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## **5.0 FINAL SECTION 4(F) EVALUATION**

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Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S.C. Section 303 and 23 U.S.C. Section 138) mandates that the Secretary of Transportation shall not approve any transportation project requiring the use of publicly owned parks, recreation areas or wildlife and waterfowl refuge, or significant historic sites, regardless of ownership, unless:

- there is no prudent and feasible alternative to using that land
- the program or project includes all possible planning to minimize harm to the public park, recreation area, wildlife or waterfowl refuge, or significant site, resulting from that use

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. Historic sites qualifying for 4(f) protection must be officially listed on, or eligible for inclusion in, the National Register of Historic Places (NRHP), or contribute to a historic district that is eligible for or listed on the NRHP.

In federally-sponsored or assisted transportation projects, the NRHP-eligibility of specific resources is established through a consultation process outlined in Section 106 of the National Historic Preservation Act. Determinations of eligibility are made by the lead federal agency (FHWA), and concurrence is sought from the State Historic Preservation Officer (SHPO). NRHP-eligible or listed sites are referred to as “historic properties” under Section 106, and this term will be utilized hereafter in this Section 4(f) evaluation to avoid confusion.

Section 106 consultation also involves the assessment of effects to historic properties from the proposed federal undertaking. Determinations of effect are made by the lead federal agency (FHWA), who solicits concurrence from the SHPO. Effects to historic properties are determined by application of the Advisory Council on Historic Preservation’s Criteria of Adverse Effect (36 CFR 800.5), resulting in a finding of either 1) “No Historic Properties Affected,” 2) “No Adverse Effect,” or 3) “Adverse Effect.” Determinations of eligibility and effect made under Section 106 enable FHWA to identify and evaluate 4(f) impacts to historic properties.

Three possible types of impacts to a property protected under Section 4(f) must be evaluated, as defined in 23 CFR 771.135(p):

- A “direct use” of a Section 4(f) property occurs when land from a qualifying 4(f) property is acquired and permanently incorporated into a transportation facility
- A “use” under Section 4(f) also occurs when there is a temporary occupancy of 4(f) land during construction of the transportation facility that is considered adverse to the preservationist purposes of the Section 4(f) statute
- A “constructive use” may occur when no land is acquired from a Section 4(f) property but the proximity of the project results in indirect impacts which would “substantially impair” the current use of the property such as visual, noise, or vibration impacts, or impairment of property access

A Draft Section 4(f) Evaluation was included in the Draft EIS issued by FHWA and CDOT in April 2005. The Draft Section 4(f) Evaluation examined the impact that each of three build alternatives (System Alternatives 1, 2 and 3) would have on properties protected under Section 4(f). The Draft Section 4(f) Evaluation also analyzed possible avoidance alternatives and presented measures to minimize harm for each Section 4(f) use. At the time of the Draft EIS and Draft Section 4(f) Evaluation, FHWA and CDOT had not identified a Preferred Alternative for the project.

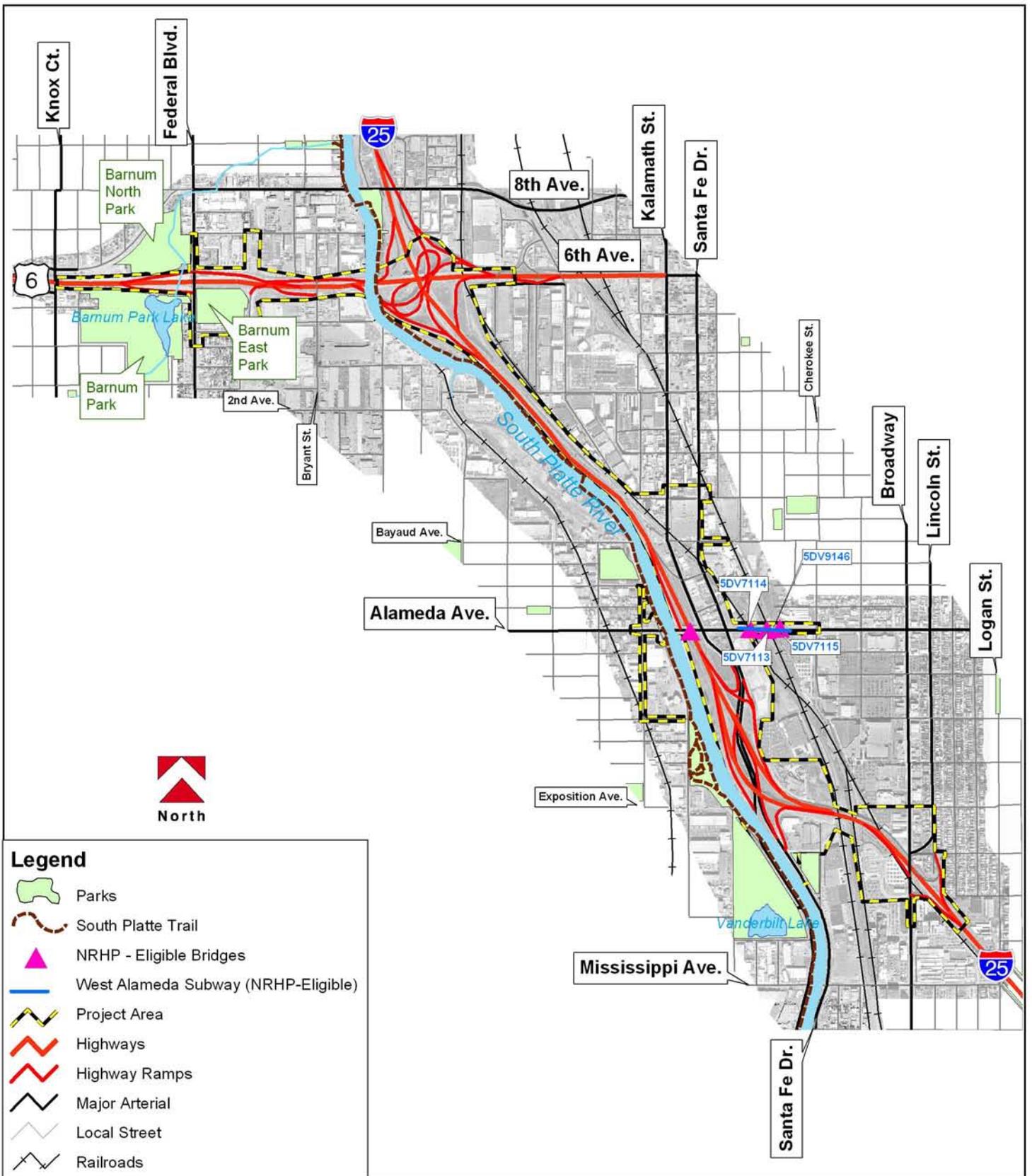
FHWA and CDOT have now identified a Preferred Alternative, as described in **Chapter 2 Alternatives**. The Preferred Alternative combines elements of the three system alternatives to meet the project purpose and need objectives, while providing appropriate avoidance, minimization, and mitigation for project impacts. The Preferred Alternative also includes refinements made to reduce impacts and improve operations, in response to agency and public comments received during the Draft EIS comment period.

The Preferred Alternative is described in detail in **Chapter 2 Alternatives** and includes the following major elements:

- **I-25 Mainline:** Widening of I-25 to provide a consistent section with four through lanes plus auxiliary lanes in each direction through the project area (these improvements were common to System Alternatives 1, 2, and 3 in the Draft EIS)
- **I-25/Broadway:** Tight diamond interchange (these improvements were included in System Alternative 3 in the Draft EIS)
- **I-25/Sante Fe Drive:** Single point urban interchange with a flyover ramp for northbound Santa Fe Drive to northbound I-25 (these improvements were common to System Alternatives 1, 2, and 3 in the Draft EIS)
- **I-25/Alameda/Santa Fe/Kalamath:** Offset partial urban interchange at I-25 and Alameda Avenue; Santa Fe Drive and Kalamath Street grade separated under the railroad close to their current alignments (these improvements were included in System Alternative 1 in the Draft EIS)
- **US 6: Ramp improvements at the I-25/US 6 interchange:** Closure of the Bryant Street interchange; Diamond interchange at US 6/ Federal Boulevard with slip ramps to Bryant Street and a braided ramp from Federal Boulevard to eastbound US 6; reconstruction of US 6 with collector-distributor roads/auxiliary lanes through the project area (these improvements were include in System Alternative 2 in the Draft EIS)

**Figure 5-1** shows the locations of historic properties and parks/recreation facilities that would be subject to Section 4(f) use under one or more of the system alternatives, which include the Preferred Alternative.

**Table 5-1** summarizes the Section 4(f) uses that would result from the implementation on the Preferred Alternative, as well as System Alternatives 1, 2, and 3. The No Action Alternative, which does not address the project purpose and need, is also presented for comparison.



**Historic Properties and Parks  
Subject to Section 4(f) Use**

0 0.25 0.5 1 Miles

**Table 5-1 Summary of Section 4(f) Use by Alternative**

	No Action Alternative	System Alternative 1	System Alternative 2	System Alternative 3	Preferred Alternative
<b>Historic Resources</b>	<b>Subject to Section 4(f) use under this alternative?</b>				
Alameda Avenue Underpass/Railroad Bridge (5DV7113)	No 4(f) Use	No 4(f) Use	4(f) Use	4(f) Use	No 4(f) Use <sup>1</sup>
Alameda Avenue Underpass/Railroad Bridge (5DV7114)	No 4(f) Use	No 4(f) Use	4(f) Use	4(f) Use	No 4(f) Use <sup>1</sup>
Alameda Avenue Underpass/Railroad Bridge (5DV7115)	No 4(f) Use	No 4(f) Use	4(f) Use	4(f) Use	No 4(f) Use <sup>1</sup>
West Alameda Subway (5DV9146)	No 4(f) Use	No 4(f) Use	4(f) Use	4(f) Use	No 4(f) Use <sup>1</sup>
<b>Parks /Recreation Resources</b>	<b>Subject to Section 4(f) use under this alternative?</b>				
Barnum Park	4(f) Use	4(f) Use	4(f) Use	4(f) Use	4(f) Use
Barnum East Park	4(f) Use	4(f) Use	4(f) Use	4(f) Use	4(f) Use
Barnum North Park	4(f) Use	4(f) Use	4(f) Use	4(f) Use	4(f) Use

**Note:** <sup>1</sup> This resource is not subject to Section 4(f) use with the Preferred Alternative and, therefore, is not discussed further in this Final Section 4(f) Evaluation

As shown in **Table 5-1**, three parks (Barnum, Barnum East, and Barnum North Parks) are subject to Section 4(f) use with implementation of the Preferred Alternative. This Final Section 4(f) Evaluation describes possible avoidance alternative (all of which were found not prudent and feasible) and minimization of harm for each Section 4(f) use under the Preferred Alternative.

As also shown in **Table 5-1**, the Preferred Alternative avoids Section 4(f) use of four historic properties (the West Alameda “Subway” grade separation structure and three associated railway bridges) that would have been subject to Section 4(f) use under System Alternatives 2 and 3. Avoidance alternatives and measures to minimize harm for these four additional historic properties were described in detail in the Draft Section 4(f) Evaluation. However, as these properties are not subject to use under the Preferred Alternative, no further analysis is required or presented in this Final Section 4(f) Evaluation. No historic properties are subject to Section 4(f) use under the Preferred Alternative.

The Draft Section 4(f) Evaluation discussed two additional resources: the Alameda Avenue Bridge over I-25 and the South Platte River Trail. Neither of these resources is subject to Section 4(f) use under the Preferred Alternative as follows:

- **Alameda Avenue (SH 26) Bridge over I-25 (5DV7074):** Subsequent to completion of the Draft Section 4(f) Evaluation, the Advisory Council for Historic Preservation approved an exemption regarding the Section 106 review process for effects from federal agency undertakings on the Interstate Highway System, with the exception of specific Interstate elements that have been determined by FHWA to embody national or exceptional significance. As a result of a special committee review, nine such elements were identified along the interstate highways within Colorado, including I-25. The Alameda Avenue (SH 26) Bridge over I-25 (5DV7074) does not appear on that list, indication that this bridge is not considered exceptional. Therefore, the Alameda Avenue Bridge over I-25 has been removed from consideration under both Section 106 and Section 4(f) in accordance with

the exemption.

- **South Platte River Trail:** The South Platte River Trail (see **Figure 5-1**) runs along the west side of the South Platte River, from the southern project limits to approximately 1st Avenue, where it crosses a bridge to the east side of the river. From this point to the northern project limits, the South Platte River Trail follows the east bank of the South Platte River. The trail serves dual purposes as a City and County of Denver maintenance access road, and as a heavily used public bike and pedestrian trail. Under the Preferred Alternative, a stretch of the trail that closely parallels I-25 would experience temporary construction impacts, but would ultimately be improved by the project. This trail segment extends from a point between 3rd and 4th Avenues, southward to a point between Ellsworth Avenue and 1st Avenue, where the trail crosses the South Platte River, and temporary detour during construction would be needed. Temporary construction impacts to the South Platte River Trail would also occur at US 6 and Alameda Avenue, where the existing bridges would be replaced, as well as at the crossing of a realigned southbound Santa Fe Drive. During bridge construction, the trail would be subject to temporary detour. The raising of bridge profiles would result in improvement of the trail. Neither acquisitions nor other permanent impacts are anticipated, nor should use of the trail be substantially impaired as a result of increased noise, visual, or access impacts. The temporary construction impacts to the South Platte River trail would not constitute a use within the meaning of Section 4(f).

Because the Alameda Avenue Bridge over I-25 and the South Platte River Trail are not subject to Section 4(f) use, they are not discussed further in this Section 4(f) Evaluation.

The remainder of this Final Section 4(f) Evaluation is organized as follow:

- Descriptions of the 4(f) protected properties subject to use with the Preferred Alternative and analyses of Preferred Alternative impacts, avoidance alternatives, and measures to minimize harm are presented in **Section 5.1 Parks**.
- Coordination with pertinent agencies is summarized in **Section 5.2 Coordination**.
- FHWA's finding is presented in **Section 5.3 Section 4(f) Finding**.

## 5.1 Parks

Under the Preferred Alternative (as with System Alternatives 1, 2, and 3), three public parks (Barnum, Barnum East, and Barnum North Parks) would be subject to Section 4(f) use. These facilities are all owned by the City and County of Denver. The locations of these parks are shown on **Figure 5-1**.

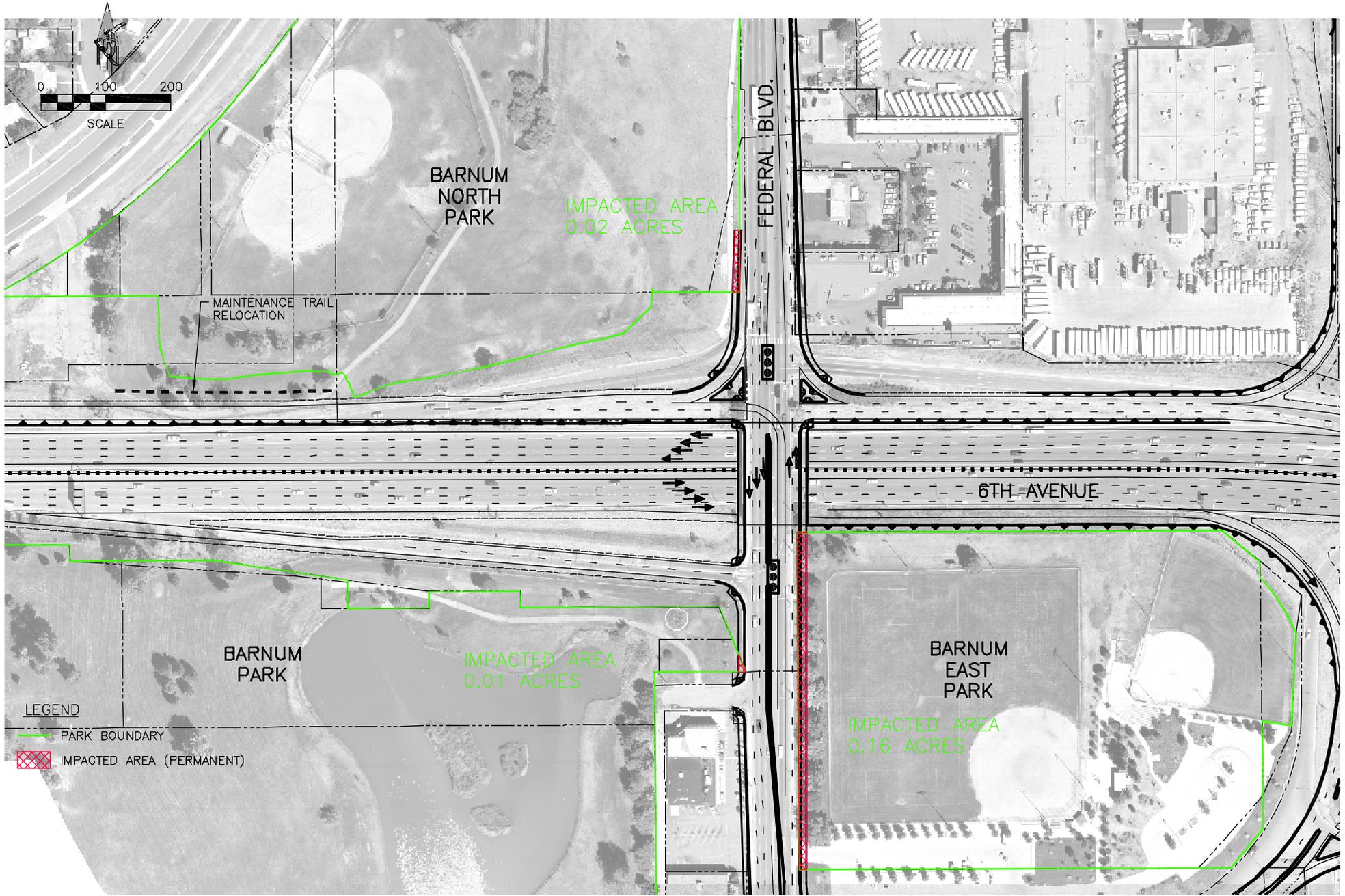
**Table 5-2** provides information about the amenities of these City-owned parks; this information was derived from park inventory data provided by City and County of Denver (City and County of Denver, 2003a; Mike Butler, City and County of Denver Department of Parks and Recreation, personal communication, March 2, 2004). As shown on **Table 5-2**, two of these parks contain improvements made with Land and Water Conservation Act funds, and are therefore protected under Section 6(f) of the Act from conversion to uses other than public outdoor recreation without appropriate mitigation (generally replacement). Summary information about each impacted park is provided below.

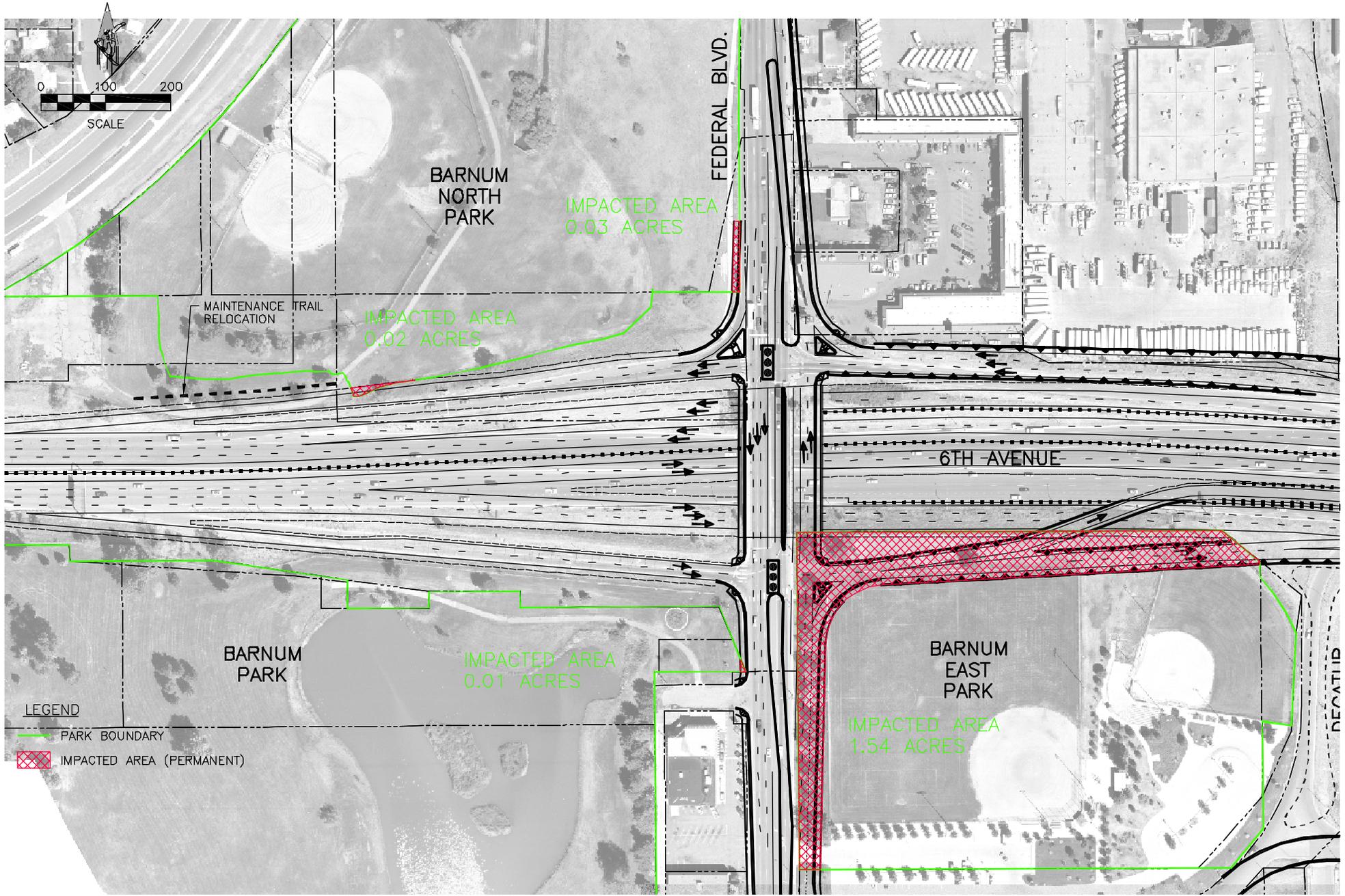
**Table 5-2 Section 4(f) Protected Parks Subject to Use**

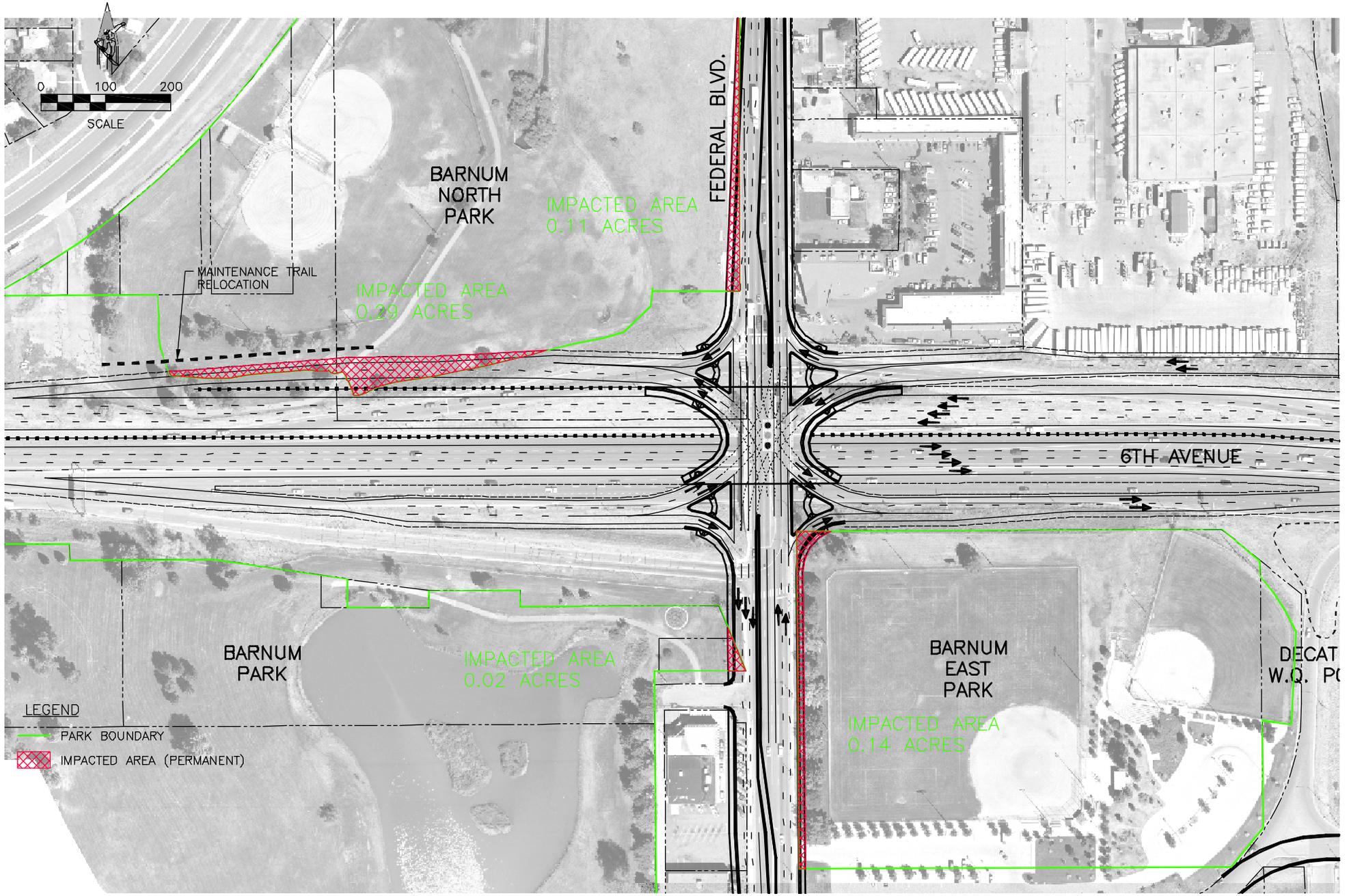
Park	Facilities	Section 6(f) Improvements?
Barnum Park	Basketball court, drinking fountain, flower garden, fishing/lake, outdoor swimming pool, playground, picnic tables and shelter, recreation center, restroom, soccer field, tennis court	Yes
Barnum East Park	Lighted baseball field, drinking fountain, restroom, lighted soccer field	No
Barnum North Park	Soccer field, lighted softball field, drinking fountain, restroom	Yes

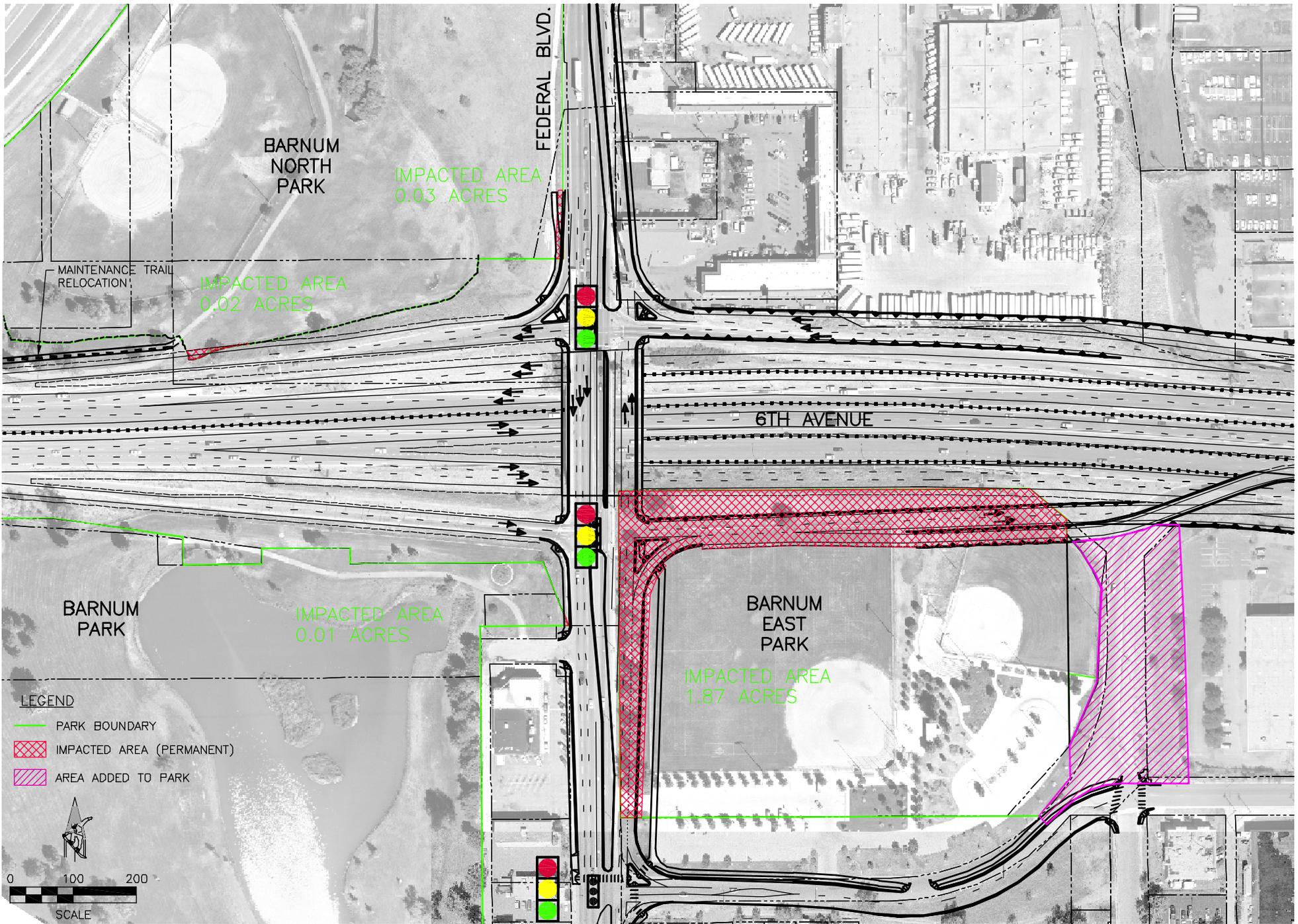
The boundaries of these parks were investigated to resolve discrepancies noted in Geographical Information System (GIS) parcel data supplied by the City and County of Denver. This effort involved a review of records at the Denver Parks and Recreation Department, the Denver County Clerk & Recorder, the Denver County Assessor, the Colorado State Archives, the Denver City Clerk's Office, the Denver Public Library, CDOT archives, the Colorado Railroad Museum and the Denver County Transportation & Denver County Surveyor's offices (Farnsworth Group, 2004).

Impacts to parks are shown for System Alternatives 1, 2, 3, and the Preferred Alternative in **Figures 5-2, 5-3, 5-4, and 5-5** respectively. Impacts are described for each of the park and recreation resource below.









## **5.1.1 Barnum Park Description and Impacts**

### **5.1.1.1 DESCRIPTION OF RESOURCE**

Barnum Park (also known as Barnum South Park) is located on the southwest side of the US 6 and Federal Boulevard interchange, within the Southwest Denver Park District. The irregularly shaped parcel extends approximately between US 6 on the north and 3<sup>rd</sup> Avenue on the south, and between Federal Boulevard on the east and Julian Street on the west. This 35.6-acre park contains a small man-made lake (Barnum Park Lake) and provides facilities for a wide variety of recreational activities, including fishing, swimming, basketball, soccer, tennis, picnicking, and walking. Recreational trails in Barnum Park approach within 60 feet of the US 6 ramp in the southwest quadrant and 75 feet of Federal Boulevard.

According to information provided by Colorado State Parks, Section 6(f) improvements were made at Barnum Park between 1965 and 1967 under Land and Water Conservation Project # 05-00106. The improvements included installation of 150 feet of 8-foot by 12-foot culvert, earth fill, landscaping, and sprinkler system expansion. These improvements were confined to the southeastern portion of the park, which is outside of the project area.

### **5.1.1.2 PROJECT IMPACTS**

#### **No Action Alternative**

Under the No Action Alternative, the physical characteristics and recreational uses of Barnum Park would remain unchanged.

#### **System Alternative 1**

Proposed reconfiguration of the US 6/Federal Boulevard interchange includes widening of both sides of Federal Boulevard and would require the acquisition and direct use of a tiny (0.01 acre) piece of land from Barnum Park's northeast corner. This minor right-of-way would not affect existing use of Barnum Park. Barnum Park's 6(f) improvements would not be impacted by System Alternative 1. Temporary construction impacts associated with replacement of the Federal Boulevard Bridge over US 6 may occur, including damage to landscaping.

#### **System Alternative 2**

Widening of Federal Boulevard under System Alternative 2 would require the acquisition and direct use of a tiny (0.01 acre) piece of land from Barnum Park's northeast corner. This minor right-of-way acquisition would not affect existing use of Barnum Park. Barnum Park's 6(f) improvements would not be impacted by System Alternative 2. Temporary construction impacts associated with replacement of the Federal Boulevard Bridge over US 6 may occur, including damage to landscaping.

#### **System Alternative 3**

Widening of Federal Boulevard under System Alternative 3 would require the acquisition and direct use of a tiny (0.02 acre) piece of land from Barnum Park's northeast corner. This minor right-of-way acquisition would not affect existing use of Barnum Park. Barnum Park's 6(f)

improvements should not be impacted by System Alternative 3. Temporary construction impacts associated with replacement of the Federal Boulevard Bridge over US 6 may occur, including damage to landscaping.

### **Preferred Alternative**

Widening of Federal Boulevard under the Preferred Alternative, which is similar to System Alternative 2 at this location, would require the acquisition and direct use of a tiny (0.01 acre) piece of land from Barnum Park's northeast corner. This minor right-of-way acquisition would not affect existing use of Barnum Park. Barnum Park's 6(f) improvements would not be impacted by the Preferred Alternative. Temporary construction impacts associated with replacement of the Federal Boulevard Bridge over US 6 may occur, including damage to landscaping.

## **5.1.2 Barnum East Park Description and Impacts**

### **5.1.2.1 DESCRIPTION OF RESOURCE**

Barnum East Park is located southeast of the intersection of US 6 and Federal Boulevard. This rectangular, 11.8-acre park is situated in the Southwest Denver Park District. Barnum East Park is bounded on the north by US 6, on the south by the on-ramp from Federal Boulevard to eastbound US 6, on the west by Federal Boulevard, and on the east by Decatur Street. Barnum East Park provides facilities for baseball and soccer and is equipped with lights for night games. Barnum East Park's ball fields are situated relatively close to the existing roadways; as close as 60 feet east of Federal Boulevard and as close as 40 feet south of US 6. No Section 6(f) improvements have been made to the park.

### **5.1.2.2 PROJECT IMPACTS**

#### **No Action Alternative**

Under the No Action Alternative, the physical characteristics and recreational use of Barnum East Park would remain unchanged.

#### **System Alternative 1**

Widening of Federal Boulevard south of US 6 would cause encroachment along the entire western edge of Barnum East Park, necessitating the acquisition of a narrow (14-ft wide; 0.16 acre) strip of landscaped land adjacent to Federal Boulevard. No impacts to recreational features (ball fields) would occur. Reconfiguration of the on- and off-ramp to eastbound US 6 would increase physical separation of the roadway from an existing ball field located at the east end of the park, and would allow for potential park expansion. Pedestrian access and safety would be improved by installation of traffic signals at the park's southwest and southeast corners. Temporary construction impacts associated with replacement of the Federal Boulevard bridge over US 6 may occur, including damage to landscaping.

## System Alternative 2

Substantial encroachment/direct use would occur along the northern and western edges of Barnum East Park due to proposed widening of Federal Boulevard to accommodate turning lanes on the bridge over US 6, as well as a new roadway/ramp from Federal Boulevard to eastbound US 6 or Bryant Street. Approximately 1.54 acres of park land would be acquired for new right-of-way, and would cut across the ball fields, impairing their use and necessitating redesign and reconstruction of some or all park facilities. Temporary construction impacts associated with replacement of the Federal Boulevard bridge over US 6 may occur, including damage to landscaping.

## System Alternative 3

Under System Alternative 3, a narrow (10-ft wide; 0.14 acre) strip of new right-of-way would be required along the west side of the park for widening of Federal Boulevard to accommodate turning lanes on the bridge over US 6, as well as a new roadway/ramp from Federal Boulevard to eastbound US 6. No impacts to recreational features (ball fields) would occur. Closing of the existing ramp from Federal Boulevard (on the south side of Barnum East Park) to eastbound US 6 would increase physical separation of the roadway from an existing ball field located at the east end of the park, and would allow for potential park expansion. Temporary construction impacts associated with replacement of the Federal Boulevard bridge over US 6 may occur, including damage to landscape.

## Preferred Alternative

With the Preferred Alternative, which is similar to System Alternative 2 at this location, substantial encroachment/direct use would occur along the northern and western edges of Barnum East Park due to proposed widening of Federal Boulevard to accommodate turning lanes on the bridge over US 6, as well as a new roadway/ramp from Federal Boulevard to eastbound US 6 or Bryant Street. Approximately 1.54 acres of park land would be acquired for new right-of-way, and would cut across the ball fields, impairing their use and necessitating redesign and reconstruction of some or all park facilities. A range of mitigation measures have been developed and included in the Preferred Alternative to address these impacts. These are described below in **Section 5.1.3.4 *Minimization of Harm***. Temporary construction impacts associated with replacement of the Federal Boulevard bridge over US 6 may occur, including damage to landscaping.

### 5.1.3 Barnum North Park Description and Impacts

#### 5.1.3.1 DESCRIPTION OF RESOURCE

Barnum North Park is located northwest of the intersection of US 6 and Federal Boulevard. This 13.6-acre park is situated within the Northwest Denver Park District. This roughly triangular parcel is bounded by Federal Boulevard on the east, US 6 on the south, and the 8<sup>th</sup> Avenue bypass/ramp to westbound US 6 on the north/west. Landscaped CDOT-owned land extends from the western edge of the park to Knox Court. Barnum North Park provides facilities for soccer and softball and is equipped with lights for night softball games. The ball fields in Barnum North Park are located quite a distance away from existing roadways – approximately 400 feet west of Federal Boulevard and 130 feet north of the US 6 westbound on ramp.

According to information provided by Colorado State Parks, Section 6(f) improvements were made at Barnum North Park in 1973 and 1976. The 1973 project (Land and Water Conservation Project # 08-00363), included design and construction of an archery range shooting pad, a hiking/biking trail, and a parking lot. These improvements encompassed a large area of the park. Additional improvements were made in 1976 (Land and Water Conservation Project # 08-00514) and included construction of two ball fields with fencing, backstops, and a sprinkler system, as well as restrooms and a combination storage/press box building in the central area of the park. Certain 6(f) improvements made in 1973 have been modified or are no longer in use, including the archery range, southwest parking lot, and practice ball field located in the southern part of Barnum North Park.

A portion of one of the 1973 6(f) improvements, the hiking/biking trail, would require relocation under each of the system alternatives, including the Preferred Alternative, as shown in **Figures 5-2, 5-3, 5-4, and 5-5**. The trail was originally constructed to provide access to the archery range that has been removed. The portion of the trail to be relocated is contained mostly within the US 6 right-of-way (not within the park boundary) and currently serves primarily as a maintenance trail for park staff. Following relocation, the trail will serve an equivalent function. CDOT has consulted with the City and County of Denver regarding impacts to this trail (as well as other impacts to the parks), and they have indicated that minor changes in this area can be accommodated if the overall park function is maintained. Based on the above, the realignment of the trail near the southern boundary does not represent a land conversion under the provisions of Section 6(f). CDOT and FHWA will continue consultations with the City and County of Denver during final design to establish realignment details and ensure that park function is maintained.

### **5.1.3.2 PROJECT IMPACTS**

#### **No Action Alternative**

Under the No Action Alternative, Barnum North Park would remain unchanged.

#### **System Alternative 1**

Under System Alternative 1, a narrow (10-ft wide; 0.02 acre) strip of land along the east edge of Barnum North Park would be required for new right-of-way to accommodate a redesigned westbound on-ramp to US 6 from southbound Federal Boulevard. Although this is a direct use under Section 4(f), no impacts should occur to existing recreational facilities or uses.

The existing park maintenance access road which extends beyond the park boundary would require relocation. Temporary construction impacts associated with replacement of the Federal Boulevard bridge over US 6 may occur, including damage to landscaping.

#### **System Alternative 2**

Under System Alternative 2, a narrow (10-ft wide; 0.03 acre) strip of land along the east edge of Barnum North Park would be required for new right-of-way to accommodate a redesigned westbound on-ramp to US 6 from southbound Federal Boulevard. An additional 0.02 acre area would be required on the south side of the park. Although this is a direct use under Section 4(f),

no impacts would occur to existing recreational facilities or uses. The existing park maintenance access road which extends beyond the park boundary would require relocation. Temporary construction impacts associated with replacement of the Federal Boulevard bridge over US 6 may occur, including damage to landscaping.

### **System Alternative 3**

Under System Alternative 3, small amounts of new right-of-way would be required along the eastern and southern edges of Barnum North Park. Acquisitions include 0.11 acre of park land along the park's east side, and another acquisition (0.29 acre) at the south side to accommodate the westbound US 6 on-ramp. The existing maintenance access road/trail that extends beyond the park's boundary would be impacted, but no impacts to recreational facilities or recreational uses within the park would occur. Temporary construction impacts associated with replacement of the Federal Boulevard bridge over US 6 may occur, including damage to landscaping.

### **Preferred Alternative**

Under the Preferred Alternative, which is similar to System Alternative 2 at this location, a narrow (10-ft wide; 0.03 acre) strip of land along the east edge of Barnum North Park would be required for new right-of-way to accommodate a redesigned westbound on-ramp to US 6 from southbound Federal Boulevard. An additional 0.02 acre area would be required on the south side of the park. Although this is a direct use under Section 4(f), no impacts would occur to existing recreational facilities or uses. The existing park maintenance access road which extends beyond the park boundary would require relocation. Temporary construction impacts associated with replacement of the Federal Boulevard bridge over US 6 may occur, including damage to landscaping.

#### **5.1.3.3 AVOIDANCE ALTERNATIVES FOR BARNUM, BARNUM EAST, AND BARNUM NORTH PARKS**

Avoidance of impacts to public park lands in the vicinity of the Federal and US 6 interchange is made difficult by the close proximity of 4(f)-protected park land in the interchange's southeast, southwest and the northwest quadrants. The landscaped edges of Barnum, Barnum East, and Barnum North parks abut the existing Federal Boulevard right-of-way.

Park property along Federal is very close to the existing roadway – as close as the back of existing curb and gutter. At the narrowest, 80 feet separates the Barnum Park right-of-way on the west from Barnum Park East on the east. Federal Boulevard and US 6/ramp lanes, shoulders, curb and gutter, and sidewalk currently exists outside of the park right-of-way. This is accomplished generally through narrow (10 feet) lanes on Federal or narrow shoulders or non-typical ramp configurations on US 6. Along US 6, the location of Barnum and Barnum East Parks along the south side and Barnum North Park along the north side of the highway limit the possibilities for transportation improvements without park impacts.

Alternatives were developed and evaluated to determine if there was a prudent and feasible alternative to the use of land from Barnum, Barnum East and Barnum North Parks. Avoidance alternatives were considered collectively for all three of these parks due to their close proximity

and position in three quadrants of the interchange. These avoidance alternatives are described below.

### **No Action Alternative**

Under the No Action Alternative, no impacts would occur to Barnum, Barnum East or Barnum North Parks. However, this alternative would not result in needed safety and operational improvement of the Federal-US 6 interchange, including reconfiguration of turning lanes and widening of traffic lanes. Because safety and operational deficiencies would not be addressed, the No Action Alternative would not meet the project purpose and need. Therefore, this alternative is not a prudent and feasible avoidance alternative with respect to these parks.

### **Improve Transportation Facilities Without Using Barnum, Barnum East or Barnum North Park Land**

Only limited improvements to the Federal-US 6 interchange are possible without widening Federal Boulevard. Minor reconfiguring of interchange ramps and replacing the Federal Boulevard bridge over US 6 with a new structure, while retaining the existing width of Federal Boulevard, would provide some operational and safety benefit to US 6, but would not remedy the operational and geometric deficiencies on Federal Boulevard. Because of these limitations, this alternative does not correct existing roadway design deficiencies nor adequately address operational deficiencies of the interchange. Therefore, this alternative does not meet the project purpose and need, and does not represent a prudent and feasible avoidance alternative with respect to these parks.

### **Improve Transportation Facilities in a New Location**

In order to avoid impacts to all of the parks in the vicinity of the Federal-US 6 interchange, an avoidance alternatives concept was considered involving the realignment of a portion of Federal Boulevard well to the east of its existing alignment. This concept involves constructing a new curved alignment that would skirt Barnum East Park, cross US 6 on a new skewed bridge, and rejoin the existing north-south alignment of Federal Boulevard on the north side of US 6. To avoid the parks, Federal would need to be realigned approximately 900 feet to the east impacting a large number of residential and commercial properties. A portion of the existing Federal Boulevard roadway would be abandoned, and the existing Federal Boulevard bridge over US 6 would be removed. The interchange would be relocated to the new location, bringing it closer to the US 6/I-25 Interchange.

Federal Boulevard is a linear arterial roadway in a heavily developed urban corridor providing regional north-south connectivity in the west central Denver metropolitan area. Moving the US 6/Federal Boulevard interchange closer to the I-25/US 6 interchange would not address the current substandard geometry and safety. Adjacent land use is predominately commercial, with businesses located as close as a block away from Federal Boulevard in the southeast and southwest quadrants. A neighborhood of modest single family dwellings is located just south of Barnum East Park.

The implementation of this alternative would require the acquisition/relocation of at least 30 homes and 15 businesses. The alternative would reroute Federal Boulevard, a major arterial, through the heart of an existing residential neighborhood, introducing noise, traffic, safety and other community impacts into an area currently characterized by quiet residential streets. This

neighborhood has a high minority and low-income population, and the impacts of rerouting Federal Boulevard would be predominantly borne by this community, raising environmental justice concerns.

In addition to the community impacts of this alternative, safety problems would result from moving the US 6 / Federal Boulevard interchange to a location much closer to the I-25 / US 6 interchange. With this alternative, the ramp terminals would be less than 600 feet apart between these two major interchanges. This distance is much less than current criteria of 1600 feet, indicating that severe safety problems would result from the implementation of this alternative.

This alternative is not prudent or feasible due to the large number of business and residential relocations, severe impacts to the existing community, environmental justice concerns, and failure of the alternative to address current safety deficiencies along US 6 that have been identified within the project purpose and need. Therefore, this alternative is not a prudent and feasible avoidance alternative with respect to these parks.

In summary, the close proximity and location of Barnum, Barnum East and Barnum North Parks in three quadrants limits the options for making transportation improvements without impacting the parks. As demonstrated above, there is no prudent and feasible alternative that avoid direct use of park land. Therefore, measures to minimize harm to the parks have been identified in accordance with the requirements of Section 4(f). These are described below.

#### **5.1.3.4 MINIMIZATION OF HARM TO BARNUM, BARNUM EAST, AND BARNUM NORTH PARKS**

When no prudent and feasible avoidance alternative exists, Section 4(f) requires that harm to protected resources be minimized. Through the process of selection and refinement of the Preferred Alternative, FHWA and CDOT have worked with the City and County of Denver to identify appropriate measures to minimize harm. These have been included in the Preferred Alternative, as described below.

System Alternative 2 would use more land from Barnum East Park than System Alternatives 1 and 3, and would require reconfiguration of the facilities in Barnum East Park. However, due to the substantial safety and operational benefits provided by System Alternative 2 at this location, this alternative was further refined to include measures to minimize harm, such that it could be included in the Preferred Alternative. These additional measures were developed through consultation with the City and County of Denver, and were added to the harm minimization measures previously discussed for System Alternative 2 in the Draft Section 4(f) Evaluation. This alternative has been identified as the Preferred Alternative at this location.

Specific harm minimization measures included in the Preferred Alternative for Barnum, Barnum East, and Barnum North Parks include the following:

- Under the Preferred Alternative, spacing between intersections on Federal Boulevard at the ramp terminals was kept to a minimum in order to keep as compact an interchange as possible.
- Under the Preferred Alternative, Federal Boulevard widening was pushed to the east, north of US 6 to avoid Barnum North Park.

- The Preferred Alternative would impact recreational use of Barnum East Park by excising land from existing sports ball fields. Appropriate mitigation would include fair financial compensation for right-of-way acquisition, as well as redesign and reconstruction of ball fields to restore the park's usefulness to the same level or better than pre-project conditions. Any damage to park landscaping or facilities caused by bridge construction would be repaired.
- Providing additional new park land along the east edge of the park by vacating the existing on-ramp and acquiring a strip of land from an adjacent property owner. The addition of this new park land will result in a net reduction in park functional area of only 0.3 acre.
- Redesign and reconstruction of park facilities to provide upgraded facilities with enhanced function. **Figure 5-6** presents a concept for park reconstruction developed in cooperation with the City and County of Denver. This concept provides for replacement of the existing facilities with new facilities, enhanced accessibility for disabled individuals through ADA compliance, and the addition of a playground area between the ball fields. Final design and construction will be achieved through a cooperative effort between CDOT and the City and County of Denver. **Table 5-3** lists the elements of the reconstruction and upgrade of the Barnum East Park facilities.
- Arrangements to be made by the City and County of Denver to provide alternative play locations from permitted field users during seasons that will be disrupted by construction.

The Preferred Alternative (which is similar to System Alternative 2 at this location) provides substantial safety and operational benefits not provided by either System Alternatives 1 or 3. With regard to safety, the estimated 20 year accident reduction for System Alternative 2 and the Preferred Alternative would be in the range of 1,550 -1,750 total accidents. Of these, 340-420 would be prevented injury accidents. This equates to a 30 to 45% overall accident reduction as compared to the next closest alternative (System Alternative 3) and a 300 to 350% overall accident reduction when compared to System Alternative 1.

The Preferred Alternative also offers operational benefits at this location not provided by either System Alternatives 1 or 3. For the overall network, which includes US 6 and the surface streets within the corridor, the operational benefit of the Preferred Alternative is 13% greater than Alternative 3 and 10% greater than Alternative 1. This becomes more pronounced on US 6 where 25% less freeway delay is experienced with the Preferred Alternative as compared to Alternative 3 and 15% less than System Alternative 1. The safety and operational analysis for the alternatives is described in detail in **Chapter 3 Transportation Analysis**.

Depending on the specific circumstances, there are instances where FHWA must consider the important non-Section 4(f) impacts in establishing a prudent alternative. This is described in the 2005 FHWA Section 4(f) Policy Paper. In this case, the important non-Section 4(f) impact is safety. As described above, the Preferred Alternative would provide a 30 to 45% overall accident reduction as compared to System Alternative 3 and a 300 to 350% overall accident reduction when compared to System Alternative 1. Due to these substantial safety benefits provided by the Preferred Alternative, it would not be prudent to choose System Alternative 1 or 3 at this location. Therefore, the Preferred Alternative (which provides the benefits of System Alternative 2 with the additional harm minimization measures identified above) has been identified as the prudent and feasible alternative which best minimizes harm to the parks at this location.



North

## Barnum East Park Concept - Preferred Alternative

**Table 5-3 Elements of Barnum East Park Reconstruction**

Measure	Preferred Alternative
<b>Functional Park Space</b>	<ul style="list-style-type: none"> <li>Includes two baseball fields, two parking lots, commons area between ball fields, and landscaped perimeter</li> <li>Total area = 421,995 square feet = 9.69 acres (3% less than the existing; primarily lost in landscaped perimeter between ball fields)</li> </ul>
<b>Parking</b>	<ul style="list-style-type: none"> <li>Refined concept provides a single contiguous parking lot with 174 parking spaces (3.5% greater than existing)</li> <li>Overflow parking is provided along adjacent 5<sup>th</sup> and Decatur and undeveloped park land south of 5<sup>th</sup> Ave.</li> </ul>
<b>Pedestrian Mobility/ Accessibility</b>	<p><u>North-South</u></p> <ul style="list-style-type: none"> <li>Sidewalks along Federal Blvd. from 5<sup>th</sup> Ave. to 7<sup>th</sup> Ave. would be replaced to meet Denver standards</li> <li>The new park layout better aligns its easterly most access across from Decatur St. providing more direct and safer pedestrian access</li> </ul> <p><u>East-West</u></p> <ul style="list-style-type: none"> <li>New sidewalks are provided within the park</li> <li>Detached sidewalks will be provided along the northern edge of 5<sup>th</sup> Ave. for the length of the park</li> <li>An additional pedestrian crossing of Federal Blvd. will be provided at 5<sup>th</sup> Ave. with a new traffic signal</li> </ul>
<b>Amenities</b>	<ul style="list-style-type: none"> <li>Two baseball fields - adult (larger) field and youth (smaller) field</li> <li>The adult field has a built in soccer field and is also used for Frisbee golf</li> <li>Other site amenities to be replaced in kind or better include: <ul style="list-style-type: none"> <li><b>Adult Ball Field</b> - Backstop and surrounding chain link fence, Bleachers, Benches, Storage cabinet, Score Board</li> <li><b>Youth Ball Field</b> - Backstop and surrounding chain link fence, Bleachers, Benches, Storage cabinet</li> <li><b>Landscape</b> - Deciduous trees, Evergreen trees</li> <li><b>Lighting</b> - Parking Lot and Plaza Area, Night lighting for Adult Field, Night lighting for Youth Field</li> <li><b>Park Structures</b> - Restroom (men and women)</li> <li><b>Miscellaneous</b> - Barrel trash cans, Vehicular gates, Trash enclosures/dumpsters, Bollards, Utility Boxes</li> </ul> </li> </ul>
<b>Current Deficiencies Corrected</b>	<ul style="list-style-type: none"> <li>Final design of the adult field will establish an appropriate size to address Denver Parks comment that the outfield is too large</li> <li>The youth field will be a more uniform and symmetrical shape replacing the shorter right field</li> <li>Artificial turf will be considered in final design to address downtime during construction.</li> <li>Trench drains will be considered on field perimeters for improved drainage during final design</li> <li>Secure chain link fencing (10-12 ft. height) and gate to the parking lot will be provided on the edges of the fields to control illegal use of the fields</li> <li>Shared rest room and concession stands facilities will be incorporated</li> <li>A new press box for the youth field will be included</li> <li>Additional bleachers can be accommodated</li> <li>A playground will be included in the “plaza” between the two fields</li> <li>The new “plaza” area offers a flatter/usable space between the two fields, much improved over the current terraced space between the two fields</li> </ul>
<b>Adjacent Roadway Operations</b>	<ul style="list-style-type: none"> <li>The EB US 6 on ramp will be realigned from the east and south side of the existing park to be on the north side with slightly less traffic (17,500 ADT); 5<sup>th</sup> Ave. will be converted to two way operations with substantially less traffic (8500 ADT); and there would be no east side roadway. The park will no longer be surrounded by US 6 and associated ramp connections</li> <li>A new traffic signal will be added at 5<sup>th</sup> Street to aid ingress and egress.</li> <li>Implementing the Preferred Alternative offers substantial operational and safety benefits along US6 EB realized through braiding the EB US6 ramp with the CD road</li> </ul>
<b>Accessibility for Vehicles</b>	<ul style="list-style-type: none"> <li>Access to the park will be through two full movement access intersections to 5<sup>th</sup> Ave</li> </ul>
<b>Use</b>	<ul style="list-style-type: none"> <li>The new facilities will accommodate the current uses and potentially enhanced usage due to improved accessibility, a new modern facility and amenities and efficiency of layout.</li> </ul>
<b>Temporary Construction Impacts</b>	<ul style="list-style-type: none"> <li>Construction sequencing is likely to impact the use of the facility for potentially two seasons. Integrating artificial turf may allow for earlier use of the fields</li> <li>Alternative ball fields may have to be identified within the City and County of Denver park system to accommodate the loss of use for this facility. Denver must assist with determining where this can best be met</li> </ul>
<b>Miscellaneous</b>	<ul style="list-style-type: none"> <li>Noise impacts to residential properties to the south of 5<sup>th</sup> Av. would be reduced as a result of the realignment of the US 6 EB on-ramp.</li> <li>Park functional areas are offset to the east, adjacent to Federal Blvd., preserving opportunities for possible future needs by others</li> </ul>

## 5.2 *Coordination*

Coordination has been conducted with agencies having jurisdiction or regulatory oversight of Section 4(f) properties. Coordination efforts to date have included:

- Consultation with the Colorado SHPO to determine the area of potential effects and survey methodology for cultural resources (CDOT, 2004b; SHPO, 2004).
- Completion of a cultural resource inventory (FHU, 2004g) for review by the Colorado SHPO, City and County of Denver's Planning Department, and the Denver Landmarks Commission
- Effects determination and consultation for historic sites under Section 106 (CDOT, 2006; SHPO, 2006)
- A meeting with City and County of Denver Parks and Recreation Department staff, February 5, 2003. This meeting was held to inform the Parks and Recreation Department about the project, and to obtain information to aid in the identification of all public parks and recreation facilities that could be impacted by the project.
- A meeting with Colorado State Parks staff, concerning parks with 6(f) improvements, May 6, 2003. During this meeting, information was obtained about 6(f) improvements to specific parks as well as the process for mitigating impacts to parks with 6(f) improvements.
- Detailed investigation of park boundaries, by the Farnsworth Group, including consultation with the City and County of Denver's Parks and Recreation Department, 2003 to 2004 (Farnsworth Group, 2004)
- A series of meetings and working sessions with the City and County of Denver after issue of the Draft EIS to develop the Barnum East Park concept and minimization of harm measures incorporated into the preferred alternative.
- A meeting with representatives of Barnum East Park permit holders (i.e.; organized sport leagues) on October 25, 2006.

## 5.3 *Section 4(f) Finding*

Based on the above considerations, FHWA has determined that there are no prudent and feasible alternatives to the use of the following Section 4(f) properties:

- Barnum Park
- Barnum East Park
- Barnum North Park

The Preferred Alternative includes all possible planning to minimize harm to these properties resulting from such use.

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