7.0 Final Section 4(f) and 6(f) Evaluation

7.1 Introduction

7.1.1 Summary of Results

The Section 4(f) analysis concluded that there would be a direct use of the Denver West Side Line (5DV3512.3), the Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (Waterworks Sales Co, J.M. Warner Co, & Richardson Lumber Spur) (5AM1888 and 5DV6243), and the Allen-Rand Ditch (5JF4454.1) and a *de minimis* use of the Jim Baker Reservoir. No Section 6(f) resources would be permanently impacted with the implementation of the Gold Line Preferred Alternative.

7.1.2 Purpose

Parklands, historic, and archeological resources are important community resources that need to be protected. Because of their importance, multiple regulations have been developed to avoid and protect these resources.

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."

Section 4(f) specifies that:

> "[t]he Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly-owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge or site) only if:
>
> 1. There is no prudent and feasible alternative to using that land; and
> 2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."

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

Section 6(f) of the Land and Water Conservation Act of 1965 contains strong provisions to protect federal investments and the quality of assisted resources. The law recognizes that some changes in land use or development may occur over time, particularly in rapidly changing urban areas and so it ensures that changes or conversions for recreational use will bear a cost. The language is as follows:

> "No property acquired or developed with the assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location."

The proposed action, as described in Chapter 2, Alternatives Considered, of the Gold Line Final Environmental Impact Statement (FEIS) (2009), is a transportation project that may receive federal funding and discretionary approvals through USDOT; therefore, documentation of compliance with Section 4(f) and 6(f) is required[1].

7.1.3 Section 4(f) "Use"

The "use" of a protected Section 4(f) resource can be classified as a direct use, a temporary use, a constructive use, or a *de minimis* use, as defined below.

Direct Use

A direct use takes place when the land is permanently incorporated into and used by a transportation facility.

Temporary Use

A temporary use occurs when there is a brief or temporary use, considered adverse in terms of the preservationist purposes (the attributes of the facility that qualify it for special recognition under Section 4(f)). After the period of use, the resource must be restored to the condition in which it was originally found.

A temporary occupancy of property *does not* constitute a use when the following conditions are satisfied:

- The occupancy would be temporary (shorter than the period of construction) and would 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 would be no permanent adverse physical effects to the protected resource, nor would there be temporary or permanent interference with activities or purpose of the resource.
- The property being used must be fully restored to a condition at least as good as what existed prior to the project.
- Documented agreement of the appropriate officials having jurisdiction over the resource must be acquired regarding the foregoing requirements.

[1] This Section 4(f) evaluation has been prepared in accordance with the joint Federal Highway Administration (FHWA) and Federal Transit Administration regulations for Section 4(f) compliance codified at 23 Code of Federal Regulations (CFR) §774 and Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2008). Additional guidance has been obtained from the FHWA Technical Advisory T 6640.8A (1987), and the revised FHWA Section 4(f) Policy Paper (2005). Land and Water Conservation Fund Act (Section 6(f)) 16 U.S.C. 4601-4 to 4601-11 (P.L. 88-578) and 36 CFR Chapter 1 Part 59.

Constructive Use

- Constructive use occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the impacts from the project's proximity are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired.

De Minimis Use

- Congress amended Section 4(f) in 2005 when it enacted the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). The SAFETEA-LU amendment to the Section 4(f) requirements allows the USDOT to determine that certain uses of Section 4(f) land will have no adverse effect on the protected resource. When this is the case, the use is considered *de minimis,* and compliance with Section 4(f) is greatly simplified and can be approved without the evaluation of avoidance alternatives typically required in a Section 4(f) evaluation.

  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 effect 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 Federal Transit Administration's (FTA) intent to make the *de minimis* impact finding based on their written concurrence that the project will not adversely effect the activities, features, and attributes that qualify the property for protection under Section 4(f); and
  3. The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resource.

7.1.4 Purpose and Need

The FTA, in cooperation with the Regional Transportation District (RTD), has initiated this Environmental Impact Statement (EIS) to identify and evaluate impacts related to the purpose of implementing fixed-guideway transit in the Gold Line study area between Denver Union Station (DUS) in Downtown Denver and Ward Road in Wheat Ridge.

The Gold Line project would help meet a number of specific needs:

- The need for mobility improvements, which would include:
  - Improved travel times over single-occupancy vehicle travel time in the corridor in 2030.
  - The provision of travel options.
  - Improvements to the regional transit system and rail system interconnectivity.
- The need to serve both traditional and new transit users.
- The need to provide environmental benefits to the Gold Line study area and the region.
- The need to be cost effective and the ability to be financed within the FasTracks program.

- The need to meet the voter mandate of the FasTracks program.

A full discussion of the project Purpose and Need is included in Chapter 1, Purpose and Need, of the Gold Line FEIS (2009).

7.1.5 Project Alternatives

Two alternatives are being considered in the Final Environmental Impact Statement (FEIS): the No Action Alternative and the Preferred Alternative for environmental impacts.

No Action Alternative

The No Action Alternative represents the region and the corridor in 2030 with no new major capital transit investment in the Gold Line study area. Transit improvements would include existing plus committed (E+C) improvements (existing or planned bus service). Three highway projects and two transit projects would be part of the No Action Alternative:

Highway Projects:

1. Reconfiguration of the Interstate (I)-70/SH 58 Interchange
2. Reconstruction of the I-70/Kipling Interchange
3. The addition of new lanes on Wadsworth Boulevard between 46th Avenue and 36th Avenue

Transit Projects:

The No Action Alternative also includes a 1.9 mile section of the Northwest Rail project alignment from Pecos Street northwest to approximately West 72nd Avenue and Lowell Boulevard.

Preferred Alternative

Proposed Alignment

The Preferred Alternative would begin at DUS, share its alignment with the Northwest Rail project to Pecos Street, and terminate at Ward Road in Wheat Ridge. None of the new track would be shared with existing or planned freight operations. A total of seven stations are included: 41st Avenue East in Denver; at Pecos Street and Federal Boulevard in Adams County; at Sheridan Boulevard, Olde Town, and Arvada Ridge in Arvada; and at Ward Road in Wheat Ridge.

The Preferred Alternative would operate eight trains per hour during the morning and evening rush hour. At the less busy times of the day, the train would operate at four trains per hour and during the late evening and early morning, two trains per hour would be provided. During weekends and holidays, train service would be four trains per hour from 8:00 a.m. to 9:00 p.m.

A more detailed description of the proposed alignment for the Preferred Alternative is given below.

DUS to Pecos Street

Beginning at DUS, the alignment would operate on a double-track system dedicated to commuter rail. From DUS, the shared Northwest Rail/Gold Line tracks diverge and pass underneath Wewatta Street at grade. After passing under Wewatta, the tracks would be located between Fox Street and the Park Avenue viaduct and rise approximately 35 feet above grade to cross the CML tracks and South Platte River.

On the north side of the South Platte River, the tracks would descend to grade and pass through private property. Slightly to the south of I-25 the tracks would enter the BNSF Railway ROW and pass under the existing easternmost span of the I-25 Bridge. From I-25 the alignment would enter private property, ascend on retained fill and fly over 38th Avenue approximately 10 feet higher and 50 feet east of the existing freight railroad bridges at 38th Avenue. The alignment would remain 8 to 10 feet above existing grade north to the vicinity of the 41st Avenue East Station, then ascend on a third structure to clear a relocated BNSF Railway Company Jersey Cutoff and return to grade to pass under I-70. It would then parallel the rail yards on retained fill, then rise on structure to clear the existing freight tracks at Utah Junction. Since the DEIS, one at-grade crossing for BNSF Railway Company maintenance vehicles has been added at the request of the railroad just to the south of I-25. However, there would be no at-grade track crossings or interconnections between the proposed commuter rail and the existing freight track network in this area.

In Denver, the 41st Avenue East Station would be located on private property east of the North Yard. An electric power substation would be located on the northeast corner of 43rd Avenue and Jason Street. The Pecos Station would be located north of the alignment, east of Pecos Street.

Pecos Street to Ward Road

The alignment would return to grade just east of Pecos Street and turn west, paralleling I-76 until it passes under this interstate highway and merges back into the railroad ROW, following it on the north. The proposed Federal Station would be located to the north of the tracks and immediately to the east of Federal Boulevard. The alignment would then continue on the north side of the track and cross Federal Boulevard and Clear Creek on structure. It would cross Lowell Boulevard and Tennyson Street at grade. The Sheridan Station would be located immediately east of Sheridan Boulevard. The alignment would then pass under Sheridan Boulevard. After passing under the Sheridan Bridge, the trackway would rise on retained fill and structure to cross over the UP Moffat Line, meeting grade west of Sheridan Boulevard between the BNSF Railway Company and UP rail lines.

After crossing over the Moffat Line tracks, the alignment would follow the BNSF Railway Company track that serves Golden along the north side of the existing ROW. To avoid impacts in areas of constrained ROW, a segment of single track would be constructed beginning immediately east of Ralston Road and Ralston Creek. The alignment would then pass under Ralston Road and cross over Ralston Creek on a single-track structure. It would remain at grade along the north side of the freight tracks to the Wadsworth Bypass, where a new single-track bridge would be built to cross the Wadsworth Bypass. West of the Wadsworth Bypass, the single track continues at grade to the Olde Town Station, and on to the vicinity of Balsam Street. From this point, the alignment would be double track to the Ward Road Station.

Two new bridges, one for the commuter rail and one for the freight rail, would be constructed over Kipling Street. There are no other bridges in this section.

Stations would be located at Arvada Ridge, just west of Kipling Street and 1,200 feet east of Ward Road.

Commuter Rail Maintenance Facility

The vehicles for all the FasTracks commuter rail projects would be serviced at a central Commuter Rail Maintenance Facility (CRMF), located immediately north of 48th Avenue in on what is referred to as the Fox North Site, which straddles both Denver and Adams counties.

7.1.6 Approach/Methodology

This chapter describes how the proposed project would use Section 4(f) resources or result in impacts to Section 6(f) resources. For the resource, there is a resource description and an overview of Section 4(f) uses, followed by a description of measures to minimize harm, and mitigation measures that have been considered. In every instance, an assessment has been made to whether any permanent or temporary use of a resource would occur and whether the proximity of the project would cause any access disruption, ecological intrusion, noise, or aesthetic effects that would substantially impair the features or attributes that qualify the resource for protection under Section 4(f).

7.2 Historic Resources

Prior to completing the Section 4(f) analysis, a Section 106 evaluation was completed to determine the significance of historic sites. The purpose of the Section 106 analysis is to protect cultural resources that are listed on or eligible for the National Register of Historic Places (NRHP) and that may be affected by federal undertakings. Table 7-1 summarizes the effects to eligible or listed archeological and historic resources.

TABLE 7-1
Summary of Impacts and Effects to Eligible or Listed Archeological and Historic Resources

Section	Smithsonian Site #	Segment Site #	Address/ Location	Eligibility Criterion	Direct Impacts	Effects Findings
Summary of the Archeological Resource						
Arvada	5JF2739	5JF2739.3	Wadsworth Ditch	Criterion A	Reconstruction of the rail crossing the former ditch	No Adverse Effect
Arvada	5JF4452	5JF4452.1	Denver & Northwestern Denver Tramway Grade	Criterion A and D	None	No Historic Properties Affected
Summary of Historic Resources						
Denver	5DV6243	5DV6243.5	Colorado & Southern siding to Clark's Junction Railroad and Denver Marshall & Boulder (Union Pacific Denver & Gulf, Colorado & Southern, Chicago Burlington & Quincy) mainline siding to Denver Union Terminal	Criterion A	This segment would require the addition of commuter rail to the corridor, including new rail and ballast, and hardware replacement. These adjustments are consistent with standard railroad maintenance activities continuously conducted.	No Adverse Effect
		5DV6243.6			None	
Denver	5DV6247	5DV6247.4 and 5DV6247.5	Burlington & Missouri River Railroad	Criterion A	None	No Historic Properties Affected
Denver	5DV9173	NA	705 38th Avenue (Texaco Site)	Criterion A and C	None	No Historic Properties Affected
Denver	5DV10434	NA	639 W. 39th Avenue (Town & Country Motel)	Criterion A	None	No Historic Properties Affected
Denver	5DV9174	NA	4101 Inca Street	Criterion A	None	No Historic Properties Affected
Denver	5DV3512	5DV3512.3	Denver West Side Line – Union Pacific Denver & Gulf Railroad (Colorado & Southern and Chicago Burlington & Quincy)	Criterion A	Reconstruction of this feature west of its existing location.	Adverse Effect

Section	Smithsonian Site #	Segment Site #	Address/ Location	Eligibility Criterion	Direct Impacts	Effects Findings
Denver	5DV10486	5DV10486.1	Boston & Colorado Smelting Company/Denver Sewer Pipe & Clay Company	Criterion A	This segment of the Boston & Colorado Smelting Company/ Denver Sewer Pipe & Clay Company railroad spur would require the addition of commuter rail to the corridor, including new rail and ballast, and hardware replacement. These adjustments are consistent with standard railroad maintenance activities continuously conducted.	No Adverse Effect
Denver	5AM1888 and 5DV6243	5AM1888.5 and 5DV6243.7	Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (Waterworks Sales Co, J.M. Warner Co, & Richardson Lumber Spur)	Criterion A	Removal of this resource to construct CRMF facility and yard	Adverse Effect
Adams	5AM982	5AM982.3	Denver, Northwestern & Pacific /Denver & Salt Lake Railroad	Criterion A	None	No Historic Properties Affected
Adams	5AM1538	5AM1538.2	Denver, Laramie & Northwestern	Criterion A	None	No Historic Properties Affected
Adams	5AM1748	NA	Fisher Ditch	Criterion A	Existing railroad currently crosses this ditch	No Adverse Effects
Adams	5AM1888	5AM1888.2 and 5AM1888.3	Denver, Marshall & Boulder/Denver Utah & Pacific	Criterion A	None	No Historic Properties Affected
Adams	5AM2089	5AM2089.1	Kershaw Ditch	Criterion A	Existing railroad currently crosses this ditch	No Adverse Effect
Adams	5AM2094	NA	5900B Federal Boulevard	Criterion C	None	No Historic Properties Affected

Section	Smithsonian Site #	Segment Site #	Address/ Location	Eligibility Criterion	Direct Impacts	Effects Findings
Arvada	5JF1278	NA	Arvada Downtown Historic District	Criterion A and C	None	No Adverse Effect
Arvada	5JF1942	NA	Reno Park Addition Historic District	Criterion A and C	None	No Adverse Effect
Arvada	5JF1943	NA	Stocke/Walter Addition Historic District	Criterion A and C	None	No Adverse Effect
Arvada	5JF181	NA	5580 Old Wadsworth Boulevard	Criterion A and C	None	No Adverse Effect
Arvada	5JF437	NA	7530 Grandview Avenue	Criterion A and C	None	No Adverse Effect
Arvada	5JF519	5JF519.4	Colorado & Central/Colorado & Southern Railroad	Criterion A	None	No Adverse Effect
		5JF519.6			None	No Adverse Effect
		5JF519.11			Addition of electric rail to the corridor including new rail and ballast and hardware replacement.	No Adverse Effect
Arvada	5JF2346	5JF2346.1	Denver Northwestern & Pacific/Denver & Salt Lake Railroad	Criterion A	None	No Historic Properties Affected
		5JF2346.9				
Arvada	5JF4454	5JF4454.1	Allen-Rand Ditch	Criterion A	This ditch segment would be relocated 10-15 feet to the north to accommodate the Preferred Alternative. Existing rail corridors and roadways already cross this linear resource. However, approximately 40% of the length of the entire resource would be impacted.	Adverse Effect

Section	Smithsonian Site #	Segment Site #	Address/ Location	Eligibility Criterion	Direct Impacts	Effects Findings
Wheat Ridge	5JF4462	NA	11818 52nd Avenue	Criterion C	None	No Historic Properties Affected
Wheat Ridge	5JF4463	NA	Address Unknown	Criterion C	None	No Historic Properties Affected
Wheat Ridge	5JF4362	5JF4362.2	Reno-Juchem Ditch	None	Existing railroad currently crosses this ditch	No Adverse Effect

Source: Gold Line Team, 2009

The Denver West Side Line (*5DV3512.3*), the Denver Utah Pacific railroad, Chicago Burlington Quincy Siding & Spur (5AM1888.5 and 5DV6243.7), and the Allen-Rand Ditch (*5JF4454.1)* would be the three historic resources characterized with a use under Section 4(f). The Denver West Side Line (*5DV3512.3)* would be impacted as a result of the 41st Avenue East Station. The Denver Utah Pacific railroad, Chicago Burlington Quincy Siding & Spur (5AM1888.5 and 5DV6243.7) would be impacted as a result of the CRMF and the Allen-Rand Ditch (*5JF4454.1)* would be impacted as a result of the alignment. These resources are further described in Table 7-2 and in the sections below.

TABLE 7-2
Section 4(f) Historic Resources

Smithsonian Site #	Name	NRHP Eligibility Criteria	Section 106 Effect Finding	Section 4(f) Use
5DV3512.3	Denver West Side Line	Criterion A	Adverse Effect	Direct Use
5AM1888 and *5DV6243*	Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (Waterworks Sales Co, J.M. Warner Co, & Richardson Lumber Spur)	Criterion A	Adverse Effect	Direct Use
5JF4454.1	Allan-Rand Ditch	Criterion A	Adverse Effect	Direct Use

Source: Gold Line Team, 2009

Denver West Side Line – Union Pacific Denver & Gulf Railroad (Colorado & Southern and Chicago Burlington & Quincy), (*5DV3512.3*)

Resource Description

This railroad segment is a standard gauge section of the Denver West Side Line (Figure 7-1). Access to this segment was limited but visible from a distance and on maps. The Denver West Side Line was a railroad built by the Union Pacific Denver & Gulf (UPD&G). The UPD&G was a consolidation of several railroads, including the Denver Marshall & Boulder and the Colorado Central. This segment measures approximately 10 to 15 feet wide, is approximately 500 feet long (from approximately 42nd Avenue to 43rd Avenue), and has light colored or no ballast. The tracks appear to be at-grade, surrounded primarily by asphalt.

FIGURE 7-1
Denver West Side Line

Source: Gold Line Team, 2009

This segment is used as a repair in place track by current owner BNSF for storage of trucks and wheels. Previously this segment was used as an industrial siding to deliver materials to the industries east of the railroad yard.

Eligibility Determination

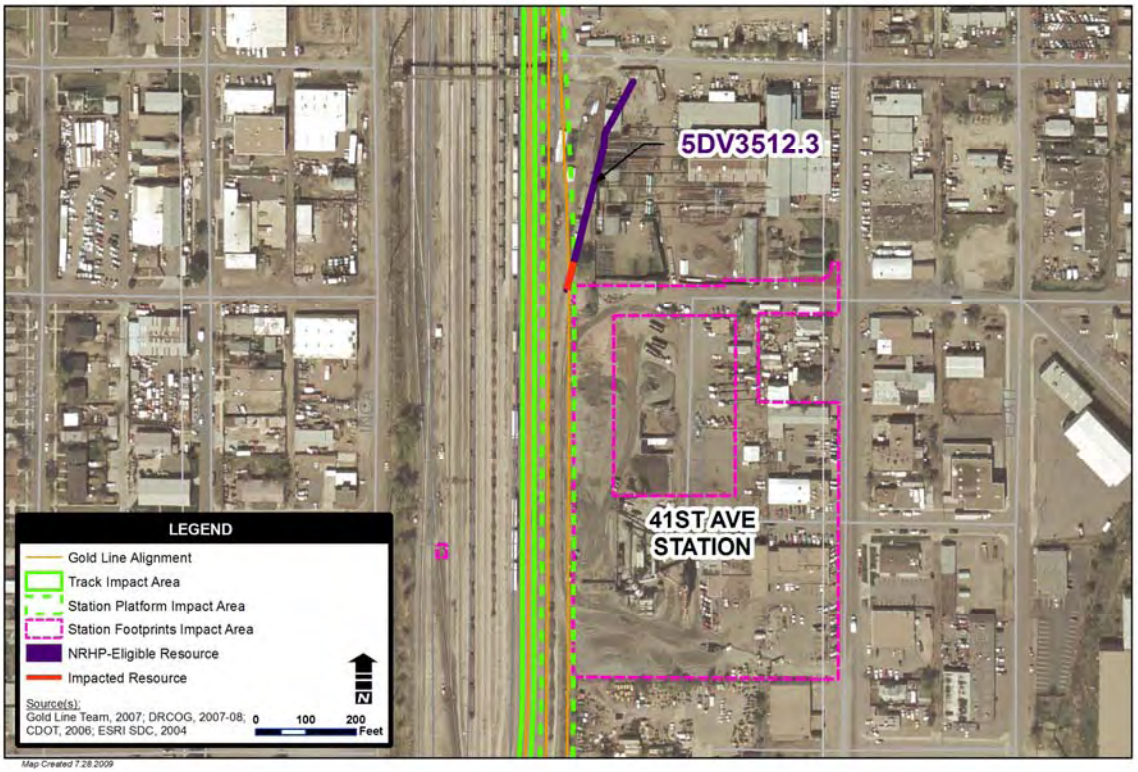
The linear resource is eligible for listing in the NRHP under Criterion A for its association with the expansion of the rail network in Colorado. The segment has lost material and

workmanship integrity due to continuous maintenance and movement of tracks by BNSF Railway Company. However, it retains sufficient feeling, setting, and association to support the eligibility of the resource as a whole. The State Historic Preservation Officer (SHPO) concurred that this resource is NRHP eligible on February 4, 2009. The Section 106 analysis concluded that the project would result in an Adverse Effect on this resource. SHPO concurred with the finding of adverse effect on February 19, 2009.

Section 4(f) Use

Construction of the 41st Avenue East Station requires the track to widen in the location for access to the station, resulting in the impact to segment 5DV3512.3 of this linear resource. The construction of the station and introduction of commuter rail technology to the existing freight rail corridor would include the addition of a new rail structure, hardware, ballast, and station facilities. Adjustments to the existing freight rail would result in direct impacts to this segment of this historic rail feature (Figure 7-2). This segment is used as a repair in place track by current owner, BNSF, for storage of trucks and wheels. As a standard part of rail maintenance, the freight rail and other rail features are continually upgraded, replaced, or moved by railroad companies. The repair in place use would be relocated to the west of the existing track. The entire linear resource is NRHP eligible under Criterion A (transportation) for its association with the expansion of the rail network, and the site would remain as an active railroad (transportation) facility. However, the segment would be moved from its current location. The segment would be replaced with the shared Gold Line and Northwest Rail track (hardware and ballast), rail structure, and station facilities. Therefore, moving this segment would result in a direct use of this resource.

FIGURE 7-2
Impacts to the Denver West Side Line



Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (Waterworks Sales Co, J.M. Warner Co, & Richardson Lumber Spur) (5AM1888.5 and 5DV6243.7)

Resource Description

Because this single linear resource crosses two jurisdictions (City and County of Denver and Adams County), the resource has been assigned two identification (Smithsonian) numbers, with corresponding segment numbers. However, for purposes of analysis, it is discussed as one continuous, linear resource.

This railroad is a standard-gauge siding located along the western edge of Fox Street. The rails are generally at grade with light-colored gravel ballast. The grade measures approximately 10 feet wide, depending on ballast, and the segment is approximately 2,000 feet long. The line provides industrial rail access to the Rocla Concrete Tie, Inc. facility. The segment merges with a track north of the Fox North site (Figure 7-3).

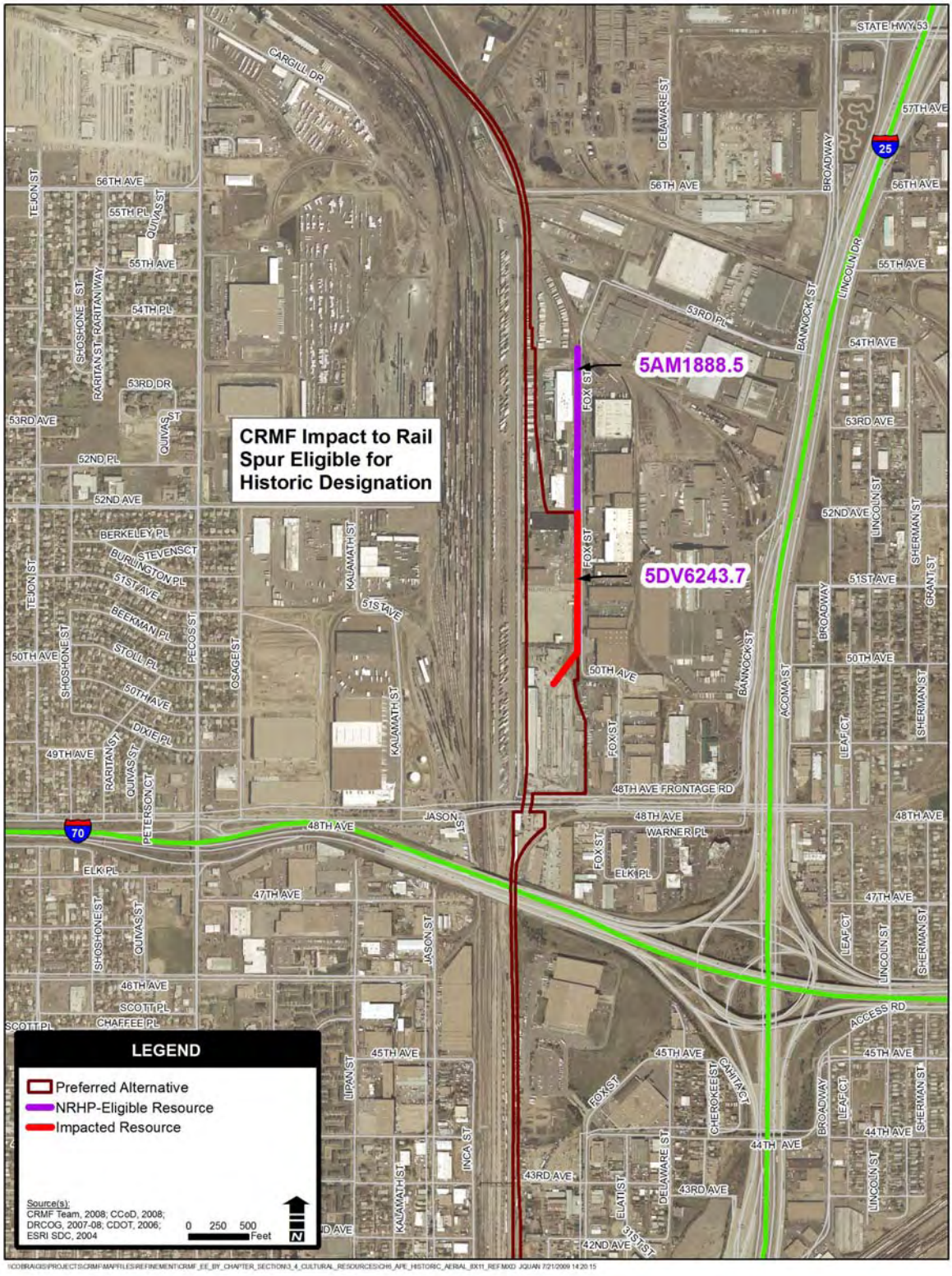
Eligibility Determination

The linear resource is eligible for listing in the NRHP under Criterion A for its association with the expansion of the rail network throughout Colorado. The segment has lost material and workmanship integrity due to continuous railroad maintenance including replacement of rail, ballast, or other material parts, and movement of the track as needed by the railroad and adjacent businesses. However, the entire resource retains sufficient integrity of setting, feeling, and association to be considered eligible for the NRHP. The segment within the Area of Potential Effect (APE) retains sufficient integrity to support the eligibility of the resource as a whole. The SHPO concurred this entire linear resource is NRHP eligible on February 4, 2009. The Section 106 analysis concluded that there would be an Adverse Effect to the historic linear resource as a result of the Preferred Alternative. SHPO concurred with the finding of adverse effect on February 19, 2009.

Section 4(f) Use

Implementation of the Preferred Alternative would result in a direct use to 5AM1888.5 and 5DV6243.7 of this linear resource. Implementation would require adding a new railyard at this location. A portion of the surveyed segment would be replaced with new rail, ballast, and facilities to maintain the FasTracks commuter rail trains.

FIGURE 7-3
Impacts to the Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur



Allan-Rand Ditch (5JF4454.1)

Resource Description

William Allen and William (also called Charles) Rand built this ditch to irrigate their neighboring farms. This is a good example of early ditch construction by independent citizens to irrigate their agricultural crops. Water rights for this ditch were not found but may possibly be tied to the Rand Ditch with rights on Leyden Creek in 1867. The ditch's total length is approximately 6,150 feet. This segment of the Allen-Rand Ditch is approximately 2,500 feet. It is an unlined irrigation channel that emerges from underground via a plastic corrugated pipe. The channel runs east-west on the south side of Ridge Road and at the far north edge of the railroad ROW (Figure 7-4). The channel measures 2 feet wide and 2 feet deep. Several small concrete box foundations are at the east end, probably for pumps to transfer water to another lateral or property. The ditch ends at Carr Street where it is piped underground and turns to the north. The integrity of this segment of the ditch is intact, as little has been done to modernize the ditch, with the exception of sections now being piped under roads.

FIGURE 7-4
Allan-Rand Ditch

Eligibility Determination

The Allen-Rand Ditch is eligible for listing in the NRHP under Criterion A for its association with early high plains agriculture and contribution to the broad patterns of Colorado history. This segment is able to convey the significance of the irrigation resource as a whole. On September 8, 2008, SHPO concurred this segment retains sufficient integrity to support the overall eligibility of the entire resource. The Section 106 analysis concluded that the project would result in an Adverse Effect on this resource. SHPO concurred with the finding of adverse effect on February 19, 2009.

Section 4(f) Use

The Preferred Alternative would impact a segment of this linear resource. The construction of the commuter rail features along the current freight railroad corridor would result in movement of approximately 2,500 feet of the resource approximately 10 to 15 feet north of its current location (Figure 7-5). The relocated portion of this ditch accounts for approximately 40% of the entire 6,150 foot-long linear resource. Within the relocated portion of the ditch, approximately 1,100 feet would be piped to cross under the railroad or adjacent Ridge Road. The remainder of the ditch would continue to be open. Existing rail corridors and roadways already cross this linear resource and the resource is currently piped in multiple locations. The addition of electric commuter rail technology to the freight rail corridor would include addition of new rail, hardware, ballast, and the construction of a catenary pole system. Movement of this segment would result in a direct use of this resource.

FIGURE 7-5
Impacts to the Allan-Rand Ditch

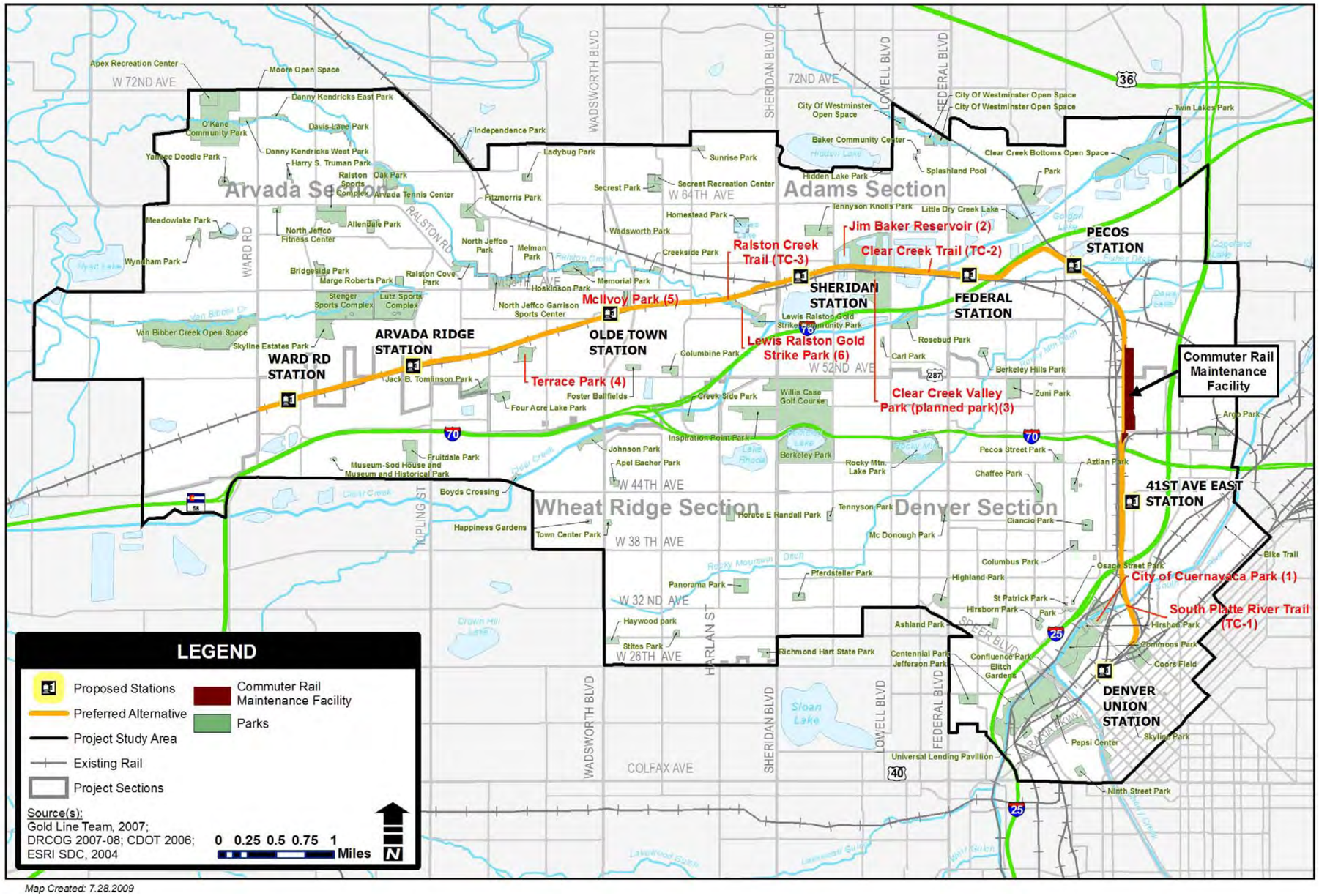
7.3 Parks and Recreational Resources

A total of 113 parks and open space resources exist within the Gold Line study area (Figure 7-6). Eleven of the 113 parks were acquired with Land and Water Conservation Funds (LWCF) funds (LWCF, 2004). None of these parks are located within the 300-foot buffer around the alignment, except the South Platte River Trail. No National Wildlife Refuges are located within the Gold Line study area. Two State Wildlife Areas are located within the Gold Line study area.

Eight existing parks and recreation Section 4(f) resources are located within 300 feet of the Preferred Alternative (Table 7-3). One additional park, Clear Creek Valley Park, is currently planned within 300 feet of the proposed alignment. None of these parks were acquired or renovated with LWCF, which would make them eligible for protection under 6(f), except for the South Platte River Trail. A portion of the Ralston Creek Trail was developed with LWCF funds, but the area that was acquired with the funding is not located within the 300-foot buffer around the proposed alignment.

The proposed project would not result in a Section 4(f) use of the South Platte River Trail, Clear Creek Trail or Ralston Creek Trail since all of the requirements of a temporary occupancy are met, as described in Section 7.1.3. There is no permanent acquisition of the South Platte River Trail; therefore there is also no Section 6(f) impact. Information about coordination with the official with jurisdiction of the resource follows in Section 7.6.

FIGURE 7-6
Parks and Open Space Resources in the Gold Line Study Area



Map Created: 7.28.2009

TABLE 7-3
Park Resources Located within 300 Feet of the Shared Alignment

Map Resource ID	Resource Name	Resource Description	Size in Acres	Access	Usage/ Patronage	Ownership	Relationship to Other Resources
Denver Section							
Trail Crossing (TC)-1	South Platte River Greenway	Multi-use trail	NA	Bicycle, pedestrian and kayak	Public/annual patronage unknown	City and County of Denver	Part of trail system
1	City of Cuernavaca Park	Multi-use trails, picnic tables, fields and a baseball field	29	Auto, bicycle, pedestrian and kayak	Public/annual patronage unknown	City and County of Denver	Connected to Hirshborn Park
Adams Section							
2	Jim Baker Reservoir	Multi-use trails and fishing	46	Auto, bicycle, and pedestrian	Public/annual patronage unknown	City of Westminster[1]	None
3	Clear Creek Valley Park (planned park)	Multi-use park including a potential underpass to the Jim Baker Reservoir	85	NA	Public/NA	Hyland Hills Park and Recreation District	None
TC-2	Clear Creek Trail	Multi-use trail	NA	Bicycle and pedestrian	Public/annual patronage unknown	Adams County	Part of trail system
Arvada Section							
4	Terrace Park	Multi-use trails, picnic tables, baseball field, and fields	10.5	Auto, bicycle, and pedestrian	Public/annual patronage unknown	City of Arvada	None
5	McIlvoy Park	Picnic tables	2.5	Auto, bicycle, and pedestrian	Public/annual patronage unknown	City of Arvada	None
TC-3	Ralston Creek Trail	Multi-use trail	NA	Bicycle and pedestrian	Public/annual patronage unknown	City of Arvada	Part of trail system
6	Lewis Ralston Gold Strike Park	Picnic table, parking area, and access to bike path	14	Auto, bicycle, and pedestrian	Public/annual patronage unknown	City of Arvada	Access to Ralston Creek Trail
No park resources are located in the Wheat Ridge Section							

Sources: Adams County, 2006c; City of Arvada, 2006; City of Westminster, 1996; Hyland Hills Parks and Recreation District, 2006 and 2007

[1] Intergovernmental agreement with Adams County who manages the reservoir for recreational activities.

The Jim Baker Reservoir is the only park and recreation resource that would be used as a result of the project and that use is considered *de minimis*, as discussed below (Table 7-4).

TABLE 7-4
Summary of Section 4(f) Parks Resources

Figure and ID Number	Resource	Location	Amenities	Official with Jurisdiction	Section 4(f) Use
Adams Section					
2	Jim Baker Reservoir	Tennyson Street and West 60th Avenue	Multi-use trails, fishing dock, picnic tables	Adams County[1]	*De minimis use*[2]

Source: Gold Line Team, 2007
[1] This property is owned by the City of Westminster to store water, but is managed by Adams County as a recreational facility.
[2] Adams County, the official with jurisdiction, concurred with the *de minimis* use of Jim Baker Reservoir. After consideration of public input FTA will make a determination on the *de minimis* finding.

Jim Baker Reservoir

Resource Description

The BNSF Railway Company/UP Alignment is located south of the Jim Baker Reservoir (Resource 2) in Adams County (Table 7-4 and Figure 7-7). The Jim Baker Reservoir is owned by the City of Westminster and used as a water reservoir. The City has an intergovernmental agreement with Adams County, who manages the facility for recreational activities. The Jim Baker Reservoir includes multi-use trails, fishing docks, and picnic tables.

FIGURE 7-7
Jim Baker Reservoir

Section 4(f) Use

As part of the Preferred Alternative, a new trackway would need to be constructed north of the existing BNSF Railway Company/UP tracks. The alignment would result in the acquisition of approximately 0.11 acre of a natural landscaped area located between the road/path and the alignment (Figure 7-7). This landscaped area is not used for any activities and does not include any park features such as benches or picnic tables. Therefore, the acquisition of this area would not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f). During construction activities, park users would be able to continue using the path. The cantilever walkway would not impact larger vehicles from driving on the road/path.

As a result of modifications to the Tennyson Street grade-crossing the elevation of Tennyson Street would rise by approximately 1 foot. Thus, the park entrance would need to be re-graded, which would cause a temporary closure of the parking lot for 1 or 2 days. During this time, temporary parking would be provided on the west side of Tennyson Street so that park users would not be impacted.

7.4 Avoidance Alternatives

As stated in 23 CFR 771.135(i), alternatives that would avoid Section 4(f) properties must be identified and evaluated. A total of four transportation modes (EMU, Diesel Multiple Unit (DMU), light rail transit (LRT), and Streetcar) and 26 alternatives were evaluated in five screening levels. A full discussion of the screening process is included in Chapter 2, Alternatives Considered of the Gold Line FEIS (2009).

Corridor-Wide Avoidance Alternatives

No Action Alternative

The No Action Alternative would include E+C transit improvements in the Gold Line study area and three highway improvement projects. Because this alternative would not include fixed-guideway transit between DUS and Ward Road in Wheat Ridge, it would not meet the Purpose and Need of the project; therefore, it is not a prudent and feasible alternative.

Resource-Specific Avoidance Alternatives

Historic Resources

Denver West Side Line (5DV3512.3)

The alignment in this area is constrained to the west by the BNSF Railway Company ROW (Figure 7-5), which RTD is unable to acquire without purchasing the entire BNSF Railway Company TOFC yard and the BNSF Rennick Yard. Therefore, shifting the alignment to the west is not a prudent and feasible avoidance alternative since it would result in additional costs of an extraordinary magnitude. Shifting the alignment to the east would also not avoid the Denver West Side Line since this resource angles from the BNSF Railway Company property to the northeast to approximately Fox Street, as shown on Figure 7-2, above. Therefore, this is not a prudent and feasible avoidance alternative since the resource would not be avoided by shifting the alignment to the east.

Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (5AM1888 and 5DV6243)

Multiple design adjustments were incorporated in an effort to avoid and minimize impact to the historic resource, while maintaining the function and purpose of the Preferred Alternative. As a result of a Peer Review process that occurred in 2008, the layout and design of the CRMF was adjusted from original plans, which allowed it to fit on the Fox North Site. This modified design and site layout is the smallest impact footprint of the

various sites considered. Previous sites that were evaluated were up to 90 acres, while the Fox North Site is approximately 30 acres. For example, the number of tracks required for each railyard was reduced to the minimum number practicable to operate the facility. While the facility does function appropriately; this is a less-efficient (less preferred) design in operations. This operational compromise was made to avoid costs and impacts.

As a result, additional major design changes to avoid this resource are not prudent and feasible because they would not allow the facility to support all commuter rail FasTracks corridors, one of the project goals.

The project team analyzed four avoidance alternatives (north, south, east and western options for the site). One common issue with all of these options was that they would incur costs of extraordinary magnitude and would therefore not meet the Gold Line Purpose and Need, which states that any proposal that is considered should meet the "Need to be cost-effective and financed within the *FasTracks Plan*". There were additional feasibility issues with each of these options as well as seen in Table 7-5. The avoidance alternatives and the reasons why they would not avoid the historic resource and are not prudent and feasible are described as well.

TABLE 7-5
Avoidance Alternatives for the Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (5AM1888 and 5DV6243)

Avoidance Alternatives	Impacts	Is it a Prudent and Feasible Avoidance Alternative?
North Option	This option would not avoid the use of the historic resource because the width of the CRMF site is already at its minimum clearance, and the resource continues to the north. This option would require the acquisition and relocation of the BNSF trailer parking facility resulting in cost issues.	**No** – This is not a prudent and feasible avoidance alternative because it would not avoid the use of the Section 4(f) Resource (§774.17 [*A feasible and prudent avoidance alternative avoids using Section 4(f) property…"]).* In addition, the acquisition of this BNSF property would result in the acquisition of the BNSF TOFC and Rennick Yards. It is doubtful that BNSF would offer the sale of this property to RTD. Even if the BNSF agreed to a sale, this would result in costs of an extraordinary magnitude and would not meet the cost effective criteria of the Purpose and Need. As a result this alternative is not prudent and feasible since it results in other severe problems of an extraordinary magnitude that substantially outweighs the importance of protecting this Section 4(f) resource.

Avoidance Alternatives	Impacts	Is it a Prudent and Feasible Avoidance Alternative?
East Option	This option would not avoid this resource because it is located on the eastern edge of the CRMF site.	**No** – This is not a prudent and feasible avoidance alternative for several reasons. First, it would not avoid the use of the Section 4(f) Resource (§774.17 [*A feasible and prudent avoidance alternative avoids using Section 4(f) property…"]),* since the alignment would need to cross the resource to access a new eastern site. Second, shifting the facility to the east of Fox Street would result in costs of extraordinary magnitude since additional businesses would need to be acquired and more employees would need to be relocated. Thus, this option would not allow the reuse of "surplus" industrial property acquired for the Gold Line, in effect doubling the impacts and cost. This would not meet the cost effective criteria of the Purpose and Need and therefore is not prudent and feasible. Third, a shift to the east would require the closure of the Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (the Section 4(f) resource) since commuter rail (for the CRMF) and freight rail need to be grade separated and the horizontal alignment would not allow the construction of a grade separation. This closure would impair the economic viability of the businesses dependent on this spur. Therefore, this option is not prudent and feasible. As a result of all of these reasons, this alternative is not prudent and feasible since it results in other severe problems of an extraordinary magnitude that substantially outweighs the importance of protecting this Section 4(f) resource.

Avoidance Alternatives	Impacts	Is it a Prudent and Feasible Avoidance Alternative?
South Option	This option would impact 48th Avenue and the BNSF Railway Company Jersey Cutoff. The BNSF Railway Company Jersey Cutoff is an eligible historic resource also and this option would impact I-70 having major cost repercussions.	**No** – Shifting the facility to the south would result in additional costs of an extraordinary magnitude, resulting in a failure to meet Purpose and Need. This shift would impact BNSF Railway Company operations and require additional purchase and relocation of the BNSF Railway Company 31st Street Yard and the BNSF Railway Company Jersey Cutoff track. Additionally, the BNSF Railway Company Jersey Cutoff track is an NRHP-eligible historic resource. Multiple BNSF Railway Company customers served by the 31st Street Yard would require relocation as well. The cost for this option is approximately two times more than the Preferred Alternative, which would not meet the cost effective need. In addition, a southern shift of the facility is also limited by I-70 and would not be feasible to build without reconstruction of I-70. Therefore, this is not a prudent and feasible avoidance alternative, nor does it meet the requirements of the Purpose and Need. As a result, this alternative is not prudent and feasible since it results in other severe problems of an extraordinary magnitude that substantially outweigh the importance of protecting this Section 4(f) resource.
West Option	Shifting the facility to the west would impact the BNSF Railway Company TOFC Yard and all through freight railroad operations in this area.	**No** – Shifting the facility to the west would result in additional costs of an extraordinary magnitude. This shift would impact BNSF Railway Company operations, requiring purchase and relocation of both the entire BNSF Railway Company TOFC Yard and Rennick Yard. As mentioned above, it is probable that the BNSF Railway Company would not agree to sell this real estate to RTD. The cost of this option is approximately two times more than the Preferred Alternative. Therefore, this is not a prudent and feasible avoidance alternative, nor does it meet the requirements of the Purpose and Need. In addition, this alternative is not prudent and feasible since it results in other severe problems of an extraordinary magnitude that substantially outweighs the importance of protecting this Section 4(f) resource.

Source: Gold Line Team, 2009

Allan-Rand Ditch (5JF4454.1)

The railroad ROW in the area around the Allan-Rand ditch is approximately 100 feet wide and is surrounded by residential properties to the north and south of the alignment. An alignment shift to the north or south would not be a prudent and feasible avoidance alternative since it would result in severe adverse social impacts and extraordinary community disruption. This is because the alignment would be shifted outside of the railroad ROW for a distance of approximately 2.7 miles. On the north side of the alignment this would result in the acquisition of approximately 93 single-family residences. On the south side this would result in impacts to approximately 39 single family-residences and 13 multi-family building. These avoidance alternatives result in severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) resource and therefore they are not prudent and feasible avoidance alternatives.

Parks and Recreation Resource

Since impacts to the Jim Baker Reservoir are assumed to be considered a *de minimis* use, resource specific avoidance alternatives are not required (Section 6009 amended Title 23 United States Code [USC] Section 138).

7.5 Measures to Minimize Harm

Historic Resources

Denver West Side Line (5DV3512.3)

Design modifications to minimize harm to this resource were evaluated; however, due to the orientation and its proximity to the BNSF Railway Company property, they were not feasible. Table 7-6 summarizes the mitigation measures for the Denver West Side Line (5DV3512.3).

TABLE 7-6
Mitigation Measures – Denver West Side Line (5DV3512.3)

Use	Use Type	Mitigation Measures
Property Acquisition	Operations	• A Memorandum of Agreement (MOA) has been completed between FTA and the SHPO and is included in Appendix D.

Source: Gold Line Team, 2009

Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (5AM1888 and 5DV6243)

RTD redesigned the CRMF to minimize the impact on the Owens Corning facilities. This involved some modifications to the original design and operational criteria and included the following measures:

Design Change 1 - Reducing the minimum vehicle storage requirements at the CRMF to 78 vehicles (the full 2015 fleet) from 96 (the full 2030 fleet), with the assumption that the additional 18 vehicles would be stored that the end of line (EOL) of the Gold Line, North Metro and Northwest Rail corridors (this would involve storing 6 vehicles at the end of line for each of the following commuter rail corridors; Gold Line, Northwest Rail and the North Metro commuter rail corridors. No end of line storage would be assumed for the East Corridor due to security concerns at Denver International Airport). It should be noted that EOL storage for morning startup would most likely be needed regardless of the CRMF storage capacity, due to the need to avoid morning dead-head (with no passengers) runs. This option would save site space, but would slightly reduce the amount of storage in the yard.

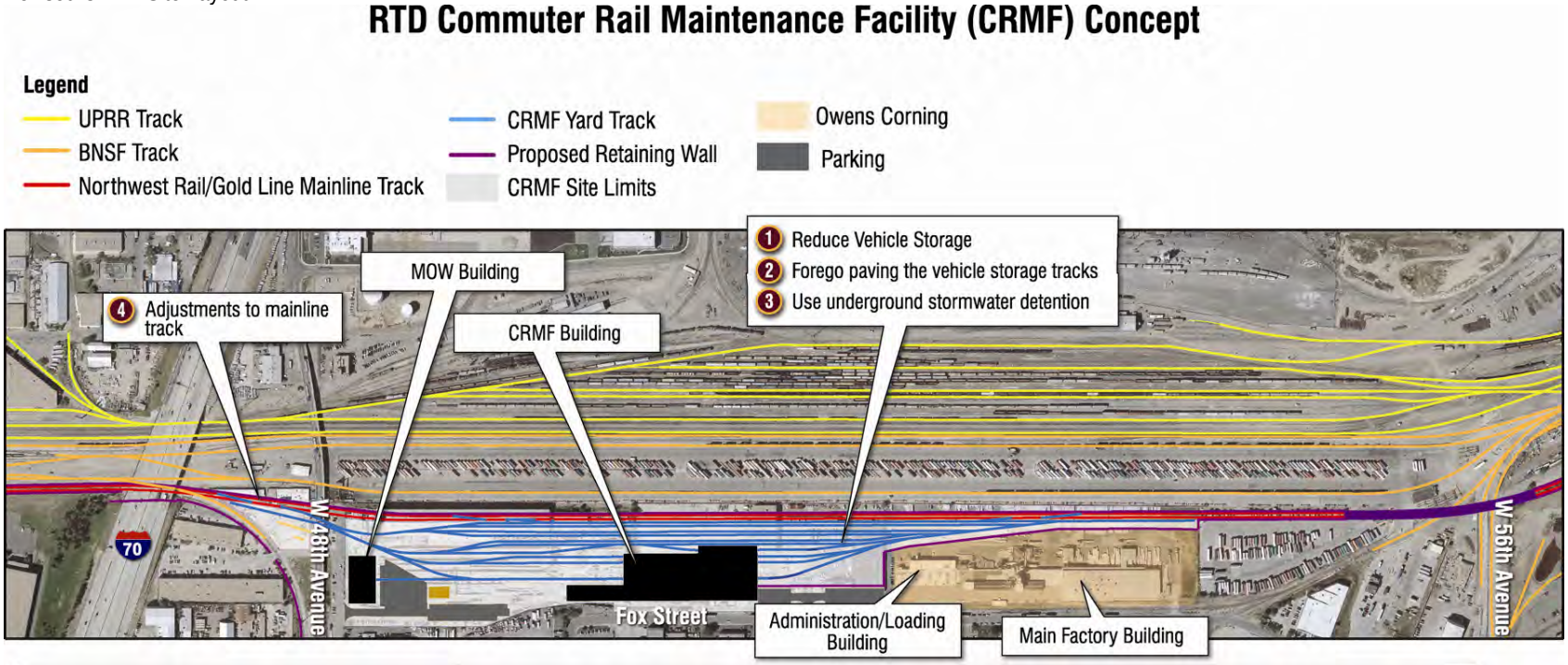
Design Change 2 – By not paving the yard as mentioned above (the area between the storage tracks), the amount of impervious surface is replaced with pervious ballast. This reduces the amount of storm runoff and thus also reduces the amount of onsite detention. Reducing the amount of paving is also a construction cost savings, but is expected to increase future maintenance for replacement of ballast.

Design Change 3 – Underground storm water detention, and reduced overall detention requirements based on less impervious surface accomplished by not paving significant areas of the CRMF, would be provided to reduce the surface area of the site. Underground storm water detention is more expensive than surface detention and presents ongoing maintenance (hence cost) concerns. Eliminating the surface detention saves approximately 1.5 acres of the OC site.

Design Change 4 – Adjust the mainline track not only accommodates southern movements from the CRMF to DUS. This also allows the entire storage track configuration to be moved to the south, thus further removing track work from the OC facility.

In total, these changes avoid the acquisition of approximately 9 acres of the Owens Corning site, allowing the administration and plant operating facilities to remain intact and minimizing impacts to the Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur, as shown in Figure 7-8.

FIGURE 7-8
Revised CRMF Site Layout



Design Change	Pros	Cons
1 Reduce minimum storage to 78+ vehicles for 2015 versus 96 (2030)	--Saves site space --Reduces impacts to Owens Corning --Saves capital cost	--Requires a change to RTD operational/business practice --Less storage on the CRMF site --Assumes some vehicle storage at corridor ends of line (EOL); may create stakeholder concerns --EOL storage requires additional safety/security measures at EOL stations
2 Forego paving the vehicle storage tracks	--Saves site space --Reduces impacts to Owens Corning --Decreases detention requirement due to less impervious surface area	--Greater maintenance due to need for ballast replacement --Not as stable for staff to work on ballast as it is to work on pavement
3 Use underground stormwater detention	--Reduces right of way costs --Reduces impacts to Owens Corning	--More expensive than surface detention --Increased maintenance
4 Make adjustments to mainline track (which allows for shifting the site to the south)	--Allowed direct southern movement --Reduces impacts to Owens Corning	--Train movements are slower as curves/obstacles near I-70 and 48th increase

Mitigation measures are summarized in Table 7-7.

TABLE 7-7
Mitigation Measures – Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (5AM1888 and 5DV6243)

Use	Use Type	Mitigation Measures
Property Acquisition	Operations	• A MOA has been completed between FTA and the SHPO and is included in Appendix D.

Source: Gold Line Team, 2009

Allan-Rand Ditch (5JF4454.1)

The project team shifted the BNSF Railway Company alignment to the south to allow enough room between the northern Gold Line track and the ROW to replace the ditch, without piping it, preserving the historical context of this feature. Table 7-8 summarizes the mitigation measures for the Allan-Rand Ditch (5JF4454.1).

TABLE 7-8
Mitigation Measures – Allan-Rand Ditch (5JF4454.1)

Use	Use Type	Mitigation Measures
Property Acquisition	Operations	• A MOA has been completed between FTA and the SHPO and is included in Appendix D.

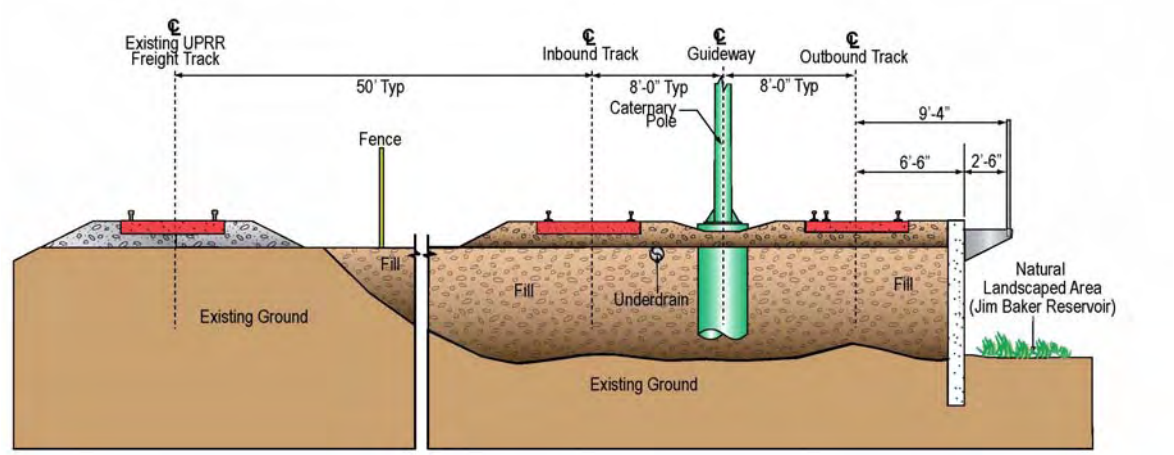
Source: Gold Line Team, 2009

Parks and Recreation Resource

Jim Baker Reservoir

The Gold Line DEIS documented that the Jim Baker Reservoir would not be impacted as a result of the project (RTD, 2008). Since the DEIS was released in July, the BNSF Railway Company notified RTD that 50-foot track centers would be required, as opposed to the 25-foot track centers assumed in the DEIS. This wider footprint resulted in impacts to approximately 0.12 acre to the Jim Baker Reservoir park, including minor impacts to the road/path located on the south side of the reservoir. As a result of these impacts, the project team modified the design to minimize the project footprint by designing a cantilever walkway (Figure 7-9). This modified design reduced the impacts to 0.11 acre and avoided direct impacts to the road/path.

FIGURE 7-9
Cross-Section along Jim Baker Reservoir



Mitigation measures are summarized in Table 7-9.

TABLE 7-9
Mitigation Measures – Jim Baker Reservoir

Use	Use Type	Mitigation Measures
Regrading Activities	Construction	• Temporary parking will be provided on the west side of Tennyson Street.
Acquisition of 0.11 Acre	Operations	• RTD will be responsible for maintaining the retaining wall.

Source: Gold Line Team, 2007

7.6 Coordination with Responsible Agencies

A Corridor Coordination Plan was developed to document expectations and roles for local governments, agencies, and other project stakeholders during development of the Gold Line EIS. A Local Government Team (LGT) comprising local municipalities was developed. The LGT also participated in Agency Working Groups (AWG), which included state and federal cooperating agencies and participating agencies. The SHPO was included in the AWG (As described in Chapter 6, Public Comment and Agency Coordination, of the Gold Line FEIS [2009]).

Historic Resources

The Gold Line Team developed and implemented a multi-step coordination and consultation process to allow input and guidance at each milestone point of the cultural resources analysis. Initially, the team met with the SHPO and Archeological and Historic Preservation Act (ACHP) to determine potential consulting parties, including local tribes and preservation groups. These groups were invited to participate and provide input to the Section 106 process, throughout the project. Consulting parties were engaged in the initial screening of alternatives, development of the APE for cultural resources, and in the cultural resource research and survey work. Since the release of the DEIS, the project team has consulted on the amended APE (minor design refinements), NRHP-eligibility, effects determinations, and avoidance and mitigation measures. This consultation process will continue through the conclusion of the Section 106 process, which will occur with the approval of the decision document.

Park and Recreational Resources

The Gold Line Team coordinated with the officials with jurisdiction, including the City and County of Denver, Adams County, and the City of Arvada. These three municipalities provided written concurrence that constructing new bridges over trails would meet the requirements of a temporary occupancy (Appendix F, Agency Correspondence).

The Gold Line coordinated with Adams County to discuss the *de minimis* use at Jim Baker Reservoir. Adams County provided written concurrence that the impacts would not adversely effect the activities, features, and attributes that qualify the Jim Baker Reservoir for protection under Section 4(f) (Appendix F, Agency Correspondence).

7.7 Final Section 4(f) Statement

Based upon the above considerations, it is determined that there are no feasible and prudent alternatives to the use of the Denver West Side Line (5DV3512.3), Denver Utah Pacific Railroad, Chicago Burlington Quincy Siding & Spur (Waterworks Sales Co, J.M. Warner Co, & Richardson Lumber Spur (5AM1888 and 5DV6243) and the Allan-Rand Ditch (5JF4454.1) and a *de minimis* use of Jim Baker Reservoir. The proposed action includes all possible planning to minimize harm to these Section 4(f) resources resulting from such use. Since the Preferred Alternative is the only prudent and feasible alternative analyzed in the Gold Line FEIS, a Least Harm Analysis is not required.