

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 the FHWA and the FTA 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 for FHWA and FTA 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:

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

(2) 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 and
4 does not cause other severe problems of a magnitude that substantially outweighs
5 the importance of protecting the Section 4(f) property. In assessing the importance of
6 protecting the Section 4(f) property, it is appropriate to consider the relative value of
7 the resource to the preservation purpose of the statute.

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

10 (3) An alternative is not prudent if:

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

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

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

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

16 (b) Severe disruption to established communities;

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

18 (d) Severe impacts to environmental resources protected under other Federal
19 statutes;

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

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

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

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

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

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

A temporary use of a Section 4(f) resource occurs when there is a brief impact to a Section 4(f) resource that is considered adverse in terms of the preservationist purposes of the Section 4(f) statute. After the period of impact, the resource must be restored to the condition in which it was originally found.

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.

Under the FHWA/FTA regulations, a temporary occupancy of property *does not* constitute a use of a Section 4(f) resource when the following conditions are satisfied:

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

Properties that may incur a temporary occupancy, specifically trails, are addressed in **Section 4.9**, Construction Impacts.

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

1 *De Minimis*

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

12 A finding of *de minimis* use may be made for historic sites when no historic property is
13 affected by the project or the project will have “no adverse effect” on the historic property in
14 question. For parks, recreation areas, and wildlife and waterfowl refuges a finding of *de*
15 *minimis* use may be made when impacts will not adversely affect the activities, features, and
16 attributes that qualify the resource for protection under Section 4(f). *De minimis* findings are
17 discussed in **Section 5.5** of this Section 4(f) evaluation.

18 **5.2 SECTION 4(f) PROJECT INFORMATION**

19 **5.2.1 Purpose and Need**

20 The purpose of the project is to meet long-term travel needs between the Denver Metro Area
21 and the rapidly growing population centers along the I-25 corridor north to the Fort Collins-
22 Wellington area. The project’s purpose is explained through five major need categories as
23 described below. For more detailed information, refer to **Chapter 1.0** of this Draft
24 Environmental Impact Statement (DEIS).

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

29 *Improve mobility and accessibility*—2030 projections in the regional study area show an
30 increase of 84 percent in households and more than 56 percent in employment over the 2000
31 levels. This growth would result in increases in travel demand throughout the regional study
32 area. There is a need for transportation improvements to address 2030 transportation
33 demand that balances mobility and accessibility along the I-25 corridor.

34 *Replace aging and obsolete highway infrastructure*—A number of structures along I-25 are
35 currently structurally deficient or are expected to be deficient by 2030. Segments of
36 pavement on I-25 are reaching the end of the pavement’s life expectancy, and surface
37 conditions are deteriorating rapidly. There is a need to replace the aging infrastructure along
38 I-25.

1 *Provide for modal alternatives and interrelationships*—Modal alternatives are very limited in
2 northern Colorado and between northern Colorado and the Denver Metro Area. There is a need
3 to increase the number of transportation choices and avoid improvements that would preclude
4 future transportation options.

5 **5.2.2 Corridor-Wide Avoidance Alternatives**

6 A full range of alternatives were developed and evaluated based on responsiveness to the
7 project purpose and need, feasibility of being constructed, environmental and community
8 impacts, and cost. A full description of alternatives considered is included in Chapter 2.0,
9 **Sections 2.3, 2.4** and **Section 2.5**. The following text summarizes the findings of this analysis
10 specific to how each corridor-wide alternative was determined to be not feasible and prudent as
11 defined under Section 4(f). The definitions for feasibility and prudence are included in **Section**
12 **5.4.2** of this chapter.

13 *No-Action Alternative*

14 The No-Action Alternative makes no substantial improvement to mobility and safety along I-25.
15 Because this alternative does not meet the purpose and need for the project of improving safety,
16 improving mobility and accessibility, replacing aging infrastructure, and enhancing modal
17 alternatives, it is not a feasible and prudent alternative for avoiding the impacted Section 4(f)
18 properties.

19 *New Freeways on a New Alignment*

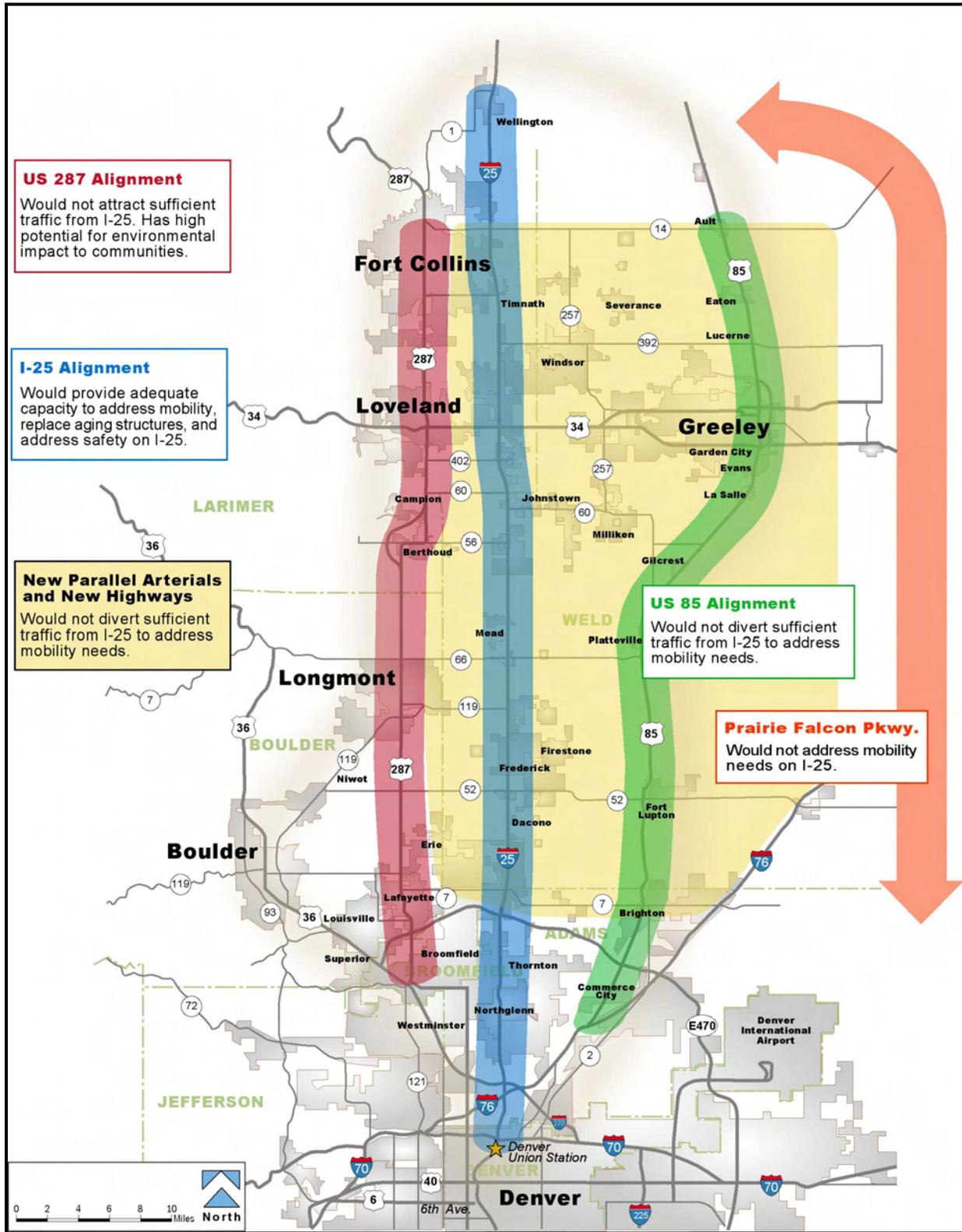
20 Freeway alternatives were evaluated that were located on an alignment other than along I-25.
21 These options are illustrated in **Figure 5-1**, and include freeways along US 287, US 85 and
22 farther east (called the Prairie Falcon Parkway). None of these three alternatives was found to
23 meet purpose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

29 A combination of widening to US 287, US 85, and I-25 was studied. This alternative would meet
30 the mobility-related purpose and need factor but would not meet the need to provide for modal
31 alternatives. In addition, widening US 287 would, after mitigation, result in severe disruptions to
32 the established communities of Fort Collins, Loveland, Berthoud, and Longmont. Businesses,
33 civic buildings, and parks in the old downtown area would be demolished. Severe impacts
34 would also occur to three times more historic properties and parks than those impacted by
35 Packages A and B. For these reasons, this alternative is not feasible and prudent.

36 Widening US 85 alone was developed as an alternative. This alternative would not meet the
37 purpose and need factor related to mobility and safety because it would divert less than 20
38 percent of the daily trips, and it would not address safety problems on I-25. For this reason, this
39 alternative is not feasible and prudent.



1 Figure 5-1 Highway Alignments Considered



2
3

1 A combination widening of US 85 and widening of I-25 was studied. This alternative would meet
2 the mobility-related purpose and need factor, but would not meet the need to provide for modal
3 alternatives. Cost for the highway portion of the alternative would be \$830 million greater than
4 widening of I-25 alone. For these reasons, this alternative is not prudent and feasible.

5 *Advanced Technology Transit Alternatives*

6 A number of advanced technology transit alternatives were considered, such as magnetic levitation,
7 automated guideway transit, high-speed rail, personal rapid transit, and subway or elevated systems.
8 Some of these could potentially have fewer impacts on Section 4(f) resources. None of these
9 alternatives was found to meet purpose and need because they did not provide accessibility or
10 connectivity to regional study area communities. They would not provide accessibility on connectivity
11 because in order to meet the definition of advanced technology, the number of stations would be
12 reduced to two or three instead of eight or nine. Because of this, these alternatives would not
13 improve access to many regional study area communities. In addition, other transit technologies
14 were found to provide a similar or greater level of transportation service at one-third to one-fifth the
15 cost and complexity of the advanced technology alternatives. For these reasons, advanced
16 technology transit alternatives were found to be not feasible and prudent.

17 *Commuter Rail or Light Rail on an Eastern or Central Alignment*

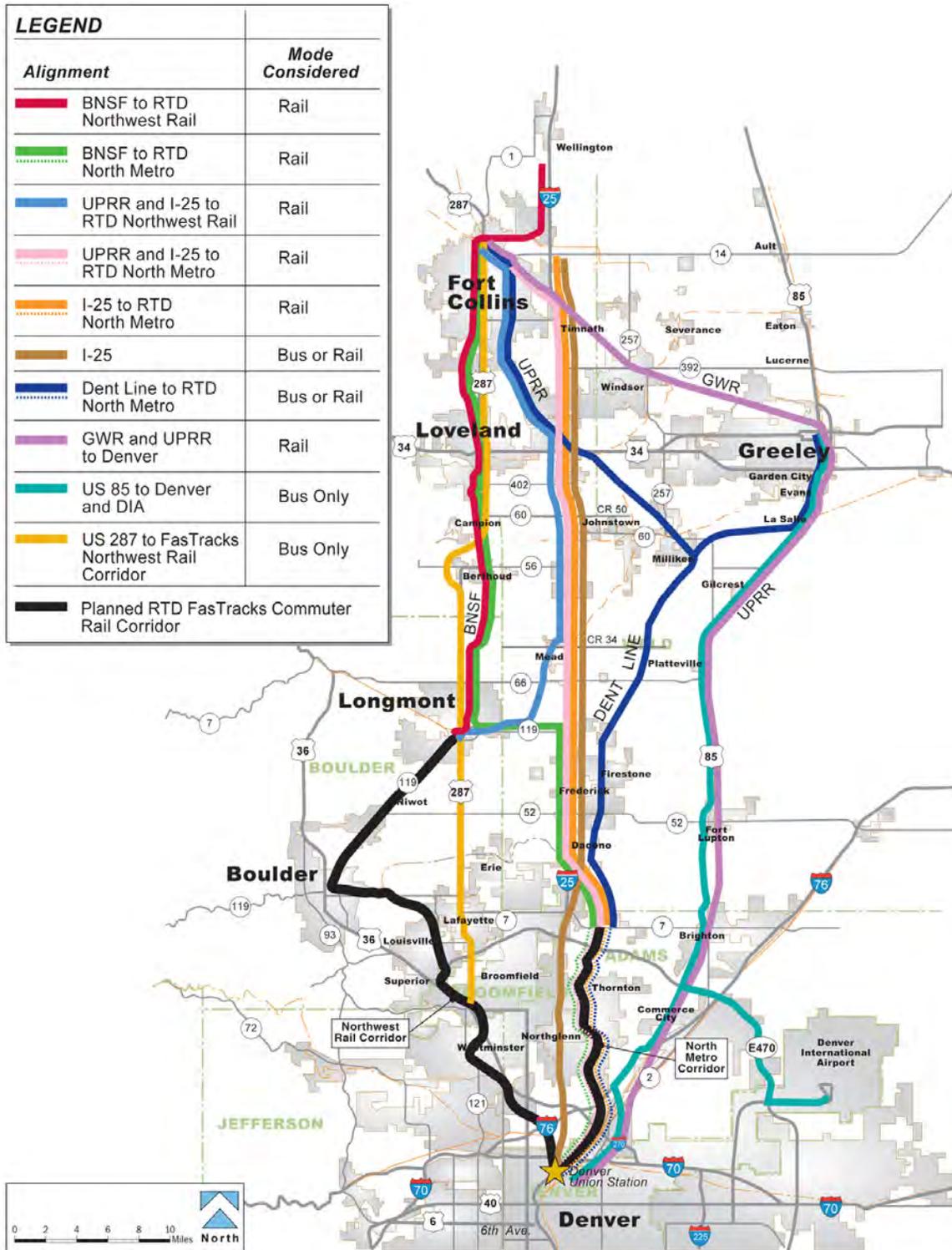
18 There were eight potential commuter rail or light rail transit alignments considered, as shown on
19 **Figure 5-2**. Three of these transit alignments were located along the western side of the regional
20 study area and were ultimately included as a part of Package A, because they would meet
21 purpose and need when combined with improvements to I-25. These three include the BNSF to
22 RTD Northwest Rail, BNSF to RTD North Metro, and US 287 to FasTracks Northwest Rail.

23 Commuter rail alignments in the central part of the corridor were also studied. These alignments
24 would likely adversely affect and result in a direct use of seven historic farms and result in a
25 direct use of two recreation areas. These alignments were not considered to be feasible and
26 prudent because:

- 27 ▶ They would cause severe impact to known habitat and populations of Preble's Meadow
28 Jumping Mouse, a federally threatened species protected by the Endangered Species Act.
29 Because the new rail alignment would cross rivers and fill in 48 more acres of wetlands, even
30 if the impacts were mitigated, it would be difficult to fully replace the current habitat value.
- 31 ▶ They would result in severe impacts to substantially more (48 acres vs. 7.2 acres on the
32 western alignment) acres of wetlands and other Waters of the U.S. when compared to rail
33 alignments along the western edge of the regional study area.
- 34 ▶ They would provide access to 30 percent less population and employment. As a result,
35 transit ridership would be 30 percent lower and the residents and employees served by the
36 western alignments would not have access to a public transit mode, thus not meeting the
37 accessibility need for the project.

38 Three transit alignments were considered along the eastern side of the regional study area.
39 These alignments did not meet project purpose and need. The future work trips between the
40 eastern communities and the Denver metropolitan area are estimated to be just over 9,000 a
41 day. By comparison, the future work trips between the western communities and the Denver
42 metropolitan area are estimated to be almost 15,000 a day. This difference in future work trips is
43 substantial and results in the eastern side transit alignments not meeting the purpose and need
44 factors of improving mobility or accessibility. For this reason, these alignments were not
45 considered feasible and prudent.

1 Figure 5-2 Transit Alignments Considered



1 *Light Rail Technology*

2 Light rail technology was studied on various alignments. This alternative was found to not meet
3 the mobility factor of purpose and need because the projected travel time was double that of
4 commuter rail. Travel time is a substantial component in estimating transit ridership. A doubling
5 of travel times would reduce transit ridership by at least half. For these reasons, this technology
6 was found to be not feasible and prudent.

7 *Modal Alternatives as a Stand-Alone*

8 The possibility of advancing only commuter rail or BRT (including the BRT stations), or just I-25
9 improvements as a stand-alone alternative was explored. Making only commuter rail
10 improvements without any improvements to I-25 was not considered feasible and prudent
11 because:

- 12 ▶ I-25 volumes would not be reduced enough to meet the purpose and need objective of
13 addressing future congestion and mobility.
- 14 ▶ Safety problems on I-25 would continue and likely worsen, thus not meeting the safety
15 objective of purpose and need.
- 16 ▶ Aging infrastructure along I-25 would not be replaced, thus not meeting this purpose and
17 need objective.

18 Making only BRT improvements along I-25 would not be feasible and prudent because it would do
19 nothing to improve mobility for automobile and truck drivers on I-25.

20 Making only highway improvements would not be feasible and prudent because the aspect of
21 purpose and need, which is to provide additional modal options for travelers, would not be met at
22 all.

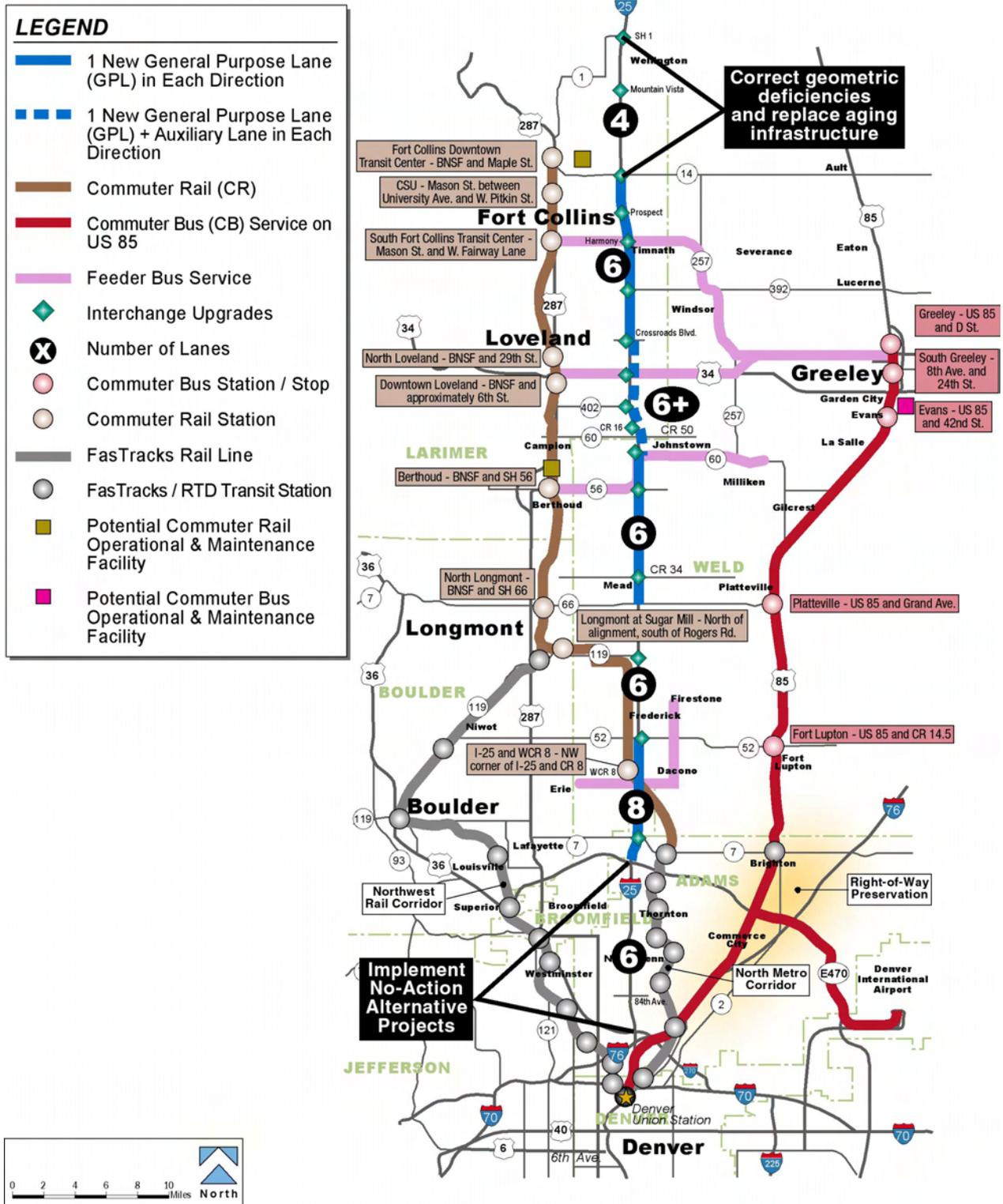
23 **5.2.2.1 PACKAGE A**

24 Package A includes the addition of general purpose (GP) plus auxiliary lanes along I-25,
25 commuter rail from Fort Collins to the proposed FasTracks North Metro end-of-line station, and
26 commuter bus along US 85 with alternating service to Denver International Airport (DIA).
27 Package A also includes interchange improvements, feeder bus, stations, maintenance facility,
28 and carpool lots. See **Figure 5-3** for an overview of Package A.

29 Components associated with Package A are as follows:

- 30 ▶ A-H1 Safety Improvements: I-25, State Highway 1 (SH 1) to SH 14
- 31 ▶ A-H2 GP Highway Improvements: I-25, SH 14 to SH 60
- 32 ▶ A-H3 GP Highway Improvements: I-25, SH 60 to E-470
- 33 ▶ A-H4 Structure Upgrades: I-25, E-470 to US 36
- 34 ▶ A-T1 Commuter Rail: Fort Collins to Longmont
- 35 ▶ A-T2 Commuter Rail: Longmont to FasTracks North Metro
- 36 ▶ A-T3 Commuter Bus: Greeley to Denver
- 37 ▶ A-T4 Commuter Bus: Greeley to Denver Union Station (DUS)

1 Figure 5-3 Package A



1 One additional GP lane would be added to I-25 in each direction from SH 14 south to SH 66.
2 The segment of I-25 from SH 66 south to SH 52 is under construction and scheduled for near-
3 term completion, therefore, it is not addressed as part of this project. From SH 52 south to E-
4 470, an additional lane would be added to make an eight-lane cross-section.

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

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

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

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

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

5.2.2.2 PACKAGE B

Package B includes Tolled Express Lanes and Bus Rapid Transit (BRT) on the Tolled Express Lanes. This improvement package consists of adding one buffer-separated express lane in each direction along the entire I-25 corridor, except between SH 60 and Harmony Road where two barrier-separated lanes would be added in each direction. The Tolled Express Lanes would be managed similarly to other toll lanes currently within the Colorado Department of Transportation (CDOT) system. Electronic payment via transmitter is required. There are no tollbooths and no cash would be accepted. Similar to Package A, 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. See **Chapter 2** and **Figure 5-4** for an overview of this Package.

Components associated with Package B are as follows:

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

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

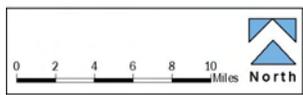
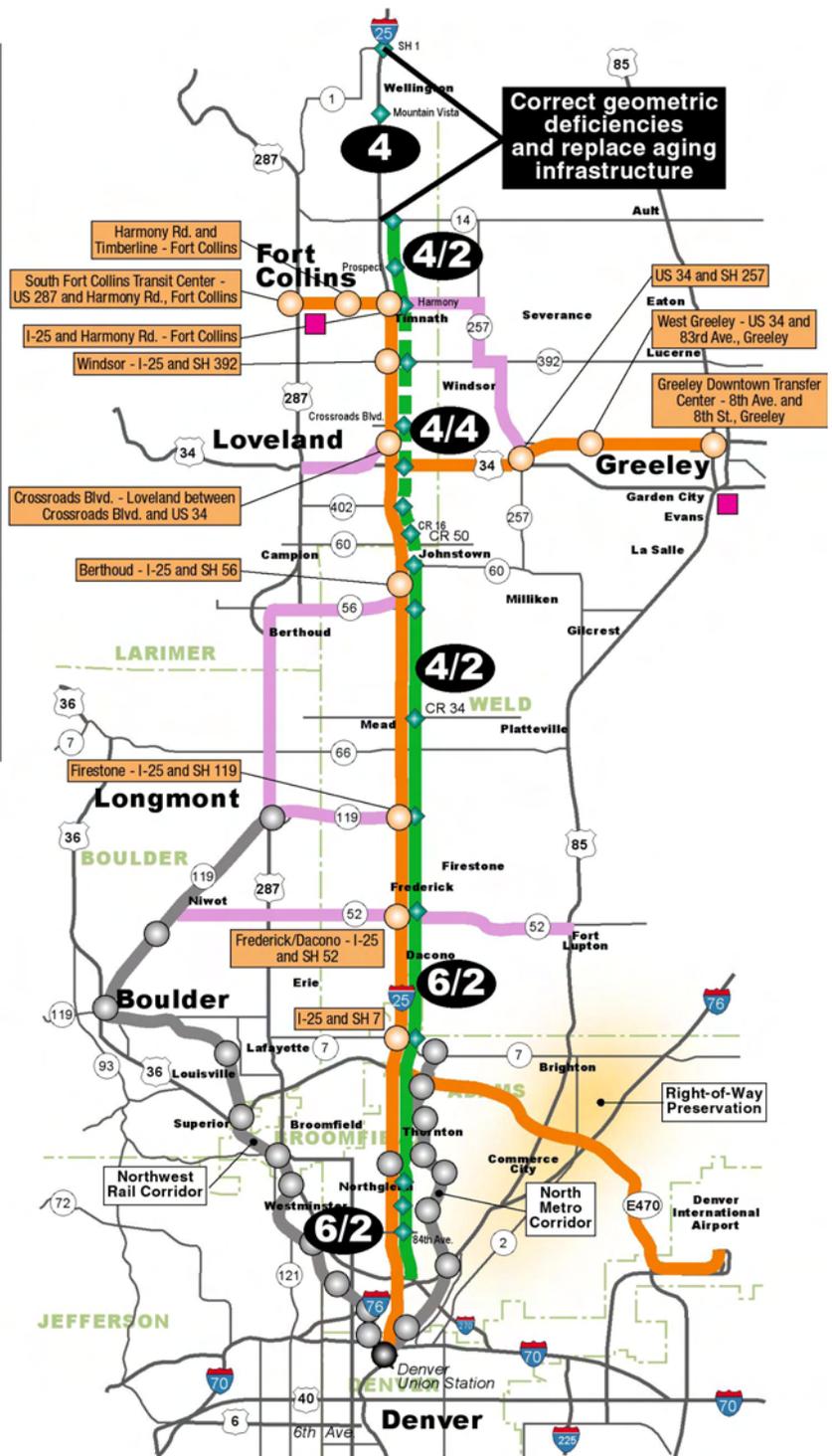
Service from Greeley would begin at the 8th Street and 8th Avenue Transit Center in downtown Greeley, and include stops along US 34, in mixed traffic, until turning north to serve the BRT station at Crossroads. The bus would operate in shared general-purpose lanes along with mixed traffic along US 34. Queue jumps, allowing buses to bypass queued traffic at signalized intersections, would be included to help achieve reliable speeds for bus services. Two maintenance facilities are being evaluated in conjunction with the bus service, as well as 12 bus rapid transit stations.

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

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



2

5.3 PROJECT PROCESS AND IDENTIFICATION OF SECTION 4(f) RESOURCES

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

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 8, 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
- ▶ 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.

For information on Native American consultation and historic and archaeological resources stakeholder consultation, see **Section 3.15**.

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 FTA or FHWA Administrator (23 CFR Section 774.17 and FHWA Section 4(f) Policy Paper)] and 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 be impacted 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.

All of the significant historic resources within the APE, whether impacted or not, are described in **Section 3.15** of this DEIS. For purposes of this Section 4(f) evaluation, only properties subject to use by the project are detailed and documented. **Table 5-1** lists resource specifics, including location and type of resource, and the reason each property is considered a Section 4(f) resource. **Figure 5-5** shows the location of these resources. There are 5 direct uses of historic properties and 25 *de minimis* uses.

Public Parks, Recreation Areas, and Wildlife and Waterfowl Refuge Areas

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

The current and planned public parks, recreation areas, and wildlife and waterfowl refuge areas were identified within the regional study area. The complete list of all public parks, recreation areas, and wildlife and waterfowl refuge areas identified within 500 feet of any corridor proposed for improvements is provided in **Section 3.18, Parks and Recreation**. For purposes of this Section 4(f) evaluation, only Section 4(f) resources having a Section 4(f) use by either of the build packages are discussed (see **Table 5-2** and **Figure 5-6**).

The initial evaluation of parks and recreation areas, public trails, and wildlife and waterfowl refuges identified all resources within 100 feet of a proposed improvement. The corridor development and evaluation process identified these properties as protected resources to be avoided, which resulted in approximately 30 park and recreation resources being avoided by the two proposed alternatives. One park would have a direct use and seven park and recreation properties and wildlife and waterfowl refuges would have *de minimis* use as a result of proposed transportation improvements of Packages A and B.

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

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

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

ID Number	Resource	Type	Affected Segments	NRHP Eligibility Comments
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.11393	Rudolph Farm	Historic Farm	NA	Eligible under Criterion C.
5LR.11330	Public Service Company of Colorado, Fort Collins Substation	Historic Power Plant	NA	Eligible under Criterion 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.995.4	Lake Canal	Historic Ditch	57R.11409.1	Eligible under Criteria A and C
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.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.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
5BL.10636	Boggs Residence	Historic Residence	NA	Eligible under Criterion C

Table 5-1 Section 4(f) Resources – Historic Properties (cont'd)

ID Number	Resource	Type	Affected Segments	NRHP Eligibility Comments
5BF76, 5WL.1966	Bull Canal/Standley Ditch	Historic Irrigation Ditch	5WL.76.2, 5WL.1966.8	Eligible under Criteria A and C-Segment 5WL.76.2 does 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
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

1
3

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	Recreation Resource: <i>Land Conservation & Stewardship Master Plan (2004)</i> identifies activities while maintaining protected natural area habitat. Acquired by City of Ft. Collins' <i>Natural Areas Program</i> in 1995.
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	Recreation Resource: <i>Land Conservation & 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' Parks Dept.

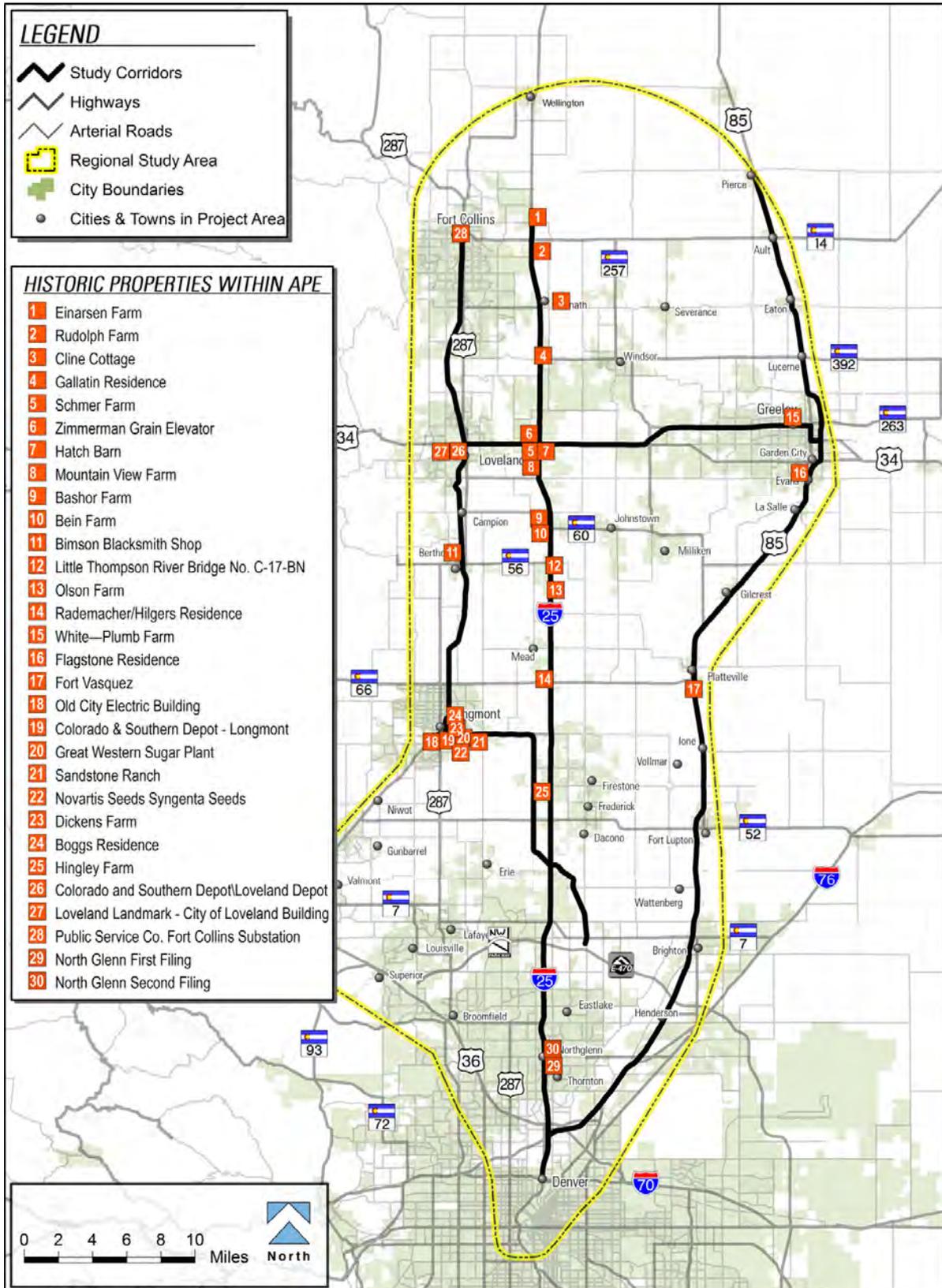
4
5

1

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

Resource	Address/ Location	Size (acres)	Amenities	Official with Jurisdiction	Type of Resource
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	Wildlife and Waterfowl Refuge: 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.
Civic Center Park (Thornton)	north of Thornton Civic Center Plaza	17 acres	Lake, recreational trail, benches and grass area	City of Thornton	Park: <i>City of Thornton Parks and Open Space Master Plan, 2003</i>
Grant Park	Adjacent to I-25, north of 104 th Avenue, Northglenn	14 acres	Trail, picnic area, detention/ drainage	City of Northglenn	Park: <i>City of Northglenn Parks and Recreation Advisory Board, 2005</i>
Little Thompson River Corridor	Adjacent to I-25, Berthoud	100.92 acres	Trails alongside Little Thompson River	Town of Berthoud	Recreation Resource: <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	Park: <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	Park: <i>1998 Sandstone Ranch Master Plan and Longmont Wildlife Management Plan</i>

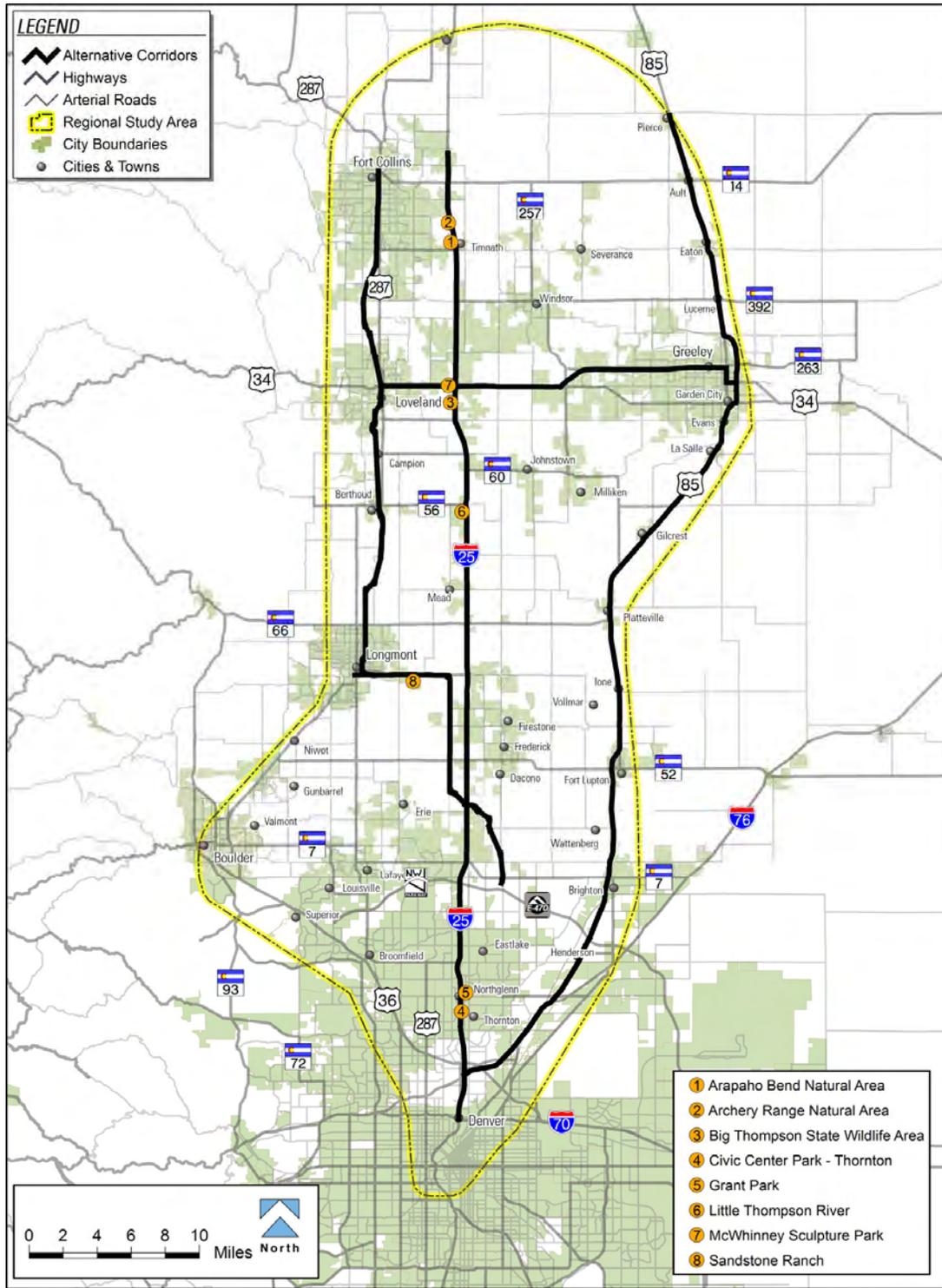
1 Figure 5-5 Section 4(f) Historic Properties



2

1
2
3

Figure 5-6 Section 4(f) Park, Recreation Areas, and Wildlife and Waterfowl Refuge Resources



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 impacted (used) by both build packages (see **Figure 5-6**).

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

6 **5.4.1 Introduction**

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

12 **5.4.2 Approach/Methodology**

13 This section describes how the proposed project would affect Section 4(f) resources. For each
14 of the resources, an overview of Section 4(f) uses is provided, followed by a description of
15 avoidance alternatives, measures to minimize harm, and mitigation measures that have been
16 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 An alternative is not feasible if it cannot be built as a matter of sound engineering practice. A
20 feasible alternative is not prudent if there are truly unusual factors present in a particular case; if
21 there are uniquely difficult problems, if there are extraordinary operational or safety problems, or
22 if the cost or community disruption resulting from the alternative reaches extraordinary
23 magnitude. A prudent alternative does not result in unacceptable and severe adverse social,
24 economic, or other environmental impacts. An alternative is not prudent if there is an
25 accumulation of factors that collectively, rather than individually, have adverse impacts that
26 present unique problems or reach extraordinary magnitudes. An avoidance alternative that fails
27 to satisfy the Purpose and Need of the project is considered not feasible and prudent. Section
28 5.2.2 discusses corridor-wide alternatives that were eliminated because they did not meet the
29 Purpose and Need of the project.

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

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

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

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

5.4.3 Use of Historic Properties

The uses of the significant historic Section 4(f) resources sorted by component are shown in **Table 5-3**. There was no use of Section 4(f) resources resulting from transportation improvements included in other Package A and B components. Additionally, the table lists the type of Section 4(f) use of each resource. Properties with a use and no adverse effect have a *de minimis* finding, pending SHPO concurrence with no adverse effects. These properties are addressed in **Section 5.5**. This project would result in Section 4(f) determination for five historic properties.

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

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

ID Number	Resource	Section 4(f) Use	
		Package A	Package B
		A-H2 General-Purpose Lanes: SH 14 to SH 60	B-H2 Tolled Express Lanes: SH 14 to SH 60
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
		A-T2 Commuter Rail: Longmont to FasTracks North Metro	B-T2 Bus Rapid Transit 120th to DUS
5BL.1245	Old City Electric Building	0.85 acre and demolition of property	No Use
5BL.1244	Colorado and Southern/BNSF Depot	0.51 acre and demolition of property	No Use
5WL.5263	Hingley Farm	7.34 acres or 9% of property; incorporation of 2,585 feet by 125-foot strips of farmland into project and demolition of the farmhouse	No Use
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

Louden Ditch (5LR.8930)

Description

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

Use of Loudon Ditch by Package

Package A	Package B
A-H2 GP Highway Improvements: SH 14 to SH 60	B-H2 Tolled Express Lanes: SH 14 to SH 60
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.

Resource Description

The ditch was originally built in 1871. The entire ditch is approximately 23.25 miles long. Two segments of the historic Loudon 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 Loudon 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.

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.

1

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 1 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 5-7** 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 impact 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 5-8** for uses associated with Package B.

Avoidance Alternatives

Complete avoidance of the Loudon Ditch would not be feasible and prudent at the Byrd Road intersection with East LCR 30. The grade of the roads to accommodate a non-culvert solution would be raised several feet above existing grade, creating an elongated impact to the existing and planned roadways. Further, elevation of East LCR 30 would result in additional physical and noise intrusion at 14 to 25 residence locations north of Byrd Road. The proposed solution would extend the culvert structure currently conveying Loudon Ditch underneath I-25. Avoidance of Loudon Ditch would not be feasible and prudent because the ditch currently flows underneath I-25 inside a concrete culvert structure. This pre-existing condition precludes feasible and prudent avoidance by restricting where the ditch could be rerouted or where the I-25 widening could be relocated. The cost of rebuilding the entire existing and proposed I-25 highway infrastructure would be approximately \$925,000 and would not represent a satisfactory change in historic setting or integrity, and this would not be considered feasible and prudent.

All Possible Planning To Minimize Harm

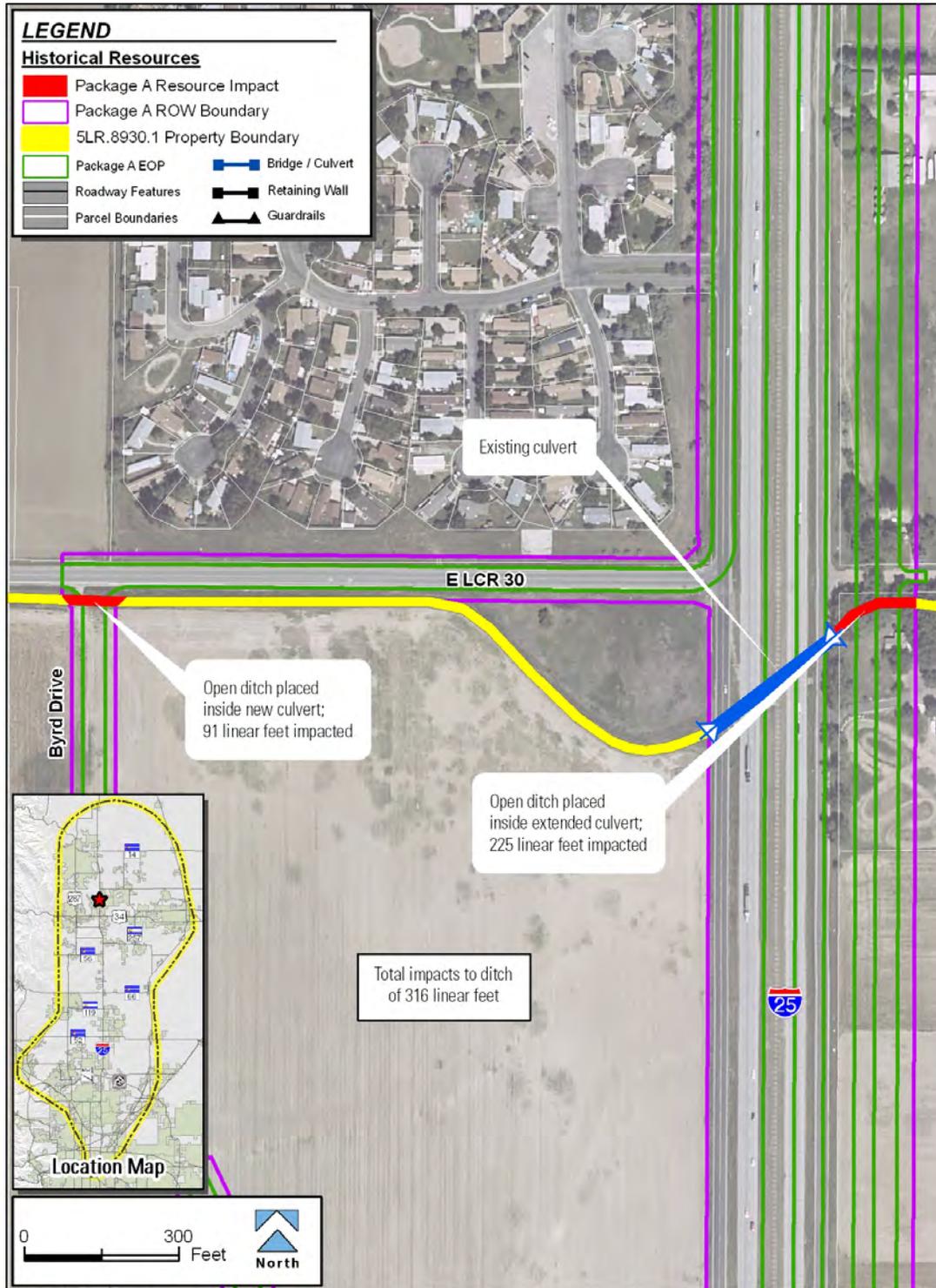
Packages A and B

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.

Mitigation Measures for Loudon Ditch

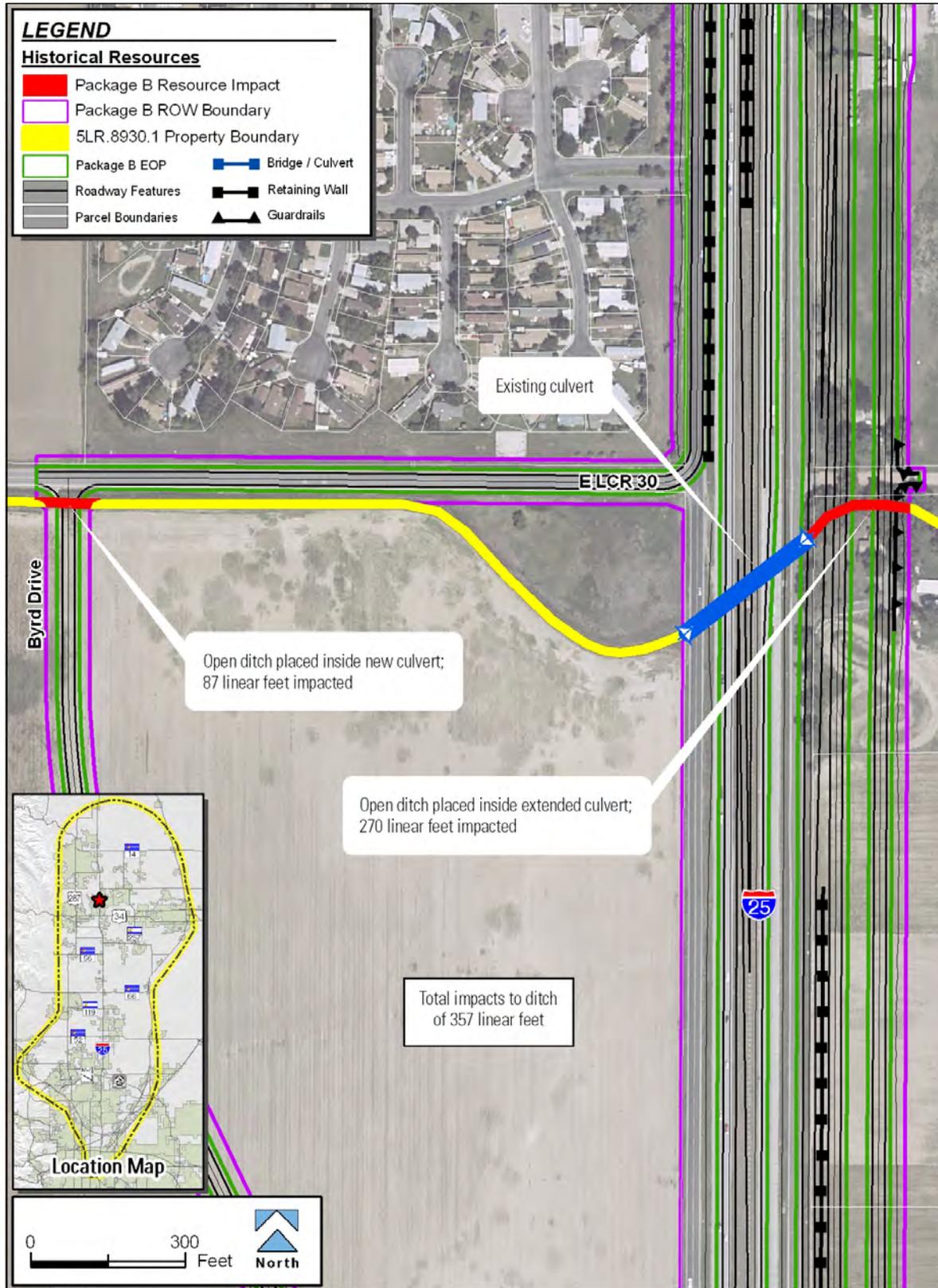
- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Operation of irrigation ditch maintained during construction.
- Appropriate erosion and sediment control Best Management Practices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

1 **Figure 5-7 Louden Ditch Package A Use**



Note: EOP—Edge of Pavement

1 Figure 5-8 Louden Ditch Package B Use



2
3 Note: EOP—Edge of Pavement

1

Old City Electric Building (5BL.1245)

Description

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

Use of Old City Electric Building by Package

Package A	Package B
A-T2 Transit Component-Commuter Rail: Longmont to FasTracks North Metro	B-T2 Transit Component-BRT: Fort Collins to DIA
0.85 acre/demolition of property	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, FHWA, and FTA have determined that Package A would result in an *adverse effect* under Section 106, and a use under Section 4(f). See **Figure 5-9** 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.

Avoidance Alternatives

This property is located at 1st Avenue and Main Street in Longmont. This segment of the commuter rail connects the proposed Sugar Mill Station with the FasTracks station at 1st Avenue and Terry Street, the end-of-line station of the Boulder/Longmont connection, and allows potential passengers on the Northern Colorado commuter rail line to continue on directly to Boulder. At this location, the existing track runs parallel to 1st Avenue in a very narrow transportation corridor bracketed by commercial buildings and urban development on all sides. 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 that the existing track runs on passes directly along the south side of the Old City Electric Building. Construction of the commuter rail line would result in a use of the Old City Electric Building.

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 and was 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. New railway construction, trackwork, signage, freight detours, etc., would cost approximately \$1 million. An estimated additional \$5 million would be required for the acquisition, demolition, and relocation of businesses located along the right-of-way. 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, severe economic impacts, and additional construction costs. 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. The approximate cost of this alternative would be an additional \$6.6 million for the acquisition, demolition, and relocation of businesses located along the right-of-way and construction of the new alignment. This alternative, similar to rerouting to the south of 1st Street, is not a feasible and prudent avoidance alternative because it would result in unacceptable safety problems, severe economic impacts, and additional construction costs. Cumulatively, these factors would cause impacts of an extraordinary magnitude, making the avoidance alternative not feasible and prudent.

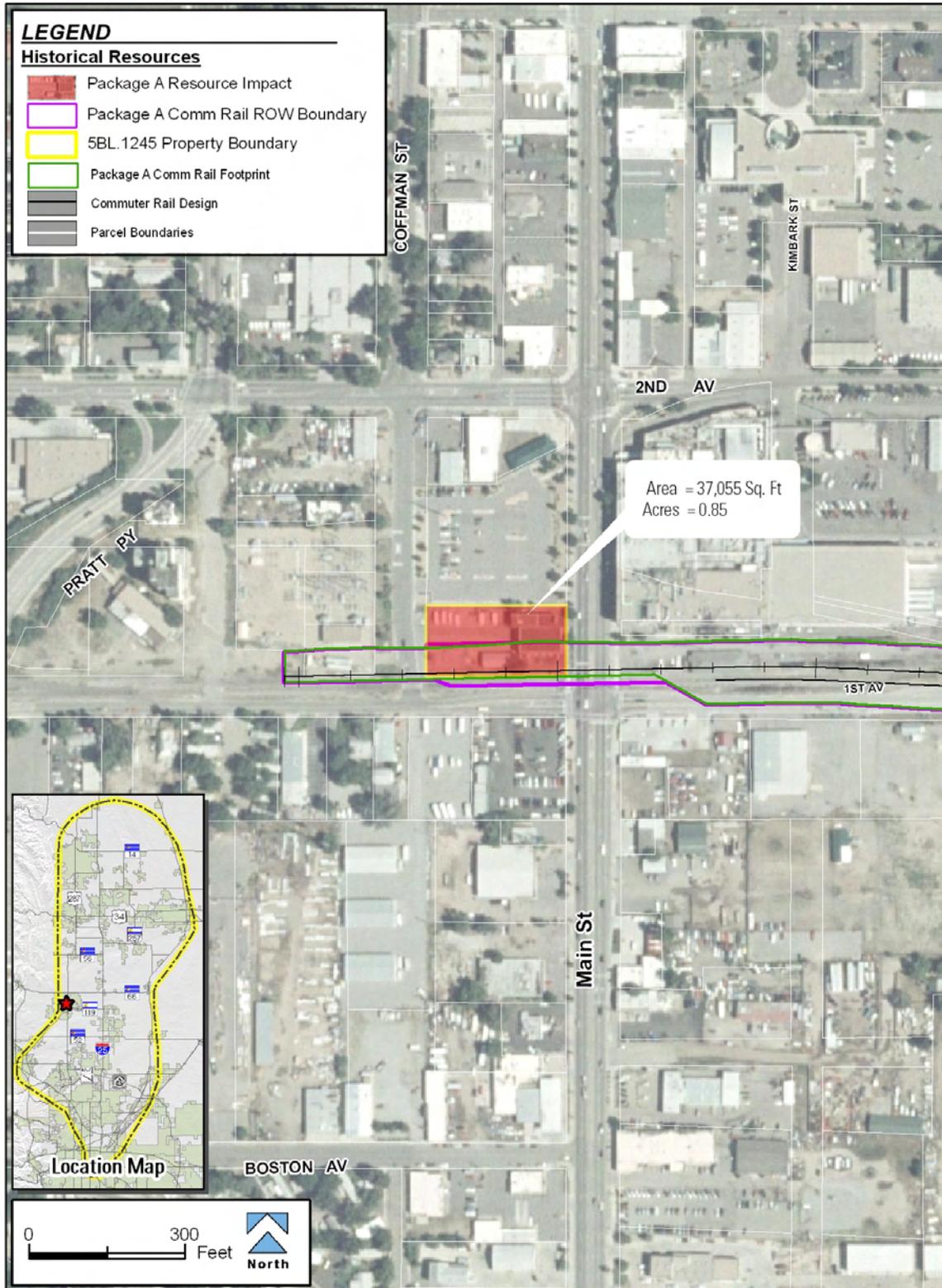
All Possible Planning to Minimize Harm

A property acquisition would be necessary to accommodate the commuter rail track and alignment. However, if the structural integrity of the historic building allows, relocation to an alternate site unaffected by the proposed improvements is a possibility.

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.
- Relocation of historic structure to be evaluated:
 - Engineering feasibility study of historic building relocation.
 - Identification of a new site for relocation of the historic building.
 - Sponsor to maintain relocated building is required.
- 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 5-9 Old City Electric Building Package A Use



2

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

Description

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

Use of Colorado & Southern/BNSF Depot by Package

Package A A-T2 Transit Component-Commuter Rail: Longmont to North Metro Corridor End-of- Line Station	Package B B-T2 Transit Component-BRT: Fort Collins to DIA
0.51 acre/demolition of property	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, FHWA, and FTA have determined that Package A would result in an *adverse effect* under Section 106, and a use under Section 4(f). See **Figure 5-10** 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.

Avoidance Alternatives

This segment of the commuter rail connects the proposed Sugar Mill Station with the FasTracks station at 1st Avenue and Terry Street, the end-of-line station of the Boulder/Longmont connection, and allows potential passengers on the Northern Colorado commuter rail line to continue on directly to Boulder. At this location, the existing railroad track runs parallel to 1st Avenue on the north side in a very narrow transportation corridor. In order to tie into the FasTracks design at the 1st Avenue and Terry Street location, the new commuter rail track requires location on the west (or north) side of the existing BNSF track. The narrow corridor that the existing track runs on passes directly along the south side of the Colorado & Southern/BNSF Depot. Construction of the commuter rail line requires the total acquisition of the depot property and demolition or relocation of the structure.

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 and was 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. New railway construction, trackwork, signage, freight detours, etc., would cost approximately \$1 million. An estimated additional \$5 million would be required for the acquisition, demolition, and relocation of businesses located along the right-of-way. This alignment would also create two additional at-grade crossings in this heavily traveled area, decreasing the overall level of safety for the motoring public. Therefore, this is not a feasible and prudent avoidance alternative because it would result in unacceptable safety problems, severe economic impacts, and additional construction costs. 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 Avenue 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 Avenue 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. The approximate cost of this alternative would be \$6.6 million for the acquisition, demolition, and relocation of businesses located along the right-of-way and construction of the new alignment. This alternative, similar to rerouting to the south of 1st Avenue, is not a feasible and prudent avoidance alternative because it would result in unacceptable safety problems, severe economic impacts, and additional construction costs. Cumulatively, these factors would cause impacts of an extraordinary magnitude, making the avoidance alternative not feasible and prudent.

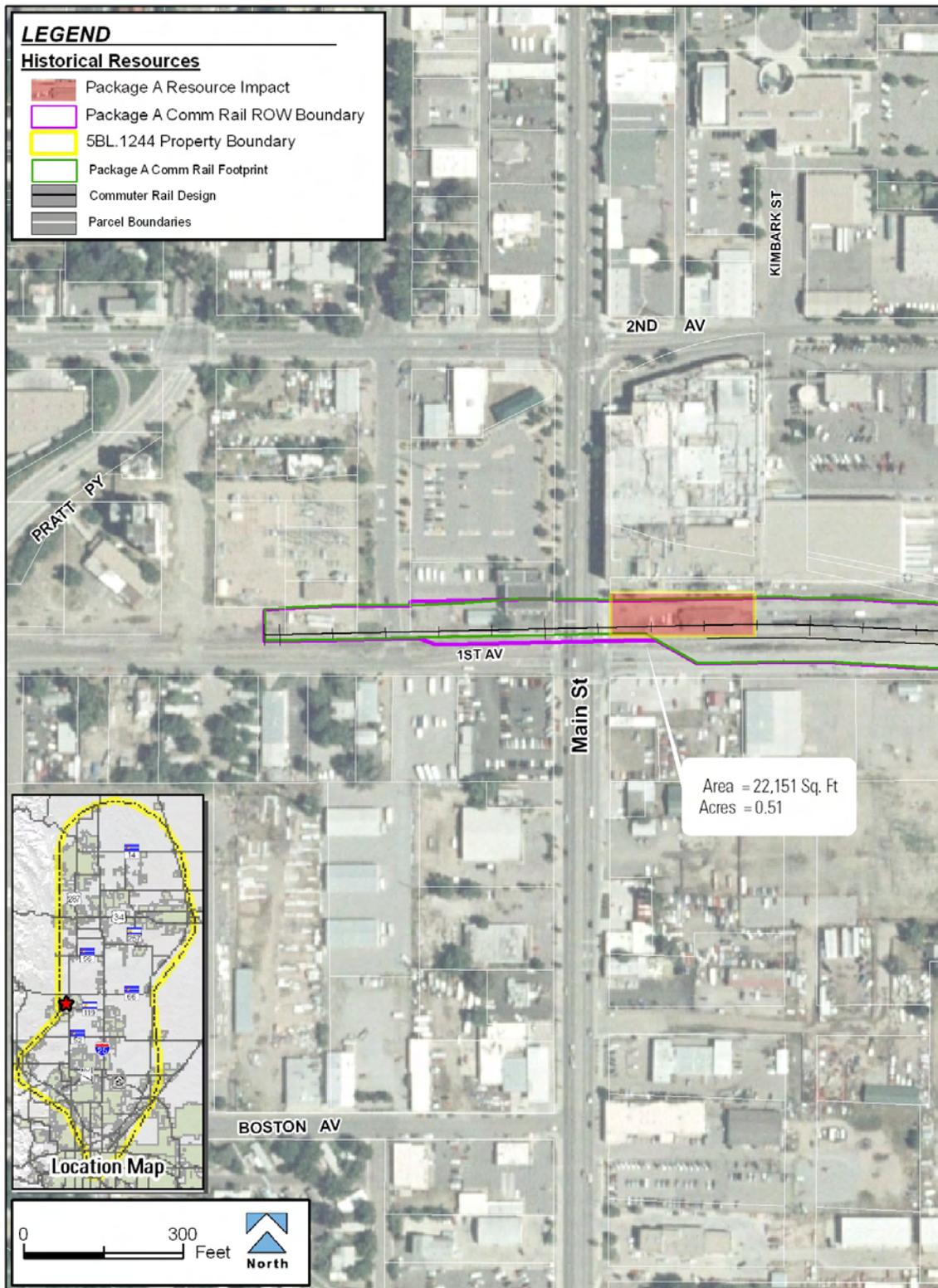
All Possible Planning to Minimize Harm

Relocation of the historic structure to another site would minimize the destructive nature of the use. There would be an engineering feasibility study to evaluate the relocation of this historic building prior to demolition. 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.
- Relocation of historic structure to be evaluated:
 - Engineering feasibility study of historic building relocation.
 - Identification of a new site for relocation of the historic building.
 - Sponsor to maintain relocated building is required.
- 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 5-10 Colorado & Southern/BNSF Depot Package A Use



2

Hingley Farm (5WL.5263)

Description

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

Use of Hingley Farm by Package

Package A A-T2 Transit Component- Commuter Rail: <u>Longmont to FasTracks North Metro</u>	Package B B-T2 Transit Component-BRT: <u>Fort Collins to DIA</u>
7.34 acres/9% of property; incorporation of 2,585 feet by 125 feet strips of farmland into project and demolition of the farmhouse	No use

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, or approximately 9 percent of the entire 81.35-acre historic property. 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, FTA and CDOT have determined that an *adverse effect* under Section 106 would result. **Figure 5-11** 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.

Avoidance Alternatives

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, 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. These wetland impacts would require an approximate expense of \$22,000 to \$29,000 for mitigation. 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. The cost of property acquisition and relocation associated with an eastern alignment is approximately two times that of the west side of CR 7.

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, severe impacts to minority populations, and additional construction costs, 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.

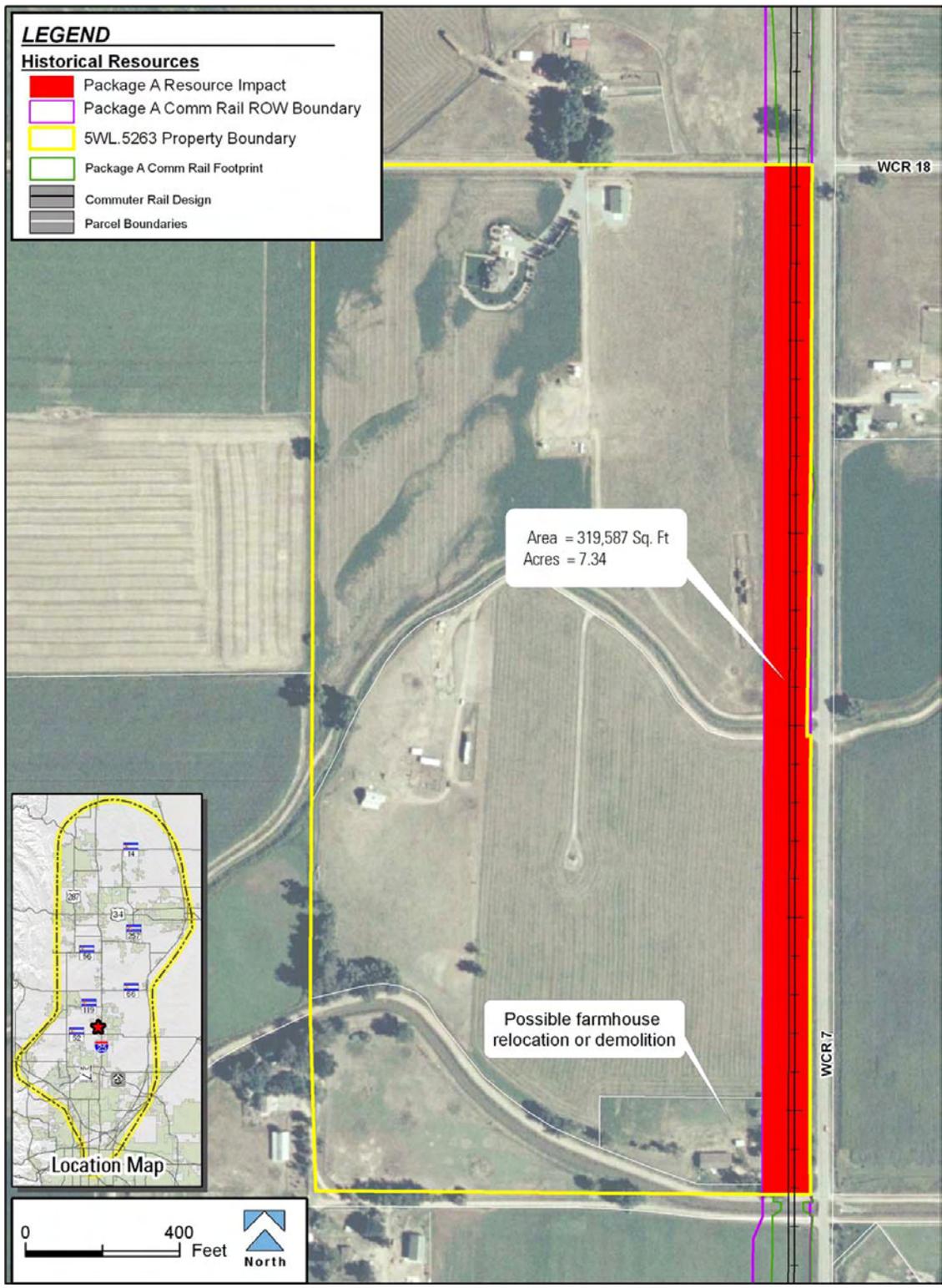
All Possible Planning to Minimize Harm

The location of the rail line to the west side of CR 7 makes avoidance, minimization, and mitigation of the impact to 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. There would be an engineering feasibility study to evaluate the relocation of this historic building prior to demolition. Relocation of the farmhouse to an alternate location on the farm that would be unaffected by the proposed transportation improvements would minimize impact to the farm.

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.
- Relocation of historic structure to be evaluated:
 - Engineering feasibility study of historic building relocation.
 - Identification of a new site for relocation of the historic building.
 - Sponsor to maintain relocated building is required.
- 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 5-11 Hingley Farm Package A



2

1

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

Description

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

Use of UPRR-Denver & Boulder Valley Branch 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
2.9-mile abandoned segment modernized for double-track commuter rail operations; demolition of two historic bridges	No use

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 C R8. 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 OAHF 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) wye and turning southward. Where the new commuter rail line would cross onto the Dent Branch, there would be direct impacts to as much as 260 feet of track by the replacement of existing "through rail" with switching tracks and associated apparatus (see **Figure 5-12**). 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 5-13**).

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-foot-long and 70-foot-wide (see **Figure 5-13**).

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 5-14**).

Summary Effect Determination:

A continuous 2.9 miles, or approximately 11 percent, 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 direct impacts to the resource.

These direct and indirect effects would result in the major reduction or loss of integrity of this resource; therefore, FHWA, FTA, 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 impacts to the railroad segment by improvements associated with Package B. No direct or indirect impacts would occur at any segment locality. FHWA, FTA and 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).

Avoidance Alternatives

Shifting the alignment of the commuter rail tracks off of 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. Relocation would result in new economic, social, and environmental impacts from the new construction and acquisition. 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.

Avoidance alternatives are not considered feasible and prudent if they do not avoid using Section 4(f) property. Although avoidance of the UPD&BV is possible, these measures would result in impacts to other Section 4(f) resources. The realignment of the double track railway off the historic alignment would result in 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.

Avoidance alternatives would result in additional impacts to social, economic, farmlands, and other environmental resources; would result in additional construction costs; and would impact two separate Section 4(f) resources of equal preservation value. Cumulatively, these factors would cause impacts of an extraordinary magnitude, making the avoidance alternative not feasible and prudent.

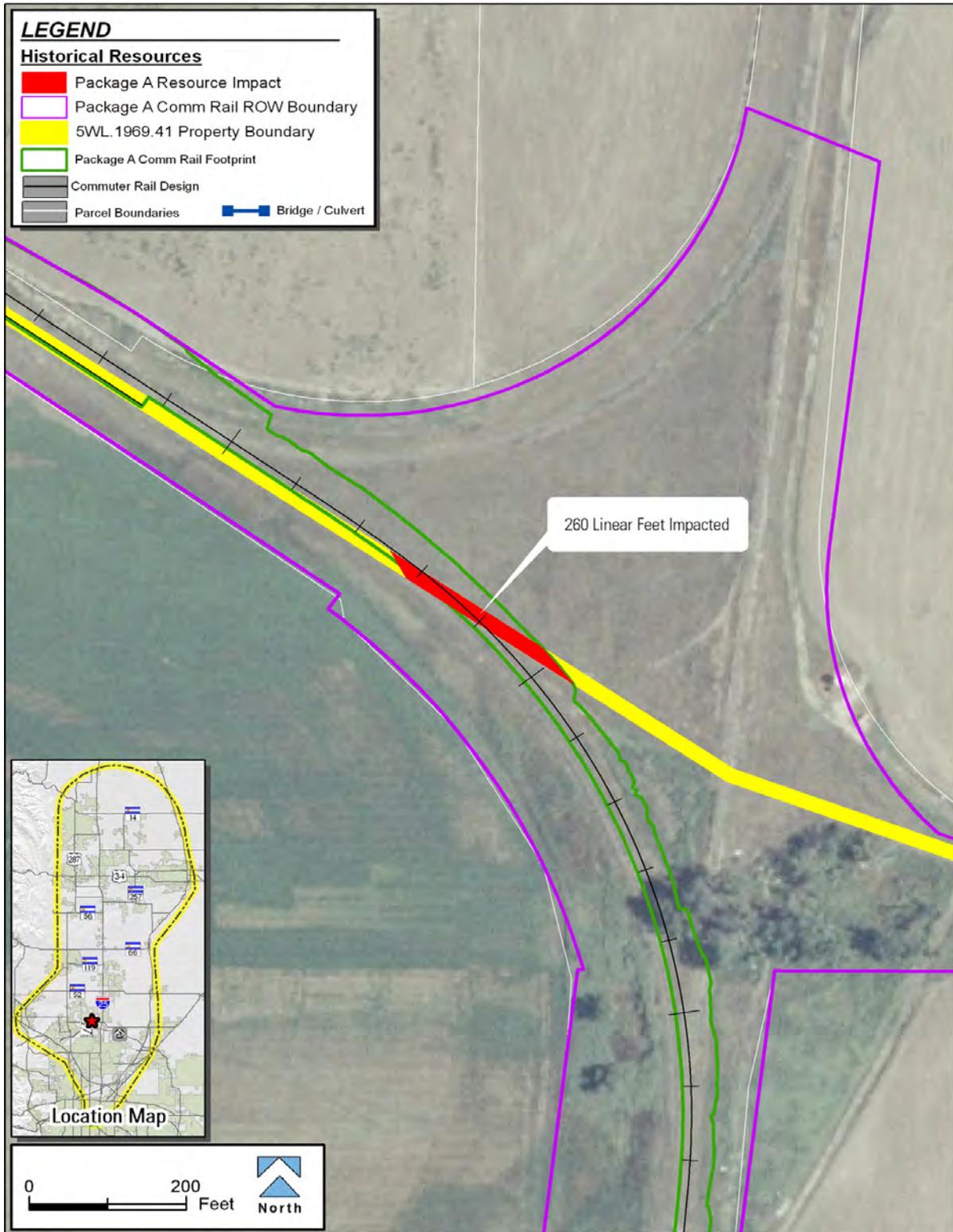
All Possible Planning to Minimize Harm

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

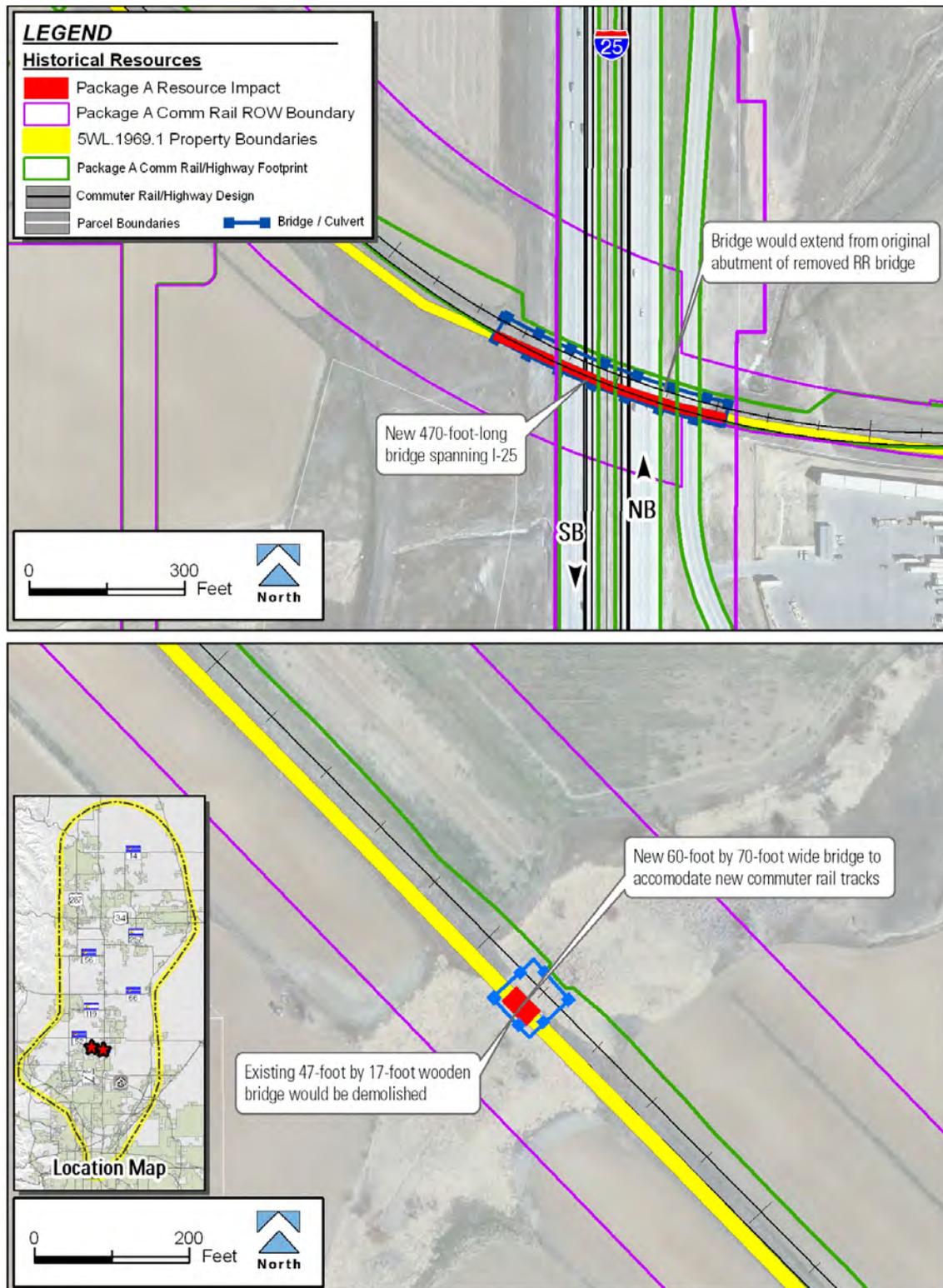
- Detailed recording of the affected railway, in accordance with the Colorado Historical Society's Standards for Level II Documentation, is recommended pending SHPO concurrence.
- Continued consultation with SHPO is recommended prior to final design to implement possible revised design elements to facilitate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

1 **Figure 5-12 Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder**
2 **Valley Branch – Package A Use**



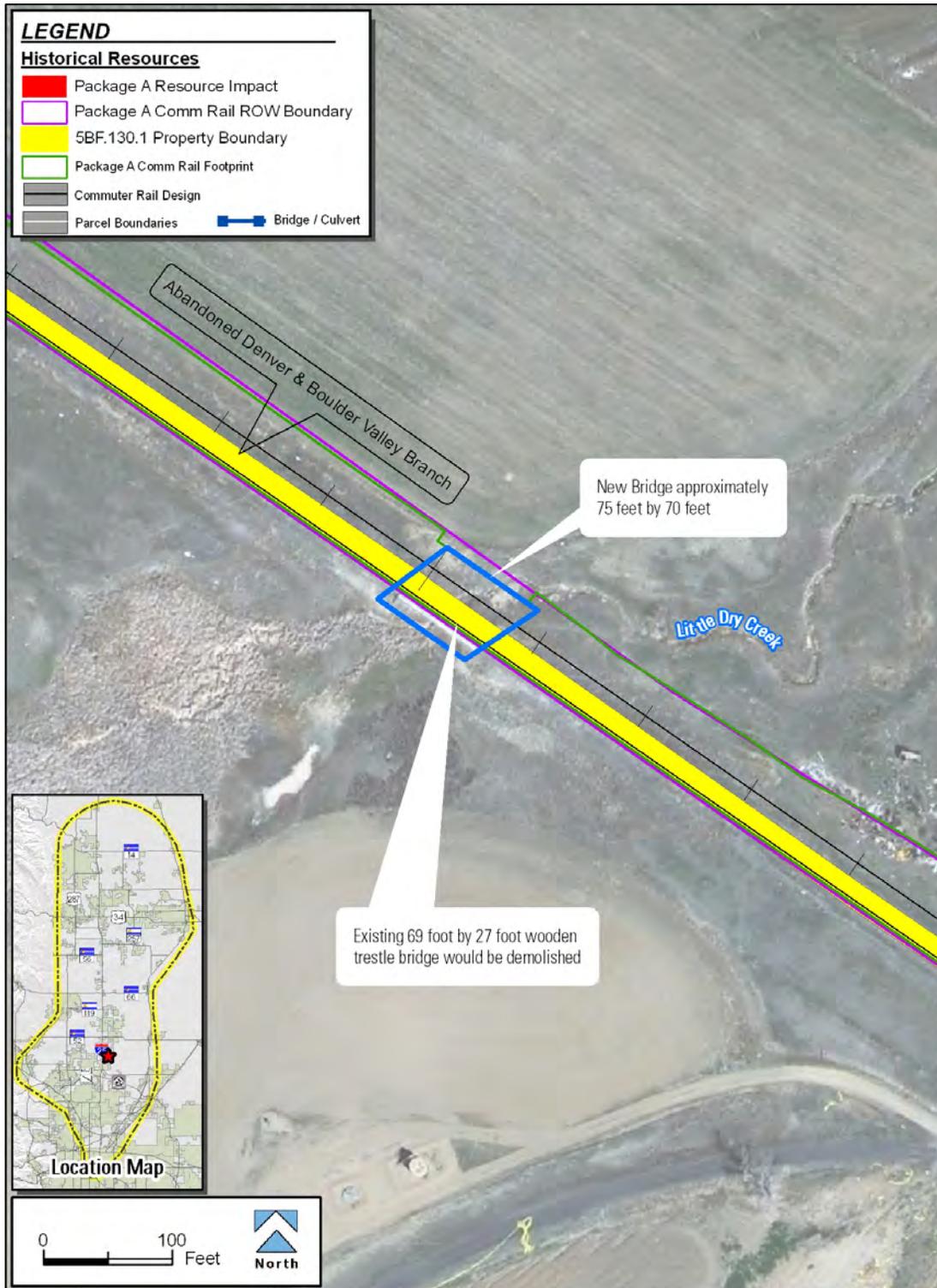
3

1 **Figure 5-13 Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder**
2 **Valley Branch – Package A Use**
3



1
2
3
4
5

Figure 5-14 Denver Pacific/Kansas Pacific/Union Pacific Railroad, Denver & Boulder Valley Branch – Package A Use



1 **5.4.4 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. There is no use of
5 Section 4(f) resources resulting from transportation improvements included in other Package A
6 and Package B components.

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

ID Number	Resource	Section 4(f) Use		Type of Use
		Package A	Package B	
		<i>A-H2 GP Highway Improvements: SH 14 to SH 60</i>	<i>B-H2 Tolled Express Lanes: SH 14 to SH 60</i>	
7	McWhinney Hahn Sculpture Park	A total of 1.21 acres, or 27%, of park used for placement of new ramps	A total of 1.21 acres, or 27%, of park used for placement of new ramps	Direct Use (both packages)

McWhinney Hahn Sculpture Park (Map ID Number 7)

Description

Location:	West of I-25, north of US 34, Loveland
Size:	4.5 acres
Type:	Park
Access:	Public access
Facilities/Amenities:	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.
Usage/Patronage:	3,200/year
Relationship to Other Resources:	One of 27 developed parks in Loveland; Loveland Chamber of Commerce Visitor Center is located adjacent to the park.
Ownership/Jurisdiction:	City of Loveland
Significance:	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) or 27% 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) or 27% 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 5-15** 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.

Avoidance Alternatives

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 impact 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 direct impacts to 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 di 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.

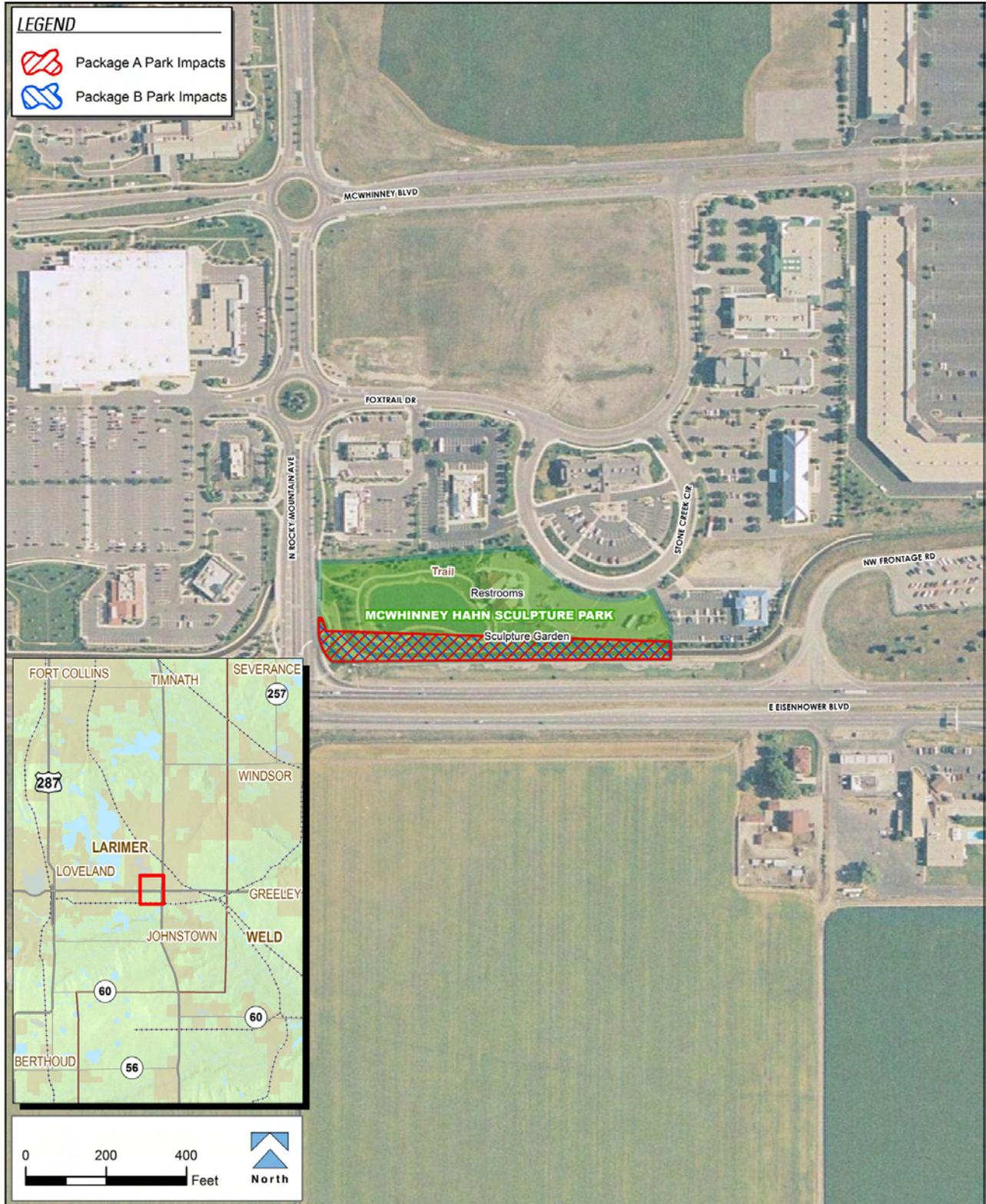
CDOT would pursue replacing acquired park land with a suitable replacement property of similar size for the McWhinney Hahn Sculpture Park due to the magnitude and character of parkland lost as a result of Packages A and B.

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
2

Figure 5-15 McWhinney Hahn Sculpture Park Use by Packages A and B



3

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 and FTA 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, or contribute to a historic district that is eligible for or listed on the NRHP, or be a supporting segment of an NRHP-listed or eligible linear resource. 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 5-16** through **Figure 5-53**. Impacts to the properties have been evaluated based on current engineering design. The SHPO (through this documentation) has been informed of the FHWA and FTA intent to make a *de minimis* finding. The *de minimis* finding will not be complete until the SHPO provides written concurrence with the effect determinations provided in this Draft EIS.

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 impact, 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 impact 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		Type of Use and Section 106 Proposed Effect Determination
		Package A	Package B	
		A-H1 Safety Improvements: SH 1 to SH 14	B-H1 Safety Improvements: SH 1 to SH 14	
5LR.8932	Larimer County Ditch	83 feet placed in two culvert extensions.	83 feet placed in two culvert extensions.	<i>De minimis no adverse effect</i>
5LR.11396	Einarsen Farm	1.76 acres, or less than 1%, of property as incorporation of 1,600-foot by 50-foot strip of farmland into project.	1.76 acres, or less than 1%, of property as incorporation of 1,600-foot by 50-foot strip of farmland into project.	<i>De minimis no adverse effect</i>
		A-H2 GP Highway Improvements: SH 14 to SH 60	B-H2 Tolled Express Lanes: SH 14 to SH 60	
5LR.11393	Rudolph Farm	A total of 0.27 acre or less than 1% of property by incorporation of a 2.5-foot by 1,247-foot strip for farmland and a 0.13-acre portion of the farmland for new driveway access.	A total of 0.40 acre or less than 1% of the property by incorporation of a 10-foot by 1,247-foot strip of farmland and a 0.13-acre portion of the farmland for a new driveway access.	<i>De minimis no adverse effect</i>
5LR.11409	Cache la Poudre Reservoir Inlet	A total length of 85 feet of open ditch or 1% of total length in culvert extensions.	A total length of 85 feet of open ditch or 1% of total length in culvert extensions.	<i>De minimis no adverse effect</i>
57R.995.4	Lake Canal	A total length of 85 feet of open ditch or 1% of total length in culvert extensions.	A total length of 85 feet of open ditch or 1% of total length in culvert extensions.	<i>De minimis no adverse effect</i>
5LR.2160	Boxelder Ditch	A total of 137.5 feet, or less than 1%, of total ditch length incorporated into a new 62.5-foot-long new culvert and a 75-foot-long culvert extension.	A total of 137.5 feet, or less than 1%, of total ditch length incorporated into a new 62.5-foot-long new culvert and a 75-foot-long culvert extension.	<i>De minimis no adverse effect</i>
5LR.503.2	Loveland and Greeley Canal	A total of 70 feet, or less than 1%, of total ditch length in culvert extension.	A total of 70 feet, or less than 1%, of total ditch length in culvert extension.	<i>De minimis no adverse effect</i>
5LR.8928	Farmers Ditch	A total of 2,539 linear feet or 3% of the total ditch length would be placed inside culvert extension.	A total of 2,539 linear feet or 3% of the total ditch length would be placed inside culvert extension.	<i>De minimis no adverse effect</i>

1

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

ID Number	Resource	Section 4(f) Use		Type of Use and Section 106 Proposed Effect Determination
5LR.11209	Schmer Farm	A total of 6.61 acres, or 5.3%, 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, or 5.6%, 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.	<i>De minimis no adverse effect</i>
5LR.850 5WL.841 5BL.514	Great Western Railway	A total of 170 feet, or less than 1%, of total railroad length incorporated into a new bridge.	A total of 240 feet, or less than 1%, of total railroad length incorporated into a new bridge.	<i>De minimis no adverse effect</i>
5LR.11382	Hatch Farm	A total of 2.1 acres or 2% 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 or 2% of total property by incorporation of narrow 850-foot and 450-foot strips of farmland into two water quality ponds.	<i>De minimis no adverse effect</i>
5LR.8927	Hillsboro Ditch	A total of 135 feet or 6% of total ditch length would be incorporated into culvert extensions.	A total of 135 feet or 6% of total ditch length would be incorporated into culvert extensions.	<i>De minimis no adverse effect</i>
5LR.11242	Mountain View Farm	A total of 4.76 acres, or 3.5%, 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, or 4%, of the property by incorporation of a 60-foot by 3,900-foot strip of farmland adjacent to I-25 and SH 402.	<i>De minimis no adverse effect</i>

1

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

ID Number	Resource	Section 4(f) Use		Type of Use and Section 106 Proposed Effect Determination
		A-H3 GP Highway Improvements: SH 60 to E-470	B-H3 Tolled Express Lanes: SH 60 to E-470	
5WL.5203	Bein Farm	A total of 17.94 acres or 6.2% of the property 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 or 7% of the property 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.	<i>De minimis no adverse effect</i>
5WL.3149	Handy/Home Supply Ditch Confluence	A total of 600 feet, or 2%, of total ditch length, incorporated into culvert extensions.	A total of 600 feet, or 2%, of total ditch length incorporated into culvert extensions.	<i>De minimis no adverse effect</i>
5WL.5198	Olson Farm	A total of 12.74 acres or 9% of property by incorporation of land from both sides of I-25.	A total of 12.81 acres or 9% of property by incorporation of land from both sides of I-25.	<i>De minimis no adverse effect</i>
5WL.1966, 5BF.76, 5BF.72, 5AM.457	Bull Ditch segment of the Bull Canal/ Standley Ditch	A total of 908 feet, or less than 1%, of the total ditch length would be placed into three culvert extensions.	A total of 850 feet, or less than 1%, of the total ditch length would be placed into two culvert extensions.	<i>De minimis no adverse effect</i>
		A-T1 Transit Component-Commuter Rail: Fort Collins to Longmont	B-T1 Transit Component-BRT: Fort Collins/Greeley to Denver	
5BL.3449	Supply Ditch	A total of 65 feet, or less than 1%, of total ditch length would be placed into a culvert extension.	No use	<i>De minimis no adverse effect</i>
5BL.3113	Rough & Ready Ditch	A total of 35 feet, or less than 1%, of total ditch length placed into a culvert extension.	No use	<i>De minimis no adverse effect</i>
5BL.4832	Oligarchy Ditch	Culvert extension of 48 feet, or less than 1% of total ditch length.	No use	<i>De minimis no adverse effect</i>

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

ID Number	Resource	Section 4(f) Use		Type of Use and Section 106 Proposed Effect Determination
		A-T2 Transit Component-Commuter Rail: Longmont to FasTracks North Metro	B-T2 Transit Component-BRT: Fort Collins to DIA	
5LR.1729	Big Thompson Ditch	A total of 60 feet, or less than 1% of total ditch length, placed into a culvert extension.	No use	<i>De minimis no adverse effect</i>
5BL.513	Great Western Sugar	A total of 0.33 acre or 9% of the property would be used for pedestrian walkway.	No use	<i>De minimis no adverse effect</i>
5WL.712	Sandstone Ranch	A total of 2.17 acres, or less than 1%, of unused land within the historic district used for new railroad right-of-way.	No use	<i>De minimis no adverse effect</i>
5WL.5461	Boulder & Weld County Ditch	A total of 63 feet, or less than 1%, of open ditch would be placed into a new culvert.	No use	<i>De minimis no adverse effect</i>
5WL.1974	Rural Ditch	A total of 130 feet, or less than 1%, of open ditch would be placed into a new culvert.	No use	<i>De minimis no adverse effect</i>
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	<i>De minimis no adverse effect</i>

1

Larimer County Ditch (5LR.8932.1)

Description

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

Use of Larimer County Ditch by Package

Package A	Package B
A-H1 Highway Component:	B-H1 Highway Component:
Safety Improvement:	Safety Improvement:
SH 1 to SH 14	SH 1 to SH 14
83 feet of open ditch would be placed inside new culvert extensions	83 feet of open ditch would be placed inside new 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 5-16**).

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, FTA, 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 impacts 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, FTA, and CDOT have determined that Package B would result in *no adverse effect* to the Larimer County Ditch (see **Figure 5-16**).

Planning and Measures Included to Reach a De Minimis Finding

Packages A and B

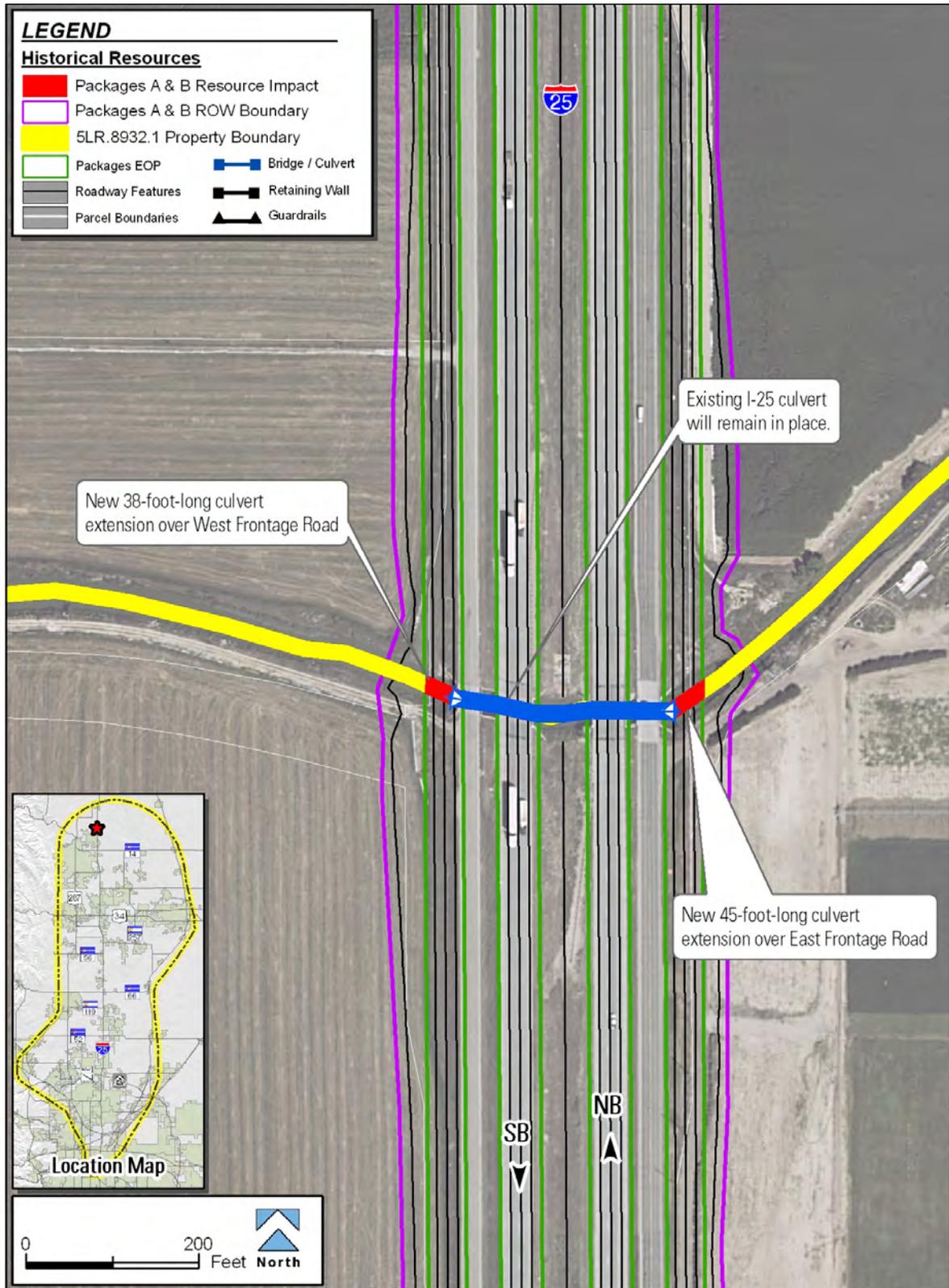
The I-25 frontage road improvements incorporate safety shoulder widening in conformance with standard engineering design, and have been moved outside of the safety clear zone for the mainline I-25 travel lanes.

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 5-16 Larimer County Ditch – Use Packages A and B

2



Einarsen Farm (5LR.11396)

Description

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

Use of Einarsen Farm by Package

Package A A-H1 Highway Component: Safety Improvement: SH 1 to SH 14	Package B B-H1 Highway Component: Safety Improvement: SH 1 to SH 14
1.76 acres, or less than 1%, of property as incorporation of 1,600-foot by 50-foot strip of farmland into project	1.76 acres, or less than 1%, 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 19th 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 impacted area is along the edge of a cultivated field and contains 1.76 acres and constitutes less than 1 percent of the total area of the 220 acres within the historic boundary. No historical buildings are located near the proposed improvements. See **Figure 5-17** 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 impacted, its proximity to the existing non-historic frontage road, and the fact that no historic farm buildings are located in this vicinity, FHWA, FTA 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-17** for Package A uses of this property.

Package B

Direct impacts to 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 impacted 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 impacted 1.76 acres are located along the edge of a cultivated field and constitute less than 1 percent of the total area of the 220 acres within the historic boundary. No historical buildings are located near the proposed improvements.

Because to 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, FTA 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-18** for Package B uses of this property.

Planning and Measures Included to Reach a De Minimis Finding

Packages A and B

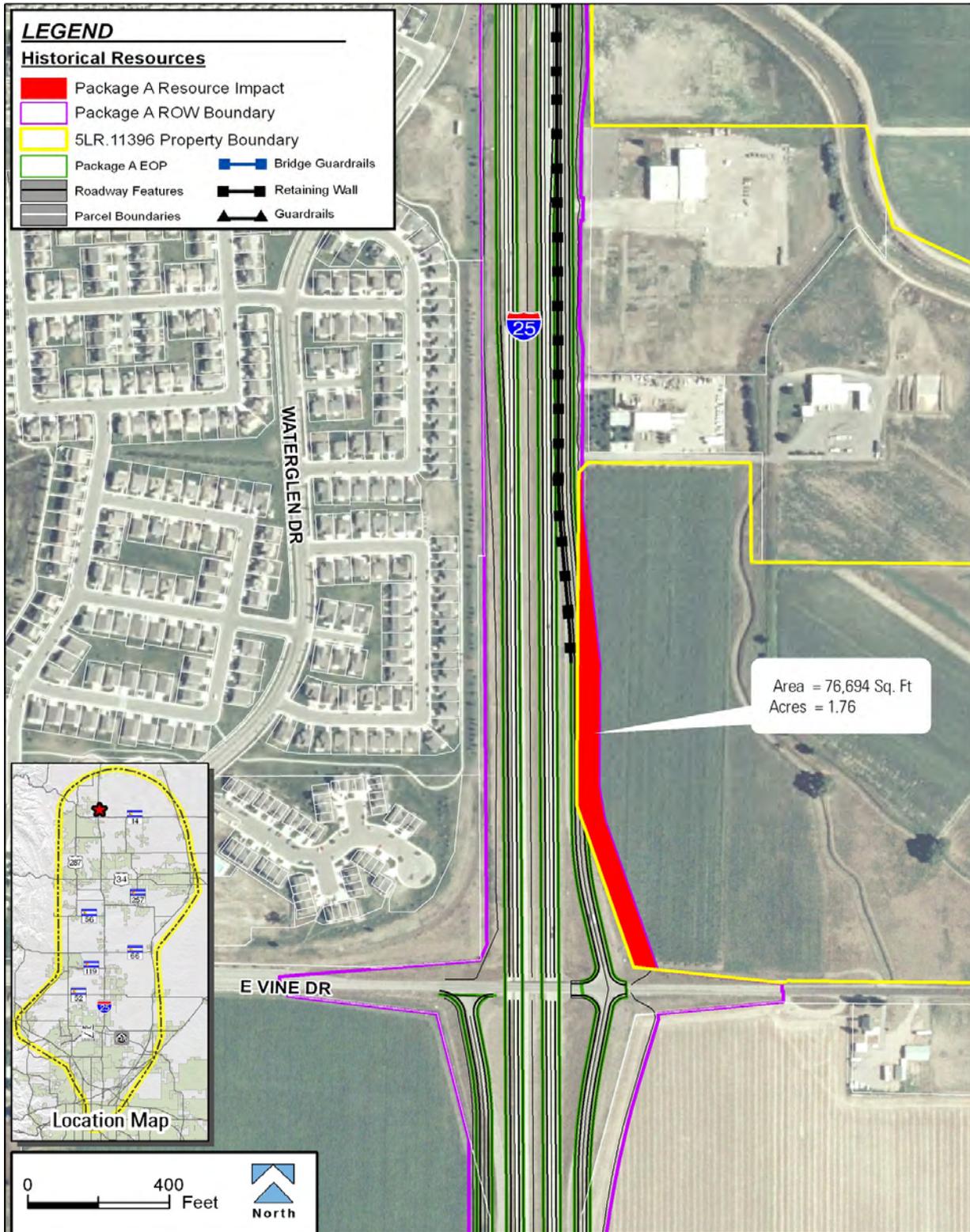
The design of the transportation improvements was dictated by safety requirements for the intersections of the frontage roads and Vine Drive on either side of I-25. All possible measures to minimize harm were included.

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
2

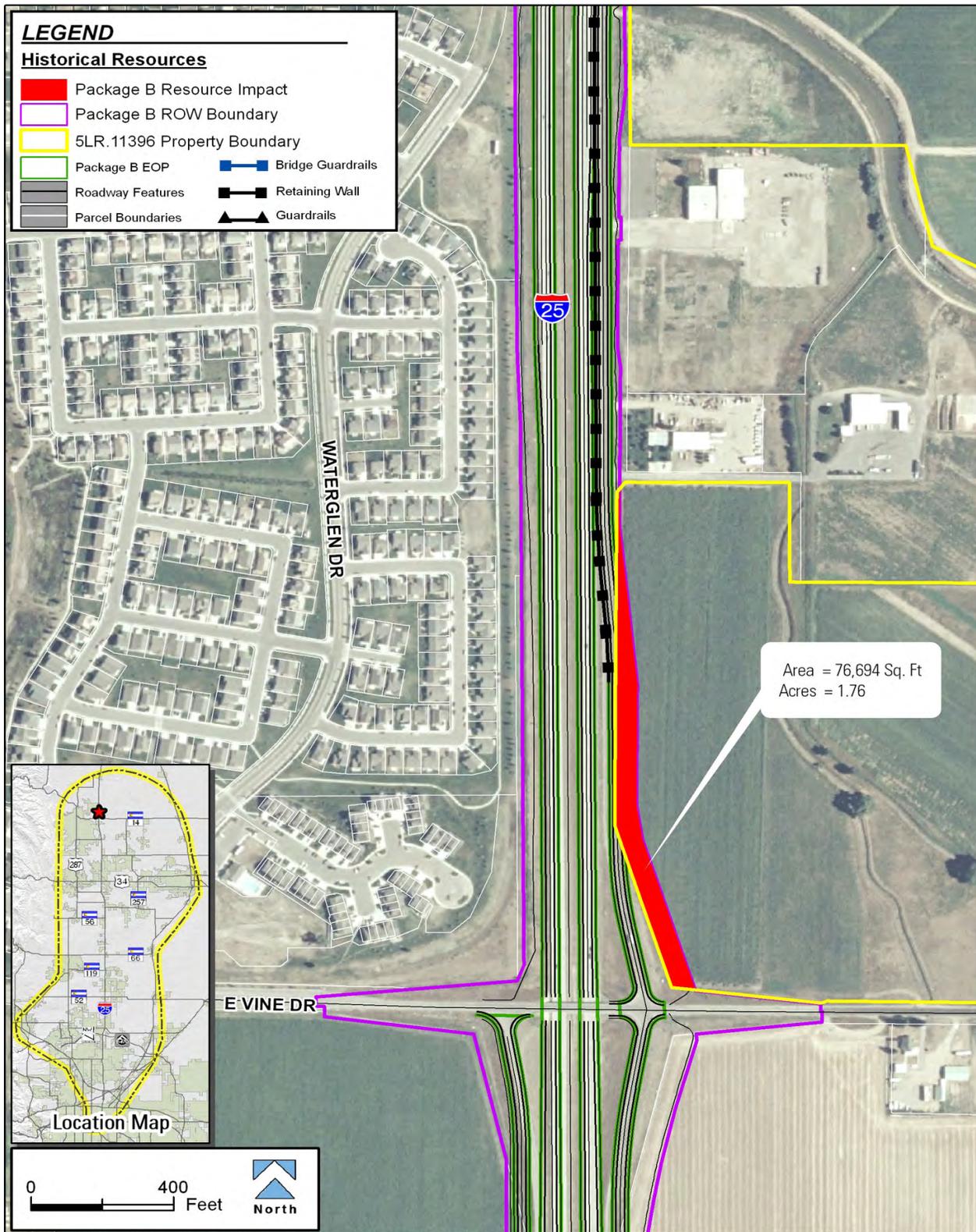
Figure 5-17 Einarsen Farm Package A Use



3
4

Note: EOP—Edge of Pavement

1 Figure 5-18 Einarsen Farm Package B Use



2
3

Note: EOP—Edge of Pavement

1

Rudolph Farm (5LR.11393)

Description

Location:	1028/1100 Southeast Frontage Road
Type:	Historic Farm
Section 106 Effect	No adverse effect
Finding:	
Ownership:	Private
Significance:	NRHP-Eligible, Criterion C

Use of Rudolph Farm by Package

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

A total of 0.27 acre, or less than 1%, of property by incorporation of a 2.5-foot by 1,247-foot strip of farmland and a 0.13-acre portion of the farmland for new driveway access

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

A total of 0.40 acre, or less than 1%, of the property by incorporation of a 10-foot by 1,247-foot strip of farmland and a 0.13-acre portion of the farmland for a new driveway access

Resource Description

The Rudolph Farm is located at 1028 to 1100 Southeast Frontage Road on the east side of I-25, a short distance south of the existing SH 14 interchange. The property is associated with the Rudolph family who acquired this land in 1915. The homestead contains an intact historic farm house constructed in 1923, and several agricultural outbuildings.

Eligibility Determination

The Rudolph Farm contains well-preserved examples of agricultural architecture in Larimer County and retains its agricultural setting. The farm structures were built during the period of significance for agriculture in Larimer County (1880s to 1940s), and exhibit very good integrity. The property is therefore eligible for the NRHP under Criterion C.

Section 4(f) Use

Package A

The Rudolph Farm is located on the east side of I-25, a short distance south of the existing SH 14 interchange. Under Package A, I-25 would be widened to accommodate three general purpose lanes in each direction, for a total of six traffic lanes. Package A roadway modifications would cause the frontage road to be replaced by new I-25 highway lanes. Currently, the closest farm building is located approximately 57 feet from the edge of the frontage road and 103 feet from the edge of I-25.

To maintain the existing I-25 elevation in this area, the new highway lanes would be slightly elevated from the frontage road elevation. The resulting slope of fill needed to elevate this portion of the roadway would extend 28.5 feet away from the edge of the roadway into the western edge of the historic property boundary. A 2.5-foot-wide and 1,247-foot-long strip of this fill slope would involve property owned by Rudolph Farm. The remainder is existing CDOT right-of-way. The fill slope would result in a regrading of the existing terrain with no change in ownership or farm use. There is a resulting temporary use of the 0.13 acre narrow strip at the toe-of-slope. The closest farm building would be approximately 70 feet from the edge of I-25. The land would remain available for use by the farm in the future.

The farm's west driveway extends through CDOT right-of-way to allow access to the frontage road. This 26-foot-wide strip of CDOT right-of-way was likely disturbed by earth-moving equipment when the frontage road (and I-25) was constructed in the 1960s. The east frontage road, which currently provides access to the historic farmhouse from SH 14 on the north and Prospect Street to the south, would be removed. Under Package A, access to the Rudolph Farm property would be provided from

the north end of the property, where there currently exists an unpaved curvilinear driveway from an unpaved and nameless east-west farm road. Approximately 0.27 acre of land adjacent to and including the north driveway would be subject to direct use. The proposed improvements include a new curved access road leading to the existing entry at the north end of the Rudolph Farm. The total direct use would constitute 0.27 acre, which is less than one percent of the 111.42-acre farm.

Removal of the east frontage road, widening of the I-25 mainline, creation of a new connection to the farm's existing north side driveway, and temporary construction impacts along the farm's west edge would not diminish or alter the architectural setting or characteristics that render the property eligible for the NRHP. FHWA, FTA and CDOT therefore have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-19** for uses associated with Package A.

Package B

Under Package B, I-25 would be widened, 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. I-25 widening would eliminate the existing frontage road located along the east side of I-25. The closest farm building would be 57 feet from the edge of the new I-25 lanes.

Impacts under Package B would be roughly similar in nature and extent to Package A, with the exception that a wider, 36-foot-wide strip of land would experience direct temporary impacts along the farm property's west edge. Of this strip of land, the eastern 10-foot width, or 0.27 acres, is actually within the legal farm parcel boundary, and the remaining 26 feet between the legal boundary and the frontage road edge is CDOT right-of-way, all located inside the historic farm boundary. The new fill slope would produce direct impacts to approximately 0.27 acre of the historic farm property. The fill slope would result in a regrading of the existing terrain with no change in ownership or farm use. The directly impacted strip of Rudolph Farm land would remain available for use by the farm in the future.

As was the case under Package A, an additional 0.13 acre of land, including part of the existing north driveway, would be subject to direct impacts to construct a new access from the interchange to the farm driveway. The total direct impacts would be 0.40 acre, which is slightly greater than the area directly impacted under Package A but still comprises less than one percent of the 111.42-acre farm.

The direct use caused by proposed transportation improvements associated with Package B would not substantially diminish or alter architectural or setting characteristics that render the property eligible for the NRHP. FHWA, FTA and CDOT therefore have determined that Package B would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-20** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

Packages A and B

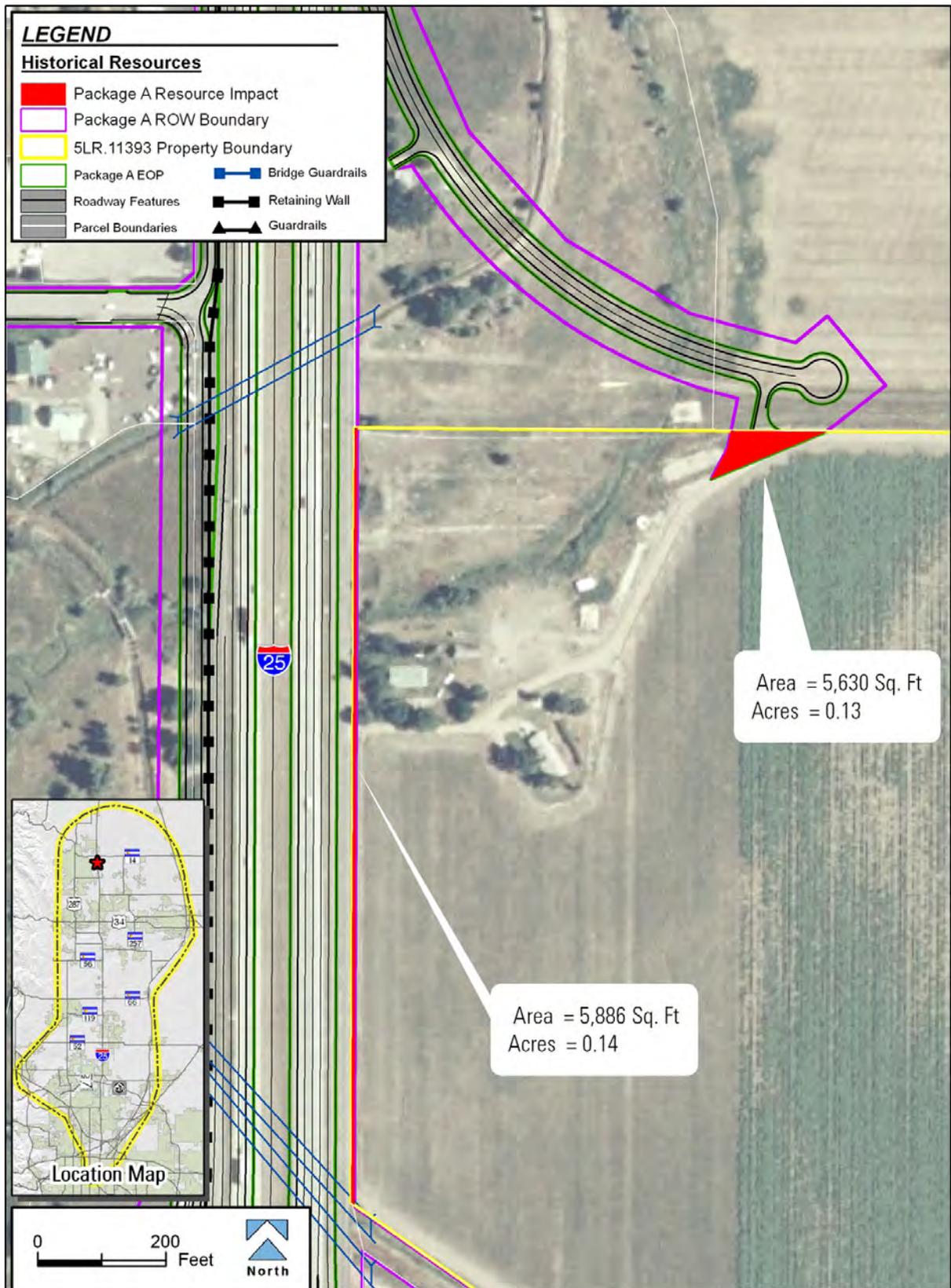
Since the I-25 template would be widened, impacts to the historic farm were lessened by eliminating the east frontage road between SH 14 and Prospect Street, and replacing the existing main access to the farm from the east frontage road with improved access to the north side of the property. If the frontage road had been retained, it would have been shifted eastward to accommodate the wider I-25 template, and would have required acquisition of a larger strip of land for new right-of-way along the entire west edge of the property.

Additionally, the I-25 centerline was planned to be shifted farther to the east to allow for construction phasing, but this concept was abandoned to ensure limited impact to the Rudolph Farm. This would consist of changes to the proposed frontage road that would lessen use of the property. Any alternative involving an I-25 alignment shift to the west near the Rudolph Farm would result in loss of access to at least three light industrial businesses on the west side, force relocation of 0.5 mile of frontage road on the east side that would affect access to another existing business, and have a substantially greater impact to two existing irrigation ditches (Cache la Poudre Reservoir Inlet and Lake Canal) along the west side of I-25.

Mitigation Measures for Rudolph Farm

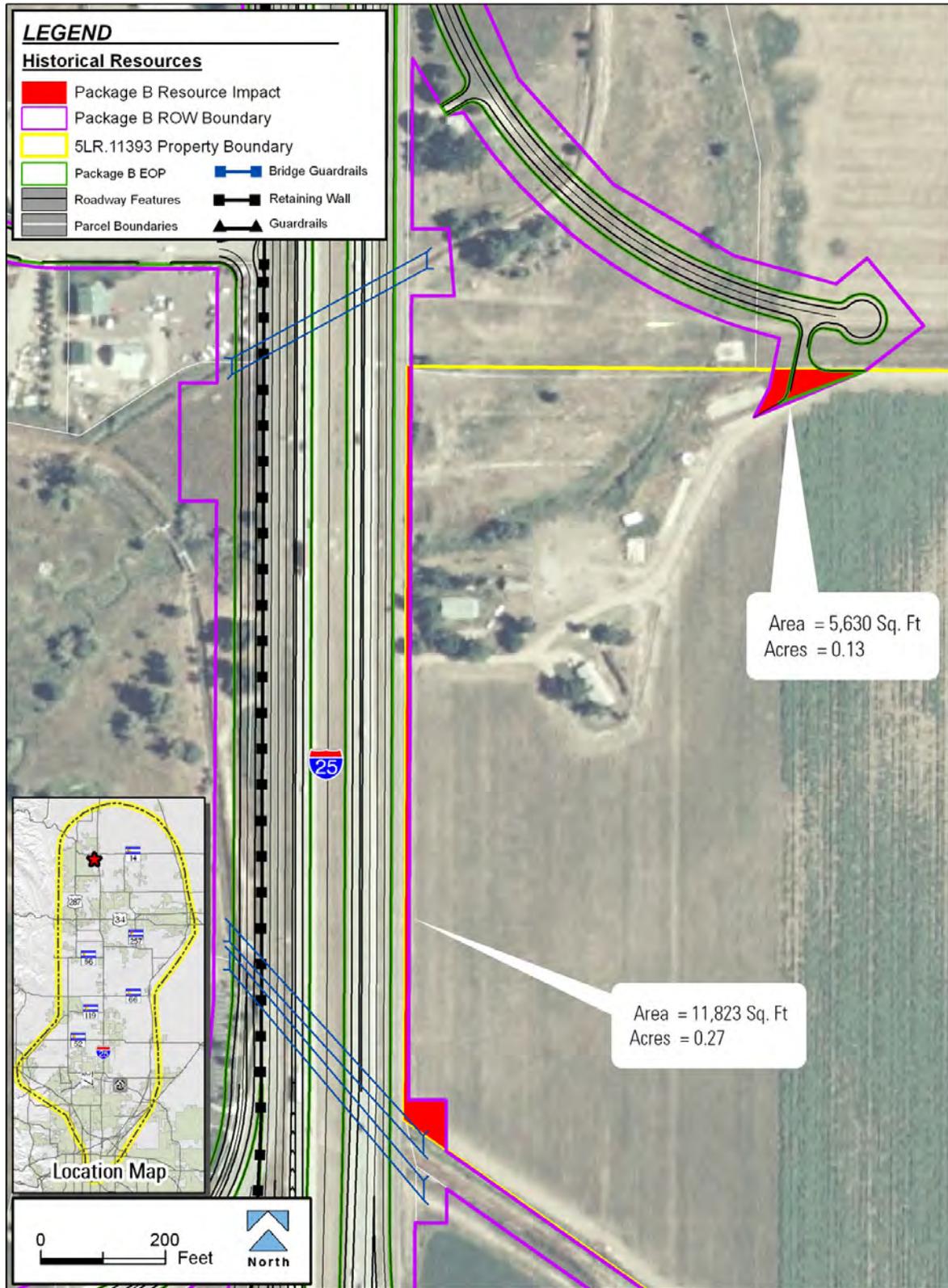
- Property acquisition will be completed under the Uniform Relocation Act.
- Maintain operation of farm during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

1 Figure 5-19 Rudolph Farm Package A Use



2 Note: EOP—Edge of Pavement

1 Figure 5-20 Rudolph Farm Package B Use



2
3 Note: EOP—Edge of Pavement

1

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

Description

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

Use of Cache la Poudre Reservoir Inlet by Package

Package A A-H2 GP Highway Improvements: SH 14 to SH 60	Package B B-H2 Tolled Express Lanes: SH 14 to SH 60
A total length of 85 feet of open ditch or 1% of total length in culvert extensions	A total length of 85 feet of open ditch or 1% of total length 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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-21** 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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-21** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

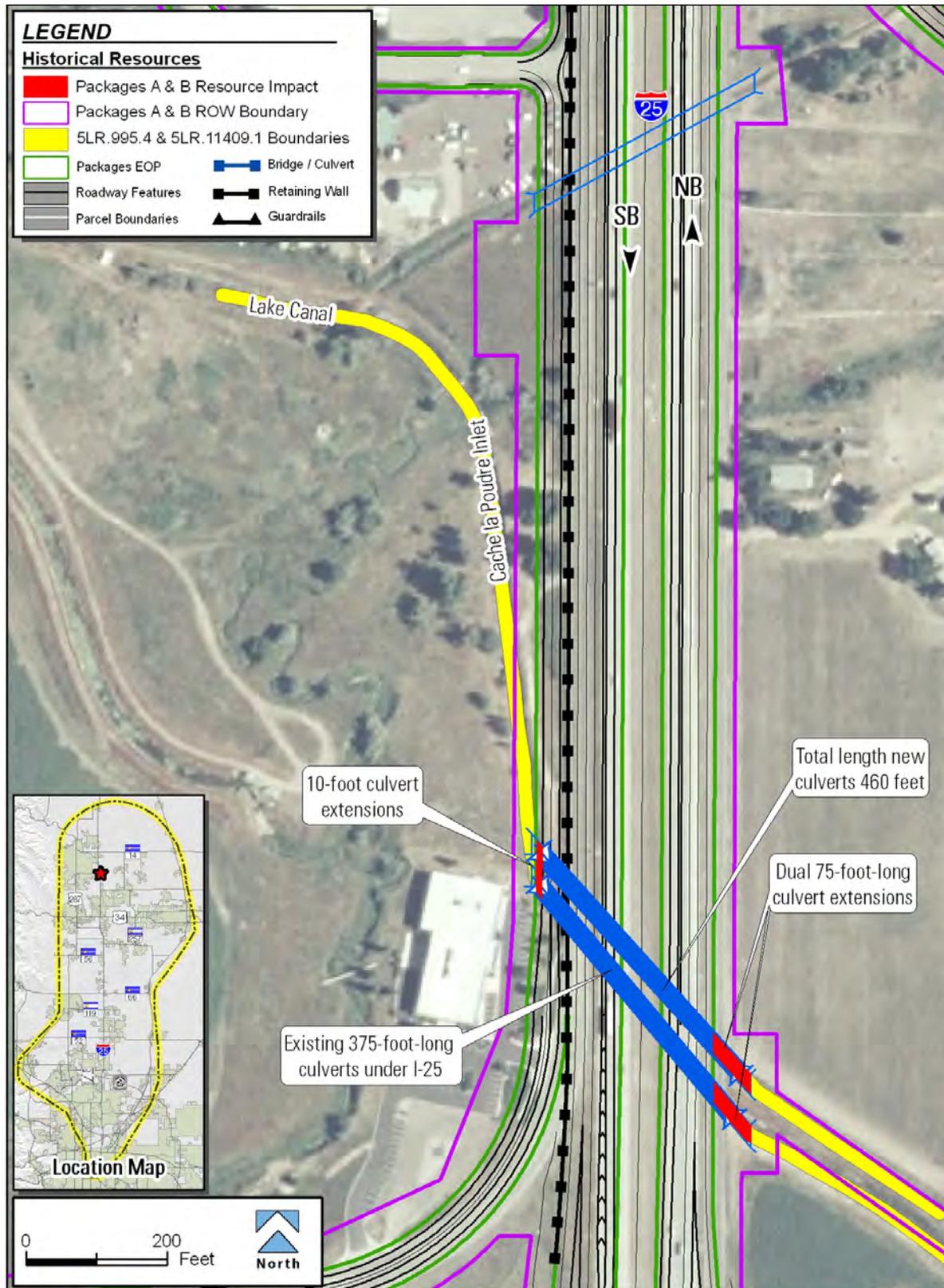
Packages A and B

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 5-21 Cache la Poudre Reservoir Inlet – Use Packages A and B



Boxelder Ditch (5LR.2160)

Description

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

Use of Boxelder Ditch by Package

Package A	Package B
A-H2 GP Highway Improvements: SH 14 to SH 60	B-H2 Tolled Express Lanes: SH 14 to SH 60
A total of 137.5 feet, or less than 1%, of total ditch length, incorporated into a new 62.5-foot-long new culvert and a 75-foot-long culvert extension	A total of 137.5 feet, or less than 1%, of total ditch length, incorporated into a new 62.5-foot-long new culvert and a 75-foot-long culvert extension

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, FTA, and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-22** 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-22** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

Packages A and B

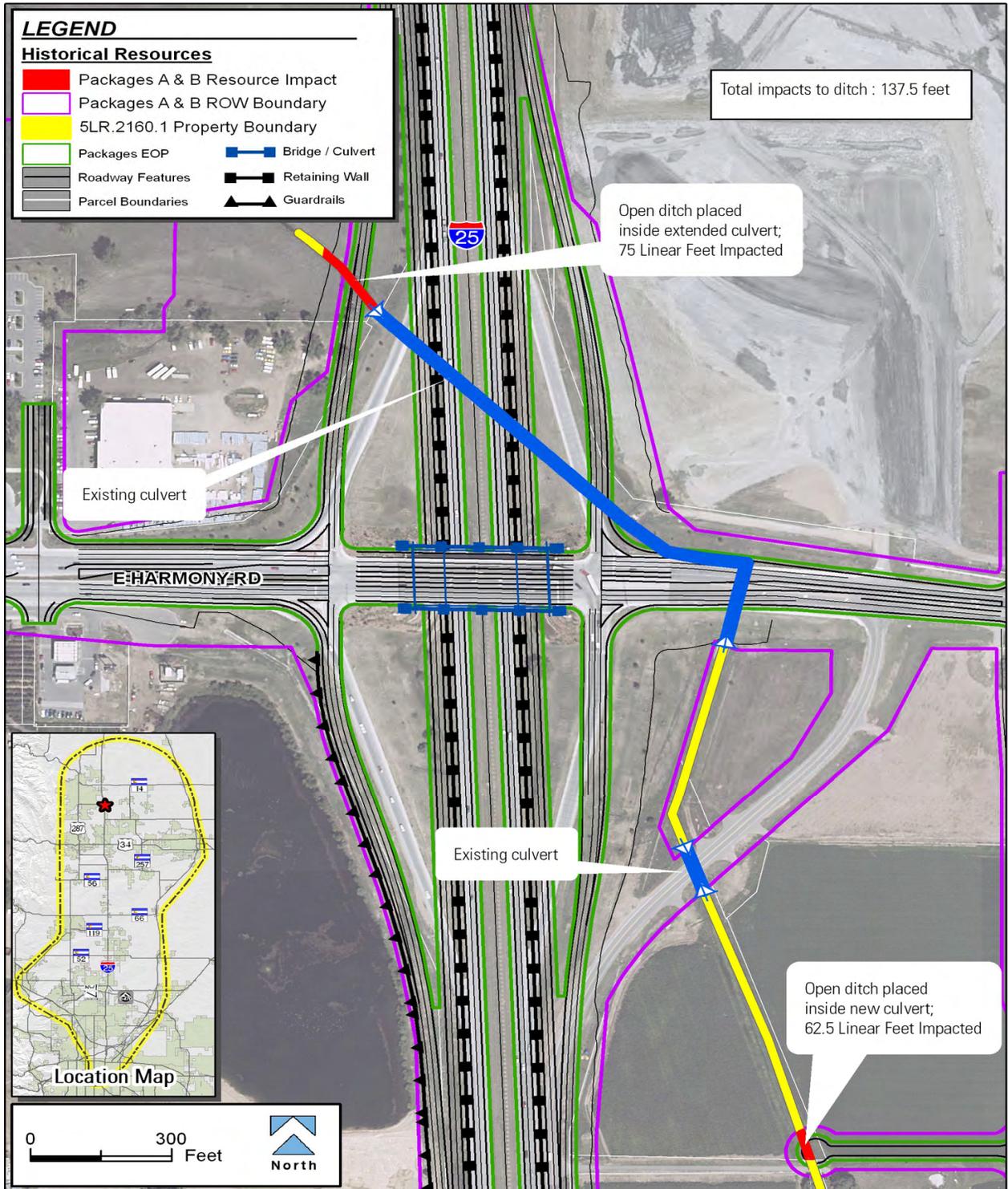
Impacts to the ditch in the northwest quadrant were minimized by adding a retaining wall along the west edge of the southbound off-ramp. Realigning the southbound off-ramp to avoid the ditch would result in a substandard design with regard to design speed and sight distance.

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 5-22 Boxelder Ditch Packages A and B Use



2
3 Note: EOP—Edge of Pavement

Loveland and Greeley Canal (5LR.503.2)

Description

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

Use of Loveland and Greeley Canal by Package

Package A A-H2 GP Highway Improvements: SH 14 to SH 60	Package B B-H2 Tolled Express Lanes: SH 14 to SH 60
A total of 70 feet, or less than 1%, of total ditch length in culvert extension	A total of 70 feet, or less than 1%, of total ditch length 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 OAHF 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, FTA, and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-23** 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, FTA, and CDOT have determined that Package B would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-23** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

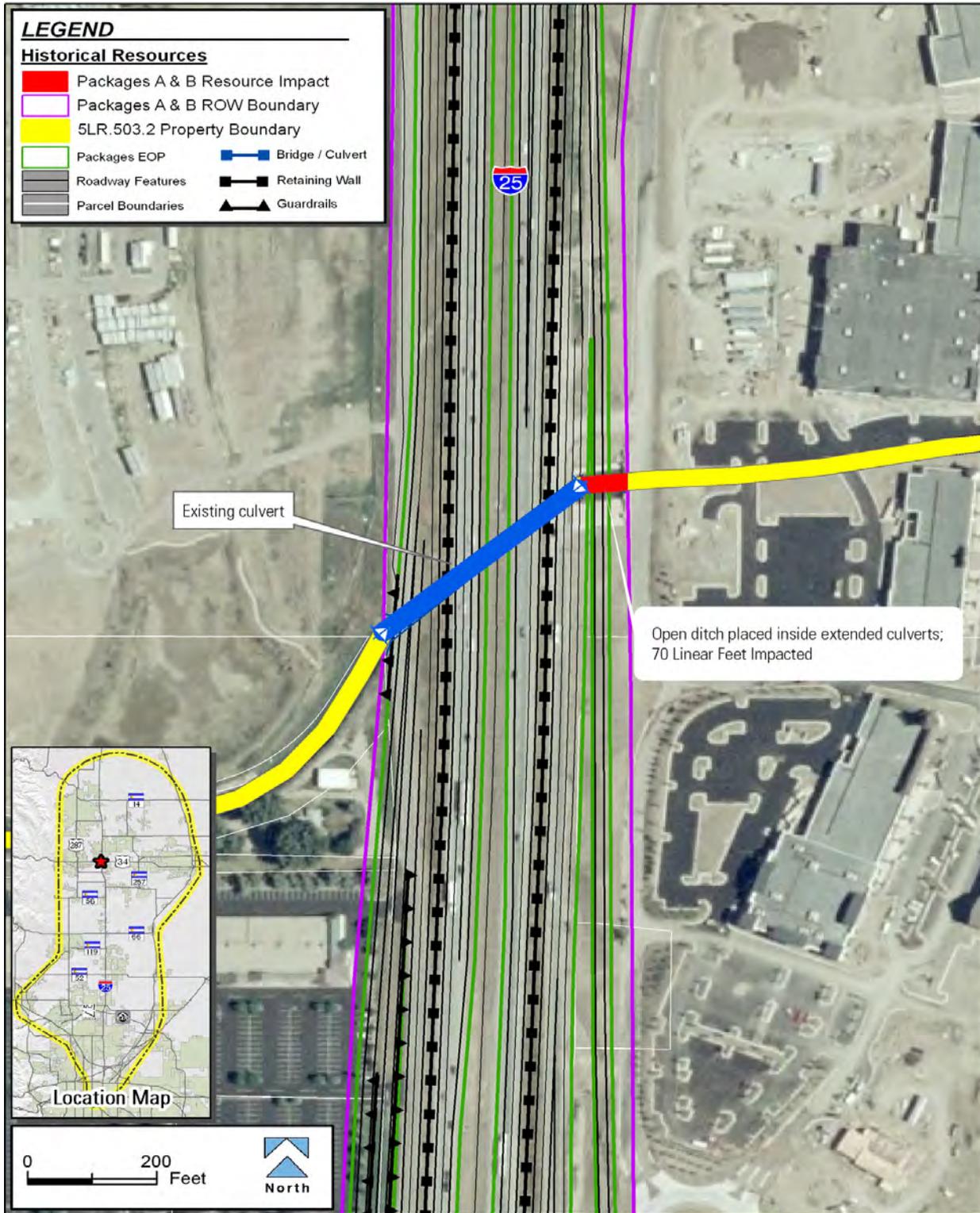
Packages A and B

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 5-23 Loveland and Greeley Canal Package A & B Use



2
3
4 Note: EOP—Edge of Pavement

Farmers Ditch (5LR.8928.1)

Description

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

Use of Farmers Ditch by Package

Package A	Package B
A-H2 GP Highway Improvements: SH 14 to SH 60	B-H2 Tolled Express Lanes: SH 14 to SH 60
A total of 2,539 linear feet or 3% of the total ditch length would be placed inside culvert extensions	A total of 2,539 linear feet or 3% of the total ditch length would be placed inside culvert extensions

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 5-24**). 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 overlie the ditch culvert. **Figure 5-25** 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 5-24**).

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 direct impacts to 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, FTA, 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 FTA 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 5-26** 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 direct impacts to 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 direct impacts to 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, FTA 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 FTA to make a finding of *de minimis* pending SHPO concurrence.

Planning and Measures Included to Reach a De Minimis Finding

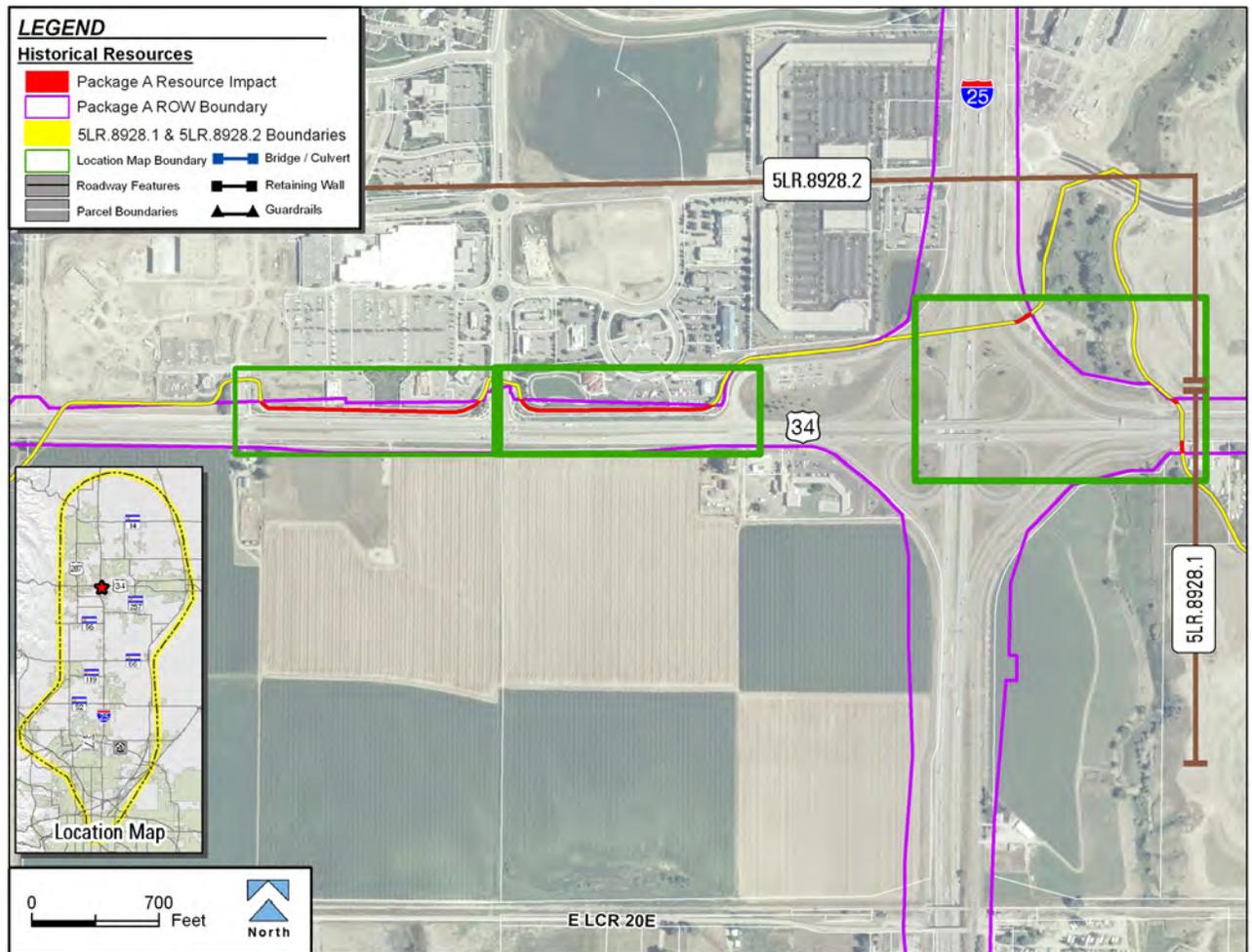
At the US 34 Interchange, the roadway template has been minimized as much as possible, and has utilized retaining walls throughout the interchange system (i.e., along all ramps, I-25 and US 34) to avoid and minimize impacts to the Schmer Farm and other environmental resources. It is the least harmful 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

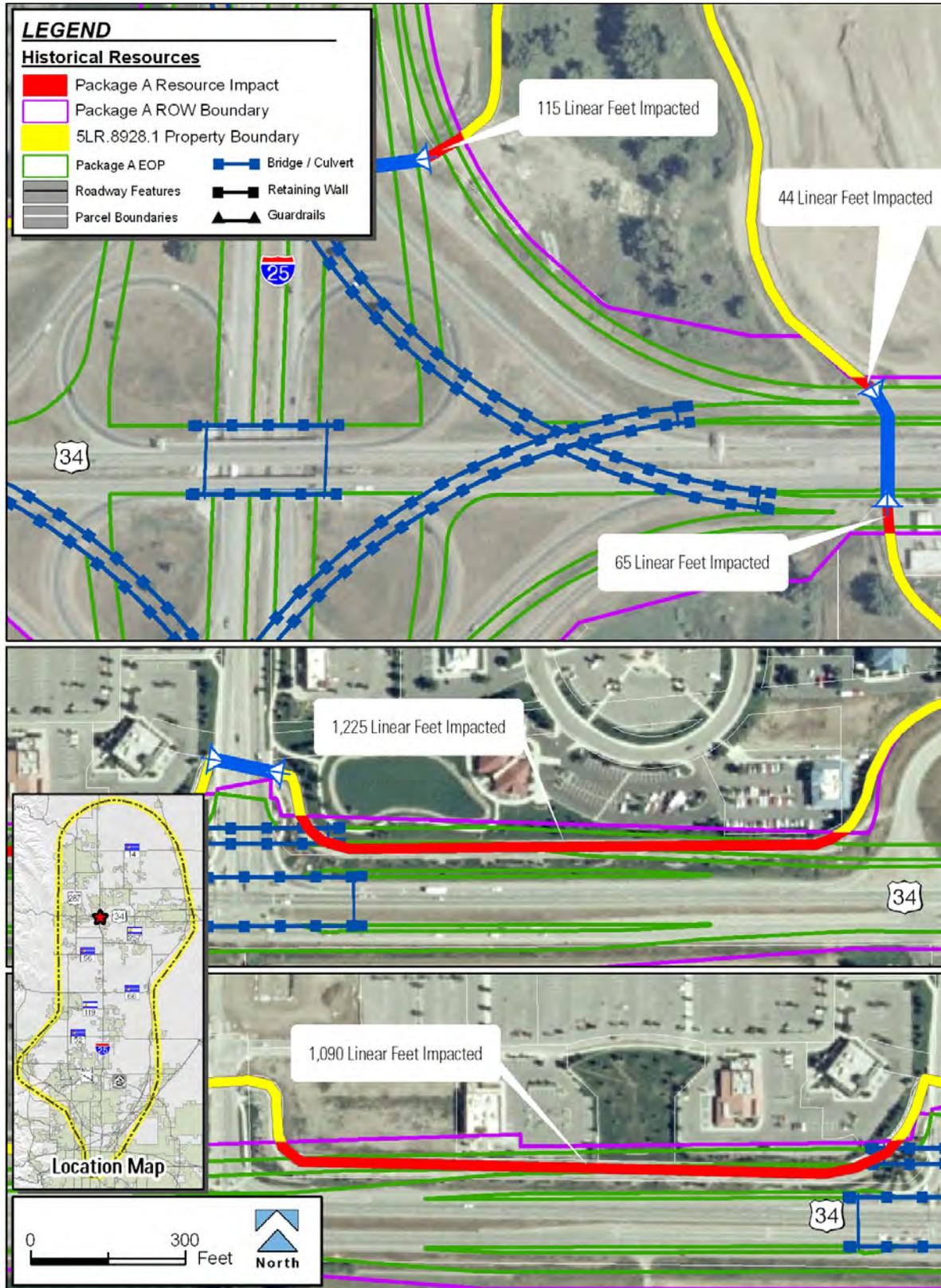
- Detailed recording of the affected ditch in accordance with the Colorado Historical Society/standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to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

1 Figure 5-24 Farmers Ditch Packages A and B Location Map



2

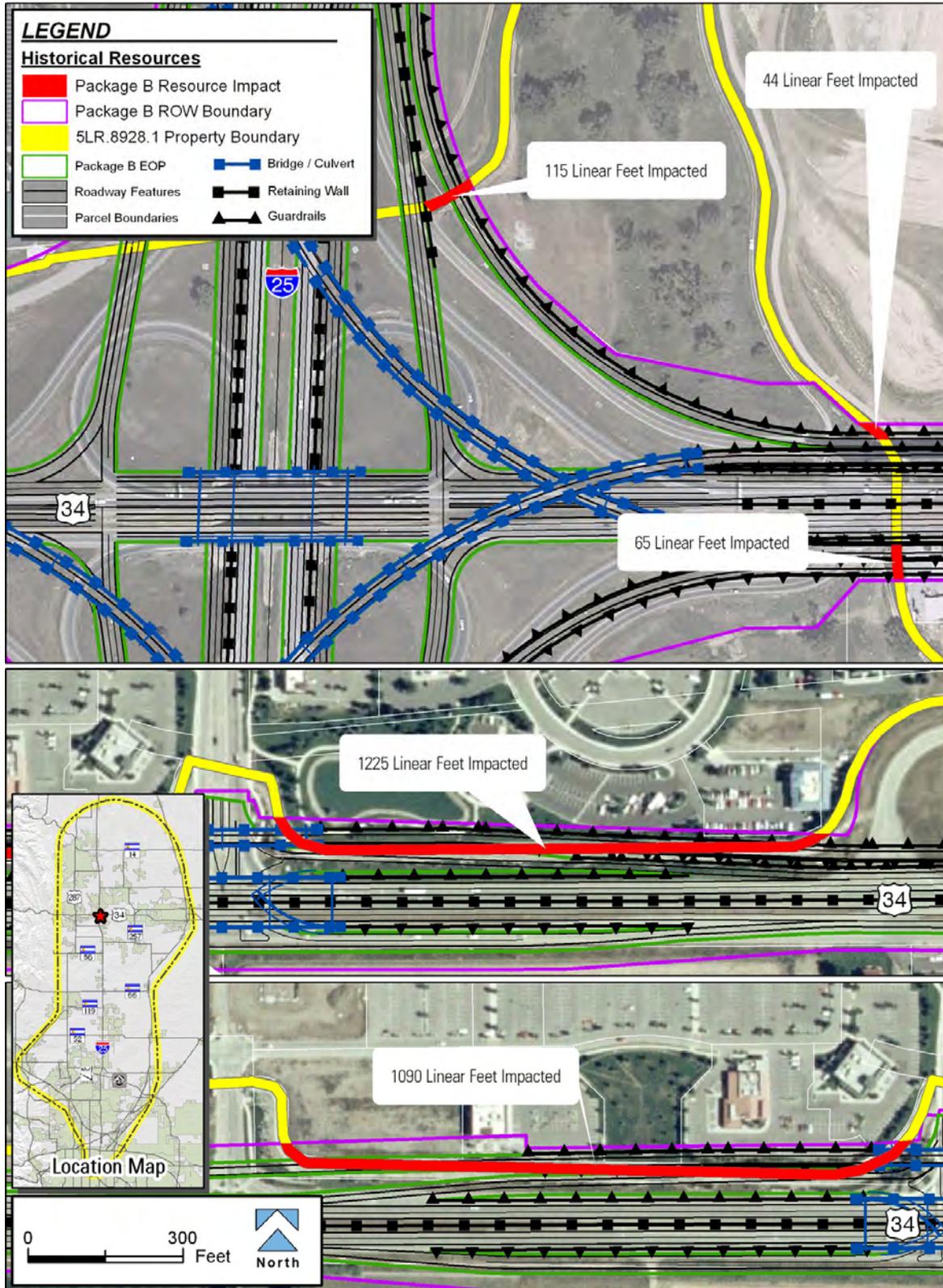
1 Figure 5-25 Farmers Ditch Package A Use



Note: EOP—Edge of Pavement

2
3

1 Figure 5-26 Farmers Ditch Package B Use



Note: EOP—Edge of Pavement

2
3
4

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, or 5.3% 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.

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

A total of 7.0 acres, or 5.6% 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.

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 create direct impacts to 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. The combined 6.61 acres of open farmland subject to direct use under Package A amounts to approximately 5.3 percent of the total 124-acre area occupied by this historic farm. 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, FTA, and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-27** 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. Direct impacts to 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 direct impacts to 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. The combined 7.0 acres of open farmland subject to direct use under Package B amounts to approximately 5.6 percent of the total 124-acre area occupied by this historic farm. No direct impacts to 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, FTA, and CDOT have determined that Package B would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-28** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

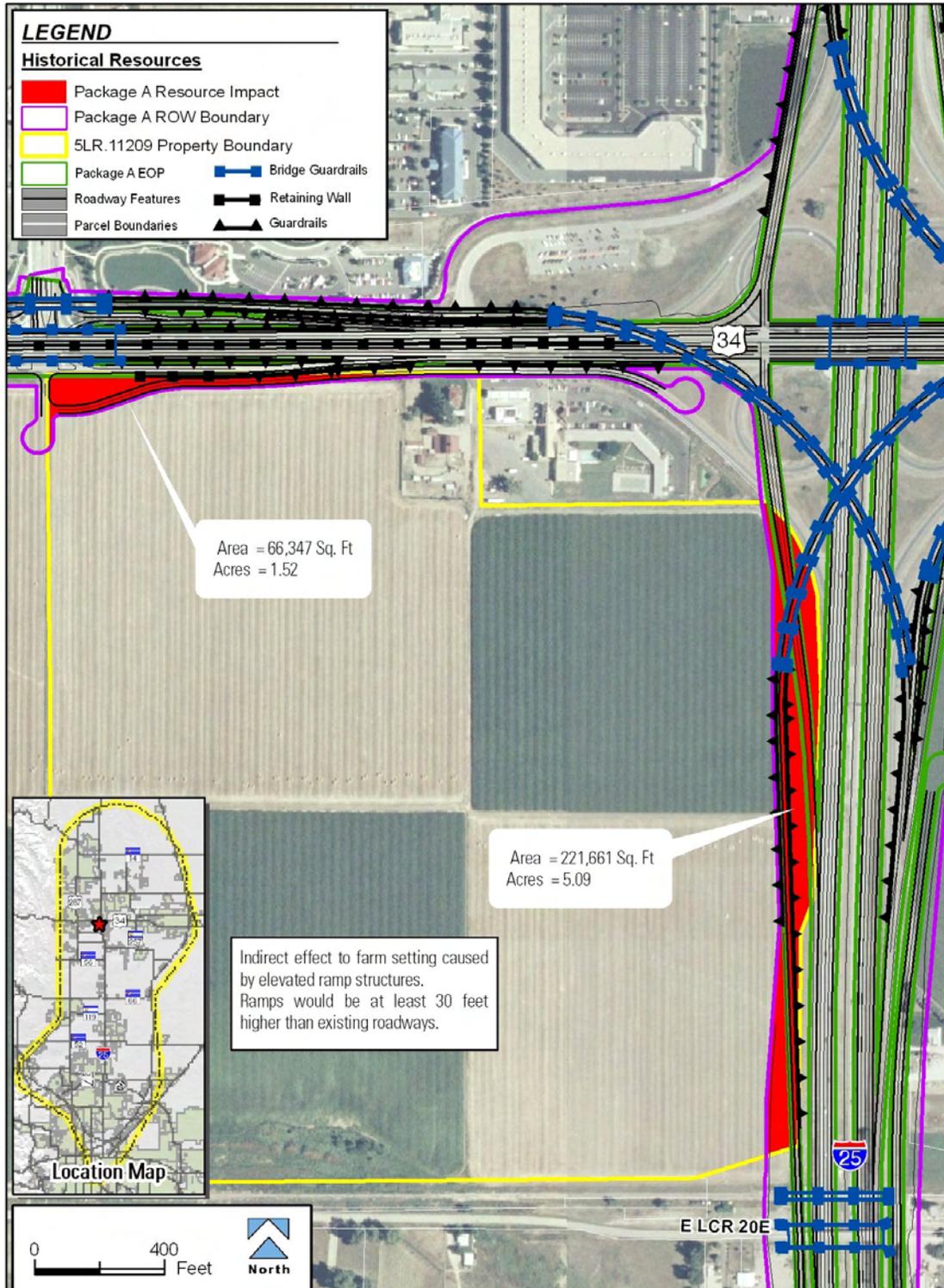
Packages A and B

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 2030 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.

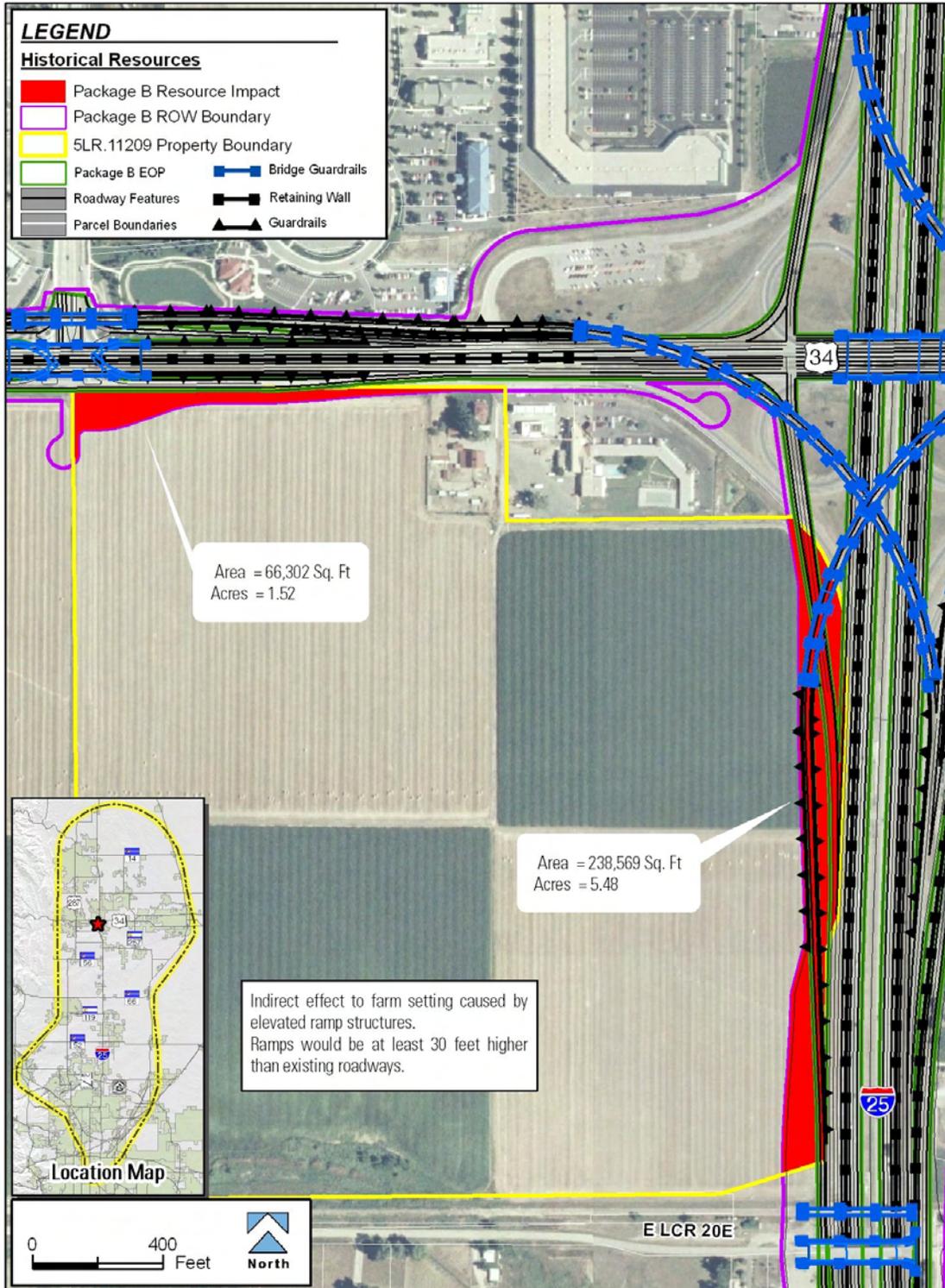
1 Figure 5-27 Schmer Farm Package A Use



Note: EOP—Edge of Pavement

2
3

1 Figure 5-28 Schmer Farm Package B Use



2
3
4

Note: EOP—Edge of Pavement

Great Western Railway (5LR.850)

Description

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

Use of Great Western Railway by Package

Package A A-H2 GP Highway Improvements: SH 14 to SH 60	Package B B-H2 Tolled Express Lanes: SH 14 to SH 60
A total of 170 feet, or less than 1%, of total railroad length incorporated into a new bridge	A total of 240 feet, or less than 1%, of total 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 5-29**).

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.

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 direct impacts to 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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-29** 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.

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 re-aligned 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, FTA 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-30** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

Package A

The bridge for Package A can not 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.

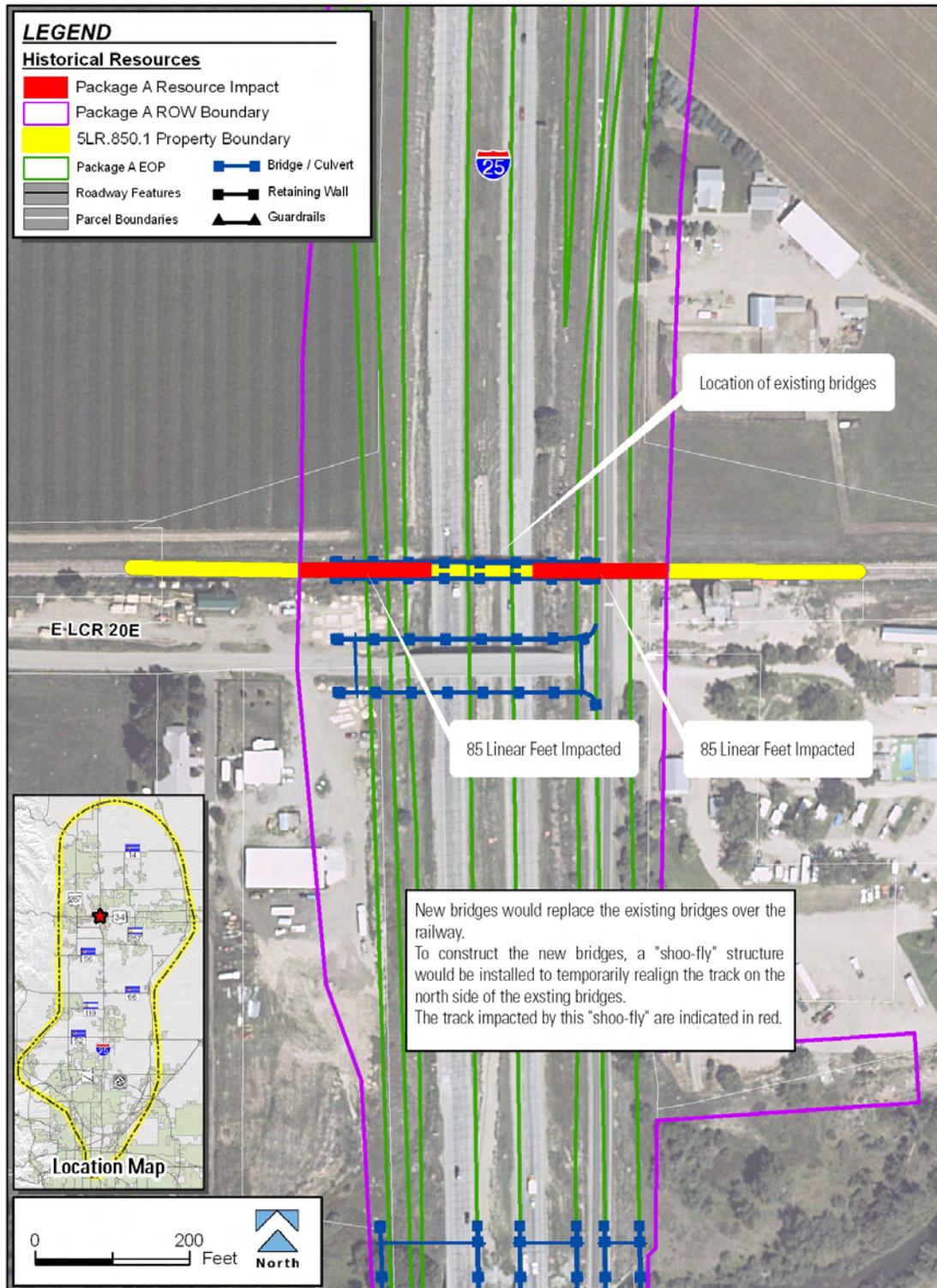
Package B

The bridge for Package B 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.

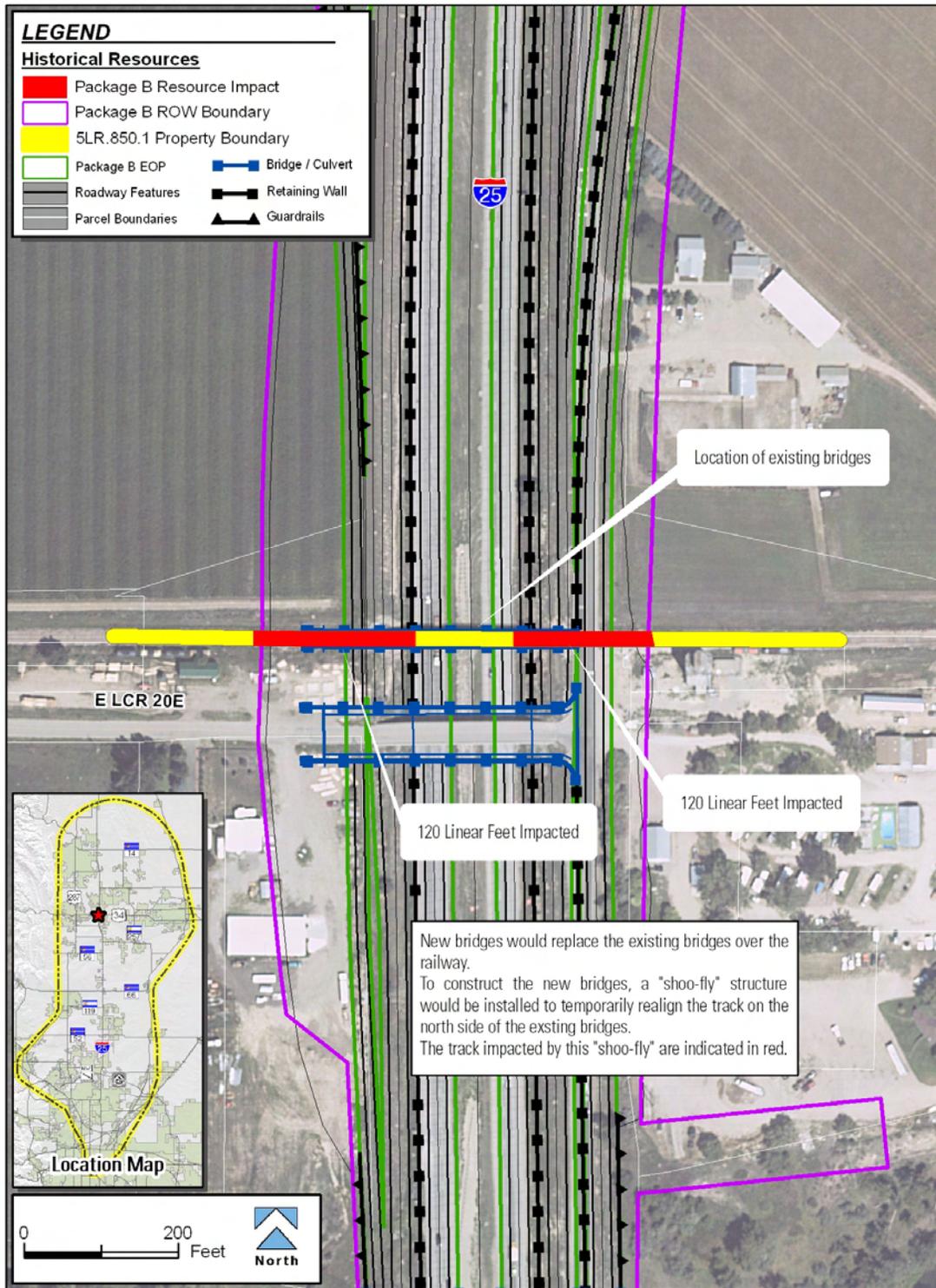
1 Figure 5-29 Great Western Railway Package A Use



2
3
4

Note: EOP—Edge of Pavement

1 Figure 5-30 Great Western Railway Package B Use



2
3
4
5
6
7
8

1

Hatch Farm (5LR.11382)

Description

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

Use of Hatch Farm by Package

Package A A-H2 GP Highway Improvements: SH 14 to SH 60	Package B B-H2 Tolled Express Lanes: SH 14 to SH 60
A total of 2.1 acres, or 2% of total property, by incorporation of narrow 850-foot and 450-foot strips of farmland for two water quality ponds in the project	A total of 2.2 acres, or 2% of total property, by incorporation of narrow 850-foot and 450-foot strips of farmland for two water quality ponds in the project

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, or approximately two percent of the area of the 106.78-acre historic farm property.

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, FTA, and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-31** 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, or approximately two percent of the area of the 106.78-acre historic farm property.

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, FTA, and CDOT have determined that Package B would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-32** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

Package A

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.

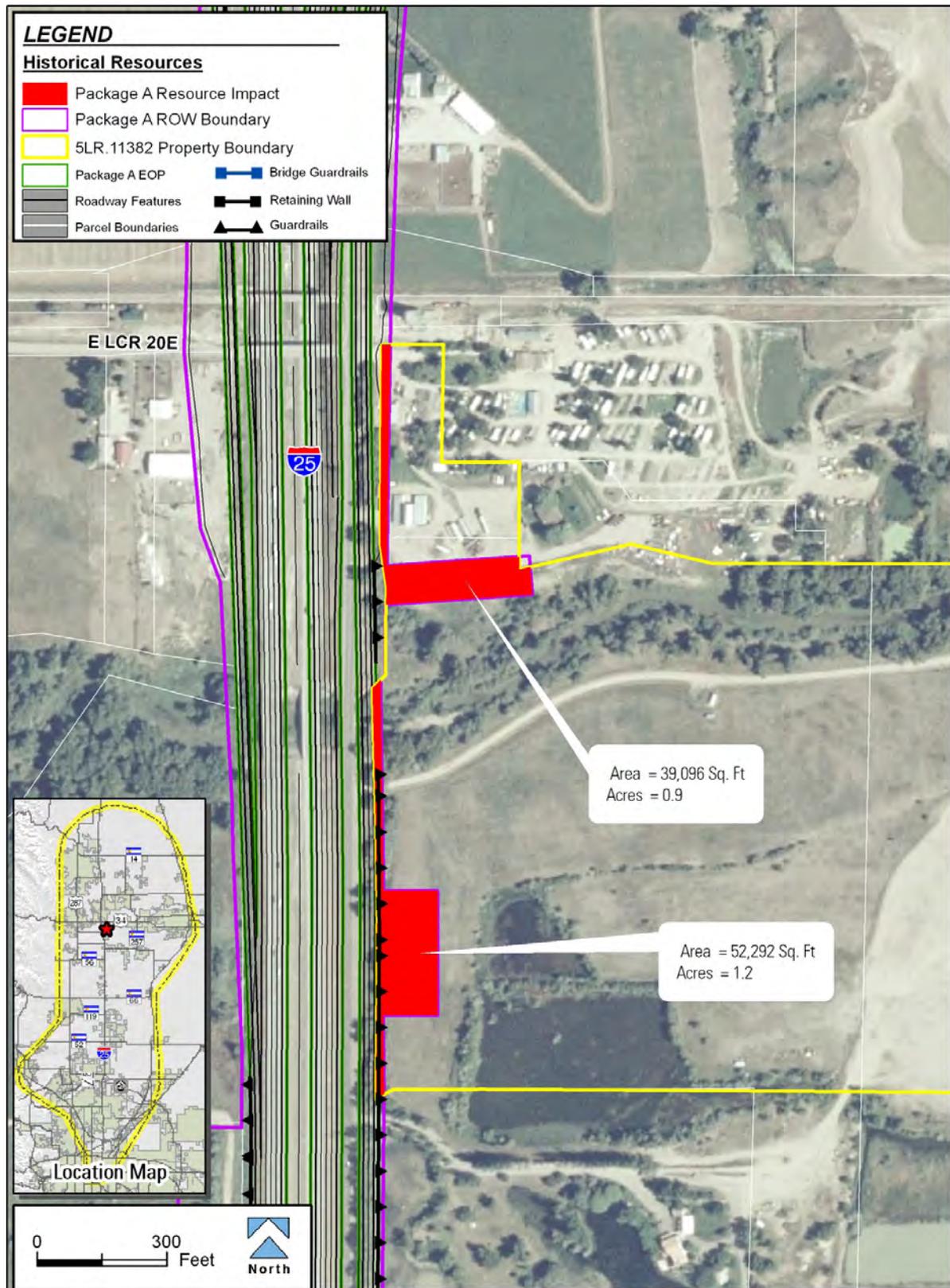
Package B

No further 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

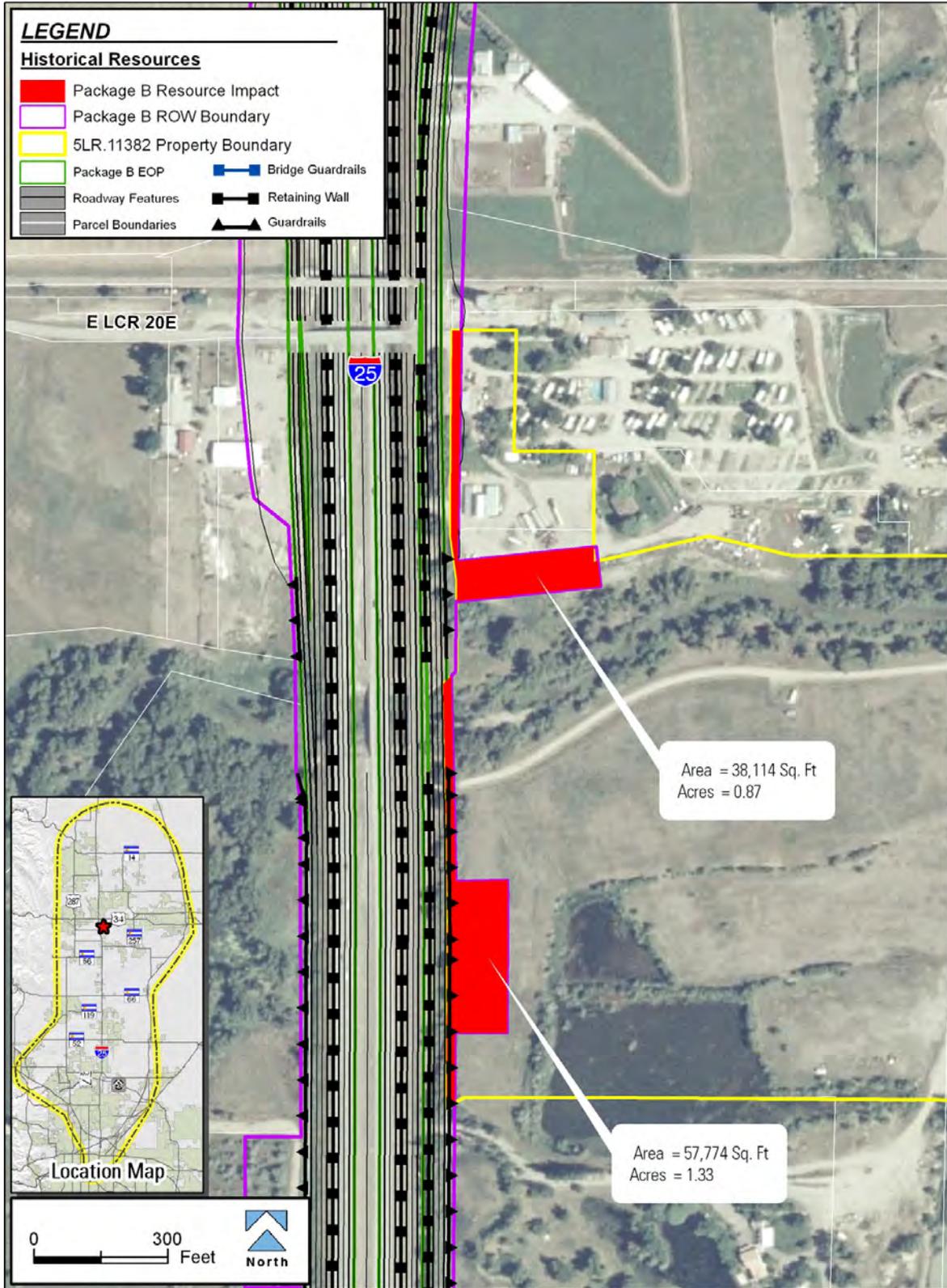
- Maintain operation of farm during construction.
- Property acquisition will be completed under the Uniform Relocation Act.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

1 Figure 5-31 Hatch Farm Package A Use



2
3 Note: EOP—Edge of Pavement

1 Figure 5-32 Hatch Farm Package B Use



2
3 Note: EOP—Edge of Pavement

1

Hillsboro Ditch (5LR.8927.1)

Description

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

Use of Hillsboro Ditch by Package

Package A A-H2 GP Highway Improvements: SH 14 to SH 60	Package B B-H2 Tolled Express Lanes: SH 14 to SH 60
A total of 135 feet or 6% of total ditch length would be incorporated into culvert extensions	A total of 135 feet or 6% of total ditch length 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.

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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-33** 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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-33** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

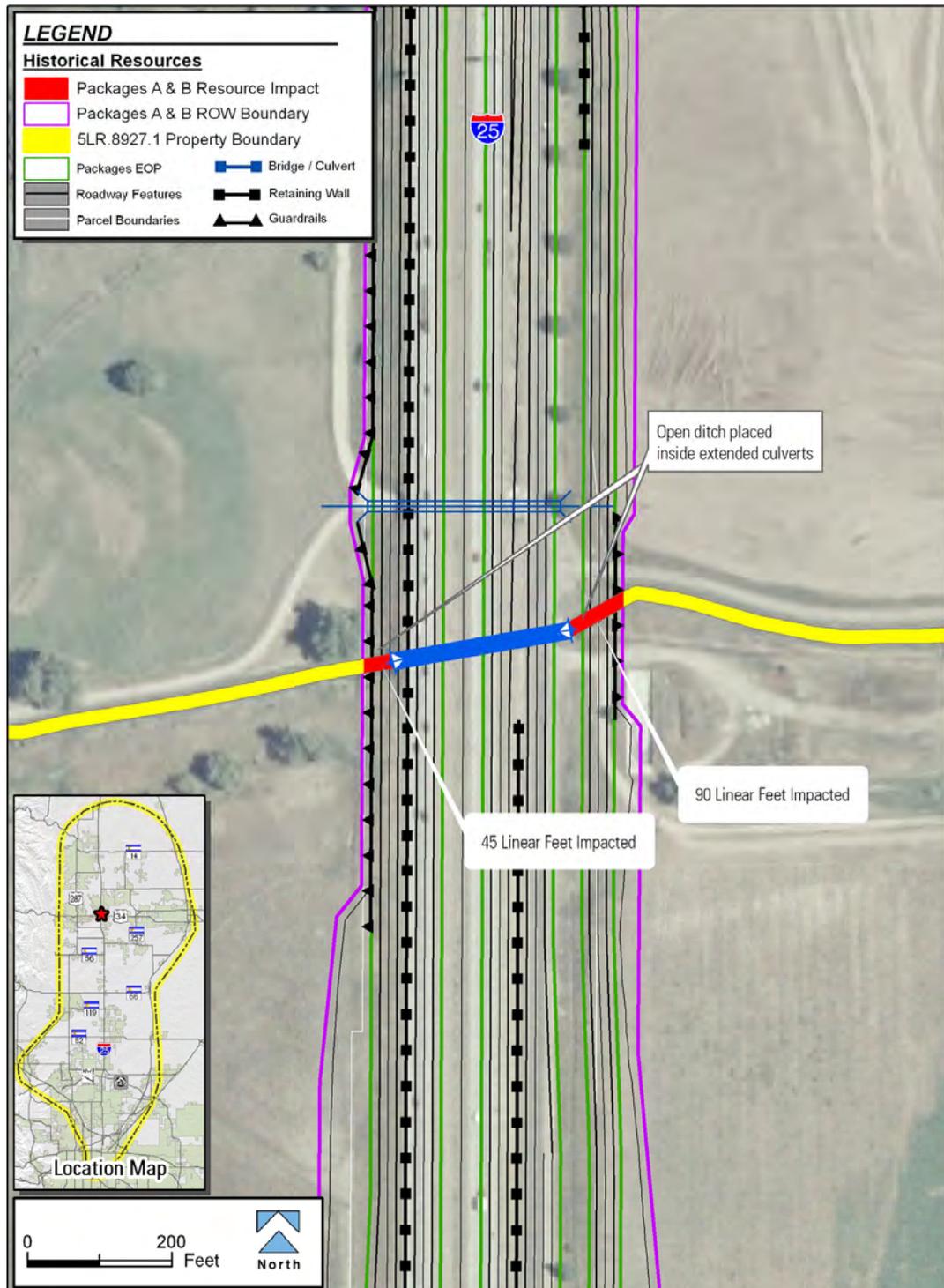
Packages A and B

Retaining walls were employed to limit uses on both the east and west sides of the I-25 corridor. Eliminating or 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.

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.

1 Figure 5-33 Hillsboro Ditch Packages A and B Use



2
3 Note: EOP—Edge of Pavement

Mountain View Farm (5LR.11242)

Description

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

Use of Mountain View Farm by Package

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

A total of 4.76 acres, or 3.5%, of the property by incorporation of a 65-foot-by 3,200-foot-long strip of farmland adjacent to I-25 and SH 402

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

A total of 5.28 acres, or 4%, of the property by incorporation of a 60-foot-by 3,900-foot-long strip of farmland adjacent to I-25 and SH 402

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.

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. This area amounts to approximately 3.5 percent of the 136.22-acre farm. 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, FTA, and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-34** 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. This area amounts to approximately 4 percent of the 136.22-acre farm. No historic buildings would be directly impacted by these transportation improvements. Therefore, it is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-35** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

Packages A and B

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.

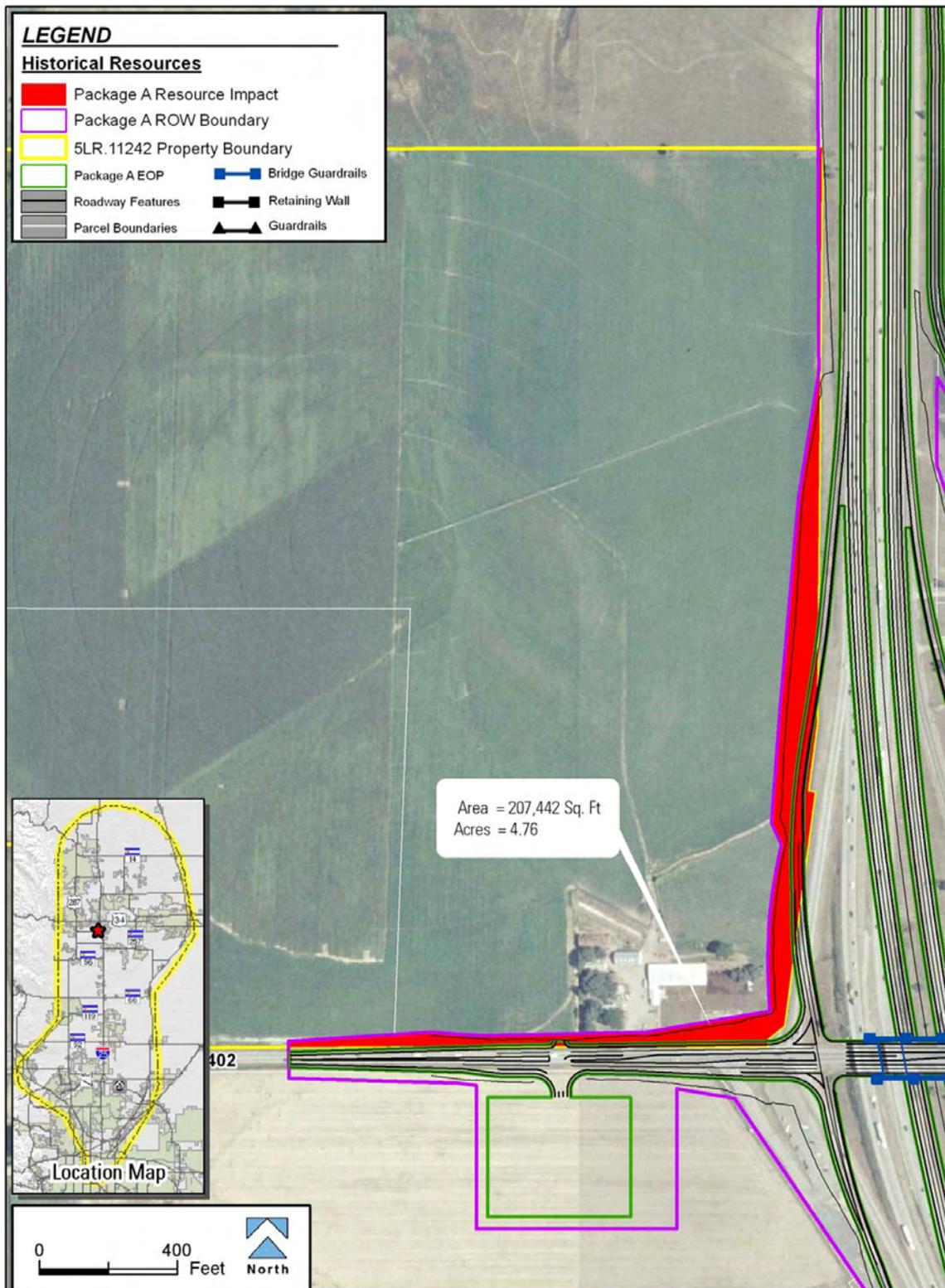
Impacts caused by expansion of SH 402 would result from wider toe slopes at the interchange and overpass. Because of the overpass height, the toe slopes would have a longer reach into the farm property. Retaining walls at the interchange were deemed not a feasible and prudent engineering design solution 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.

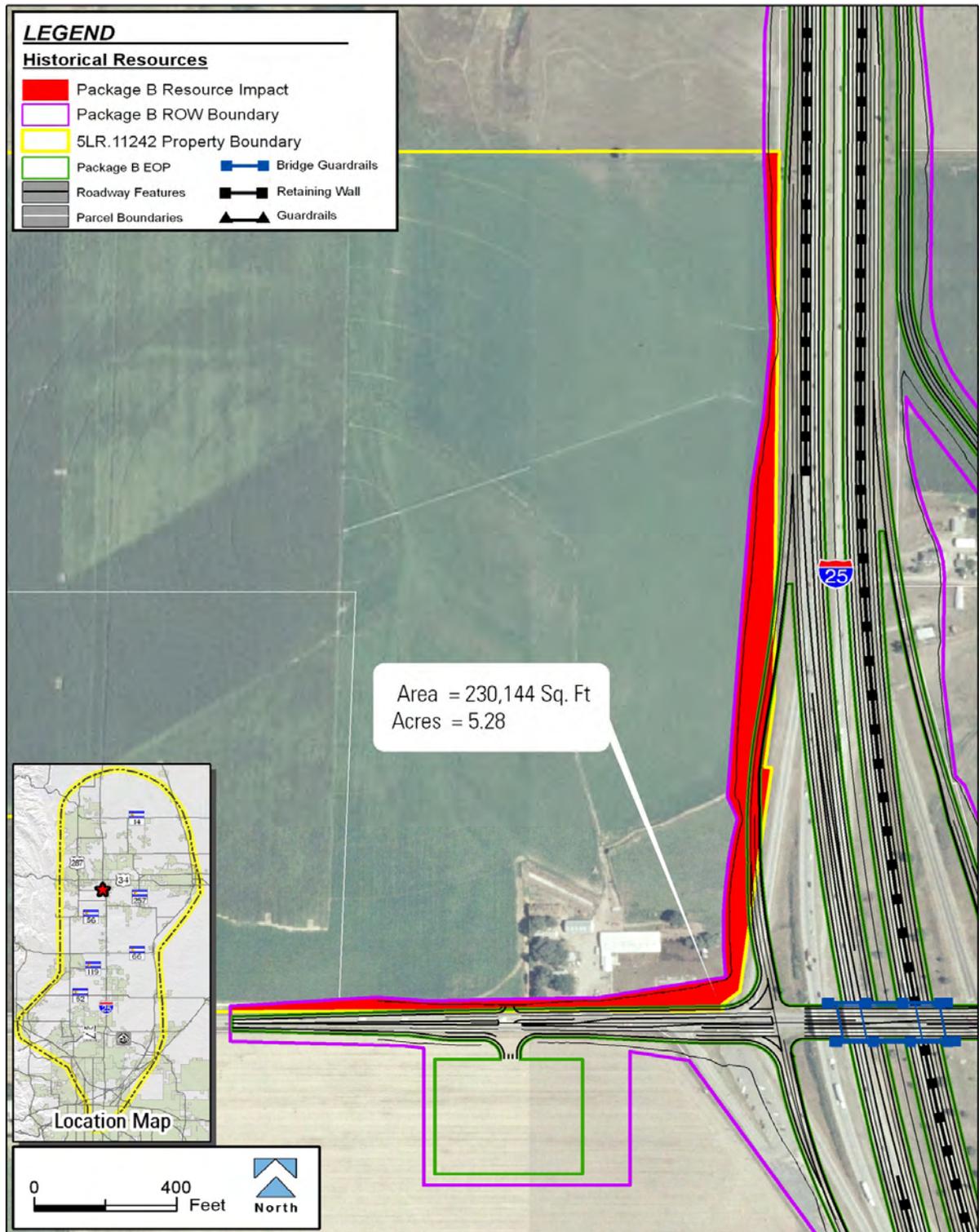
- Maintain operation of farm during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

1 Figure 5-34 Mountain View Farm Package A Use



Note: EOP—Edge of Pavement

1 Figure 5-35 Mountain View Farm Package B Use



Note: EOP—Edge of Pavement

1

Bein Farm (5WL.5203)

Description

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

Use of Bein Farm by Package

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

A total of 17.94 acres, or 6.2%, of the property 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

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

A total of 20.04 acres, or 7%, of the property 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

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 19th 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 19th 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 cause direct impacts to 17.94 acres along the east and north edges of the property. This comprises approximately 6.2 percent of the historic farm's total 288.45 acres. No farm buildings would be directly impacted.

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, FTA, and CDOT have determined that Package A would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-36** 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 direct impacts to the farm would be 20.04 acres along the east and north edges of the property, comprising approximately seven percent of the historic farm's total 288.45 acres. No farm buildings would be directly impacted.

Because the direct and indirect impacts to the land within the historic farm building 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, FTA, and CDOT have determined that Package B would result in *no adverse effect* to the resource. It is the intent of the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-37** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

Packages A and B

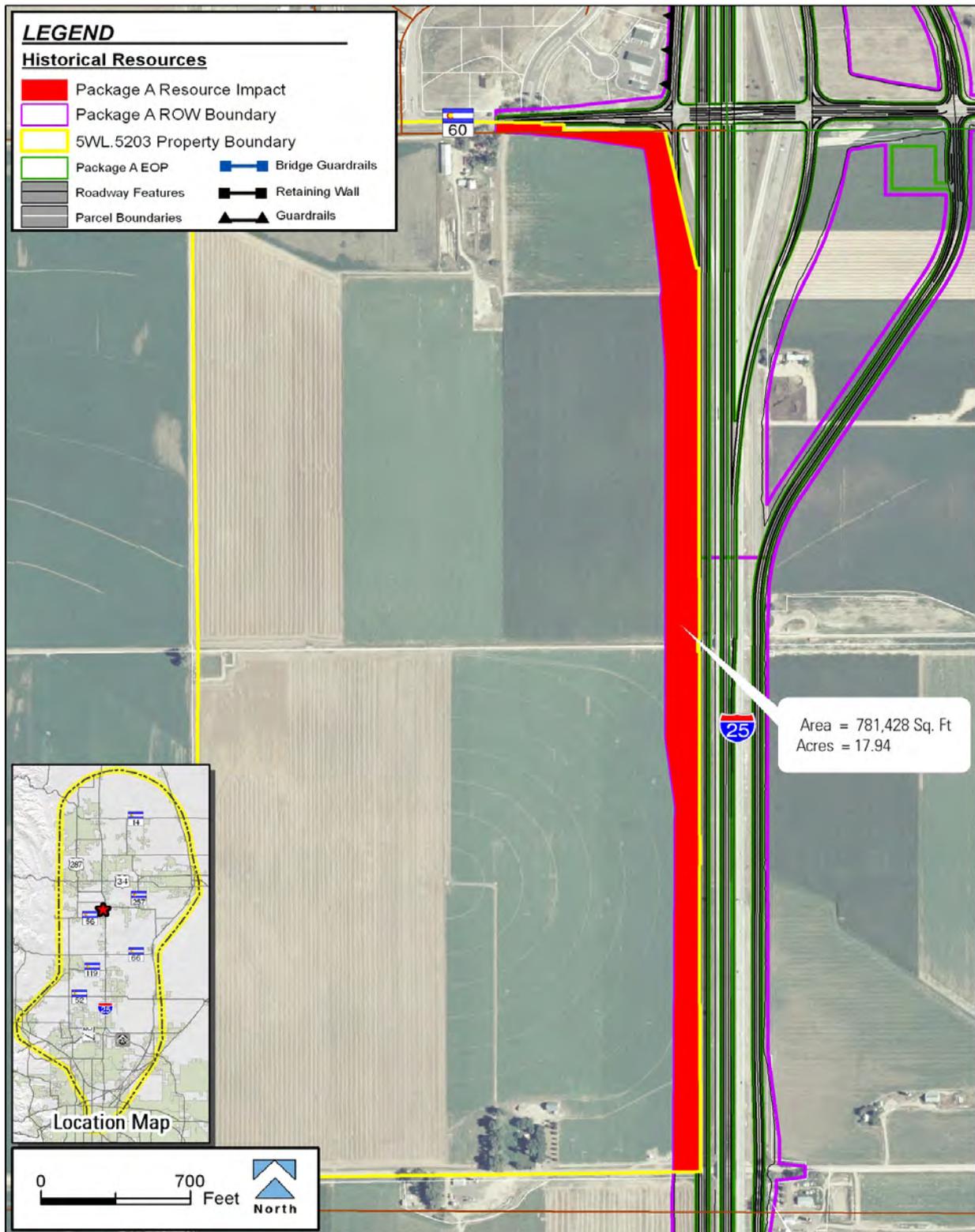
The proposed design is an offset diamond interchange that incorporates southbound off- and on-ramps to and from I-25 that were shifted eastward toward the I-25 mainline in order to avoid use of the gasoline station/convenience store located on the northwest side of the I-25/SH 60 interchange. This configuration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

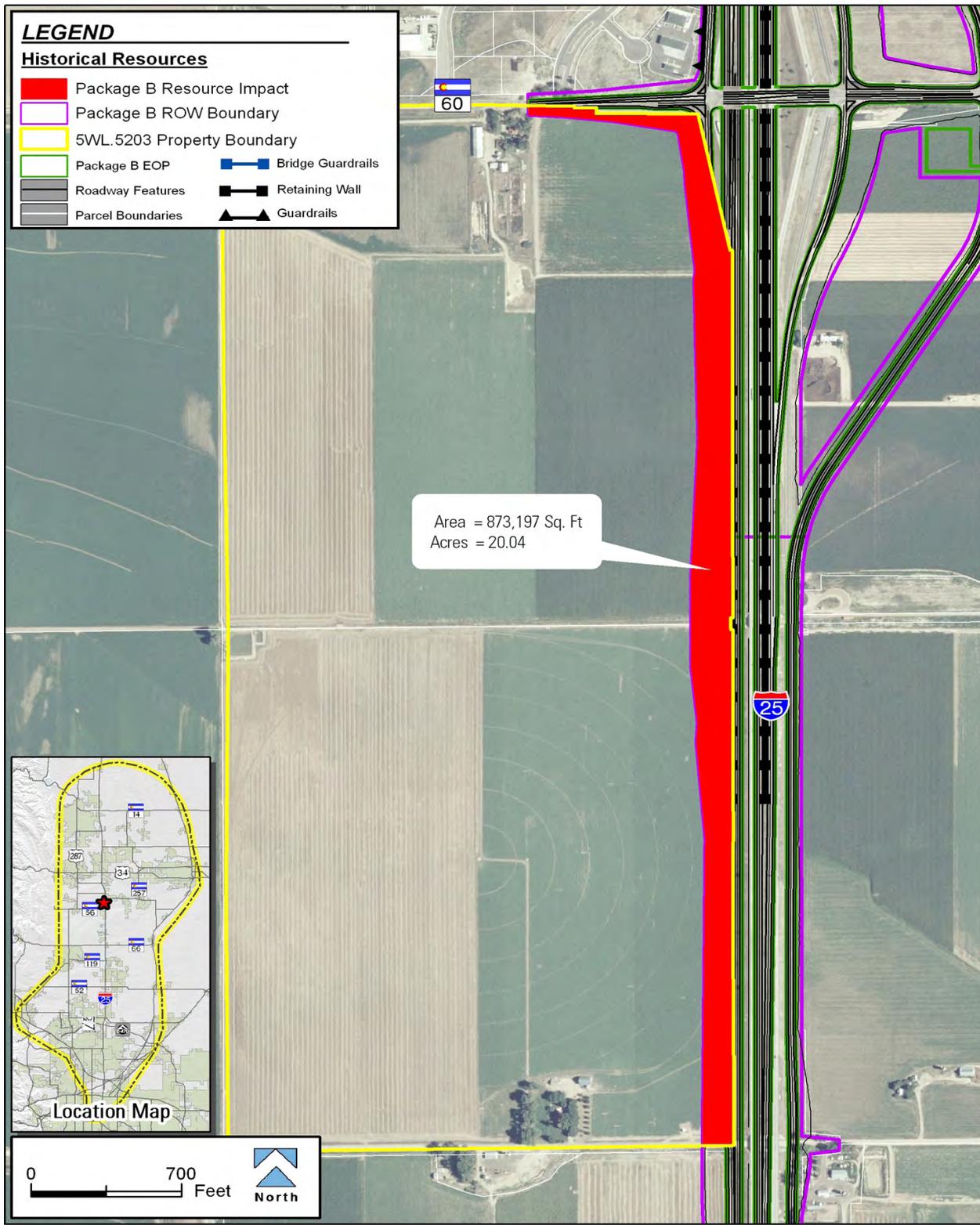
- Maintain operation of farm during construction.
- Appropriate erosion and sediment control BMPs will be employed to ensure protection of resource during construction.
- Disturbed areas will be reseeded with native grasses.

1 Figure 5-36 Bein Farm Package A Use



2
3 Note: EOP—Edge of Pavement

1 Figure 5-37 Bein Farm Package B Use



2
3 Note: EOP—Edge of Pavement

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

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 Handy/Home Supply Ditch Confluence by Package

Package A A-H3 GP Improvements: SH 60 to E-470	Package B B-H3 Tolled Express Lanes: SH 60 to E-470
A total of 60 feet, or 2%, of total ditch length incorporated into an culvert extension	A total of 60 feet, or 2%, of total ditch length, incorporated into an culvert extension

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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-38** 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.

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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-38** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

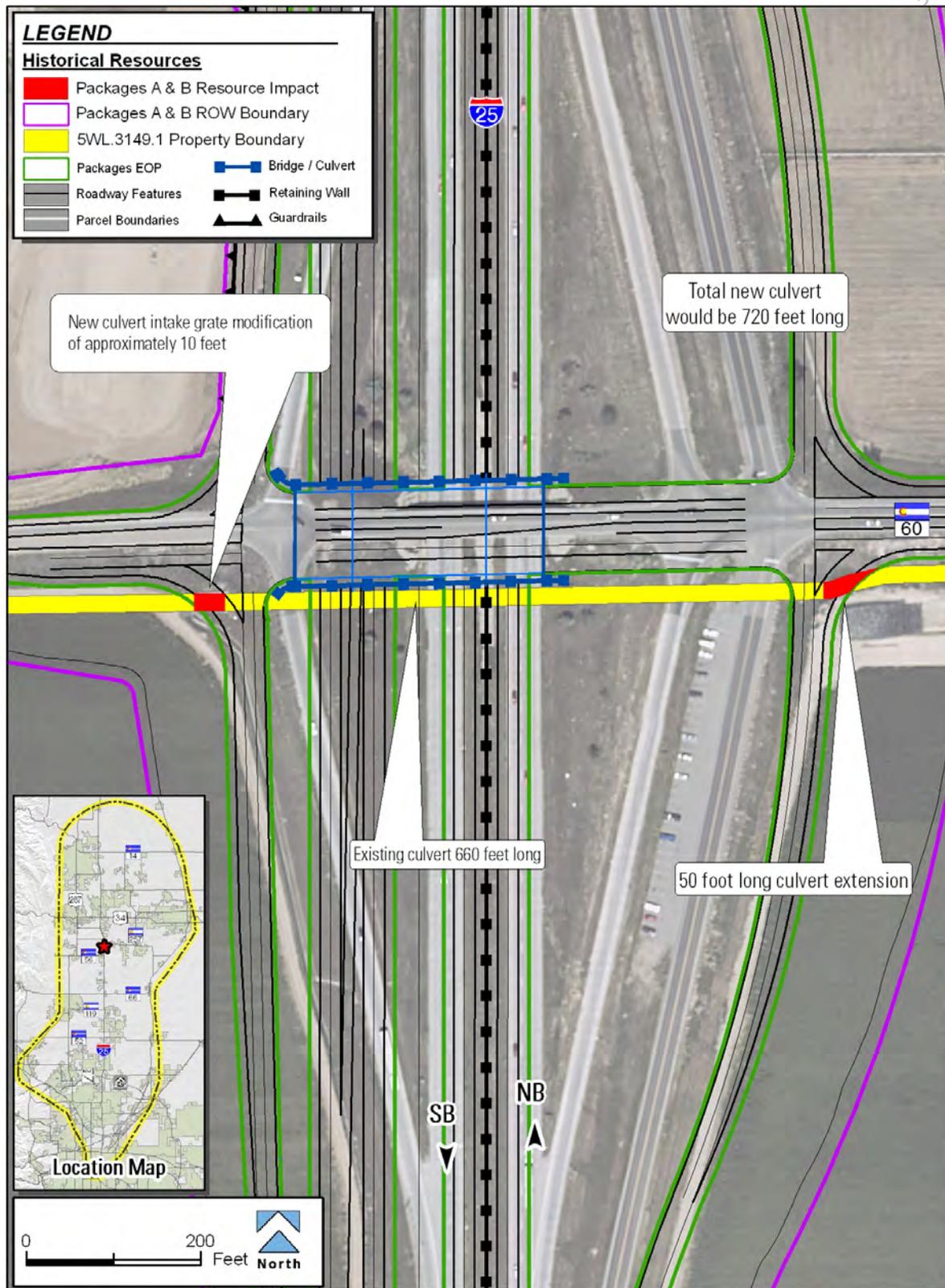
Packages A and B

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.

1 Figure 5-38 Handy/Home Supply Ditch Confluence Use Packages A and B



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	Package B B-H3 Tolled Express Lanes: SH 60 to E-470
A total of 12.74 acres, or 9%, of property by incorporation of land from both sides of I-25	A total of 12.81 acres, or 9%, of property 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, which comprises approximately nine percent of the total site area of 141.67 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.

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, FTA 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-39** 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, which would comprise approximately nine percent of the total site area of 141.67 acres. Because is bisected by the wide I-25 corridor, and the lack of direct impacts to the contributing historic farm buildings and reservoir, FHWA, FTA 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-40** for uses associated with Package B.

Planning and Measures Included to Reach a De Minimis Finding

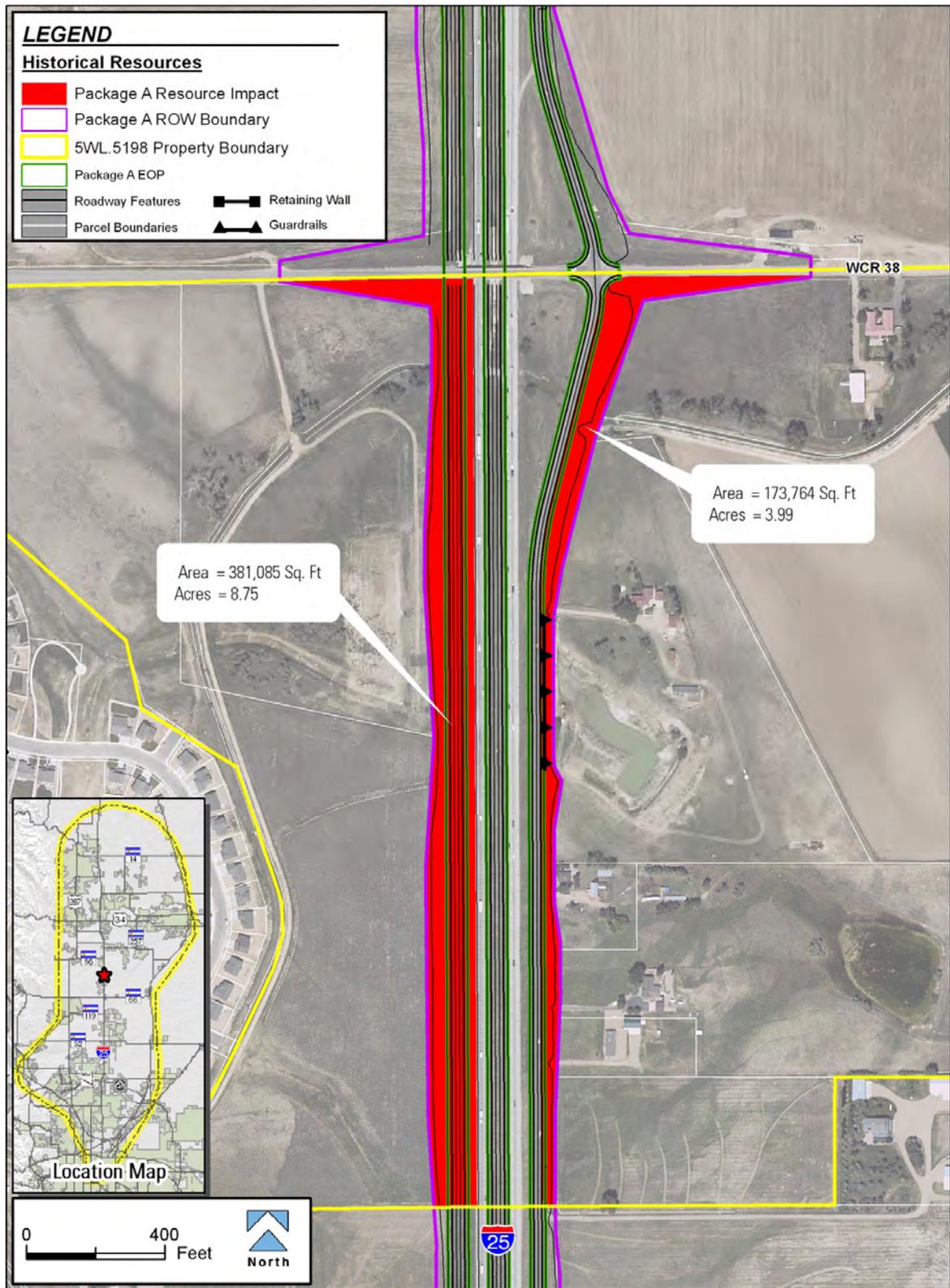
Packages A and B

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.

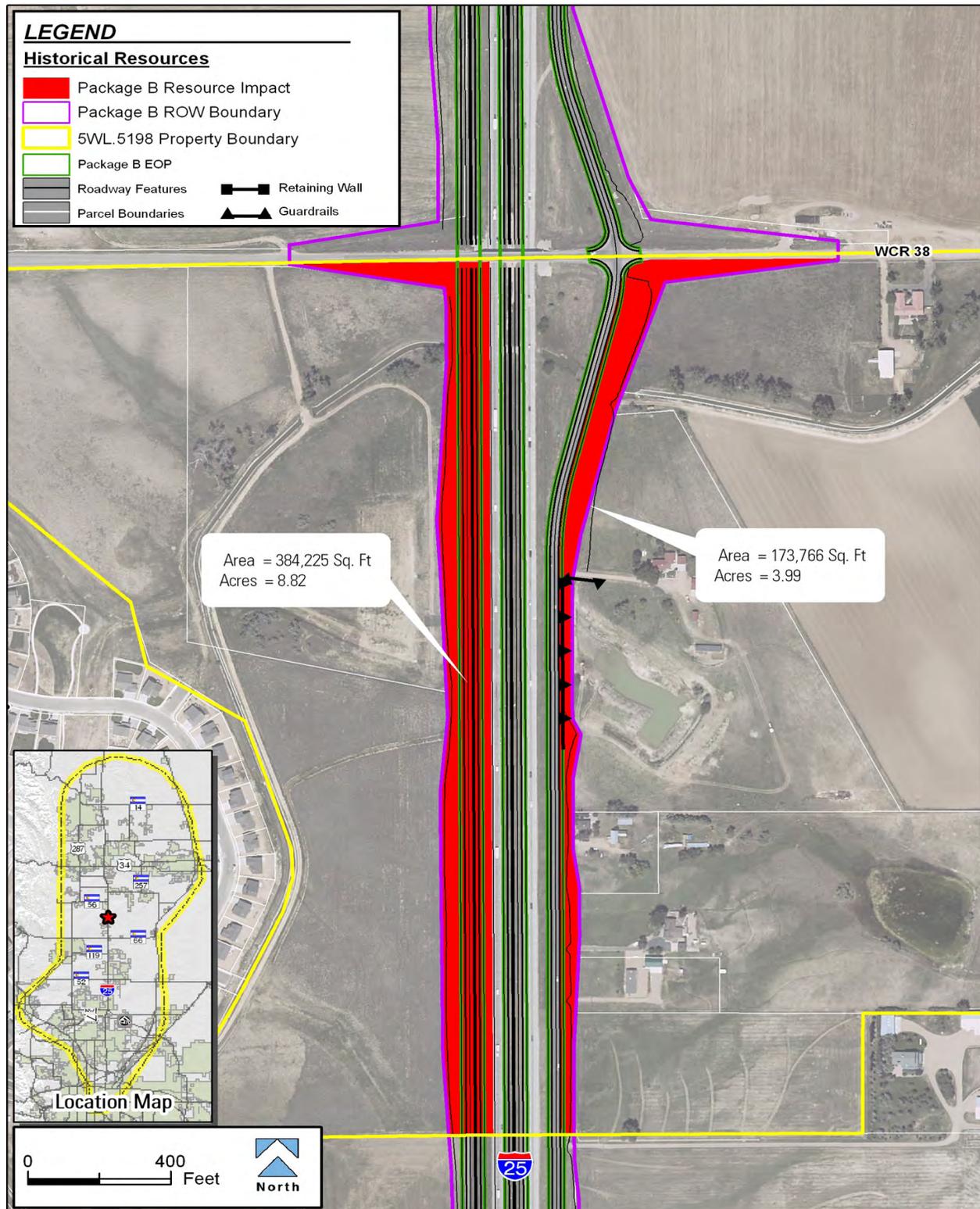
1 Figure 5-39 Olson Farm Package A Use



2
3
4

Note: EOP—Edge of Pavement

1 Figure 5-40 Olson Farm Package B Use



2
3 Note: EOP—Edge of Pavement
4

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

Description

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

Use of Bull Canal/Standley Ditch by Package

Package A

A-H3 GP Highway Widening:

SH 60 to E-470

A-T2 Transit Component-

Commuter Rail:

Longmont to North Metro End-of-Line
Station

A total of 908 feet, or less than 1%, of the total ditch length would be placed into three culvert extensions

Package B

B-H3 Tolled Express Lanes:

SH 60 to E-470

B-T2 Transit Component-BRT:
120th to Denver

A total of 850 feet, or less than 1%, of the total ditch length 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.

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, 5BF.72.1, 5BF.72.2, 5BF.72.3, and 5AM.457.1 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.

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 5-41**).

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 5-41**).

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 5-41**) 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, FTA, 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 FTA 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.

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 5-42**).

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 5-42**).

Segment 5AM.457.4: Highway widening of I-25 resulting from Package B would not result in direct impacts to 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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence.

Planning and Measures Included to Reach a De Minimis Finding

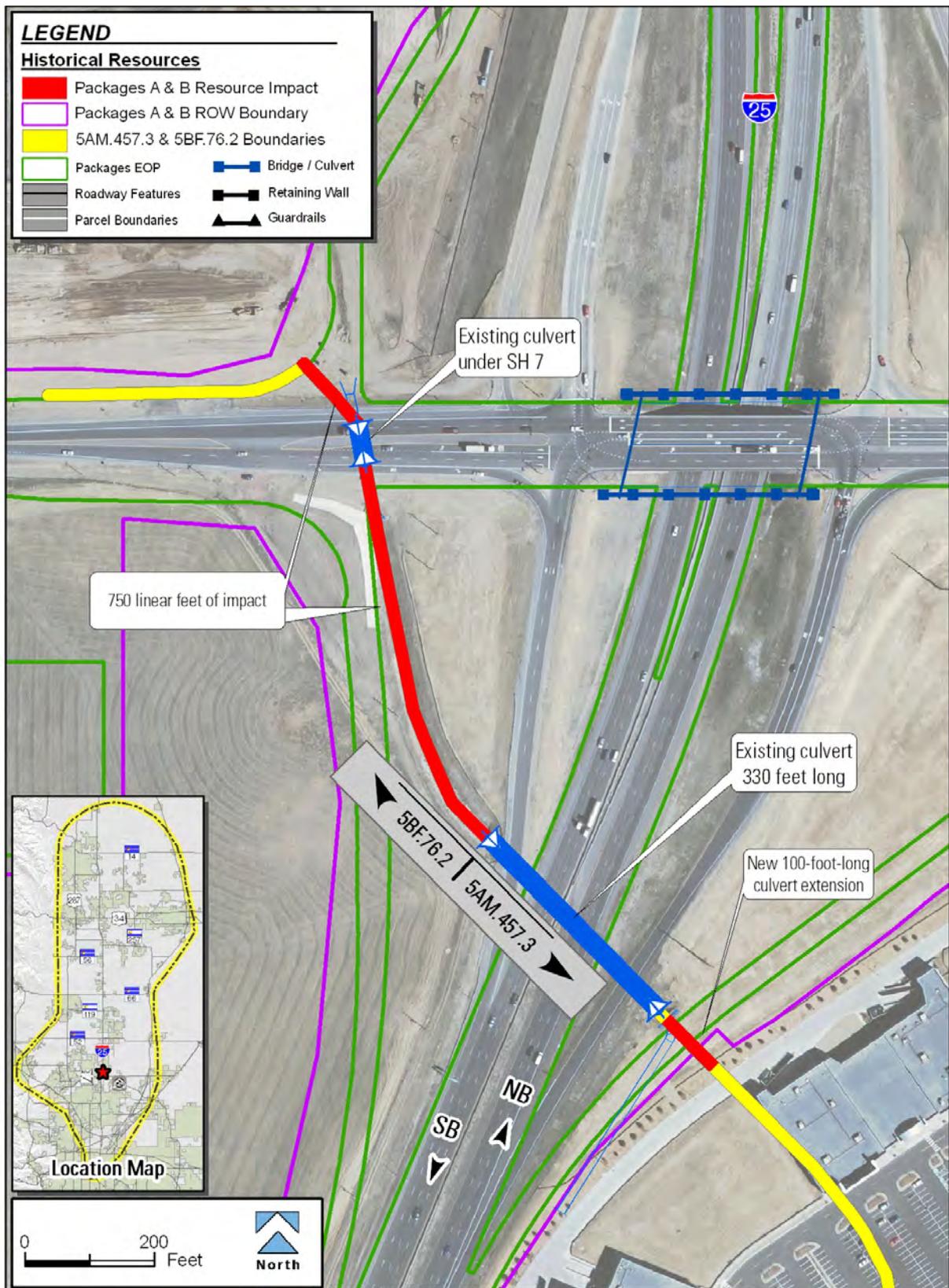
Package A

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

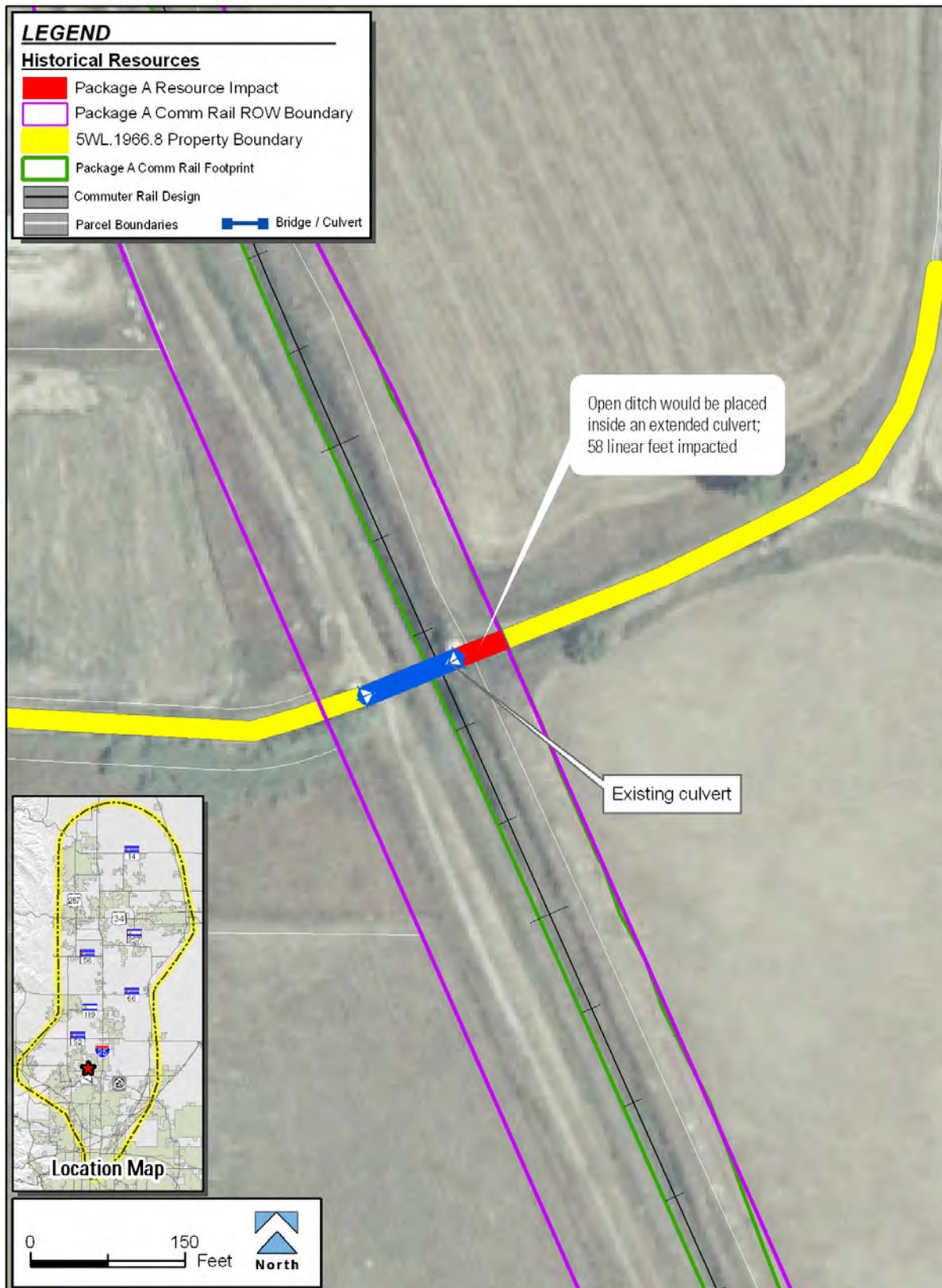
Mitigation Measures for the Bull Canal/Standley Ditch

- 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.

1 Figure 5-41 Bull Canal/Standley Ditch – Packages A and B



1 Figure 5-42 Bull Canal/Standley Ditch – Package A Commuter Rail



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

Description

Location:	405 – 409 Railroad Avenue in Loveland
Type:	Historic train depot
Section 106 Effect Finding:	No adverse effect
Ownership:	Private
Significance:	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 acres or 7%, of total property	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 an 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, FTA, and CDOT have determined that Package A would result in *no adverse effect* to the Loveland Depot. See **Figure 5-43** for uses associated with Package A.

Package B

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

Planning and Measures Included to Reach a De Minimis Finding

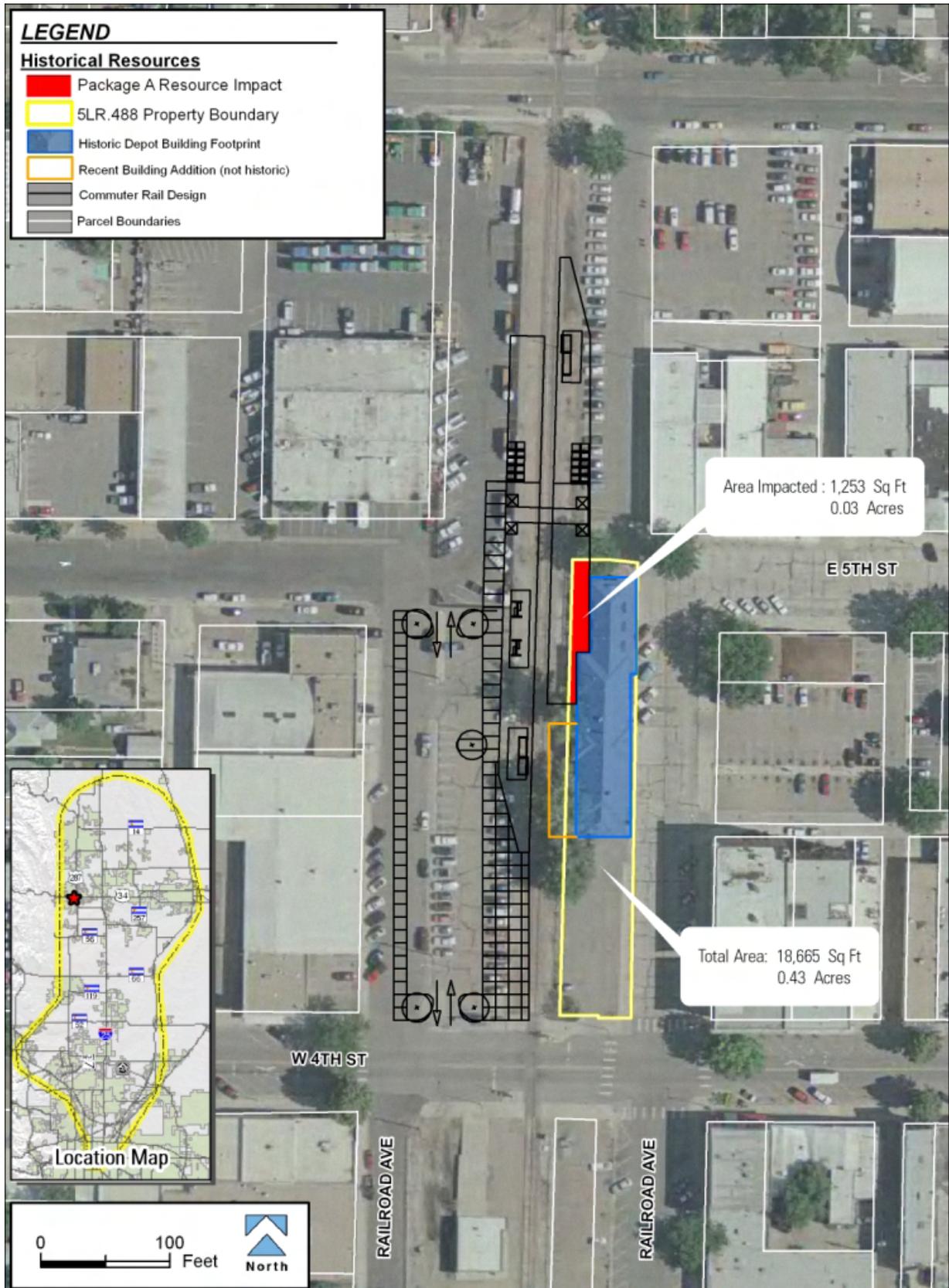
Package A

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.

1 Figure 5-43 Colorado and Southern Railway Depot / Loveland Depot



1

Supply Ditch (5BL.3449)

Description

Location:	100 feet southwest from the CR 2/115 th Street intersection north of Longmont
Type:	Historic ditch
Section 106 Effect Finding:	No adverse effect
Ownership:	Private
Significance:	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, or less than 1%, of total ditch length would be placed into an culvert extension	No use

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 OAHP 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, FTA and CDOT have determined that the Package A transit improvements would result in *no adverse effect* to the entire Supply Ditch. See **Figure 5-44** 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.

Planning and Measures Included to Reach a De Minimis Finding

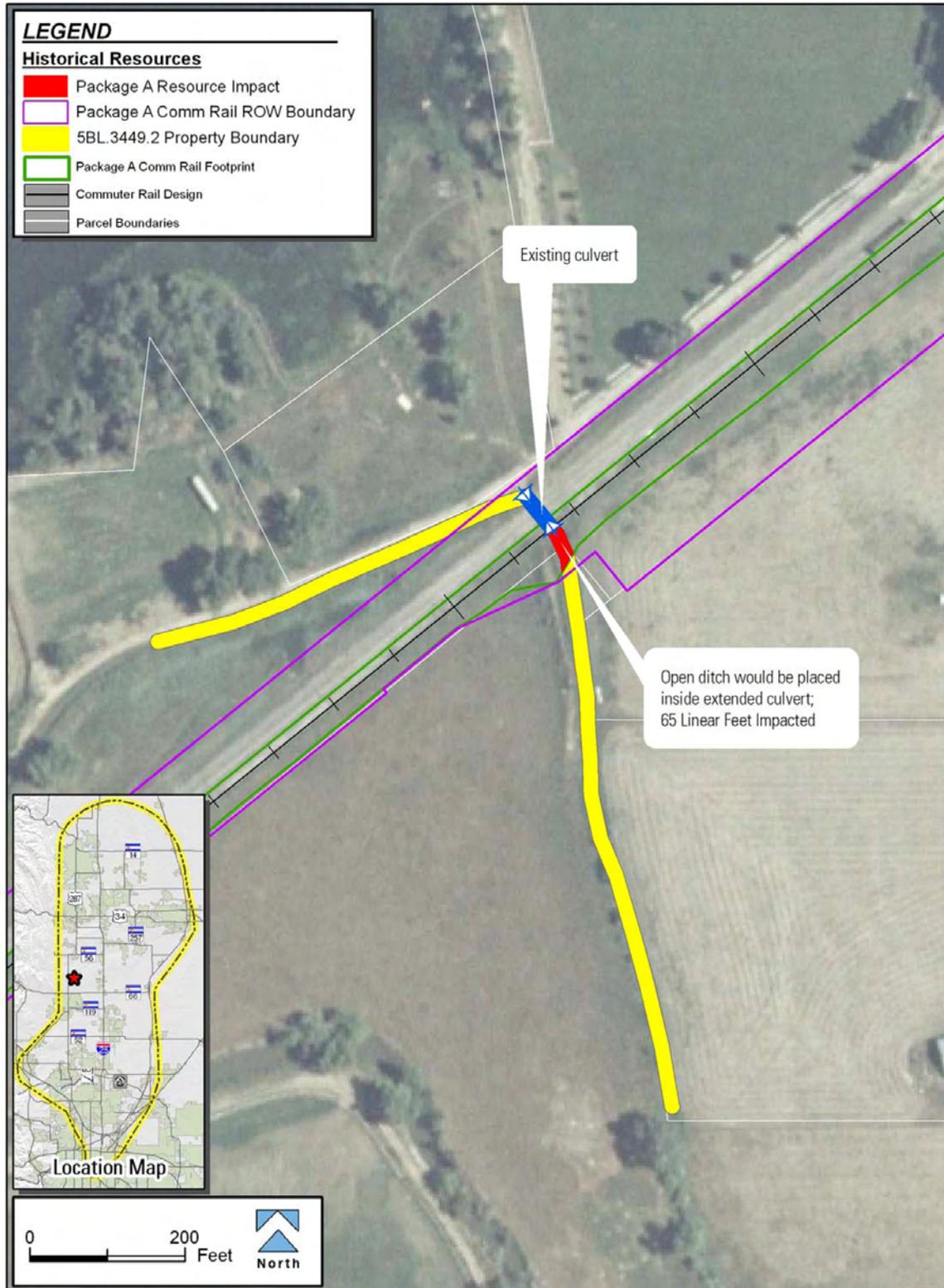
Package A

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.

1 Figure 5-44 Supply Ditch Package A Use



Rough & Ready Ditch (5BL.3113)

Description

Location:	North of the Main Street/21st Avenue Intersection in Longmont
Type:	Historic ditch
Section 106 Effect Finding:	No adverse effect
Ownership:	Private
Significance:	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, or less than 1%, of total ditch length placed into a culvert extension	No use

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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-45** 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.

Planning and Measures Included to Reach a De Minimis Finding

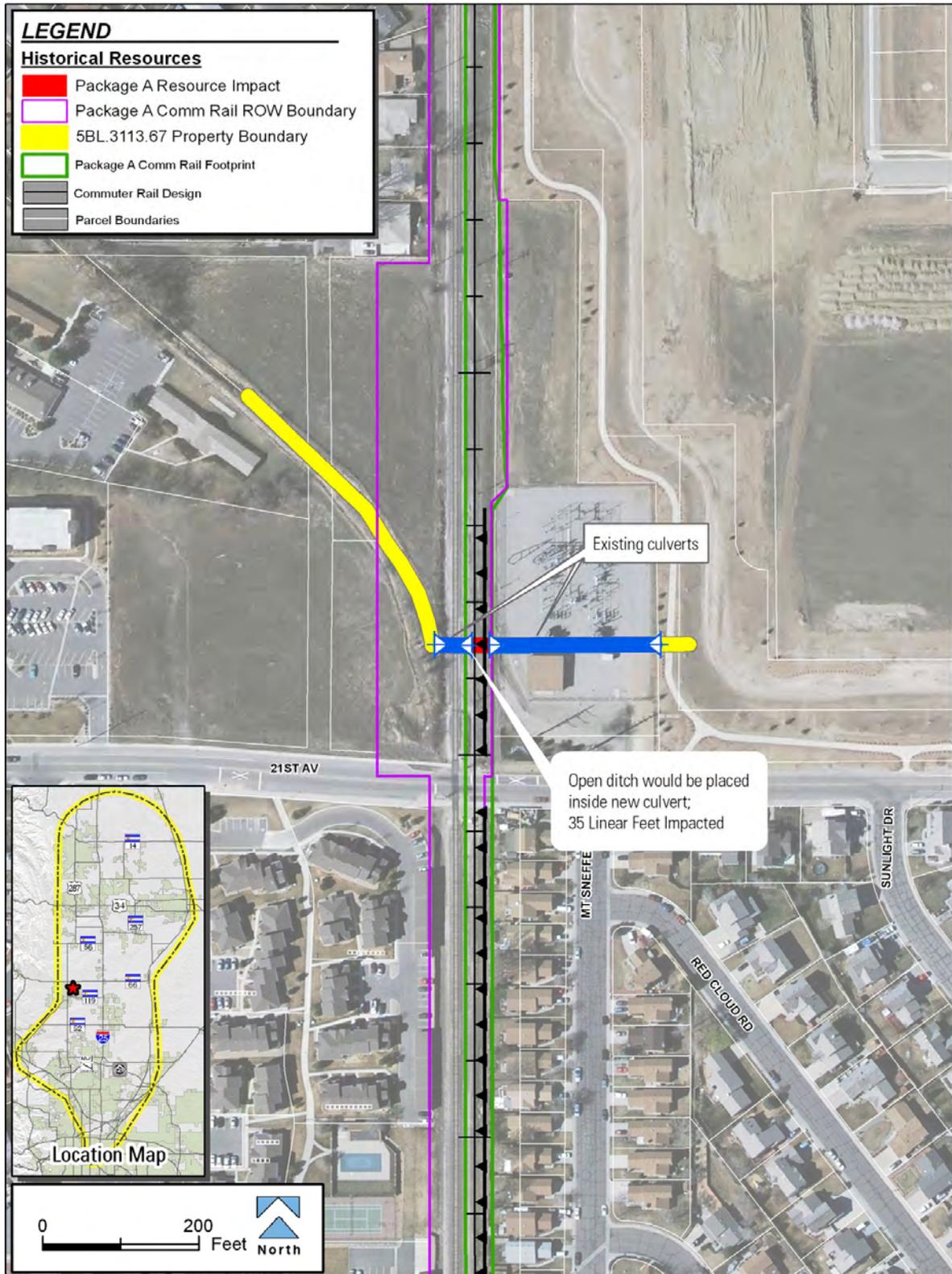
Package A

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.

1 Figure 5-45 Rough & Ready Ditch Package A Use



1

Oligarchy Ditch (5BL.4832)

Description

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

Use of Oligarchy Ditch by Package

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

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.

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, FTA, 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 5-46** and **Figure 5-47** 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.

All Possible Planning to Minimize Harm

Package A

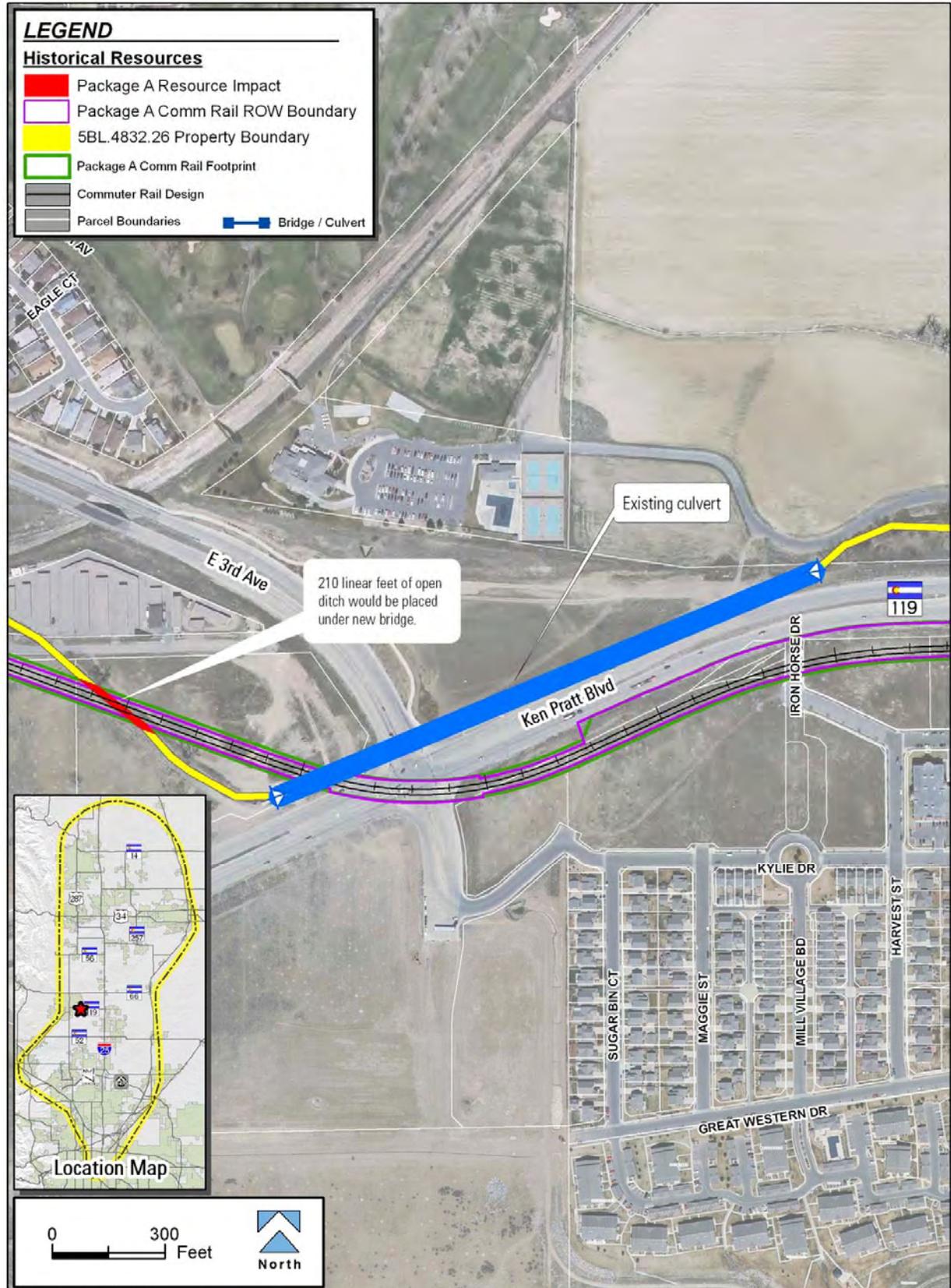
A retaining wall was included in the design on the east side of the proposed commuter rail tracks at Segment 5LR.4832.28 to minimize impacts to homes and businesses in the Longmont area south of 17th Avenue. This retaining wall also mitigates the direct impact to the ditch by shortening the length of 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.

Mitigation Measures for Oligarchy Ditch

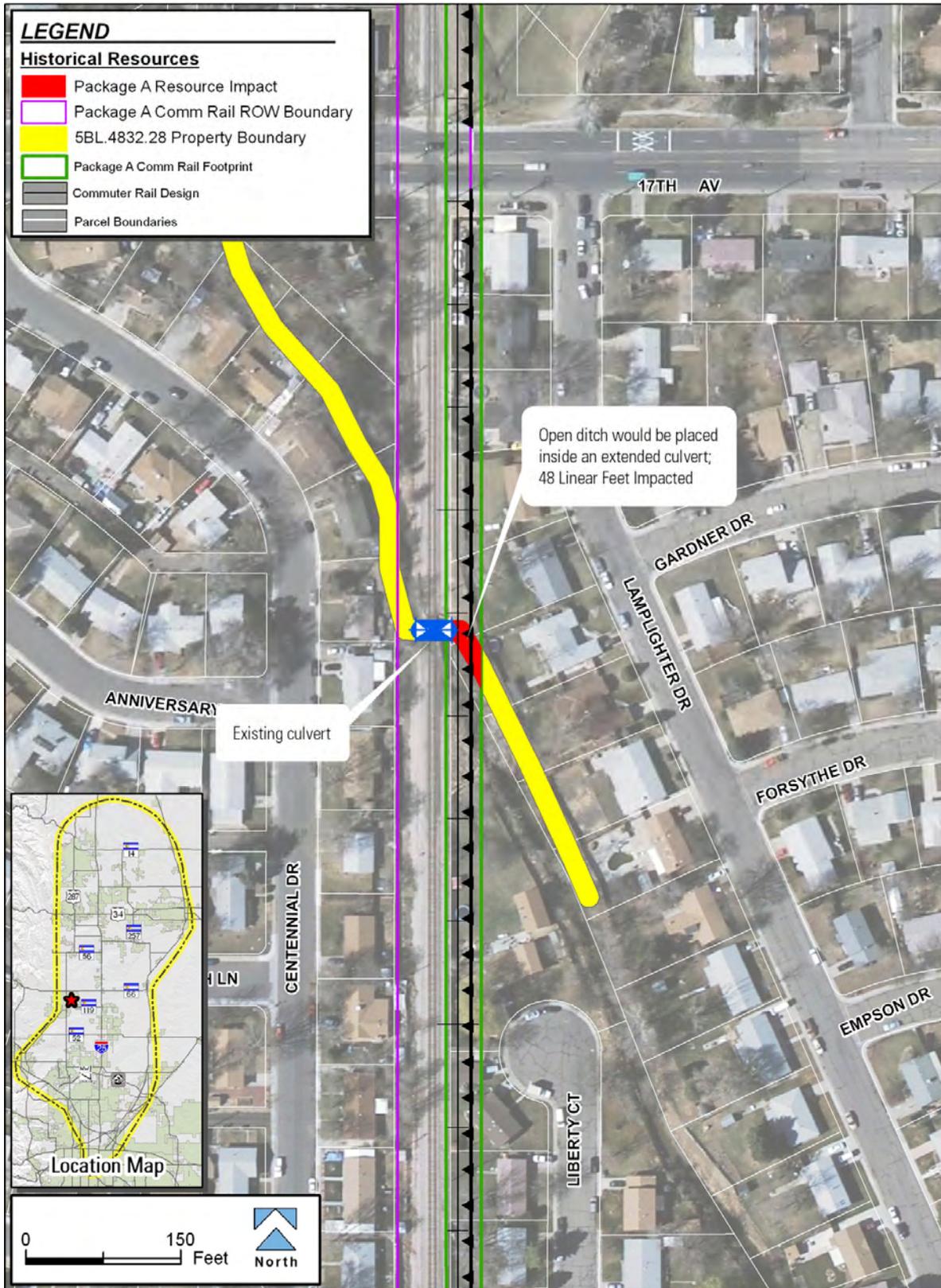
- Detailed recording of the affected ditch in accordance with the Colorado Historical Society standards for Level II Documentation is recommended pending SHPO concurrence.
- Maintain operation of irrigation ditch during construction.
- Appropriate erosion and sediment control BMPs will be employed to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

1 Figure 5-46 Oligarchy Ditch Package A Use



2

1 Figure 5-47 Oligarchy Ditch Package A Use



2

Big Thompson Ditch (5LR.1729)

Description

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

Use of Big Thompson Ditch by Package

Package A A-T2 Transit Component- Commuter Rail: <u>Longmont to FasTracks North Metro</u>	Package B B-T2 Transit Component- BRT: <u>Fort Collins to DIA</u>
A total of 60 feet, or less than 1%, of total ditch length placed into a culvert extension	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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-48** 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.

Planning and Measures Included to Reach a De Minimis Finding

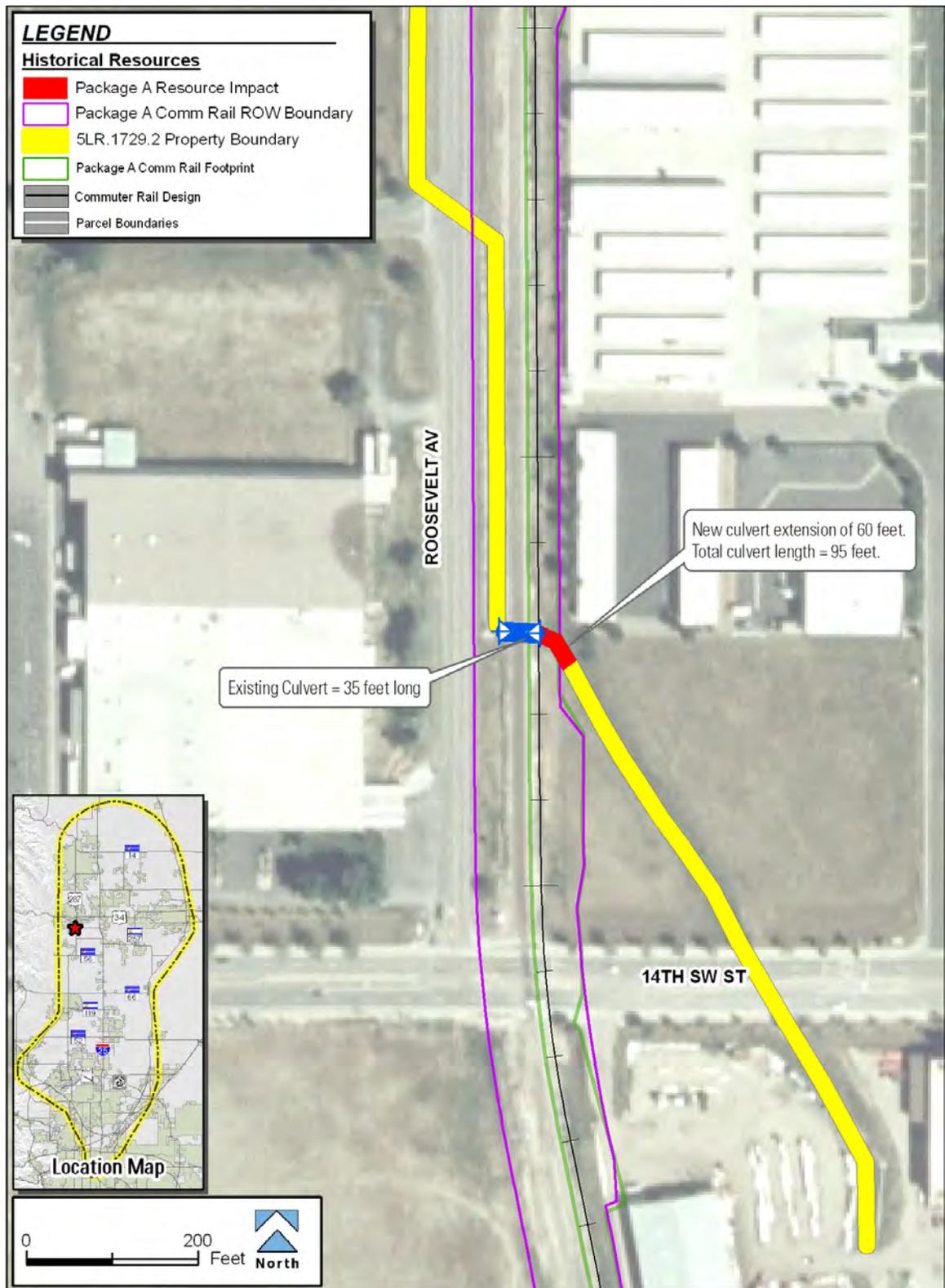
Package A - The physical railway template of graded bed, track, and ballast has been reduced to the minimum width necessary to meet FRA and FTA design and safety standards.

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.

1 Figure 5-48 Big Thompson Ditch Package A Use

2
3



Great Western Sugar Factory (5BL.513)

Description

Location:	11939 and 11801 Sugarmill Road
Type:	Historic buildings/historic district
Section 106 Effect Finding:	No adverse effect
Ownership:	Private
Significance:	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, or 9%, of the property would be used for pedestrian walkway	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 acres, or approximately nine percent of the 3.72-acre property. 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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-49** 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.

Planning and Measures Included to Reach a De Minimis Finding

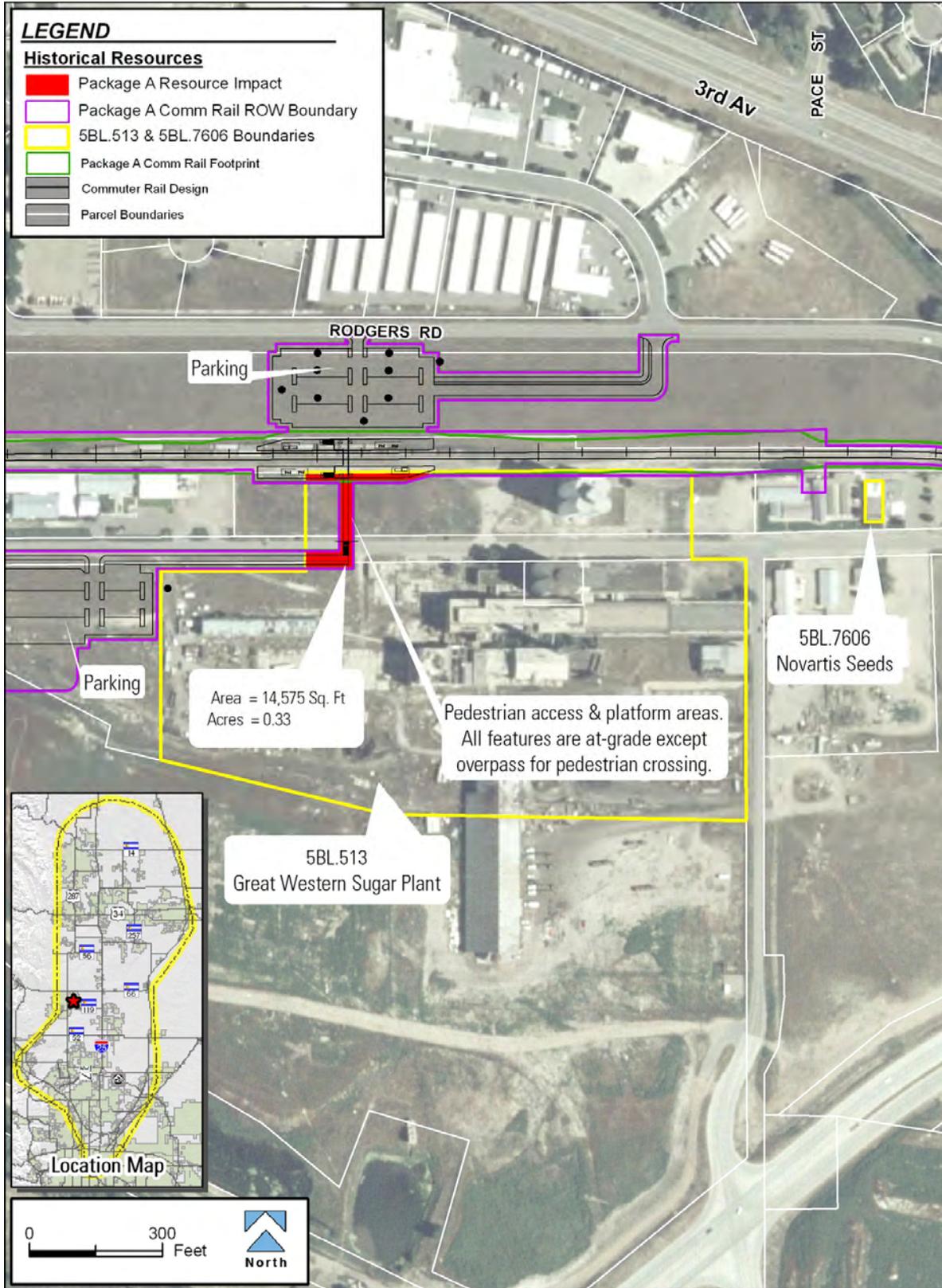
Package A

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 impacts to 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.

1 Figure 5-49 Great Western Sugar Factory Package A Use



2

Sandstone Ranch (5WL.712)

Description

Location:	T2N/R68W, SH 119 just east of Longmont
Type:	Historic district
Section 106 Effect Finding:	No adverse effect
Ownership/Jurisdiction:	City of Longmont
Significance:	NRHP-listed, Criteria A, B, and C

Use of Sandstone Ranch by Package

Package A A-T2 Transit Component- Commuter Rail: <u>Longmont to FasTracks North Metro</u>	Package B B-T2 Transit Component-BRT: <u>120th to Denver</u>
A total of 2.17 acres, or less than 1%, of unused land within the historic district used for new railroad right-of-way	No use

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, or less than one percent, of the entire 337.22-acre historic district. 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.

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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-50** 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.

Planning and Measures Included to Reach a De Minimis Finding

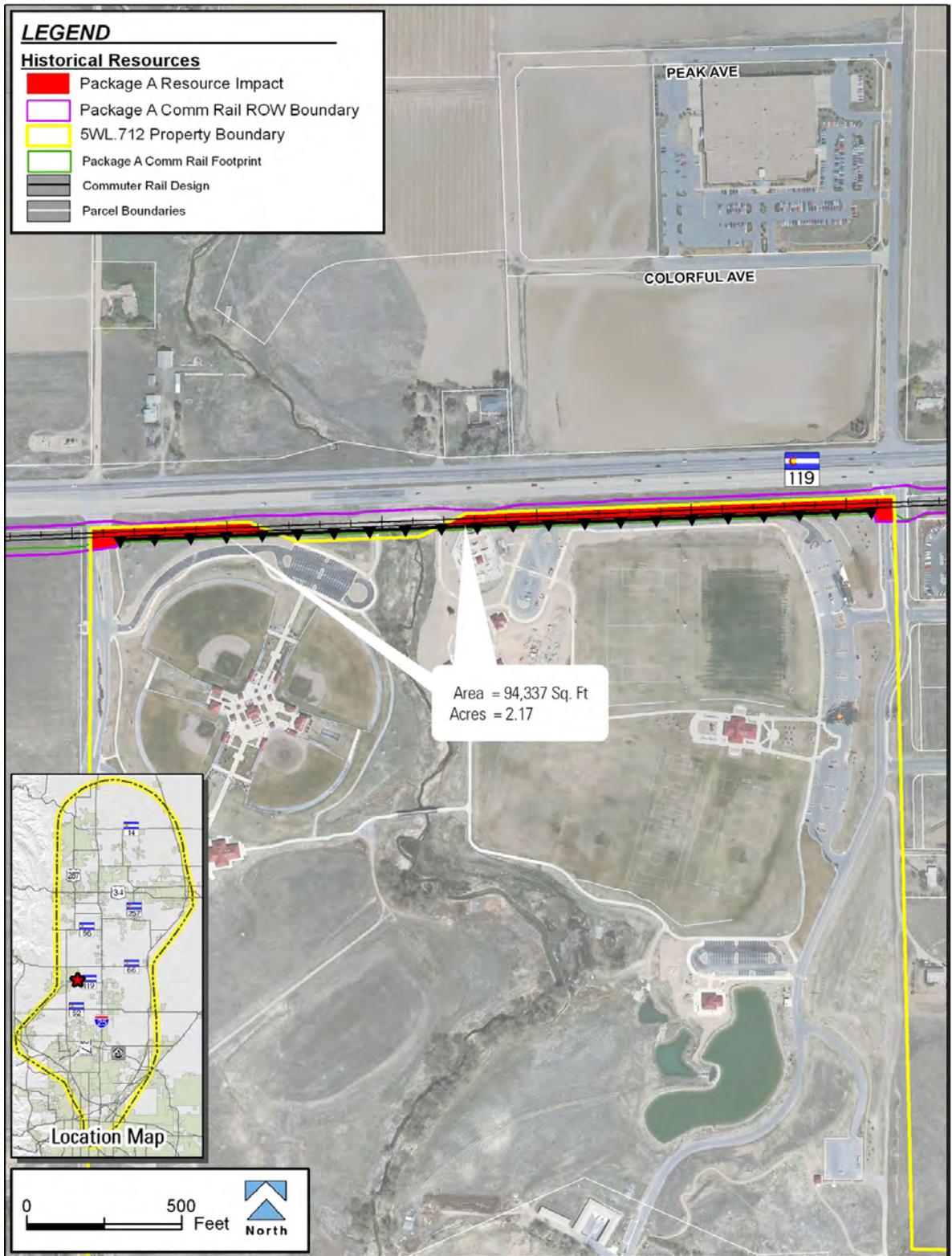
Package A

A retaining wall was included on the south side of the proposed tracks to mitigate impacts to 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.

1 Figure 5-50 Sandstone Ranch Package A Use



2

Boulder and Weld County Ditch (5WL.5461)

Description

Location:	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 1/4 (East end)
Type:	Historic ditch
Section 106 Effect Finding:	No adverse effect
Ownership:	Private
Significance:	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: 120 th to Denver
A total of 63 feet, or less than 1%, of open ditch would be placed into a new culvert	No use

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. Three FHWA, FTA, 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 the FHWA and FTA to make a finding of *de minimis* pending SHPO concurrence. See **Figure 5-51** 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.

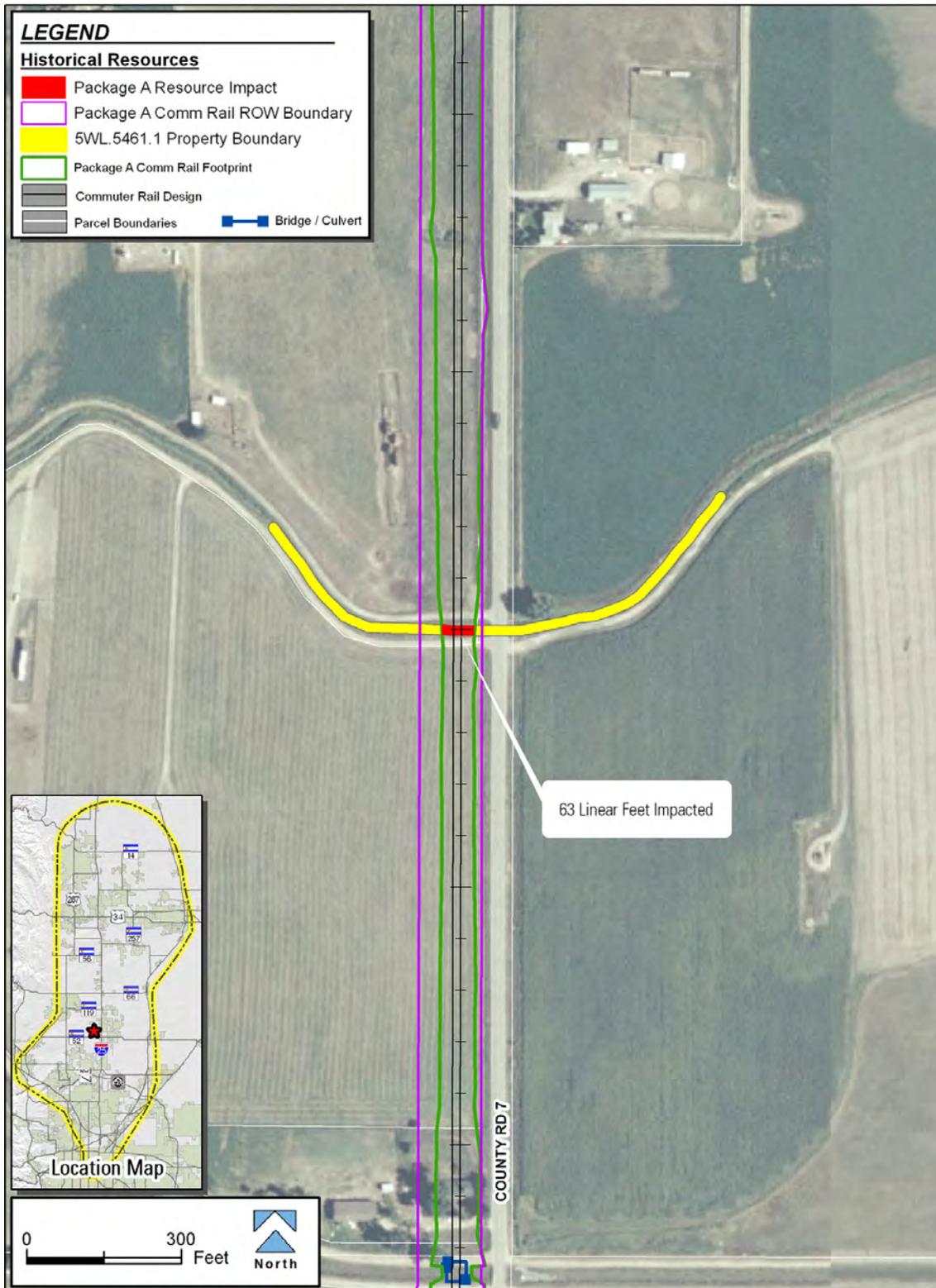
Planning and Measures Included to Reach a De Minimis Finding

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.

1 Figure 5-51 Boulder and Weld County Ditch Package A Use



1

Rural Ditch (5WL.1974)

Description

Location:	T2N/R68W, SW ¼ Sec 15, located near CR 7 south of Rinn, CO and 600 feet south of CR 2050.
Type:	Historic ditch
Section 106 Effect Finding:	No adverse effect
Ownership:	Private
Significance:	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: 120 th to Denver
A total of 130 feet, or less than 1%, of open ditch would be placed into a new culvert	No use

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, FTA, 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 FTA to make a finding of *de minimis* pending SHPO concurrence.] See **Figure 5-52** 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.

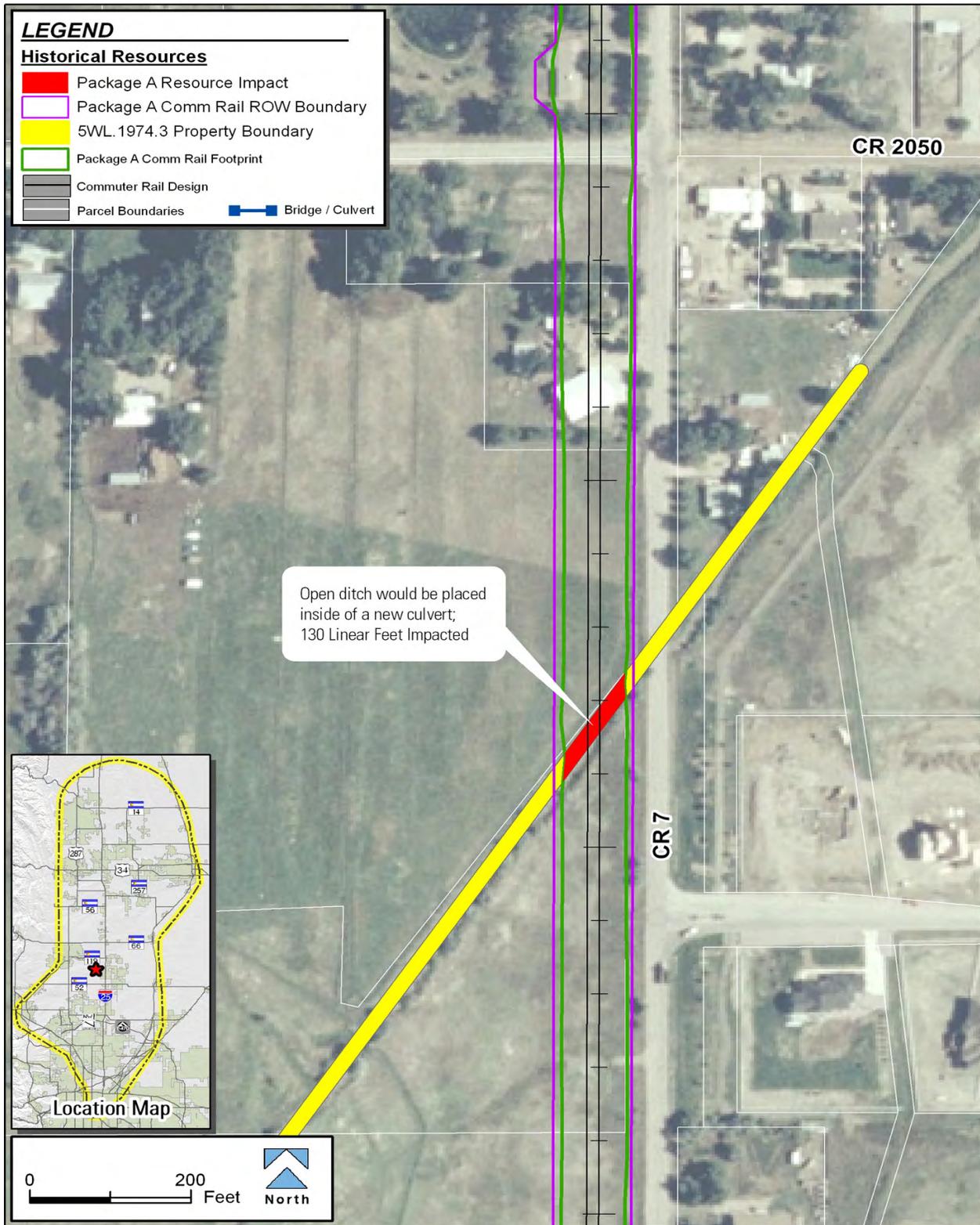
Planning and Measures Included to Reach a De Minimis Finding

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 5-52 Rural Ditch Package A Use



2

Union Pacific Railroad, Dent Branch (5WL.1317, 5AM.472)

Description

Location:	T1N/R68W, NW ¼ Sec 24, to T1S/R68W, NE ¼ Sec 12
Type:	Abandoned historic railroad
Section 106 Effect Finding:	No adverse effect
Ownership:	Private
Significance:	NRHP-Eligible, Criterion A

Use of UPRR, Dent Branch 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
4.89-mile abandoned segment modernized for double-track commuter rail operations, 200 linear feet impacted	No use

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 wye at St. Vrains junction southward. Where the new commuter rail line crosses the Dent Branch, there would be direct impacts to as many as 200 feet of track by the replacement of existing "through rail" with switching tracks and associated apparatus (see **Figure 5-53**). 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.

A continuous 4.89 miles, or approximately 12% of the entire linear resource, 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, FTA, 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, FTA, 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 FTA to make a finding of *de minimis*, pending SHPO concurrence.

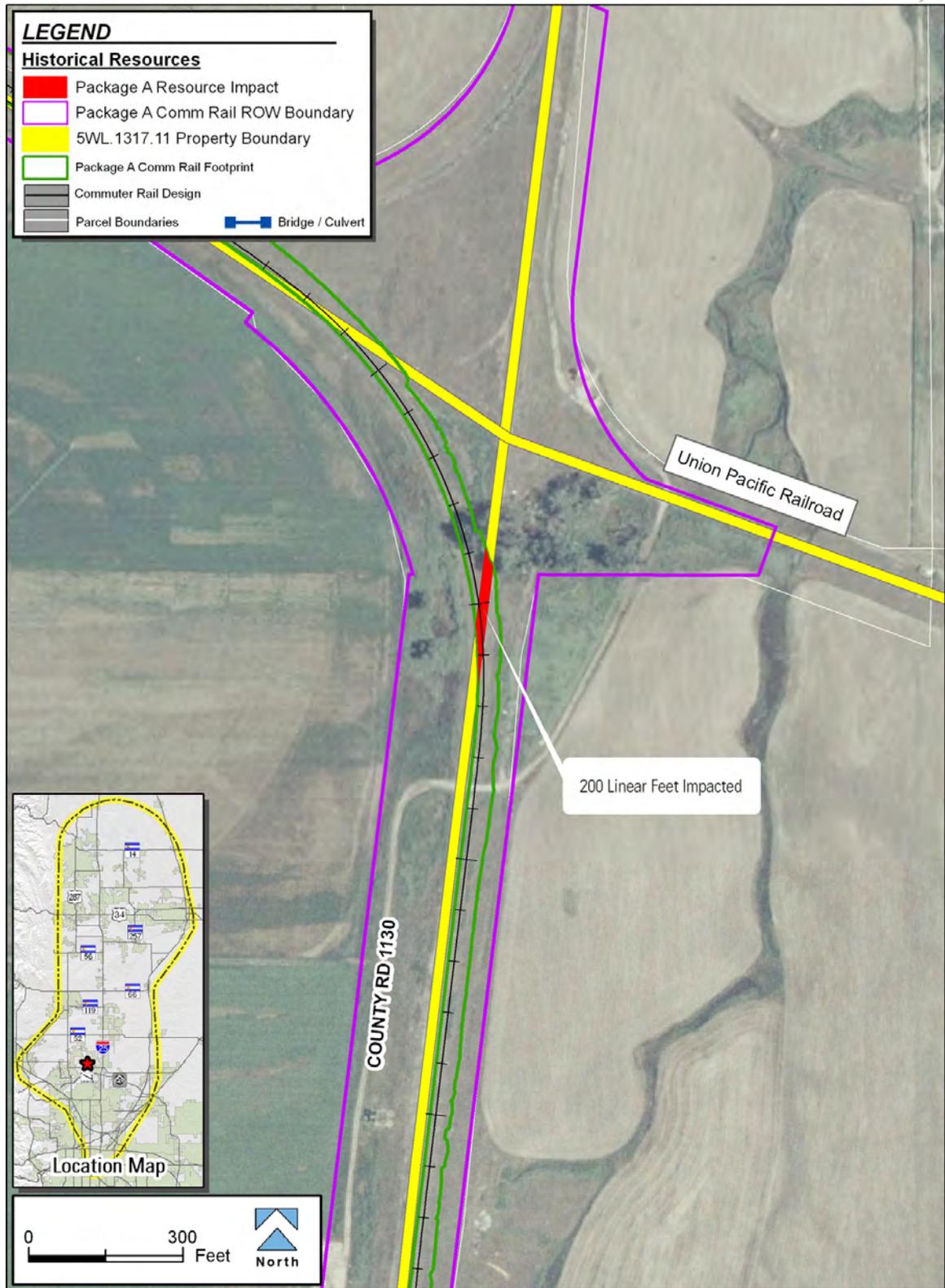
Planning and Measures Included to Reach a De Minimis Finding

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.

1 Figure 5-53 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 FTA’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. Public input on the possible findings of *de minimis* will be requested during the public comment period for this Draft EIS. Specific requests to provide input on the proposed *de minimis* findings will be made at the DEIS public hearings. Following this input, the officials with jurisdiction would be asked to provide written concurrence with the proposed FHWA and FTA finding of *de minimis*. FHWA and FTA would make a *de minimis* determination only after the public has been provided an opportunity to comment and the official with jurisdiction has submitted its written concurrence.

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 Waterfowl Refuge

Site #	Resource Name	Package A:	Package B:	Type of Use
		A-H2 GP Highway Improvements: SH 14 to SH 60	B-H2 Tolled Express Lanes: SH 14 to SH 60	
1	Arapaho Bend Natural Area	4.28 acres Incidental use of high-activity area and 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.	5.11 acres Incidental use of high-activity area and 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.	<i>De minimis</i> (both packages)
2	Archery Range Natural Area	0.09 acre A total of 0.09 acre, or less than 1% of the property, by incorporation of very narrow 400-foot-long strip of unused land. No features or amenities impacted.	0.14 acre A total of 0.14 acre, or less than 1% of the property, by incorporation of very narrow 400-foot-long strip of unused land. No features or amenities impacted.	<i>De minimis</i> (both packages)
3	Big Thompson Ponds State Wildlife Area	0.11 acre A total of 0.11 acre, or less than 1% of property, 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.	0.24 acre A total of 0.24 acre, or less than 1% of property, 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.	<i>De minimis</i> (both packages) walls used to minimize impact.
		A-H3 GP Highway Improvements: SH 60 to E-470	B-H3 Tolled Express Lanes: SH 60 to E-470	
4	Little Thompson River Corridor	2.04 acres A total of 2.04 acres, or 2% of total property, 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.	2.03 acres A total of 2.03 acres, or 2% of total property, 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.	

1
2 **Table 5-6 De Minimis Use of Section 4(f) Parks, Recreational Areas, and Wildlife and**
3 **Waterfowl Refuge (cont'd)**

Site #	Resource Name	Package A:	Package B:	Type of Use
		A-H4 Structure Upgrades: E-470 to US 36	B-H4 Tolled Express Lanes: E-470 to 70th Avenue	
5	Civic Center Park (Thornton)	No use	1.18 acres A total of 1.18 acres, or 6.9% of the property, by incorporation of a 1,230-foot by 60-foot strip of unused land from park due to lane additions. No features or amenities are impacted.	<i>De minimis</i> (Package B)
6	Grant Park	No use	0.09 acre A total of 0.09 acre, or 1% of entire property, for water quality pond due to lane addition and associated drainage requirements; small portion of pedestrian trail impacted and would be replaced.	<i>De minimis</i> (Package B)
		A-T2 Transit Component-Commuter Rail: Longmont to FasTracks North Metro	B-T2 Transit Component-BRT: Fort Collins to DIA	
7	Sandstone Ranch	2.17 acres A total of 2.17 acres, or less than 1%, 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	<i>De minimis</i> (Package A) retaining wall used to minimize impact.

Arapaho Bend Natural Area (Map ID Number 1)

Description

Location:	West of I-25, north of Harmony Road, Fort Collins, along Poudre River
Size:	278 acres
Type:	Recreation resource
Access:	Public access
Facilities/Amenities:	Fishing ponds, boating, trails, parking areas.
Usage/Patronage:	Public, no data available for annual patronage
Relationship to Other Resources:	Segment of Cache la Poudre River runs through the park. Arapaho Bend is one of 37 Natural Areas in Fort Collins.
Ownership/Jurisdiction:	City of Fort Collins
Significance:	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, or 1.5%, of entire property; 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; in addition, 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, or 1.8%, of entire property; 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; in addition, 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. See **Figure 5-54**.

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 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 Package A and Package B.

FHWA and FTA 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 both packages; however, Package B is wider than Package A. 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.

FHWA and FTA 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.

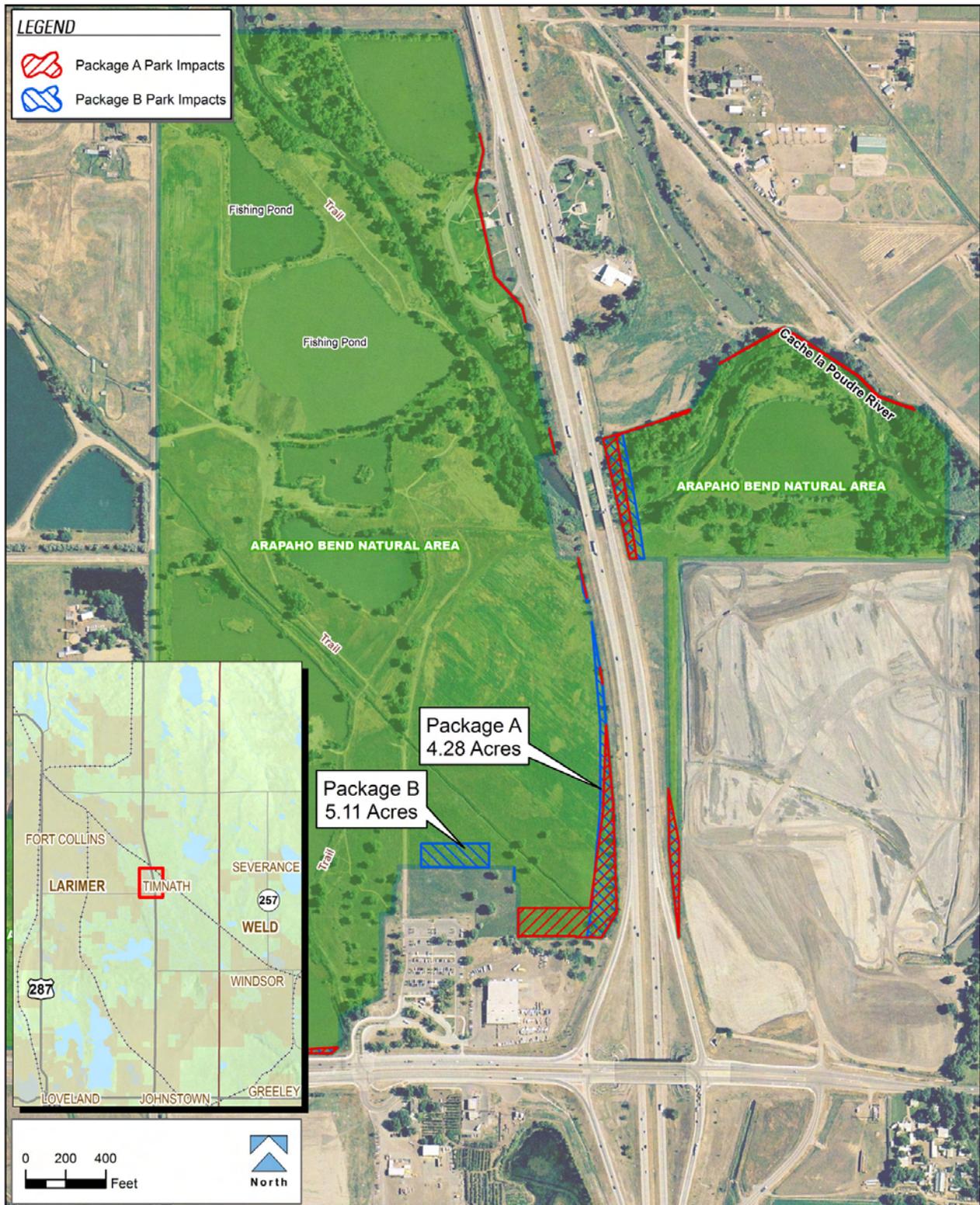
All Possible Planning to Minimize Harm

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.

1 Figure 5-54 Arapaho Bend Natural Area Package A & B Uses



2

1

Archery Range Natural Area (Map ID Number 2)

Description

Location:	West of I-25, Fort Collins
Size:	50 acres
Type:	Recreation resource
Access:	Public access
Facilities/Amenities:	Trailhead, parking area, archery circuit station located around natural area.
Usage/Patronage:	No data
Relationship to Other Resources:	One of 37 Natural Areas in Fort Collins.
Ownership/Jurisdiction:	City of Fort Collins Parks Department
Significance:	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, or less than 1% of the property, 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, or less than 1% of the property, by incorporation of very narrow 400-foot-long strip of unused land. No features or amenities impacted.

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 5-55** for Archery Range Natural Area map.

FHWA and FTA 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.

FHWA and FTA 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.

Indirect Impacts

In order to minimize direct impacts to 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

Impacts to 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.

1 Figure 5-55 Archery Range Natural Area Use



Big Thompson Ponds State Wildlife Area (Map ID Number 3)

Description

Location:	Larimer County East of Loveland on Highway 402 on I-25 Frontage Road
Size:	51 acres
Type:	Wildlife refuge: Hunting (rabbit, dove, waterfowl), warm water fishing, picnicking and wildlife viewing.
Access:	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.
Usage/Patronage:	Average 20/30 people/day, summer 100 people/day
Relationship to Other Resources:	Big Thompson River runs through property
Ownership/Jurisdiction:	Colorado Division of Wildlife (CDOW)
Significance:	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	Package B B-H2 Tolled Express Lanes: SH 14 to SH 60
A total of 0.11 acre, or less than 1% of property, 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.	A total of 0.24 acre, or less than 1% of property, 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.

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.

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 5-56** for uses associated with Package A.

FHWA and FTA 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 FTA 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.

Indirect Effects

For both packages, 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.

1 Figure 5-56 Big Thompson Ponds State Wildlife Area Use



2

Little Thompson River Corridor (Map ID Number 6)

Description

Location:	Adjacent to I-25, Berthoud
Size:	100.92 acres
Type:	Recreational resource
Access:	Public
Facilities/Amenities:	Trails alongside Little Thompson River
Usage/Patronage:	Data on patronage not available
Relationship to Other Resources:	Provides a physical and visual buffer between high- and low-intensity land uses.
Ownership/Jurisdiction:	Town of Berthoud
Significance:	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

Package A A-H3 GP Highway Improvements: SH 60 to E-470	Package B B-H3 Tolled Express Lanes: SH 60 to E-470
A total of 2.04 acres, or 2% of total property, 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.	A total of 2.03 acres, or 2% of total property, 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.

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 5-57** for uses associated with Package A.

FHWA and FTA 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. 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.

FHWA and FTA 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 Package A and B. 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

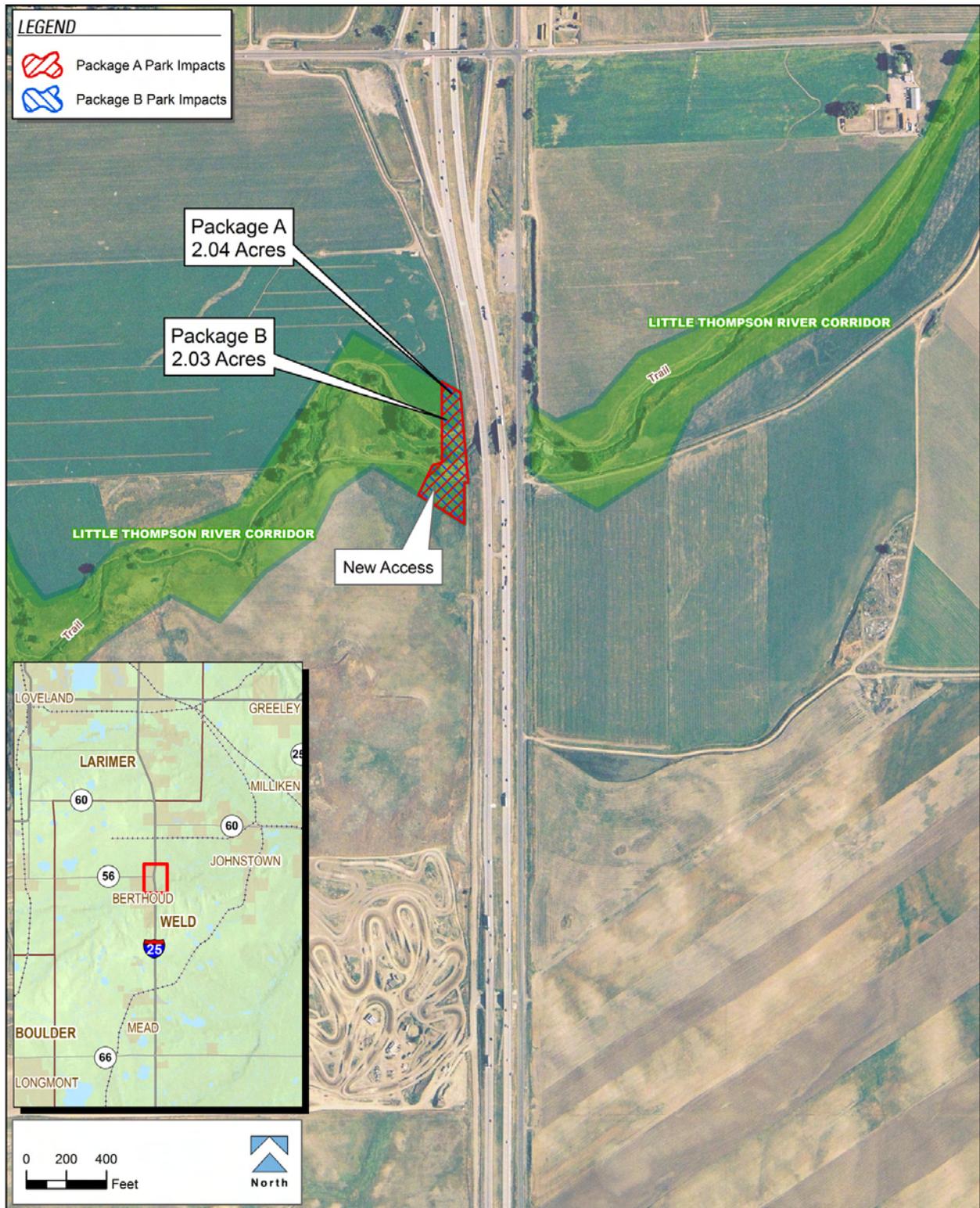
CDOT would develop the new access before the existing access is closed.

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.

1 Figure 5-57 Little Thompson River Corridor Use for Packages A & B



Civic Center Park (Thornton) (Map ID Number 4)

Description

Location:	North of Thornton Civic Center Plaza
Size:	17 acres
Type:	Park
Access:	Public
Facilities/Amenities:	Lake, recreational trail, benches and grass area
Usage/Patronage:	Data on annual patronage not available
Relationship to Other Resources:	Adjacent to Thornton Civic Center Plaza
Ownership/Jurisdiction:	City of Thornton
Significance:	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 Civic Center Park (Thornton) by Package

Package A A-H4 Structure Upgrades: E-470 to US 36	Package B B-H4 Tolled Express Lanes: E-470 to 70th Avenue
No use	A total of 1.18 acres, or 6.9% of the property, by incorporation of a 1,230-foot by 60-foot strip of unused land from park due to lane additions. No features or amenities are impacted.

Resource Description

The park is included in the *City of Thornton Parks and Open Space Master Plan, 2003* as a park adjacent to Civic Center Plaza in Thornton.

Section 4(f) Use

Package A

There are no direct park uses associated with Package A.

Package B

Improvements between E-470 and US 36 include the addition of one buffer-separated lane in each direction, for a total of six-general purpose lanes and two tolled express lanes. BRT would share the tolled express lanes. Section 4(f) use would result from the addition of the one buffer-separated tolled lane that accommodates the BRT. The combined improvements would use the westernmost edge of the park. Total acreage used would be 1.18 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. See **Figure 5-58** for Civic Center Park uses associated with Package B.

FHWA and FTA 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 Thornton has provided written concurrence that the use does not adversely affect the activities, features, or attributes of the resource.

Indirect Effects

Indirect effects are the same for Package A and B. Portions of Civic Center Park would experience noise impacts, 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 park 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 highway adjacent to Civic Center Park is in a physically constrained location with one park directly adjacent to northbound lanes and a water storage facility adjacent to the northbound lanes. The median has been reduced as much as possible with a concrete barrier and minimum shoulders. No other measures were available to minimize harm. Because the area is tightly constrained, no measures to minimize harm could be identified at this location.

Mitigation Measures for Civic Center Park

- Noise mitigation recommendations would be consistent with the commitments made in the DEIS noise barrier analysis.
- 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 land used by transportation improvements.

1 Figure 5-58 Civic Center Park Package B Use



1
2

Grant Park (Map ID Number 5)

Description

Location:	Adjacent to I-25, south of 104 th Avenue, Northglenn
Size:	14 acres
Type:	Park
Access:	Public access
Facilities/Amenities:	Trail, picnic area, detention/drainage
Usage/Patronage:	Public, patronage unknown
Relationship to Other Resources:	Provides a recreational connection to residential areas. One of 23 parks in the City of Northglenn.
Ownership/Jurisdiction:	City of Northglenn
Significance:	City of Northglenn Parks and Recreation Advisory Board, 2005. 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 Grant Park by Package

<u>Package A</u> <u>A-H4 Structure Upgrades:</u> <u>E-470 to US 36</u>	<u>Package B</u> <u>B-H 4 Tolled Express Lanes:</u> <u>E-470 to 70th Avenue</u>
No use	0.09 acre, or 1% of entire property, for water quality pond due to lane addition and associated drainage requirements. A small portion of pedestrian trail would be impacted and will be replaced.

Resource Description

Grant Park is a publicly owned and accessible neighborhood park with a trail system and drainage feature.

Section 4(f) Use

Package A

No direct park uses are associated with Package A.

Package B

Section 4(f) uses would result from the addition of one buffer-separated tolled express lane that would be added in each direction, for a total of six general-purpose lanes and two tolled express lanes. Bus Rapid Transit also would travel exclusively in the tolled express lanes. In order to accommodate drainage associated with the proposed improvements, two water quality ponds would be constructed. One pond would be located north of Grange Hall Creek, entirely in Grant Park, and one pond would be located south of Grange Hall Creek, partially in Grant Park and partially in the CDOT right-of-way. There would be 50 feet of encroachment, and the total used area in Grant Park for both ponds would be 0.09 acre. The property that would be converted is at the westernmost edge of Grant Park. A short portion of the pedestrian trail would be impacted. 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 5-59** for Grant Park uses associated with Package B.

FHWA and FTA 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 Northglenn 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

Several options were explored to contain water in this area. One option would result in the loss of four homes in the subdivision to the north of Grant Park. At a meeting held in March 2007, the City concurred that impacting nearby homes was not acceptable. The same option also impacted a nearby shopping area. The team coordinated with the City on design and placement of the ponds in order to minimize impacts to Grant Park and its users. CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by the transportation improvements.

Mitigation Measures for Grant Park

- CDOT will investigate the suitability of land acquisition for replacement of impacted lands used by the transportation improvements.
- Two water quality ponds would be constructed to accommodate drainage associated with construction.
- A new sidewalk will be constructed as replacement for the portion impacted by the land acquisition.
- Disturbed areas will be reseeded with native grasses.
- Native shrubs will be added as appropriate.

1 Figure 5-59 Grant Park Package B Use



2

Sandstone Ranch (Map ID Number 8)

Description

Location:	West of I-25, south of SH 119
Size:	313 acres
Type:	Park
Access:	Public access
Facilities/Amenities:	Softball fields, soccer fields, trails, picnic tables, playground, skate park, restrooms, BBQ grills, concession stand
Usage/Patronage:	10,000/year
Relationship to Other Resources:	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.
Ownership/Jurisdiction:	City of Longmont
Significance:	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: <u>Longmont to FasTracks North Metro</u>	Package B B-T2 Transit Component-BRT: <u>Fort Collins to DIA</u>
2.17 acres, or less than 1% of entire property, 40 to 60 feet of trail would require relocation and replacement. No other features or amenities would be impacted.	No use

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.

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 5-60** for detail of park impacts associated with Package A.

FHWA and FTA 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.

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 consistent with the Uniform Relocation and Assistance Program.

1 Figure 5-60 Sandstone Ranch Package A Use



5.6 LEAST HARM ANALYSIS

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 factors such as:

- 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 property;
- The views of the official with jurisdiction over the property;
- The degree to which each alternative meets the purpose and need for the project;
- The magnitude, after mitigation, of any adverse impacts to resources not protected by Section 4(f); and
- Substantial differences in costs among the alternatives.

In several cases, the uses of Packages A and B would have the same context and intensity (see **Table 5-7**). Twenty of the resources that would be impacted (used) by both packages are recommended for *de minimis* determination. The context and intensity of the uses described as *de minimis* would be similar between the alternatives despite very minor differences in the encroachments between the alternatives. Enhancements would be equivalent to the degree of impact. By definition, *de minimis* impacts have no adverse effects to the activities, features, and attributes of the park, or no adverse effects on historic sites.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
5LR.8932 Larimer County Ditch	<p><i>A-H1 Safety Improvements: SH 1 to SH 14</i></p> <p>An 83-foot culvert extension; no adverse effect.</p>	<p><i>B-H1 Safety Improvements: SH 1 to SH 14</i></p> <p>An 83-foot culvert extension; no adverse effect.</p>	<ul style="list-style-type: none"> ▪ Use: Increase in culvert length due to widening of I-25. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Perform Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. ▪ Maintain operation of ditch during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Reseed disturbed areas with native grasses.
5LR.11396 Einarsen Farm	<p>1.76 acres, or less than 1% of property, by incorporation of 1,600-foot 50-foot strip of farmland into project; no adverse effect.</p>	<p>1.76 acres, or less than 1% of property, by incorporation of 1,600-foot 50-foot strip of farmland into project; no adverse effect.</p>	<ul style="list-style-type: none"> ▪ Use: Acquisition of land along the farm's western edge due to realignment and widening of the east frontage road. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Property acquisition will be completed under the Uniform Relocation Act. ▪ Maintain operation of farm during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Reseed disturbed areas with native grasses.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
	A-H2 GP Highway Improvements: SH 14 to SH 60	B-H2 Tolled Express Lanes: SH 14 to SH 60	
5LR.1139311409 Rudolph Farm	A total of 0.27 acre, or less than 1% of property by incorporation of a 2.5-foot by 1,247-foot strip of farmland and a 0.13-acre portion of the farmland for new driveway access; no adverse effect.	A total of 0.40 acre, or less than 1% of the property by incorporation of a 10-foot 1,247-foot strip of farmland and a 0.13-acre portion of the farmland for a new driveway access; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Acquisition of the farm's west edge due to highway widening. Mitigation: <ul style="list-style-type: none"> ▪ Fair compensation for property acquisition will be completed under the Uniform Relocation Act. ▪ Maintain operation of farm during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Reseed disturbed areas with native grasses.
Arapaho Bend Natural Area	4.28 acres, or 1.5% of entire property; 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 will be revegetated and reclaimed; in addition, bank stabilization along Cache la Poudre River; no change in activities or use areas.	5.11 acres, or 1.8% of entire property; 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 will be revegetated and reclaimed; in addition, bank stabilization along Cache la Poudre River; no change in activities or use areas.	<ul style="list-style-type: none"> ▪ Use: I-25 widening & carpool parking lot expansion uses park. ▪ Reclaim and revegetate in-kind the areas where the existing bridges are removed. Mitigation: Alternate routes and adequate detour signing will be provided during bridge reconstruction.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
	<i>A-H2 GP Highway Improvements: SH 14 to SH 60</i>	<i>B-H2 Tolled Express Lanes: SH 14 to SH 60</i>	
5LR.11409 Cache la Poudre Reservoir Inlet and Lake Canal (5LR.995.4)	A total length of 85 feet of open ditch, or 1% of total length, in culvert extensions; no adverse effect.	A total length of 85 feet of open ditch, or 1% of total length, in culvert extensions; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Placement of an open ditch inside culvert due to widening of I-25. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. ▪ Maintain operation of inlet during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.
5LR.2160 Boxelder Ditch	A total of 137.5 feet, or less than 1% of total ditch length, incorporated into a new 62.5-foot-long new culvert and a 75-foot-long culvert extension; no adverse effect.	A total of 137.5 feet, or less than 1% of total ditch length incorporated into a new 62.5-foot-long new culvert and a 75-foot-long culvert extension; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Placement of an open ditch inside culvert due to widening of I-25 and frontage roads. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. ▪ Maintain operation of ditch during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
	<i>A-H2 GP Highway Improvements: SH 14 to SH 60</i>	<i>B-H2 Tolled Express Lanes: SH 14 to SH 60</i>	
Archery Range Natural Area	0.09 acre, or less than 1% of the property, by incorporation of very narrow 400-foot-long strip of unused land. No features or amenities impacted.	0.14 acre, or less than 1% of the property, by incorporation of very narrow 400-foot-long strip of unused land. No features or amenities impacted.	<ul style="list-style-type: none"> ▪ Use: New frontage road would tie into the entrance into the natural area. ▪ Mitigation: 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.
5LR.503 Loveland and Greeley Canal	A total of 70 feet, or less than 1% of total ditch length in culvert extension; no adverse effect.	A total of 70 feet, or less than 1%, of total ditch length in culvert extension; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Placement of an open ditch inside culvert due to widening of I-25. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. ▪ Maintain operation of canal during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
	<i>A-H2 GP Highway Improvements: SH 14 to SH 60</i>	<i>B-H2 Tolled Express Lanes: SH 14 to SH 60</i>	
5LR.8928 Farmers Ditch	A total of 2,539 linear feet, or 3% of the total ditch length, would be placed inside culvert extension; no adverse effect.	A total of 2,539 linear feet or 3% of the total ditch length would be placed inside culvert extension; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Placement of an open ditch inside five extended culverts due to widening of I-25 and interchange ramps. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. ▪ Maintain operation of ditch during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.
5LR.11209 Schmer Farm	A total of 6.61 acres, or 5.3% 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; no adverse effect.	A total of 7.0 acres or 5.6% 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; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Acquisition of land along the farms western edge due to realignment and widening of the east frontage road. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Fair compensation for property acquisition will be completed under the Uniform Relocation Act. ▪ Coordinate with SHPO during final design to formulate acceptable aesthetic treatment of highway ramps and flyways (facades, pier treatments, elevation changes, landscaping, etc.). ▪ Maintain operation of farm during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
	<i>A-H2 GP Highway Improvements: SH 14 to SH 60</i>	<i>B-H2 Tolled Express Lanes: SH 14 to SH 60</i>	
5LR.850 Great Western Railway	A total of 170, feet, or less than 16% of total railroad length, incorporated into a new bridge; no adverse effect.	A total of 240 feet, or less than 16% of total railroad length, incorporated into a new bridge; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Replace the existing railroad bridge under I-25 due to I-25 widening. A section of railroad will be temporarily realigned to cross I-25 north of the existing railroad bridge to maintain rail service. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Permanent easements or acquisition will be completed under the Uniform Relocation Act. ▪ Maintain rail operations during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
5LR.11382 Hatch Farm	<p align="center">A-H2 GP Highway Improvements: SH 14 to SH 60</p> <p>A total of 2.1 acres, or 2% of total property, by incorporation of narrow 850-foot and 450-foot strips of farmland and two water quality ponds into the project; no adverse effect.</p>	<p align="center">B-H2 Tolled Express Lanes: SH 14 to SH 60</p> <p>A total of 2.2 acres, or 2% of total property, by incorporation of narrow 850-foot and 450-foot strips of farmland and two water quality ponds into the project; no adverse effect.</p>	<ul style="list-style-type: none"> ▪ Use: Acquisition of land along the farm's western edge due to widening of I-25, retaining wall construction, and installation of 2 water quality basins. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Fair compensation for property acquisition will be completed under the Uniform Relocation Act. ▪ Maintain operation of farm during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.
Big Thompson Ponds State Wildlife Area	<p>0.11 acre, or less than 1% of property, by incorporation of narrow 750-foot-long and 200-foot-long strip of land adjacent to I-25 due to ramp and lane additions. No impacts features, amenities or wildlife area.</p>	<p>0.24 acre, or less than 1% of property, by incorporation of narrow 750-foot-long and 200-foot-long strip of land adjacent to I-25 due to ramp and lane additions. No impacts features, amenities or wildlife area.</p>	<ul style="list-style-type: none"> ▪ Use: Highway widening and permanent wall easement. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ 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.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
5LR.8927 Hillsboro Ditch	<p style="text-align: center;">A-H2 GP Highway Improvements: SH 14 to SH 60</p> <p>A total of 135 feet, or 6% of total ditch length, would be incorporated into culvert extensions; no adverse effect.</p>	<p style="text-align: center;">B-H2 Tolled Express Lanes: SH 14 to SH 60</p> <p>A total of 135 feet, or 6% of total ditch length, would be incorporated into culvert extensions; no adverse effect.</p>	<ul style="list-style-type: none"> ▪ Use: Placement of an open ditch inside culvert due to widening of I-25 and installation of retaining walls. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. ▪ Maintain operation of ditch during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.
5LR.11242 Mountain View Farm	<p>A total of 4.76 acres, or 3.5% of the property, by incorporation of a 65-foot- by 3,200-foot-long strip of farmland adjacent to I-25 and SH 402; no adverse effect</p>	<p>A total of 5.28 acres, or 4% of the property, by incorporation of a 60-foot- by 3,900-foot-long strip of farmland adjacent to I-25 and SH 402; no adverse effect</p>	<ul style="list-style-type: none"> ▪ Use: Property acquisition due to interchange ramp realignment and SH 402 widening. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Fair compensation for property acquisition will be completed under the Uniform Relocation Act. ▪ Maintain operation of farm during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
	<i>A-H3 GP Highway Improvements: SH 60 to E-470</i>	<i>B-H3 Tolled Express Lanes: SH 60 to E-470</i>	
5WL.5203 Bein Farm	A total of 17.94 acres, or 6.2% of the property, 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; no adverse effect.	A total of 20.04 acres, or 7% of the property, 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; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Property acquisition due to highway widening and SH 60 widening. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Fair compensation for property acquisition will be completed under the Uniform Relocation Act. ▪ Maintain operation of farm during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.
5WL.3149 Handy/Home Supply Ditch Confluence	A total of 50 feet, or 2% of total ditch length, incorporated into an culvert extension; no adverse effect.	A total of 50 feet, or 2% of total ditch length, incorporated into an culvert extension; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Placement of an open ditch inside culvert due to widening of I-25 and installation of retaining walls. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. ▪ Maintain operation of ditch during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
	<i>A-H3 GP Highway Improvements: SH 60 to E-470</i>	<i>B-H3 Tolled Express Lanes: SH 60 to E-470</i>	
Little Thompson River Corridor	2.04 acres or, 2% of total property, 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.	2.03 acres, or 2% of total property, 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.	<ul style="list-style-type: none"> ▪ Use: Property acquisition due to highway widening. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ 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.
5WL.5198 Olson Farm	A total of 12.74 acres, or 9% of property, by incorporation of land from both sides of I-25; no adverse effect.	A total of 12.81 acres, or 9% of property, by incorporation of land from both sides of I-25; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Property acquisition of land due to highway widening and installation of retaining walls. <p>Mitigation:</p> <ul style="list-style-type: none"> ▪ Fair compensation for property acquisition will be completed under the Uniform Relocation Act. ▪ Maintain operation of farm during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be reseeded with native grasses.

1

Table 5-7 Recommended *De Minimis* Findings of Section 4(f) Resources Summarized by Context and Intensity (cont'd)

Resource ID/ Resource Name	Package A	Package B	Context and Intensity of Uses
	A-H3 GP Highway Improvements: SH 60 to E-470	B-H3 Tolled Express Lanes: SH 60 to E-470	
5WL.1966, 5BF.72, 5BF.76, 5AM.457 Bull Canal/Standley Ditch	A total of 908 feet, or less than 1% of the total ditch length, would be placed into three culvert extensions; no adverse effect.	A total of 850 feet or less than 1% of the total ditch length, would be placed into two culvert extensions; no adverse effect.	<ul style="list-style-type: none"> ▪ Use: Placement of an open ditch inside culvert due to widening of I-25 and installation of commuter rail tracks. Mitigation: <ul style="list-style-type: none"> ▪ Detailed recording of the affected ditch, in accordance with the Colorado Historical Society ▪ Maintain operation of ditch during construction. ▪ Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. ▪ Disturbed areas will be re-seeded with native grasses.

Summary of Recommended <i>De Minimis</i> Findings of Section 4(f) Resources		
	Package A	Package B
Totals	7 Historic farms: 46.18 acres 9 ditches 1 Railroad 4 Parks: 6.52 acres	7 Historic farms: 49.49 acres 9 ditches 1 Railroad 4 Parks: 7.52 acres

2 The above resources are recommended for a *de minimis* finding. Mitigation and enhancements
 3 have already been considered in the intention to make such a finding. Since the impacts are
 4 trivial by nature, a comparison of the resources does not contribute to a difference in harm
 5 between the alternatives. Final determinations regarding *de minimis* will be made only after the
 6 public has been provided with an opportunity to comment and the official with jurisdiction has
 7 submitted its written concurrence. There are no differences in intensity and value between
 8 Package A and Package B for these resources recommended for *de minimis* findings.

9 The following resource, listed in **Table 5-8**, has identical uses in intensity and value for both
 10 packages. This resource does not contribute to any differentiation or least harm conclusion for
 11 the two build packages.

1

Table 5-8 Section 4(f) Resources – Identical Use for Both Packages A and B

Resource Id	Package A	Package B	Identical Uses In Value and Intensity
	A-H2 GP Highway Improvements: SH 14 to SH 60	B-H2 Tolled Express Lanes: SH 14 to SH 60	
McWhinney Hahn Sculpture Park	1.21 acres (approximately 875-foot by 60-foot strip of land), or 27% of park, used for placement of new ramps; includes impacts to sculptures, trails, and access. Serves as gateway for city.	1.21 acres (approximately 875-foot by 60-foot strip of land), or 27% of park, used for placement of new ramps; includes impacts to sculptures, trails, and access. Serves as gateway for city.	<ul style="list-style-type: none"> ▪ Use: Property acquisition due to interchange, highway and local roadway widening. ▪ Use: Function of park is lost.

Notes:% = percent

2 **5.6.1 Parks and Recreation Resources**

3 There are three parks or recreational resources, and a wildlife and waterfowl refuge with
4 different uses between the two packages. One of these park or recreational resources would be
5 used by Package A and is awaiting a *de minimis* finding. Mitigation and enhancements have
6 already been considered in the intention to make such a finding. Two parks or recreational
7 resources would be used by Package B and both are awaiting a *de minimis* finding.

8 The impacts to narrow strips of I-25 frontage did not utilize important habitat, trail, or activity
9 areas, but reduce by small increments the buffer between the highway and the park or
10 recreational area. The Package A uses occur within the commuter rail components between
11 Fort Collins and the FasTracks North Metro end-of-line station, and consist of placement of the
12 commuter rail alignment along the northern frontage of the historic recreation area under
13 Package A (see **Table 5-9**). The Package B uses occur from impacts caused by general
14 widening associated with component B-H4 Tolled Express Lanes between E-470 to 70th
15 Avenue.

16 Meetings with the local jurisdictions were held to describe the project, the alternatives analysis,
17 and the nature and intensity of uses to affected resources. Mapping of facilities associated with
18 affected properties were also verified. After impacts were determined associated with each of
19 the packages, coordination began with jurisdictions that could be potentially affected by use of
20 Section 4(f) resources.

21 General mitigation strategies were discussed with a commitment to explore these strategies in
22 more detail after identification of the Preferred Alternative. Coordination meetings have been
23 held to date with Fort Collins, Northglenn, Loveland, and Boulder County. Coordination will
24 continue to occur throughout the remainder of the NEPA process.

1

Table 5-9 Public Parks and Recreation Areas

Resource	Use and Mitigation under Package A	Use and Mitigation under Package B
	A-H4 Structure Upgrades: E-470 to US 36	B-H4 Tolled Express Lanes: E-470 to 70th Avenue
Grant Park	No use	<ul style="list-style-type: none"> ▪ Use: 0.09 acre. ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: Two water quality ponds would be constructed to accommodate drainage associated with construction. ▪ Disturbed areas will be reseeded with native grasses and shrubs as appropriate.
Civic Center Park (Thornton)	No use	<ul style="list-style-type: none"> ▪ Use: 1.18 acres. ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: Noise mitigation recommendations would be consistent with other commitments made in the DEIS noise barrier analysis. Disturbed areas will be reseeded with native grasses and shrubs as appropriate; BMPs will be employed for erosion control.
	A-T2 Transit Component: Commuter Rail: Longmont to N. Metro	B-T2 Transit Component-BRT: Fort Collins to DIA
Sandstone Ranch Park	<ul style="list-style-type: none"> ▪ Use: 2.17 acres. ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: Retaining wall included on south side of commuter rail tracks to minimize impacts. Disturbed areas will be reseeded with native grasses and shrubs as appropriate; BMPs will be employed for erosion control. 	No use
Public Parks and Recreation Areas	Package A	Package B
Totals	<ul style="list-style-type: none"> ▪ 1 park (2.17 acres)—<i>de minimis</i> finding being sought. 	<ul style="list-style-type: none"> ▪ 2 parks (1.27 acres)—<i>de minimis</i> findings being sought.

2

3 5.6.2 Historic Resources

4 There are 16 historical resources with different uses between the two packages. Fifteen of these
5 historic resources would be used with Package A within the commuter rail line improvements,
6 eleven of which are awaiting a determination of *de minimis*. Mitigation and enhancements have
7 already been considered in the intention to make such a finding. Two of the properties used
8 under Package A constitute a total property acquisition and demolition of the resources.
9 Package B would result in a use to one ditch. See **Table 5-10**, **Table 5-11**, and **Table 5-12**.

1

Table 5-10 Summary of Non-De Minimis Historic Property Uses

Resource	Use and Mitigation under Package A	Use and Mitigation under Package B
	A-H2 <i>GP Highway Improvements: SH 14 to SH 60</i>	B-H2 <i>Tolled Express Lanes: SH 14 to SH 60</i>
5LR.8930 Louden Ditch	<ul style="list-style-type: none"> ▪ Use: 316 linear feet of open ditch placed inside new (90 feet) and extended existing (225 feet) culverts. ▪ Mitigation: <ul style="list-style-type: none"> – Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. – Maintain operation of ditch during construction. – Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. – Disturbed areas will be reseeded with native grasses. 	<ul style="list-style-type: none"> ▪ Use: 357 linear feet of open ditch placed inside new (87 feet) and extended existing (270 feet) culverts. ▪ Mitigation: <ul style="list-style-type: none"> – Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. – Maintain operation of ditch during construction. – Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. – Disturbed areas will be reseeded with native grasses.

2

1 Table 5-10 Summary of Non-De Minimis Historic Property Uses (cont'd)

Resource	Use and Mitigation under Package A	Use and Mitigation under Package B
	A-T2 Transit Component: Commuter Rail: Longmont to N. Metro	B-T2 Transit Component-BRT: Fort Collins to DIA
5BL.1245 Old City Electric Building	<ul style="list-style-type: none"> ▪ Use: 0.85 acre; demolition or relocation of historic building. ▪ Mitigation: <ul style="list-style-type: none"> – 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. – Evaluate relocation of historic structure: Engineering feasibility study of relocation of historic building, identification of a new site for relocation of the historic building, and requires sponsor to maintain relocated building. – Detailed recording of the building, in accordance with the Colorado Historical Society's Standards for Level II Documentation. 	No use
5BL.1244 Colorado and Southern/BNSF Depot	<ul style="list-style-type: none"> ▪ Use: 0.51 acre and demolition or relocation of historic building. Mitigation: <ul style="list-style-type: none"> – 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. – Evaluate relocation of historic structure: Engineering feasibility study of relocation of historic building, and requires sponsor to maintain relocation building. – Detailed recording of the building, in accordance with the Colorado Historical Society's Standards for Level II Documentation. 	No use

1 Table 5-10 Summary of Non-De Minimis Historic Property Uses (cont'd)

Resource	Use and Mitigation under Package A	Use and Mitigation under Package B
	A-T2 Transit Component: Commuter Rail: Longmont to N. Metro	B-T2 Transit Component-BRT: Fort Collins to DIA
5WL.5263 Hingley Farm	<ul style="list-style-type: none"> ▪ Use: A total of 7.34 acres, or 9%, of unused land and demolition or relocation of the historic farmhouse. ▪ Mitigation: <ul style="list-style-type: none"> – 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. – Evaluate relocation of historic structure: Engineering feasibility study of relocation of historic building, identification of a new site for relocation of the historic building, and requires sponsor to maintain relocated building. – Detailed recording of the building, in accordance with the Colorado Historical Society's Standards for Level II Documentation. 	No Use
5WL.1969, 5BF.130 Denver Pacific/Kansas Pacific/UPRR-Denver and Boulder Valley Branch	<ul style="list-style-type: none"> ▪ Use: 2.9-mile abandoned segment modernized for double-track commuter rail operations. Two contributing wooden trestle bridges would be demolished to upgrade existing drainage crossings to carry structural load. ▪ Enhancement: <ul style="list-style-type: none"> – 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. 	No Use

1

Table 5-11 Summary of Historic Property *De Minimis* Uses

Resource	Use and Mitigation under Package A	Use and Mitigation under Package B
	A-T1 Transit Component: Commuter Rail: Fort Collins—Longmont	B-T1 Transit Component: BRT: Fort Collins/ Greeley to Denver
5LR.488 Colorado and Southern Railway Depot / Loveland Depot	<ul style="list-style-type: none"> ▪ Use: A total of 0.03 acres or 7%, of total property ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: <ul style="list-style-type: none"> — Permanent easement or property acquisition will be completed under the Uniform Relocation Act. — Disturbed areas will be re-landscaped. — Attempts will be made to incorporate the depot into the station platform. 	No use
5BL.3449 Supply Ditch	<ul style="list-style-type: none"> ▪ Use: A total of 65 feet, or less than 1% of total ditch length, would be placed into an culvert extension. ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: <ul style="list-style-type: none"> — Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. — Maintain operation of ditch during construction. — Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. — Disturbed areas will be reseeded with native grasses. 	No use
5BL.3113 Rough & Ready Ditch	<ul style="list-style-type: none"> ▪ Use: A total of 35 feet, or less than 1% of total ditch length, placed into an existing extension. ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: <ul style="list-style-type: none"> — Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. — Maintain operation of ditch during construction. — Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. — Disturbed areas will be reseeded with native grasses. 	No use
	A-T2 Transit Component: Commuter Rail: Longmont to N. Metro	B-T2 Transit Component- BRT: Fort Collins to DIA
5LR.1729 Big Thompson Ditch	<ul style="list-style-type: none"> ▪ A total of 60 feet, or less than less than 1% of total ditch length, placed into an culvert extension. ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: <ul style="list-style-type: none"> — Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. — Maintain operation of ditch during construction. — Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. — Disturbed areas will be reseeded with native grasses . 	No use

2

1

Table 5-11 Summary of Historic Property *De Minimis* Uses (cont'd)

Resource	Use and Mitigation under Package A	Use and Mitigation under Package B
	A-T2 Transit Component: Commuter Rail: Longmont to N. Metro	B-T2 Transit Component- BRT: Fort Collins to DIA
5BL.513 Great Western Sugar	<ul style="list-style-type: none"> ▪ Use: A total of 0.33 acre, or 9% of the property, would be used for pedestrian walkway. ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: <ul style="list-style-type: none"> – Property acquisition will be completed under the Uniform Relocation Act. – Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. – Disturbed areas will be re-landscaped. 	No use
5WL.712 Sandstone Ranch	<ul style="list-style-type: none"> ▪ Use: A total of 2.17 acres, or less than 1% of unused land within the historic district, used for new railroad. ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: <ul style="list-style-type: none"> – Property acquisition will be completed under the Uniform Relocation Act. – Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. – Disturbed areas will be re-landscaped. 	No use
5WL.5461 Boulder & Weld County Ditch	<ul style="list-style-type: none"> ▪ Use: A total of 63 feet, or less than 1% of open ditch, would be placed into a new culvert. ▪ <i>De minimis</i> finding being sought. Enhancement: <ul style="list-style-type: none"> – Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. – Maintain operation of ditch during construction. – Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. – Disturbed areas will be reseeded with native grasses. 	No use
5WL.1974 Rural Ditch	<ul style="list-style-type: none"> ▪ Use: A total of 130 feet, or less than 1% of open ditch, would be placed into a new culvert. ▪ <i>De minimis</i> finding being sought ▪ Enhancement: <ul style="list-style-type: none"> – Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. – Maintain operation of ditch during construction. – Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. – Disturbed areas will be reseeded with native grasses. 	No use

1

Table 5-11 Summary of Historic Property *De Minimis* Uses (cont'd)

Resource	Use and Mitigation under Package A	Use and Mitigation under Package B
	A-T2 Transit Component: Commuter Rail: Longmont to N. Metro	B-T2 Transit Component- BRT: Fort Collins to DIA
5WL.1317, 5AM.472 Denver Pacific/ Kansas Pacific/UPR R-Dent Branch	<ul style="list-style-type: none"> ▪ Use: 4.89-mile abandoned segment modernized for double-track commuter rail operations. ▪ <i>De minimis</i> finding being sought. ▪ Enhancement: <ul style="list-style-type: none"> – 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. 	No use
5WL.1966.8 Bull Ditch segment of the Bull Canal/ Standley Ditch	<ul style="list-style-type: none"> ▪ Use: A total of 58 feet, or less than 1% of the total ditch length, would be placed into an culvert extension. ▪ <i>De minimis</i> finding being sought for entire resource. ▪ Enhancement: <ul style="list-style-type: none"> – Detailed recording of the affected ditch, in accordance with the Colorado Historical Society. – Maintain operation of ditch during construction. – Employ appropriate erosion and sediment control BMPs to ensure protection of resource during construction. – Disturbed areas will be reseeded with native grasses. 	No use

2

Table 5-12 Historic Resources Least Harm Analysis

Resource	Use and Mitigation under Package A	Use and Mitigation under Package B
Historic Resources	Package A	Package B
Summary	<ul style="list-style-type: none"> ▪ 1 ditch: 316 linear feet—<i>Adverse effect</i> ▪ 1 railroad: 2.9 miles—<i>Adverse effect</i> ▪ 2 properties: 1.36 acres (full acquisition)—<i>Adverse effect</i> ▪ 1 property: 7.34 acres—<i>Adverse effect</i> ▪ 3 properties: 2.53 acres—<i>De minimis</i>* ▪ 7 ditches: 459 linear feet—<i>De minimis</i> ▪ 1 railroad: 4.89 miles—<i>De minimis</i> 	<ul style="list-style-type: none"> ▪ 1 ditch: 357 linear feet—<i>Adverse effect</i>

*Sandstone Ranch qualifies as a public park and historic property. Use quantities appear under parks and historic categories.

5.6.3 Summary

The Least Harm Analysis has included the *de minimis* properties with similar use and intensity identified in **Table 5-7**, properties with identical use shown in **Table 5-8**, park and recreation resources identified in **Table 5-9**, and historical resources identified in **Table 5-10** and **Table 5-11**.

Table 5-13 summarizes all of the Section 4(f) uses broken down by package and component, including those with similar uses and intensity.

Table 5-13 Least Harm Analysis Summary

Resource Type	Package A	Package B
	A-H1 Safety Improvements: SH 1 to SH 14	B-H1 Safety Improvements: SH 1 to SH 14
Park and recreation area	<ul style="list-style-type: none"> ▪ No use 	No use
Historic	<ul style="list-style-type: none"> ▪ 1 property: 1.76 acres—<i>De minimis</i> ▪ 1 ditch— <i>De minimis</i> 	<ul style="list-style-type: none"> ▪ 1 property: 1.76 acres—<i>De minimis</i> ▪ 1 ditch— <i>De minimis</i>
	A-H2 GP Highway Improvements: SH 14 to SH 60	B-H2 Tolled Express Lanes: SH 14 to SH 60
Park and recreation area	<ul style="list-style-type: none"> ▪ 3 parks: 4.48 acres—<i>De minimis</i> ▪ 1 park: 1.21 acres 	<ul style="list-style-type: none"> ▪ 3 parks: 5.49 acres—<i>De minimis</i> ▪ 1 park: 1.21 acres
Historic	<ul style="list-style-type: none"> ▪ 4 properties: 13.74 acres —<i>De minimis</i> ▪ 6 ditches—<i>De minimis</i> ▪ 1 ditch—<i>Adverse Effect</i> ▪ 1 railroad—<i>De minimis</i> 	<ul style="list-style-type: none"> ▪ 4 properties: 14.88 acres —<i>De minimis</i> ▪ 6 ditches—<i>De minimis</i> ▪ 1 ditch—<i>Adverse Effect</i> ▪ 1 railroad—<i>De minimis</i>
	A-H3 GP Highway Improvements: SH 60 to E-470	B-H3 Tolled Express Lanes: SH 60 to E-470
Park and recreation area	<ul style="list-style-type: none"> ▪ 1 park: 2.04 acres—<i>De minimis</i> 	<ul style="list-style-type: none"> ▪ 1 park: 2.03 acres—<i>De minimis</i>
Historic	<ul style="list-style-type: none"> ▪ 2 properties: 30.68 acres—<i>De minimis</i> ▪ 2 ditches—<i>De minimis</i> 	<ul style="list-style-type: none"> ▪ 2 properties: 32.85 acres—<i>De minimis</i> ▪ 2 ditches—<i>De minimis</i>
	A-H4 Structure Upgrades: E-470 to US 36	B-H4 Tolled Express Lanes: E-470 to 70th Avenue
Park and recreation area	<ul style="list-style-type: none"> ▪ No use 	<ul style="list-style-type: none"> ▪ 2 parks: 1.27 acres—<i>De minimis</i>
Historic	<ul style="list-style-type: none"> ▪ No use 	<ul style="list-style-type: none"> ▪ No use
	A-T1 Transit Component-Commuter Rail: Fort Collins to Longmont	B-T1 Transit Component-BRT: Fort Collins/Greeley to Denver
Park and recreation area	<ul style="list-style-type: none"> ▪ No use 	<ul style="list-style-type: none"> ▪ No use
Historic	<ul style="list-style-type: none"> ▪ 3 ditches—<i>De minimis</i> ▪ 1 property: 0.03 acres—<i>De minimis</i> 	<ul style="list-style-type: none"> ▪ No use

8

1 **Table 5-13 Least Harm Analysis Summary (cont'd)**

Resource Type	Package A	Package B
	A-T2 <i>Transit Component-Commuter Rail: Longmont to FasTracks North Metro</i>	B-T2 <i>Transit Component-BRT: Fort Collins to DIA</i>
Park and recreation area	<ul style="list-style-type: none"> ▪ 1 park: 2.17 acres—<i>De minimis</i>* 	<ul style="list-style-type: none"> ▪ No use
Historic	<ul style="list-style-type: none"> ▪ 2 properties: 1.36 acres (demolition and full acquisition)—<i>Adverse Effect</i> ▪ 1 property: 7.34 acres—<i>Adverse Effect</i> ▪ 2 properties: 2.5 acres—<i>De minimis</i>* ▪ 4 ditches—<i>De minimis</i> ▪ 1 railroad—<i>De minimis</i> ▪ 1 railroad—<i>Adverse Effect</i> 	<ul style="list-style-type: none"> ▪ No use
Totals	Package A	Package B
Historic	<ul style="list-style-type: none"> ▪ 2 properties: 1.36 acres (full acquisition)—<i>Adverse Effect</i> ▪ 1 property: 7.34 acres—<i>Adverse Effect</i> ▪ 10 properties: 48.71 acres—<i>De minimis</i>* ▪ 16 ditches—<i>De minimis</i> ▪ 1 ditch—<i>Adverse Effect</i> ▪ 2 railroads—<i>De minimis</i> ▪ 1 railroad—<i>Adverse Effect</i> 	<ul style="list-style-type: none"> ▪ 7 properties: 49.49 acres—<i>De minimis</i> ▪ 9 ditches—<i>De minimis</i> ▪ 1 railroad—<i>De minimis</i> ▪ 1 ditch—<i>Adverse Effect</i>
Park and recreation area	<ul style="list-style-type: none"> ▪ 1 park: 1.21 acres ▪ 5 parks: 8.69 acres—<i>De minimis</i>* 	<ul style="list-style-type: none"> ▪ 1 park: 1.21 acres ▪ 6 parks: 8.79 acres—<i>De minimis</i>

*Sandstone Ranch qualifies as a public park and historic property. Use quantities appear under parks and historic categories.

2 Package A and Package B transportation improvements within the regional study area are
 3 composed of three primary transportation corridors: the I-25-centered improvements, Fort
 4 Collins to FasTracks North Metro end-of-line station commuter rail improvements, and Greeley
 5 to DUS bus transit improvements. Feeder bus transit improvements are incorporated into all
 6 the corridor improvements. As discussed in **Chapter 2.0, Alternatives**, each corridor has been
 7 subdivided into transportation components, which define more detailed design options at a
 8 more local geographic basis.

9 Impacts to Section 4(f)-protected resources along each of these corridors have been tabulated
 10 and quantified in the preceding **Table 5-6** through **Table 5-10**. Analyses of these tables elicits
 11 the following trends among the corridors and Section 4(f) use.

12 The Package A and Package B roadway designs, although different in transportation modes
 13 and lane configurations, have been developed with consideration of the same existing
 14 highway, frontage and local roadway infrastructure, within the same engineering design and
 15 safety standards, and with the same physical constraints dictated by environmental resource
 16 impacts, existing and planned development, land use, and community social and economic
 17 factors. The common goal of minimizing impacts outside the existing right-of-way resulted in
 18 compact design layouts that often utilize the same space for different transportation
 19 improvements. Thus, this consolidation of improvements to similar footprints between
 20 packages has resulted in similar uses of Section 4(f) resources along the I-25 corridor.

I-25 Corridor Components

The overall use of Section 4(f) resources along the I-25 corridor, including components for Package A highway improvements and Package B highway, TEL, and BRT improvements as described in **Table 5-13**, I-25 corridor components are so similar between Package A and Package B that there is no substantial difference in intensity or type of use. The number of historic ditches and railroads, the acreage of impact to parks, recreational areas and historic properties, and the nature of the intrusions involving these Section 4(f)-protected resources as summarized in **Table 5-13** is slightly skewed toward Package B (more impacts). In most areas, even if the actual component improvement was different, the intensity of the impacts caused by each package component was similar if not identical. Therefore, there is very little discernable difference between the I-25-centered portions of Packages A and B.

Bus Rapid Transit

The Greeley/Fort Collins to DUS/DIA transportation improvements are primarily associated with Package B Bus Rapid Transit components and improvements to local bus stops parking facilities, and a maintenance yard, and also include feeder bus connections in common with Package A. None of these improvements result in use of Section 4(f)-protected resources, and, therefore, have little influence upon the least harm analysis. Use of other environmental resources is relatively minor and would not change the intensity of impacts associated with this component of Package B.

Commuter Rail

The Fort Collins to FasTracks North Metro commuter rail components connect with the planned FasTracks North Metro transit facilities. Although a portion of this corridor shares a portion of the BNSF freight rail corridor between Fort Collins and Longmont (A-T1), the commuter rail would be a new transit element between Fort Collins and the FasTracks linkages of the Denver metropolitan area. The commuter rail (Component A-T2) would occupy a new and independent rail corridor between Longmont and the FasTracks North Metro terminus. Because the commuter rail traverses an underdeveloped rural landscape, many more historic properties are encountered along its alignment than the more urbanized and transportation-oriented corridors of US 85 between Greeley and Denver and I-25. Component A-T1 could be considered a stand-alone component of the commuter rail piece of Package A, connecting to the Northwest Rail FasTracks corridor.

Summary

The following captures the component distribution of use:

A-H1: Safety Improvements: SH 1 to SH 14	<i>De minimis</i> use
B-H1: Safety Improvements: SH 1 to SH 14	<i>De minimis</i> use
A-H2: GP Highway Improvements: SH 14 to SH 60	<i>De minimis</i> & Direct Use
B-H2: Tolled Express Lanes: SH 14 to SH 60	<i>De minimis</i> & Direct Use
A-H3: GP Highway Improvements: SH 60 to E-470	<i>De minimis</i> use
B-H3: Tolled Express Lanes: SH 60 to E-470	<i>De minimis</i> use
A-H4: Structure Upgrades: E-470 to US 36	No use
B-H4: Tolled Express Lanes: E-470 to 70th Avenue	<i>De minimis</i> use
A-T1: Transit Component-Commuter Rail: Fort Collins to Longmont	<i>De minimis</i> use
B-T1: Transit Component-BRT: Fort Collins/Greeley to Denver	No use
A-T2: Transit Component-Commuter Rail: Longmont to FasTracks North Metro	<i>De minimis</i> & Direct Use
B-T2: Transit Component-BRT: Fort Collins to DIA	No use

1 Pursuant to Section 774.3(c)(1), the following text provides information that FHWA and FTA will
2 use to determine which package or component (if these are redistributed within a package after
3 the DEIS public review period) causes the least overall harm in light of the statute's preservation
4 purpose. It should be noted, as detailed on **Table 5-13**, that the only components within a
5 package that have no Section 4(f) uses associated with them are the structural upgrades
6 associated with Package A (A-H4), the Package A commuter rail component from Fort
7 Collins/Greeley to Denver (B-T1) and the Package B BRT component (B-T2). None of these
8 three components would meet the project purpose and need by themselves; however, it is
9 possible that, after the public review period for the DEIS, they may be combined with other
10 components that collectively would meet purpose and need.

11 Since the analysis of feasible and prudent avoidance alternatives, as described in Sections 5.4.3
12 and 5.4.4 of this chapter, concludes that there is no feasible and prudent avoidance alternative
13 available [from among the remaining alternatives that use Section 4(f) property], the text below
14 provides information that will be used to determine which of the two build alternatives would
15 cause the least overall harm.

16 Package A (Component A-T2) would result in more use (in terms of acres) to more historic
17 Section 4(f) properties than Package B, due primarily to the greater uses of properties
18 associated with the commuter rail components. The four historic properties with adverse effects
19 associated with Package A that are not used with Package B are the three with buildings to be
20 acquired: Hingley Farm, the Old City Electric Building, the Colorado and Southern/BNSF
21 Railroad Depot; and fourth resource: the Denver Pacific/Kansas Pacific/Union Pacific/Denver
22 and Boulder Valley Railroad branch. In all four cases, the ability to mitigate the adverse effects
23 associated with the uses is strong. For the three historic buildings, the possibility of moving the
24 building either to another location onsite or to a location that would be incorporated into the
25 planned commuter rail station would substantially mitigate the adverse impact to each of these
26 three properties and consequently substantially reduce any remaining harm (after mitigation) to
27 the protected attributes and features of these three properties. For the railroad, even though
28 two wooden trestle bridges would be demolished and 2.9 miles of abandoned railroad bed would
29 be modernized, this modernization is entirely consistent with the original use of the railroad right-
30 of-way as a train corridor.

31 Both packages use land from the same six park and recreational resources, although Package
32 B uses more acreage. In addition, Package A uses property from one park that is not used by
33 Package B (Sandstone Ranch), while Package B uses land from two other parks (Thornton
34 Civic Center Park and Grant Park) that are not used by Package A. Grant Park is also a Section
35 6(f) resource. Even though Package B would use more acreage of park property and would use
36 more property from more total parks, after mitigation, the remaining park property would not be
37 diminished in utility and none of the features or attributes of the parks would be negatively
38 impacted. The one exception to this is at McWhinney Hahn Sculpture Park, where the two
39 packages have identical uses and where the protected park attributes and features would be
40 lost.

41 For the remaining historic property uses (all of which have been determined to be not adverse in
42 nature), Package A also would result in two more historic property uses and seven more historic
43 ditch uses, all of which have been determined to be *de minimis*. By definition, even though
44 there are more total properties used, the *de minimis* nature of these uses illustrates the minor
45 nature of the harm. In addition, the remaining harm to these properties is minimal.

1 The relative significance of the Section 4(f) historic properties that are used is as follows:

- 2 ▶ Both the Colorado & Southern / BNSF Railroad Depot and the City Electric Building are
3 important elements of infrastructure necessary for the development of this region. The
4 depot served a key role in providing rail transportation service to early settlers. The
5 electric building in Longmont was one of the first municipally owned electric generation
6 plants.
- 7 ▶ The Hingley Farm and Denver Pacific/Kansas Pacific/Union Pacific/Denver and Boulder
8 Valley Railroad branch would have less significance because there were many
9 farmsteads on the Plains with multiple farmsteads remaining intact, and many railroad
10 tracks still evident on the Plains in this region.

11 The significance of the historic ditches can be most appropriately viewed in a context of the
12 nature of the regional study area, which is a historic agricultural area with hundreds of
13 agricultural ditches.

14 The views of the officials with jurisdiction are, in almost all of the cases of Section 4(f)
15 property use, not such that they would contribute to a discussion of relative harm. The
16 officials with jurisdiction in general were supportive of the project and did not feel that the
17 proposed property use was a significant effect to the attributes, activities, or features of the
18 remaining property. The one exception to this was expressed by the officials with jurisdiction
19 over the McWhinney Hahn Sculpture Park. This view is that the effects to the park property
20 from blocking the views of the sculpture park from US 34 and from users of the park to the
21 Rocky Mountains are such that the activities, attributes, and features of the park could no
22 longer serve the original intended use as a gateway to Loveland, and a replacement property
23 that would substitute for the park would likely be the most appropriate mitigation.

24 The degree to which Package A meets the purpose and need for the project (as compared
25 with Package B) is:

- 26 ▶ Would provide faster vehicle time than Package B by seven minutes.
- 27 ▶ Would provide more travel lanes for the general-purpose highway user, so would attract
28 more highway users.
- 29 ▶ Would more noticeably reduce travel on parallel arterial streets.
- 30 ▶ Would produce 3,400 more transit riders per day.

31 By contrast, Package B would result in more reliable, uncongested travel for users of the tolled
32 express lanes. Package B would provide greater automobile travel time savings compared to
33 Package A; 64 minutes in the tolled express lanes compared to 101 minutes for Package A.
34 Package B would also provide more travel time savings for transit users from Greeley and Fort
35 Collins, a savings of 21 minutes from Fort Collins and 32 minutes from Greeley (when compared
36 to Package A commuter rail.)
37

38 After reasonable mitigation, the adverse impacts to other resources as a result of Package A
39 would include impacts to established communities and business areas primarily in the
40 Longmont area as a result of 35 more residential and 17 more business displacements. Even
41 though this is a noticeable difference in residential and business relocations, the availability of
42 replacement housing and business sites would not indicate that this remaining adverse
43 impact would be of high magnitude. In addition, an adverse effect after mitigation would

1 result from the addition of commuter rail that will operate on a much more frequent basis than
2 the freight rail along the same corridor (with the addition of a second set of tracks) and the
3 addition of commuter rail along the alignment between Longmont and the FasTracks North
4 Metro corridor, where no rail service currently exists. In these locations, the commuter rail
5 service would serve to either create a new barrier between communities or to exacerbate the
6 barrier created by the existing freight rail service.

7 As a comparison, after reasonable mitigation, the adverse impacts as a result of Package B
8 would include 75.73 additional acres of direct removal of threatened, endangered, state
9 sensitive, and protected species habitat and traffic noise impacts (after mitigation) to 624
10 receivers as compared to 570 receivers with Package A. In addition, even after mitigation, the
11 239 additional acres of impervious surface associated with Package B would continue to result
12 in a greater quantity of stormwater runoff. Other greater impacts to terrestrial and aquatic habitat
13 and wetlands are able to be satisfactorily mitigated so that the remaining adverse effects are
14 minimal.

15 Package A is \$426 million more expensive to build and \$23 million more expensive to operate
16 than Package B. This would be considered a substantial cost difference.

17 In summary, the factors presented on the previous pages provide information that FHWA and
18 FTA will use (when combined with feedback from the Draft EIS public review process) to
19 determine which of the two build packages (and components of the two packages if they are
20 recombined into a new package) would cause the least overall harm in light of the statute's
21 preservation purpose.

1
2
3
4
5
6

THIS PAGE INTENTIONALLY LEFT BLANK