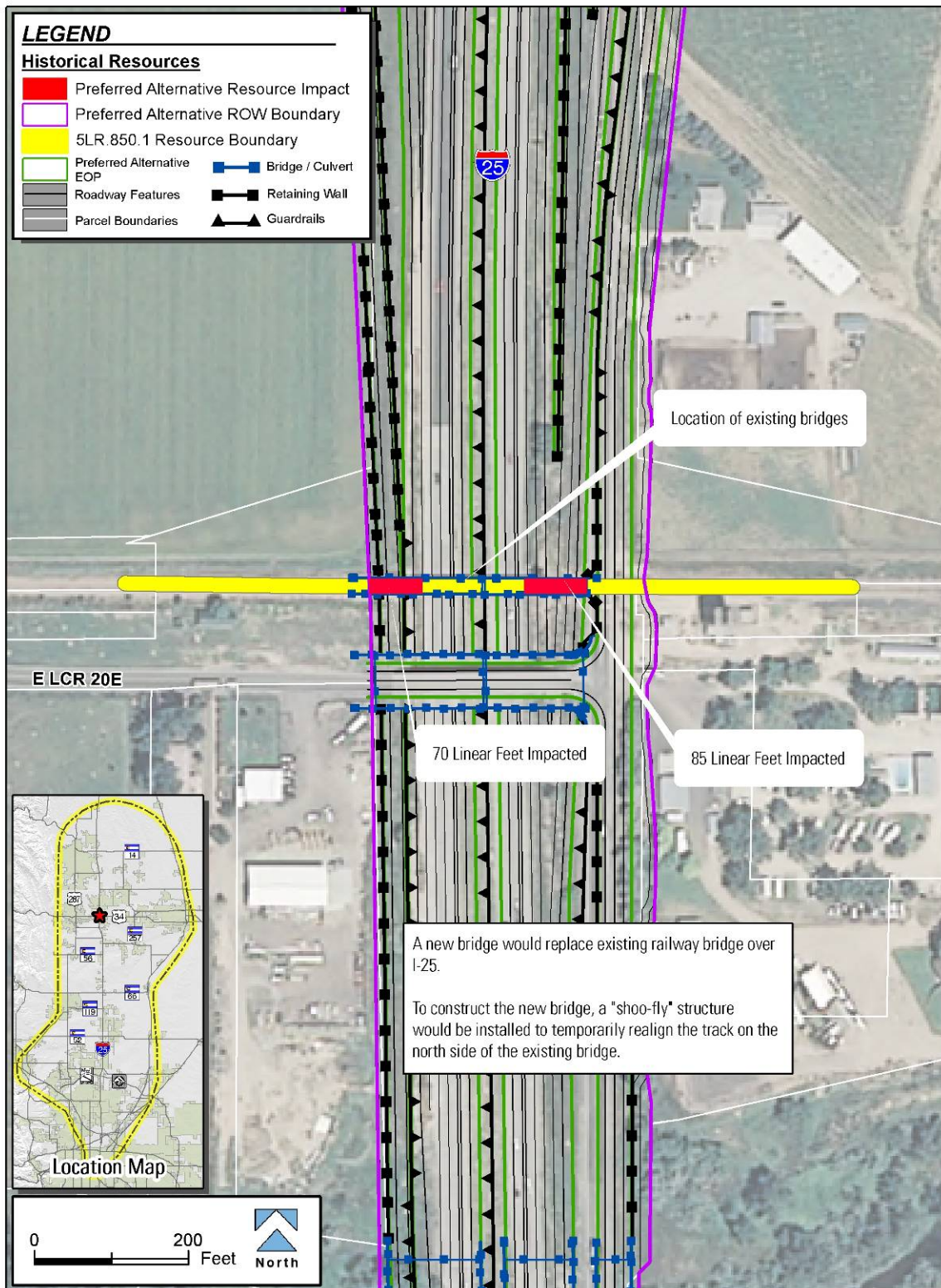


1 Figure 5-42 Great Western Railway Package B Use



2 Note: EOP—Edge of Pavement

1 Figure 5-43 Great Western Railway Preferred Alternative Use





## Hatch Farm (5LR.11382)

### Description

<b>Location:</b>	640 Southeast Frontage Road
<b>Type:</b>	Historic farm
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion C

### Use of Hatch Farm by Package

**Package A**  
**A-H2 GP Highway Improvements:**  
**SH 14 to SH 60**

A total of 2.1 acres by incorporation of narrow 850-foot and 450-foot strips of farmland for two water quality ponds in the project

**Package B**  
**B-H2 Tolled Express Lanes:**  
**SH 14 to SH 60**

A total of 2.2 acres by incorporation of narrow 850-foot and 450-foot strips of farmland for two water quality ponds in the project

**Preferred Alternative**  
**I-25 Highway Improvements:**

A total of 1.33 acres by incorporated into the transportation infrastructure

### Resource Description

The Hatch Farm is located at 640 Southeast Frontage Road in Larimer County. This property includes a historic balloon-framed barn, which is unique for this area. The barn was constructed circa 1920. The barn is surrounded by farmland.

### Eligibility Determination

The significance of the Hatch Farm is attributed to the architecture of the barn. The barn retains very good architectural integrity, is an excellent example of a specialized type and construction method of agricultural architecture, and has been determined to be eligible for the NRHP under Criterion C.

### Section 4(f) Use

#### Package A

Under Package A, the existing I-25 template in this vicinity would be changed from the existing two general purpose lanes in each direction, to a wider footprint containing three general purpose lanes plus one auxiliary lane in each direction. The existing east frontage road would be shifted to the east of its present alignment approximately 50 feet east of its current edge of pavement. In conjunction with these transportation improvements, Package A design includes construction of two water quality ponds on the east side of I-25, extending into this historic property. Ponds in this area were placed to avoid wetlands and Section 4(f)-protected parkland along the Big Thompson River. The northernmost water quality pond would extend nearly 300 feet into the historic property and would occupy an area approximately 0.9 acre in size. The southernmost pond would extend approximately 104 feet into the historic property and would occupy an area approximately 1.2 acres in size. Together, these ponds would use approximately 2.1 acres of land within the site boundary.

The proposed water quality ponds would be visually unobtrusive. Because the historic barn would not be directly used by development of these water quality ponds, and the transportation-related improvements associated with Package A would not diminish or alter architectural characteristics that render the property eligible for the NRHP, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-44** for uses associated with Package A.



### **Package B**

Under Package B, the existing I-25 template in this vicinity would be altered to include two general purpose lanes and two barrier-separated managed lanes in each direction. The existing east frontage road would be shifted to the east of its present alignment approximately 65 feet east of the current edge of pavement. In conjunction with these transportation improvements, the Package B design specifies the construction of two water quality ponds on the east side of I-25, extending into this historic site. The northernmost water quality pond would extend nearly 286 feet into the historic property and would occupy an area approximately 0.87 acre in size. The southernmost pond would extend approximately 91 feet into the historic property and would occupy an area approximately 1.33 acres in size. Together, these ponds would use approximately 2.2 acres of land within the site boundary.

Because the historic barn on the Hatch Farm property would not be directly used by development of these water quality ponds, and the transportation-related improvements associated with Package B would not diminish or alter architectural characteristics that render the property eligible for the NRHP, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-45** for uses associated with Package B.

### **Preferred Alternative**

Under the Preferred Alternative, the existing I-25 template in this vicinity would be changed from the existing two general purpose lanes in each direction, to a wider footprint containing three general purpose lanes plus one TEL in each direction. The existing east frontage road would be shifted to the east of its present alignment. In conjunction with these transportation improvements, the Preferred Alternative design calls for the construction of a water quality pond on the east side of I-25, extending into this historic property. The pond was placed in this area to avoid wetlands and Section 4(f) protected parkland along the Big Thompson River. The pond would extend approximately 104 feet into the historic property, and would occupy an area approximately 1.18 acres in size. Together, this pond and the widened footprint of the transportation infrastructure would impact approximately 1.33 acres of land within the site boundary (see **Figure 5-46**).

The planned ROW allows for a 10-foot-wide, continuous maintenance easement along the retaining walls and southern basin, which can be accessed from the unpaved county road.

Very little of the original 160-acre farm is still used for agriculture. There are no farm buildings on the Hatch property except for the barn and that no longer has any association with agriculture. Mr. Hatch said that his 8-acre parcel has not been used as cropland since the 1940s. It was used as a wrecking yard in the 1950s. The Big Thompson River flows through the northern portion of the original farm. The property has been divided and sold and is now in a variety of uses. There is a campground on 12 acres in the northwest part of the original farm. Mr. Hatch has 8 acres with about 4 acres used for his trucking business and the other 4 acres used for residential uses. The land to the south of the Big Thompson River has been a large gravel pit for the last 15 years. The only remaining agricultural use of the land is for pasture on the land surrounding the gravel pit operation. The barn is eligible under Criterion C, but the site has lost integrity in terms of setting as there are no other buildings on site that were associated with agricultural uses.

The proposed water quality pond would be visually unobtrusive. The historic barn would not be directly or indirectly affected by development of these water quality ponds, and the transportation-related improvements associated with the Preferred Alternative would not diminish or alter architectural characteristics that render the property eligible for the NRHP. The loss of the land from the site is not adverse because the setting and feeling of this property have been changed with the development of the campground, the service garage, the trucking business and the gradual reduction of agricultural use of the property. The approximate 1.33 acres of land that would be taken for this project is mainly vacant land with some portions of the land being used as an area to park trucks for the trucking business. The barn was not used for agricultural purposes on this property. The association for this property is now commercial rather than agricultural. The material, workmanship, location and design of the barn would retain integrity and not

be affected by a loss of land from the site. Due to the prior loss of the agricultural setting of this property and the fact that there would be no direct impact to the barn which is the reason for the property's eligibility, FHWA and CDOT have determined that the Preferred Alternative would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

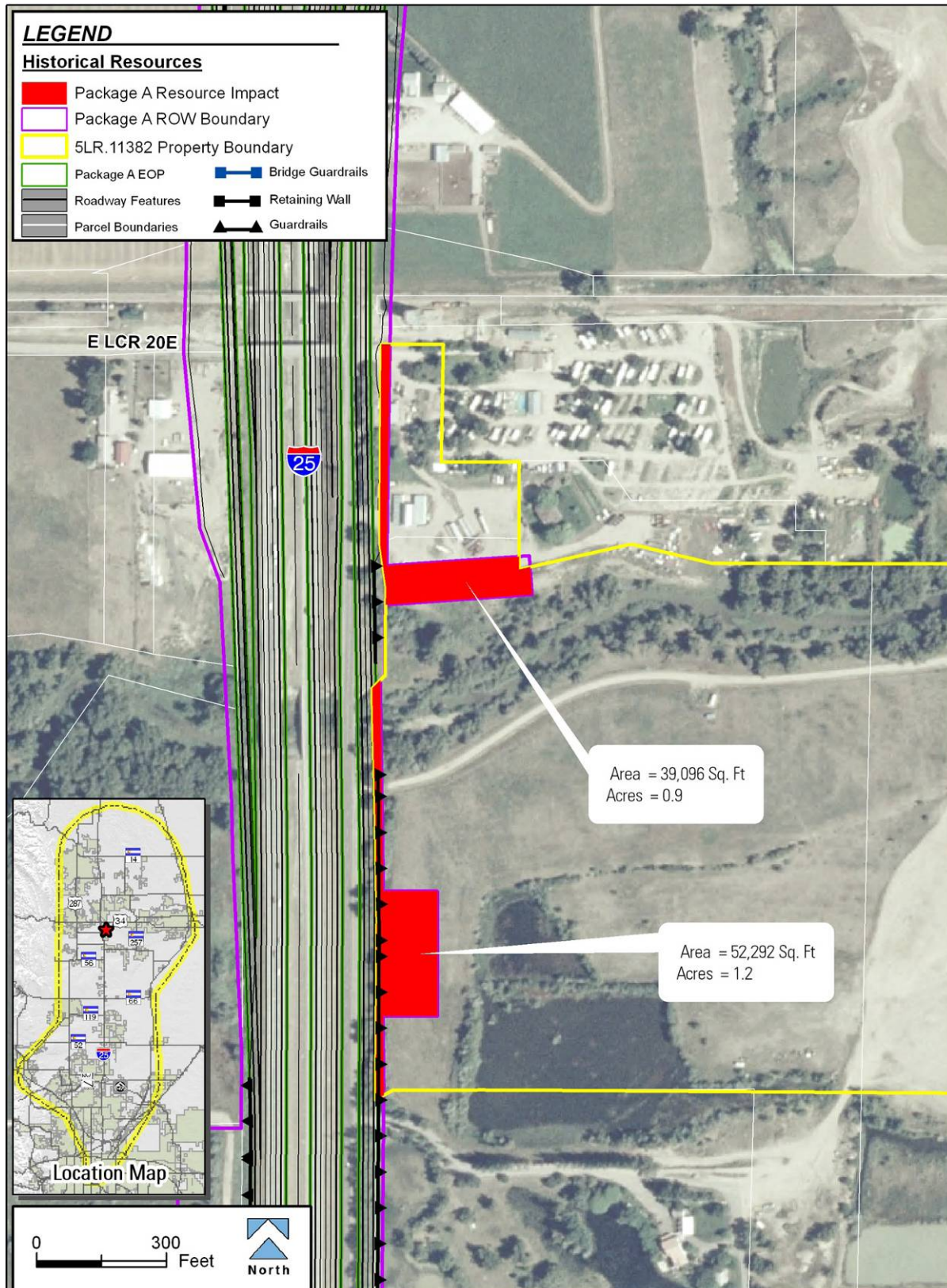
#### **Package A, B, and Preferred Alternative**

No minimization, mitigation, or enhancement measures are currently possible because of the requirement of locating water quality ponds on the east side of I-25 while avoiding uses of the Big Thompson riparian corridor and wetlands. All measures to reduce impact have been considered.

#### **Mitigation Measures for the Hatch Farm**

- Maintain operation of farm during construction.
- Property acquisition will be completed under the Uniform Relocation Act.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

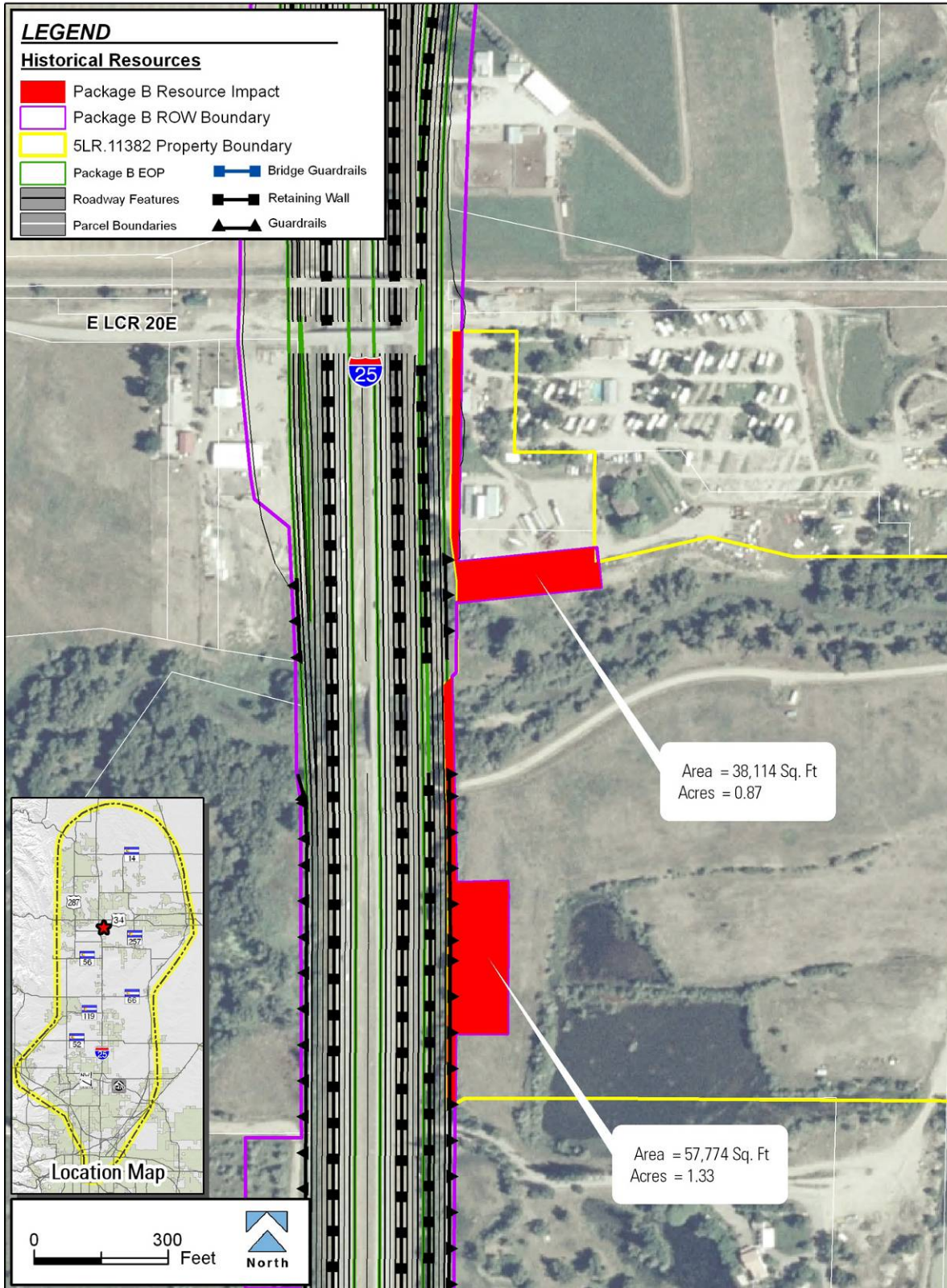
1 Figure 5-44 Hatch Farm Package A Use



2 Note: EOP—Edge of Pavement



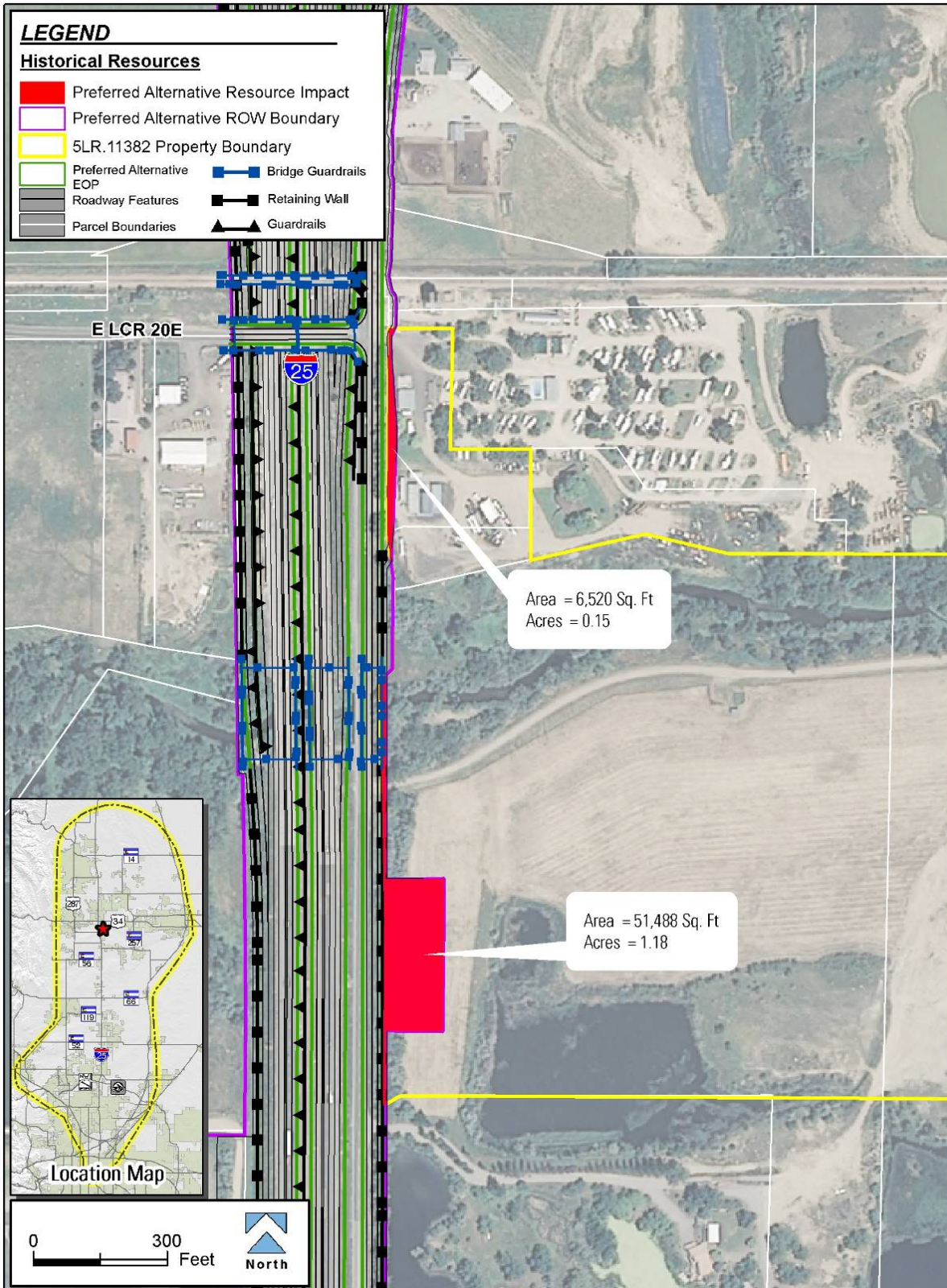
1 Figure 5-45 Hatch Farm Package B Use



2 Note: EOP—Edge of Pavement



1 Figure 5-46 Hatch Farm Preferred Alternative Use



## Hillsboro Ditch (5LR.8927.1)

### Description

<b>Location:</b>	North I-25 1.3 miles south of US 34
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Hillsboro Ditch by Package

Package A	Package B
<b>A-H2 GP Highway Improvements: SH 14 to SH 60</b>	<b>B-H2 Tolled Express Lanes: SH 14 to SH 60</b>
A total of 135 feet would be incorporated into culvert extensions	A total of 135 feet would be incorporated into culvert extensions

### Preferred Alternative I-25 Highway Improvements:

A total of 55 feet would be incorporated into culvert extensions.

### Resource Description

This segment of the historic Hillsboro Ditch crosses I-25 just south of the I-25 and US 34 interchange. The irrigation ditch was constructed as one of the first cooperatively owned ditches in the area. The entire ditch (5LR.8927) is approximately 19.25 miles long. The documented segment in the project APE (5LR.8927.1) is 2,065 feet (0.4 mile) long. The ditch channel is approximately 20 feet wide. Sparse riparian growth covers both banks of the ditch in many areas. The surrounding area is primarily rural in character.

### Eligibility Determination

The entire Hillsboro Ditch is eligible for listing on the NRHP under Criterion A because of its important association with the development of water rights and agriculture in Larimer County. Outside the I-25 right-of-way, this segment of the functioning ditch appears to maintain its historic alignment and its association with the rural landscape through which it runs. Segment 5LR.8927.1 within the project APE retains sufficient integrity of location, setting, feeling, and use to support the eligibility of the entire linear resource.

### Section 4(f) Use

#### Package A

Under Package A, I-25 would be expanded to eight lanes, containing three general purpose lanes plus one auxiliary lane in each direction. The Hillsboro Ditch is presently conveyed underneath I-25 inside a modern concrete box culvert. The box culvert would be replaced with a new 135-foot-long box culvert of the same cross-section dimensions, 14 feet wide and 14 feet tall. That portion of the Hillsboro Ditch already inside the I-25 culvert has lost integrity. Widening of the I-25 southbound lanes, ramp, and the associated slopes under Package A would require 90 feet of land west of the existing road slope edge. This requires enclosing 90 feet of open ditch on the east side of I-25 in a new culvert to allow for the expanded highway construction.

Similar widening of the highway and fill slopes along the northbound lanes requires that 45 feet of open ditch be enclosed in a culvert on the east side of I-25. A total of approximately 135 feet of open ditch would be subject to direct use from Package A transportation improvements.

Construction of the concrete culverts would require temporary access to the historic property for equipment access, and would require a temporary easement. The ditch would likely be diverted during demolition of the old culvert and installation of the replacement culvert, but would remain operational, and irrigation water would be protected from by construction-related sedimentation.



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Placing additional short sections of open ditch in new culverts in proximity to the pre-existing culverts would not substantially diminish the qualities that render this resource NRHP-eligible. The proposed modifications affect a very small portion of the entire 19.25-mile linear resource. Therefore, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the entire Hillsboro Ditch (5LR.8927). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-47** for uses associated with Package A.

#### **Package B**

Package B improvements include an eight-lane I-25 facility and would contain two general purpose lanes plus two barrier-separated managed lanes in each direction. Direct uses of the Hillsboro Ditch associated with Package B are identical in nature and extent to those associated with Package A.

Placing additional short sections of open ditch in new culverts in proximity to the pre-existing culverts would not substantially diminish the qualities that render this resource NRHP-eligible. The proposed modifications affect a very small portion of the entire 19.25-mile linear resource. Therefore, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the entire Hillsboro Ditch (5LR.8927). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-47** for uses associated with Package B.

#### **Preferred Alternative**

Under the Preferred Alternative, I-25 would be expanded to 8 lanes, containing three general purpose lanes plus one TEL in each direction. The Hillsboro Ditch is presently conveyed beneath I-25 inside a modern CBC. The box culvert would be replaced with a new, 55-foot-longer box culvert of the same cross section dimensions, 14 feet wide and 14 feet tall. That portion of the Hillsboro Ditch already inside the I-25 culvert has lost integrity. Widening of the I-25 southbound lanes, ramp and the associated slopes under the Preferred Alternative would require 90 feet of land west of the existing road slope edge. This requires that 55 feet of open ditch be enclosed in a culvert on the east side of I-25. A total of approximately 55 feet of open ditch would be subject to direct impact from the Preferred Alternative transportation improvements (see **Figure 5-48**).

Construction of the concrete culverts would require temporary access to the historic property for equipment access, and would require a temporary easement. The ditch would likely be diverted during demolition of the old culvert and installation of the replacement culvert, but would remain operational and irrigation water would be protected from construction-related sedimentation. All disturbances caused by construction equipment or construction activities would be temporary in nature and affected areas would be restored to their original condition and appearance.

Placing additional short sections of open ditch in new culverts in proximity to the pre-existing culverts would not substantially diminish the qualities that render this resource NRHP-eligible. The proposed modifications affect a very small portion of the entire 19.25-mile linear resource. FHWA and CDOT have determined that the Preferred Alternative would result in *no adverse effect* to the entire Hillsboro Ditch (5LR.8927). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

#### **Packages A, B, and Preferred Alternative**

Retaining walls were employed to limit uses on both the east and west sides of the I-25 corridor. Eliminating or further reducing the width of medians between the northbound and southbound roadways of I-25 and between I-25 and the east frontage road could minimize direct uses to the ditch. This minimization measure is not consistent with the intent to maintain a wider median for future transit needs, and therefore, is not being utilized. No other avoidance, minimization, mitigation, or enhancement measures were possible.

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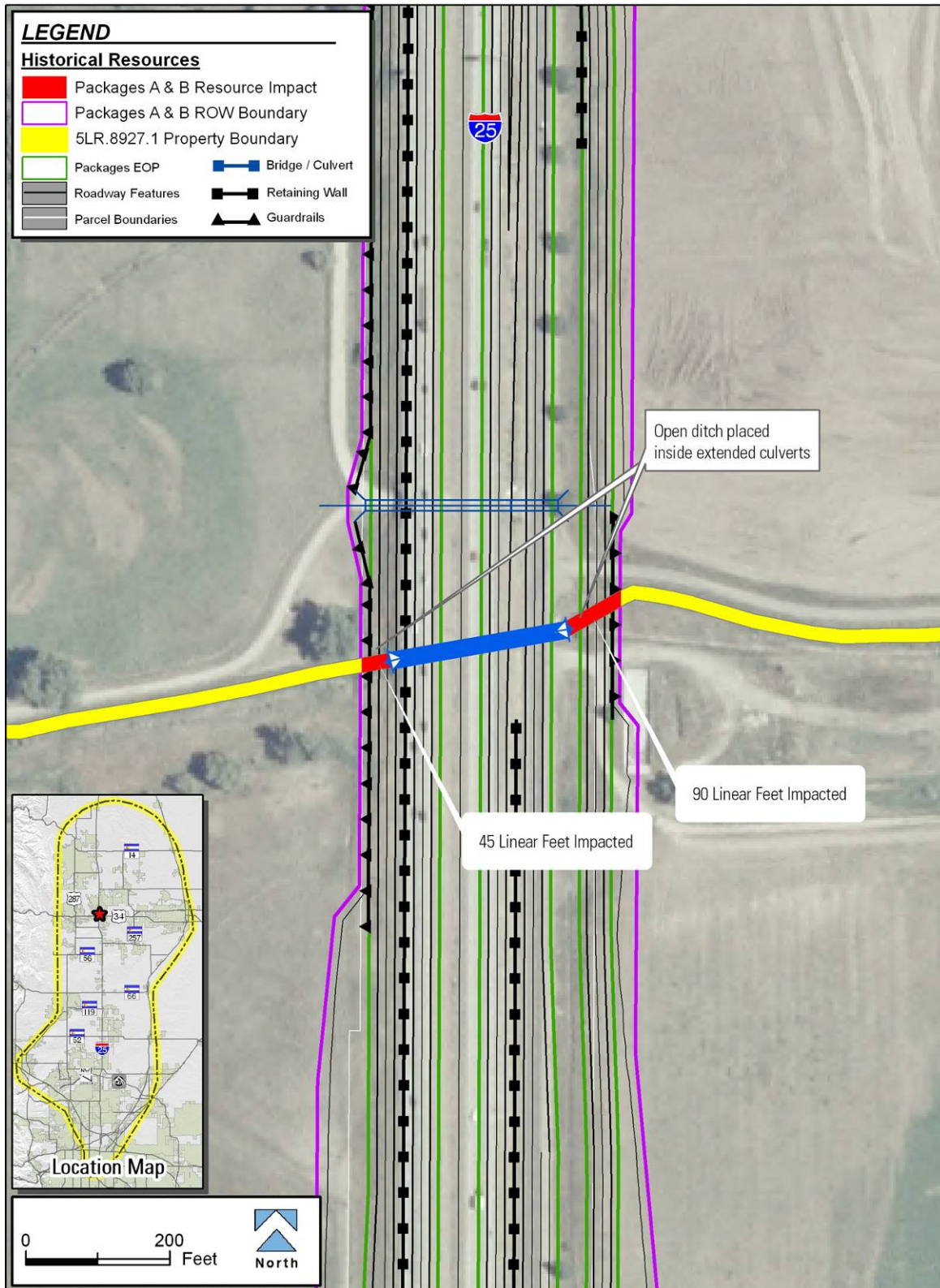
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### **Mitigation Measures for the Hillsboro Ditch**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

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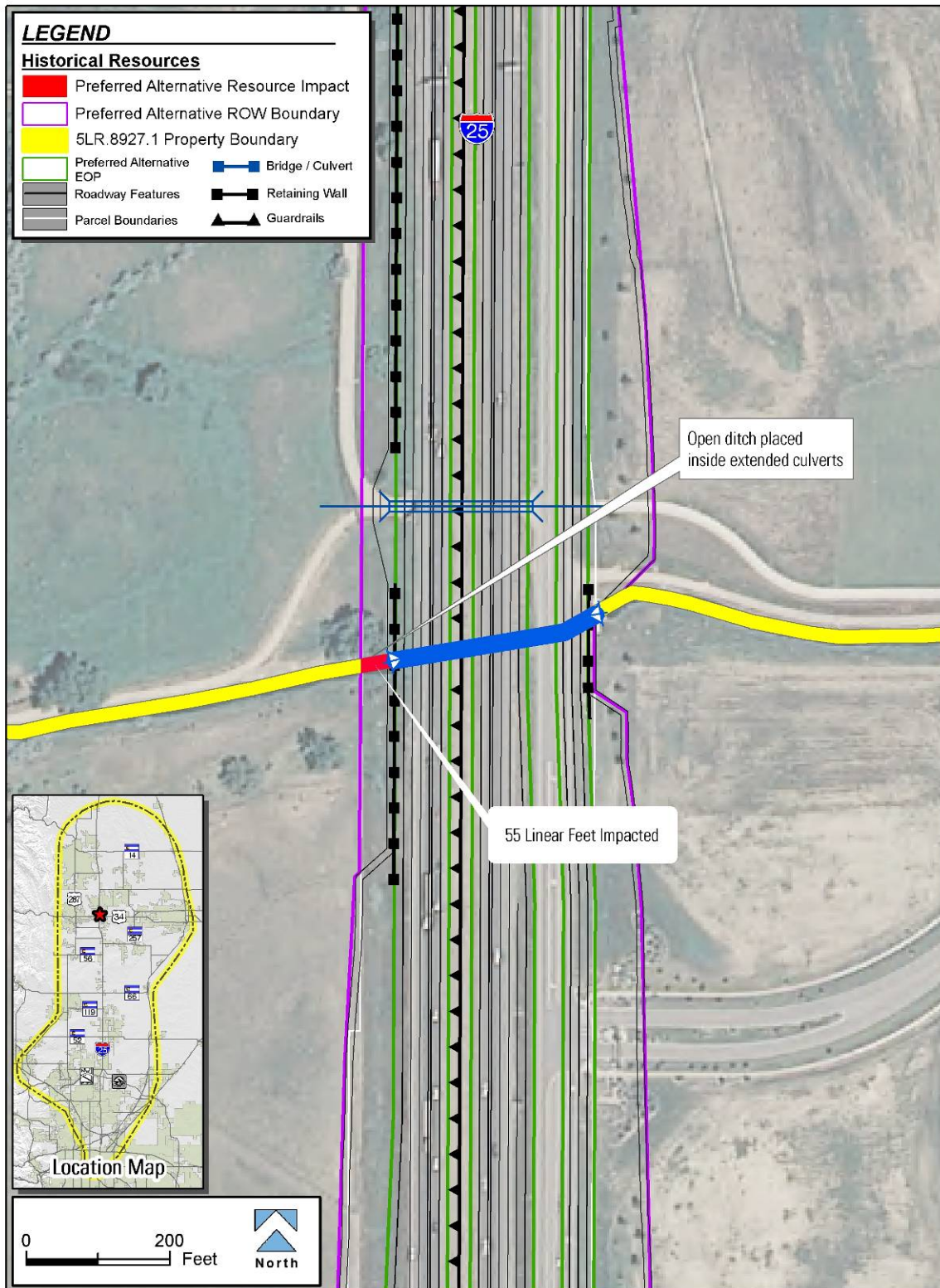
1 Figure 5-47 Hillsboro Ditch Packages A and B Use



2 Note: EOP—Edge of Pavement



1 Figure 5-48 Hillsboro Ditch Preferred Alternative Use



## Mountain View Farm (5LR.11242)

### Description

<b>Location:</b>	5531 E. SH 402, Loveland
<b>Type:</b>	Historic farm
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A and C

### Use of Mountain View Farm by Package

<b>Package A</b>	<b>Package B</b>
<b>A-H2 GP Improvements: SH 14 to SH 60</b>	<b>B-H2 Tolled Express Lanes: SH 14 to SH 60</b>
A total of 4.76 acres by incorporation of a 65-foot- by 3,200-foot-long strip of farmland adjacent to I-25 and SH 402	A total of 5.28 acres by incorporation of a 60-foot- by 3,900-foot-long strip of farmland adjacent to I-25 and SH 402

### **Preferred Alternative I-25 Highway Improvements:**

A total of 1.82 acres adjacent to I-25 and SH 402 incorporated into transportation.

### Resource Description

The Mountain View Farm is located at 5531 SH 402, just west of the I-25 and SH 402 interchange. The farm was originally patented in 1895 and contains a farmhouse and associated farm buildings. The total acreage of the farm is 136.22 acres.

### Eligibility Determination

This historic farm is significant for its association with early agriculture in Larimer County, including sugar beet cultivation. The farmhouse and associated farm buildings retain good integrity, and are significant examples of agricultural architecture. For these reasons, the Mountain View Farm is eligible for the NRHP under Criteria A and C.

### Section 4(f) Use

#### **Package A**

This historic farm would experience a direct use associated with proposed improvement of the I-25/SH 402 interchange. Package A would realign the I-25 southbound off-ramp west of the existing off-ramp, and would require the acquisition of a 60- to 100-foot-wide strip of cultivated farmland at the east edge of the historic farm property to accommodate the proposed new off-ramp from southbound I-25 to SH 402.

Another direct use would occur near the farmhouse as a result of widening along the north edge of SH 402 to add turn and through lanes at the off-ramp. The new width of roadway along SH 402 would convert a maximum of 100 feet of farm property at the intersection with the southbound off-ramp, tapering to a 20-foot wide strip of new transportation right-of-way near the driveway to the farmhouse. The highway overpass and ramp intersections would be approximately 22 feet above the highway at the bridge similar to the existing interchange configuration. However, Package A design necessitates extending the slope from the elevated overpass and ramp intersections westward to the existing grade of SH 402 much closer to the historic farm house than is the case with the existing interchange configuration. No historic buildings would experience a direct use from these transportation improvements.

A temporary construction easement may be required along the western edge of the property to allow for haul roads, construction access, and/or staging areas to facilitate roadway widening and slope construction. No permanent use would be anticipated from this temporary construction occupancy of the farmland property.

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A total use of 4.76 acres of land would result due to open farmland being converted to paved roadway and fill slopes within the historic farm boundary. The proposed transportation improvements associated with Package A would not substantially diminish or alter architectural or setting characteristics that render the property eligible for the NRHP. Therefore, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-49** for uses associated with Package A.

### **Package B**

Anticipated direct use of the property under Package B is similar in character and extent to that expected from Package A improvements. A slightly larger portion of the farm would be incorporated into the project as a result of the realignment of the I-25 southbound off-ramp, and would require the acquisition of a strip of farmland. The additional impact over Package A results from the wider footprint required to accommodate the managed express lanes. A total area of 5.28 acres of land would be subject to direct impact. No historic buildings would be directly impacted by these transportation improvements. Therefore, it is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-50** for uses associated with Package B.

### **Preferred Alternative**

This historic farm would experience direct impacts associated with proposed improvement of the I-25/SH 402 interchange. The Preferred Alternative would re-align the I-25 southbound off-ramp west of the existing off-ramp, and would require the acquisition of a strip of cultivated farmland at the east edge of the historic farm property to accommodate the proposed new off-ramp from southbound I-25 to SH 402

Another direct use would occur near the farmhouse as a result of widening along the north edge of SH 402 to add turn and through lanes at the off-ramp. The new width of roadway along SH 402 would convert a maximum of 100 feet of farm property at the intersection with the southbound off-ramp, tapering off near the driveway to the farmhouse. The highway overpass and ramp intersections would be approximately 22 feet above the highway at the bridge similar to the existing interchange configuration. However, the Preferred Alternative design necessitates extending the slope from the elevated overpass and ramp intersections westward to the existing grade of SH 402 closer to the historic farm house than is the case with the existing interchange configuration.

A total area of 1.82 acres of land would be used from open farmland to paved roadway and fill slopes within the historic farm boundary. No historic buildings would be used by these transportation improvements (see **Figure 5-51**). However, the presence of the existing I-25 highway ramps and interchange already introduce modern elements into this agricultural setting. Under the Preferred Alternative, the fill slopes and ramps would be moved closer to the eastern edge of the farm, and would be slightly taller than the existing slopes, ramps and overpass. Another change would be construction of a proposed new park and ride parking lot on the south side of SH 402 near the farm.

Traffic noise generated by I-25 would decrease three decibels because the highway would be re-aligned to the east, away from the farmhouse. Although the new southbound off-ramp would be built on a new alignment closer to and elevated above the farmhouse, noise from existing traffic and the closer ramp would not substantially alter the agricultural setting or diminish the architectural characteristics that render the property NRHP-eligible.

A temporary construction easement may be required along the eastern edge of the property for to allow haul roads, construction access, and/or staging areas to facilitate roadway widening and slope building. No permanent impacts would be anticipated from this temporary construction activity on the farmland property, and no farm structures would be affected. Construction-related noise generated by construction equipment and trucks would be temporary in nature and would not permanently affect the character of the farm setting. Thus, indirect effects caused by temporary construction activities are not expected to substantially diminish the function, character, or attributes that render the farm or farm buildings NRHP-eligible.

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The uses associated with the Preferred Alternative would occur along the eastern edge of the farm adjacent to I-25 where the original integrity of the farm was compromised with the highway's intrusion on the visual landscape some 40 years ago. There would be no materially different visual perception of the farm from the Preferred Alternative. The farm buildings would not be directly affected, agricultural production would continue and the farm would continue to convey significance in terms of the lands' association with early agricultural development in Larimer County. CDOT's determination is that the farm was still significant in 2006, in spite of the changes to the setting, feeling and association. The farm would continue on as it was in 2006 except for the removal of 1.82 acres in a thin strip of land along portions of the east and south borders of the farm. The land in the far southeast corner of the property is being used as a cattle feed lot and pasture. To the north of the pasture, the land is being used to produce grain. Air photos from previous years show that parts of the land on this farm have been irrigated with center pivot irrigation. A concrete-lined irrigation ditch lateral is located along the east side of the property in the take strip. The land that would be taken along the south property has recently been cropped with grains.

FHWA and CDOT have determined that the loss of an additional 1.82 acres of land for construction of the Preferred Alternative would result in *no adverse effect* to this farm because the characteristics that define the integrity of the rural landscape would not be compromised. The location, design, materials and workmanship of the farm would remain the same. The Preferred Alternative would not affect any of the farm buildings nor would the setting be affected. Therefore, it is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. The mountains to the west of the farm continue to be a key element of its historic setting. The interstate highway on the east has been there for over forty years and was a part of the setting when the property was determined eligible for the NRHP. The feeling would remain one of an active farm. The association is still strong as it is clear that this is still an active farm. The Mountain View Farm was determined eligible under Criterion A for its association with 20th century Larimer County farming. That association would not change as a result of implementation of the Preferred Alternative.

## Planning and Measures Included to Reach a *De Minimis* Finding

### Packages A, B, and Preferred Alternative

The farm flanks the existing southbound lanes and off-ramp of I-25 at the junction of SH 402. The increased number of highway lanes included in Packages A and B would require widening of the I-25 footprint and a corresponding expansion westward of the I-25 off-ramp onto SH 402. This would result in an intrusion onto pasture and farmland along much of the I-25 frontage. The overall footprint of this new highway configuration has incorporated a narrow center median to minimize the impact to the farmland. The ramp configuration is the most compact alignment and roadway width to meet safety and design standards for planned highway speeds.

Impacts caused by expansion of SH 402 would result from wider toe slopes at the interchange and overpass. Because of the overpass height, the toe slopes would have a longer reach into the farm property. Retaining walls at the interchange were deemed not a feasible and prudent engineering design solution for this location because of the turning movements at the ramps, maintenance issues, and the non-urbanized setting of the interchange would pose a safety risk.

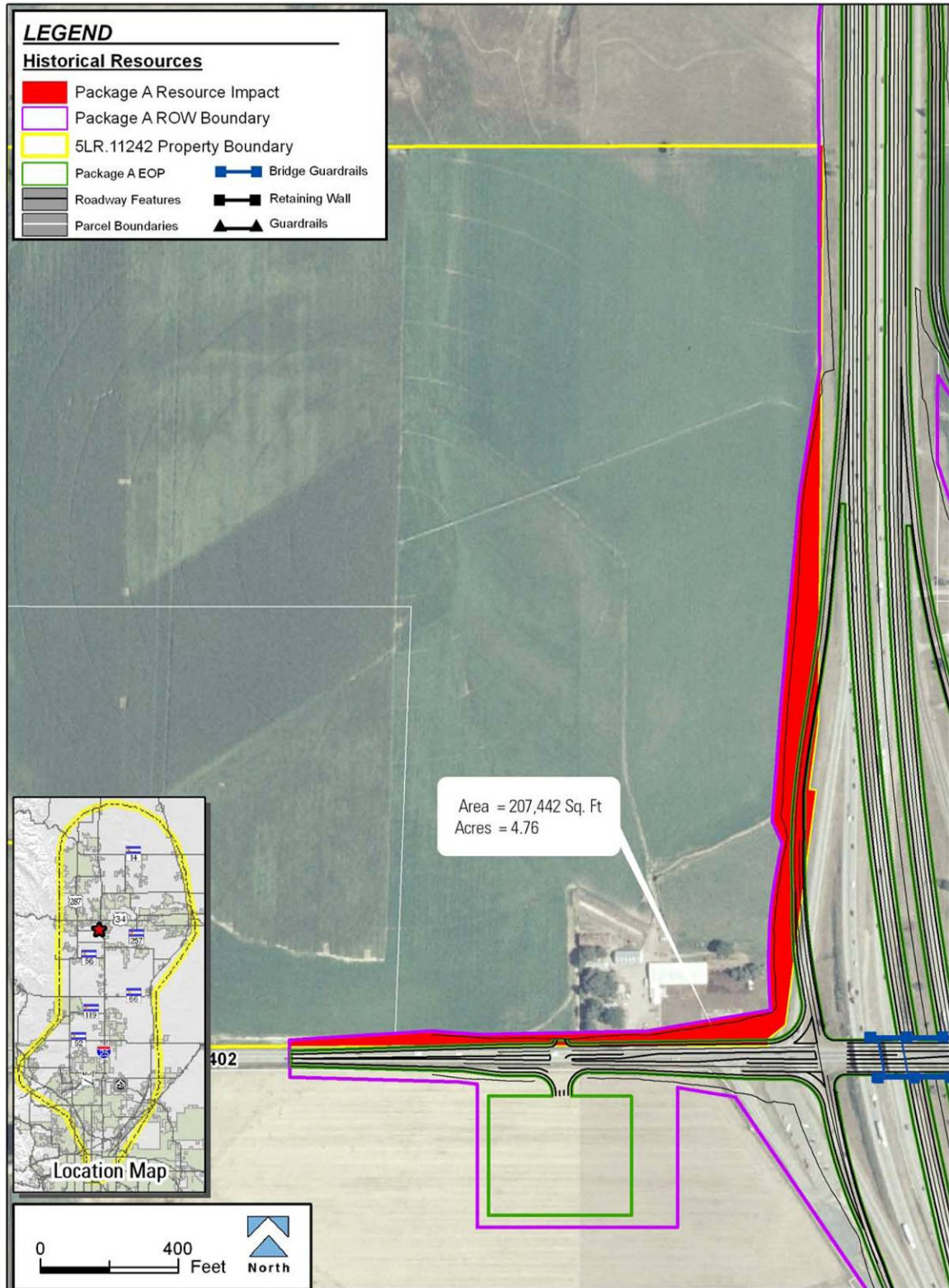
### Mitigation Measures for the Mountain View Farm

- Property acquisition will be completed under the Uniform Relocation Act.
- Maintain operation of farm during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

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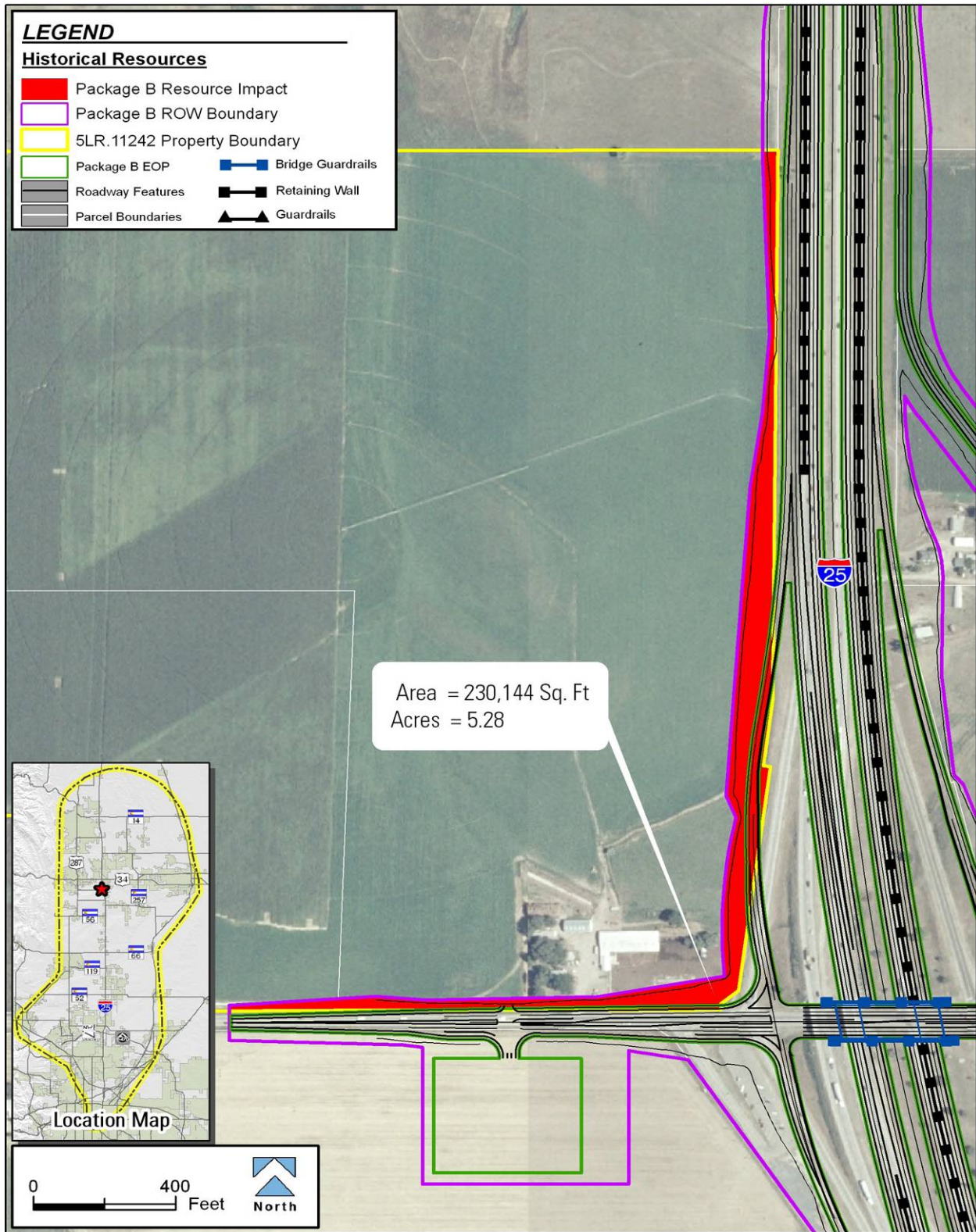
Figure 5-49 Mountain View Farm Package A Use



3 Note: EOP—Edge of Pavement  
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1 Figure 5-50 Mountain View Farm Package B Use

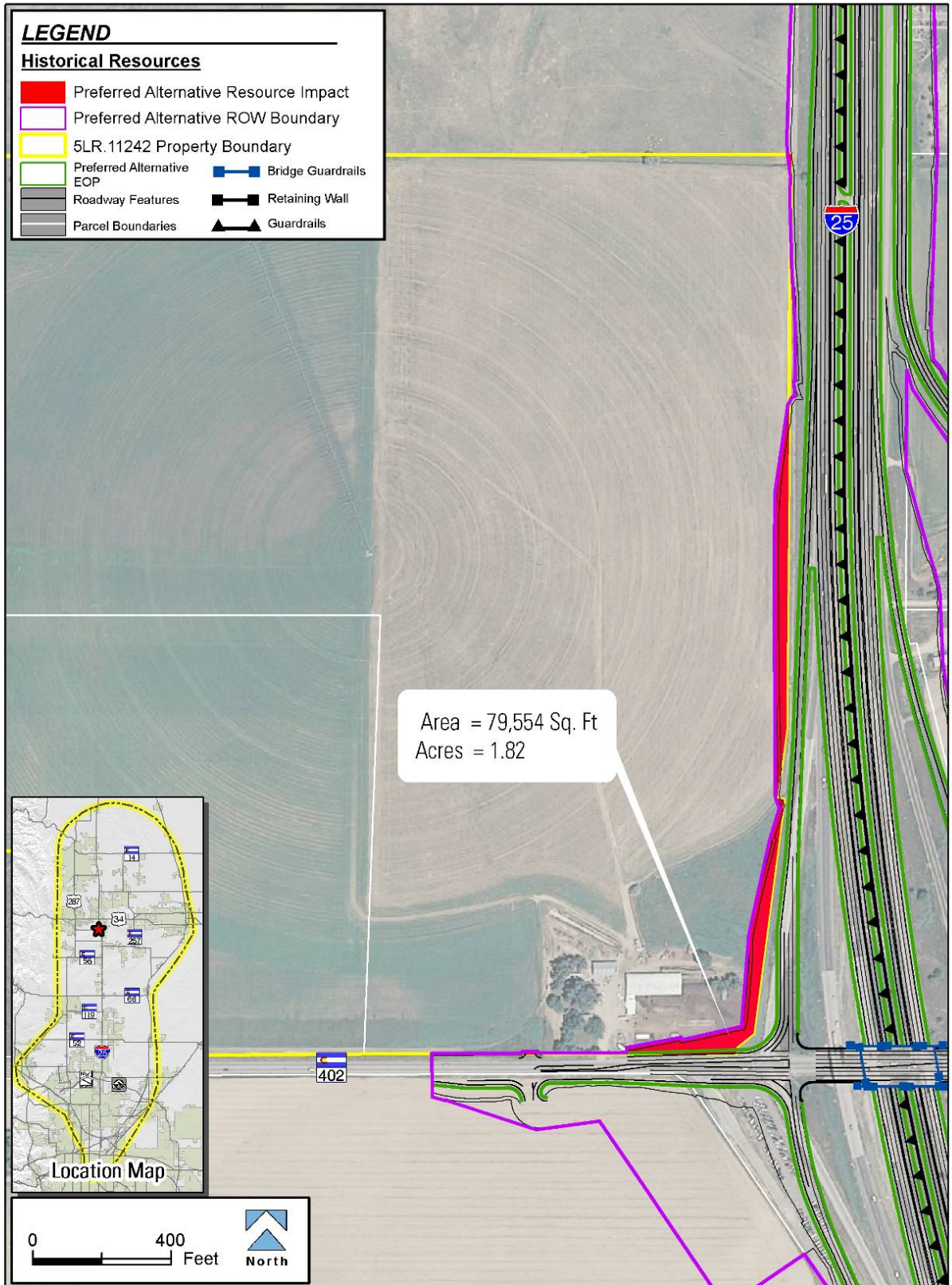


2 Note: EOP—Edge of Pavement

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1 Figure 5-51 Mountain View Farm Preferred Alternative Use



## Bein Farm (5WL.5203)

### Description

<b>Location:</b>	3766 CR 48, Berthoud
<b>Type:</b>	Historic farm
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Bein Farm by Package

<b>Package A</b>	<b>Package B</b>
<b>A-H3 GP Improvements: SH 60 to E-470</b>	<b>B-H3 Tolled Express Lanes: SH 60 to E-470</b>
A total of 17.94 acres by incorporation of a 4,600-foot by 150-foot strip of farmland adjacent to I-25 and an 800-foot by 110-foot strip of farmland adjacent to SH 60	A total of 20.04 acres by incorporation of a 4,600-foot by 170-foot strip of farmland adjacent to I-25 and an 800-foot by 110-foot strip of farmland adjacent to SH 60

### **Preferred Alternative I-25 Highway Improvements:**

A total of 16.10 acres adjacent to I-25 or SH 60 incorporated into transportation infrastructure

### Resource Description

The Bein Farm is located at 3766 CR 48 near the I-25 and SH 60 interchange. This property was owned by Fred Bein, a pioneer Berthoud stockman and farmer, and one of the most widely-known residents of the Berthoud community until his death in 1933. The property contains a variety of farm buildings constructed in the late 19<sup>th</sup> century. The total acreage of the farm is 288.45 acres.

### Eligibility Determination

The Bein Farm is eligible for the NRHP under Criterion A because of its important association with early ranching and farming in the Berthoud area during the late 19<sup>th</sup> century.

### Section 4(f) Use

#### Package A

This historic farm is located on the west side of the mainline of I-25, and on the southwest quadrant of the I-25/SH 60 interchange, both of which would be improved under Package A. Package A includes widening of I-25 in this area to accommodate three general purpose lanes in each direction. The proposed wider highway template would require the acquisition and permanent conversion of a 120-foot-wide, 5,600-foot-long strip of cultivated farmland west of the existing southbound I-25 lanes into new highway and slopes, resulting in a direct use.

West of I-25, SH 60 would be widened to provide for a safe transition from the interchange ramps to the existing roadway section. The new SH 60 roadway would consist of four general lanes and turning lanes at the interchange, tapering back to two general lanes on the west side of the existing driveway to the farm building complex.

The combined I-25 widening along the length of the Bein Farm, realignment of the southbound on-ramp from the SH 60 interchange, and the widening and reconfiguring of a tapered section of SH 60 on the west side of this interchange would use 17.94 acres along the east and north edges of the property. No farm buildings would be directly impacted.

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There would be no change to the historic access to this property. The retaining wall along the southbound off-ramp is located on the opposite side of the interchange from the historic farm and would not result in a direct use of the property.

The direct use of the historic farm building complex along SH 60 would not substantially diminish or alter characteristics that render the site eligible for the NRHP. Therefore, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-52** for uses associated with Package A.

#### **Package B**

Package B calls for the widening of I-25 in this area to accommodate two general purpose lanes plus two barrier-separated managed lanes in each direction. The resulting direct impacts from widening of I-25 would be similar to Package A, but Package B would require a slightly longer southbound I-25 on-ramp to better join with managed lanes of I-25 that occupy more land than the shorter Package A on-ramp.

Impacts resulting from modifications to SH 60 are the same as Package A. Total use of the farm would be 20.04 acres along the east and north edges of the property. No farm buildings would be directly impacted.

Because the direct and indirect impacts to the land within the historic farm complex along SH 60 that would occur under Package B would not substantially diminish or alter characteristics that render the site eligible for the NRHP, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-53** for uses associated with Package B.

#### **Preferred Alternative**

This historic farm is located on the west side of the mainline of I-25, and on the southwest quadrant of the I-25/SH 60 interchange, both of which would be improved under the Preferred Alternative. The Preferred Alternative calls for the widening of I-25 in this area to accommodate three general purpose lanes and one TEL in each direction. The proposed wider highway template would use a strip of cultivated farmland west of the existing southbound I-25 lanes into the transportation infrastructure.

West of I-25, SH 60 would be widened to provide for a safe transition from the interchange ramps to the existing roadway section. The new SH 60 roadway would consist of four general lanes and turning lanes at the interchange, tapering back to two general lanes on the west side of the existing driveway to the farm building complex.

The combined I-25 widening along the length of the Bein Farm, re-alignment of the southbound on-ramp from the SH 60 interchange, and the widening and reconfiguring of a tapered section of SH 60 on the west side of this interchange would use 16.10 acres along the east and north edges of the property. No farm buildings would be directly impacted (see **Figure 5-54**).

There would be no change to the historic access to this property. The retaining wall along the southbound off-ramp is located on the opposite side of the interchange from the historic farm and would not result in an indirect impact to the property.

The uses associated with the Preferred Alternative would occur along the eastern edge of the farm adjacent to I-25 where the original integrity of the farm was compromised with the highway's intrusion on the visual landscape some 40 years ago. There would be no materially different visual perception of the farm from the Preferred Alternative. The farm buildings would not be directly affected, agricultural production would continue and the farm would continue to convey significance in terms of its association with early agricultural development in Weld County. The farm would continue on as it was in 2007 when determined eligible for the NRHP except for the removal of approximately 16.10 acres in a strip of land along portions of the north and east borders of the farm. In recent growing seasons, the Bein farm land was irrigated cropland. The center pivot irrigation system sits on the property today. The land was planted to the edge of their property which abuts the I-25 right-of-way on the east and the CR 38 right-of-way on the north. All of the 16.10 acres that are to be taken for the Preferred Alternative are currently used as irrigated cropland. The Bein Farm, in spite of a loss of these 16.10 acres of land for the improvement of I-25, would still convey significance under Criterion A.

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FHWA and CDOT have determined that the loss of an additional 16.10 acres of land for construction of this project would result in *no adverse effect* to this farm because the characteristics that define the integrity of the rural landscape would not be compromised. The location, design, materials and workmanship of the farm would remain the same. The Preferred Alternative would not affect any of the farm buildings. The setting would not be affected by the Preferred Alternative. The mountains to the west of the farm continue to be a key element of its historic setting. The setting of the land to the north of the Bein farm has changed. What was once all agricultural land has been developed over the last decades into commercial and industrial development. The interstate highway on the east has been there for over forty years and was a part of the setting when the property was determined eligible for the NRHP. The feeling would remain one of an active farm established in the early part of the 20th century. The association is still strong as it is clear that this is still an active farm. The Bein Farm was determined eligible under Criterion A for its association with 20th century Weld County farming. That association would not change as a result of the Preferred Alternative. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

#### **Packages A, B, and Preferred Alternative**

The proposed design is an offset diamond interchange that incorporates southbound off- and on-ramps to and from I-25 that were shifted eastward toward the I-25 mainline in order to avoid use of the gasoline station/convenience store located on the northwest side of the I-25/SH 60 interchange. This configuration also reduces the size of the directly used area on the east edge of this historic farm.

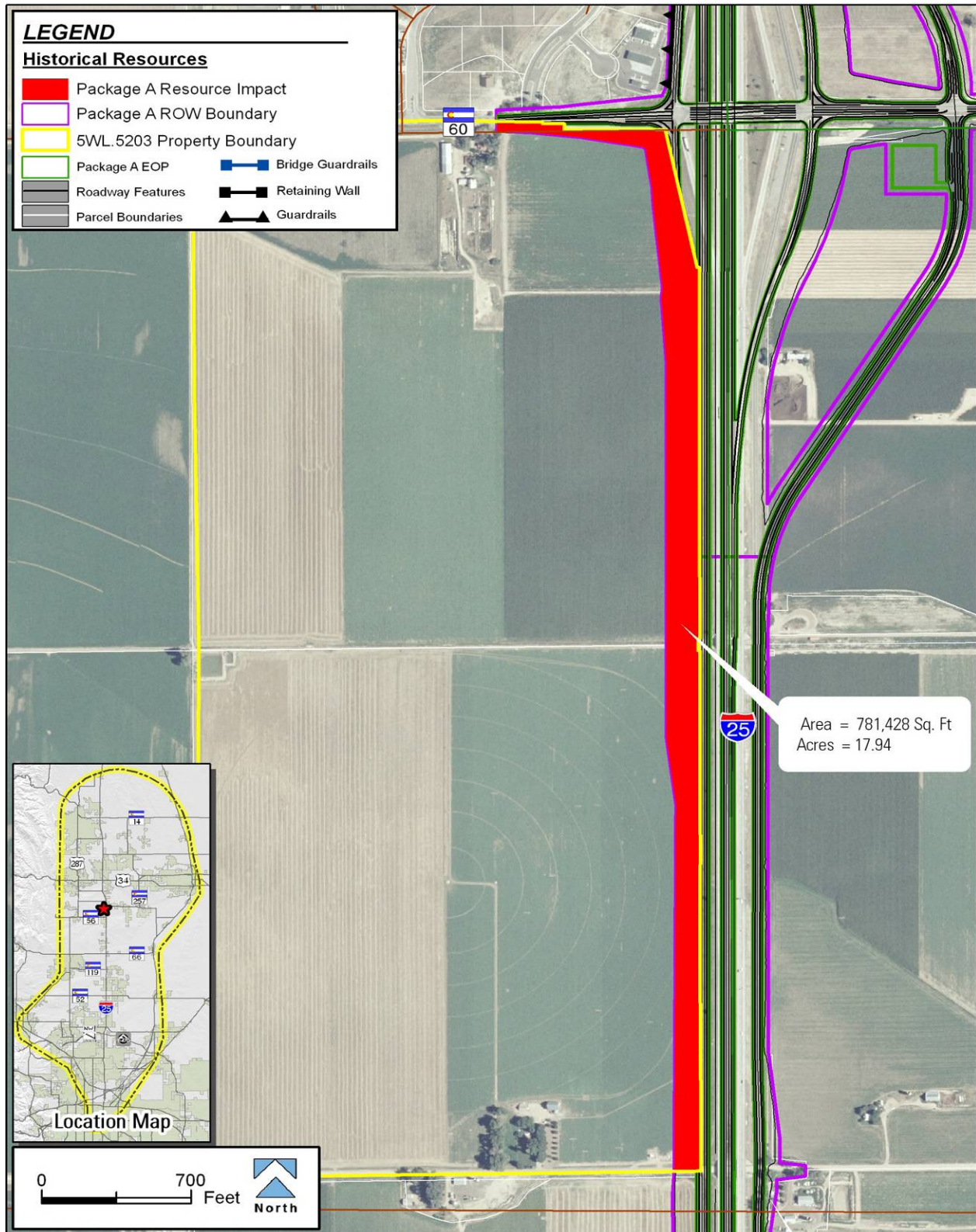
#### **Mitigation Measures for the Bein Farm**

Property acquisition will be completed under the Uniform Relocation Act.

- Maintain operation of farm during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

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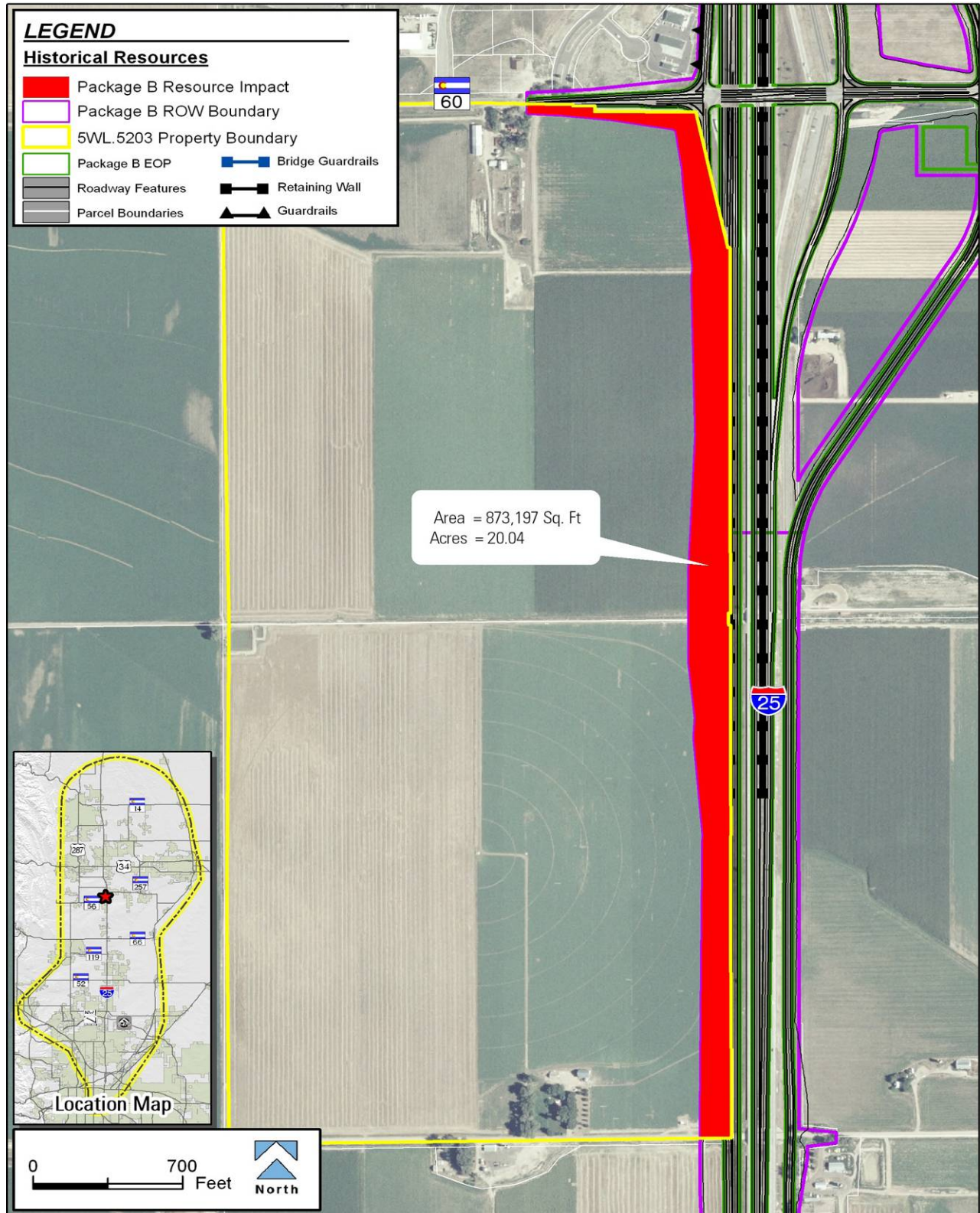
1 Figure 5-52 Bein Farm Package A Use



2 Note: EOP—Edge of Pavement



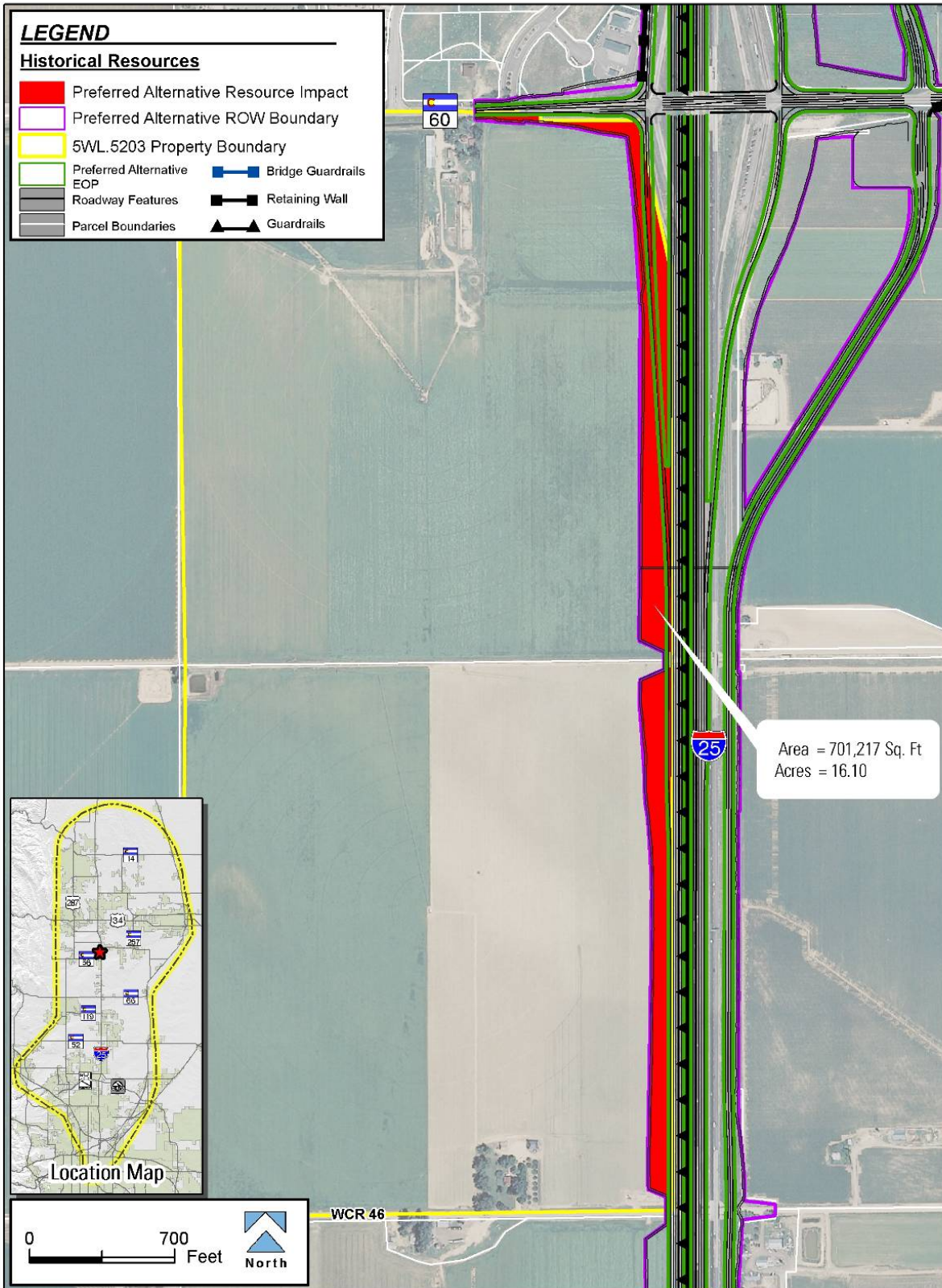
1 Figure 5-53 Bein Farm Package B Use



2 Note: EOP—Edge of Pavement



1 Figure 5-54 Bein Farm Preferred Alternative Use



## Handy/Home Supply Ditch Confluence (5WL.3149)

### Description

<b>Location:</b>	17820 East I-25 Frontage Road
<b>Type:</b>	Historic farm
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Handy/Home Supply Ditch Confluence by Package

**Package A**  
**A-H3 GP Improvements:**  
**SH 60 to E-470**

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A total of 60 feet incorporated into a culvert extension

**Package B**  
**B-H3 Tolled Express Lanes:**  
**SH 60 to E-470**

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A total of 60 feet incorporated into a culvert extension

**Preferred Alternative**  
**I-25 Highway Improvements:**

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A total of 74 feet incorporated into culvert extensions.

### Resource Description

The ditch crosses I-25 along the south edge of CR 48 (SH 60) and is conveyed underneath the I-25 ramps and mainline highway lanes inside a 660-foot-long concrete culvert. The ditch confluence is 2,456 feet long, 20 feet wide, earthen, 5 feet deep, with rip-rapped banks. Handy and Home Supply ditches combine to flow into a concrete diversion gate that funnels water under SH 60, west of I-25. The grade drops off steeply eastward from I-25 into 3 drop boxes.

### Eligibility Determination

The entire Handy/Home Supply Ditch Confluence is NRHP-eligible under Criterion A for its important association with the development of water rights and agriculture in Weld County. Segment 5WL.3149.1 fails to support the integrity of the greater site because it has been modified by recent development.

### Section 4(f) Use

#### Package A

Package A would require modification of the grated culvert intake located west of the current southbound on-ramp to accommodate a new frontage road and widened SH 60 intersection turning radius, resulting in a direct use of the resource. The outfall of the 660-foot-long culvert similarly would require a 50-foot extension and modification to allow the redesigned northbound ramp intersection with the widened SH 60, and modification of 10 feet of the grated culvert intake located west of the current southbound on-ramp to accommodate a new frontage road and widened SH 60, resulting in a direct use of the resource.

Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of the I-25 and frontage road, and Package A improvements are minor in relative extent, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the Handy/Home Supply Ditch Confluence. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-55** for uses associated with Package A.

#### Package B

Package B would require modification of 10 feet of the grated culvert intake located west of the current southbound on-ramp to accommodate a new frontage road and widened SH 60 intersection turning radius. The outfall of the 660-foot-long culvert similarly would require a 50-foot extension and modification to allow the redesigned northbound ramp intersection with the widened SH 60, resulting in a direct use of the resource.

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Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of I-25 and the frontage road, and Package B improvements are minor in relative extent, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the Handy/Home Supply Ditch Confluence. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-55** for uses associated with Package B.

#### **Preferred Alternative**

The Preferred Alternative would require modification of the grated culvert intake located west of the current southbound on-ramp to accommodate a new frontage road and widened SH 60/CR 48 intersection turning radius (see **Figure 5-56**). The outfall of the 660-foot-long culvert similarly would require a 60-foot-extension and modification to allow the redesigned northbound ramp intersection with the widened SH 60/CR 48.

Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of the I-25 and frontage road and because the Preferred Alternative improvements are minor in relative extent, FHWA and CDOT have determined that the Preferred Alternative would result in *no adverse effect* to the Handy/Home Supply Ditch Confluence. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

#### **Planning and Measures Included to Reach a *De Minimis* Finding**

##### **Packages A, B, and Preferred Alternative**

The interchange configuration has been designed to provide an adequate level of service (LOS C) for local traffic and local-to-interstate connections by limiting interstate access and providing free-flowing turning access to ramps. Compressing the diamond interchange to move the southbound ramp close to mainline I-25 has reduced the ditch gate modifications to a very minimum impact. This consolidation along the westbound or southbound side has forced the east ramps out, resulting in a minimally acceptable distance (turning vehicles storage) between ramp intersection signals by design standard.

##### **Mitigation Measures for the Handy/Home Supply Ditch Confluence**

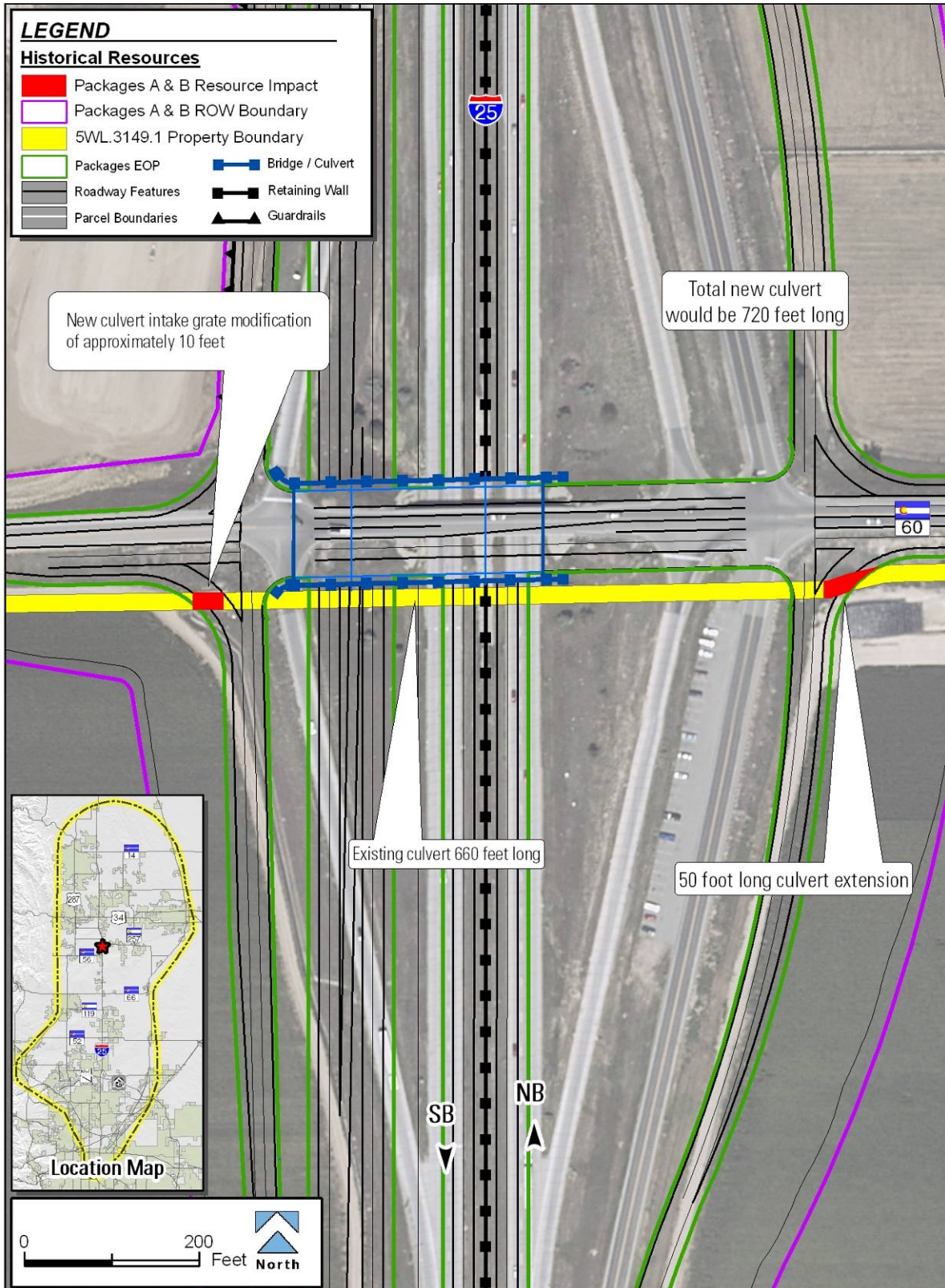
- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

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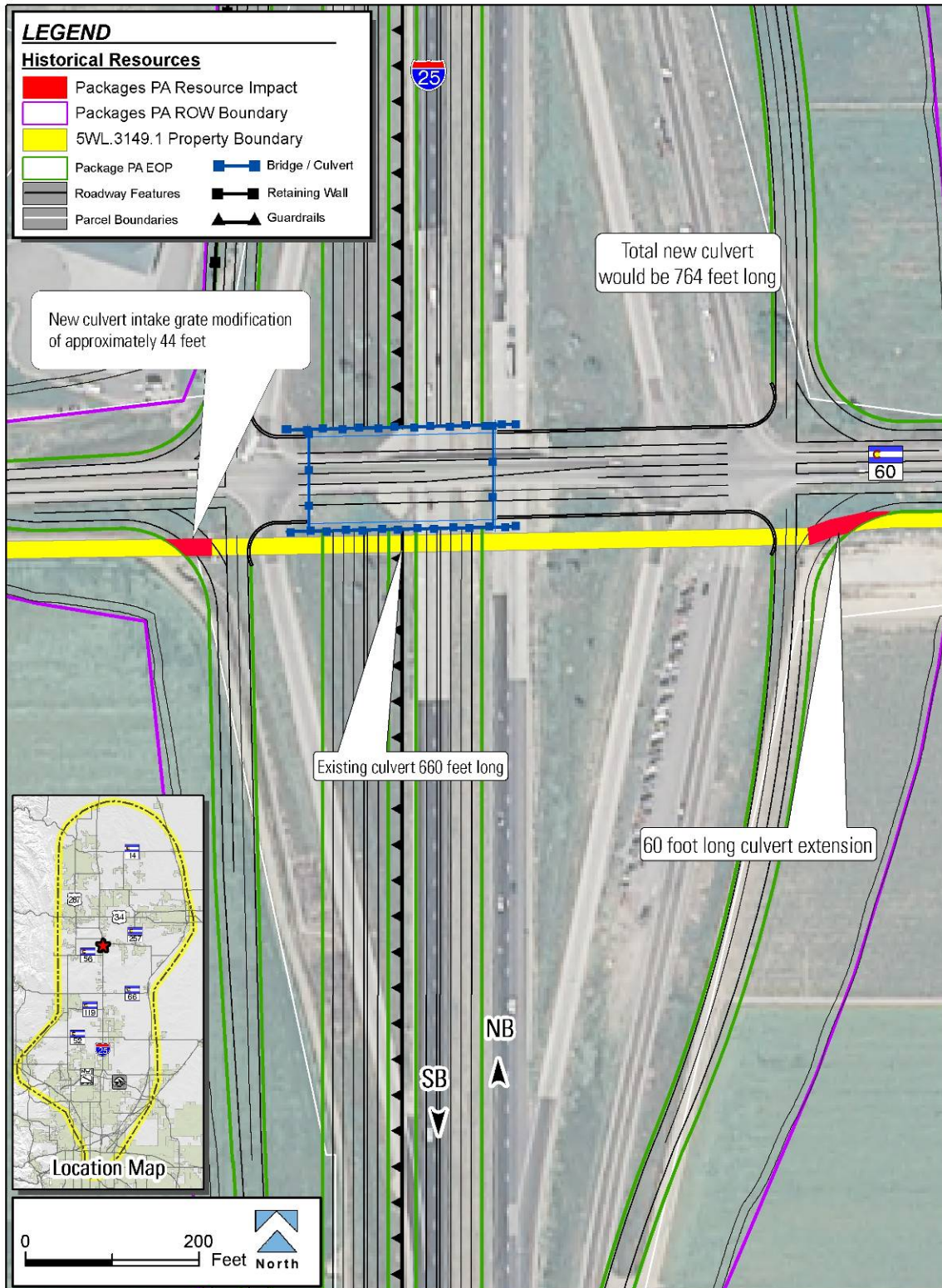


1 Figure 5-55 Handy/Home Supply Ditch Confluence Use Packages A and B



2

1 Figure 5-56 Handy/Home Supply Ditch Confluence Preferred Alternative Use





## Olson Farm (5WL.5198)

### Description

Location:	17820 East I-25 Frontage Road
Type:	Historic farm
Section 106 Effect Finding:	No adverse effect
Ownership:	Private
Significance:	NRHP-Eligible, Criterion A

### Use of Olson Farm by Package

**Package A**  
**A-H3 GP Improvements:**  
**SH 60 to E-470**

A total of 12.74 acres by incorporation  
of land from both sides of I-25

**Package B**  
**B-H3 Tolled Express Lanes:**  
**SH 60 to E-470**

A total of 12.81 acres by incorporation  
of land from both sides of I-25

**Preferred Alternative**  
**I-25 Highway Improvements:**

A total of 4.63 acres by incorporation of  
land from both sides of  
I-25.

### Resource Description

This historic farm is located at 17820 East I-25 Frontage Road near CR 38. The site contains various farm buildings, a reservoir, and farmland used by the Olson family who were early settlers in this area. The Ballinger Reservoir has an early water appropriation date from 1887, making it one of the early irrigation features in the area. The site boundary is based upon the historic boundary of the Olson Farm, and spans I-25. The boundary encompasses 155.37 acres, although 13.7 acres comprising the existing CDOT I-25 right-of-way is considered a non-contributing portion of the site.

### Eligibility Determination

The Olson Farm is eligible for the NRHP under Criterion A because of its important association with early settlement and agriculture in Weld County.

### Section 4(f) Use

#### **Package A**

Under Package A, I-25 would be realigned and reconfigured for three general purpose lanes in each direction. The existing I-25 east frontage road would stay in its present alignment, including its crossing of CR 38, but the area needed for the frontage road turning lanes and paved shoulders would be widened along the west edge of the eastern portion of the Olson Farm property. Direct use of this portion of the site would be confined to an 8.75-acre strip of land 2,740 feet long and approximately 110 feet wide at CR 38 at the north end of the property and 30 feet wide at the south end. This impact corresponds to the new toe-of-slope for the east frontage road that would bury the farmland currently located adjacent to the frontage road.

A retaining wall would be installed along the edge of the frontage road to prevent any direct use of the Ballinger Reservoir (a contributing feature of the NRHP-eligible farm) that is located mid-way along the east side of the frontage road. A total of 3.99 acres of the eastern portion of the site would be subject to direct impacts under Package A. The total area subject to direct impacts under Package A is 12.74 acres.

Temporary occupancy due to installation of the new bridge across I-25, roadway widening, and the retaining wall at Ballinger Reservoir would likely require a temporary easement on portions of the historic property for equipment access, haul roads, and other construction activities.



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Because of the site's bisection by the wide I-25 corridor, and the lack of direct impacts to the contributing historic farm buildings and reservoir, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the Olson Farm. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-57** for uses associated with Package A.

#### **Package B**

Under Package B, I-25 would be realigned and reconfigured for two general purpose lanes plus one buffer-separated lane in each direction. Direct use of the site under Package B would be similar in nature to that associated with Package A. The slightly larger impact associated with Package B is due to the buffer associated with the buffer-separated lanes. An 8.82 acre of direct use would be confined to a strip of land 2,740 feet long and approximately 120 feet wide at CR 38 at the north end of the property and 30 feet wide at the south end. This impact corresponds to the new toe-of-slope for the east frontage road that would bury the farmland currently located adjacent to the frontage road. A retaining wall would be installed along the edge of the frontage road to prevent direct impacts to the Ballinger Reservoir. A total of 3.99 acres of the eastern portion of the site would be subject to direct use under Package B.

The total area subject to direct impacts under Package B is 12.81 acres. Because the farm is bisected by the wide I-25 corridor, and the lack of direct impacts to the contributing historic farm buildings and reservoir, FHWA and CDOT have determined that Package B would result in *no adverse effect* to the Olson Farm. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-58** for uses associated with Package B.

#### **Preferred Alternative**

Under the Preferred Alternative, I-25 would be re-aligned and reconfigured for three general purpose lanes and one TEL in each direction. The existing I-25 east frontage road would stay in its present alignment, including its crossing of CR 38, but the area needed for the frontage road turning lanes and paved shoulders would be widened along the west edge of the eastern portion of the Olson Farm property. Use of this portion of the site would be confined to a small strip of land at WCR 38 at the north end of the property. This use corresponds to the new toe of slope for the east frontage road which would bury the land currently located adjacent to this portion of the frontage road. A retaining wall would be installed along the edge of the frontage road to prevent direct uses of the Ballinger Reservoir (a contributing feature of the NRHP-eligible farm) located mid-way along the east side of the frontage road. A total of 0.66 acre of the eastern portion of the site would be subject to use under the Preferred Alternative (see **Figure 5-59**).

A strip of farmland located west of I-25, would be buried below pavement and fill slopes for the widened southbound I-25 lanes. This would result in 3.97 acres used due to the western re-alignment and widening of the I-25 roadways.

The total area subject to uses under the Preferred Alternative is 4.63 acres. These 4.63 acres are not a character-defining part of this farm. The strip of land on the west boundary of the property is land adjacent to the I-25 frontage road. That land is currently used for hay production. It is part of a small plot of land that separates the subdivision developed by the Olson's from I-25. The strip of land on the east side of the East I-25 Frontage Road, north of the Olson house, is currently vacant. It appears it was a pasture at one time. The remaining strip of land on the east side of I-25 is part of the front lawns of several non-historic rural residences.

Increased highway and frontage road traffic resulting from the Preferred Alternative improvements would generate noise levels two decibels more than the No-Action Alternative. This increase in noise is barely perceptible and would not affect the characteristics which have rendered the property NRHP-eligible. Since the 1960's when I-25 was constructed, modern transportation elements have bisected the historic farm. The Olson's have developed modern residential subdivisions adjacent to the existing western property boundary. The additional I-25 and frontage road widening, installation of a new retaining wall near Ballinger Reservoir, and modification of CR 38 overpass would increase the amount of intrusive transportation elements within the property boundary leading to an indirect effect on the historic property, however; these transportation improvements would not affect the historic association of this property with the agricultural development of Weld County which renders this property NRHP-eligible.

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Temporary effects due to installation of the new bridge across I-25, roadway widening and the retaining wall at Ballinger Reservoir would likely require a temporary easement on portions of the historic property for equipment access, haul roads and other construction activities. The farm would remain operational and measures to protect the property from erosion, dust and water-borne sediment dispersal would be implemented. All disturbances caused by construction equipment or construction activities would be temporary in nature and affected areas would be restored to their original condition and appearance.

The setting and feeling of this property have been changed with the 1960s development of I-25 through the center of the farm's historic boundary. The association with agriculture still exists. FHWA and CDOT have determined that the Preferred Alternative would result in *no adverse effect* to the resource because the land to be taken on the east side of I-25 is not being used for agricultural purposes and there would be no direct effect to the Ballinger Reservoir. The land on the west side of I-25 is serving as a buffer between a subdivision and the Interstate. In addition, the Olson family has developed a subdivision on part of the farmland and hopes to develop more in the future and they are now renting their land out to others for farming. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence

### **Planning and Measures Included to Reach a *De Minimis* Finding**

#### **Packages A, B, and Preferred Alternative**

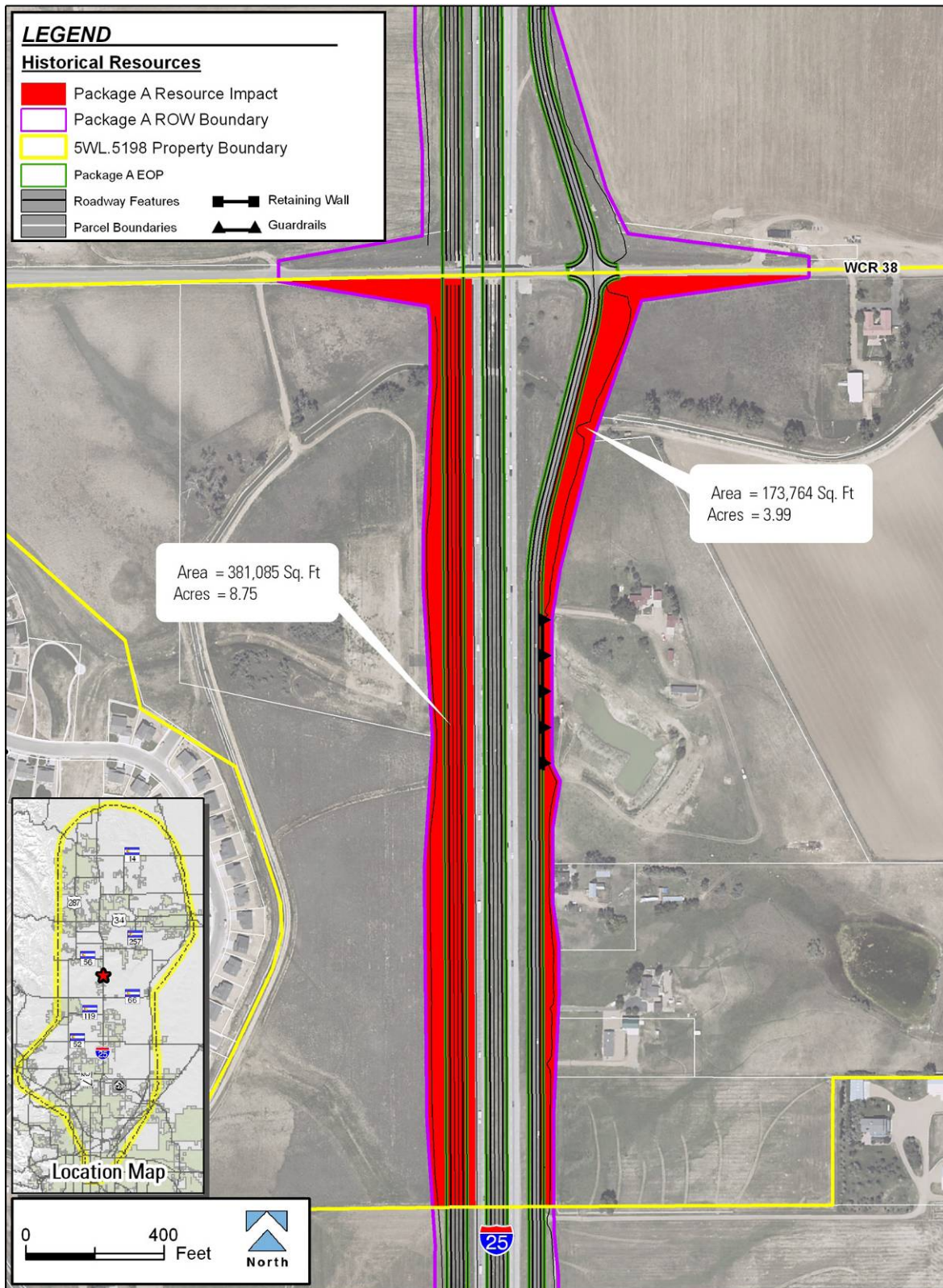
The proposed design for the I-25 corridor incorporates a small retaining wall placed along the east side of the east frontage road for the purpose of limiting uses to Ballinger Reservoir, which is a contributing feature on this historic farm.

#### **Mitigation Measures for the Olsen Farm**

- Property acquisition will be completed under the Uniform Relocation Act.
- Maintain operation of farm during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

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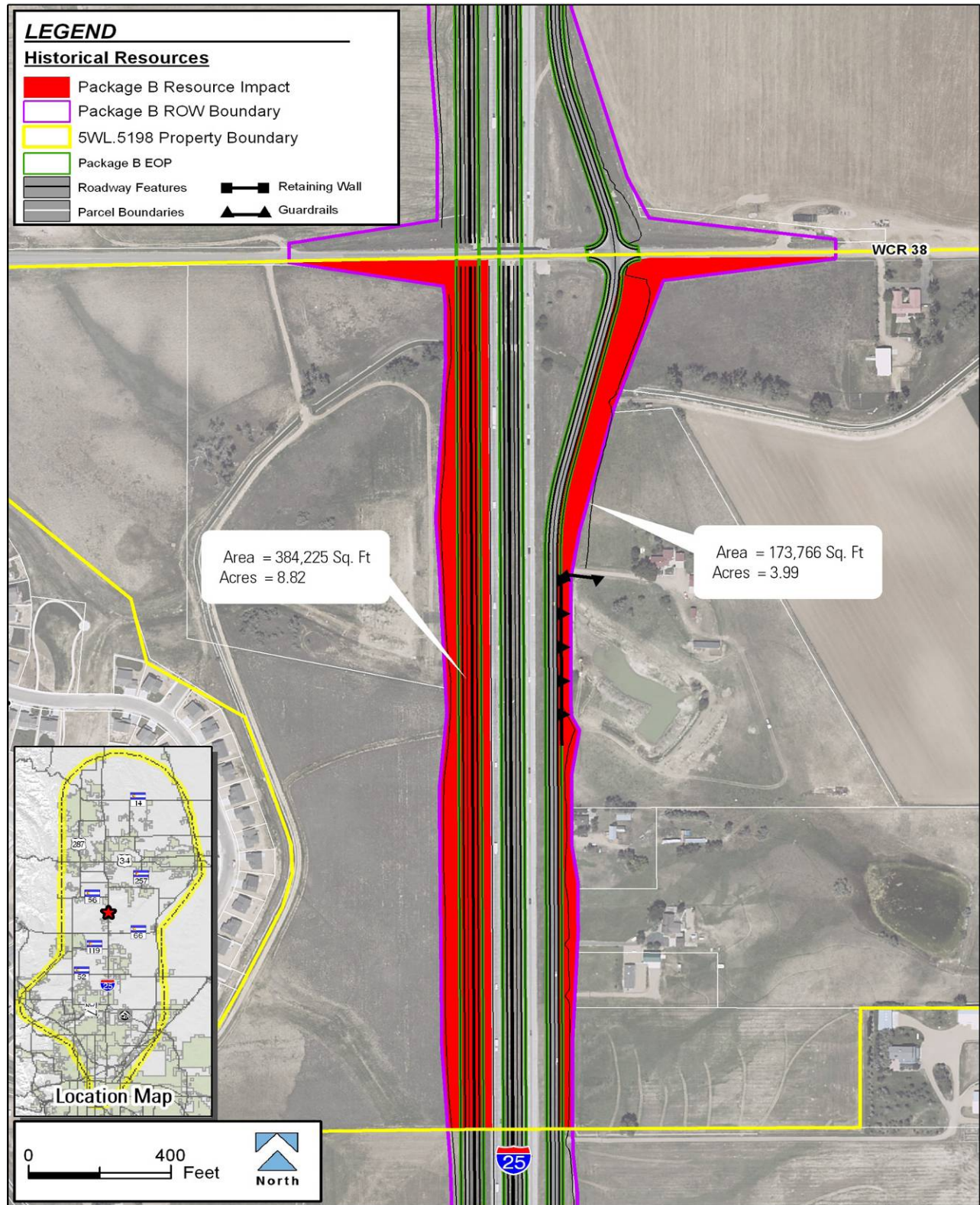
1 Figure 5-57 Olson Farm Package A Use



2 Note: EOP—Edge of Pavement



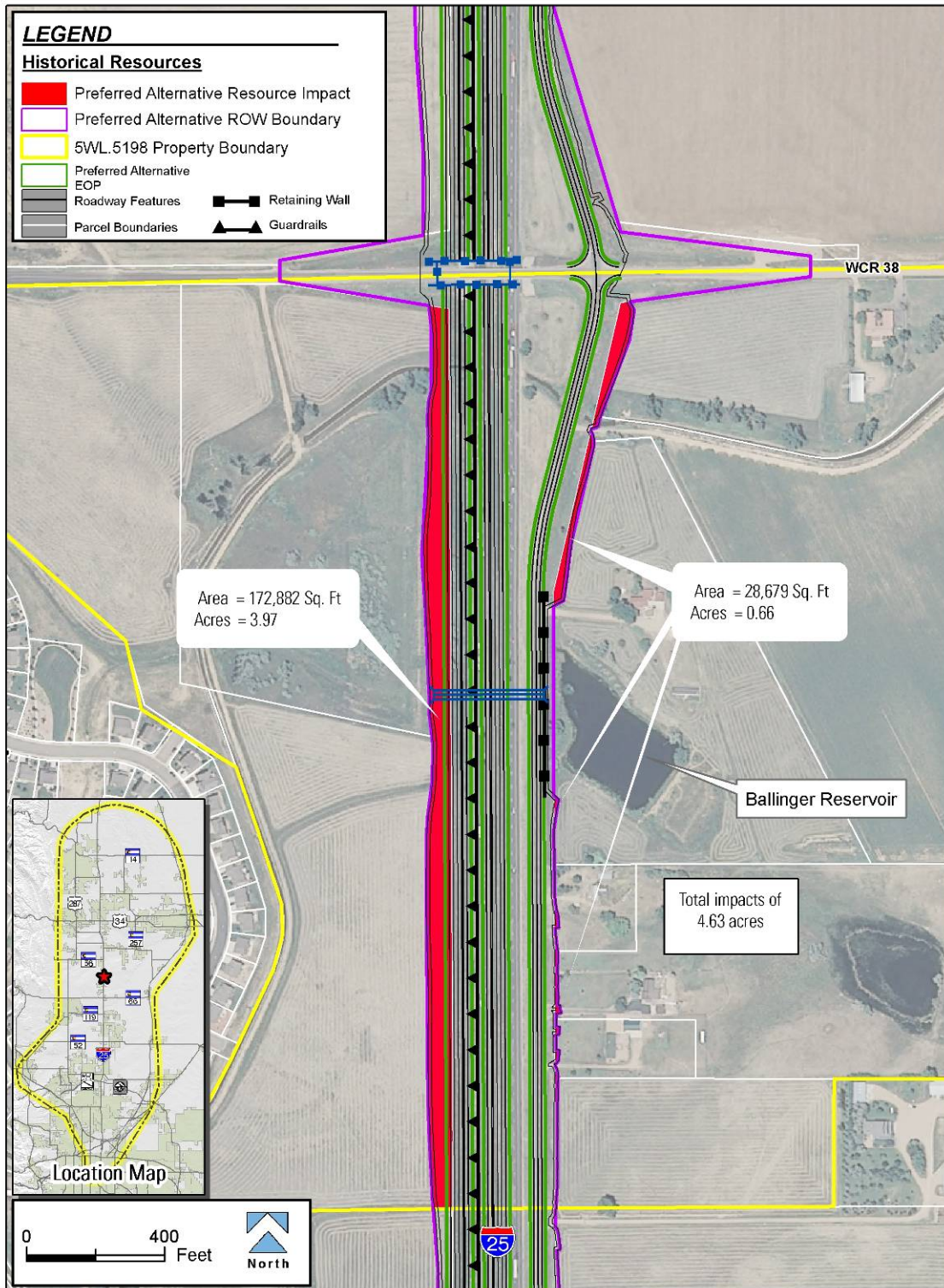
1 Figure 5-58 Olson Farm Package B Use



2 Note: EOP—Edge of Pavement



1 Figure 5-59 Olson Farm Preferred Alternative Use



## Bull Canal/Standley Ditch (5WL.1966, 5BF.72, 5BF.76, 5AM.457)

### Description

<b>Location:</b>	Runs along I-25 in Broomfield, Adams, and Weld counties
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A and C

### Use of Bull Canal/Standley Ditch by Package

Package A	Package B
<b>A-H3 GP Highway Widening: SH 60 to E-470</b>	<b>B-H3 Tolloed Express Lanes: SH 60 to E-470</b>
<b>A-T2 Transit Component- Commuter Rail:</b>	<b>B-T2 Transit Component-BRT: 120th to Denver</b>
<b>Longmont to North Metro End-of-Line Station</b>	
<hr/> A total of 908 feet would be placed into three culvert extensions	<hr/> A total of 850 feet would be placed into two culvert extensions
<b>Preferred Alternative</b> <b>I-25 Highway Improvements and</b> <b>Commuter Rail:</b>	
<hr/> A total of 736 feet would be placed into two culvert extensions.	

### Resource Description

The entire Bull Canal/Standley Ditch is approximately 44 miles long and runs through Adams, Broomfield, and Weld counties. The ditch was originally built in 1907. Several segments of the Bull Canal/Standley Ditch are within the APE.

Segment 5WL.1966.1 generally follows a serpentine course adjacent to the east side of I-25 and crosses the highway and the frontage road in multiple locations. The concrete-lined ditch is approximately 20 feet wide. The portion of the ditch that crosses under I-25 and the frontage road was altered and conveyed under the roadways in concrete box culverts when the highway was constructed in the 1960s. Segment 5WL.1966.1 is 3,524 feet (0.67 miles) long. Well-developed willow growth exists along the south levee of the ditch in some areas. The surrounding area includes industrial and residential development. Weld County segments 5WL.1966.11 and 5WL.1966.8 cross the APE at the proposed commuter rail alignment. These segments each contain the 60-foot-wide concrete lined channel running through a rural setting. Segment 5WL.1966.8 is a 607-foot-long segment of the Bull Ditch that follows a gently curving alignment from west to northeast through the project area.

The Broomfield County portion of ditch within the APE includes 20-foot-wide segments 5BF.72.1, 5BF.72.2, 5BF.72.3, and 5BF.76.2. Each concrete-lined segment crosses under existing I-25 and the frontage road through modern concrete box culverts. Segment 5BF.72.1 is 1,439 feet (0.27 mile) long. Sparse riparian growth of large mature trees exists along both banks of the ditch in many areas. The surrounding area includes agricultural and residential development. Segment 5BF.72.2 is 1,023 feet (0.2 mile) long with grassy vegetation lining the ditch levees. Segment 5BF.72.3 is 3,392 feet (0.64 mile) long. The latter two segments traverse areas characterized by industrial and residential development.

Segment 5BF.76.2 is 2,172 feet long and approaches SH 7 from the northwest until it approaches the west side of I-25, where it turns south crossing both SH 7 and I-25. The ditch, where exposed, is earthen with rip-rapped banks and is about 15 feet wide. The ditch has been extensively realigned by recent commercial development to remove the entire ditch loop north of SH 7 and is now buried in a pipe for its length parallel to SH 7 and crosses south underneath SH 7 via a bridge. This segment of the ditch ends at the foot of the I-25 southbound on-ramp. The Broomfield segments traverse areas characterized by industrial and residential development.



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The Adams County segments include 5AM.457.2, 5AM.457.3, 5AM.457.4, and 5AM.457.8. Segment 5AM.457.2 is approximately 35 feet wide and 3,685 feet (0.7 mile) long. This segment crosses under existing I-25 and the frontage road via modern concrete box culverts. Heavy riparian growth exists along both banks of the ditch in many areas. The surrounding land now supports mixed development. Remaining segments 5AM.457.3, 5AM.457.4, and 5AM.457.8 cross I-25 and the frontage roads inside culverts installed when I-25 was constructed in the 1960s.

Segment 5AM.457.3 runs east of I-25 near the base of the northbound off-ramp for SH 7. The ditch runs underneath I-25 in a 330-foot-long concrete box culvert. The segment appears briefly on the surface at the opening of the concrete box culvert directly east of I-25 and immediately disappears below ground to cross underneath the Larkridge Shopping Center.

Segment 5AM.457.4 of the ditch is located west of I-25 and south of West 136th Avenue. Most of the ditch segment has been abandoned and the ditch has been realigned at a point further west of I-25 out of the APE. A portion of the abandoned segment has been obliterated by new commercial construction at the site.

Segment 457.8 is no longer functional and has been abandoned. This segment is located east of I-25 near milepost 226.8. This 1,585-foot-long, 26-foot-wide concrete lined looping ditch segment has been abandoned and no longer functions for irrigation. Weeds and rushes fill the abandoned channel floor, and the concrete lining of the bank is cracked and settled in many places.

### Eligibility Determination

The entire Bull Canal/Standley Ditch was a part of the ambitious, corporate Standley Lake Irrigation System developed in the early 20th Century. The canal is eligible for listing on the NRHP under Criterion A because of its important association with the development of water rights and agriculture in northeastern Colorado, and under Criterion C as an important example of irrigation engineering in the region. Segment 5WL.1966.11 and 5WL.1966.8 also include good examples of concrete siphons that represent a distinctive method of hydraulic engineering that add to the canal's significance under Criterion C. Segments 5WL.1966.1, 5WL.1966.11, 5BF72.1, 5BF.72.2, 5BF.72.3, and 5AM457.1 within the project APE retain sufficient integrity of location, setting, feeling, and use to support the eligibility of the entire linear resource. Resources 5BF.76.2, 5AM.457.3, 5AM.457.4, and 5AM.457.8 were found to be modified, and lack sufficient integrity to support the eligibility of the entire linear resource.

### Section 4(f) Use

#### Package A

**Segment 5WL.1966.1:** This historic canal is currently conveyed underneath I-25 and the east frontage road in two locations through modern concrete box culverts. Under Package A, the existing I-25 template would be maintained in this area. The existing box culverts would not require replacement or modification, and no direct use of the canal would occur.

**Segment 5BF.72.1:** This historic canal is conveyed underneath I-25 and the east frontage road through modern concrete box culverts. Under Package A, the I-25 template would be reconfigured to contain four general purpose lanes in each direction. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct use of the canal would occur under Package A.

**Segment 5BF.72.2:** This historic canal is conveyed underneath I-25 and the east frontage road through modern concrete box culverts. Under Package A, the existing I-25 template would be maintained in this area. The existing box culverts would not require replacement or modification, and no direct use of the canal would occur.

**Segment 5BF.72.3:** This historic canal is conveyed underneath I-25 and the east frontage road through modern concrete box culverts. In this area, I-25 would be widened to the median to contain a new template consisting of four general purpose lanes in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct use of the canal would occur under Package A.

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**Segment 5BF.76.2:** Package A would require putting the 750-foot-long remainder of the ditch located between the SH 7 buried pipe outfall and the existing I-25 concrete box culvert in a buried culvert (see **Figure 5-60**).

**Segment 5AM.457.2:** This historic canal is conveyed underneath I-25 and the east frontage road through modern concrete box culverts. Under Package A, the existing I-25 template would be maintained in this area. The existing box culverts would not require replacement or modification, and no direct use of the canal would occur.

**Segment 5AM.457.3:** Package A would result in placing an additional 100 feet of open ditch into a culvert extension east of the I-25 northbound off-ramp (see **Figure 5-60**).

**Segment 5WL.1966.11:** The proposed new commuter rail line would pass in a northwest-southeast trajectory across this historic ditch segment. The new rail line would closely parallel an existing active rail through this area. The historic ditch has already been placed in a culvert beneath the existing railroad grade. The existing culvert would be left in place and no culvert extension would be necessary to accommodate the new additional rail line, therefore no direct use would occur.

**Segment 5WL.1966.8:** In the vicinity of this historic ditch, the proposed new commuter rail line would run closely parallel to the east side of an existing active rail line. The historic ditch has already been placed in a culvert beneath the existing railroad grade. The existing culvert would be left in place and approximately 58 feet of open ditch would be placed in a new culvert extending beneath the proposed new commuter rail line (see **Figure 5-61**) resulting in a direct use of the resource. Although the segment of open ditch would be placed in a culvert, this change affects only a very small percentage of the entire linear resource.

The Bull Canal/Standley Ditch would experience a total direct use of 908 feet of open ditch that would be placed inside a culvert at three locations; at I-25 segments 5BF.76.2 and 5AM.457.3, and along the commuter rail on Segment 5WL.1966.8. Temporary construction impacts would occur during culvert installation and highway construction activity at those locations. No other direct use would occur to the remaining seven segments. Therefore, FHWA and CDOT have determined that the Package A improvements would result in *no adverse effect* to the historic Bull Canal/Standley Ditch (5WL.1966, 5BF.72, 5BF.76, and 5AM.457). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

#### **Package B**

**Segment 5WL.1966.1:** In this area, I-25 would be widened to the median to contain a new template consisting of three general purpose lanes plus one buffer-separated managed lane in each direction. The existing east frontage road would be realigned farther to the east. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct use of the canal would occur under Package B.

**Segment 5BF.72.1:** This historic canal is conveyed underneath I-25 and the east frontage road through modern concrete box culverts. In this area, I-25 would be widened to the median to contain a new template consisting of three general purpose lanes plus one buffer-separated managed lane in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct use of the canal would occur under Package B.

**Segment 5BF.72.2:** This historic canal is conveyed underneath I-25 and the east frontage road through modern concrete box culverts. In this area, I-25 would be widened to the median to contain a new template consisting of three general-purpose lanes plus one buffer-separated managed lane in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct use of the canal would occur under Package B.

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**Segment 5BF.72.3:** This historic canal is conveyed underneath I-25 and the east frontage road through modern concrete box culverts. In this area, I-25 would be widened to the median to contain a new template consisting of four general-purpose lanes in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no direct use of the canal would occur under Package B.

**Segment 5BF.76.2:** Package B would require placing the 750-foot-long remainder of the ditch located between the SH 7 buried pipe outfall and the existing I-25 concrete box culvert in a buried culvert (see **Figure 5-60**).

**Segment 5AM.457.2:** This historic canal is conveyed underneath I-25 and the east frontage road through modern concrete box culverts. Under Package B, the I-25 template would consist of three general purpose lanes plus one buffer-separated managed lane. The portion of the ditch that currently crosses under the highway and frontage roads is conveyed inside a concrete box culvert. The new roadway would be contained within the current roadway template and no new disturbance would occur to areas of the ditch located outside the existing culverts. The integrity of that portion of the historic canal to be placed in a culvert has already been compromised by the original construction of I-25 in the 1960s, and no new direct use would occur.

**Segment 5AM.457.3:** Package B would result in placing an additional 100 feet of open ditch into a culvert extension east of the I-25 northbound off-ramp (see **Figure 5-60**).

**Segment 5AM.457.4:** Highway widening of I-25 resulting from Package B would not result in use of this ditch. A permanent water quality basin is planned in proximity to the ditch but would not result in a direct impact to this feature. There would be no temporary construction impacts to this feature.

**Segment 5AM.457.8:** Package B improvements do not encroach on the ditch. Temporary construction impacts would be avoided at this site.

The Bull Canal/Standley Ditch would experience a total direct use of 850 feet of open ditch that would be placed inside a culvert at I-25 segments 5BF.76.2 and 5AM.457.3, where the ditch has already been highly modified by I-25 construction in the 1960s. Temporary construction activity would occur during culvert installation and highway construction activity at those locations. No other direct use would occur to the remaining seven segments. Therefore, FHWA and CDOT have determined that the Package A transit improvements would result in *no adverse effect* to the historic Bull Canal/Standley Ditch (5WL.1966, 5BF.72, 5BF.76, and 5AM.457). It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

#### **Preferred Alternative**

**Segment 5WL.1966.1:** In this area, I-25 would be widened to the median to contain a new template consisting of three general purpose lanes plus one TEL in each direction. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no use of the canal would occur under the Preferred Alternative.

**Segment 5BF.72.1:** This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. In this area, I-25 would be widened to the median to provide a new template consisting of three general purpose lanes plus one TEL in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no use of the canal would occur under the Preferred Alternative.

**Segment 5BF.72.2:** This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. In this area, I-25 would be widened to the median to provide a new template consisting of three general purpose lanes plus one TEL in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no use of the canal would occur under the Preferred Alternative.

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**Segment 5BF.72.3:** This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. In this area, I-25 would be widened to the median to provide a new template consisting of three general purpose lanes plus one TEL in each direction. The existing east frontage road would be retained. The proposed transportation improvements in this area would not require replacement or modification of the existing box culverts, and no use of the canal would occur under the Preferred Alternative.

**Segment 5BF.76.2:** The Preferred Alternative would require putting 615 feet of the ditch located between the SH 7 pipe outfall and the existing I-25 CBC in a buried culvert. West of the SH 7 outfall the ditch would be capped for a short distance where it runs adjacent to SH7 (see **Figure 5-62**).

**Segment 5AM.457.2:** This historic canal is conveyed beneath I-25 and the east frontage road through modern CBCs. Under the Preferred Alternative, the I-25 template would consist of three general purpose lanes plus one TEL in each direction. The portion of the ditch that currently crosses under the highway and frontage roads is conveyed inside a CBC. The new roadway would be contained within the current roadway template and no new disturbance would occur to areas of the ditch located outside the existing culverts. The integrity of that portion of the historic canal to be placed in a culvert has already been compromised by original construction of I-25 in the 1960s, and no new direct or indirect impacts would occur under the Preferred Alternative.

**Segment 5AM.457.3:** The Preferred Alternative would result in placing an additional 121 feet of open ditch into a culvert extension east of the I-25 northbound off ramp (see **Figure 5-62**).

**Segment 5WL.1966.11:** The proposed new commuter rail line would pass in a northwest-southeast alignment across this historic ditch segment. The new rail line would be constructed on an existing railroad grade through this area. The historic ditch has already been placed in a culvert beneath the existing railroad grade. The existing culvert would be left in place and no culvert extension should be necessary to accommodate the new rail line. Therefore, no direct or indirect impacts would occur as a result of the Preferred Alternative.

**Segment 5WL.1966.8:** In the vicinity of this historic ditch, the proposed new commuter rail line would be constructed on an existing railroad grade. The historic ditch has already been placed in a culvert beneath the existing railroad grade. The existing culvert would be left in place and no culvert extension should be necessary to accommodate the new rail line. Therefore, no direct or indirect impacts would occur as a result of the Preferred Alternative (see **Figure 5-61**).

A total of 908 linear feet of open ditch would be used. Approximately 736 feet of ditch would be placed inside two culverts at the I-25 and SH 7 interchange. West of these culverts another section of the ditch would be capped as it runs adjacent to SH7 on the north side of the roadway. In this area much of the ditch has already been realigned and it currently runs through existing culverts beneath I-25 and its ramps as well as SH7. As a result of these previous alterations, segment 5BF.76.2, was found to lack sufficient integrity to support the eligibility of the entire linear resource. Temporary construction impacts would occur during culvert installation and highway construction activity at that location. No other direct or indirect impacts would occur to the remaining seven segments. As a result of the impacted segments lack of integrity to support the eligibility of the entire resource, FHWA and CDOT have determined that the Preferred Alternative improvements would result in *no adverse effect* to the historic Bull Canal/Standley Ditch (5WL.1966, 5BF.72, 5BF.76, and 5AM.457). It is the intent of FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

## **Planning and Measures Included to Reach a *De Minimis* Finding**

### **Packages A, B, and Preferred Alternative**

The physical railway template has been reduced to the minimum width necessary to meet FRA and FTA design and safety standards.

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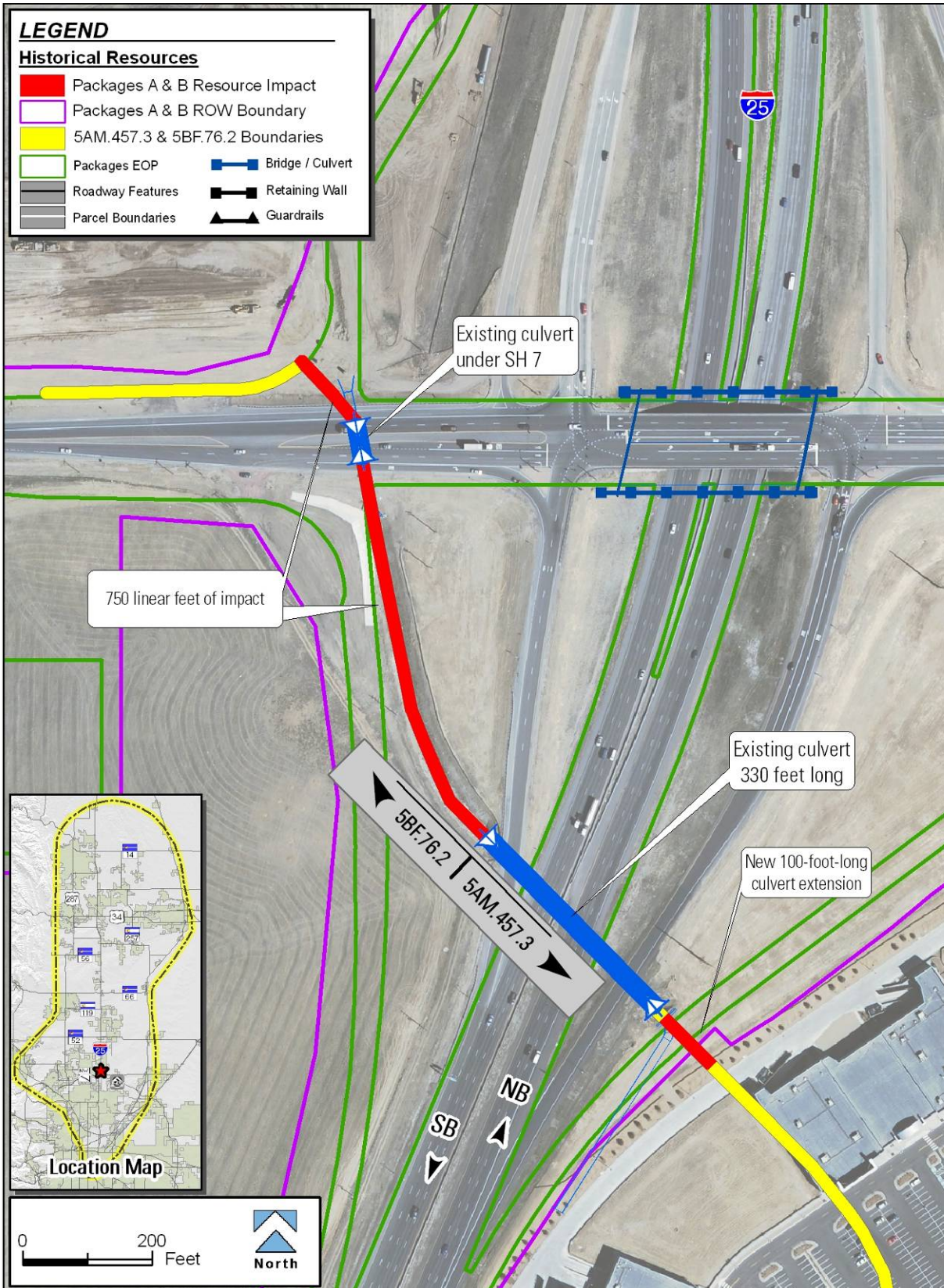
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**Mitigation Measures for the Bull Canal/Standley Ditch**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

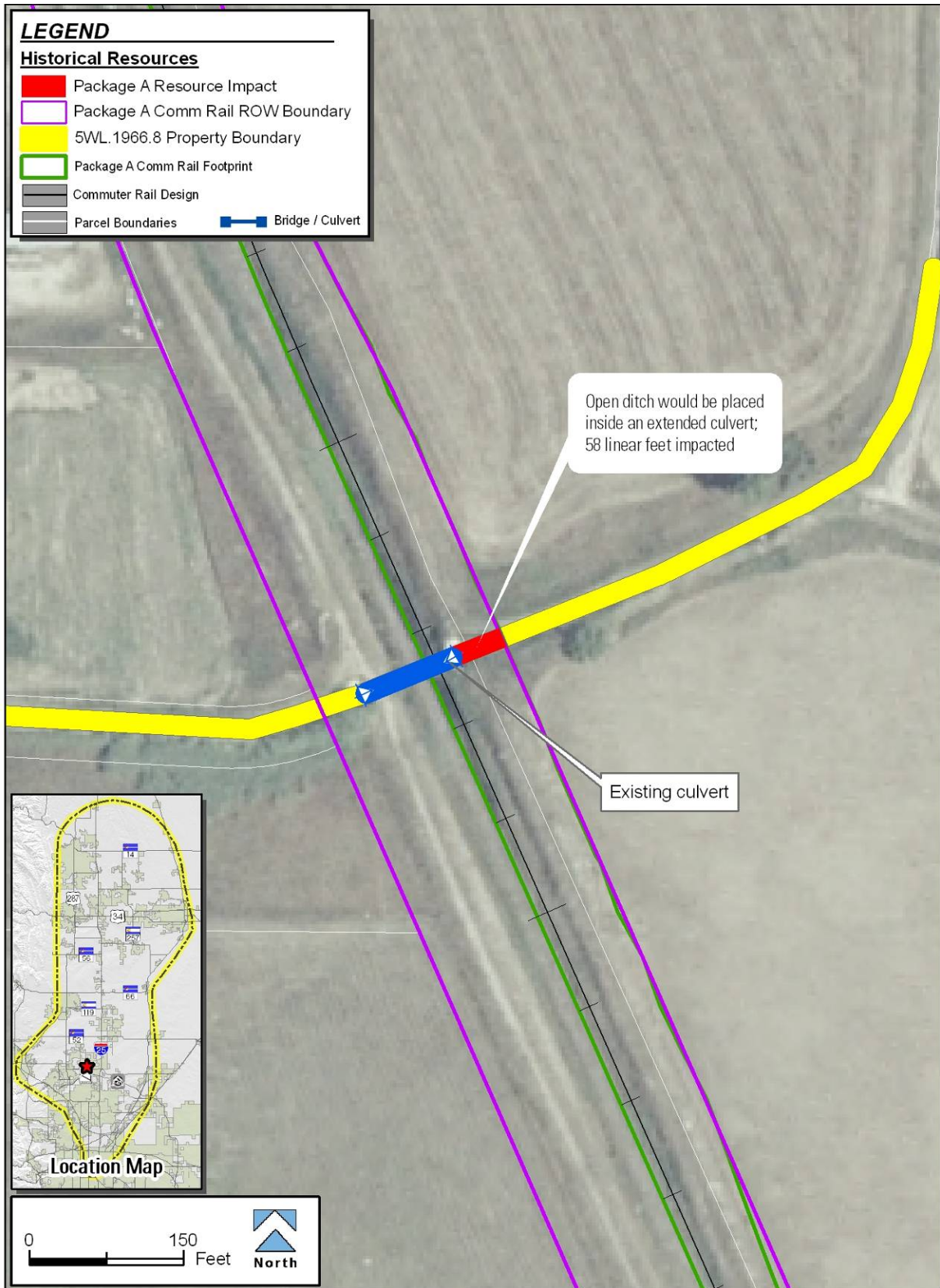
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1 Figure 5-60 Bull Canal/Standley Ditch – Packages A and B Use



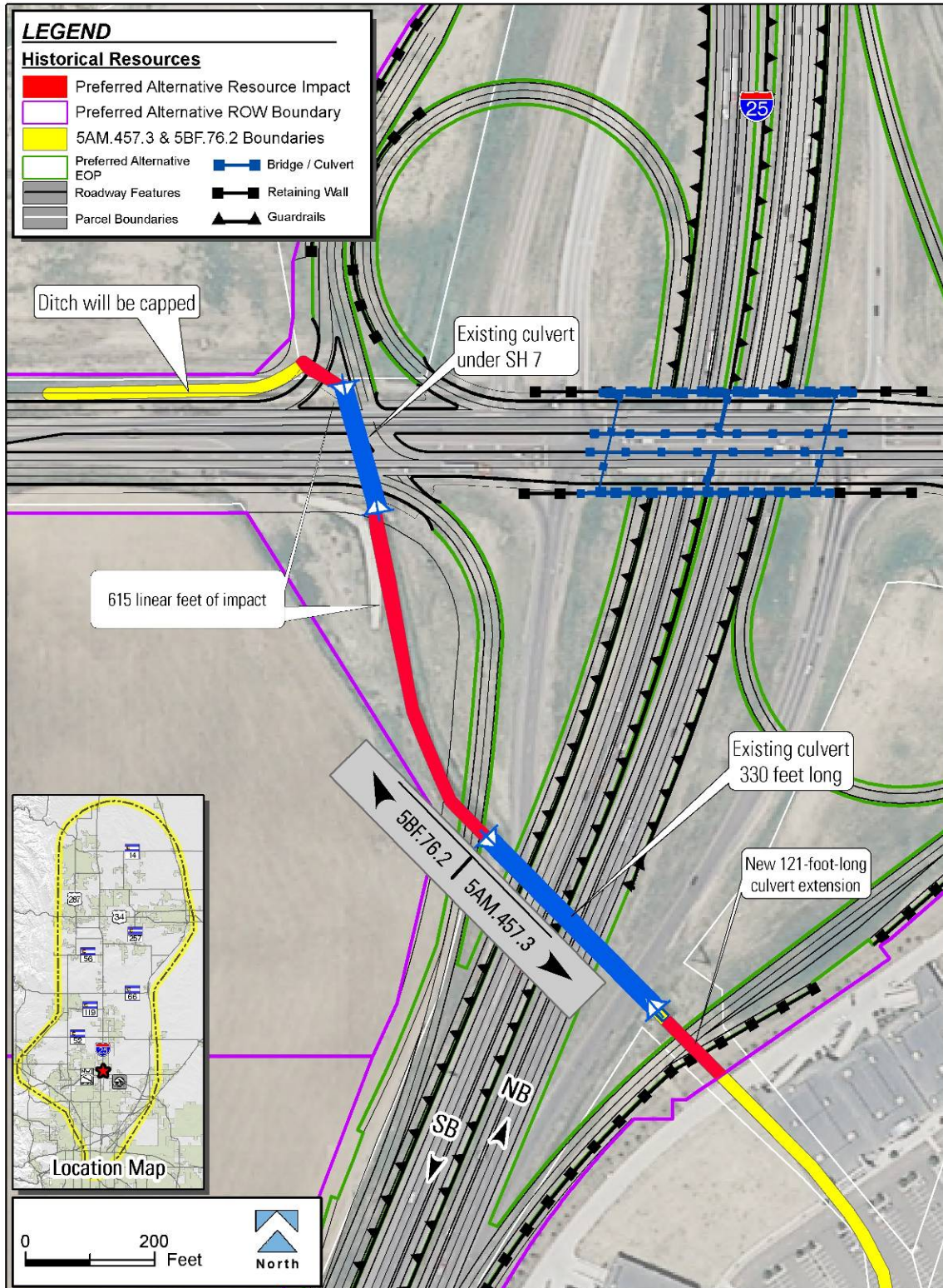


1 Figure 5-61 Bull Canal/Standley Ditch – Package A Commuter Rail Use





1 Figure 5-62 Bull Canal/Standley Ditch – Preferred Alternative Use



## Colorado and Southern Railway Depot / Loveland Depot (5LR.488)

### Description

<b>Location:</b>	405 – 409 Railroad Avenue in Loveland
<b>Type:</b>	Historic train depot
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A and C

### Use of Loveland Depot by Package

Package A A-T1 Transit Component- Commuter Rail: Fort Collins to Longmont	Package B B-T1 Transit Component/BRT: Fort Collins/Greeley to Denver
A total of 0.03 acre	No use
<b>Preferred Alternative Commuter Rail:</b>	
No Use	

### Resource Description

The Loveland Depot is located at 405 – 409 Railroad Ave. in Loveland. It was built in 1902 by the Colorado and Southern Railway Company which was the successor, in 1898, to the Colorado Central Railroad which originally laid tracks through Loveland in 1877. Loveland, an agricultural community, was dependent on the railroad for its economic survival and the depot was critical for efficient movement of freight and passengers.

### Eligibility Determination

This structure is significant under Criterion A for its role in rail transportation in northern Colorado. It is also architecturally significant under Criterion C as a good example of a turn-of-the-century depot.

### Section 4(f) Use

#### Package A

The historic Loveland Depot is adjacent to the existing BNSF railroad tracks. A concrete station platform (350' long 22' wide) would be built between that depot and the tracks. This platform would be placed adjacent to the west side of the depot. Approximately 0.03 acre of the 0.43 acre historic property would thus be converted from ownership by the BNSF to commuter rail use. Because the use of this parcel was historically for transportation purpose and the proposed modifications would affect a small portion of the historic property, the FHWA and CDOT have determined that Package A would result in *no adverse effect* to the Loveland Depot. See **Figure 5-63** for uses associated with Package A.

#### Package B

There is no direct use of any of this property resulting from Package B.

#### Preferred Alternative

There is no direct use of any of this property resulting from the Preferred Alternative.



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## Planning and Measures Included to Reach a *De Minimis* Finding

### Package A

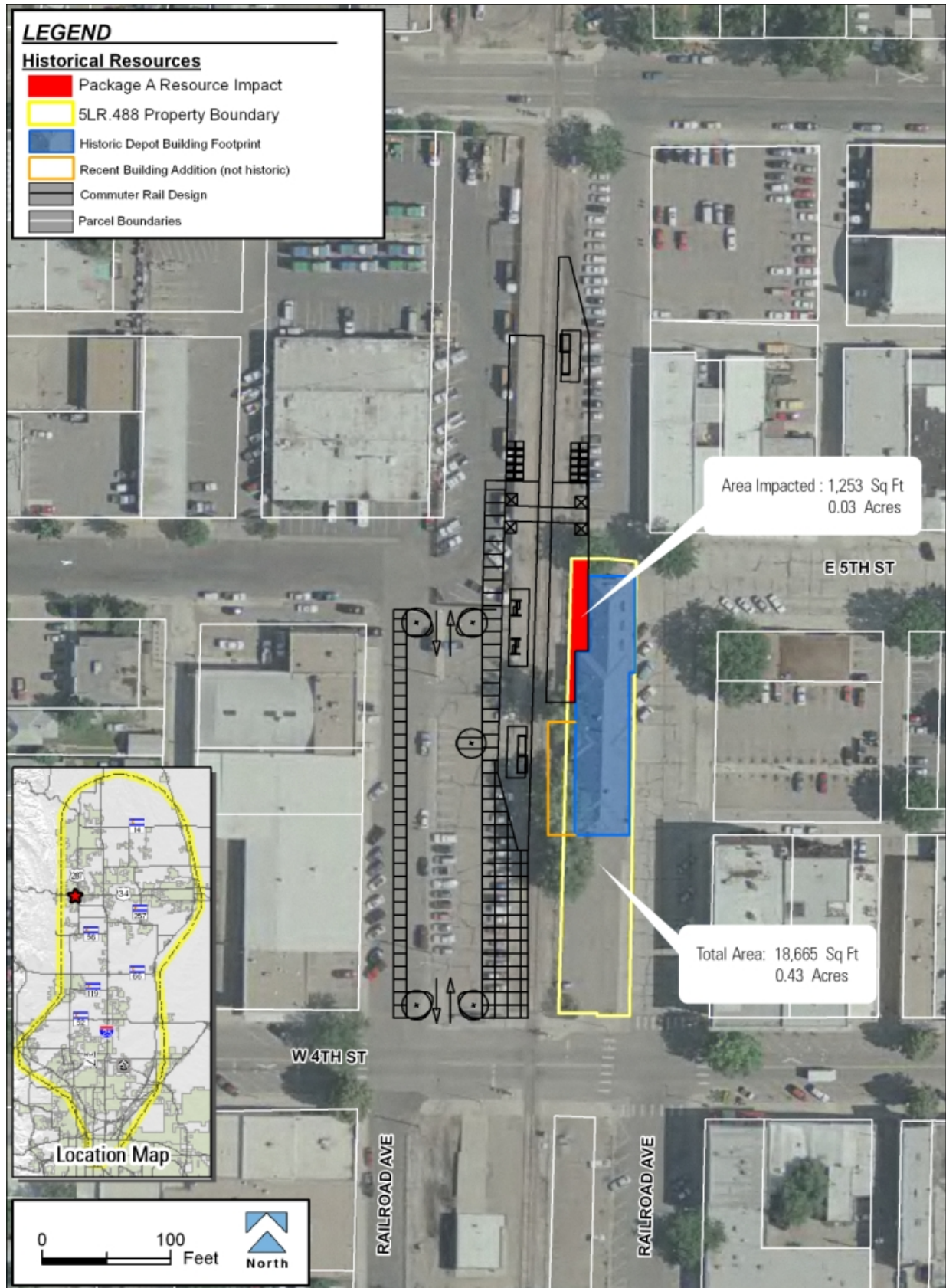
In order to reach this *de minimis* finding the segment of commuter rail within the boundary of the historic depot has been reduced to a single track. In this configuration, the use of the Loveland Depot property has been reduced from demolition of the depot building to placement of the station platform along the edge of the depot property.

### **Mitigation Measures for the Loveland Depot**

- Permanent easement or property acquisition will be completed under Uniform Relocation Act.
- Disturbed areas will be re-landscaped.
- Attempt will be made to incorporate the depot into the station platform.

2

1 Figure 5-63 Colorado and Southern Railway Depot / Loveland Depot – Package A Use



## Supply Ditch (5BL.3449)

### Description

<b>Location:</b>	100 feet southwest from the CR 2/115 <sup>th</sup> Street intersection north of Longmont
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Supply Ditch by Package

Package A A-T1 Transit Component- Commuter Rail: Fort Collins to Longmont	Package B B-T1 Transit Component/BRT: Fort Collins/Greeley to Denver
A total of 65 feet would be placed into an culvert extension	No use

#### Preferred Alternative Commuter Rail:

A total of 45 feet would be placed into a culvert extension.

### Resource Description

The entire earthen ditch was constructed in 1861 and is approximately 22 miles long. The segment within the project APE (5LR.3449.2) is 100 feet long and follows its original historic alignment through the project area and is in good functional condition. This segment of the Supply Ditch crosses the active BNSF rail line in a culvert. Both banks are covered by heavy riparian growth in many areas. The surrounding area supports industrial and residential development.

### Eligibility Determination

The Supply Ditch was determined to be NRHP-eligible by OAH in 1992. The ditch is eligible under Criterion A for its important association with the development of water rights and agriculture in Boulder County. This segment (5BL.3449.2) retains sufficient integrity to support the eligibility of the entire linear resource.

### Section 4(f) Use

#### Package A

The historic Supply Ditch currently crosses the active BNSF railroad line via a culvert. The proposed commuter rail line would be aligned 20 feet north and parallel to the existing railroad. The elevated embankment carrying the new tracks and ballast would require an area approximately 65 feet wide. Thus, 65 feet of the open ditch would have to be placed in a new culvert underneath the new commuter rail line on the south side of the existing rail line. The portion of the ditch subject to direct impact by the commuter rail line is in close proximity to a pre-existing impacted section (crossing under the active rail line). This additional impact would not substantially diminish the qualities that make this resource NRHP eligible. The proposed modifications affect a relatively small section of the 22-mile-long linear resource. Therefore, FHWA and CDOT have determined that the Package A transit improvements would result in *no adverse effect* to the entire Supply Ditch. See **Figure 5-64** for uses associated with Package A.



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**Package B**

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

**Preferred Alternative**

The historic Supply Ditch currently crosses an active railroad line via a culvert. Under the Preferred Alternative, the proposed commuter rail service would be added to the active rail line. However, a required maintenance road would be constructed on the north side of the existing rail line with fill slopes impacting approximately 46 linear feet of the historic ditch (see **Figure 5-65**). The portion of the ditch subject to use by the maintenance road is in close proximity to a preexisting impacted section (crossing under the active freight rail line). This additional use would not substantially diminish the qualities that make this resource NRHP eligible. The proposed modifications use a relatively small section of the 22 mile-long linear resource. FHWA and CDOT have determined that the Preferred Alternative transit improvements would result in *no adverse effect* to the entire Supply Ditch.

**Planning and Measures Included to Reach a *De Minimis* Finding**

**Package A and Preferred Alternative**

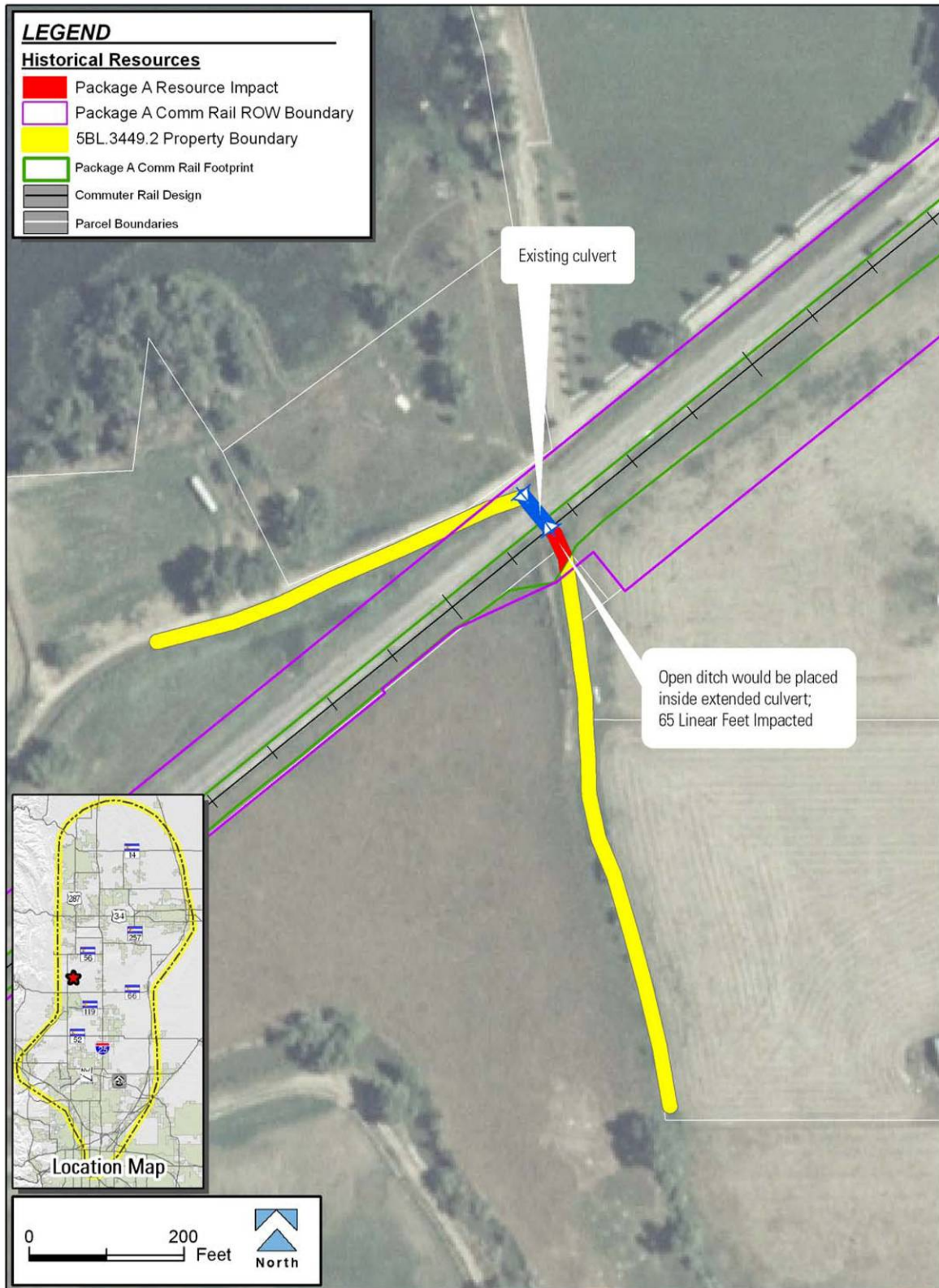
The physical railway template has been reduced to the minimum width necessary to meet FRA and FTA design and safety standards.

**Mitigation Measures for the Supply Ditch**

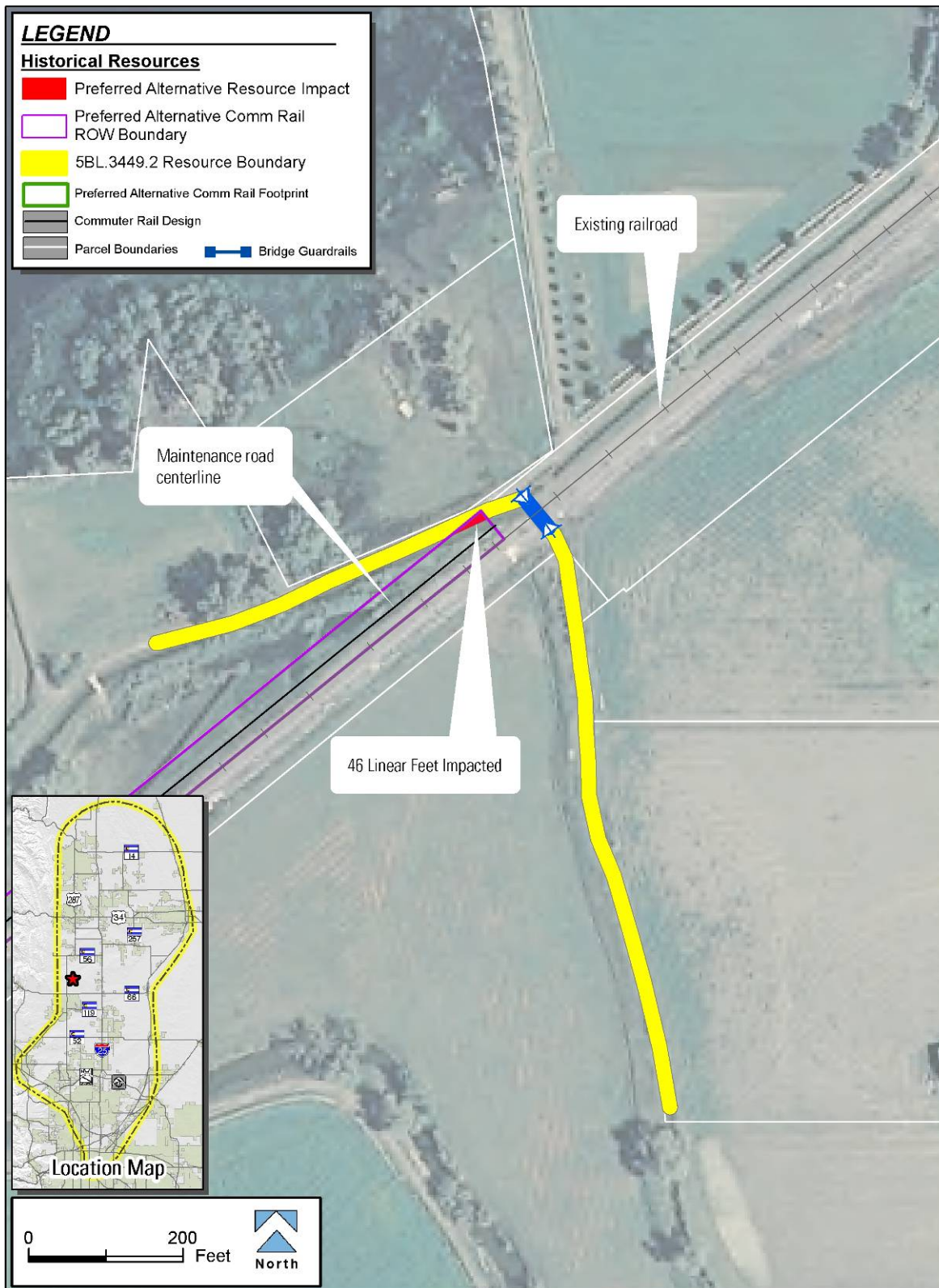
- Permanent easement or property acquisition will be completed under the Uniform Relocation Act.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

2

1 Figure 5-64 Supply Ditch Package A Use



1 Figure 5-65 Supply Ditch Preferred Alternative Use





### Rough & Ready Ditch (5BL.3113)

#### Description

<b>Location:</b>	North of the Main Street/21st Avenue Intersection in Longmont
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

#### Use of Rough & Ready Ditch by Package

Package A A-T1 Transit Component- Commuter Rail: Fort Collins to Longmont	Package B B-T1 Transit Component-BRT: Fort Collins/Greeley to Denver
A total of 35 feet placed into a culvert extension	No use
<b>Preferred Alternative Commuter Rail:</b>	
A total of 45 feet placed into a culvert extension.	

#### Resource Description

This segment of the historic earthen Rough & Ready Ditch crosses underneath the active UPRR alignment via a concrete culvert. The entire ditch is approximately 16.5 miles long. The segment within the project APE (5BL.3113.67) is 100 feet long. This segment is the oldest portion of the ditch, with water appropriated in 1869. The ditch is 20 feet wide and 6 feet deep, is in good condition, and much of its length follows the historic alignment. At the east side of the railway crossing, the ditch is piped underground beneath a power substation. Well-developed riparian growth exists along both banks of the ditch in many areas. The surrounding area supports rural residential development.

#### Eligibility Determination

In 1991, the OAHF officially determined the entire Rough & Ready Ditch (5BL.3113) to be NRHP-eligible under Criterion A for its important association with the development of water rights and agriculture in Boulder County. The segment within the project APE (5BL.3113.67) retains sufficient integrity to support the eligibility of the entire linear resource.

#### Section 4(f) Use

##### Package A

The historic Rough & Ready Ditch currently crosses the active railroad line inside a modern concrete culvert. The proposed commuter rail would be aligned 20 feet northeast and parallel to the existing railroad. The elevated embankment supporting the new tracks and ballast would require an area approximately 35 feet wide. Thus, 35 feet of the open ditch would have to be placed in a new culvert beneath the new commuter rail line and ballast on the south side of the existing rail line.

The portion of the ditch subject to direct impact by the commuter rail line is in close proximity to a pre-existing impacted section (crossing underneath the active rail line). This additional impact would not substantially diminish the qualities that make this resource NRHP eligible. The proposed modifications affect a relatively small section of the 16.5-mile-long linear resource. Therefore, FHWA and CDOT have determined that the Package A transit improvements would result in *no adverse effect* to the entire Rough & Ready Ditch. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-66** for uses associated with Package A.

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### **Package B**

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

### **Preferred Alternative**

The historic Rough & Ready Ditch currently crosses the active railroad line inside a modern concrete culvert. The proposed maintenance road associated with the commuter rail line would be aligned east and parallel to the existing railroad. The elevated embankment supporting the road would require an area approximately 35 feet wide. Thus, 35 feet of the open ditch would have to be placed in a new culvert beneath the maintenance road on the east side of the existing rail line (see **Figure 5-67**).

The portion of the ditch subject to use by the Preferred Alternative is in close proximity to a preexisting impacted section (crossing under the active freight rail line). This additional use would not substantially diminish the qualities that make this resource NRHP eligible. The proposed modifications affect a relatively small section of the 16.5 mile-long linear resource. FHWA and CDOT have determined that the Preferred Alternative transit improvements would result in *no adverse effect* to the entire Rough & Ready Ditch. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

## **Planning and Measures Included to Reach a *De Minimis* Finding**

### **Package A and Preferred Alternative**

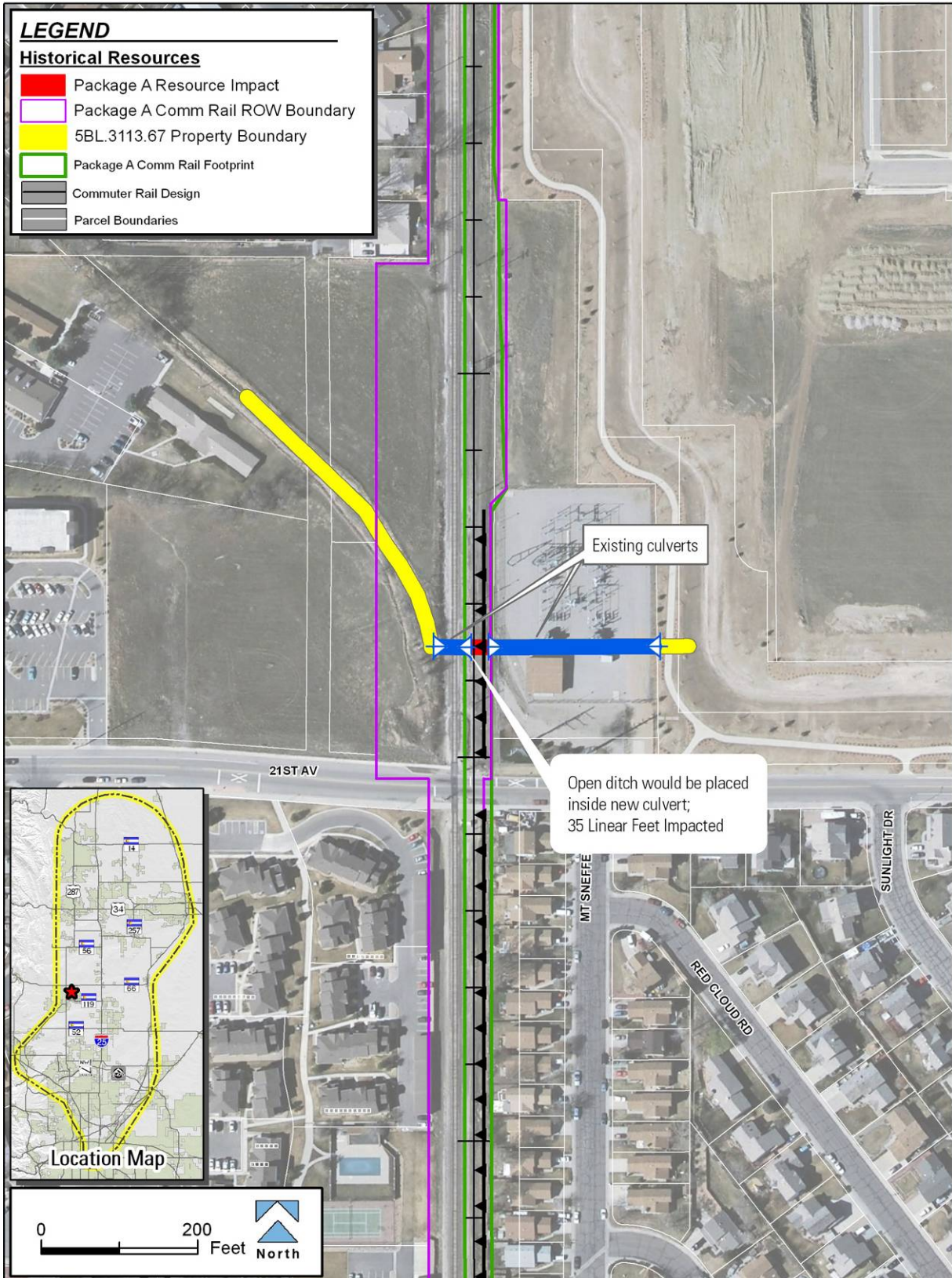
A retaining wall was included in the design on the east side of the proposed tracks to minimize impacts to homes and businesses in the Longmont area. This retaining wall also mitigates the impact to the ditch. A culvert would also be installed. The physical railway template of graded bed, track, and ballast has been reduced to the minimum width necessary to meet FRA and FTA design and safety standards.

### **Mitigation Measures for the Rough and Ready Ditch**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

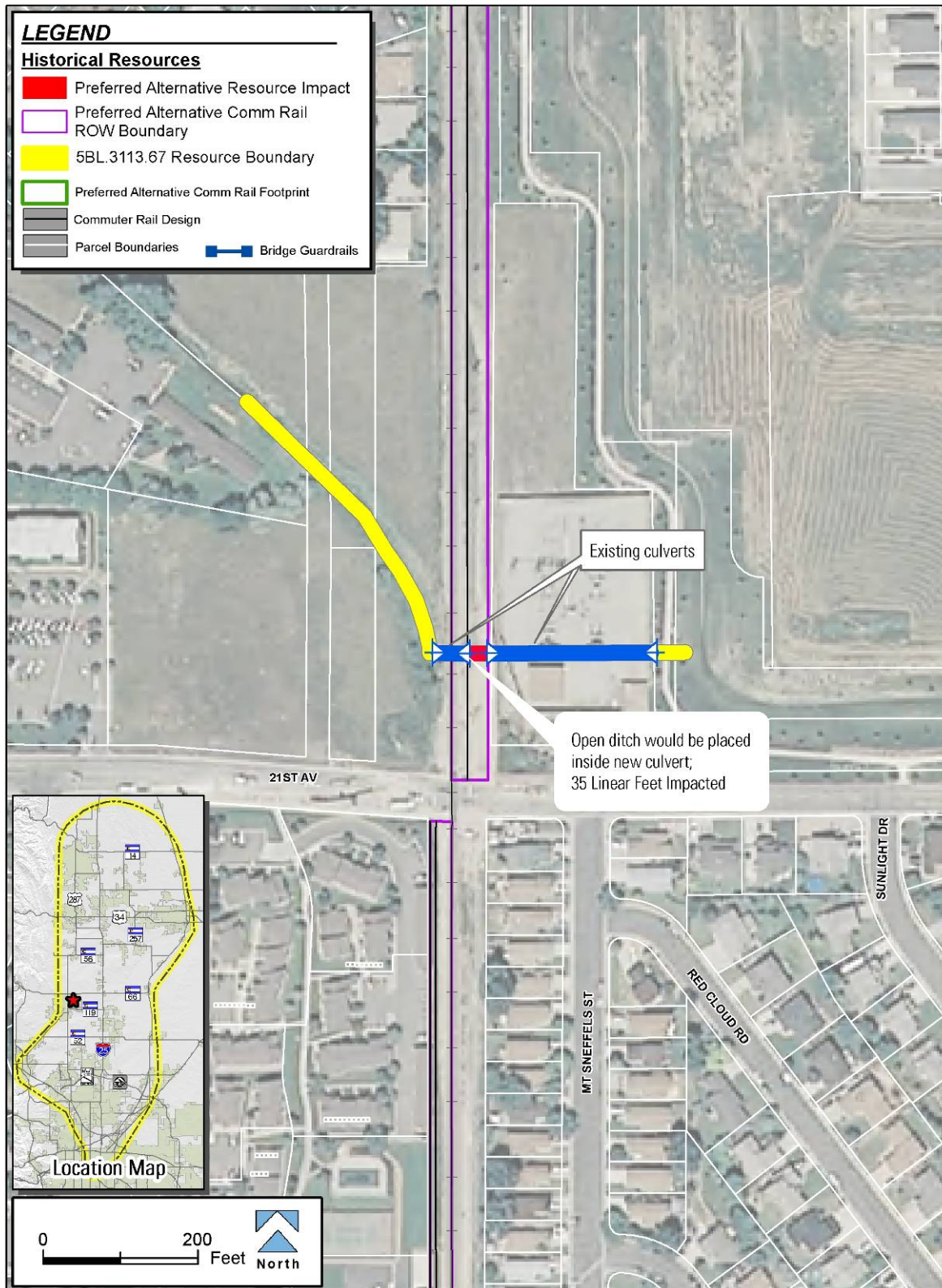
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1 Figure 5-66 Rough & Ready Ditch Package A Use





1 Figure 5-67 Rough & Ready Ditch Preferred Alternative Use



## Oligarchy Ditch (5BL.4832)

### Description

<b>Location:</b>	T3N/R69W, NE¼ Sec. 34; T2N/R69W, N1/2 Sec. 12
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Oligarchy Ditch by Package

<b>Package A</b> <b>A-T1 Transit Component- Commuter Rail:</b> <b>Fort Collins to Longmont</b>	<b>Package B</b> <b>B-T1 Transit Component-BRT:</b> <b>Fort Collins/Greeley to Denver</b>
48 feet placed in culvert extension	No use

### Preferred Alternative Commuter Rail:

Culvert extension of 64 feet.

### Resource Description

The entire earthen ditch is approximately 15.6 miles long. The ditch has been associated with Boulder County irrigation since its first appropriation date of 1861, which is among the oldest in the county. Two segments of the ditch cross the commuter rail corridor. Segment 5BL.4832.28 crosses the active BNSF railway alignment in a culvert approximately 500 feet south of 17th Avenue in Longmont. This segment is 100 feet long, 21 feet wide and 6 feet deep. Both banks of the ditch are covered by heavy riparian growth in many areas. The surrounding area supports rural residential development.

A second Oligarchy Ditch segment (5BL.4832.26) follows a meandering course through the proposed commuter rail alignment crossing south of SH 119 and Rogers Road intersection. This segment in the project APE is one mile long. Well-developed riparian growth exists along both banks of the ditch in some areas. The surrounding area supports semi-rural residential development.

### Eligibility Determination

The Oligarchy Ditch is NRHP-eligible under Criterion A for its important association with the development of water rights and agriculture in Boulder County. The two segments located within the APE retain sufficient integrity to support the eligibility of the entire linear resource.

### Section 4(f) Use

#### Package A

Portions of Segment 5BL.4832.26 of the historic Oligarchy Ditch would pass through the new dedicated commuter rail corridor. The ditch meanders across this area, often running parallel to the planned railroad alignment. A 1,200-foot-long concrete box culvert crosses underneath SH 119. The railway alignment follows a broad sweeping curve, and intersects the irregular course of the ditch at two places. Because the ditch and railroad alignments generally run parallel, a 210-foot-long stretch of the open ditch would be spanned by a new commuter rail bridge, conveying the intact open ditch beneath the new rail line on the west side of SH 119. There would be no direct use of the ditch at this location.

The proposed commuter rail would be aligned 20 feet northeast and parallel to the existing railroad and crosses Segment 5BL.4832.28 of the ditch. The new embankment supporting the tracks and ballast would require an additional area approximately 48 feet wide. Thus, 48 feet of the open ditch would have to be placed in a new extension of the existing BNSF railroad culvert beneath the new commuter rail line on the south side of the existing rail line. Although the physical integrity of the ditch segment would be compromised by placing a portion of it into a culvert, this change affects only a very small percentage of the overall linear resource.

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A total of 48 feet of open ditch would be placed inside a new extended culvert at Segment 5LR.4832.28. Temporary construction activity would occur at the site during culvert installation. Because the physical integrity of the channel of the ditch segment would not substantially alter or impact the qualities that render the Oligarchy Ditch historic, FHWA and CDOT have determined that the Package A commuter rail improvements would result in *no adverse effect* to the entire Oligarchy Ditch (5LR.4832). See **Figure 5-68** and **Figure 5-69** for uses associated with Package A.

#### **Package B**

There would be no use of the Oligarchy Ditch resulting from transportation improvements associated with Package B.

#### **Preferred Alternative**

Segment 5BL.4832.28: The proposed commuter rail line under the Preferred Alternative would include the addition of a passing track on the east side of the existing rail line and a maintenance road on the west side in this area. The new embankment supporting the tracks and ballast would require an area approximately 48 feet wide to the east and the embankment supporting the new roadbed would require an area approximately 16 feet on the west. Thus, the existing culvert that carries Oligarchy Ditch underneath the railway would be extended; impacting 64 linear feet of the open ditch that would have to be placed in a new culvert (see **Figure 5-70**). Although the physical integrity of the ditch segment would be compromised by placing a portion of it into a culvert, this change affects only a very small percentage of the overall linear resource.

Segment 5BL.4832.26: Portions of this segment of the historic Oligarchy Ditch would pass through the proposed route of the new commuter rail line under the Preferred Alternative. The ditch meanders across this area, often running parallel to the planned railroad alignment. A segment of the ditch was realigned during construction of Ken Pratt Boulevard. (SH 119), with the old channel being covered up and a 1,200-foot-long portion of the ditch placed in a 1,200-foot-long culvert underneath 3rd Avenue and SH 119. The railway alignment follows a broad sweeping curve, and intersects the irregular course of the ditch west of 3rd Avenue. As a result a 61-foot-long stretch of the open ditch would have to be bridged by a new railroad structure. A total length of 61 feet of open ditch would be spanned by a new bridge (see **Figure 5-71**). The resulting overhead cover would shade the portion of the ditch located underneath the bridge, but all structural support elements such as piers or abutments, would be placed outside of the historic boundary and would not result in a direct impact to the ditch. The physical setting of the ditch segment would not be substantially compromised by placing a portion of it underneath a bridge structure.

A cumulative total of 64 feet of open ditch would be placed inside a new culvert (5BL.4832.26) and 61 feet of open ditch would flow underneath a new bridge (5BL.4832.28). Temporary construction impacts would occur during culvert installation. Because the physical integrity of the ditch segment would not be substantially compromised by placing a portion of it inside a culvert and underneath a bridge structure, and these changes affect only a very small percentage of the overall linear resource, FHWA and CDOT have determined that the Preferred Alternative commuter rail improvements would result in *no adverse effect* to the entire Oligarchy Ditch (5LR.4832). It is the intent of FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **All Possible Planning to Minimize Harm**

#### **Package A and Preferred Alternative**

A retaining wall was included in the design on the east side of the proposed commuter rail tracks at Segment 5LR.4832.28 to minimize impacts to homes and businesses in the Longmont area south of 17th Avenue. This retaining wall also mitigates the direct impact to the ditch by shortening the length of open ditch conveyed within a culvert, thus minimizing the loss of historic ditch integrity at this site. No other minimization, mitigation, or enhancement measures were possible.

The physical railway template of graded beds, rail tracks, and ballast has been reduced to the minimum width necessary to meet FRA and FTA design and safety standards. The new culvert carries the ditch along the shortest distance to cross the railroad footprint.

2



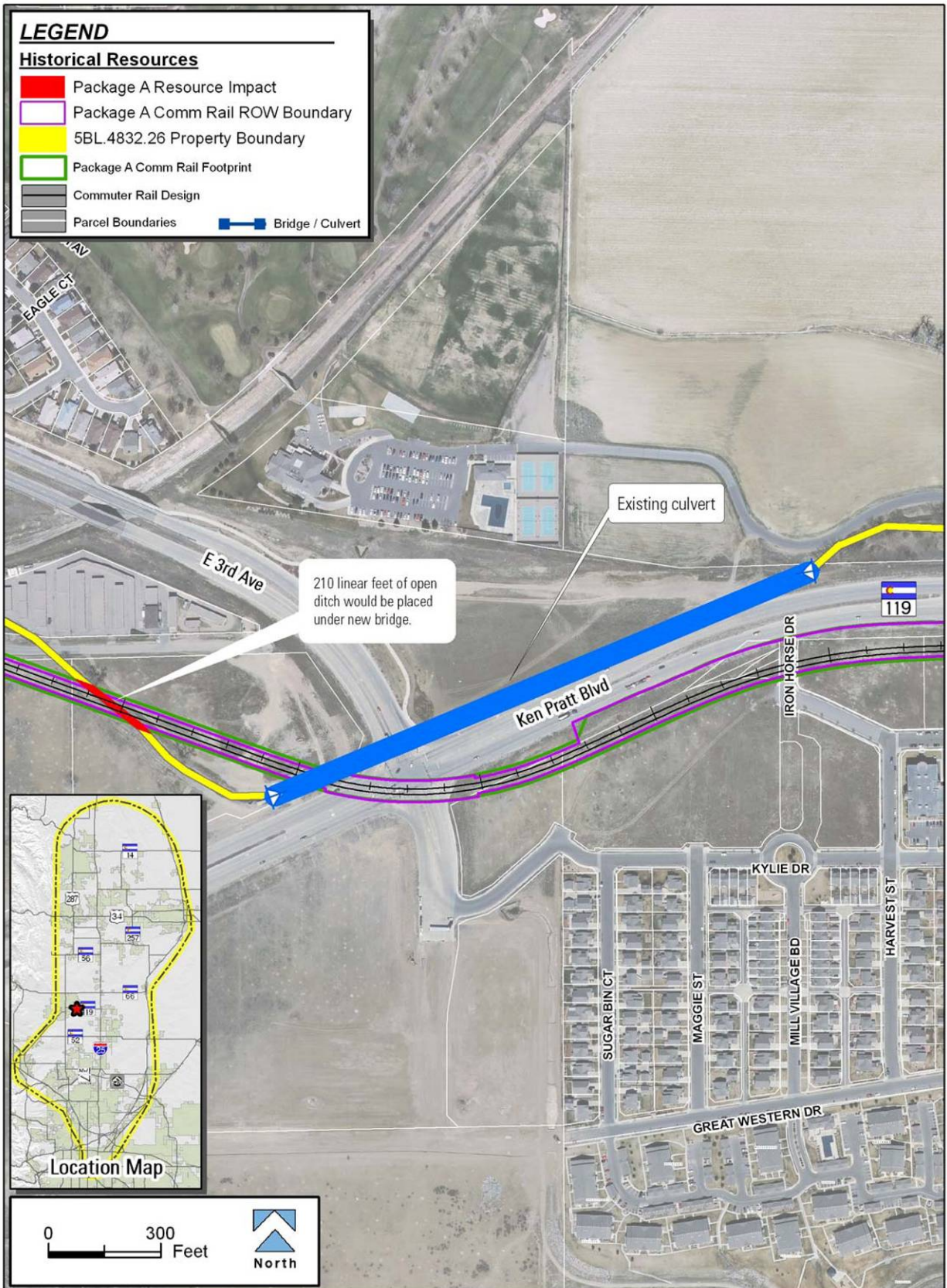
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#### **Mitigation Measures for Oligarchy Ditch**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

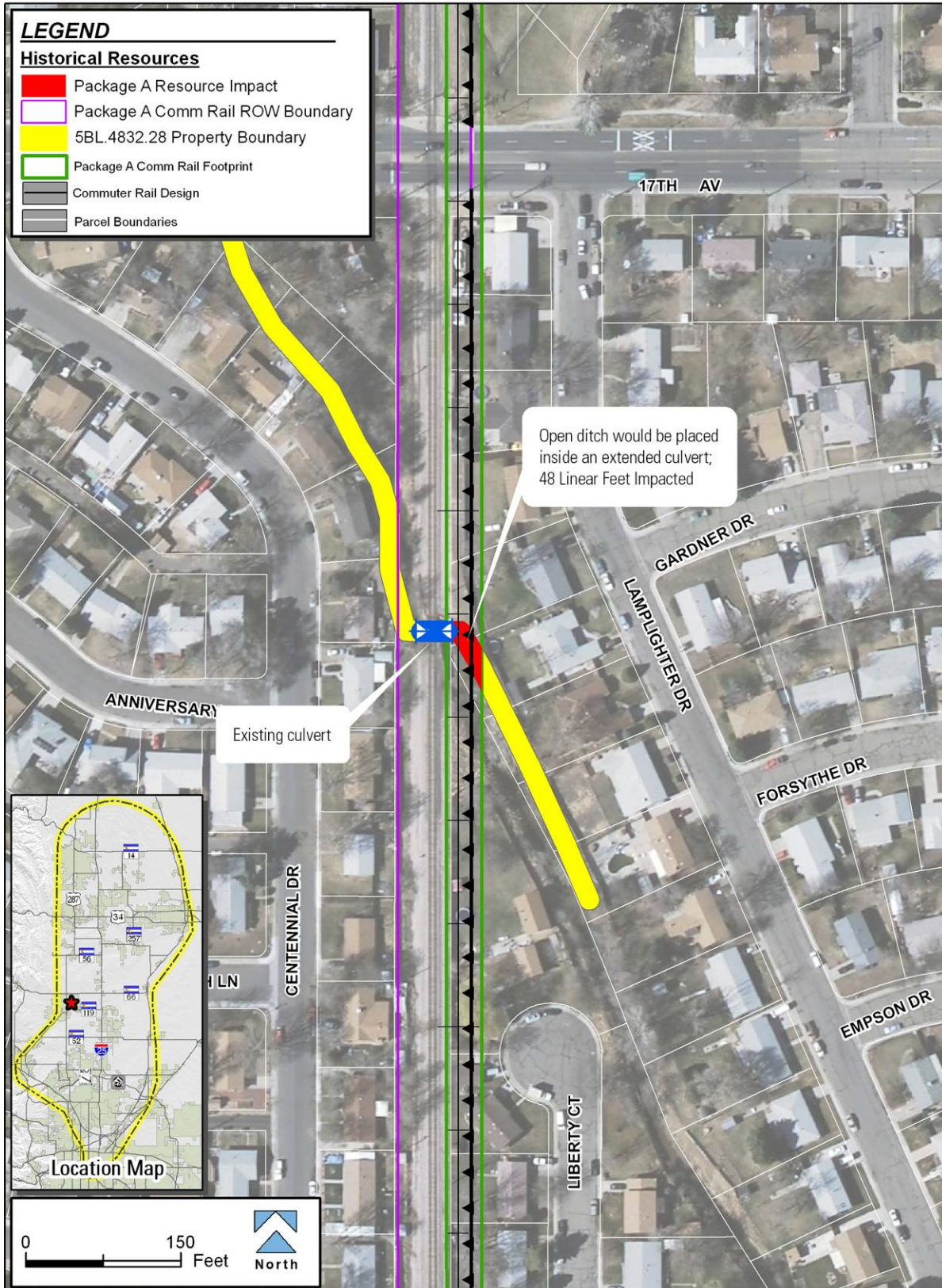
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1 Figure 5-68 Oligarchy Ditch Package A Use



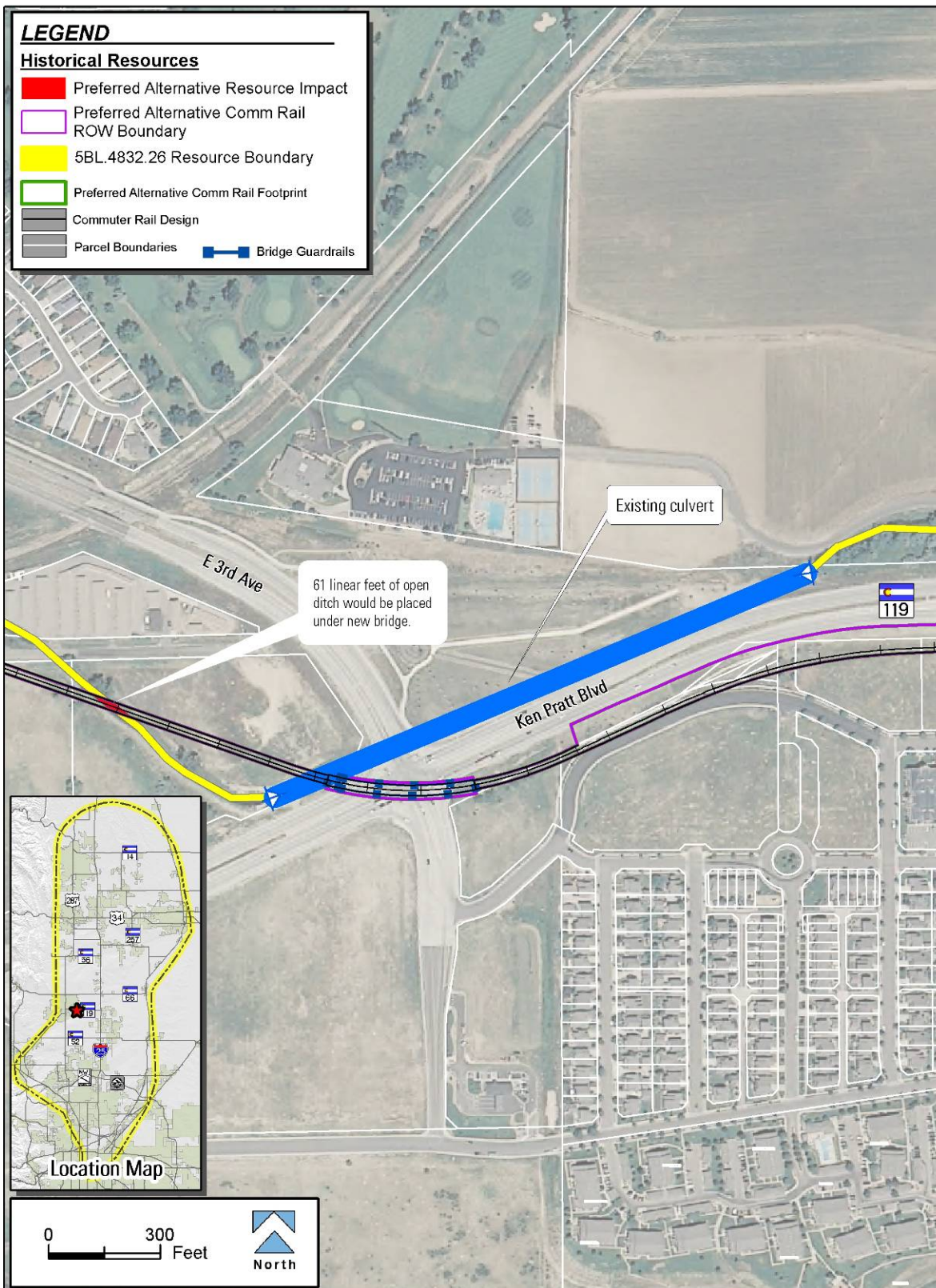


1 Figure 5-69 Oligarchy Ditch Package A Use



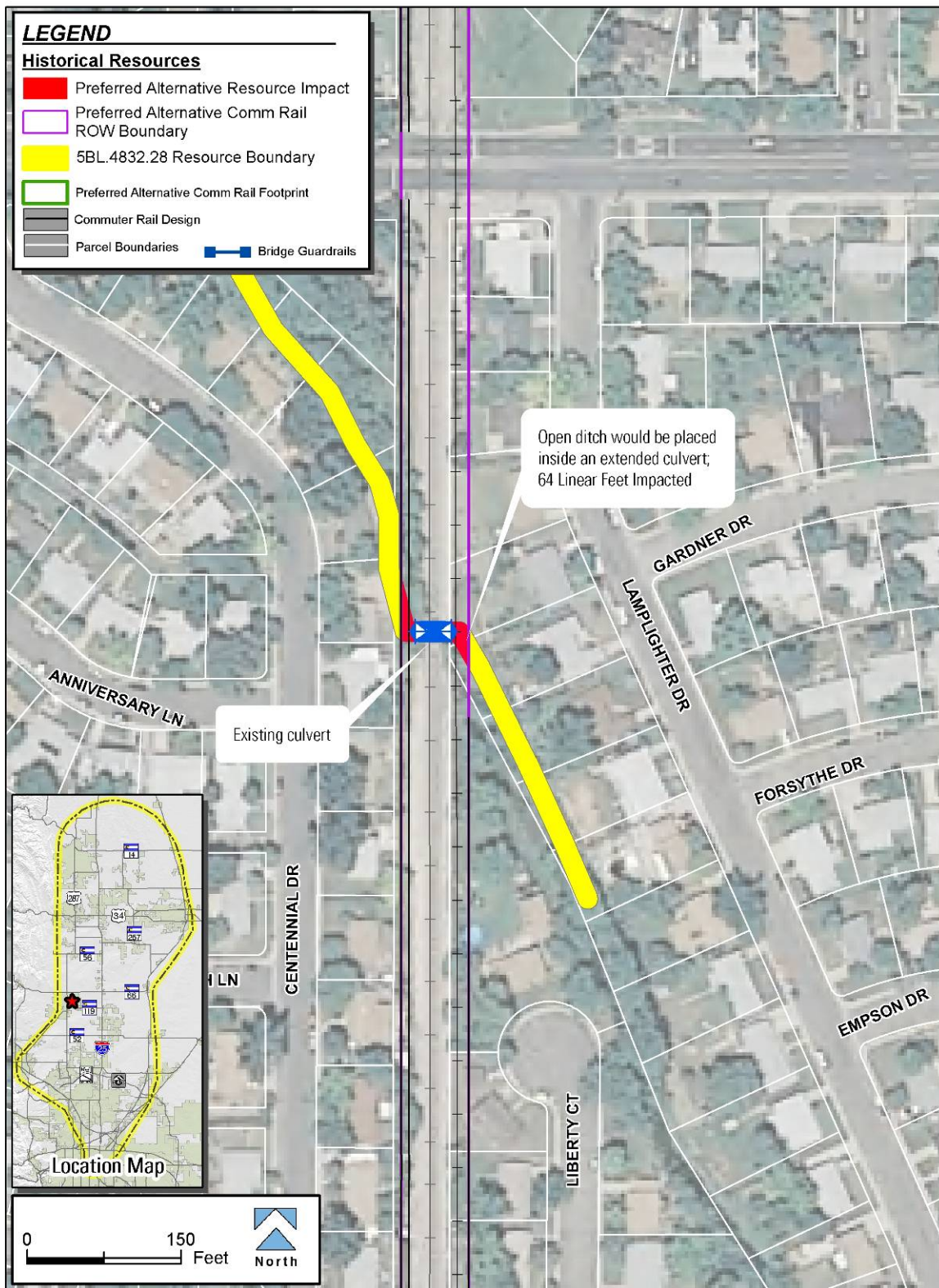


1 Figure 5-70 Oligarchy Ditch Preferred Alternative Use





1 Figure 5-71 Oligarchy Ditch Preferred Alternative Use



## Kitley House (5BL.9163)

### Description

<b>Location:</b>	846 Atwood Street Longmont
<b>Type:</b>	Historic Residence
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criteria A, B, & C

### Use of Kitley House by Package

<b>Package A A-T2 Transit Component- Commuter Rail: Longmont to FasTracks North Metro</b>	<b>Package B B-T2 Transit Component- BRT: Fort Collins to DIA</b>
A small strip of land totaling 385 square feet on the eastern edge of the property would be acquired for construction of a retaining wall that would prevent greater use of the property	No use
<b>Preferred Alternative Commuter Rail:</b>	
A small strip of land totaling 385 square feet on the eastern edge of the property would be used for construction of a retaining wall that would prevent greater use of the property	

### Resource Description

The Kitley House was the home of Rae and Mary Kitley, who both made significant contributions to Longmont's history. Rae was the son of early Longmont pioneers and one of Longmont's most influential citizens. He was a lawyer, a banker, and served for 10 years as mayor of Longmont. The house is also significant for its association with Longmont's residential development from the early to mid 20th century. The house is architecturally notable as a good example of the Craftsman style of architecture.

### Eligibility Determination

The property was initially surveyed in March 2003 and field assessed as eligible for inclusion on the NRHP under Criterion A for its association with Longmont's residential development, under Criterion B for its association with the Kitley's and under Criterion C as a good example of Craftsman architecture. It was re-evaluated in August 2010 and assessed as eligible under those same three criteria.

### Section 4(f) Use

#### Package A

The use associated with commuter rail under Package A would occur along the eastern edge of the property where a very small strip of land totaling 385 sq. ft. (0.01 acre) on the east edge of the property adjacent to the west side of the existing railroad tracks would be acquired for construction of a retaining wall that would prevent a more extensive acquisition from occurring. Removal of this strip of property would not have any impact on the historic association or architectural qualities of the house that make this property historic.

Removal of this strip of land would not diminish the architectural or setting characteristics that render this property eligible for the NRHP. Therefore FHWA and CDOT have determined that the Package A improvements would result in no adverse effect to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.



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**Package B**

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

**Preferred Alternative**

The uses associated with commuter rail under the Preferred Alternative would occur along the eastern edge of the property where a very small strip of land totaling 385 sq. ft. (0.01 acre) on the east edge of the property adjacent to the west side of the existing railroad tracks would be acquired for construction of a retaining wall that would prevent a more extensive acquisition from occurring. Removal of this strip of property would not have any impact on the historic association or architectural qualities of the house that make this property historic

Removal of this strip of land would not diminish the architectural or setting characteristics that render this property eligible for the NRHP. Therefore FHWA and CDOT have determined that the Preferred Alternative improvements would result in no adverse effect to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-72** for uses associated with the Preferred Alternative.

**Planning and Measures Included to Reach a *De Minimis* Finding**

**Package A and Preferred Alternative**

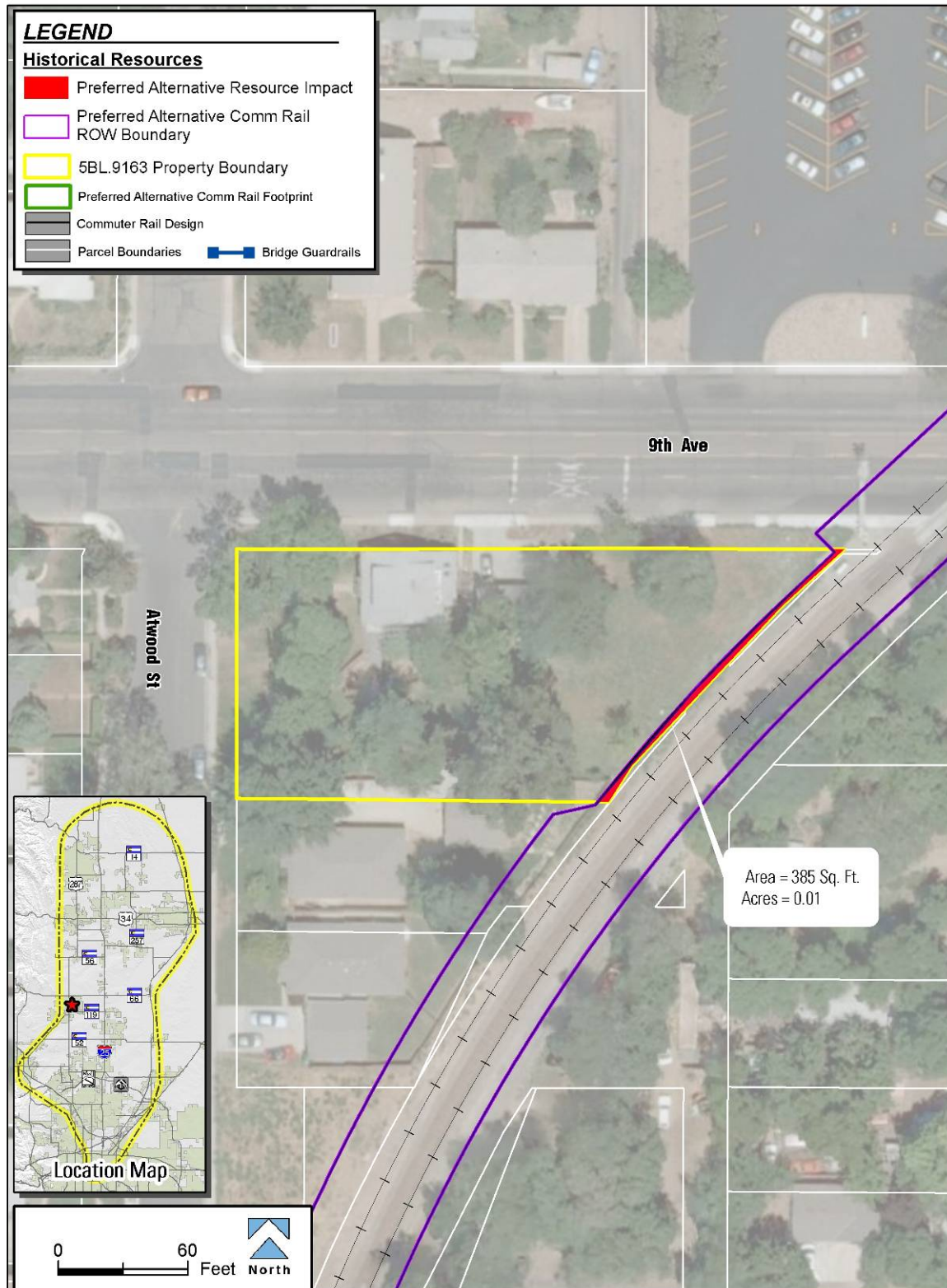
The physical railway template of graded bed, track, and ballast has been reduced to the minimum width necessary to meet FRA and FTA design and safety standards.

**Mitigation Measures for the Kitley House**

- Detailed recording of the affected property in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Appropriate BMPs will be employed ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

2

1 Figure 5-72 Kitley House – Preferred Alternative



## Big Thompson Ditch (5LR.1729)

### Description

<b>Location:</b>	Ditch runs east-west across north Longmont area
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Big Thompson Ditch by Package

<b>Package A</b> <b>A-T2 Transit Component- Commuter Rail:</b> <b>Longmont to FasTracks North Metro</b>	<b>Package B</b> <b>B-T2 Transit Component- BRT:</b> <b>Fort Collins to DIA</b>
A total of 60 feet placed into a culvert extension	No use
<b>Preferred Alternative Commuter Rail:</b>	
No use	

### Resource Description

The entire ditch (5LR.1729) is ten miles long and is one of the oldest in the area. The 2,216-foot-long segment crosses the BNSF RR just north of SH 402 in Loveland. The ditch parallels the railroad for 485 feet before turning east and passing under the railroad in a concrete box culvert. The six-foot-wide ditch is concrete lined and west of the railroad and unlined east of the BNSF.

### Eligibility Determination

The ditch is NRHP-eligible due to its ties to the City of Loveland and the successful development of high plains irrigation under Criterion A. The ditch has been realigned and concrete lined, compromising the historic integrity within the setting, and is non-supportive of the greater site.

### Section 4(f) Use

#### Package A

Under Package A the new commuter rail track would be placed east and adjacent to the existing track. At the existing BNSF crossing, the ditch is conveyed underneath the railway in a 35-foot-long culvert pipe. This pipe would be extended and the ditch realigned 60 feet east to accommodate the new track. Part of this length is to alter the ditch outfall from a perpendicular bend as it exits the railroad crossing to a smoother angled alignment for the purpose of preventing ditch erosion during higher flows.

Because the qualities that make the entire resource NRHP-eligible have already been compromised by modifications associated with construction of the BNSF railroad and Package A improvements are minor in relative extent, FHWA and CDOT have determined that Package A would result in *no adverse effect* to the Big Thompson Ditch. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-73** for uses associated with Package A.

#### Package B

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

#### Preferred Alternative

There is no direct use of any portion of this resource resulting from Preferred Alternative transportation improvements.



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## **Planning and Measures Included to Reach a *De Minimis* Finding**

### ***Package A***

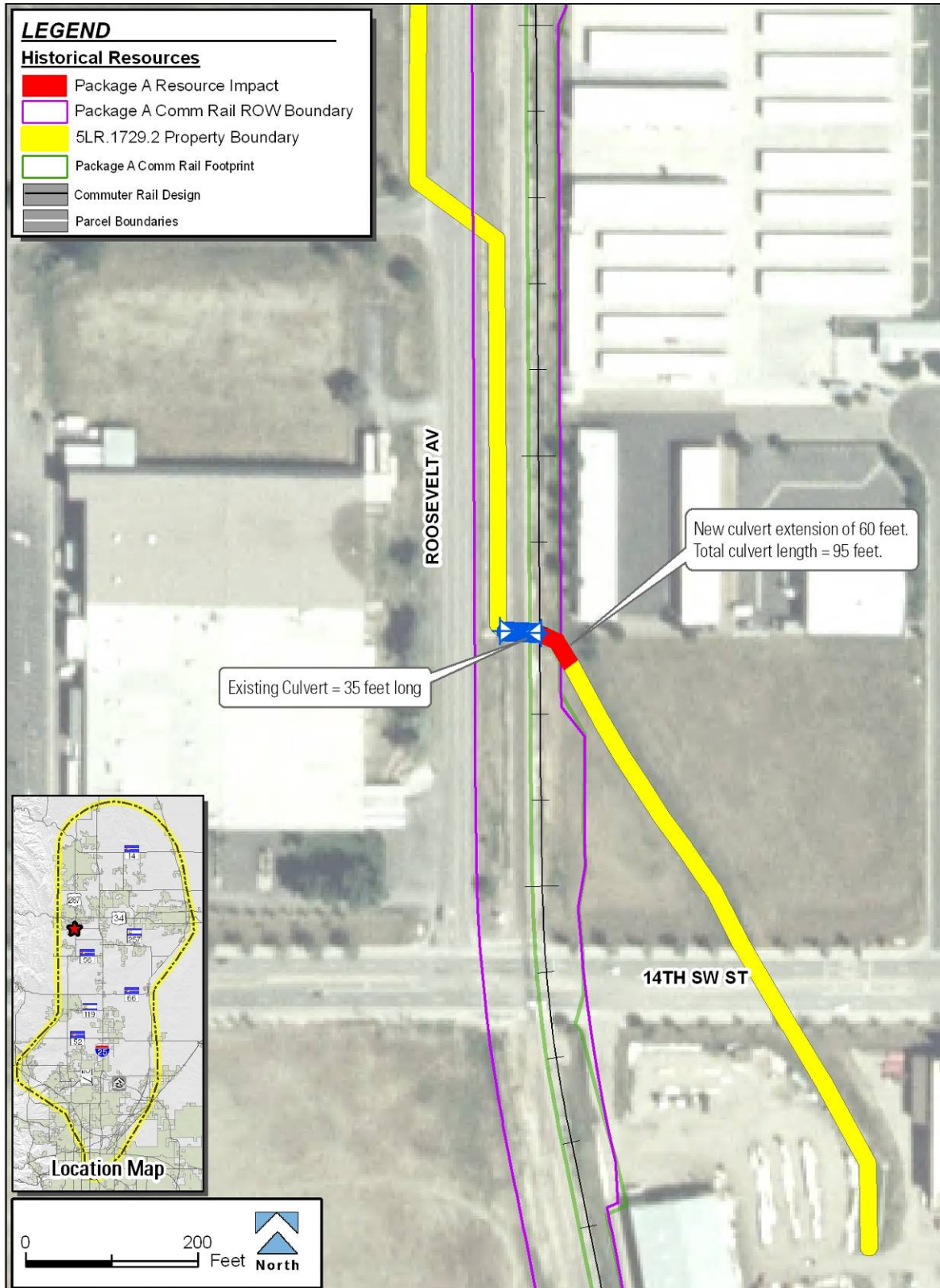
The physical railway template of graded bed, track, and ballast has been reduced to the minimum width necessary to meet FRA and FTA design and safety standards.

### **Mitigation Measures for Big Thompson Ditch**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs to will be employed ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

2

1 Figure 5-73 Big Thompson Ditch Package A Use



## Great Western Sugar Factory (5BL.513)

### Description

<b>Location:</b>	11939 and 11801 Sugarmill Road
<b>Type:</b>	Historic buildings/historic district
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Great Western Sugar by Package

Package A A-T2 Transit Component- Commuter Rail: <u>Longmont to FasTracks North Metro</u>	Package B B-T2 Transit Component-BRT: Fort Collins to DIA
A total of 0.33 acre would be used for pedestrian walkway	No use
<b>Preferred Alternative Commuter Rail:</b>	
No use	

### Resource Description

The Great Western Sugar Factory is located at 11939 and 11801 Sugarmill Road in Longmont. This sugar beet processing factory was built in 1903 and operated into the 1970s. The 3.72-acre factory site contains several beet processing buildings, as well as industrial features, including storage silos located north of Sugarmill Road.

### Eligibility Determination

The Great Western Sugar Factory (5BL.513) is eligible for the NRHP under Criterion A for its significant role in the very important sugar beet industry in Colorado, as well as its major contribution to the economic development of the Longmont area.

### Section 4(f) Use

#### Package A

Proposed commuter rail improvements in the vicinity of the Great Western Sugar Factory site include a station platform, park-&-Ride lots, and a pedestrian walkway from the station platform to the south parking lot. The station platform intrudes slightly into the north edge of the sugar factory site, and the proposed pedestrian walkway extends from the platform through the northwestern corner of the property to access a proposed parking lot that would be located just west of the factory site. These direct impacts amount to 0.33 acre. None of the buildings or other standing industrial features that contribute to the property's significance would be affected by these commuter rail facilities.

Because the proposed transportation improvements would not substantially diminish or alter architectural or setting characteristics that render the property eligible for the NRHP, FHWA and CDOT have determined that Package A commuter rail improvements would result in *no adverse effect* to the resource.

It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-74** for uses associated with Package A.

#### Package B

There is no direct use of any portion of this resource resulting from Package B transportation improvements.



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**Preferred Alternative**

There is no direct use of any portion of this resource resulting from Preferred Alternative transportation improvements.

**Planning and Measures Included to Reach a *De Minimis* Finding**

**Package A**

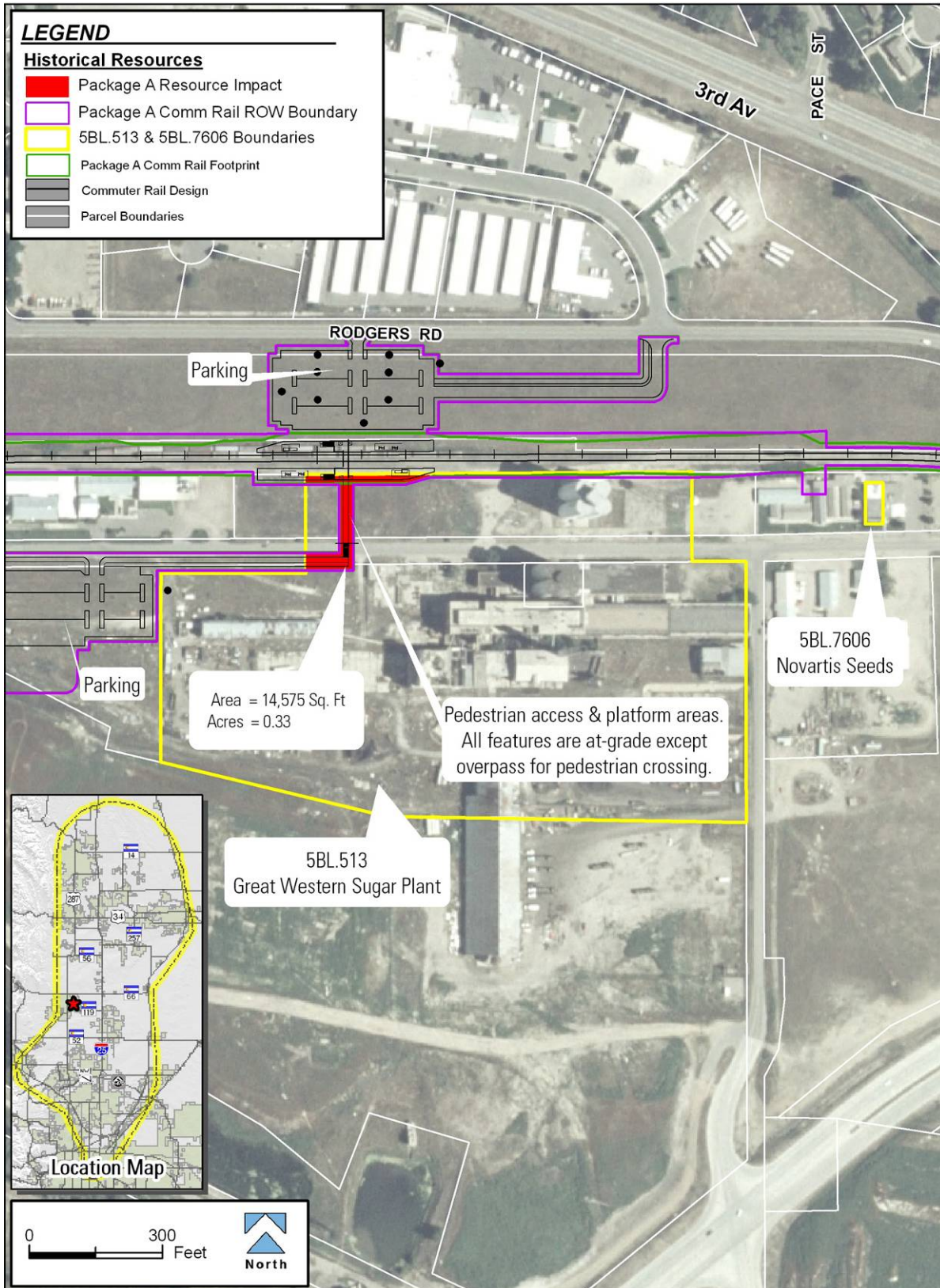
This property is located near the SH 119 and 3rd Avenue intersection. The original proposed commuter rail alignment was designed to run along Sugar Mill Road, through the historic property. To minimize use of the property, the alignment was shifted north to the existing Great Western Railroad right-of-way, and parking features were relocated from the historic property.

**Mitigation Measures for the Great Western Sugar Factory**

- Property acquisition will be completed under the Uniform Relocation Act.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be re-landscaped.

2

1 Figure 5-74 Great Western Sugar Factory Package A Use



## Sandstone Ranch (5WL.712)

### Description

<b>Location:</b>	T2N/R68W, SH 119 just east of Longmont
<b>Type:</b>	Historic district
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership/Jurisdiction:</b>	City of Longmont
<b>Significance:</b>	NRHP-listed, Criteria A, B, and C

### Use of Sandstone Ranch by Package

<b>Package A</b> <b>A-T2 Transit Component- Commuter Rail:</b>	<b>Package B</b> <b>B-T2 Transit Component-BRT: 120th to Denver</b>
<b><u>Longmont to FasTracks North Metro</u></b>	
A total of 2.17 acres of unused land within the historic district used for new railroad right-of-way	No use
<b><u>Preferred Alternative Commuter Rail:</u></b>	
A total of 2.17 acres of unused land within the historic district used for new railroad right-of-way.	

### Resource Description

The Sandstone Ranch is located on SH 119 just east of Longmont. The ranch is associated with Morse Coffin, one of the early settlers in this area. Morse Coffin settled in Boulder County in 1859 and became a preeminent agriculturalist and co-founder of the first public school district in Colorado. The City of Longmont now owns the ranch property, which is now designated Sandstone Ranch Park. Portions of the former ranch have been altered recently by gravel mining, post-mining reclamation, and multi-use recreational development by the City of Longmont. The only intact ranchland in the northern portion of the property is a riparian corridor surrounding the Union Reservoir Outlet Ditch/ Coffin Spring Gulch Ditch (5WL.2877.1).

### Eligibility Determination

The ranch was NRHP-listed in 1984 under Criteria A, B, and C. The Sandstone Ranch is eligible under Criterion A because of its important association with early settlement and agricultural development in Weld County. It is also eligible under Criterion B because of its direct association with Morse H. Coffin, an important historical figure, and under Criterion C because of the architectural significance of the Coffin farmhouse. The historic district boundary is currently being evaluated for re-definition to exclude the areas modified by construction of public recreational facilities and areas modified by gravel mining.

### Section 4(f) Use

#### **Package A**

The proposed commuter rail facilities along SH 119 would necessitate acquisition of new right-of-way within the extreme northern edge of the Sandstone Ranch historic district. This land would be needed to provide space for the new commuter rail bed, tracks, and ballast. The area subject to direct impacts comprises 2.17 acres. In addition to the small size of the impacted area, the northern portion of the historic district has lost most of its integrity due to recent development of sports fields by the City of Longmont.



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The historic ranch buildings would be located approximately 0.5 mile from passing trains and, therefore, would not be affected by noise and vibration impacts. The commuter rail tracks would run along the edge of the northern portion of the historic district that has lost nearly all integrity. No indirect effects are expected that would harm the function, setting, atmosphere, or attributes that render this district NRHP-eligible. Therefore, FHWA and CDOT have determined that Package A commuter rail improvements would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-75** for uses associated with Package A.

#### **Package B**

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

#### **Preferred Alternative**

Under the Preferred Alternative widening of SH 119 to accommodate one commuter rail track would necessitate acquisition of new right-of-way within the extreme northern edge of the Sandstone Ranch. This land would be needed to provide space for the new commuter rail bed, tracks, and ballast. The area subject to use comprises 1.45 acres. In addition to the small size of the use, the northern portion of the site has lost most of its integrity due to recent development of sports fields by the City of Longmont (see **Figure 5-76**).

The historic ranch buildings are located too far away to be affected by noise and vibration impacts from passing trains. The commuter rail tracks would run along the edge of the northern portion of the historic district that has lost nearly all integrity. No indirect effects are expected which would harm the function, setting, atmosphere, or attributes that render this district NRHP-eligible.

The proposed transportation improvements would not substantially diminish or alter characteristics that render the property eligible for the NRHP. For all of these reasons, FHWA and CDOT have determined that the Preferred Alternative would result in *no adverse effect* to the resource. It is the intent of the FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

#### **Package A and Preferred Alternative**

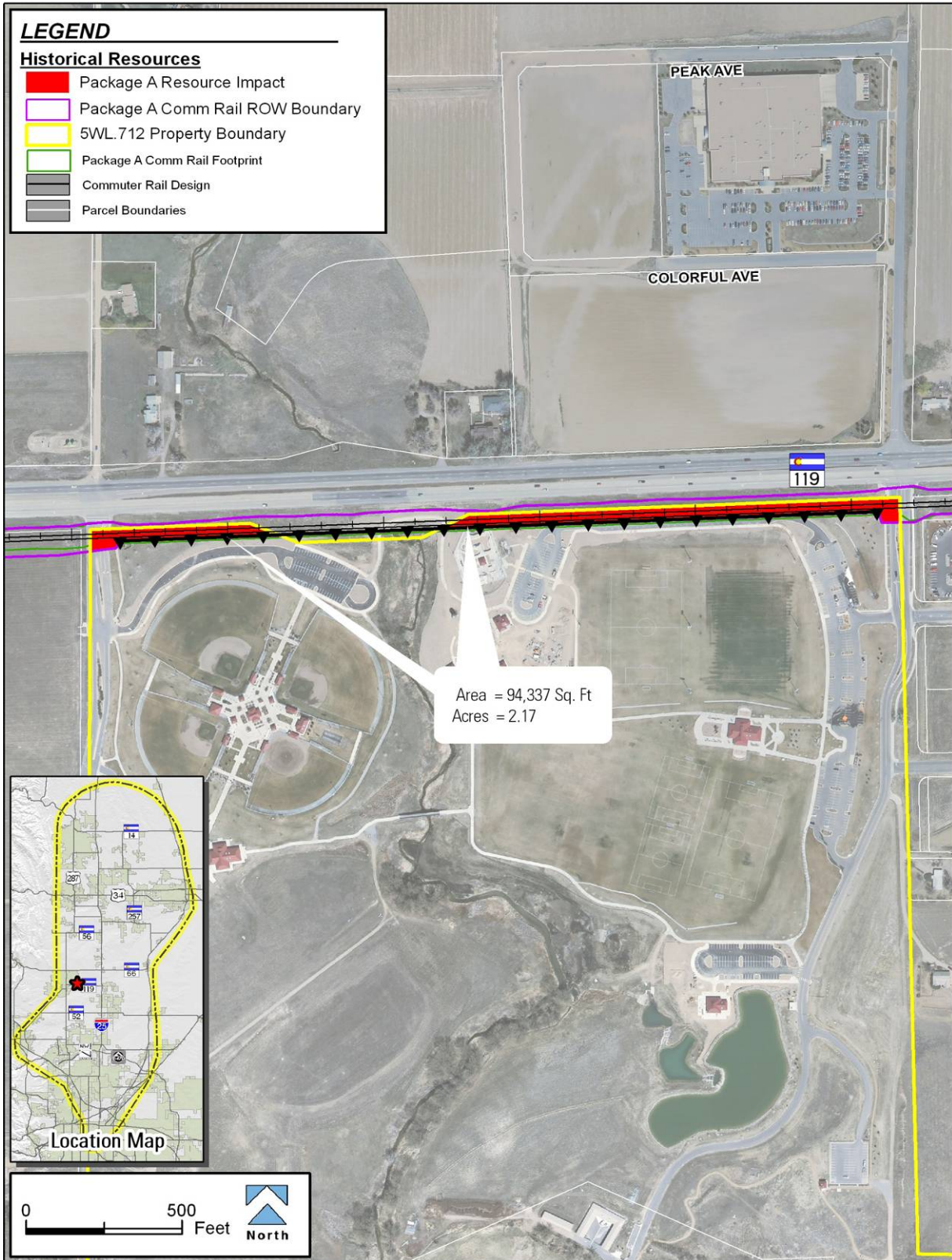
A retaining wall was included on the south side of the proposed tracks to mitigate use of the park. Otherwise, all railway template widths are reduced to the minimum width necessary to meet FRA and FTA design and safety standards.

#### **Mitigation Measures for the Sandstone Ranch**

- Property acquisition will be completed under the Uniform Relocation Act.
- Retaining walls used to minimize surface use.
- Operation of recreational facilities during construction will be maintained.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

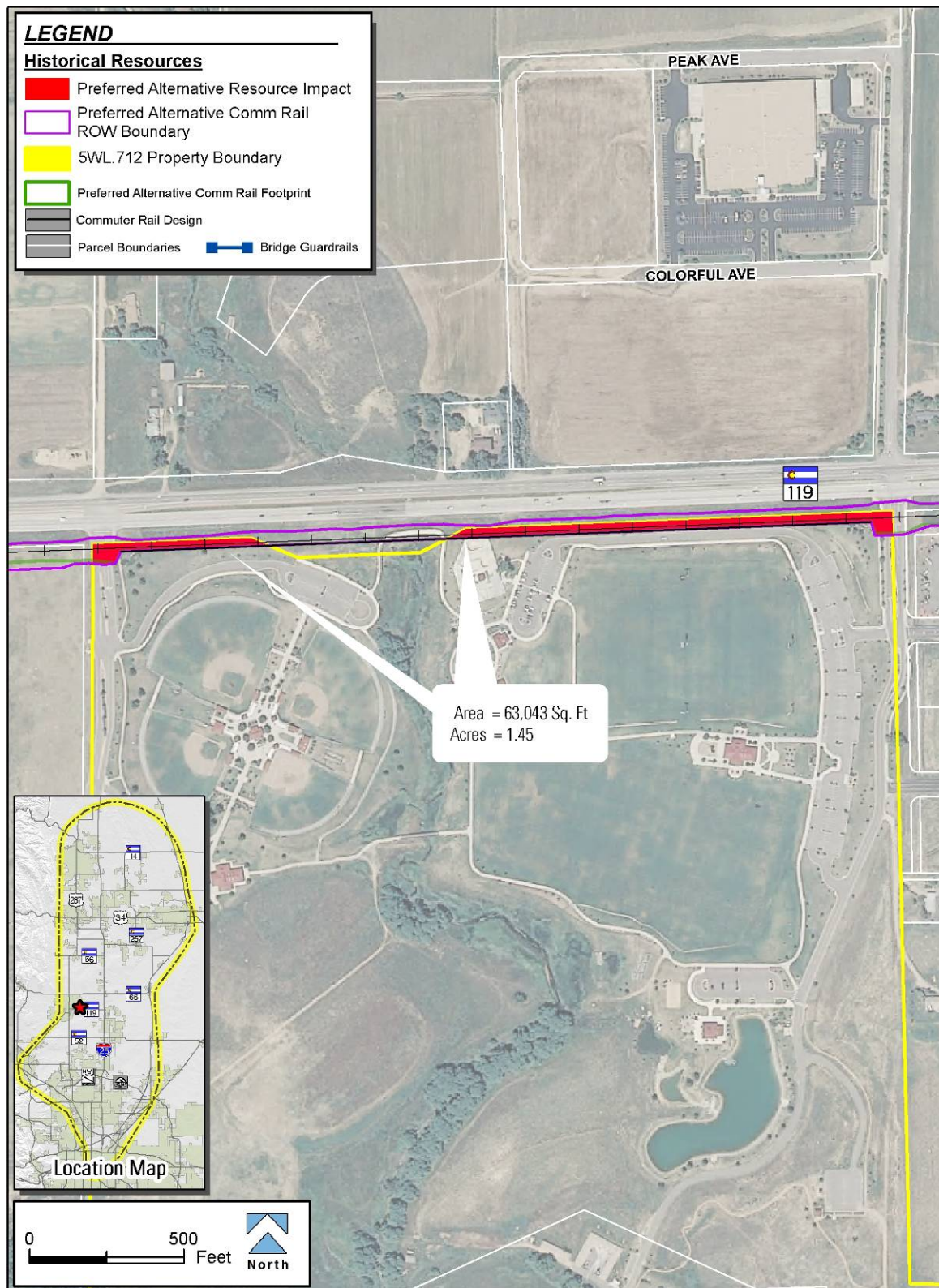
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1 Figure 5-75 Sandstone Ranch Package A Use





1 Figure 5-76 Sandstone Ranch Preferred Alternative Use





## Boulder and Weld County Ditch (5WL.5461)

### Description

<b>Location:</b>	T2N/R68W, Sec 28 NW ¼ of NW ¼ of SE ¼ of NE ¼ (West end) T2N/R68W, Sec 28 NW ¼ of NW ¼ of SE ¼ of NW ¼ (East end)
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Boulder and Weld County Ditch by Package

Package A A-T2 Transit Component-Commuter Rail: Longmont to FasTracks North Metro	Package B B-T2 Transit Component-BRT: 120th to Denver
A total of 63 feet of open ditch would be placed into a new culvert	No use

#### Preferred Alternative Commuter Rail:

A total of 63 feet of open ditch would be placed into a new culvert.

### Resource Description

The entire Boulder and Weld County Ditch is approximately five miles long and draws water from a head gate on Boulder Creek. The ditch was constructed in 1871 and remains in use, supplying irrigation water for agricultural use. The segment of the earthen irrigation ditch passing through the commuter rail corridor is approximately 684 feet (0.13 mile) long, 20 feet wide, and 6.5 feet deep. The surrounding land is rural in character.

### Eligibility Determination

The Boulder and Weld County Ditch is eligible for the NRHP under Criterion A because of its important association with the early development of agriculture in Weld County. The segment of the ditch within the project APE retains sufficient integrity of location, setting, feeling, and use to support the eligibility of the entire linear resource.

### Section 4(f) Use

#### Package A

In the vicinity of the Boulder and Weld County Ditch, the commuter rail alignment closely parallels CR 7, beneath which the ditch crosses in a culvert. The commuter rail design would include a new concrete box culvert to accommodate the historic ditch. Approximately 63 linear feet of the ditch would be directly impacted by being placed in a culvert beneath the commuter rail facility.

Construction of the concrete culvert structure would likely require temporary access to the historic property for equipment access and culvert installation activities, resulting in a temporary occupancy. The ditch would likely be diverted during demolition of the old culvert and installation of the replacement culvert, but would remain operational, and irrigation water would be protected from encroachment by construction.

Although a portion of the open ditch would be placed in a culvert, this change affects only a very small percentage of the entire linear resource. Therefore, FHWA and CDOT have determined that Package A commuter rail improvements would result in *no adverse effect* to the entire Boulder and Weld County Ditch. It is the intent of FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-77** for uses associated with Package A.

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### **Package B**

There is no direct use of any portion of this resource resulting from Package B transportation improvements.

### **Preferred Alternative**

In the vicinity of the Boulder and Weld County Ditch, the Preferred Alternative commuter rail alignment closely parallels WCR 7, beneath which the ditch crosses in a culvert. The commuter rail design would include a new CBC to accommodate the historic ditch. Approximately 63 linear feet of the ditch would be used by being placed in a culvert beneath the commuter rail facility (see **Figure 5-78**).

Construction of the concrete culvert structure would likely require temporary access to the historic property for equipment access and culvert installation activities. The ditch would likely be diverted during demolition of the old culvert and installation of the replacement culvert, but would remain operational and irrigation water would be protected from encroachment by construction. All disturbance caused by construction equipment or activities would be temporary in nature and affected areas would be restored to their original condition and appearance.

Although a portion of the open ditch would be placed in a culvert, this change affects only a very small percentage of the entire linear resource. FHWA and CDOT have determined that the Preferred Alternative commuter rail improvements would result in *no adverse effect* to the entire Boulder and Weld County Ditch. It is the intent of FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

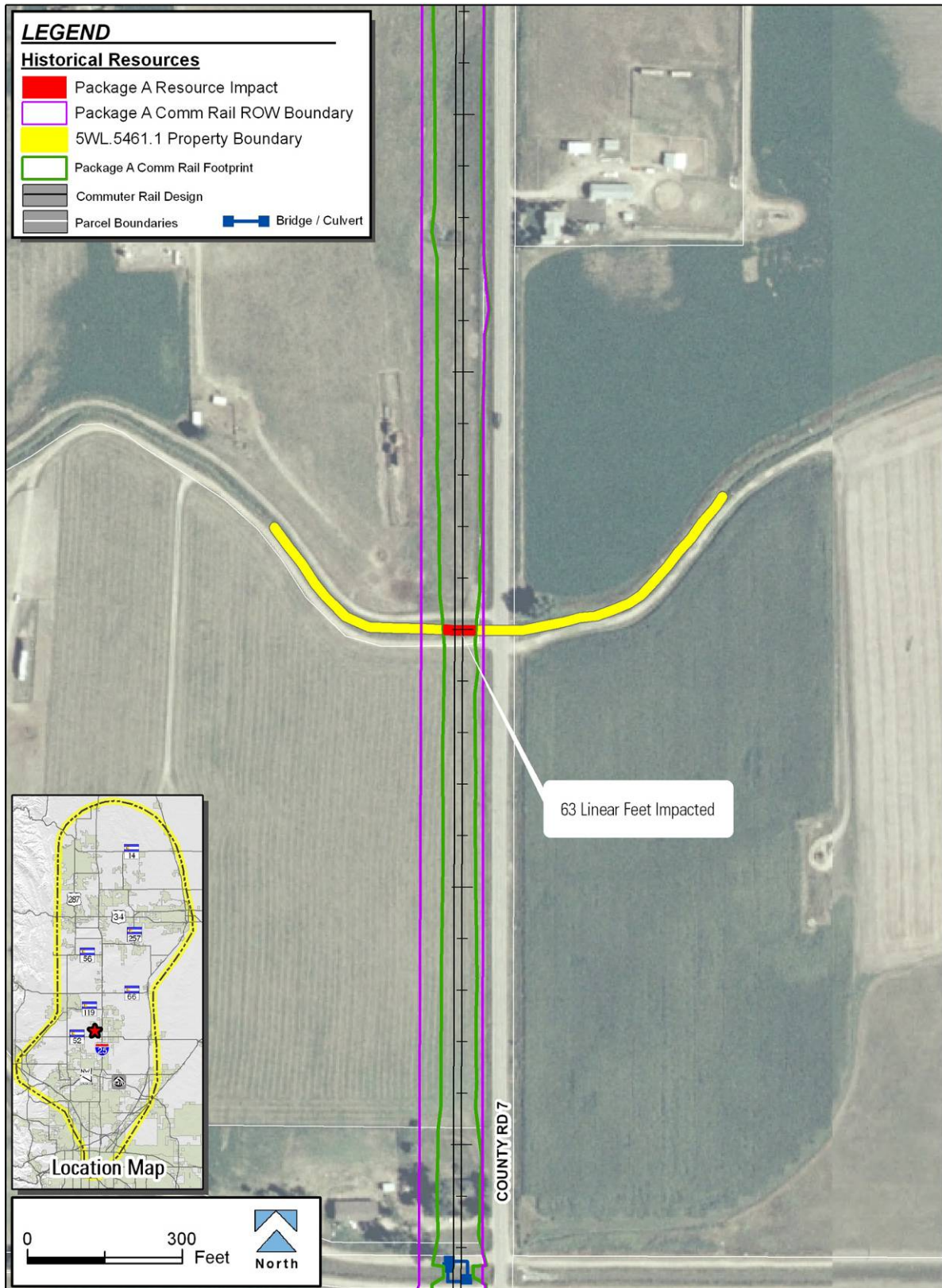
The physical railway template of grade bed, rail track, and ballast has been reduced to the minimum width necessary to meet FRA and FTA design and safety standards. The new culvert carries the ditch along the shortest distance to cross the railway footprint.

### **Mitigation Measures for the Boulder and Weld County Ditch**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

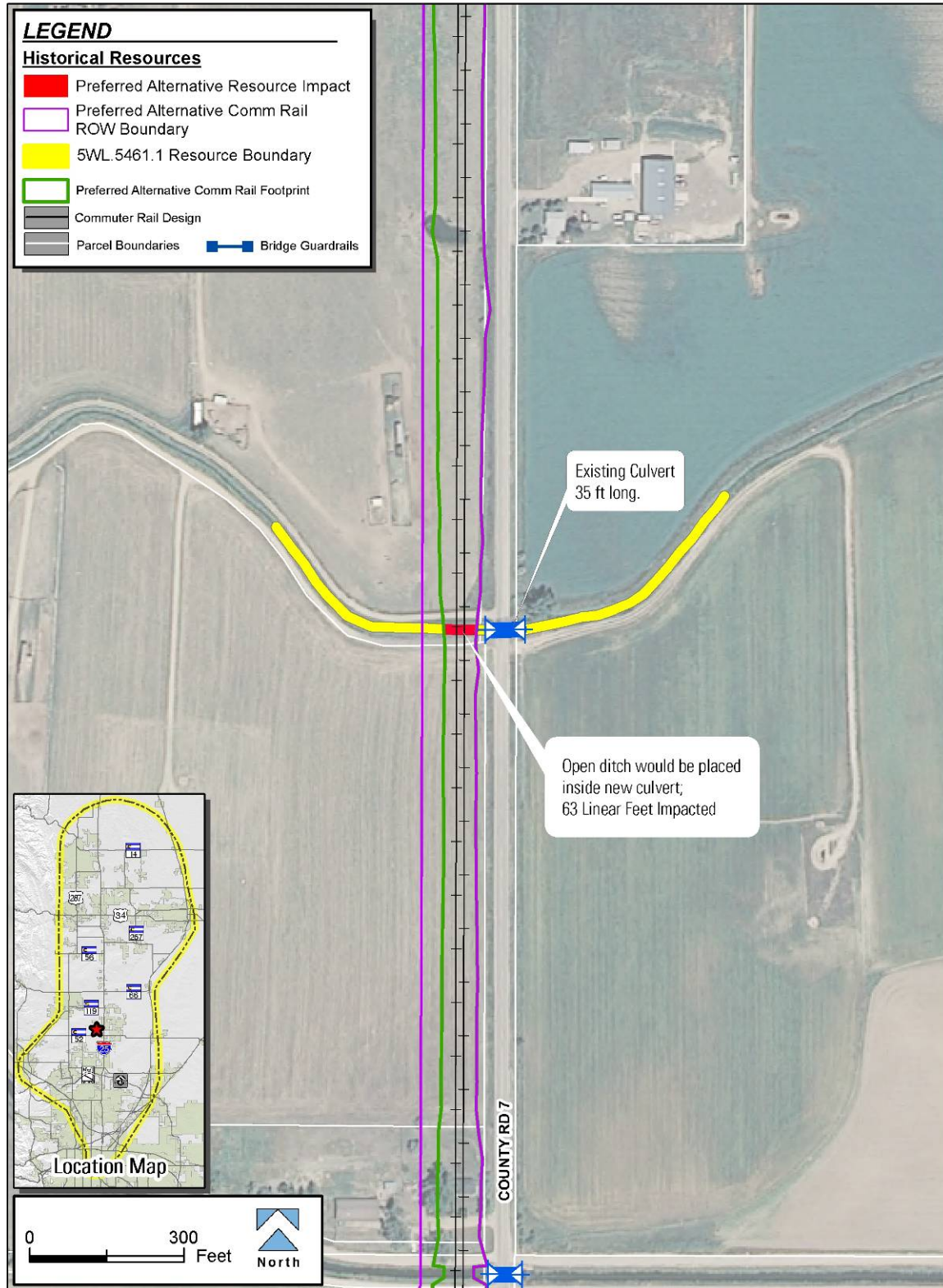
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1 Figure 5-77 Boulder and Weld County Ditch Package A Use





1 Figure 5-78 Boulder and Weld County Ditch Preferred Alternative Use



## Rural Ditch (5WL.1974)

### Description

<b>Location:</b>	T2N/R68W, SW ¼ Sec 15, located near CR 7 south of Rinn, CO and 600 feet south of CR 2050.
<b>Type:</b>	Historic ditch
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of Rural Ditch by Package

Package A A-T2 Transit Component-Commuter Rail: Longmont to FasTracks North Metro	Package B B-T2 Transit Component-BRT: 120th to Denver
A total of 130 feet of open ditch would be placed into a new culvert	No use

#### Preferred Alternative Commuter Rail:

A total of 108 feet of open ditch would be placed into a new culvert.

### Resource Description

The entire Rural Ditch is approximately four miles long. Two segments of the ditch are present within the APE. Segment 5WL.1974.1 crosses I-25 diagonally from southwest to northeast immediately north of SH 119, passing under SH 119 and I-25 in two existing culverts. The segment length is 3,327 feet, and is a 10-foot wide earthen ditch.

Segment 5WL.1974.3 of the historic Rural Ditch crosses northwest to southeast within the project area. This segment (5WL.1974.3) intercepts waters of Idaho Creek at the southwest edge of the APE. The excavated 5-foot-deep, earthen ditch segment is 1,253 feet long and 20 feet wide. Both banks of the ditch areas are covered with grass. The surrounding area is rural in character.

### Eligibility Determination

The entire ditch (5WL.1974) was determined to be not eligible in 1993. The entire Rural Ditch is recommended as eligible for the NRHP under Criterion A because of its important association with the development of water rights and agriculture in northeastern Colorado. Segment 5WL.1974.3 follows the original historic alignment of the ditch, and therefore supports the eligibility of the entire linear resource. Segment 5WL.1974.1 is modified by adjacent development and road crossings at SH 119 and I-25 and does not support the eligibility of the entire resource.

### Section 4(f) Use

#### Package A

**Segment 5WL.1974.3:** The proposed new commuter rail line would pass in a northwest-southeast trajectory across this historic ditch segment. Approximately 130 feet of open ditch would need to be placed in a culvert beneath the new railroad embankment, ballast, bed, and tracks, resulting in a direct use of the resource.

Installation of the new culvert would likely require temporary use of the historic property for equipment access and minor construction activities, resulting in temporary occupancy. The ditch would remain operational, and irrigation water would be protected from encroachment by construction. Although the segment of open ditch would be placed in a culvert, this change affects only a very small percentage of the overall linear resource.

**Segment 5WL.1974.1:** Package A is in a non-improvement zone and results in no impacts.

Approximately 130 feet of open ditch would be placed inside a culvert at one segment location (5WL.1974.9). Because the physical integrity of the channel of the ditch segment would be compromised by placing it in a culvert, FHWA and CDOT have determined that the Package A transit improvements would result in *no adverse effect* with respect to the historic resource 5WL.1974 (Rural Ditch). (It is the intent of FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence.) See **Figure 5-79** for uses associated with Package A.

### **Package B**

**Segment 5WL.1974.1:** Under Package B, modifications to the center median of the highway would incorporate new BRT lanes in this area. Because the ditch is already conveyed underneath the area of highway, there would be no additional impact to the ditch segment. The ditch already lacks integrity of alignment and setting, and there is no new use expected to result from the installations planned by Package B.

### **Preferred Alternative**

**Segment 5WL.1974.3:** The proposed new commuter rail line would pass in a northwest-southeast alignment across this historic ditch segment. Approximately 108 feet of open ditch would need to be placed in a culvert beneath the new railroad embankment, ballast, bed and tracks.

Installation of the new culvert would likely require temporary use of the historic property for equipment access and minor construction activities. The ditch would remain operational and irrigation water would be protected from encroachment by construction. All disturbances caused by construction equipment or construction activities would be temporary in nature and affected areas would be restored to their original condition and appearance.

Although the segment of open ditch would be placed in a culvert, this change affects only a very small percentage of the overall linear resource.

**Segment 5WL.1974.1:** Under the Preferred Alternative modifications to the center median of the highway would incorporate new TELs in this area. Because the ditch is already conveyed underneath the area of highway there would be no additional use of to the ditch segment. Because the ditch already lacks integrity of alignment and setting, no additional indirect impacts are expected to result from the installations planned by the Preferred Alternative.

Under the Preferred Alternative 108 feet of open ditch would be placed inside a culvert at one segment locality. Temporary construction impacts would occur during culvert installation and highway construction activity. Because the physical integrity of the channel of the ditch segment has been previously compromised by placing it in a culvert, FHWA and CDOT have determined that the Preferred Alternative improvements would result in no adverse effect with respect to the historic resource 5WL.1974 (Rural Ditch). It is the intent of FHWA and CDOT to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-80** for uses associated with the Preferred Alternative.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

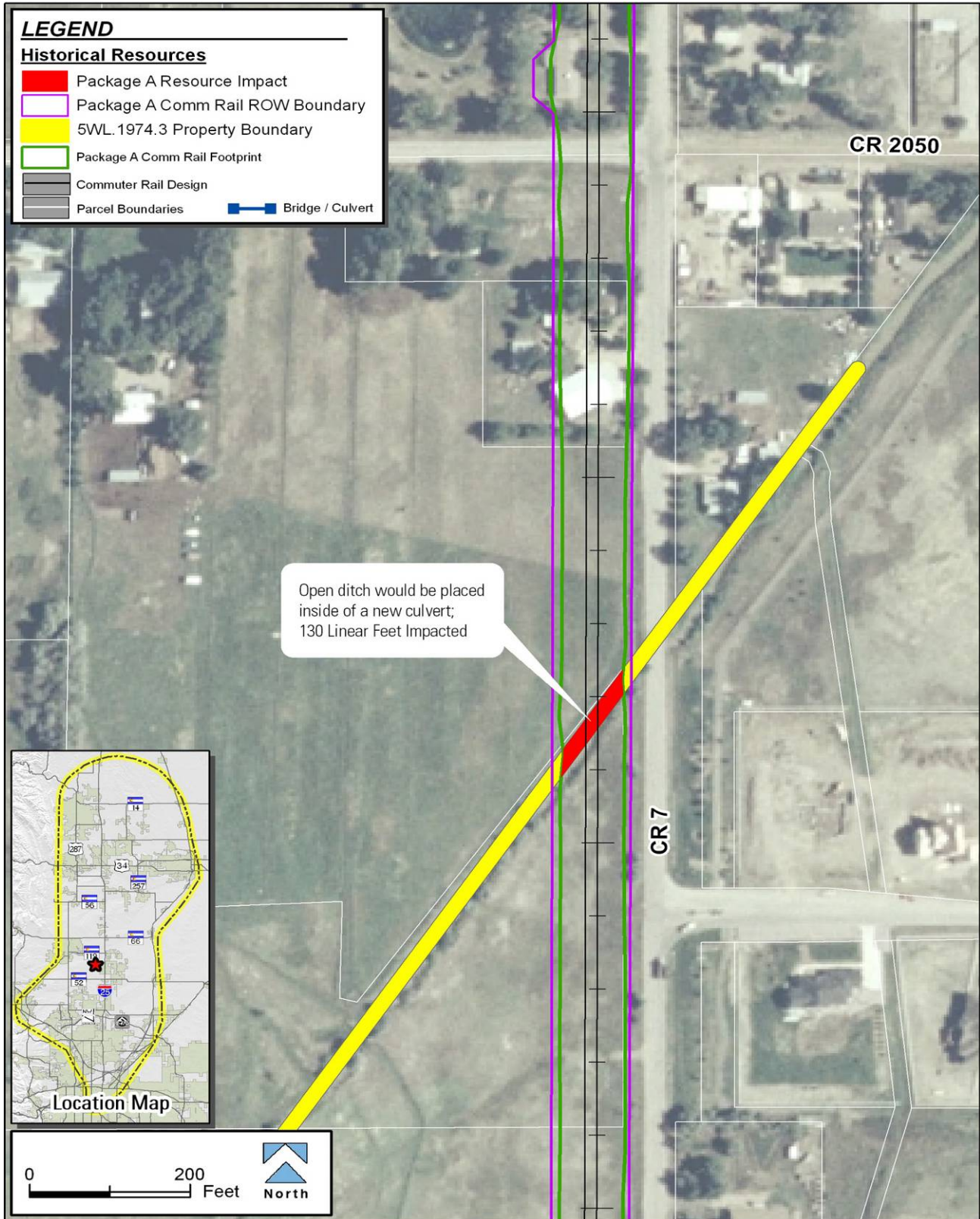
The physical railway template of graded bed, track, and underlying ballast has been reduced to the minimum width necessary to meet FRA and FTA design and safety standards. The new culvert does not alter the historic alignment of the ditch. A perpendicular crossing of the railroad footprint would minimize the culvert length, but adversely affect the historic ditch alignment.

### **Mitigation Measures for the Rural Ditch**

- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

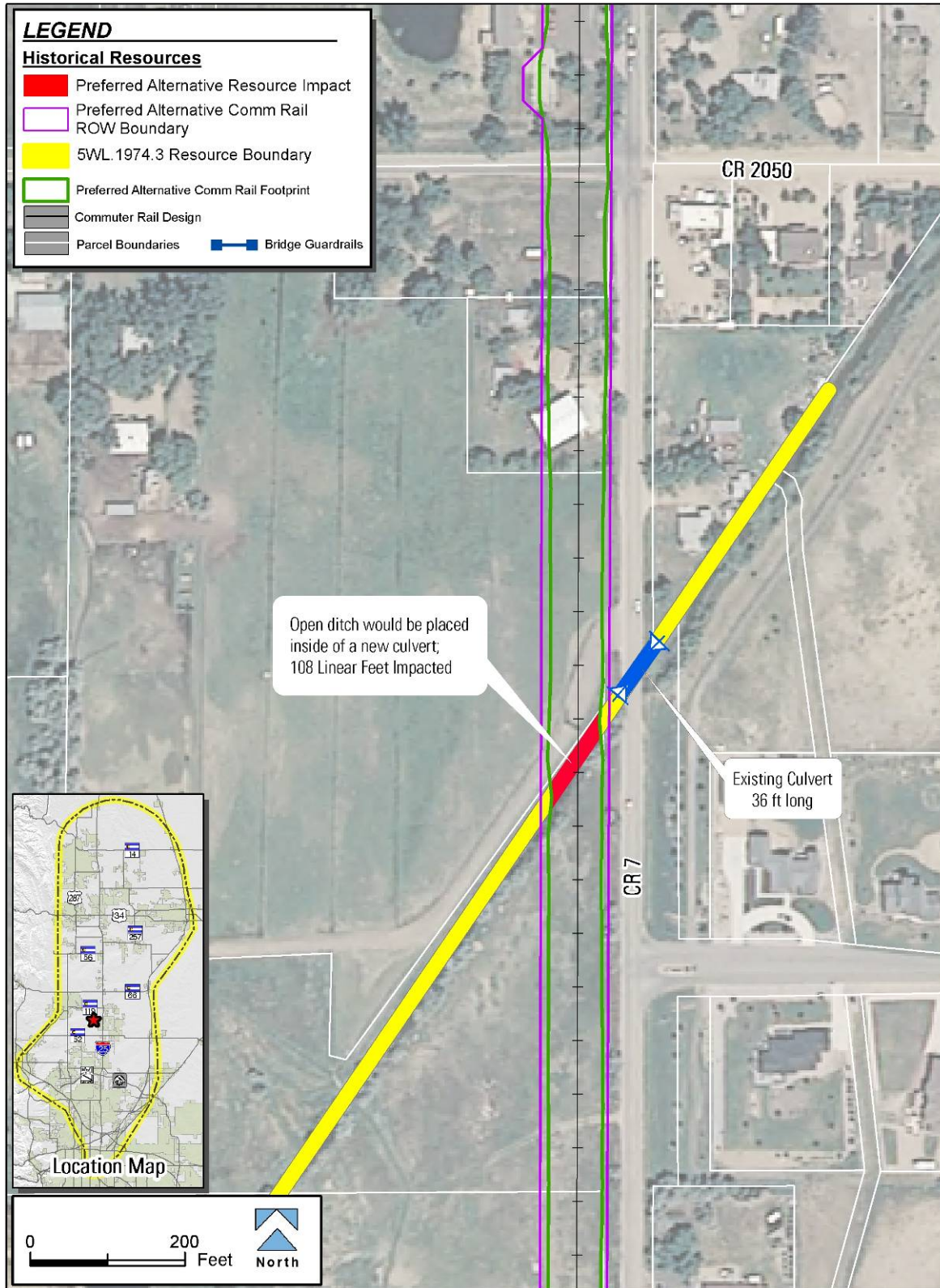


1 Figure 5-79 Rural Ditch Package A Use





1 Figure 5-80 Rural Ditch Preferred Alternative Use



## Union Pacific Railroad, Dent Branch (5WL.1317, 5AM.472)

### Description

<b>Location:</b>	T1N/R68W, NW ¼ Sec 24, to T1S/R68W, NE ¼ Sec 12
<b>Type:</b>	Abandoned historic railroad
<b>Section 106 Effect Finding:</b>	No adverse effect
<b>Ownership:</b>	Private
<b>Significance:</b>	NRHP-Eligible, Criterion A

### Use of UPRR, Dent Branch by Package

<b>Package A</b> <b>A-T2 Transit Component-Commuter Rail:</b> <b>Longmont to FasTracks North Metro</b>	<b>Package B</b> <b>B-T2 Transit Component-BRT:</b> <b>Fort Collins to DIA</b>
4.89-mile abandoned segment modernized for double-track commuter rail operations, 200 linear feet impacted	No use

#### Preferred Alternative Commuter Rail:

4.89-mile abandoned segment modernized for double-track commuter rail operations.

### Resource Description

The Dent Branch is a 39-mile-long section of the UPRR that ran through Weld and Adams Counties. The Weld County segment 5WL.1317.11 of the Dent Branch runs 2.9 miles within the project APE. The railway segment is abandoned, but rails, ties, and the ballasted roadbed remain in relatively good condition. A 3,500-foot freight bypass on the Dent Branch, located south of the Boulder Valley-Dent Branch junction, once consisted of a multiple-track complex. South of that bypass, the track reverts to a single-track alignment. Segment 5AM.472.1 is a 1.9-mile-long railway segment that follows the original single-track alignment in Adams County. Most of this segment has been abandoned. The surrounding area is rural in character.

### Eligibility Determination

The OAHF has officially declared the UPRR-Dent Branch eligible for the NRHP under Criterion A for its important role in the development of the agricultural economy of the Front Range of Colorado. Although abandoned, these two railway segments retain integrity of location and association, and, therefore, support the eligibility of the entire linear resource.

### Section 4(f) Use

#### Package A

The proposed new commuter rail would join this existing historic rail line by approaching from the northwest, then crossing over to the east side of the historic railroad, which it would closely parallel and follow southward. The commuter rail would utilize a double-track configuration, using the existing track alignment and adding a parallel track alignment following the historic UPRR Dent Branch (5WL.1317.1 and 5AM.472.1) from the way at St. Vrains junction southward. Where the new commuter rail line crosses the Dent Branch, there would be use of as many as 200 feet of track by the replacement of existing "through rail" with switching tracks and associated apparatus (see **Figure 5-81**). Although one of the new commuter rail tracks would run along the historic alignment, the existing historic bed, ballast, and grade along the entire affected extent of the historic railway would be preserved. Deteriorated ties and abandoned rail would be replaced as required to meet safety and design standards.



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A continuous 4.89 miles would be reoccupied with new track on the existing bed, ballast, and grade, and an additional new track, 15 feet away and parallel to the existing historic alignment. New commuter rail tracks along the transportation corridor would introduce new but compatible rail use and infrastructure elements to the historic setting. The proposed transportation improvements associated with Package A would not substantially diminish or alter characteristics that render the property eligible for the NRHP, FHWA and CDOT have determined that Package A commuter rail improvements would result in no adverse effect to the historic UPRR Dent Branch (5WL.1317 and 5AM.472).

### **Package B**

No direct or indirect impacts would occur at any segment locations. Therefore, FHWA and CDOT have determined that the Package B commuter rail improvements would result in *no historic properties affected* with respect to the historic UPRR Dent Branch (5WL.1317 and 5AM.472). It is the intent of FHWA and CDOT to make a finding of *de minimis*, pending SHPO concurrence.

### **Preferred Alternative**

The proposed new commuter rail line would join this existing historic rail line by approaching from the northwest. The commuter rail would utilize the existing track alignment following the historic UPRR-Dent Branch from the way at St. Vrans junction southward. There would be no use as a result of the Preferred Alternative. Although the new commuter rail would run along the historic alignment, the existing historic bed, ballast and grade along the entire affected extent of the historic railway would be preserved. Deteriorated ties and abandoned rail would be replaced as required to meet safety and design standards.

The Preferred Alternative would lay new track on the existing bed, ballast, and grade of the UPRR-Dent Branch as described in segment 5WL.1317.11. The historic railroad bed, ballast, and grade would remain intact. The installation of new sets of tracks would be compatible with the historic use of the railroad line, and would not substantially diminish or alter the function, alignment, character, or other attributes that render the railroad NRHP-eligible.

A continuous 4.89 miles would be reoccupied with new track on the existing bed, ballast and grade of the historic alignment. New commuter rail tracks along the transportation corridor would introduce new, but compatible rail use and infrastructural elements to the historic setting. The proposed transportation improvements associated with the Preferred Alternative would not substantially diminish or alter characteristics that render the property eligible for the NRHP. FHWA and CDOT therefore have determined that the Preferred Alternative commuter rail improvements would result in *no adverse effect* to the historic UPRR-Dent Branch (5WL.1317 and 5AM.472). It is the intent of FHWA and CDOT to make a finding of *de minimis*, pending SHPO concurrence.

### **Planning and Measures Included to Reach a *De Minimis* Finding**

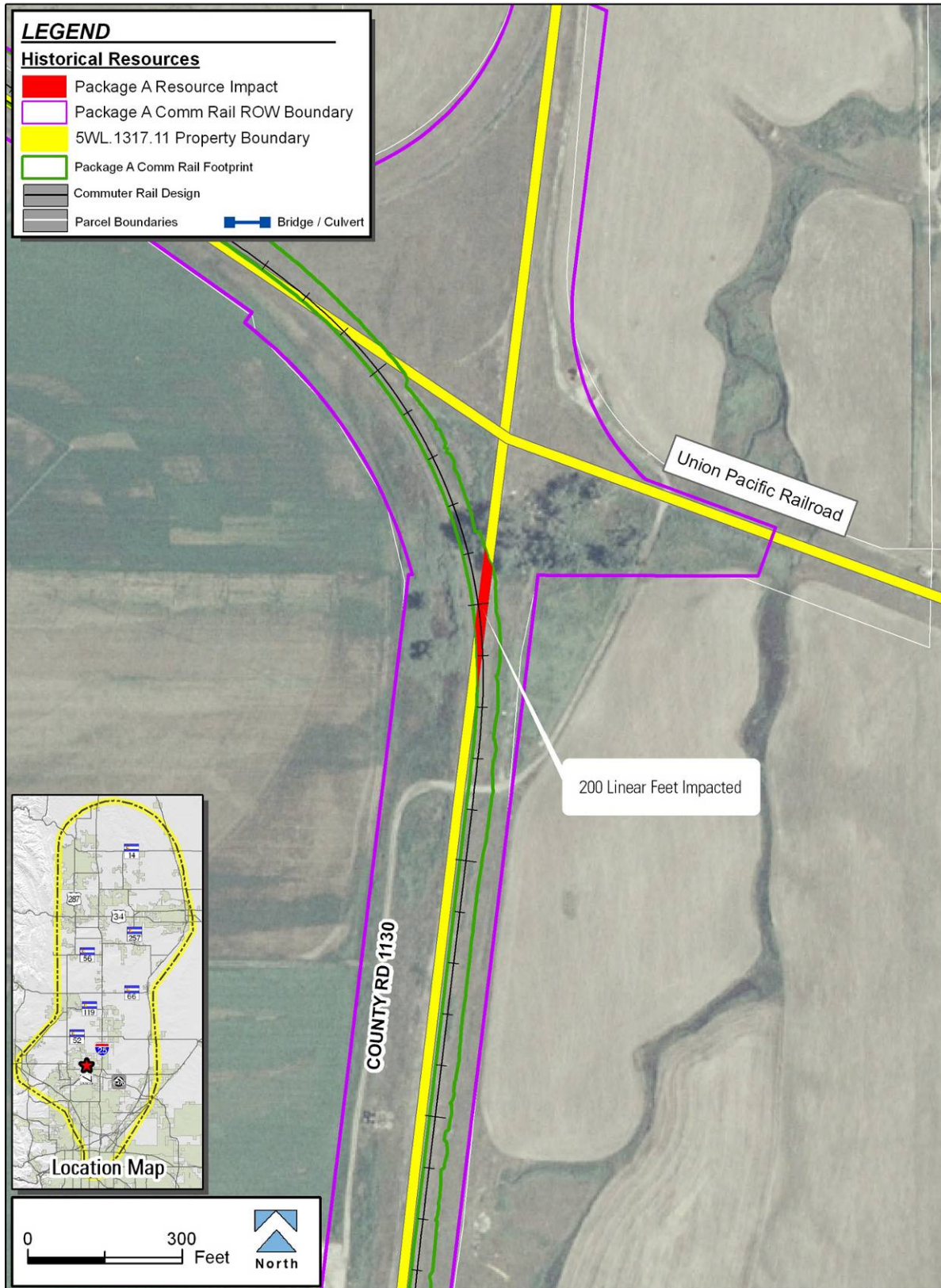
No measures to minimize harm were included because the addition of new track in this vicinity would result in additional project costs. Approximately one new mile of track would be needed to avoid this resource, resulting in an additional project cost of \$ 2.5 million. In addition, new track parallel to this track would result in additional impacts to wetlands. No additional measures to minimize harm were possible.

### **Mitigation Measures for UPRR Dent Branch**

- Detailed recording of the affected railway, in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended pending SHPO concurrence.

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1 Figure 5-81 UPRR-Dent Branch Package A Use



## 5.5.2 *De minimis* for Public Parks, Recreation Areas, and Wildlife and Waterfowl Refuge

In order to be protected under Section 4(f), public parks and recreation facilities must be considered “significant,” as determined by the Federal, State, or local officials having jurisdiction over them. Section 6009 amended Title 23 USC Section 138 states:

“With respect to parks, recreation areas, or wildlife or waterfowl refuges, the Secretary may make a finding of *de minimis* use only if the Secretary has determined, after public notice and opportunity for public review and comment, that the transportation use or project will not adversely affect the activities, features, and attributes of the park, recreation area, or wildlife or waterfowl refuge eligible for protection under this section and the finding of the Secretary has received concurrence from the officials with jurisdiction over the park, recreation area, or wildlife or waterfowl refuge.”

The Section 4(f) parks and recreational resources were identified based on the process outlined above. A finding of *de minimis* use may be made when the use of the resource is minimal and does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f). (Questions and answers on the Application of Section 4(f) *de minimis* Impact Criteria, and the 23 CFR 774.) The finding of a *de minimis* impact on recreational and wildlife resources can be made when:

1. The transportation use of the Section 4(f) resource, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f).
2. The official(s) with jurisdiction over the property are informed of FHWA’s or CDOT’s intent to make the *de minimis* impact finding based on their written concurrence that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f).
3. The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resource.

Initial agency coordination has begun with the officials having jurisdiction over the properties prior to releasing the Draft EIS for public comment. Public input on the possible findings of *de minimis* was requested during the public comment period for the Draft EIS. No comments were received regarding these impacts. In addition, the public is being requested to comment on the impacts to section 4(f) resources as part of the Final EIS. Specific requests to provide input on the proposed *de minimis* findings will also be made at the Final EIS public hearings. The officials with jurisdiction for the park, recreation, and wildlife refuge properties with proposed *de minimis* impacts have provided written concurrence that the transportation use of that property does not adversely affect the activities, features, and attributes that qualify that property for protection under Section 4(f). Concurrence letters were received from all of these officials with jurisdiction these are included in Appendix D. Pending public comment on the impacts, FHWA will make their formal finding in the ROD.

**Table 5-6** lists the Section 4(f) properties that are recommended for *de minimis* determination. Section 4(f) use of the properties has been evaluated based on current preliminary engineering design.



1 **Table 5-6 De Minimis Use of Section 4(f) Parks, Recreational Areas, and Wildlife and**  
2 **Waterfowl Refuge**

Map Id #	Resource Name	Package A:	Package B:	Preferred Alternative:
		<b>A-H2 GP Highway Improvements: SH 14 to SH 60</b>	<b>B-H2 Tolled Express Lanes: SH 14 to SH 60</b>	<b>I-25 Highway Improvements; Express Bus</b>
1	Arapaho Bend Natural Area	Incidental use of high-activity area and 4.28 acres of land adjacent to highway right-of-way; increase in overhead shading of Cache la Poudre vegetation due to bridge deck shading; reclaim and revegetate demolition area.	Incidental use of high-activity area and 5.11 acres of land adjacent to highway right-of-way; increase in overhead shading of Cache la Poudre River vegetation due to bridge deck shading; reclaim and revegetate demolition area.	Incidental use of high-activity area and 3.07 acres of land adjacent to highway right-of-way; increase in overhead shading of Cache la Poudre River vegetation due to bridge deck shading; reclaim and revegetate demolition area.
2	Archery Range Natural Area	A total of 0.09 acre by incorporation of very narrow 400-foot-long strip of unused land. No features or amenities impacted.	A total of 0.14 acre by incorporation of very narrow 400-foot-long strip of unused land. No features or amenities impacted.	No Use
3	Big Thompson Ponds State Wildlife Area	A total of 0.11 acre by incorporation of narrow 750-foot- and 200-foot-long strips of land adjacent to I-25 due to ramp and land additions. No impacts to features, amenities or wildlife area.	A total of 0.24 acre by incorporation of narrow 750-foot- and 200-foot-long strips of land adjacent to I-25 due to ramp and land additions. No impacts to features, amenities or wildlife area.	No Use
		<b>A-H3 GP Highway Improvements: SH 60 to E-470</b>	<b>B-H3 Tolled Express Lanes: SH 60 to E-470</b>	<b>I-25 Highway Improvements</b>
4	Little Thompson River Corridor	A total of 2.04 acres by incorporation of 600-foot by 100-foot area adjacent to the river due to lane and ramp additions and new access. A portion of the trail would be located under bridge structure. No impacts to facilities or amenities.	A total of 2.03 acres by incorporation of 600-foot by 100-foot area adjacent to the river due to lane and ramp additions and new access. A portion of the trail would be located under bridge structure. No impacts to facilities or amenities.	A total of 1.31 acres adjacent to the river incorporated into transportation infrastructure due to lane and ramp additions and new access. A portion of the trail would be located under bridge structure. No impacts to facilities or amenities.

Note: McWhinney Hahn Sculpture Park (Map Id number 5) is included in **Table 5-4**.

1 **Table 5-6 De Minimis Use of Section 4(f) Parks, Recreational Areas, and Wildlife**  
2 **and Waterfowl Refuge (cont'd)**

Map Id #	Resource Name	Package A:	Package B:	Preferred Alternative:
		<b>A-T2 Transit Component-Commuter Rail: Longmont to FasTracks North Metro</b>	<b>B-T2 Transit Component-BRT: Fort Collins to DIA</b>	<b>Commuter Rail</b>
6	Sandstone Ranch	A total of 2.17 acres of entire property. Approximately 40 to 60 feet of sidewalk would require relocation and replacement. No other features or amenities would be impacted.	No use	<b>A total of 1.45 acres of entire property. Approximately 40 to 60 feet of sidewalk would require relocation and replacement. No other features or amenities would be impacted.</b>
7	RR Alignment (21 to Hwy 66) Trail	Direct impacts to approximately 1,510 feet of trail. Temporary detour would be provided, or a relocated trail would be constructed east of the existing trail before the current trail alignment is demolished. Would result in <i>de minimis</i> use.	No Use	<b>No Use</b>
		<b>A-H4 Structure Upgrades: E-470 to US 36</b>	<b>B-H4 Tolled Express Lanes: E-470 to 70th Ave.</b>	<b>I-25 Highway Improvements and Express Bus</b>
8	120th Avenue Transit Station Underpass	No Use	Replace existing box culvert with new box culvert approximately 50 feet longer to accommodate I-25 widening. Temporary closure of trail would be required during culvert replacement, and trail tie-in to the new longer culvert would require minor realignment of trail. Otherwise, construction activities would not modify or affect trail. Overall aesthetic quality of trail would not be substantially diminished. The function and purpose of trail would be unchanged. Would result in <i>de minimis</i> use.	<b>Same as Package B</b>

1 **Table 5-6 De Minimis Use of Section 4(f) Parks, Recreational Areas, and Wildlife**  
2 **and Waterfowl Refuge (cont'd)**

Map Id #	Resource Name	Package A:	Package B:	Preferred Alternative:
9	Farmers Highline Canal Trail	No use	Replace existing underpass with new underpass approximately 87 feet longer to accommodate I-25 widening. Temporary closure of trail would be required during construction. Trail would not be modified during construction activities. Overall aesthetic quality of trail would not be substantially diminished. Function and purpose of trail would be unchanged. Would result in <i>de minimis</i> use.	Same as Package B
10	Niver Creek Open Space/ Niver Creek Trail	No Use	Replace existing underpass with an approximately 1,720-foot long by 11-foot-wide pedestrian overpass and reroute trail through new overpass. Overpass would be completed prior to demolition of underpass; therefore, no trail closure would be required. Overall aesthetic quality of trail would not be substantially diminished. The overall experience, function, and purpose of trail would be unchanged. Trail would be permanently altered and rerouted. Would result in <i>de minimis</i> use.	Same as Package B

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## Arapaho Bend Natural Area (Map ID Number 1)

### Description

<b>Location:</b>	West of I-25, north of Harmony Road, Fort Collins, along Poudre River
<b>Size:</b>	278 acres
<b>Type:</b>	Recreation resource
<b>Access:</b>	Public access
<b>Facilities/Amenities:</b>	Fishing ponds, boating, trails, parking areas.
<b>Usage/Patronage:</b>	Public, no data available for annual patronage
<b>Relationship to Other Resources:</b>	Segment of Cache la Poudre River runs through the park. Arapaho Bend is one of 37 Natural Areas in Fort Collins.
<b>Ownership/Jurisdiction:</b>	City of Fort Collins
<b>Significance:</b>	This park is valuable for its natural resources, recreational opportunities, and as a scenic entryway into the city. Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

### Use of Arapaho Bend Natural Area by Package

#### A-H2 GP Highway Improvements: SH 14 to SH 60

4.28 acres; incidental use of high-activity area and land adjacent to highway right-of-way; increase in overhead shading due to widened bridge deck; demolition area would be revegetated and reclaimed; bank stabilization along Cache la Poudre River; no change in activities or use areas

#### B-H2 Tolled Express Lanes: SH 14 to SH 60

5.11 acres; incidental use of high-activity area and land adjacent to highway right-of-way; increase in overhead shading due to widened bridge deck; demolition area would be revegetated and reclaimed; bank stabilization along Cache la Poudre River; no change in activities or use areas

#### Preferred Alternative I-25 Highway Improvements and Express Bus:

3.07 acres; incidental use of high-activity area and land adjacent to highway right-of-way; increase in overhead shading due to widened bridge deck; demolition area would be revegetated and reclaimed; bank stabilization along Cache la Poudre River; no change in activities or use areas.

### Resource Description

This 278-acre, multi-use park along the Cache la Poudre River includes ponds for fishing, trails, and boating, as well as three public parking areas and two gated areas for vehicles with special access. The property was acquired by City of Fort Collins Natural Areas in 1995.

### Section 4(f) Use

#### Package A

Section 4(f) use at this location would result from the expansion of a carpool lot to the north of the existing lot used by CDOT in the northwest quadrant of Harmony Road and I-25. The City of Fort Collins had previously negotiated an easement in this area of 4.03 acres anticipating future expansion of the lot, which

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would remove this use area from Section 4(f) use. The proposed parking lot expansion, the addition of a new ramp, and improvements to the bridge over Cache la Poudre River would use a total of 8.15 acres, of which 4.03 acres is part of the easement, totaling a net use of 4.28 acres. None of the features or amenities would be used as a result, and the remainder of the natural area would not be diminished in utility. Additionally, access off Harmony Road would be improved from the existing one-lane entrance to a four-lane entrance with right-in and right-out movements only. I-25 is proposed to be widened with both Packages A and B and the Preferred Alternative. See **Figure 5-82**.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the City of Fort Collins has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

#### **Package B**

I-25 is proposed to be widened with all alternatives; however, Package B is wider than Package A and the Preferred Alternative. Other design improvements include ramp reconfiguration to address existing substandard ramp conditions related to safety and traffic operations. Uses at this location would be similar to Package A resulting from the expansion of a carpool lot to the north and the addition of the ramp and the bridge modifications at Cache la Poudre River. The proposed parking lot expansion would exceed the easement, totaling a net use of 5.11 acres. None of the features or amenities would be used as a result, and the remainder of the natural area would not be diminished in utility. Additionally, access off Harmony Road would be improved from the existing one-lane entrance to a four-lane entrance with right-in and right-out movements only. See **Figure 5-82**.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the City of Fort Collins has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

#### **Preferred Alternative**

I-25 is proposed to be widened with all alternatives; however, the Preferred Alternative would use less land from this area than the other alternatives. Design improvements include ramp reconfiguration to address existing substandard ramp conditions related to safety and traffic operations. Uses at this location would be similar to Package A resulting from the expansion of a carpool lot to the north and the addition of the ramp and the bridge modifications at Cache la Poudre River. The proposed parking lot expansion would exceed the easement, totaling a net use of 3.07 acres. None of the features or amenities would be used as a result, and the remainder of the natural area would not be diminished in utility. Additionally, access off Harmony Road would be improved from the existing one-lane entrance to a four-lane entrance with right-in and right-out movements only. See **Figure 5-83**.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the City of Fort Collins has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

#### **All Possible Planning to Minimize Harm**

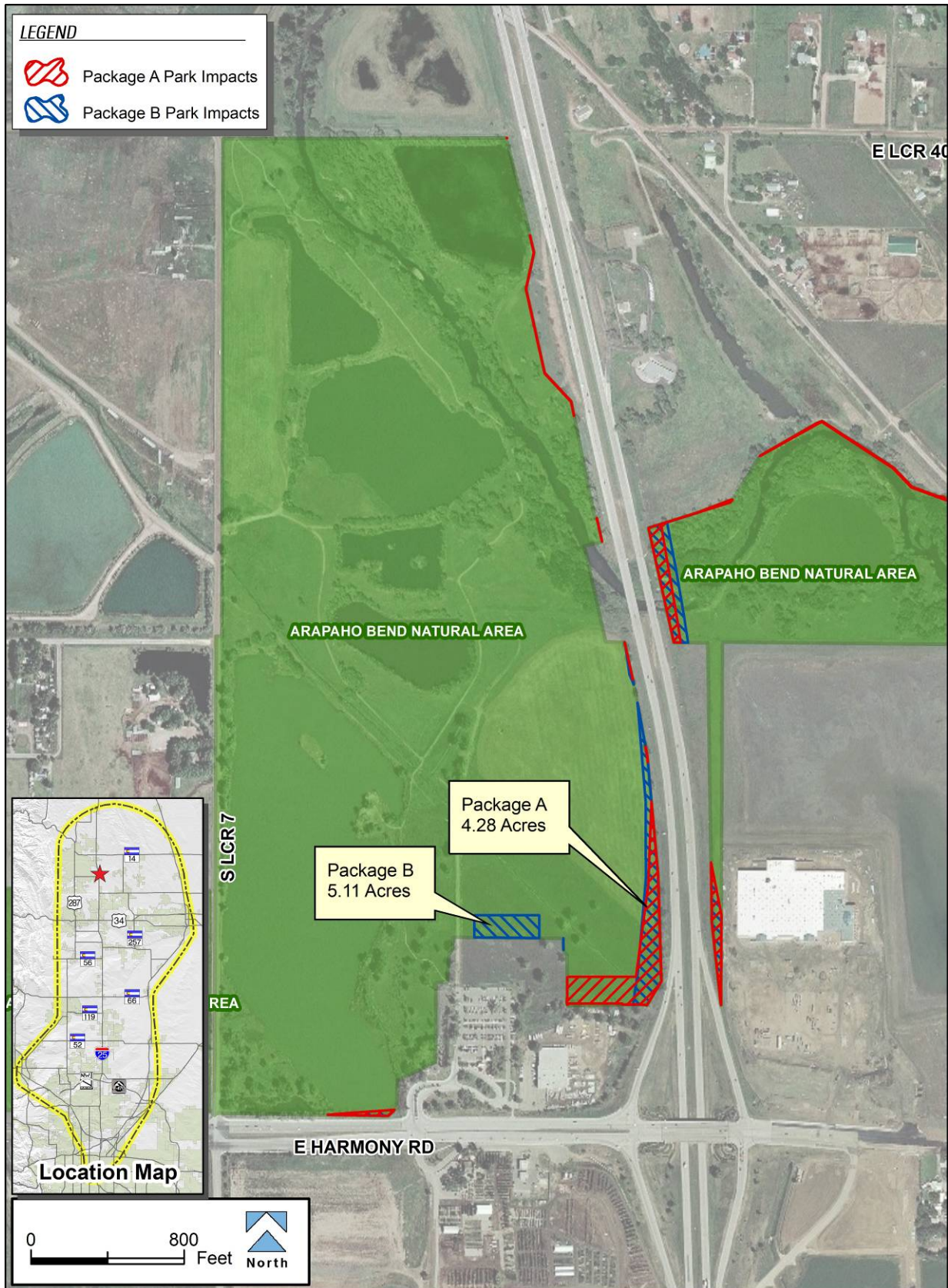
The proposed ramp improvements are to the minimum standard requirements to minimize right-of-way width and, therefore, minimizing Section 4(f) use of this property. Approximately 2,000-foot-long retaining walls would be included along the Harmony Road/I-25 interchange ramps north of Harmony Road to minimize use. The walls would extend up to the bridge over the Cache la Poudre River to minimize uses at the northern extent of the property.

#### **Mitigation Measures for Arapaho Bend Natural Area**

- Reclaim and revegetate in-kind the areas where the existing bridges are removed.
- CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by the transportation improvements.

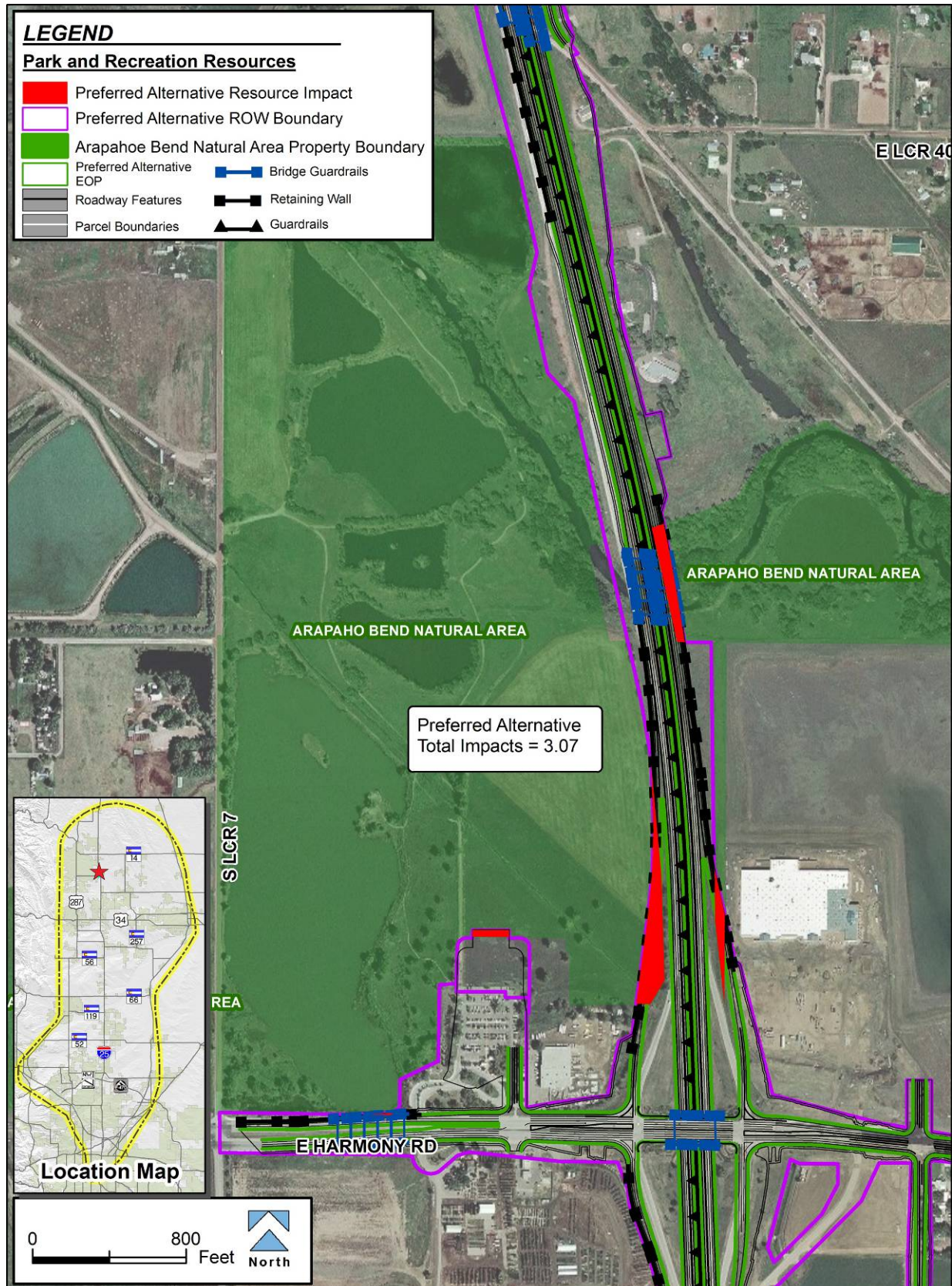
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1 Figure 5-82 Arapaho Bend Natural Area Package A and B Use





1 Figure 5-83 Arapaho Bend Natural Area Preferred Alternative Use



## Archery Range Natural Area (Map ID Number 2)

### Description

<b>Location:</b>	West of I-25, Fort Collins
<b>Size:</b>	50 acres
<b>Type:</b>	Recreation resource
<b>Access:</b>	Public access
<b>Facilities/Amenities:</b>	Trailhead, parking area, archery circuit station located around natural area.
<b>Usage/Patronage:</b>	No data
<b>Relationship to Other Resources:</b>	One of 37 Natural Areas in Fort Collins.
<b>Ownership/Jurisdiction:</b>	City of Fort Collins Parks Department
<b>Significance:</b>	Local site for archery circuit stations. Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

### Use of Archery Range Natural Area by Package

#### A-H2 GP Highway Improvements: SH 14 to SH 60

A total of 0.09 acre by incorporation of very narrow 400-foot-long strip of unused land. No features or amenities impacted.

#### B-H2 Tolled Express Lanes: SH 14 to SH 60

A total of 0.14 acre by incorporation of very narrow 400-foot-long strip of unused land. No features or amenities impacted.

#### Preferred Alternative:

No use

### Resource Description

This property was acquired by the City of Fort Collins Utility Department in 1983 and transferred to the City of Fort Collins Parks Department. It is primarily used for recreation, with amenities such as an archery circuit trail located around the natural area. The site includes parking areas and other trails.

### Section 4(f) Use

#### Package A

Widening would occur to both sides of the highway in this location and a new frontage road would tie into the entrance into the natural area, resulting in a slight impact of 0.09 acre to the eastern edge of the park. None of the features or amenities would be impacted as a result, and the remainder of the natural area would not be diminished in utility. Access to the natural area would be improved. See **Figure 5-84** for Package A use.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the City of Fort Collins has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

#### Package B

Improvements in this location would be similar to those associated with Package A, except the impact would be 0.14 acre. The impact is slightly larger because of the addition of a buffer-separated lane. None of the features or amenities would be impacted as a result, and the remainder of the natural area would not be diminished in utility. Access to the natural area would be improved. See **Figure 5-84** for Package B use

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FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the City of Fort Collins has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

**Preferred Alternative**

There are no direct park uses associated with the Preferred Alternative.

**Indirect Impacts**

In order to minimize use of the park under both packages, a 300-foot wall, 11 feet to 15 feet in height, is proposed to run along the edge of the park. This has the potential to inhibit the view to the east.

**All Possible Planning to Minimize Harm**

Use of this property have been avoided and minimized by shifting the frontage road adjacent to I-25 and with a barrier separation between the edge of the frontage road and the edge of I-25.

**Mitigation Measures for Archery Range Natural Area**

- BMPs will be used to avoid or minimize construction-related nuisances in affected areas from noise, dust, light/glare, etc.
- Disturbed areas will be reseeded with native grasses.
- Native shrubs will be added as appropriate.
- BMPs will be employed for erosion control.
- Property acquisition will be completed under the Uniform Relocation Act.

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1 Figure 5-84 Archery Range Natural Area Package A and B Use



### Big Thompson Ponds State Wildlife Area (Map ID Number 3)

#### Description

<b>Location:</b>	Larimer County East of Loveland on Highway 402 on I-25 Frontage Road
<b>Size:</b>	51 acres
<b>Type:</b>	Wildlife refuge: Hunting (rabbit, dove, waterfowl), warm water fishing, picnicking and wildlife viewing.
<b>Access:</b>	Public must have wildlife stamp, which is a \$10 annual fee. Public access restricted one hour after sunset to one hour before sunrise daily except when fishing.
<b>Usage/Patronage:</b>	Average 20/30 people/day, summer 100 people/day
<b>Relationship to Other Resources:</b>	Big Thompson River runs through property
<b>Ownership/Jurisdiction:</b>	Colorado Division of Wildlife (CDOW)
<b>Significance:</b>	Big Thompson Ponds State Wildlife Area (SWA) is one of 20 SWAs in Larimer County. The Park provides recreation in the forms of hunting, fishing, as well as wildlife viewing. Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

#### Use of Big Thompson Ponds State Wildlife Area by Package

**Package A**  
**A-H2 GP Highway Improvements:**  
**SH 14 to SH 60**

A total of 0.11 acre by incorporation of narrow 750-foot-long and 200-foot-long strips of lane adjacent to I-25 due to ramp and lane additions. No impacts to features, amenities or wildlife area.

**Package B**  
**B-H2 Tolloed Express Lanes:**  
**SH 14 to SH 60**

A total of 0.24 acre by incorporation of narrow 750-foot- and 200-foot-long strips of lane adjacent to I-25 due to ramp and land additions. No impacts to features, amenities or wildlife area.

**Preferred Alternative:**

No use

#### Management Plan & Resource Description

The management plan, created in 1984, focuses on warm water fish species, including bluegill (*Lepomis macrochirus*), black croppie (*Pomoxis nigromaculatus*) and channel catfish (*Ictalurus punctatus*). These species are monitored every one to two years via population sampling using trap nets. State Wildlife Areas are properties owned or managed by the CDOW for the benefit of wildlife and wildlife-related recreation. CDOW properties not only protect wildlife habitat, but also provide the public with opportunities to hunt, fish, and watch wildlife. This property is intensively used by both anglers and those hunting waterfowl.

1

## Section 4(f) Use

### Package A

Use at this location would result from the addition of the general purpose lane and the auxiliary lane on the west side of I-25, as well as the transition of the ramp from the US 34 interchange south onto I-25. The combined improvements would use the easternmost edge of the wildlife area. Walls were placed in this area in order to minimize use, and the area used was reduced to 0.11 acre. None of the features or amenities would be used as a result, and the remainder of the wildlife area would not be diminished in utility. Permanent right-of-way and Section 4(f) use includes a maintenance easement. See **Figure 5-85** for uses associated with Package A.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and CDOW has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

### Package B

Use at this location would result from the addition of the two barrier-separated tolled express lanes on the western side of the general-purpose lanes. These lanes would also accommodate the BRT. The combined improvements would affect the easternmost edge of the wildlife area. Walls were placed in this area in order to minimize impact and the acreage used was reduced to 0.24 acre. None of the features or amenities would be used as a result, and the remainder of the natural area would not be diminished in utility.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and CDOW has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

### Preferred Alternative

There are no direct park uses associated with the Preferred Alternative.

### Indirect Effects

For the build alternatives, indirect effects include noise impacts to portions of the park, which exceed CDOT's noise abatement criteria (NAC). Although the noise level impacts are above the level required for NAC, they will not substantially impair the activities or features that qualify the wildlife area for Section 4(f) protection. The increase would be small but still require an exploration of mitigation. For more detailed information, please refer to **Section 3.6, Noise and Vibration**.

## All Possible Planning to Minimize Harm

The design includes retaining walls. The Section 4(f) use cannot be entirely avoided because the retaining walls require a 10-foot easement for CDOT maintenance activities. Retaining walls have been included on the east side of I-25 to minimize impacts. Retaining walls would be extended on Package A south of the bridge to minimize impacts to the Big Thompson River. The retaining walls would not impede wildlife movement and would redirect wildlife to use the crossing under the highway.

## Mitigation Measures for Big Thompson Ponds State Wildlife Area

- CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by the transportation improvements.
- Disturbed area will be reseeded with native grasses.
- Native shrubs will be replaced as appropriate.
- Easement acquisition will be completed under the Uniform Relocation Act.

2



1 Figure 5-85 Big Thompson Ponds State Wildlife Area Package A and B Use



## Little Thompson River Corridor (Map ID Number 4)

### Description)

<b>Location:</b>	Adjacent to I-25, Berthoud
<b>Size:</b>	100.92 acres
<b>Type:</b>	Recreational resource
<b>Access:</b>	Public
<b>Facilities/Amenities:</b>	Trails alongside Little Thompson River
<b>Usage/Patronage:</b>	Data on patronage not available
<b>Relationship to Other Resources:</b>	Provides a physical and visual buffer between high- and low-intensity land uses.
<b>Ownership/Jurisdiction:</b>	Town of Berthoud
<b>Significance:</b>	Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

### Use of Little Thompson River Corridor by Package

<b>Package A</b>	<b>Package B</b>
<b>A-H3 GP Highway Improvements: SH 60 to E-470</b>	<b>B-H3 Tolled Express Lanes: SH 60 to E-470</b>
<hr/> <p>A total of 2.04 acres by incorporation of a 600-foot by 100-foot area adjacent to the river due to lane and ramp additions and new access. A portion of the trail would be located under bridge structure. No impacts to facilities or amenities.</p>	<hr/> <p>A total of 2.03 acres by incorporation of a 600-foot by 100-foot area adjacent to the river due to lane and ramp additions and new access. A portion of the trail would be located under bridge structure. No impacts to facilities or amenities.</p>

#### Preferred Alternative:

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 A total of 1.31 acres by incorporation of a small strip of land adjacent to the river due to lane and ramp additions and new access. A portion of the trail would be located under bridge structure. No impacts to facilities or amenities.

### Resource Description

This recreation area is included in the *Town of Berthoud I-25 Sub-Area Draft Land Use Plan, 2001*. The purpose of this area is to provide recreation opportunities while linking nearby residential land uses.

### Section 4(f) Use

#### Package A

Uses at this location would result from the addition of the general-purpose lane and auxiliary lane on the west side of I-25, as well as the transition of the southbound ramp at the newly configured SH 56 interchange. A portion of the trail along Little Thompson River would be located under the new bridge. Trail access would be maintained for the additional lane and ramp. Current access to the recreation area would be removed and replaced with a new access from the south, ending at a cul-de-sac at the recreation area. The new right-of-way acquisition required to accommodate the additional lane, the ramp, and the new access would require 2.04 acres of land adjacent to the west side of the highway. None of the features or amenities would be used as a result, and the remainder of the recreation area would not be diminished in utility. See **Figure 5-86** for uses associated with Package A.

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FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the Town of Berthoud has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

### **Package B**

Improvements include the addition of one buffer-separated lane in each direction, for a total of four general-purpose lanes and two tolled express lanes. Bus Rapid Transit would share the tolled express lanes. Uses at this location would result from the right-of-way acquisition required to accommodate the additional lane, the ramp, and the new access to the area. Total acreage used would be 2.03 acres adjacent to the highway on the west side. Aside from the new access and a portion of the trail under the new bridge, none of the features or amenities would be used as a result, and the remainder of the recreation area would not be diminished in utility. See **Figure 5-86** for uses associated with Package B.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the Town of Berthoud has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

### **Preferred Alternative**

Improvements include the addition of one buffer-separated lane and one general-purpose lane in each direction, for a total of six general-purpose lanes and two TELs. Express Bus would share the TELs. Uses at this location would result from the right-of-way acquisition required to accommodate the additional lane, the ramp, and the new access to the area. Total acreage used would be 1.31 acres adjacent to the highway on the both sides. Aside from the new access and a portion of the trail under the new bridge, none of the features or amenities would be used as a result, and the remainder of the recreation area would not be diminished in utility. See **Figure 5-87** for uses associated with the Preferred Alternative.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the Town of Berthoud has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

### **Indirect Effects**

Indirect effects would be the same for all alternatives. West side property access would be maintained, except for the northwest park road connection to the service road. This connection would be severed, but access would still be available to the south. East side property access would be modified so that recreationists would use the new service road.

### **All Possible Planning to Minimize Harm**

CDOT would develop the new access before the existing access is closed.

The trail extends for several miles perpendicular to the highway at this location. There are also several wetlands located on either side of I-25. Shifting to the east to avoid impacts to wetlands and the trail on the west would also have impacted wetlands and trails; therefore, no additional measures to minimize harm could be identified.

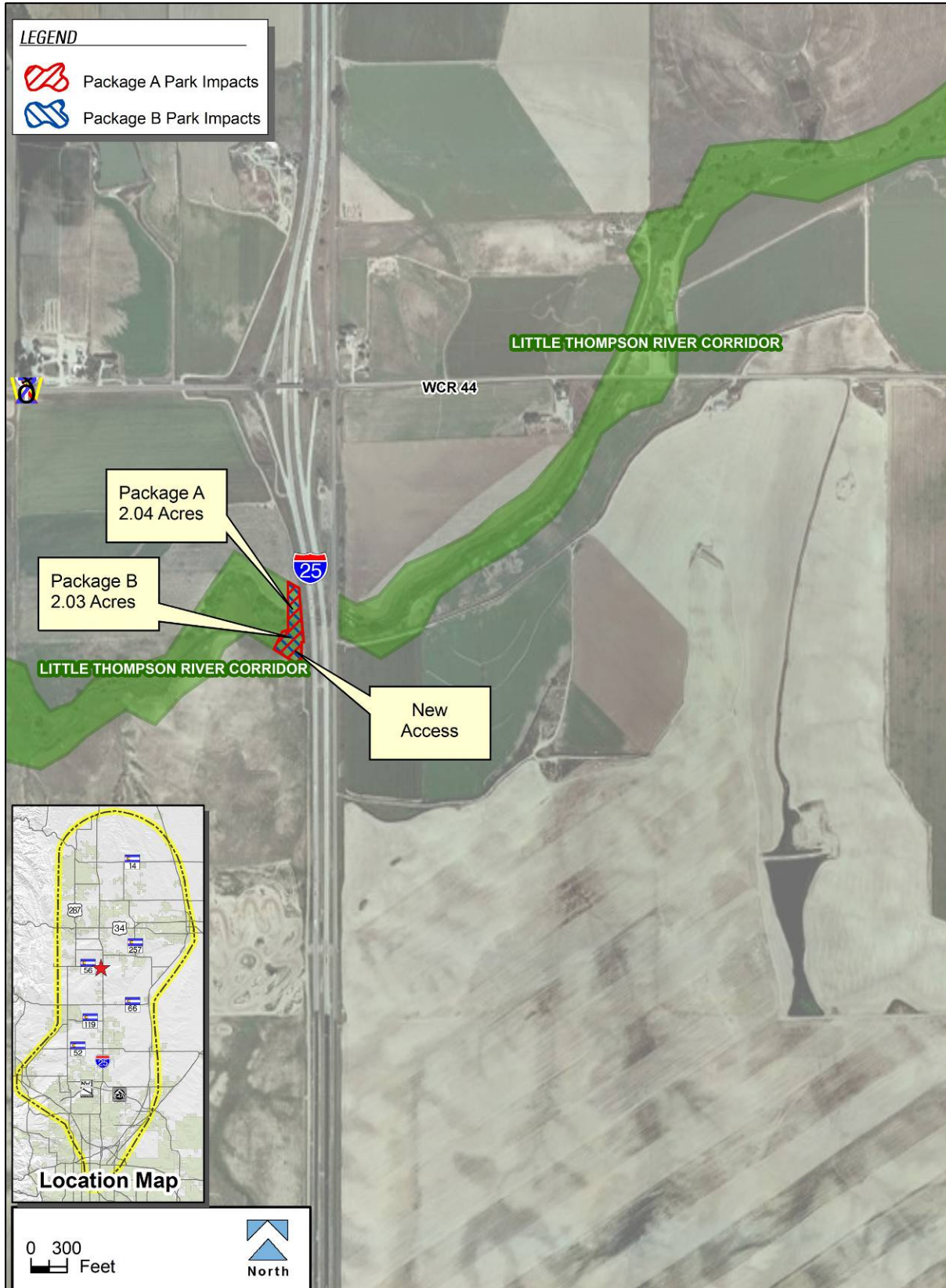
### **Mitigation Measures for Little Thompson River Corridor**

- CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by transportation improvements.
- CDOT will develop the new access before the existing access is closed. Alternate routes will be identified and adequate detour signing will be provided.
- Work with Berthoud to reseed disturbed with native grasses.
- Native shrubs will be added as appropriate.

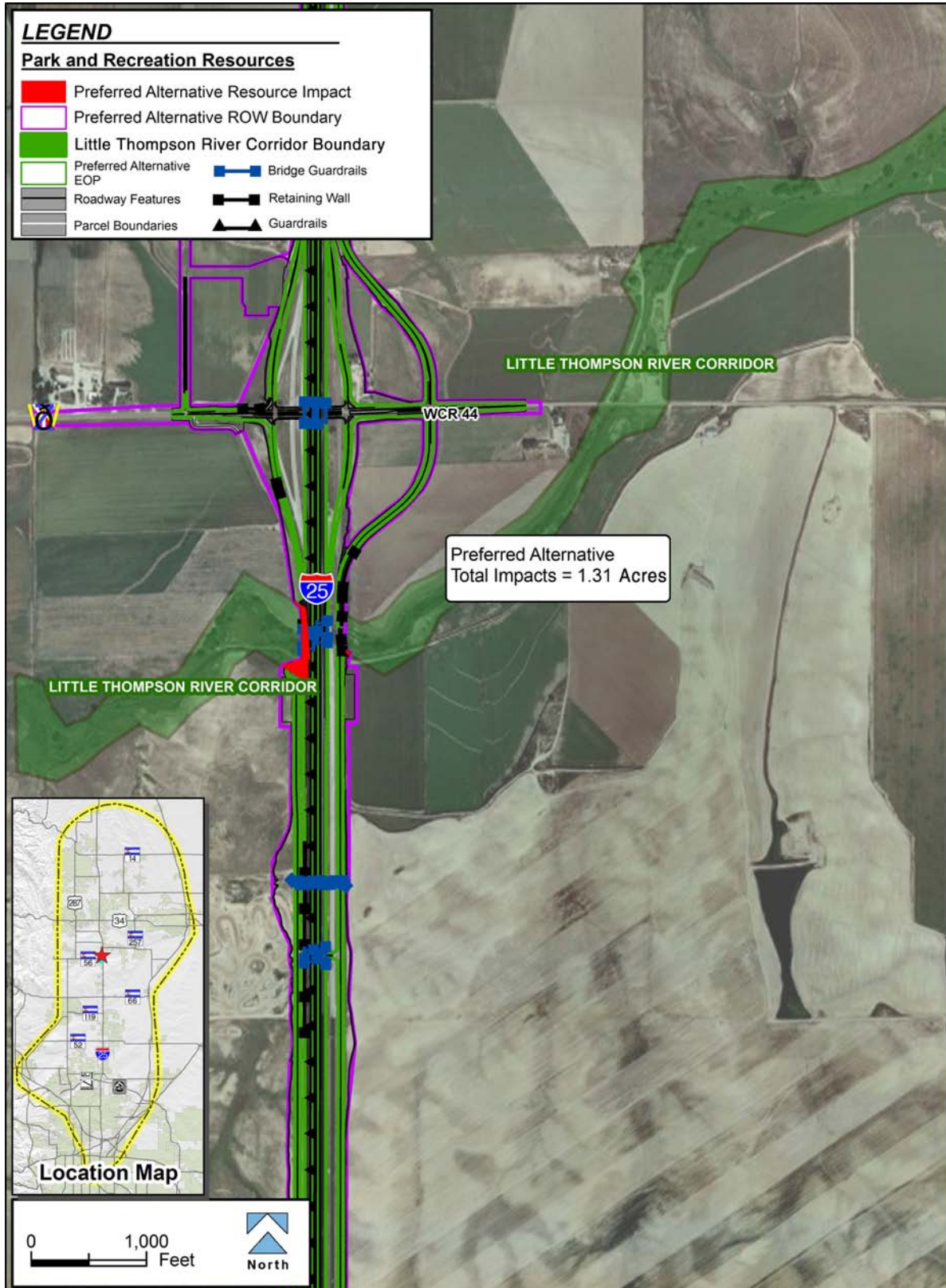
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1 Figure 5-86 Little Thompson River Corridor Packages A and B Use



1 Figure 5-87 Little Thompson River Corridor Preferred Alternative Use



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## Sandstone Ranch (Map ID Number 6)

### Description

<b>Location:</b>	West of I-25, south of SH 119
<b>Size:</b>	313 acres
<b>Type:</b>	Park
<b>Access:</b>	Public access
<b>Facilities/Amenities:</b>	Softball fields, soccer fields, trails, picnic tables, playground, skate park, restrooms, BBQ grills, concession stand
<b>Usage/Patronage:</b>	10,000/year
<b>Relationship to Other Resources:</b>	In September 2000, Longmont designated the house at Sandstone Ranch as a local landmark on the State and National Historic Registers. In addition, a management plan has been completed for the Sandstone Ranch Park with the goal to protect habitat and wildlife in the area.
<b>Ownership/Jurisdiction:</b>	City of Longmont
<b>Significance:</b>	Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

### Use of Sandstone Ranch by Package

Package A A-T2 Transit Component- Commuter Rail: Longmont to FasTracks North Metro	Package B B-T2 Transit Component-BRT: Fort Collins to DIA
2.17 acres; 40 to 60 feet of trail would require relocation and replacement. No other features or amenities would be impacted.	No use

### Preferred Alternative:

A total of 1.45 acres; 40 to 60 feet of trail would require relocation and replacement. No other features or amenities would be impacted.

### Resource Description

Sandstone Ranch Park is a 313-acre City of Longmont park. Active use areas include ball fields, soccer fields, playground, multi-sport fields, and a skate park in the northern portion of the site. Passive use areas include picnic area, concessions, shelters, and parking. Other passive uses include open space for trails and wildlife viewing. The *1998 Sandstone Ranch Final Master Plan* also calls for construction of additional ball fields south of the existing ball fields in the northwestern portion of the site.



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## Section 4(f) Use

### Package A

Package A use at this location would result from the new commuter rail line proposed to run south of SH 119 to connect from Longmont to the proposed FasTracks North Metro Corridor end-of-line station in Thornton. The commuter rail line track would use 2.17 acres at the northernmost edge of the park, adjacent to SH 119. A small portion of the trail in the northwest corner of the park would be used due to 40 feet to 60 feet of encroachment but none of the other features or amenities would be used as a result, and the remainder of the park would not be diminished in utility. See **Figure 5-88** for detail of park impacts associated with Package A.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the City of Longmont has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

### Package B

There are no direct impacts associated with Package B.

### Preferred Alternative

Use at this location would be similar to that under Package A. The commuter rail line track would use 1.45 acres at the northernmost edge of the park, adjacent to SH 119. A small portion of the trail in the northwest corner of the park would be used due to 40 feet to 60 feet of encroachment but none of the other features or amenities would be used as a result, and the remainder of the park would not be diminished in utility. See **Figure 5-89** for detail of park impacts associated with the Preferred Alternative.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations would be completed once the public has had an opportunity to comment and the City of Longmont has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

### **All Possible Planning to Minimize Harm**

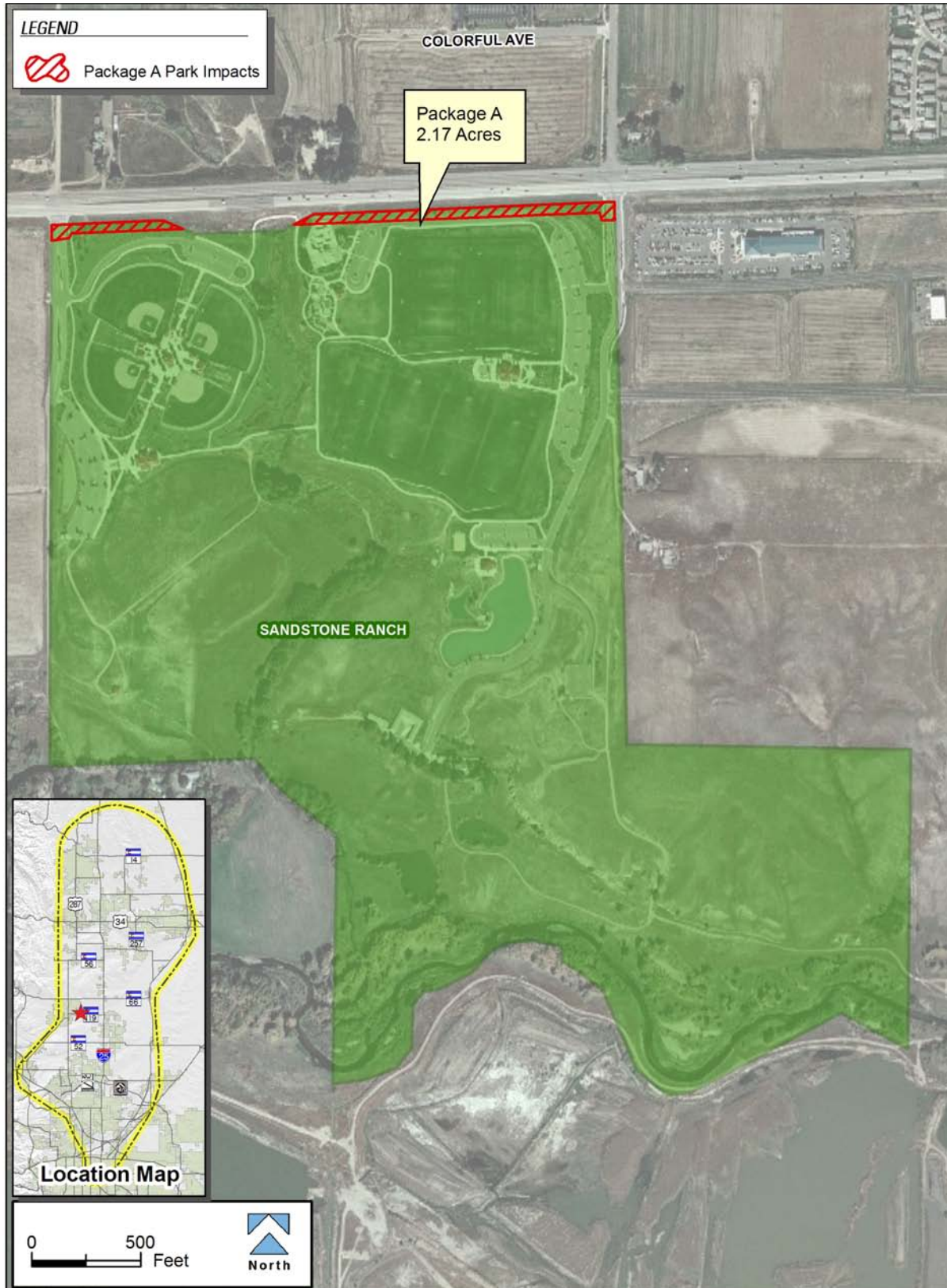
A retaining wall was included on the south side of the proposed tracks to mitigate use of the park. Otherwise, the railway footprint is reduced to the minimum width required to meet FRA and FTA design and safety standards.

### **Mitigation Measures for Sandstone Ranch**

- Disturbed areas will be reseeded with native grasses.
- Native shrubs will be added as appropriate.
- BMPs will be used to avoid or minimize construction-related nuisances in affected areas from noise, dust, light/glare, etc.
- CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by the transportation improvements.
- Property will be acquired consisted with the Uniform Relocation and Assistance Program.

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1 Figure 5-88 Sandstone Ranch Package A Use



2



1 Figure 5-89 Sandstone Ranch Preferred Alternative Use



2



## RR Alignment (21st to Hwy 66) Trail (Map Id Number 7)

### Description

<b>Location:</b>	Follows Colorado and Southern RR alignment between 21st and Hwy 66, terminating just south of Hwy 66.
<b>Size:</b>	0.5 mile
<b>Type:</b>	Existing Recreational Trail
<b>Access:</b>	Publicly accessible
<b>Facilities/Amenities:</b>	Trail
<b>Usage/Patronage:</b>	Annual patronage unknown
<b>Relationship to Other Resources:</b>	Extension of Rough and Ready Trail
<b>Ownership/Jurisdiction:</b>	City of Longmont
<b>Significance:</b>	Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

### Use of RR Alignment (21st to Hwy 66) Trail by Package

<b>Package A</b> <b>A-T1 Transit Component- Commuter Rail:</b> <b>Fort Collins to Longmont</b> <hr/> <i>De minimis</i>	<b>Package B</b> <hr/> No use
<b>Preferred Alternative</b> <hr/> No use	

### Resource Description

The majority of the RR Alignment (21st to Hwy 66) Trail exists, with a small missing segment immediately south of Hwy 66 that is proposed.

### Section 4(f) Use

#### Package A

Package would result in direct impacts to approximately 1,510 linear feet of the existing trail. A temporary detour would be provided, before the current trail alignment is demolished. Consequently, no trail closure is necessary, and there would be no disruption of service to trail users. Because the trail would be permanently altered and rerouted, this cannot be considered a temporary occupancy. However, because there would be no overall adverse affect on the activities, features, and attributes that qualify this resource for protection under Section 4(f), this would be a *de minimis* use of the RR Alignment (21st to Hwy 66) Trail.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations will be completed once the public has had an opportunity to comment and the City of Longmont has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource. See **Figure 5-90** for a depiction of trail use.

#### Package B

There is no use of any portion of this resource resulting from Package B improvements.

#### Preferred Alternative

There is no use of any portion of this resource resulting from the Preferred Alternative.

### **All Possible Planning to Minimize Harm**

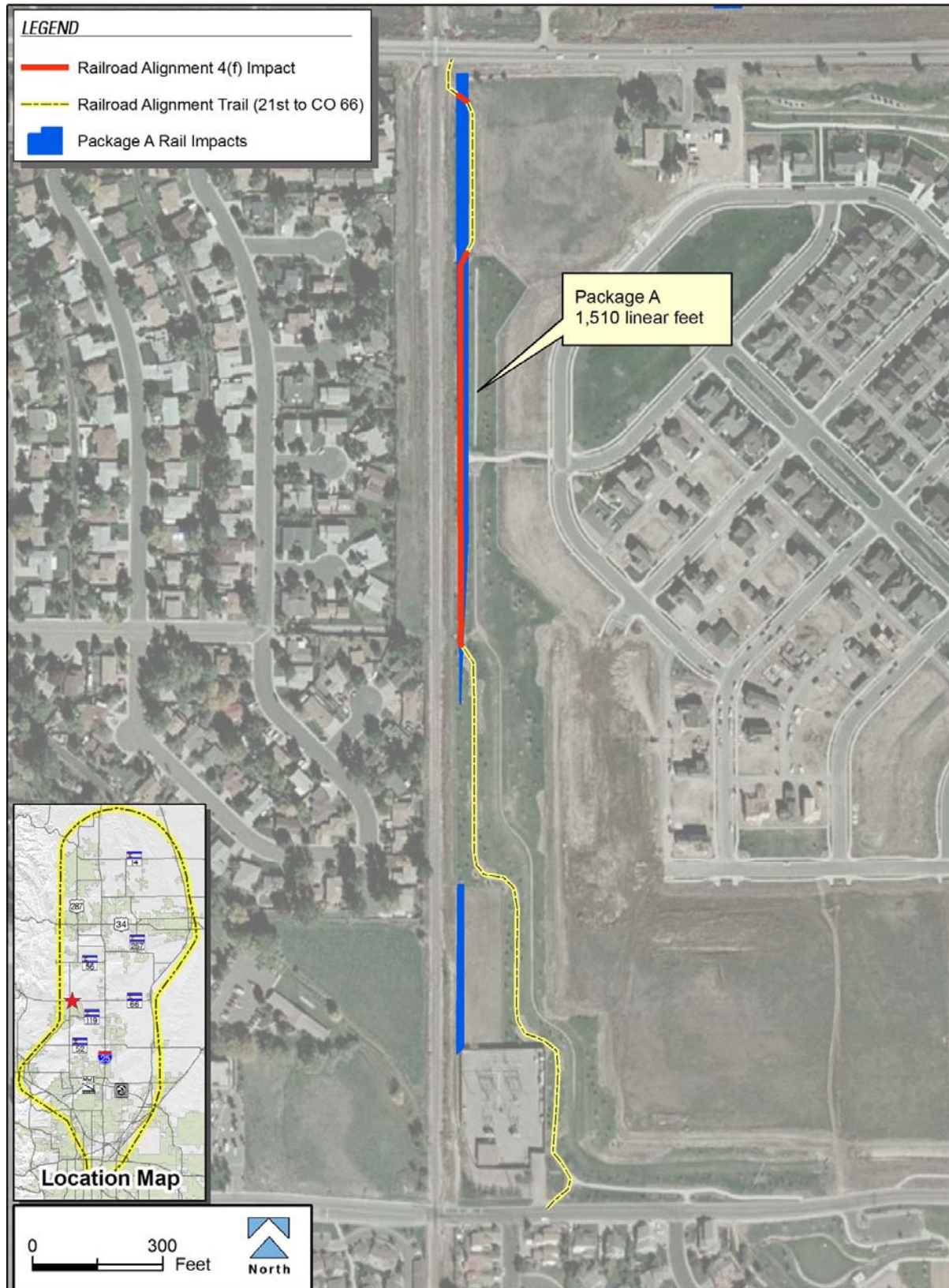
As described previously, CDOT intends to mitigate any harm to the RR Alignment (21st to Hwy 66) Trail by providing a detour before demolishing the current alignment of the trail. Consequently, no trail closure is necessary, and there would be no disruption of service to trail users. While the trail would be permanently changed, the new trail would be constructed to fit aesthetically into the current environment, and it would not alter the current function or purpose of the trail.

As the project proceeds through final engineering and design, the measures to minimize harm to the RR Alignment (21st to Hwy 66) Trail will be re-examined and refined with the local officials having jurisdiction over the affected resource. The following table includes other mitigation measures to which CDOT, FHWA, and FTA would adhere.

### **Mitigation Measures for the RR Alignment (21st to Hwy 66) Trail**

- Work with City of Longmont to ensure advanced notice and signage for rerouting of trail.

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Figure 5-90 Railroad Alignment (21st to Hwy 66) Trail Preferred Alternative Use





## 120th Avenue Transit Station Underpass (Map Id Number 8)

### Description

<b>Location:</b>	Runs east to west from Huron Street, through Wagon Road park-n-Ride, under I-25 to Malley Drive.
<b>Size:</b>	0.97 mile
<b>Type:</b>	Existing recreational
<b>Access:</b>	Publicly accessible
<b>Facilities/Amenities:</b>	Trail
<b>Usage/Patronage:</b>	Annual patronage unknown
<b>Relationship to Other Resources:</b>	Approximate 700-foot section of a 0.97-mile-long trail.
<b>Ownership/Jurisdiction:</b>	City of Northglenn
<b>Significance:</b>	Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

### Use of 120th Avenue Transit Station Underpass by Package

<b>Package A</b>	<b>Package B</b>
<b>A-H4 Structure</b>	<b>B-H4 Tolloed Express</b>
<b>Upgrades:</b>	<b>Lanes:</b>
<b>E-470 to US 36</b>	<b>E-470 to 70th Avenue</b>
No use	Temporary trail closure of 790 linear feet <i>De minimis</i> use

**Preferred Alternative**  
**I-25 Highway Improvements and**  
**Express Bus:**  
Same as Package B

### Resource Description

The 120th Avenue Transit Station Underpass (see **Photo 5-1** and **Photo 5-2**) is just south of 120th street. It connects a trail from Huron Street, below I-25 to Farmers Highline Canal. See **Figure 5-91**.



**Photo 5-1:** 120th Avenue Transit Station Underpass, facing east from the west side of I-25.



**Photo 5-2:** 120th Avenue Transit Station Underpass facing west, on the east side of I-25.

### Section 4(f) Use

#### Package A

There is no use of any portion of this resource resulting from Package A transportation improvements.

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### **Package B**

Package B calls for replacing the existing box culvert with a new box culvert at this location to accommodate the widening of I-25. The new box culvert would be approximately 50 feet longer than the existing box culvert. A temporary closure of the trail would be required during the replacement of the box culvert, and the trail tie-in to the new longer culvert would require minor realignment of the trail. Otherwise, construction activities would not modify or affect the trail.

A potential detour would require trail users to take Huron Street north to 120th Avenue, then east across I-25. By taking Community Center Drive south, users would reach the Farmers Highline Canal, to which the 120th Avenue Transit Station Underpass connects. Huron Street has a detached sidewalk suitable for bicyclists, and Grant Street is a local residential arterial. 120th Avenue has a detached sidewalk, but bicyclists would be required to mix with vehicle traffic while crossing over I-25. For a temporary use of 790 feet of trail closure during construction, a 1.2-mile detour would have to be established. The length of the detour and the necessary close contact with vehicle traffic poses severe safety problems, especially for pedestrian trail users; hence, the detour is not prudent and feasible because a trail closure would be necessary for the 120th Avenue underpass and a prudent detour does not exist. The requirements of a temporary occupancy would not be fulfilled, therefore, there would be no temporary use of this resource.

The addition of 50 feet to this trail undercrossing by replacing it with a new box culvert would modify the visual experience of trail users; however, this slight change would not substantially diminish the overall aesthetic quality of the trail. Trail users would continue to be afforded a facility similar in visual quality as exists presently. The function and purpose of the trail would be unchanged. Accordingly, the visual effects associated with a longer underpass would not result in the constructive use of this Section 4(f) resource. Any other potential long-term disruption of the use and enjoyment of this resource associated with operation-related proximity impacts (i.e., noise, impaired aesthetic quality, restricted access, and/or ecological intrusion) would be avoided or minimized, and would, therefore, not substantially diminish the activities, features, or attributes that qualify the resource for protection under Section 4(f). Package B would not permanently incorporate land from this Section 4(f) resource. The use would not result in a change of functionality for the trail crossing. Because there would be no overall adverse effect on the activities, features, and attributes that qualify this resource for protection under Section 4(f), this would be a *de minimis* use of the 120th Avenue Transit Station Underpass.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations will be completed once the public has had an opportunity to comment and the City of Northglenn has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

See **Figure 5-91** for uses associated with Package B.

### **Preferred Alternative**

Impacts to the 120th Avenue Transit Station Trail would be the same as those described for Package B, and would result in a *de minimis* use of the trail.

See **Figure 5-91** for uses associated with the Preferred Alternative.

### **All Possible Planning to Minimize Harm**

As the project proceeds through final engineering and design, the measures to minimize harm to the 120th Transit Station Underpass will be re-examined and refined with the local officials having jurisdiction over the affected resource. Temporary uses of the 120th Avenue Transit Station Underpass would be mitigated by improving lighting. The following table includes other mitigation measures to which CDOT, FHWA, and FTA would adhere.

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### **Mitigation Measures for the 120th Avenue Transit Station Underpass**

- A detour will be provided and in place prior to closure of the existing trail.
- Advanced notice and signage will be in place for closure and detour.
- Trail crossings will be returned to existing or improved condition after construction.
- A public safety and security program will be developed and implemented for affected areas with local officials, including access management, signage, and public information.
- A traffic management plan will be developed and implemented with local officials for automobiles, bicycles, and pedestrians.
- BMPs will be used to avoid or minimize construction-related nuisances in affected areas from noise, dust, light/glare, etc.
- Disturbed areas will be reseeded with native grasses.
- Native shrubs will be added as appropriate.
- Coordinate with City of Northglenn regarding design features and size of opening.
- Applicable regional and/or local design criteria will be included for bridges and the box culvert structures in construction specifications.

2



1 **Figure 5-91 120th Avenue Transit Station Underpass Preferred Alternative Use**



2

## Farmers Highline Canal Trail (Map Id Number 9)

### Description

<b>Location:</b>	Standley Lake east to Northglenn's EB Raines Park (10.3 mi) and beyond into Thornton.
<b>Size:</b>	10.3 miles
<b>Type:</b>	Existing multi-Use, off-street trail
<b>Access:</b>	Publicly accessible
<b>Facilities/Amenities:</b>	Trail
<b>Usage/Patronage:</b>	Annual patronage unknown
<b>Relationship to Other Resources:</b>	Trail meanders through a variety of parks and open space property. Approximate 580-foot section of a 10.3-mile-long trail.
<b>Ownership/Jurisdiction:</b>	City of Westminster
<b>Significance:</b>	Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

### Use of Farmers Highline Canal Trail by Package

**Package A**  
**A-H4 Structure Upgrades:**  
**E-470 to US 36**

No use

**Package B**  
**B-H4 Tolled Express Lanes:**  
**E-470 to 70th Avenue**

Culvert expansion and temporary closure  
(575 linear feet of trail) *De minimis* use

**Preferred Alternative**  
**I-25 Highway Improvements and**  
**Express Bus:**

Same as Package B

### Resource Description

The Farmers High Line Canal Trail (see **Photo 5-3**) is a signature trail that winds from near Standley Lake east to Northglenn's EB Raines Junior Memorial Park and beyond into Thornton. The trail is paved in various locations along its length. Maintenance of the trail is the responsibility of the different jurisdictions through which the trail passes.



**Photo 5-3:** Farmers Highline Canal Underpass, facing west on the east side of I-25.

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## **Section 4(f) Use**

### **Package A**

There is no use of any portion of this resource resulting from Package A transportation improvements.

### **Package B**

Package B would replace the existing underpass with a new underpass at this location to accommodate the widening of I-25. The new underpass would be approximately 87 feet longer than the existing underpass. A temporary closure of the trail would be required during construction. The trail would not be modified during construction activities. A stormwater detention basin would be built on the east side of I-25 just north of the trail, but this basin would not impact the trail.

A potential detour would require trail users to take Community Center Drive south at E.B. Rains, Jr. Memorial Park. Community Center Drive crosses I-25 as an overpass with wide sidewalks suitable for bicycles. Once on the west side of I-25, users would take West 112th Avenue to Huron Street, go south and reconnect with the Farmers Highline Canal Trail. For a temporary use of 575 feet of trail closure during construction, a 1.21-mile detour would have to be established. The entire detour would be on existing trails; however, because of its length, this detour is not prudent and feasible for trail users. Since a trail closure would be necessary and a prudent detour does not exist for the Farmers Highline Canal Trail, the requirements of a temporary occupancy would not be fulfilled; therefore, there would be no temporary use of this resource.

The addition of 87 feet on this trail undercrossing would modify the visual experience of trail users by extending the underpass; however, this slight change would not substantially diminish the overall aesthetic quality of the trail. Trail users would continue to be afforded a facility similar in visual quality as currently exists. The function and purpose of the trail would be unchanged. Accordingly, the visual effects associated with a longer underpass would not result in the constructive use of this Section 4(f) resource. Any other potential long-term disruption of the use and enjoyment of this resource associated with operation-related proximity impacts (i.e., noise, impaired aesthetic quality, restricted access, and/or ecological intrusion) would be avoided or minimized, and would, therefore, not substantially diminish the activities, features, or attributes that qualify the resource for protection under Section 4(f). Package B would permanently incorporate a small amount of land from this Section 4(f) resource required for the widening of I-25. The use would not result in a change of functionality for the trail crossing. See **Figure 5-92** for a depiction of trail use.

Because there would be no overall adverse affect on the activities, features, and attributes that qualify this resource for protection under Section 4(f), this would be a *de minimis* use of the Farmers Highline Canal Trail.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations will be completed once the public has had an opportunity to comment and the City of Westminster has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

### **Preferred Alternative**

Impacts to the Farmers Highline Canal Trail would be the same as those described for Package B, and would result in a *de minimis* use of the trail.

### **All Possible Planning to Minimize Harm**

As the project proceeds through final engineering and design, the measures to minimize harm to the Farmers Highline Canal Trail will be re-examined and refined with the local officials having jurisdiction over the affected resource. The following table includes other mitigation measures to which CDOT, FHWA, and FTA would adhere.

2



### **Mitigation Measures for the Farmers Highline Canal Trail**

- Advanced notice and signage will be in place for closure.
- Trail crossings will be returned to existing or improved condition after construction.
- A public safety and security program will be developed and implemented for affected areas with local officials, including access management, signage, and public information.
- A traffic management plan will be developed and implemented with local officials for automobiles, bicycles, and pedestrians.
- BMPs will be used to avoid or minimize construction-related nuisances in affected areas from noise, dust, light/glare, etc.
- Disturbed areas will be reseeded with native grasses.
- Native shrubs will be added as appropriate.
- BMPs will be employed for erosion control
- Applicable regional and/or local design criteria will be included for bridges and the box culvert structures in construction specifications.

1 **Figure 5-92 Farmers Highline Canal Trail**



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## Niver Creek Open Space/Niver Creek Trail (Map Id Number 10)

### Description

<b>Location:</b>	The trail begins at Zuni Street and travels southeastward. At Huron Street the trail enters the Niver Creek Open Space. This Open Space is located between Huron St. and I-25 and Thornton Pkwy. And 84th Ave. The trail continues on passing beneath I-25 and then follows Coronado Pkwy.
<b>Size:</b>	Trail: 1.12 miles; Open Space: 61 Acres
<b>Type:</b>	Open Space/Existing recreational trail
<b>Access:</b>	Publicly accessible
<b>Facilities/Amenities:</b>	Regional trail, benches, bike racks, guardrail/fence, lighting, signage, trashcans. The majority of the trail is existing with a few small missing segments that are proposed.
<b>Usage/Patronage:</b>	Annual patronage unknown
<b>Relationship to Other Resources:</b>	Approximate 1,200 foot section of 1.12-mile-long trail
<b>Ownership/Jurisdiction:</b>	Adams County/ City of Thornton
<b>Significance:</b>	Comparing the availability and function of this resource with the park and recreation objectives of the community, the resource in question plays an important role in meeting those objectives.

### Use of Niver Creek Open Space/Niver Creek Trail by Package and Component

<b>Package A</b>	<b>Package B</b>
<b>A-H4 Structure Upgrades: E-470 to US 36</b>	<b>B-H4 Tolled Express Lanes: E-470 to 70th Avenue</b>
No use	Replace existing underpass with overpass <i>De minimis</i> use
<b>Preferred Alternative</b>	
<b>I-25 Highway Improvements and Express Bus:</b>	
Same as Package B	

### Resource Description

Niver Creek Open Space is preserved by the City of Thornton to protect the natural areas surrounding the junction of the north and south forks of Niver Creek, to provide for passive recreation uses including the Niver Creek trail, to provide for wildlife habitat, and to act as a buffer between I-25 and the residential uses to the west. The Niver Creek Trail begins west of Niver Creek Open Space and follows the creek to the east side of I-25. It is mostly constructed with a few small missing segments that are proposed. Regional trail facilities provide connections to trail systems that cross municipalities, to neighboring community trail systems, or to major activity centers. It has paved and unpaved sections, and is 10 feet to 12 feet wide.

### Section 4(f) Use

#### Package A

There is no direct use of any portion of this resource resulting from Package A transportation improvements.



### **Package B**

Package B improvements involve replacing the 88th Avenue bridge over I-25 as well as the existing underpass that the Niver Creek Trail uses to cross I-25. The bridge replacement will require the acquisition of approximately 2 acres of land that is currently located along the southeast corner of the Niver Creek Open Space. This property will be acquired to accommodate fill slopes along 88th Ave and the express bus/BRT improvements to I-25. The Niver Creek Trail will be the only attribute affected by the proposed improvements as described below.

This use of the Niver Creek Open Space will not result in any noticeable change to the aesthetic, environmental, or recreational features of the natural area. Since there would be no overall adverse effect on the activities, features, and attributes that qualify this resource for protection under Section 4(f), this would be a *de minimis* use on the Niver Creek Open Space.

The pedestrian underpass will be replaced with an approximately 1,720-foot-long by 11-foot-wide pedestrian overpass, and the trail will be rerouted to this overpass. CDOT intends to complete the overpass prior to the demolition of the underpass; therefore, no trail closure would be required. Because the trail will be permanently altered and rerouted, this cannot be considered a temporary occupancy. However, since there would be no overall adverse effect on the activities, features, and attributes that qualify this resource for protection under Section 4(f), this would be a *de minimis* use on the Niver Creek Trail.

The replacement of the existing underpass with a new overpass would modify the visual experience for trail users; however, this change would not substantially diminish the overall aesthetic quality or recreational experience provided by the trail. An underpass affords a trail user a tunnel-like experience, while an overpass would be more open. The existing visual setting of trails in this area includes a built environment with urban elements (e.g., commercial and residential development, roadways, highways, etc.). Thus, in this context, trails such as this one would not likely have the same visual sensitivity as would be expected in less-developed areas. While the trail crossing of I-25 would be by different means than currently exists, the overall experience, function, and purpose of the trail would be unchanged. Any other potential long-term disruption of the use and enjoyment of this resource associated with operation-related proximity impacts (i.e., noise, impaired aesthetic quality, restricted access, and/or ecological intrusion) would be avoided or minimized, and would, therefore, not substantially diminish the activities, features, or attributes that qualify the resource for protection under Section 4(f). See **Figure 5-93** for a depiction of Section 4(f) uses associated with Package B.

FHWA and CDOT propose that this use would have *de minimis* impact. Final *de minimis* determinations will be completed once the public has had an opportunity to comment and the Adams County and the City of Thornton has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

### **Preferred Alternative**

Impacts expected under the Preferred Alternative are identical to those under Package B described above.

### **All Possible Planning to Minimize Harm**

As described previously, CDOT intends to mitigate any harm to the Niver Creek Open Space/ Niver Creek Trail by rerouting the trail onto an adjacent trail within the Open Space and constructing the new overpass before demolishing the current underpass. Consequently, no trail closure is necessary, and there would be no disruption of service to trail users. While the trail would be permanently changed, the new overpass would be constructed to fit aesthetically into the current environment, and it would not alter the current function or purpose of the trail.

As the project proceeds through final engineering and design, the measures to minimize harm to the Niver Creek Trail will be re-examined and refined with the local officials having jurisdiction over the affected resource. The following table includes other mitigation measures to which CDOT, FHWA, and FTA would adhere.

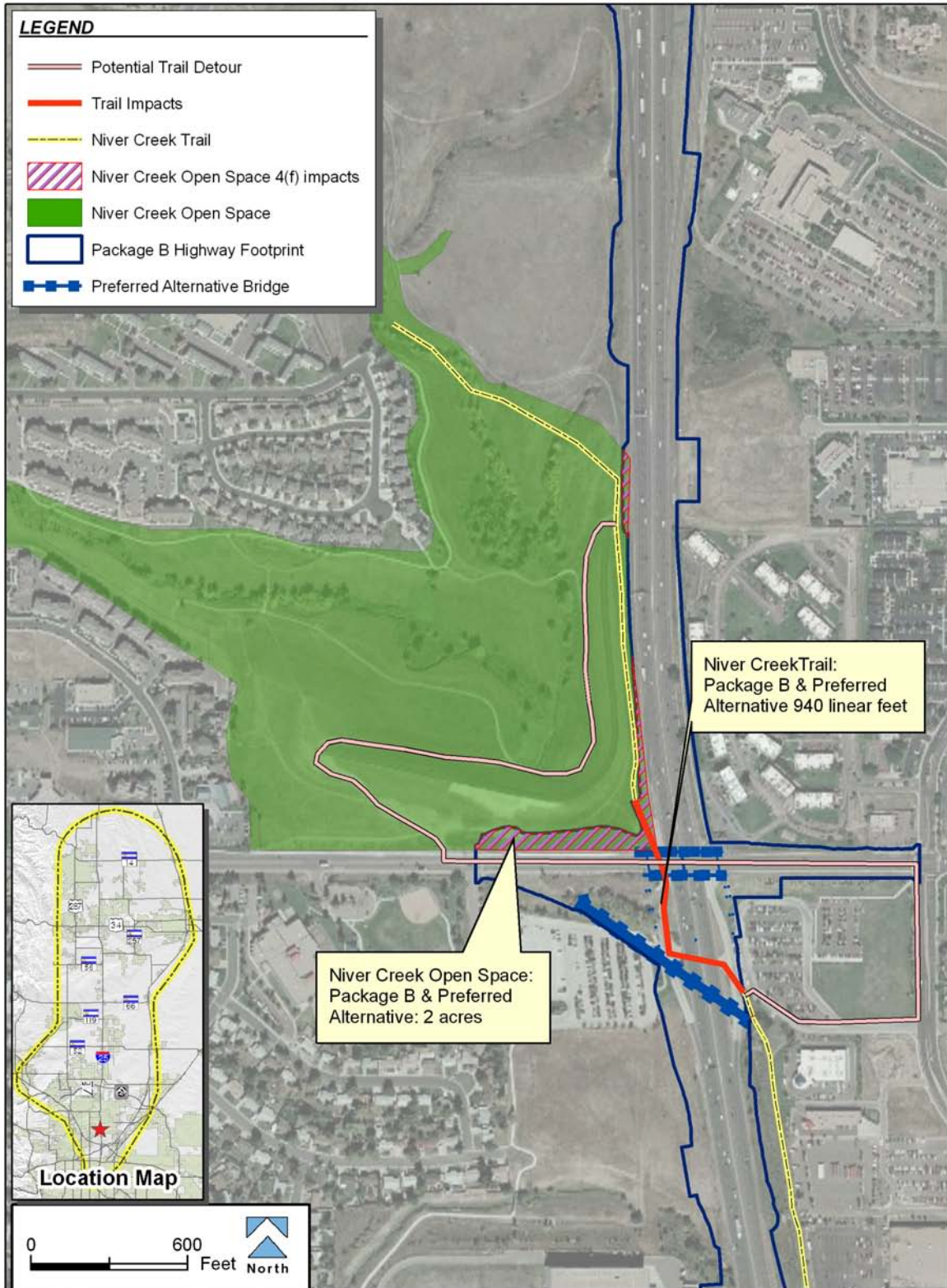
### **Mitigation Measures for the Niver Creek Open Space/Niver Creek Trail**

- CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by the transportation improvements.
- A detour will be provided and in place prior to closure of the existing trail.
- Advanced notice and signage will be in place for closure and detour.
- Trail crossings will be returned to existing or improved condition after construction.
- Disturbed areas will be reseeded with native grasses.
- Work with Adams County and City of Thornton to ensure advanced notice and signage for rerouting of trail.
- The trail underpass will be replaced by an overpass prior to the demolition.

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Figure 5-93 Niver Creek Open Space/Niver Creek Trail





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## 5.6 LEAST OVERALL HARM ANALYSIS

The FHWA has determined that there is no feasible and prudent avoidance alternative and the Preferred Alternative includes all possible planning to minimize harm to the Section 4(f) properties resulting from such use.

Section 4(f) mandates that if there is a feasible and prudent alternative that avoids the use of a Section 4(f) resource, that alternative must be selected. If all alternatives use land from a Section 4(f) resource, then an analysis must be performed to determine which has the least overall harm to the Section 4(f) resource. The least overall harm is determined by balancing the following factors:

- ▶ The ability to mitigate adverse impacts to each Section 4(f) property;
- ▶ The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualifies each property for protection;
- ▶ The relative significance of each Section 4(f) property;
- ▶ The views of the official(s) with jurisdiction over each Section 4(f) property;
- ▶ The degree to which each alternative meets the purpose and need for the project;
- ▶ After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
- ▶ Substantial differences in costs among the alternatives.

**Table 5-7** provides a summary of the Section 4(f) uses, by alternative and by type of property.

1 Table 5-7 Section 4(f) Summary

Use Type	Resource Type	Package A	Package B	Preferred Alternative
<i>De Minimis</i>	Historic	<ul style="list-style-type: none"> <li>•<u>Historic Properties (10)</u>: In each case, only a small portion of the total property would be used. The use would occur on the edge of the property, there would be no impacts to the historic structures, and there would be no change in the setting, feel or existing associations of the property. Therefore, the historic significance of the property would remain and there would be <i>No adverse effect</i> to these properties.</li> <li>•<u>Ditches (15)</u>: In each case, only a small portion of the total ditch would be used either through extension of an existing culvert or addition of a new culvert adjacent to an existing culvert and the impacts would occur in an area where the setting, feel or existing associations of the ditch have already been compromised. The entire historic ditch would retain its historic significance and there would be <i>No adverse effect</i> to these ditches.</li> <li>•<u>Railroads (2)</u>: For both railroads, the use consists of the modernization of track or associated features in a segment where the track or features have previously been removed. The continued use as a rail line would enhance the historic association of the rail line and therefore would result in <i>No Adverse effect</i> to the railroads.</li> </ul>	<ul style="list-style-type: none"> <li>•<u>Historic Properties (6)</u>: In each case, only a small portion of the total property would be used. The use would occur on the edge of the property, there would be no impacts to the historic structures, and there would be no change in the setting, feel or existing associations of the property. Therefore, the historic significance of the property would remain and there would be <i>No adverse effect</i> to these properties.</li> <li>•<u>Ditches (8)</u>: In each case, only a small portion of the total ditch would be used either through extension of an existing culvert or addition of a new culvert adjacent to an existing culvert and the impacts would occur in an area where the setting, feel or existing associations of the ditch have already been compromised. The entire historic ditch would retain its historic significance and there would be <i>No adverse effect</i> to these ditches.</li> <li>•<u>Railroad (1)</u>: Use consists of a modern railroad bridge being constructed on a historic railroad line where the bridge was previously demolished. The continued use as a rail line would enhance the historic association of the rail line and therefore would result in <i>No Adverse effect</i> to the railroads.</li> </ul>	<ul style="list-style-type: none"> <li>•<u>Historic Properties (8)</u>: In each case, only a small portion of the total property would be used. The use would occur on the edge of the property, there would be no impacts to the historic structures, and there would be no change in the setting, feel or existing associations of the property. Therefore, the historic significance of the property would remain and there would be <i>No adverse effect</i> to these properties.</li> <li>•<u>Ditches (13)</u>: In each case, only a small portion of the total ditch would be used either through extension of an existing culvert or addition of a new culvert adjacent to an existing culvert and the impacts would occur in an area where the setting, feel or existing associations of the ditch have already been compromised. The entire historic ditch would retain its historic significance and there would be <i>No adverse effect</i> to these ditches.</li> <li>•<u>Railroads (2)</u>: For both railroads, the use consists of the modernization of track or associated features in a segment where the track or features have previously been removed. The continued use as a rail line would enhance the historic association of the rail line and therefore would result in <i>No Adverse effect</i> to the railroads.</li> </ul>

1 Table 5-7 Section 4(f) Summary (cont'd)

Use Type	Resource Type	Package A	Package B	Preferred Alternative
<i>De Minimis</i>	Park or Recreation Area	<ul style="list-style-type: none"> <li>•Parks (5): Use of the parks all consist of acquisition of small portions of the park with no permanent impacts to the features, attributes, or activities that qualify the park for protection under Section 4(f).</li> <li>•Trail (1): Use of the trail involves acquisition of a small strip of land adjacent to the rail corridor and would require rerouting the trail approximately 10 feet from the existing location. There would be no permanent impacts to the features, attributes, or activities that qualify the trail for protection under Section 4(f).</li> </ul>	<ul style="list-style-type: none"> <li>•Parks (4): Use of the parks all consist of acquisition of small portions of the park with no permanent impacts to the features, attributes, or activities that qualify the park for protection under Section 4(f).</li> <li>•Trails (3): In each case the trail currently crosses I-25 in an underpass that would be temporarily closed and replaced with a slightly extended underpass to accommodate the highway widening. The trails are currently managed through easements and additional right-of-way would be required for the widened highway template. Use of the trail would not be permanently affected and reasonable detours would be provided during the construction period. There would be no permanent impacts to the features, attributes, or activities that qualify the trail for protection under Section 4(f).</li> </ul>	<ul style="list-style-type: none"> <li>•Parks (3): Use of the parks all consist of acquisition of small portions of the park with no permanent impacts to the features, attributes, or activities that qualify the park for protection under Section 4(f).</li> <li>•Trails (3): In each case the trail currently crosses I-25 in an underpass that would be temporarily closed and replaced with a slightly extended underpass to accommodate the highway widening. The trails are currently managed through easements and additional right-of-way would be required for the widened highway template. Use of the trail would not be permanently affected and reasonable detours would be provided during the construction period. There would be no permanent impacts to the features, attributes, or activities that qualify the trail for protection under Section 4(f).</li> </ul>

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1 Table 5-7 Section 4(f) Summary (cont'd)

Use Type	Resource Type	Package A	Package B	Preferred Alternative
Permanent Incorporation of land	Historic	<ul style="list-style-type: none"> <li>•Louden Ditch: A small portion of the ditch would be used. The remainder of the ditch would still have its historic association with the development of water rights and agriculture in Larimer County. It would remain eligible for the NRHP.</li> <li>•Denver/Kansas UPRR: The uses of the railroad are not such that the significance of the remaining portions of this resource would be compromised. It would still be eligible for the NRHP, because it would still be able to convey its association with the early development of the agricultural economy on the Front Range of Colorado.</li> <li>•Old City Electric Building: Under Package A the entire structure would be removed to construct the new commuter rail line adjacent the existing commercial rail line. The building would be demolished and the site would no longer be eligible for the NRHP.</li> </ul> <p>Colorado and Southern/BNSF Railroad Depot: Under Package A the entire structure would be removed to construct the new commuter rail line adjacent the existing commercial rail line. The building would be demolished and the site would no longer be eligible for the NRHP.</p>	<ul style="list-style-type: none"> <li>•Louden Ditch: A small portion of the ditch would be used. The remainder of the ditch would still have its historic association with the development of water rights and agriculture in Larimer County. It would remain eligible for the NRHP.</li> </ul>	<ul style="list-style-type: none"> <li>•Louden Ditch: A small portion of the ditch would be used. The remainder of the ditch would still have its historic association with the development of water rights and agriculture in Larimer County. It would remain eligible for the NRHP.</li> <li>•Denver/Kansas UPRR: The uses of the railroad are not such that the significance of the remaining portions of this resource would be compromised. It would still be eligible for the NRHP, because it would still be able to convey its association with the early development of the agricultural economy on the Front Range of Colorado.</li> </ul>

2

1 Table 5-7 Section 4(f) Summary (cont'd)

Use Type	Resource Type	Package A	Package B	Preferred Alternative
		<ul style="list-style-type: none"> <li>•Hingley Farm: The Hingley Farm farmhouse would be removed. Since the integrity and significance of the farmhouse was the main reason for its eligibility to the NRHP, this farm would most likely no longer be eligible.</li> </ul>		<ul style="list-style-type: none"> <li>•Hingley Farm: The Hingley Farm farmhouse would be removed. Since the integrity and significance of the farmhouse was the main reason for its eligibility to the NRHP, this farm would most likely no longer be eligible.</li> </ul>
Permanent Incorporation of land	Historic (cont'd)	<ul style="list-style-type: none"> <li>•Jillson Farm: The use consists of a sliver of property that would be converted from agricultural use to commuter rail use. The addition of the rail line and train service would alter the setting of the farm resulting in an adverse effect to the property. However, the remainder of the farm would continue to operate as a farm, retaining its eligibility to the NRHP.</li> </ul>		<ul style="list-style-type: none"> <li>•Jillson Farm: The use consists of a sliver of property that would be converted from agricultural use to commuter rail use. The addition of the rail line and train service would alter the setting of the farm resulting in an adverse effect to the property. However, the remainder of the farm would continue to operate as a farm, retaining its eligibility to the NRHP.</li> </ul>
Permanent Incorporation of land	Park or Recreation Area	<ul style="list-style-type: none"> <li>•McWhinney Hahn Sculpture Park: This park would experience a complete loss of its function as a gateway to the city and a large area used to display the sculptures and provide a walking trail for visitors would be removed. The features, attributes and activities would be permanently affected resulting in a use of the property.</li> </ul>	<ul style="list-style-type: none"> <li>•McWhinney Hahn Sculpture Park: This park would experience a complete loss of its function as a gateway to the city and a large area used to display the sculptures and provide a walking trail for visitors would be removed. The features, attributes and activities would be permanently affected resulting in a use of the property.</li> </ul>	<ul style="list-style-type: none"> <li>•McWhinney Hahn Sculpture Park: This park would experience a complete loss of its function as a gateway to the city and a large area used to display the sculptures and provide a walking trail for visitors would be removed. The features, attributes and activities would be permanently affected resulting in a use of the property.</li> </ul>

2

## 1 **De Minimis Uses**

2 Among the alternatives, only minor differences are exhibited as they relate to uses that have  
3 been recommended for *de minimis* approval. The Preferred Alternative uses the least acreage  
4 from both historic and park properties among the alternatives and fewer resources than  
5 Package A. Package B uses less linear distance from the linear resources and fewer  
6 resources overall. However, all of the *de minimis* impacts are so minor that their contribution to  
7 the evaluation of the three alternatives and the determination of least overall harm is basically  
8 nil. The *de minimis* impacts have no adverse effects to the activities, features, and attributes of  
9 a park or recreation resource, or they have been determined to be “no adverse effect” from a  
10 Section 106 standpoint. Therefore, the remainder of this section focuses on the Section 4(f)  
11 resource uses that are not *de minimis*.

## 12 **Uses: Permanent Incorporation of Land**

13 All three build alternatives result in the same use of the McWhinney Hahn Sculpture Park, the  
14 only park or recreation property not recommended for *de minimis* use.

15 Package A would result in more use (in terms of acres) to more Section 4(f) properties than  
16 either of the other alternatives. This is due primarily to the greater uses of properties  
17 associated with the commuter rail components, and Package A, as opposed to the Preferred  
18 Alternative, included the addition of a second track for its entire length. The five historic  
19 properties with adverse effects associated with Package A that are not used with Package B  
20 include four properties to be acquired: Jillson Farm, Hingley Farm, the Old City Electric  
21 Building, and the Colorado and Southern/BNSF Railroad Depot; and one railroad, the  
22 Denver/Kansas/Union Pacific Railroad. The Preferred Alternative would use more properties  
23 than Package B as a result of the use of the two farms (Hingley and Jillson) and the  
24 Denver/Kansas/Union Pacific Railroad. It would also use more lineal feet of the Louden Ditch  
25 and the Denver/Kansas/Union Pacific Railroad.

## 26 **5.6.1 Ability to Mitigate Adverse Impacts**

27 In the case of all adverse effects to historic properties, detailed recording of the affected  
28 resource in accordance with Colorado Historical Society’s Standards for Level II  
29 Documentation would occur. For the Louden Ditch, which is adversely affected by all  
30 alternatives, this, and insuring the continued operation of the ditch during and after  
31 construction, is the only available mitigation option. It would still be eligible for inclusion on the  
32 National Register after the project is built.

33 For three of the historic properties (the Hingley Farm, the Old City Electric Building, and the  
34 Colorado and Southern/BNSF Railroad Depot), the ability to mitigate the adverse effects  
35 associated with the uses is not sufficient to compensate for their primary loss of integrity. In all  
36 three cases, the acquisition and demolition of the primary building would mean they would no  
37 longer be eligible for inclusion on the National Register of Historic Places. All three of these  
38 properties are used by Package A. The Preferred Alternative only uses one property (the  
39 Hingley Farm).

40 In the case of the railroad that is adversely affected by Package A and the Preferred  
41 Alternative (5WL.1969, 5BF130), even though two wooden trestle bridges would be  
42 demolished and 2.9 miles of abandoned railroad bed would be modernized, this modernization  
43 is entirely consistent with the original use of the railroad right-of-way as a train corridor.



1 The adverse effect to the Jillson Farm under Package A and the Preferred Alternative is  
2 largely a result of the introduction of railroad tracks and train traffic to the historic farm setting  
3 in which tracks and trains have never been a part of the setting. Not only would they provide a  
4 visual intrusion, but they would also bring noise and train activity on a regular schedule to the  
5 farm. The farm could continue to serve its agricultural function. Effects to the Jillson Farm  
6 would not result in the loss of any of the contributing structural elements and it would still be  
7 eligible to the National Register of Historic Places.

8 The park uses of the McWhinney Hahn Sculpture Park are identical for all three build  
9 alternatives. The key attributes and features of the park are its easy visibility from US 34 so it  
10 can be seen as a “gateway” from I-25 to the City of Loveland, its views of the mountains to the  
11 west and its clear view of the sculptures. The three build alternatives all damage these  
12 attributes and features even without any physical use of the park, since there will be a new  
13 high speed ramp that is elevated approximately 30 feet above the park. This means that the  
14 park will be only barely visible from US 34, the views of the mountains will be noticeably  
15 reduced and the sculptures will no longer be visible. The three build alternatives use  
16 1.21 acres of parkland, in addition to the indirect impacts of the new high speed ramp. All of  
17 these impacts are such that the park, in this location, has lost its intended function. The  
18 mitigation option that remains, which the City of Loveland supports, is for a new location to be  
19 chosen as a replacement. CDOT will coordinate with the City of Loveland to identify a new  
20 location and relocate the park, gateway and visitors center. The City believes that a new  
21 location will better serve the original activities, features, and attributes of the park.

22 To summarize, the Section 4(f) uses associated with Package B are able to be fully mitigated  
23 such that the one historic property (the Loudon Ditch) would still be eligible for inclusion on the  
24 National Register of Historic Places. The use of the McWhinney Hahn Sculpture Park is also  
25 able to be fully mitigated by replacement in a manner and location that enhances its intended  
26 function.

27 For the Preferred Alternative, the Section 4(f) uses of the Loudon Ditch, the Denver/Kansas  
28 UPRR, the Jillson Farm and the McWhinney Hahn Sculpture Park are all such that mitigation  
29 would effectively alleviate harm so that their integrity and significance is maintained. The use  
30 of the Hingley Farm, however, would not be able to be effectively mitigated because the  
31 acquisition and demolition of the primary building would be required. That property would lose  
32 its eligibility to the National Register of Historic Places.

33 For Package A, similar to the Preferred Alternative, the Section 4(f) uses of the Loudon Ditch,  
34 the Denver/Kansas UPRR, the Jillson Farm and the McWhinney Hahn Sculpture Park are all  
35 such that mitigation would effectively alleviate harm so that their integrity and significance is  
36 maintained. The uses of the Hingley Farm, the Old City Electric Building and the Colorado and  
37 Southern/BNSF Railroad Depot however, would not be able to be effectively mitigated  
38 because the acquisition and demolition of the primary building in each of these cases would be  
39 required. Those three properties would all lose their eligibility to the National Register of  
40 Historic Places

## 41 **5.6.2 Relative Severity of the Remaining Harm**

42 After mitigation, the severity of the remaining harm to the protected activities, attributes or  
43 features that qualified these properties for protection is indistinguishable among the  
44 alternatives as they relate to the following two resources:

- 1 ▶ The McWhinney Hahn Sculpture Park, where the protected park attributes and features  
2 would be lost under all three alternatives. The park will be relocated to a site that is likely to  
3 better serve its intended function (as a gateway to the City of Loveland). The harm to this  
4 park would be fully mitigated because the City of Loveland would prefer to re-locate this  
5 park. After mitigation, all attributes and features important for this park will be replaced in  
6 the new location.
- 7 ▶ Loudon Ditch is 23.25 miles in its entirety. All three alternatives would use the ditch by  
8 extending the existing culvert that carries the ditch beneath I-25 and by placing the ditch in  
9 a new culvert beneath the proposed Byrd Drive. The Preferred Alternative would use an  
10 additional 524 linear feet over Packages A and B where the ditch runs adjacent to LCR 30  
11 and roadway improvements would affect the ditch. The Preferred Alternative would also  
12 use another segment not used by the other alternatives at the rail line where an existing  
13 culvert would be extended to accommodate the proposed new service road.
- 14 Although the Preferred Alternative uses a greater length of the ditch than the other  
15 alternatives, after mitigation, there is no difference in the severity of harm to the resource.  
16 All uses occur in areas where the setting has previously been compromised by existing  
17 culverts and adjacent development. Under all alternatives the ditch would continue to  
18 operate toward its intended purpose both during and after construction and the remainder  
19 of the ditch would not be compromised. Under all alternatives, the ditch would still retain its  
20 important association with the development of water rights and agriculture in Larimer  
21 County and would thus still be eligible for the National Register of Historic Places.
- 22 The Hingley and Jillson Farms, will be affected similarly by Package A and the Preferred  
23 Alternative with no impacts under Package B. Since the new commuter rail operation would  
24 introduce railroad tracks and train traffic to a historic farm setting, this will result in an adverse  
25 affect to the setting and feeling of the farms. The Jillson Farm would still be eligible for  
26 inclusion on the National Register of Historic Places because it would still be clear that this is  
27 an active farm. Since the Hingley Farm is important primarily because of the farmhouse, it  
28 would likely no longer be eligible for inclusion on the National Register of Historic Places.
- 29 The Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder Valley Branch  
30 (5WL.1969, 5BF130) would be used under Package A and the Preferred Alternative. However,  
31 after mitigation as described in **Section 5.6.1**, this would result in relatively low severity of  
32 effects to the protected activities, attributes and features of this property.
- 33 Package A would also use an additional two properties not used under the Preferred  
34 Alternative or Package B. These are the Old City Electric Building (5BL.1245) and the  
35 Colorado and Southern/BNSF Depot (5BL.1244). In these cases the remaining harm, after  
36 mitigation, would still be severe because the primary buildings on each property would be  
37 acquired and demolished.
- 38 To summarize, the relative severity of the remaining harm to the one historic property (the  
39 Loudon Ditch) used by Package B is such that its significant features are maintained. The one  
40 park property (the McWhinney Hahn Sculpture Park), after mitigation, would have its attributes  
41 and functions fully replaced.
- 42 For the Preferred Alternative, the Section 4(f) uses of the Loudon Ditch, the Denver/Kansas  
43 UPRR, the McWhinney Hahn Sculpture Park and the Jillson Farm are all such that mitigation  
44 would effectively alleviate harm so that their integrity and significance is maintained. The use  
45 of the Hingley Farm is such that the relative severity of the remaining harm results in a loss of  
46 its significance.

1 For Package A, similar to the Preferred Alternative, the Section 4(f) uses of the Loudon Ditch,  
2 the Denver/Kansas UPRR, the McWhinney Hahn Sculpture Park and the Jillson Farm are all  
3 such that mitigation would effectively alleviate harm so that their integrity and significance is  
4 maintained. The relative severity of the remaining harm to the Hingley Farm, the Old City  
5 Electric Building, and the Colorado and Southern/BNSF Railroad Depot however, are all such  
6 that their significance, features or attributes would be lost because the primary buildings on  
7 each property would be acquired and demolished.

8 In comparison, Package A, because the commuter rail component must be double tracked to  
9 meet the project purpose and need, uses three properties for which the relative severity of  
10 remaining harm to each property's significant features is such that these three historic  
11 properties lose their eligibility to the National Register of Historic Places; Package B uses no  
12 properties that fall within this definition; and the Preferred Alternative uses one property for  
13 which the relative severity of remaining harm to that property's significant features is such that  
14 it would no longer be eligible to the National Register of Historic Places. For a project of this  
15 scale, including improvements to 619.5 lineal miles of highway lanes or passenger rail tracks,  
16 along three separate corridors, this minimal use of historic properties demonstrates the efforts  
17 that have been undertaken to avoid and minimize uses of historic properties. In northern  
18 Colorado the prevalence of historic farm houses and lands is high. These properties are fairly  
19 common and similar. Therefore the differences between Package B and the Preferred  
20 Alternative, considering the remaining severity of harm are very small.

### 21 **5.6.3 Relative Significance of Each Property**

22 The relative significance of the various types of Section 4(f) historic properties that are  
23 used, as they relate to other examples of that type in the regional study area is as follows:

- 24 ▶ The Old City Electric Building (used only by Package A) in Longmont was one of the  
25 first municipally owned electric generation plants and exhibits unique characteristics in  
26 the regional study area as such.
- 27 ▶ The Hingley Farm and, the Jillson Farm are both examples of historic farms and  
28 ranches, of which there are many in the regional study area. Neither farm has any  
29 particular unique attributes or features that make it special among the other farms in the  
30 regional study area.
- 31 ▶ The Denver Pacific/Kansas Pacific/Union Pacific/Denver and Boulder Valley Railroad  
32 branch is no more unique than other railroad tracks still evident on the Plains and in this  
33 region. The Colorado & Southern/BNSF Railroad Depot, however, is one of just a few  
34 depots associated with the development of the railroads in the regional study area and is  
35 a very good example of that infrastructure. The Depot is used only by Package A.
- 36 ▶ The Loudon Ditch can be most appropriately viewed in a context of the nature of the  
37 regional study area, which is a historic agricultural area with hundreds of agricultural  
38 ditches. It has no special or unique features in comparison with the other ditches in the  
39 regional study area.
- 40 ▶ The McWhinney Hahn Sculpture Park is the smallest and least important of the three  
41 sculpture parks in the City of Loveland. It was originally placed in this location to serve as a  
42 quiet gateway to the City. This function has been compromised by the higher intensity  
43 development that has occurred in the area, and would be further compromised by the  
44 US 34 interchange improvements planned as a part of all three build alternatives. Even if  
45 no use of this property occurs, the high retaining walls would cut off views of the mountains



1 and views of the US 34 motorists of the sculptures in the park. For these reasons, the  
2 opinion of the Official with Jurisdiction is that the current location of the park no longer  
3 serves its original intent. The significance and value of this park is not tied to the current  
4 location.

5 To summarize the differences in the build alternatives, only Package A uses properties that are of  
6 particular significance within the regional study area (the Old City Electric Building and the  
7 Colorado and Southern /BNSF Railroad Depot). The other two alternatives use portions of  
8 properties (historic farmsteads, ditches, railroads and a park) that have no outstanding  
9 characteristics or significance when compared to other similar properties within the regional study  
10 area.

#### 11 **5.6.4 Views of the Officials with Jurisdiction**

12 The officials with jurisdiction that have been coordinated with include the State Historic  
13 Preservation Officer and the Parks and Recreation representative from Loveland. The views of  
14 the SHPO on the relative significance and value of the historic properties are based on  
15 documentation from the Section 106 determinations of eligibility and effects. The views of the  
16 official with jurisdiction concerning the McWhinney Hahn Sculpture Park come from a meeting  
17 held with that official with jurisdiction.

18 The SHPO's opinion about the Old City Electric Building and the Colorado & Southern/BNSF  
19 Depot is that these properties represent important and significant elements of infrastructure  
20 development.

21 The SHPO's opinion about the Loudon Ditch is that it is one of 16 eligible ditches in the  
22 regional study area and is no more or less significant than the other 15 ditches. Similarly, the  
23 segment of the Denver/Kansas/UP Railroad is not more significant than other historic railroads  
24 in the Front Range and its conversion of use to an active commuter rail line is entirely  
25 consistent with its historic use.

26 The view of the Official with Jurisdiction related to the McWhinney Hahn Sculpture Park is that  
27 the effects to the park property, including impediments to the views of the sculpture park from  
28 US 34 and from users of the park to the Rocky Mountains are such that the activities,  
29 attributes, and features of the park could no longer serve the original intended use as a  
30 gateway to Loveland. Therefore, a replacement property that would substitute for the park is  
31 the most appropriate mitigation.

32 To summarize, because the Old City Electric Building and the Colorado & Southern/BNSF  
33 Depot Building are of higher significance within the regional study area, the Section 4(f) uses  
34 associated with Package A would be of greater concern from the SHPO. Neither Package B  
35 nor the Preferred Alternative would use these two buildings.

#### 36 **5.6.5 Degree to Which Each Alternative Meets the Purpose and** 37 **Need of the Project**

38 When considering all of the different components of the project purpose and need, the  
39 Preferred Alternative cumulatively meets these to a greater extent than the other two build  
40 alternatives as described below:

##### 41 ***Need to Address the Increased Frequency and Severity of Crashes***

42 All three build alternatives have been designed to be safe. All three build alternatives would  
43 reduce the frequency and severity of crashes on I-25, when compared to the No-Action  
44 Alternative. Considering only I-25 in 2035, Package B would result in fewer crashes

1 (4,061 average per year) than the Preferred Alternative (4,399) and fewer average crashes per  
2 vehicle miles traveled (1.32) than the Preferred Alternative (1.37). However when considering  
3 the entire regional system, the Preferred Alternative has the greatest reduction of crashes  
4 because of the reduced daily VMT on arterials compared to Package A or Package B. This  
5 reduced VMT is a result of the higher capacity provided by the Preferred Alternative on I-25  
6 making I-25 a more attractive route than the adjacent arterial network. The crash rate on  
7 arterials is higher than the crash rate on access controlled facilities such as I-25. This results in  
8 improved safety under the Preferred Alternative for the entire regional transportation system  
9 because of the transfer of VMT from arterials to I-25.

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

### 15 *Need to Address the Increasing Traffic Congestion on I-25, Leading to Mobility and* 16 *Accessibility Problems*

17 The Preferred Alternative provides the most efficient operations for I-25 compared to  
18 Packages A and B. A comparison of the traffic elements of the mobility portion of the purpose  
19 and need demonstrates that the Preferred Alternative provides the highest benefit:

- 20 ▶ Its remaining congested miles on I-25 general purpose lanes in the PM peak hour would be  
21 noticeably less at 17 miles, compared to 45 miles with Package B and 44 miles with  
22 Package A in 2035.
- 23 ▶ In the AM peak hour, its remaining congested miles on general purpose lanes are only 11,  
24 compared to 30 with Package B and 16 with Package A in 2035.
- 25 ▶ In 2035, it has the fewest number of interchange ramp merge/diverge locations operating  
26 at LOS E or F. The Preferred Alternative would have 13 of these in the AM peak period and  
27 26 in the PM. Package B would have 34 in the AM and 52 in the PM. Package A would  
28 have 30 in the AM and 34 in the PM.
- 29 ▶ It has the fastest highway travel time from SH 1 to 20th Street in the general purpose lanes  
30 (107 minutes compared to 117 minutes with the other two alternatives in 2035).
- 31 ▶ It has the fastest travel time from SH 1 to 20<sup>th</sup> Street in the tolled express lanes in 2035  
32 (64 minutes compared to 65 minutes with Package B and 102 minutes with Package A  
33 (which only uses a short section of existing tolled express lanes in the Denver metro area  
34 and the remaining trip is in general purpose lanes).
- 35 ▶ It provides the most travel choices on I-25 allowing a motorist to pay a toll or carpool to  
36 avoid congestion, or choose to travel toll free in the general purpose lanes, or choose  
37 express bus.
- 38 ▶ It has the fastest bus transit service from the South Transit Center to 20th Street at  
39 63 minutes for an express bus, compared to 70 minutes for BRT with Package B.
- 40 ▶ Similar to Package B the tolled express lanes provide an opportunity to maintain reliable  
41 travel time for buses, HOVs and toll paying users in perpetuity.
- 42 ▶ Because the Preferred Alternative would have the best level of service in the general  
43 purpose lanes, it would have the best overall mobility for freight traffic.

- 1 ▶ It would serve the highest number of users on I-25 at over 990,000 users (number of  
2 vehicles entering this length of I-25 multiplied by vehicle occupancy. See **Section 4.2.5**  
3 *Highway Users* for an explanation of the calculation).
- 4 ▶ It captures the second highest percentage of transit market share between the northern  
5 front range area and the downtown Denver CBD at 50 percent in 2035. Package A  
6 captures the highest percentage at 55 percent and Package B captures 45 percent.
- 7 ▶ It has the second highest ridership with 6,500 daily riders while Package B captures the  
8 highest ridership at 6,800 daily riders as a result of its frequent and robust BRT service.  
9 Package A captures the fewest riders with 5,850 daily.
- 10 ▶ Regional vehicle hours of travel are the least with the Preferred Alternative at 1.68 million  
11 compared to 1.69 million with Package B and 1.70 million with Package A in 2035.
- 12 ▶ It produces the highest amount of vehicle miles of travel at 52.81 as a result of its higher  
13 capacity than the other two packages. Package B produces the least amount of regional  
14 VMT at 52.62 and Package A produces 52.76.
- 15 ▶ Its regional average speed (including freeways and other facilities) in 2035 is the highest  
16 (31.4 miles per hour) compared to 31.1 with the other two build alternatives – a notable  
17 increase considering the magnitude of the number of miles and number of hours in the  
18 region used to calculate average miles per hour.

### 19 *Need to Replace Aging and Functionally Obsolete Infrastructure*

20 The Preferred Alternative and Package B both provide the most new structures which replace  
21 aging structures: 94, compared to 87 with Package A. All of the alternatives would replace all  
22 of the pavement that has exceeded its useful life.

### 23 *Need to Provide Modal Alternatives*

24 The Preferred Alternative provides the most opportunity for improved mode choice throughout  
25 the regional study area. In addition, it allows the ability to implement transit service with  
26 minimal initial infrastructure investment. Overall the Preferred Alternative addresses this  
27 element of purpose and need in the following ways:

- 28 ▶ The Preferred Alternative would provide the most opportunity to use multiple modes of  
29 travel, since two or more modes would be provided along three separate corridors:  
30 commuter rail would be provided on the US 287 corridor; express bus and carpooling on  
31 TELs on I-25; and commuter bus service would be provided on US 85. Package A would  
32 provide multiple modes on only two corridors and Package B would provide multiple modes  
33 on only one corridor.
- 34 ▶ The express bus service provided as a part of the Preferred Alternative could be fairly  
35 easily implemented and implemented in phases, providing near term multimodal options to  
36 commuters traveling the North I-25 and US 85 corridors. BRT service provided as a part of  
37 Package B would be harder to implement in phases because stations are located in the  
38 median, requiring reconstruction of I-25.
- 39 ▶ Given the uncertainty of the schedules for the FasTracks North Metro and Northwest Rail  
40 corridors, express bus service provided as a part of the Preferred Alternative could provide  
41 an additional mode choice that would first supplement and then complement the FasTracks  
42 commuter rail corridors.



- 1 ▶ It would attract the highest level of special event ridership (transit trips to sporting events,  
2 the theater and other activities in downtown Denver), due to the range of transit options  
3 that can accessed for these discretionary trips.

4 To summarize, the Preferred Alternative best responds to the four elements of Purpose and  
5 Need. Regional safety is improved the most with the Preferred Alternative. The Preferred  
6 Alternative reduces congestion on I-25 to a noticeably greater degree than the other  
7 alternatives. It also results in dramatically shorter travel times for highway users, tolled express  
8 lane users and bus patrons. And because it includes tolled express lanes, the faster travel time  
9 for users of those lanes is a more reliable travel option over time. The Preferred Alternative  
10 also provides the most opportunity to use multiple modes of travel, since two or more modes  
11 would be provided along three separate corridors:

- 12 ▶ commuter rail would be provided along the US 287 corridor
- 13 ▶ express bus, vanpooling and carpooling on TEL lanes would be provided on I-25, along  
14 with noticeable improvements to travel in general purpose lanes
- 15 ▶ commuter bus service would be provided on US 85

16 And it, along with Package B, requires reconstruction of more of the I-25 structures, thus  
17 replacing more of the aging infrastructure that is an important element of Purpose and Need.

## 18 **5.6.6 Magnitude, After Mitigation, of Adverse Impacts to Other** 19 **Resources**

20 After reasonable mitigation, the adverse impacts to other resources as a result of the Preferred  
21 Alternative would include impacts to established communities and businesses, including  
22 relocations and noise impacts. Traffic noise impacts (after mitigation) would occur to 840  
23 receivers under the Preferred Alternative as compared to 826 receivers with Package A and  
24 848 receivers with Package B. The Preferred Alternative would result in 8 fewer residential  
25 (51 compared to 59) and 10 fewer business (23 compared to 33) displacements than  
26 Package A. Compared to Package B, the Preferred Alternative would result in 51 residential  
27 displacements (27 more than Package B) and 23 business displacements (7 more than  
28 Package B). Even though there is a noticeable difference in residential and business  
29 relocations among the alternatives, the availability of replacement housing and business sites  
30 would not indicate that this remaining adverse impact would be of high magnitude.

31 After mitigation, an adverse effect to established communities would still result from the  
32 addition of commuter rail under Package A and the Preferred Alternative. Commuter rail will  
33 operate on a more frequent basis than the freight rail along the same corridor (with the  
34 addition of a second set of tracks under Package A) and the addition of commuter rail along  
35 the alignment between Longmont and the FasTracks North Metro corridor, where no rail  
36 service currently exists, would create a new barrier between communities. The existing barrier  
37 created by the freight rail service would also be somewhat exacerbated. The magnitude of this  
38 impact, however is offset by the fact that there is already rail service along most of this corridor  
39 and the substantial benefit to be gained by the new rail service that would be available to the  
40 adjacent residents, businesses and business patrons.

41

- 1 The Preferred Alternative results in the least impacts to:
- 2 ▶ Wetlands and jurisdictional open waters
  - 3 (18.2 acres compared to 21.3 acres with Package B and 21.9 acres with Package A)
  - 4 ▶ Sensitive wildlife habitat
  - 5 (1.9 acres compared to 2.4 acres with Package B and 2.0 acres with Package A)
  - 6 ▶ Aquatic habitat
  - 7 (1.5 acres compared to 2.3 acres with Package B and 1.8 acres with Package A)
  - 8 ▶ Preble's meadow jumping mouse habitat
  - 9 (0.7 acre compared to 0.8 acre with Package A and Package B)

10 In general, the magnitude and severity of the impacts of the three build alternatives to the  
11 natural environment are relatively similar taking into account the size of the project. The  
12 Preferred Alternative has fewer impacts to the habitat for the Preble's meadow jumping  
13 mouse, a federally threatened species. The Preferred Alternative also has the least impacts to  
14 aquatic resources. On the other hand, the Preferred Alternative has more impacts than either  
15 of the other build alternatives to bald eagle foraging habitat and raptor nests and it has more  
16 impervious surface than Package A.

17 The Preferred Alternative results in impacts to some resources that are greater than the other  
18 alternatives: impacts to bald eagle foraging habitat, noise impacts from rail transit and number  
19 of raptor nests potentially impacted. The Preferred Alternative results in the least impact to the  
20 following resources: wetlands and jurisdictional open waters, Preble's meadow jumping  
21 mouse habitat, sensitive wildlife habitat, aquatic habitat and northern leopard frog and  
22 common garter snake habitat. It is the view of FHWA and CDOT that the Preferred Alternative  
23 has the least impacts to aquatic resources and therefore has the most likelihood of all build  
24 alternatives to meet the Section 404(b)(1) requirements to secure an individual Section 404  
25 permit from the USACE.

## 26 **5.6.7 Substantial Differences in Cost**

27 A tabulation of costs for the three build alternatives shows that the Preferred Alternative is  
28 more than the other two build alternatives. Package A capital cost is \$1.96 billion, Package B  
29 capital cost is \$1.72 billion and the Preferred Alternative is \$2.18 billion. However, the  
30 Preferred Alternative provides benefits that the other two alternatives do not. The Preferred  
31 Alternative:

- 32 ▶ Better improves regional safety compared to the other two build alternatives
- 33 ▶ Reduces congestion more effectively than Package A or Package B
- 34 ▶ Is similar to the other alternatives in replacing aging and obsolete infrastructure
- 35 ▶ Is superior to the other alternatives in providing modal options
- 36 ▶ Better addresses goals of the land use plans in the northern Colorado communities
- 37 ▶ Achieves system wide benefits that Package A and B do not provide such as regional  
38 connectivity and travel reliability
- 39 ▶ Better supports livability concepts than Package A and Package B by providing a more  
40 comprehensive multimodal system of transportation improvements

## 5.6.8 Summary

The determination of least overall harm was made by the lead agencies using primarily three factors: (1) the relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualifies each property for protection, (2) the degree to which each alternative meets the purpose and need for the project, and (3) after reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f). The reasons these factors were emphasized was based on the importance that they play in furthering the Section 4(f) intent, the public benefit provided by the investment in infrastructure and meeting other federal requirements that protect the natural environment.

The Preferred Alternative is identified as the alternative with the least overall harm because: the severity of the remaining harm to Section 4(f) properties is similar between Package B and the Preferred Alternative and much less severe than Package A; the Preferred Alternative demonstrates the highest degree of meeting the purpose and need, thus providing a superior transportation benefit; and the Preferred Alternative in the view of FHWA and has the least impacts to aquatic resources and therefore has the most likelihood of all build alternatives to meet the Section 404(b)(1) requirements.

To summarize, the Preferred Alternative is considered to be the least overall harm alternative per 23 CFR 774.3(c)(1) based on:

1. *The relative severity of remaining harm, after mitigation, to the protected activities, attributes or features that qualifies each property for protection.* The Preferred Alternative uses one additional Section 4(f) property with a resulting higher severity of harm than Package B. Although mitigation includes the documentation of the farm, the actual character defining features of this property would be destroyed. This property, the Hingley Farm, is a common type of property in Northern Colorado and does not have unique characteristics that would set it apart from other similar type historic properties. In comparison, Package B does not use a historic property to this relative severity. However, for a project of this scale, including improvements to 619.5 lineal miles of highway lanes or passenger rail tracks, along three separate corridors, this minimal use of historic properties demonstrates the efforts that have been undertaken to avoid and minimize uses of historic properties resulting in a conclusion that the overall severity of these impacts from these alternatives is similar.
2. *The degree to which the Preferred Alternative meets the purpose and need for the project.* The degree to which the Preferred Alternative meets the purpose and need of the project is much higher than the other alternatives, resulting in a transportation benefit that is clearly superior. The Preferred Alternative improves regional safety. The Preferred Alternative reduces congestion on I-25 to a noticeably greater degree than the other alternatives. It also results in dramatically shorter travel times for highway users, tolled express lane users and bus patrons. The benefits of tolled express lanes include the faster travel time for users of those lanes and a more reliable travel option over time. The Preferred Alternative also provides the most opportunity to use multiple modes of travel, since two or more modes would be provided along three separate corridors:
  - commuter rail would be provided on US 287 corridor, in addition to the auto and bus travel currently provided along US 287; and



- 1 • express bus, vanpooling and carpooling on TEL lanes would be provided on I-25, along  
2 with noticeable improvements to travel in general purpose lanes; and
- 3 • commuter bus service would be provided on US 85 in addition to auto travel already on  
4 US 85.

5 3. *The magnitude, after reasonable mitigation, of any adverse impacts to resources not*  
6 *protected by Section 4(f).* In general, the magnitude and severity of the impacts of the three  
7 build alternatives to the natural environment are relatively similar taking into account the  
8 size of the project. The Preferred Alternative results in impacts to some resources that are  
9 greater than the other alternatives: impacts to bald eagle foraging habitat, noise impacts  
10 from rail transit and number of raptor nests potentially impacted. The Preferred Alternative  
11 results in the least impact to the following natural resources: wetlands and jurisdictional  
12 open waters, Preble's meadow jumping mouse habitat, sensitive wildlife habitat, aquatic  
13 habitat and northern leopard frog and common garter snake habitat. It is the view of FHWA  
14 and CDOT that the Preferred Alternative has the least impacts to aquatic resources and  
15 therefore has the most likelihood of all build alternatives to meet the Section 404(b)(1)  
16 requirements to secure an individual Section 404 permit from the USACE.

17 For the remaining four least overall harm factors, the relative differences among the three  
18 alternatives is slight between the Preferred Alternative and Package B and a greater difference  
19 when comparing Package A, as demonstrated in the following text:

- 20 ▶ *The ability to mitigate adverse impacts to each Section 4(f) property* associated with the  
21 Preferred Alternative is, for a project of this scale, similar to that of Package B. The  
22 Preferred Alternative results in an inability to mitigate adverse impacts to only one Section  
23 4(f) property, compared to none with Package B. Package A is unable to fully mitigate  
24 adverse impacts to three Section 4(f) properties.
- 25 ▶ *The relative significance of each Section 4(f) property used* is indistinguishable between  
26 the Preferred Alternative and Package B. Only Package A uses properties that are of  
27 unique significance or value within the regional study area. The other two alternatives use  
28 portions of properties (historic farms, ditches, railroads and a park) that have no  
29 outstanding characteristics or significance when compared to other similar types of historic  
30 properties within the regional study area.
- 31 ▶ *The views of the officials with jurisdiction* mirrors the relative significance of the Section 4(f)  
32 properties, which is that Package B and the Preferred Alternative are nearly  
33 indistinguishable. Because the Old City Electric Building and the Colorado and  
34 Southern/BNSF Depot building have unique characteristics within the regional study area,  
35 the Section 4(f) uses associated with Package A would be of greater concern from the  
36 SHPO. Both Package B and the Preferred Alternative avoid these two properties.
- 37 ▶ And finally, any *substantial differences in cost* are not a major factor because although the  
38 Preferred Alternative costs the most, its benefits far outweigh the additional costs. When  
39 compared to the other two alternatives, it better improves regional safety, reduces  
40 congestion more effectively, is similar in the replacement of aging infrastructure, and is  
41 superior in providing modal options. It also better addresses goals of the land use plans of  
42 northern Colorado communities, achieves system wide regional connectivity and travel  
43 reliability benefits and better supports livability concepts by providing a more  
44 comprehensive system of multimodal improvements.