3.0 CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter describes the existing environmental, social, and economic conditions of the study area and discloses the environmental impacts the project alternatives could have on these resources. As the study progressed, the impacts to some resources began to emerge as discernible differences among the two Build Alternatives.

To help the reader focus on the resources for which there were **distinguishable differences** in impacts among the Build Alternatives and that influenced the identification of the Preferred Alternative, those resources are discussed first in this chapter. Greater detail has been provided in this Final Environmental Impact Statement (FEIS) for these resources. Resources that would be impacted similarly by the Build Alternatives with **no distinguishable differences** among impacts (but were identified as important by the public and agencies) are discussed second in this chapter. All **other resources** are discussed after these two groups.

Impacts and mitigation measures are discussed individually for each resource and are supported by separate technical reports and appendices, where necessary. All technical reports prepared for this FEIS can be found on the Technical Memoranda CD included with Volume II of this document.

Twenty-three environmental and social resource areas were evaluated for the No Action Alternative, Existing Interstate 25 (I-25) Alternative, and Modified I-25 Alternative (Preferred Alternative) (as defined in **Chapter 2 – Alternatives**). Together, these resources define the human and natural environment around the proposed project. The sections that cover these resources and the pages that they appear on in this chapter are listed in **Exhibit 3.0-1**.

EXHIBIT 3.0-1
Resource Areas Evaluated in the Final Environmental Impact Statement

Section Title	Page
RESOURCES WITH DISTINGUISHABLE DIFFERENCES BETWEEN ALTERNATIVES	
Transportation	3.1-1
Historic Properties	3.2-1
Parks and Recreation	3.3-1
Right-of-Way and Relocations	3.4-1
Noise	3.5-1
Social Resources, Economic Conditions, and Environmental Justice	3.6-1
Wetlands	3.7-1
RESOURCES WITHOUT DISTINGUISHABLE DIFFERENCES BETWEEN ALTERNATIVES	
Land Use	3.8-1
Visual Resources	3.9-1
Air Quality	3.10-1
Hazardous Materials	3.11-1
Fish and Wildlife Habitat	3.12-1
Sensitive Species	3.13-1
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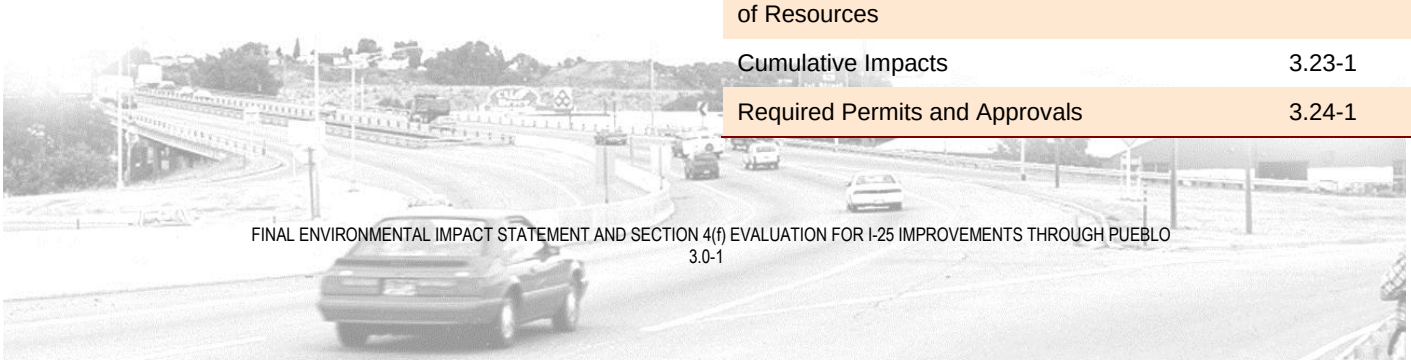
OTHER RESOURCES	
Utilities	3.16-1
Energy	3.17-1
Noxious Weeds	3.18-1
Paleontological Resources	3.19-1
Soils and Geology	3.20-1
Relationship of Local Short -Term Uses Versus Long-Term Productivity	3.21-1
Irreversible and Irretrievable Commitment of Resources	3.22-1
Cumulative Impacts	3.23-1
Required Permits and Approvals	3.24-1



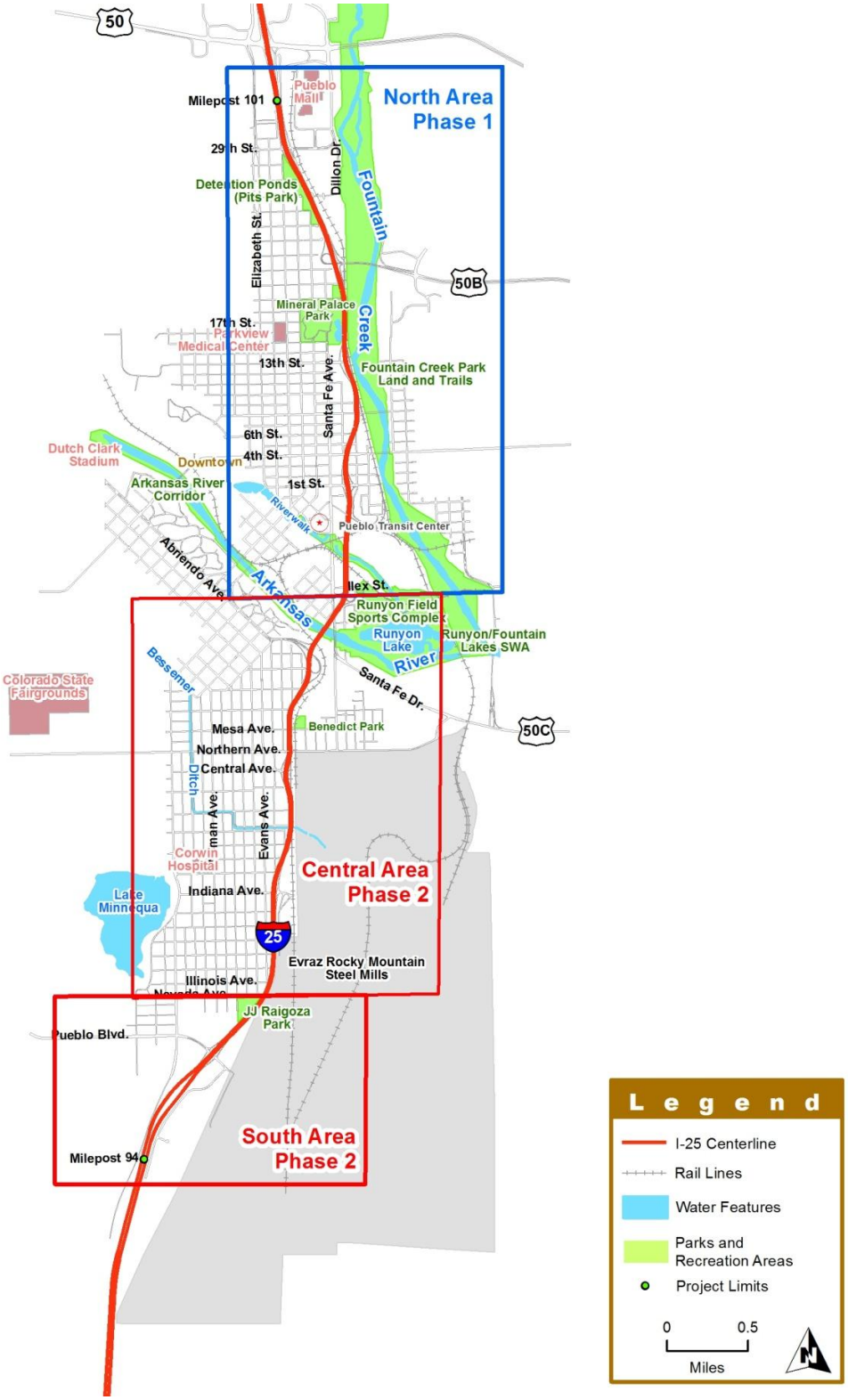
Within each resource topic, the content is organized by discussions of the Affected Environment, the Environmental Consequences, and Mitigation. The Affected Environment summarizes the conditions that existed in the study area at the time the analysis was prepared. Each section describes the boundaries of the impact assessment for the resource area (which may vary). The content of the impact discussion is organized by three geographic areas: North, Central, and South. The North Area extends from just north of 29th Street to Ilex Street. The Central Area continues from Ilex Street to Nevada Avenue. The South Area extends between Nevada Avenue and milepost 94, just south of the Pueblo Boulevard interchange. A map illustrating these three geographic areas is provided in **Exhibit 3.0-2**.

The content of the Environmental Consequences discussion is organized by geographic area within the project study area, presented in order of North, South, and Central. The two Build Alternatives follow the same alignment and have the same impacts in the North Area and the South Area. The impacts to the Central Area are discussed last because the Central Area is where distinguishable differences occur between the two Build Alternatives. Within the Environmental Consequences discussion, direct impacts of the project alternatives are evaluated. Direct impacts are those that are caused by the project and occur at the same time and place as the project. Where there is a potential for indirect impacts to a resource area, they are discussed in this chapter. Indirect impacts are those that are caused by the project and are later in time or farther removed in distance but are still reasonably foreseeable. Impacts may be adverse or beneficial.

Where adverse impacts to resources are anticipated, mitigation measures are discussed; these are measures that will be implemented to avoid, minimize, or compensate for project impacts. In some instances, detailed mitigation for impacts to certain resource areas is still under development and will be finalized as the project progresses. Where this occurs, it has been noted within the mitigation discussion for each resource area, and information on the process and timeframe to finalize mitigation has been provided. Mitigation measures would be implemented with the selection of a Build Alternative.

As described in detail in **Chapter 5 – Phased Project Implementation**, funding limitations necessitate that the project be constructed in two phases: Phase 1 and Phase 2. Phase 1 consists of improvements planned from approximately the Ilex interchange north to 29th Street and connecting the I-25 mainline improvements to those previously completed just north of 29th Street – this corresponds with the North Area described above. Smaller projects within Phase 1 could be completed individually and are described in **Chapter 5 – Phased Project Implementation**. Phase 1 is currently the only funded phase of the project. Phase 2 improvements correspond with the Central Area and South Area described above and consists of the improvements planned from immediately south of the Ilex interchange to the Pueblo Boulevard interchange. As noted previously, the Central Area is where distinguishable differences occur between the two Build Alternatives. Phase 2 would be constructed over time and as funding becomes available. Implementation of future phases may not occur if funding beyond the initial phase cannot be identified. To help the reader better understand the impacts associated with each phase, the Environmental Consequences discussion denotes which phase of improvements is encompassed in each geographic area.

EXHIBIT 3.0-2
North Area (Phase 1), Central Area (Phase 2), and South Area (Phase 2) for Impact Discussions



3.1 TRANSPORTATION

Transportation planning in Pueblo has been designed as a continuous and ongoing process. As part of the process, the Pueblo Area Council of Governments (PACOG) developed a comprehensive plan in 2002, the *Pueblo Regional Development Plan*. This plan addressed regional planning needs, including those related to Pueblo's transportation systems (PACOG, 2002). In 2008, PACOG developed the *Pueblo Area 2035 Long Range Transportation Plan* to further refine the vision for the future transportation system in Pueblo. As a part of this ongoing planning process, the citizens of Pueblo were given the opportunity to identify community issues to be addressed. Among the issues cited by the citizens were cross-town local mobility concerns, the lack of pedestrian-friendly streets, safety at railroad crossings, and the impact of I-25 on the surrounding neighborhoods.

When PACOG asked for their vision of the Pueblo region's future, residents cited strong, interconnected neighborhoods with local services and activities, an efficient multi-modal transportation system serving all citizens, pedestrian and bicycle facilities, and greenways that provide added connectivity to neighborhoods. This section addresses roadway configuration, traffic, transit, and related multi-modal issues in the Pueblo I-25 corridor.

Transportation is discussed first in this chapter because the local and regional mobility and safety improvements included as part of the Build Alternatives were an important distinguishing feature to use for comparison between alternatives. Additionally, throughout the extensive public involvement process (see **Chapter 6 – Comments and Coordination**), citizens told the CDOT Project Team that I-25 and the local street network are the primary challenges in their ability to travel around Pueblo. Citizens were interested in which of the alternatives best address their local street issues, which in turn affects their neighborhoods. Lastly, presenting the proposed transportation improvements associated with each Build Alternative first will help the reader better understand the features of the alternatives as they read about the impacts of each alternative in this chapter.

3.1.1 Affected Environment

The segment of I-25 through Pueblo consists of four travel lanes; two continuous asphalt-covered lanes in each direction serve as the primary thoroughfare for north-south traffic. This section was constructed between 1949 and 1959, predating the Interstate Highway System and its associated design guidelines, making it among the oldest segment of the interstate system in Colorado. Lane and shoulder widths vary throughout the corridor. Posted speeds of the segment range from 50 miles per hour (mph) to 75 mph.

As a result of its age and the design practices at the time it was built, structural and operational deficiencies are becoming apparent and are manifested in two major roadway condition categories: safety and local/regional mobility. The following provides detailed descriptions of the safety and local/regional mobility issues present in the study area.

3.1.1.1 Roadway Conditions that Affect Safety

The design of a roadway considers the traffic volume and speed expected over the service life of the roadway. The design accommodates the traffic volume with adequate lanes and accommodates speed with appropriate curves and other geometric features.

A technical evaluation of the geometric and operational deficiencies was conducted by CDOT Project Team engineers to evaluate the nominal safety of this segment of I-25 (CH2M HILL, 2002; 2011a). The evaluation consisted of a combination of field measurements, field observations, and review of original construction plans. The geometric features that were reviewed included the horizontal and vertical alignment of the roadway, stopping sight distance, cross-sectional elements, entrance and exit lane design, and ramp design and spacing. Each feature was evaluated against current state and national standards, including CDOT's *Roadway Design Guide* (2005a), the American Association of State Highway and Transportation Officials' *A Policy on Geometric Design of Highways and Streets* (2004), and the Transportation Research Board's *Highway Capacity Manual* (2010), and rated as good, fair, or poor. **Exhibit 3.1-1** lists the ratings for geometric and operational features on I-25.

EXHIBIT 3.1-1
Accident Ratings and Major Geometric and Operational Deficiencies on I-25 through Pueblo for 2003 through 2005

Segment	Travel Direction	Accident Rate[1]	Evaluation Rating	Major Geometric Deficiency[2]
Statewide Average	–	1.57	Fair	–
PHASE 1				
29th Street to US 50B	Northbound	2.31	Poor	Distance between ramps leaves insufficient deceleration and acceleration distance. Steep vertical curves on 29th Street. Deficient ramp design and lane balance at US 50B evident by sideswipe accidents. Several multi-vehicle crashes on the ramps, which could be related to the ramp layout.
	Southbound	2.76	Poor	
US 50B to 13th Street	Northbound	1.64	Fair	Rear-end accidents on the mainline could result from congestion. Several rear-end accidents at the ramp intersections. Obstructions within the clear zone. Tight curves resulting in fixed object crashes. Steep grades and side slopes. Obstructions within the clear zone. Inadequate stopping sight distance leading to rear-end type accidents. Poor lane balance and ramp sequencing.
	Southbound	2.13	Poor	
13th Street to 6th Street	Northbound	1.96	Fair	Tight curves resulting in fixed object crashes. A fatal crash occurred in this section of I-25 when a driver was changing lanes on a curve. Steep grades and side slopes. Obstructions within the clear zone. Inadequate stopping sight distance leading to rear-end type accidents. Insufficient distance to decelerate for 13th Street exit ramp in the northbound direction. Poor ramp design and insufficient distance to decelerate for 6th Street exit ramp in the southbound direction. Evidence of parked car accidents due to insufficient shoulder width. Poor ramp design. Poor lane balance and ramp sequencing.
	Southbound	1.54	Fair	
6th Street to 1st Street	Northbound	2.54	Poor	Tight curves resulting in fixed object crashes. Steep grades and side slopes. Obstructions within the clear zone. Inadequate stopping sight distance leading to rear-end type accidents. Inadequate shoulder width. Poor ramp design. Poor lane balance and ramp sequencing leading to sideswipe type accidents. Steep grades on exit ramp at 1st Street southbound. Insufficient distance to accelerate northbound at 1st Street entrance ramp leading to sideswipe type accidents. Several multi-vehicle crashes on the ramps that could be related to the ramp layout.
	Southbound	4.42	Poor	
1st Street to Ilex Street	Northbound	2.62	Poor	Tight curves resulting in fixed object crashes. Steep grades. Inadequate stopping sight distance leading to rear-end accidents. Poor ramp layout and design leading to multi-vehicle accidents on the ramps. Sharp curve on exit ramp at Ilex Street northbound. Inadequate deceleration length for 1st Street exit ramp northbound. Inadequate acceleration length southbound from the 1st Street entrance ramp. Evidence of parked car accidents due to Insufficient shoulder width. Several multi-vehicle crashes on the ramps that could be related to the ramp layout.
	Southbound	2.79	Poor	
PHASE 2				
Ilex Street to Abriendo Avenue	Northbound	3.64	Poor	Tight curves resulting in fixed object crashes and overturning accidents. Poor driver comfort. Obstructions within the clear zone. Inadequate stopping and decision sight distance leading to rear-end accidents in this segment. Poor ramp spacing possibly leading to multi-vehicle crashes on the ramp. Insufficient shoulder width.
	Southbound	3.02	Poor	

EXHIBIT 3.1-1
Accident Ratings and Major Geometric and Operational Deficiencies on I-25 through Pueblo for 2003 through 2005

Segment	Travel Direction	Accident Rate[1]	Evaluation Rating	Major Geometric Deficiency[2]
Abriendo Avenue to Central Avenue	Northbound	4.72	Poor	Tight curves resulting in fixed object crashes and overturning accidents. Steep side slopes. Poor signing. Inadequate sight distance leading to rear-end accidents. Unexpected ramp location at Central Avenue contributing to multi-vehicle crashes. Insufficient shoulder width causing accidents with parked vehicles.
	Southbound	1.87	Fair	
Central Avenue to Indiana Avenue	Northbound	1.34	Fair	Constrained cross section leading to running off the road and hitting fixed objects. Inadequate sight distance. Poor ramp layout and design. Rear-end accidents on ramps are typical accident types in this location due to the poor ramp design and inadequate sight distance.
	Southbound	1.73	Fair	

Source: CH2M HILL, 2011b.

[1] Rating scale: Good = < 1.18 total accidents per million vehicle miles traveled (VMT); Fair = 1.18-1.96 total accidents per million VMT; Poor = > 1.96 total accidents per million VMT.

[2] Unless otherwise noted, the Geometric Deficiency applies to both the northbound and southbound directions.

Horizontal and Vertical Alignment

The horizontal alignment of a roadway is defined by its configuration as seen in plan view, such as on a map or from an airplane. Vertical alignment refers to the vertical elevation of a roadway on the landscape; for example, the grade of a road as it climbs or descends a hill. If the horizontal or vertical alignments of a roadway are substandard, it is usually due to tight curves, inadequate banking of the road at curves, and/or long, steep grades.

The horizontal and vertical alignments on I-25 were evaluated against state and national standards. Horizontal alignments on I-25 were rated as good from 29th Street to United States Highway (US) 50B, poor from US 50B to Central Avenue, and good from Central Avenue to Pueblo Boulevard. Vertical alignments on I-25 were rated as fair at 29th Street, good from 29th Street to US 50B, poor from US 50B to Abriendo Avenue, and fair from Abriendo Avenue to Pueblo Boulevard.

Stopping Sight Distance

Stopping sight distance is the distance required by a driver to stop a vehicle traveling at or near the design speed of a highway before reaching a stationary object such as a stopped vehicle. Stopping sight distance on I-25 was evaluated against state and national standards and was rated as poor at 29th Street, good from 29th Street to US 50B, poor from US 50B to Abriendo Avenue, fair from Abriendo Avenue to Indiana Avenue, and good from Indiana Avenue to Pueblo Boulevard. Inadequate stopping sight distance could result in rear-end accidents when a driver's ability to react is compromised.

Cross-Sectional Elements

Cross-sectional elements encompass a wide variety of roadway components, including lane widths, shoulder and median widths, clear zone obstructions, side slopes, and guard rails. Compared to state and national standards, the cross-sectional elements on I-25 were rated as poor in more than 95 percent of the corridor, from US 50B to Pueblo Boulevard and in segments north of US 50B (CH2M HILL, 2002; 2011a). The poor rating can be attributed to the following conditions:

- Narrow shoulders and clear zone obstructions such as light or utility poles throughout the corridor.
- The lack of a barrier between northbound and southbound traffic between 29th Street and US 50B.
- Steep side slopes near downtown Pueblo and the Arkansas River.
- Unprotected bridge piers at Northern Avenue.
- A concrete-lined drainage ditch close to the edge of the highway from Ilex Street to Central Avenue.
- An alley that backs up to a residential area within the clear zone between Central Avenue and Indiana Avenue.
- An electrical substation close to the edge of the highway near Pueblo Boulevard.

Entrance/Exit Ramp Design

Existing entrance and exit ramp length and curvature were evaluated in conjunction with the interchange design. Entrance and exit ramps were considered good at 29th Street, Abriendo Avenue, and Pueblo Boulevard; fair at 13th Street, 6th Street, and Central Avenue; and poor throughout the rest of the corridor.

Interchange and Ramp Spacing

The spacing of interchanges was evaluated against national criteria for sufficiency. The national design recommendation is to provide a minimum spacing between interchanges of 1 mile in urban areas and 2 miles in rural areas. Appropriate spacing of interchanges is determined based on the ability of traffic to exit or enter the highway without conflicting with other motorists.

Along the 7-mile project corridor, there are 11 interchanges. The average spacing between these interchanges is 0.53 mile. Interchange spacing was rated as poor throughout the downtown Pueblo area and near the Ilex Street and Abriendo Avenue interchanges. Interchange spacing was rated as good on the north and south ends of the corridor and fair everywhere else.

Adequate spacing between the ends of each ramp allows vehicles to accelerate or decelerate when entering or exiting the highway. This spacing also allows for signing to inform, warn, and control drivers. In the project corridor, the areas south of Pueblo Boulevard are considered to have good ramp spacing; areas north are generally rated poor.

Accident Analysis

Accidents on a roadway are typically associated with a combination of several elements, including the driver, the vehicle, and the roadway's geometric and operational features. The severity and frequency of accidents along a given roadway can be used to develop an accident rate, which is measured in total accidents per million vehicle miles traveled (VMT). Likewise, the accidents and Average Daily Traffic (ADT) along a section of roadway can be compared to facilities with the same number of lanes, area type (rural or urban), and access control with the use of a Safety Performance Function (SPF) graph. These comparisons can provide insight into the safety of the roadway compared to similar types of roads within the state.

An accident analysis was conducted for the I-25 corridor from the 29th Street interchange to the Pueblo Boulevard interchange for the 6-year period from 2003 to 2008 (CH2M HILL, 2011b). During this timeframe, CDOT safety analyses evolved from accident rate comparisons to SPF comparisons. Both methodologies assess the level of safety for a roadway based on accidents and traffic volumes. However, the SPF methodology provides a more accurate comparison of a roadway's safety performance to similar facilities because it considers factors such as number of lanes and presence of a median, whereas the average accident rate is calculated from statistics for facilities across the state with varying cross-sectional elements including number of lanes. The SPF methodology is now the industry standard.

Because the methodology for evaluating accidents changed during the preparation of the DEIS (around 2006), both methodologies are presented in this section. The accident analysis for the 2003 through 2005 time period was conducted by comparing the I-25 accident statistics for the study area to the 2005 statewide average urban interstate rates. The accident analysis for the 2006 through 2008 time period was conducted by comparing the I-25 accident statistics to CDOT's "Urban 4-Lane Freeways" SPF graph. The results are described below.

- **Accident Rates (2003 - 2005)**. Comparative data from 2003 to 2005 indicate that I-25 through Pueblo has a 43 percent higher overall rate of accidents than other urban interstates statewide. I-25 through Pueblo has a 68 percent higher property-damage-only accident rate for the same period. Accident rates that are considerably higher than the statewide average are key indicators of the safety issues on I-25 through Pueblo.

  For the accident rate analysis (2003 – 2005), the 7-mile length of I-25 through Pueblo was divided into nine different study segments. **Exhibit 3.1-1** shows accident rates for the eight segments of I-25 through Pueblo that were rated as fair or poor. The rating is based on CDOT criteria for urban interstates, with a good rating being 1.18 or fewer total accidents per million VMT, a fair rating being between 1.18 and 1.96, and a poor rating being 1.96 or greater. The 2005 average urban interstate accident rate in Colorado, measured in total accidents per million VMT, was 1.57.

Major geometric deficiencies for the eight segments with fair and poor accident rates and typical accident types associated with these deficiencies are also included in **Exhibit 3.1-1**. The accident history for the Indiana Avenue to Pueblo Boulevard segment results in a good rating and is, therefore, not included in the exhibit. The geometric deficiencies and typical accident types are similar to those shown for the Central Avenue to Indiana Avenue segment.

- **Safety Performance Function (2006 - 2008).** The SPF analysis was conducted by comparing the total number of accidents per mile per year and the ADT volume along the 7-mile length of I-25 in the study area to CDOT's "Urban 4-Lane Freeways" SPF graph (CH2M HILL, 2011b). This analysis indicated that I-25 through Pueblo experienced more accidents and exhibited a lower safety performance than expected during the 2006 to 2008 time period. This is consistent with the fair and poor ratings attributed to the accident rates shown in **Exhibit 3.1-1**. Roadway segments with a low safety performance such as I-25 through Pueblo have a high potential for accident reduction once improvements that target the safety issues are implemented. Additional information on the SPF analysis may be found in the Accident Analysis Update, Addendum to Traffic Report Technical Memorandum (CH2M HILL, 2011b).

Both accident analysis methodologies indicate that traffic safety problems exist on I-25 through Pueblo. The accident rate and SPF comparisons yield similar conclusions over the 6-year analysis period because the accidents have remained fairly consistent from year to year, due in part to the geometric deficiencies and recurring congestion along this segment of I-25.

3.1.1.2 Roadway Conditions that Affect Mobility

Mobility is a measure of how well the roads, sidewalks, trails, and public transit move people and goods within and through the community. The citizens of Pueblo have come to depend heavily on I-25 for local north-south local mobility, and I-25 also serves regional travelers and freight movement. Mobility on I-25 can be measured by how effectively it moves vehicles from place to place. Part of this measurement relates to how interchanges connect to side streets, how local and regional traffic interacts, and the level of traffic congestion.

Interchange Connectivity

Typically, interchanges are placed to connect interstates with major cross streets, such as highways and major arterials. Rarely do interstate interchanges directly connect with a neighborhood street, a minor roadway, or a roadway that does not extend a reasonable distance from the highway. The existing interchanges in Pueblo connect a variety of roadways, state highways, and local neighborhood streets to I-25.

Many of the interchanges connect to streets that do not provide adequate east-west local mobility. The interchanges at US 50B and Pueblo Boulevard connect I-25 to other major regional routes; however, the interchange at US 50B does not provide access to the west, and the interchanges at 13th Street, Ilex Street, Abriendo Avenue, Central Avenue, and Pueblo Boulevard do not provide access to the east of I-25. Many of the interchanges connect directly to neighborhood streets or to streets that are local and discontinuous. Examples include the exit ramps at Minnequa Avenue and Illinois Avenue, which move traffic from the highway directly into local neighborhood streets, and the interchange at Central Avenue, which connects I-25 to a discontinuous local street.

Traffic Conflicts

I-25 serves as the primary north-south route in Pueblo, with no convenient alternative routes on local roadways. Barriers to east-west local mobility include Fountain Creek, the Union Pacific Railroad (UPRR) line, the Arkansas River, the Evraz Rocky Mountain Steel Mills, and other physical features. Traffic is further hindered by poor interchange connectivity, thereby increasing local and regional demand on I-25.

Traffic Congestion

Data on existing traffic conditions in the I-25 corridor are collected by CDOT and local governments. According to CDOT, bi-directional traffic volumes along the I-25 corridor ranged from a low of approximately 25,900 daily vehicles north of Pueblo Boulevard to a high of 67,500 daily vehicles between the US 50B and 13th Street interchanges. Traffic in the corridor is expected to approximately double by the year 2035, with ADT ranging from 54,300 to 108,360 in various segments of the corridor (CH2M HILL, 2005a; 2010h; 2011b). Roadway capacity is defined as a road's ability to efficiently handle traffic. Theoretical capacity is based on the number of lanes on a road. Capacity is the measure of the number of vehicles that can travel through a location in 1 hour. According to the *Highway Capacity Manual*, the theoretical capacity is approximately 2,000 vehicles per lane per hour, or 8,000 vehicles per hour for a four-lane interstate highway (Transportation Research Board, 2010). Operating constraints such as high truck volumes, narrow shoulders, sharp curves, and inadequate sight distance further reduce the theoretical capacity of a road. These operating constraints reduce the speed of traffic which, in turn, reduces the actual roadway capacity.

As shown in **Exhibit 3.1-2**, many segments in the corridor exceed 8,000 vehicles per hour (4,000 in each direction) for the future No Action scenario, suggesting that six lanes would theoretically be required to handle this amount of traffic. While safety improvements alone would slightly improve the theoretical capacity, these improvements still would not provide sufficient capacity to meet these future traffic demands on the system.

As **Exhibit 3.1-2** indicates, six lanes would not be required to meet future traffic demand between Central Avenue and Pueblo Boulevard. However, six lanes cannot be decreased to four lanes until Indiana Avenue, where there is an off-ramp that can safely accommodate the lane reduction.

The existing and future traffic volumes developed in coordination with the Pueblo Area Council of Governments is used to analyze proposed solutions. These volumes, along with factors such as speed, travel time, maneuverability, delay, and safety, are quantified as the segment's Level of Service (LOS). LOS measures the efficiency of the road's operation using a rating system of A through F. LOS A is the best operating level and allows a motorist to travel at the speed limit, encountering a minimum number of vehicles and minimal roadway restrictions. LOS F is a failure condition ranging from stop-and-go to stopped traffic. At LOS F, the road's actual capacity has been exceeded. **Exhibit 3.1-3** shows an example of LOS and the

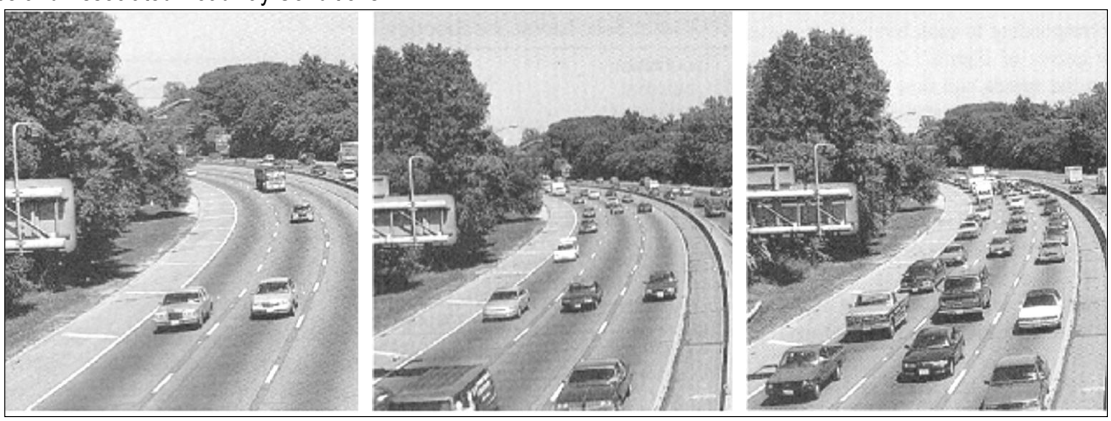
EXHIBIT 3.1-2

Existing (2002) and Future (2035) No Action Bi-Directional Peak-Hour Volumes (Vehicles per Hour)

Segment	Existing I-25		Future No Action I-25	
	Northbound	Southbound	Northbound	Southbound
North of 29th Street	2,341	2,430	3,310	4,000
29th Street to US 50B	3,147	3,619	3,920	4,050
US 50B to 13th Street	3,222	3,406	4,170	4,350
13th Street to 6th Street	2,574	3,049	4,100	4,600
6th Street to 1st Street	1,946	2,515	3,550	4,400
1st Street to Ilex Street	1,866	2,613	3,595	4,500
Ilex Street to Abriendo Avenue	1,585	2,152	3,300	4,200
Abriendo Avenue to Central Avenue	1,302	1,757	2,650	3,600
Central Avenue to Indiana Avenue	1,019	1,501	2,300	3,350
Indiana Avenue to Pueblo Boulevard	891	1,230	1,800	2,700

Source: CH2M HILL, 2005a; 2010h; 2011b.
US 50B = United States Highway 50B

EXHIBIT 3.1-3
Level of Service and Associated Roadway Conditions



LOS B **LOS D** **LOS F**

associated conditions. The LOS by direction for segments on the I-25 corridor within the project limits is summarized in **Exhibit 3.1-4.**

VMT is a measure of the total distance traveled by the total number of vehicles within the Pueblo region, as defined by PACOG. Changing the vehicle path (for example, closing a ramp) is likely to increase VMT as the route to get to the same location may be longer. Another contributing factor to increasing VMT is roadway congestion. As an existing roadway network becomes more congested, the VMT increases as drivers opt for more indirect routes in an effort to save overall travel time. (The 2035 No Action Alternative VMT in the project area is shown in **Exhibit 3.1-7**.)

Truck traffic ranges from 5 to 10 percent of daily traffic along I-25 through Pueblo, with the highest percentages north of 29th Street. The corridor average is nearly 7 percent. These values are higher than the truck percentages on other state highways in the Pueblo area, where the average is just over 4 percent, indicating that I-25 is a major truck traffic route through Pueblo and the state. The mixture of higher-than-average heavy truck traffic and a high number of local trips on I-25 poses a concern for motorists because the travel needs of each type of user differ.

EXHIBIT 3.1-4
Existing (2002) and Future (2035) No Action Bi-Directional PM Peak-Hour Highway Level of Service

Segment	Existing I-25		Future No Action I-25	
	Northbound	Southbound	Northbound	Southbound
North of 29th Street	C	C	F	D
29th Street to US 50B	C	C	F	D
US 50B to 13th Street	C	C	F	E
13th Street to 6th Street	C	C	F	E
6th Street to 1st Street	C	C	F	F
1st Street to Ilex Street	C	C	F	F
Ilex Street to Abriendo Avenue	B	B	F	D
Abriendo Avenue to Central Avenue	B	B	E	D
Central Avenue to Indiana Avenue	A	A	C	D
Indiana Avenue to Pueblo Boulevard	A	A	A	C

Source: CH2M HILL, 2005a; 2010h; 2011b. US 50B = United States Highway 50B

Further detail on traffic in the project area may be found in the *Traffic Report Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005a; 2010h, 2011b).

Bridge Deficiencies

CDOT assigns bridge sufficiency ratings to structures on all state highways. This rating is a number between 100 (best) and 1 (worst) based on the condition and design of each bridge. A bridge rated below 50 qualifies for replacement, and those rated between 50 and 80 qualify for rehabilitation or replacement if justified.

Bridge sufficiency ratings may reflect structural deficiencies and/or functional obsolescence. A structurally deficient rating is assigned to bridges that are in advanced stages of deterioration. Bridges in the study area, listed in **Chapter 1 – Purpose and Need**, **Exhibit 1-3**, continue to deteriorate, and four bridges are currently rated as structurally deficient (southbound I-25 at Ilex Street, northbound I-25 at Indiana Avenue, and the Mesa Avenue and Northern Avenue Bridges that span I-25).

Functionally obsolete bridges are those with acceptable load-carrying capacity but physical limitations, such as narrow deck width, poor approach alignments, or inadequate vertical under clearance. Other bridge conditions considered in determining functional obsolescence (and possibly contributing to corridor safety and capacity issues) relate to existing conditions that do not meet current design guidelines or that cannot adequately accommodate the planned improvements, such as narrow medians, bridge pier locations that result in tight horizontal curvature, and low vertical bridge clearances. Based on evaluation for this study, 11 of the 25 structures in the I-25 corridor were considered functionally obsolete.

3.1.1.3 Existing Pedestrian and Bicycle Facilities

Non-motorized mobility within the City is provided by a series of on-street bicycle routes, multi-use trails, and sidewalks. The city-wide bicycle route network consists of nearly 200 miles of designated on-street routes suitable for riders of all experience levels (PACOG, 2008). Pueblo's multi-use trails are designed to accommodate pedestrians and bicyclists along open space areas, major rivers, and stream corridors. The Fountain Creek and Arkansas River trails provide almost 15 miles of multi-use trails within the City (illustrated in **Section 3.3 Parks and Recreation**, **Exhibit 3.3-1**); however they do not provide connections for users south of the Arkansas River. More information on trails in the project area is available in **Section 3.3 Parks and Recreation**. Sidewalks encourage alternative transportation by connecting neighborhoods, existing trails, and other city centers and public facilities. Approximately 80 percent of roadways in the City of Pueblo have sidewalk facilities (PACOG, 2008).

3.1.1.4 Existing and Planned Public Transit Facilities

Bus service first became available in Pueblo in 1947 to meet the City's mass transportation needs. The bus service was privately owned and operated by the Pueblo Transit Company until 1968 when the City acquired the company and its assets. The City's Department of Transportation currently manages this publicly owned transportation system.

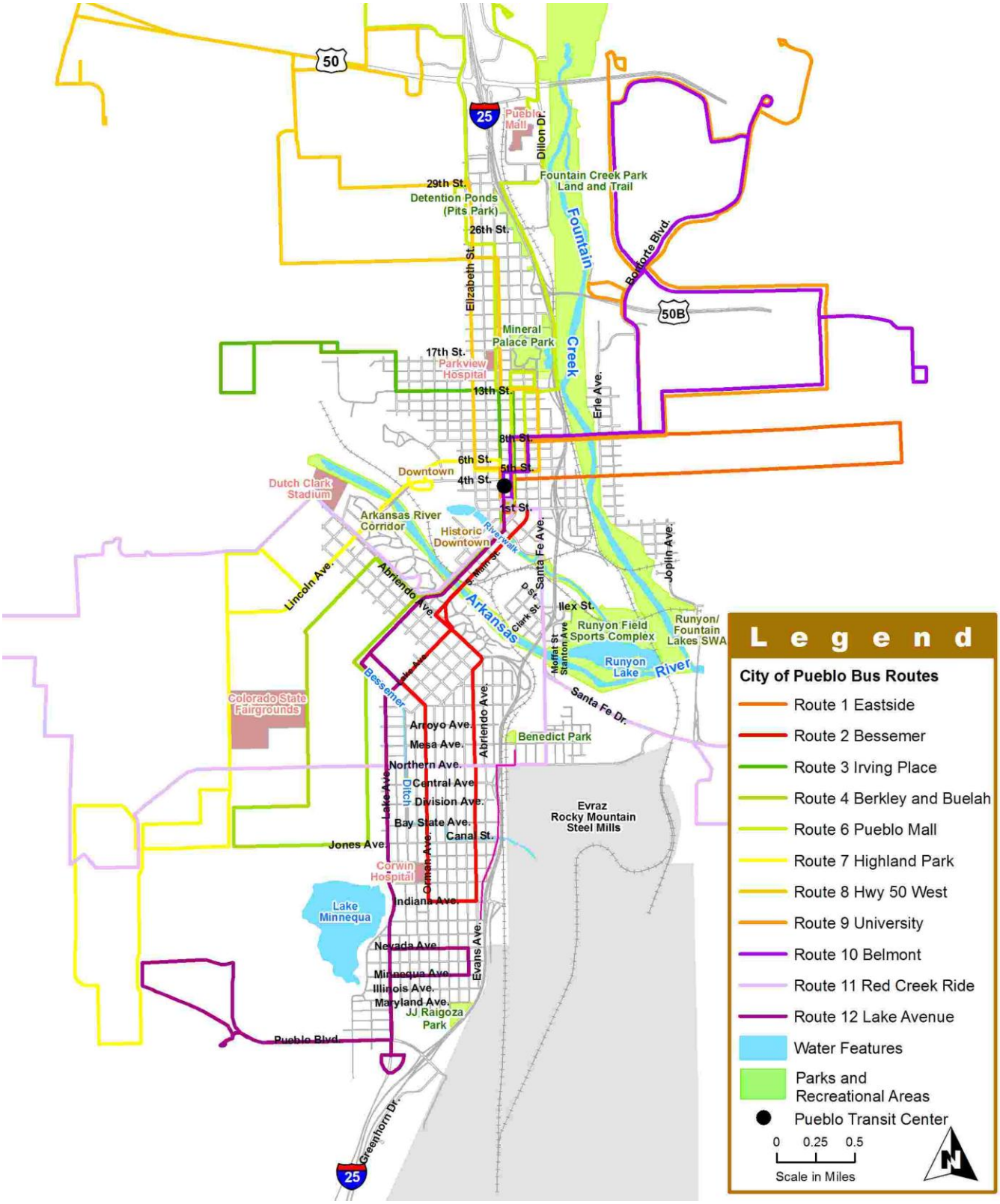
In 2010, the Pueblo Transit System consisted of 11 bus routes that have a central transfer point at the Pueblo Transit Center, located in downtown Pueblo at 1st Street and Court Street. The location of the Pueblo Transit Center is shown in **Exhibit 3.1-5**. This system is called a "radial pulse" system, which is designed to have all routes converge and diverge from a central transfer point with all routes timed to arrive and depart at the same time. This type of system is helpful for facilitating transfers between routes but can lead to a significant overlap of service. The bus routes provide service to St. Mary Corwin and Parkview Hospitals, the Pueblo Mall, Colorado State University at Pueblo, and various other schools, neighborhoods, retail centers, and medical facilities. These routes are shown in **Exhibit 3.1-5**. The transit center also houses Greyhound Lines, a private interstate bus operator.

I-25 is not heavily used as a public transit corridor; bus travel on I-25 is limited to Route 6, "Pueblo Mall," which uses I-25 between 29th Street and 13th Street. The routes that cross I-25 are Route 1 along 4th Street and 8th Street, Routes 9 and 10 along 8th Street, and Route 11 along Northern Avenue and Santa Fe Avenue.

The Pueblo Transit System also offers a service called Citi-Lift. Citi-Lift is an Americans with Disabilities Act (ADA) paratransit service for individuals who cannot use the fixed-route bus service because of a disability. The service area for Citi-Lift includes the Pueblo city limits and corridors

EXHIBIT 3.1-5

Existing Public Transit Facilities in the Project Area



that are within 0.75 mile of the fixed routes. Services are offered Monday through Saturday, 6:00 a.m. to 6:30 p.m. According to PACOG's *Pueblo Area 2035 Long Range Transportation Plan*, demand for Citi-Lift doubled between 2003 and 2005 (PACOG, 2008).

Commuter rail service from Pueblo to Colorado Springs on the existing tracks and an intercity rail connection to Amtrak's Zephyr service via Tennessee Pass through Pueblo has been proposed; however, no formal agreements have been made and are therefore not anticipated within the next 5 years. CDOT's Division of Freight and Rail recently studied statewide freight and passenger rail (CDOT, 2012a). A study on the feasibility of high-speed rail throughout Colorado by the Rocky Mountain Rail Authority was finalized in 2010 (Rocky Mountain Rail Authority, 2010). The ongoing Interregional Connectivity Study and the Automated Guideway System Study are each looking at some type of high-speed rail facility connecting Colorado's Front Range communities from Pueblo to Fort Collins (Parsons Brinckerhoff, 2012).

3.1.1.5 Existing Railroad Operations

Railroads have a long history in Pueblo. The founder of the Denver & Rio Grande Railroad, General William J. Palmer, aspired to build a railroad from Denver to Mexico, passing directly through Pueblo. The Denver & Rio Grande Railroad arrived in Pueblo in 1872 after the citizens of Pueblo passed a $100,000 bond to finance the construction of the rail line into Pueblo. Shortly after the arrival of the first rail line, a total of five rail lines connected in Pueblo at the Pueblo Union Depot. The Pueblo Union Depot was built in 1890 and sits adjacent to Pueblo's rail yard north of the Arkansas River. The Colorado Fuel and Iron (CF&I) steel mill (now known as the Evraz Rocky Mountain Steel Mills), located 2 miles south of the Pueblo Union Depot on the Denver & Rio Grande Railroad line, relied heavily on the line. The construction of rail lines made it possible for Pueblo's first industry, steel works, to succeed (PACOG, 2002).

Today, Pueblo County is served by the Burlington Northern Santa Fe (BNSF) Railway Company and UPRR rail lines. All rail activities in Pueblo County consist exclusively of freight service. As shown in **Exhibit 3.1-6**, the UPRR freight line parallels I-25 to the east along Fountain Creek until it splits to the north of Ilex Street. One branch continues south on the west side of the Evraz Rocky Mountain Steel Mills. The

EXHIBIT 3.1-6
Existing Rail Lines in the Project Area

other heads west, crossing I-25 approximately 0.25 mile north of the Ilex Street interchange, toward the rail yard. From the rail yard, this branch heads due south, crossing I-25 at the Abriendo Avenue interchange, then follows I-25 until it rejoins the first branch south of the steel mill facility (within the steel mill property). A third branch heads east across I-25 from the line split north of Ilex Street near the trail that leads to the Historic Arkansas Riverwalk of Pueblo (HARP).

The BNSF Railway Company shares the UPRR freight rail lines in Pueblo with the exception of the line east of I-25 along Fountain Creek. For service to the north of Pueblo, the BNSF Railway Company line extends northwest from the downtown rail yard along the west side of Pueblo until it connects with the UPRR line to the north of Pueblo near Purcell Boulevard and I-25.

In addition to the BNSF Railway Company and UPRR rail lines, lines exist on and around the Evraz Rocky Mountain Steel Mills site. Internal steel mill lines are operated by the Colorado and Wyoming Railroad Company.

The strategic Rail Corridor Network (STRACNET) is a Department of Defense program that aims to ensure the nation's rail infrastructure can support national defense in the event of an emergency. STRACTNET lines in Pueblo run along the BNSF and UPRR north-south lines in Pueblo and connect to the U.S. military's Pueblo Chemical Depot (Parsons Brinckerhoff, 2012).

3.1.2 Environmental Consequences

3.1.2.1 No Action Alternative

Under the No Action Alternative, there would be no construction impacts as a result of highway reconstruction. Normal highway maintenance operations may temporarily disrupt traffic; however, there would be no improvements to the accident rates that currently affect I-25. The existing problems on I-25 are expected to persist under the No Action Alternative because the basic configuration of the highway throughout the study area will remain the same. The deficient geometric and operational features would continue to exist without the reconstruction needed for improving the safety of the highway.

Local and regional mobility in Pueblo would not be improved as a result of the No Action Alternative because of the following situations:

- Interchanges would continue to connect to discontinuous local and neighborhood streets, providing limited east-west local mobility across I-25.
- Conflicts between local and regional users of the highway would persist.
- Traffic congestion would continue to increase, resulting in LOS F conditions which would cause stop-and-go to stopped conditions, further reducing regional mobility on I-25.
- Aging and functionally obsolete bridges would continue to deteriorate.

3.1.2.2 Build Alternatives

The Build Alternatives would positively impact transportation safety and local/regional mobility in Pueblo. The geometric and operational deficiencies that are a result of the age of I-25 would be corrected, thereby improving safety. Local and regional mobility would be improved through the connection of interchanges to appropriate city streets, the creation of off-highway connections, a consistent speed limit along I-25, increased capacity, provisions of multi-modal elements such as trails and sidewalks, and the replacement of functionally obsolete bridges along the corridor.

To measure the capacity and efficiency of the current I-25 through Pueblo and to analyze solutions, existing and future traffic volumes were developed in coordination with PACOG. The 2035 forecasted traffic volumes were used in the analysis of future operating conditions (CH2M HILL, 2005a; 2010h).

Exhibit 3.1-7 shows the projected PM peak-hour vehicle miles traveled in the project area for each alternative. **Exhibit 3.1-8** lists the corresponding LOS of specific segments of I-25 through Pueblo during PM peak traffic.

EXHIBIT 3.1-7
PM Peak-Hour Vehicle Miles Traveled in the Project Area (2035)

Alternative	Total VMT
No Action Alternative	68,650
Existing I-25 Alternative	74,630
Modified I-25 Alternative (Preferred Alternative)	80,490

Source: CH2M HILL, 2005a; 2010h; 2011b.

EXHIBIT 3.1-8
Bi-directional PM Peak-Hour Highway Level of Service

Segment	Existing (2002) I-25 LOS NB/SB	No Action Alternative (2035) I-25 LOS NB/SB	Existing I-25 Alternative (2035) I-25 LOS NB/SB	Modified I-25 Alternative (Preferred Alternative) (2035) I-25 LOS NB/SB
North of 29th Street	C/C	F/D	B/C	B/C
29th Street to US 50B	C/C	F/D	B/C	B/C
US 50B to 1st Street	C/C	F/F	C/C	C/C
1st Street to Abriendo Avenue	C/C	F/F	B/C	B/C
Abriendo Avenue to Northern Avenue	B/B	E/D	B/C	B/C
Northern Avenue to Pueblo Boulevard	A/A	C/C	A/A	A/A

Source: CH2M HILL, 2005a; 2010h; 2011b.
I-25 = Interstate 25
US 50B = United States Highway 50B
LOS = level of service
NB/SB = Northbound/Southbound

Construction of either Build Alternative may result in temporary impacts to businesses and residents, such as changes in access, delay caused by lane closures, out-of-direction travel due to detours, and other similar unavoidable impacts caused by construction-related activities.

North Area (Phase 1)

Both Build Alternatives would improve the transportation network in the North Area (Phase 1) of the project corridor. Improvements to the mainline of I-25 would correct geometric and operational deficiencies that are a result of the age of the highway. A total of 15 bridges in the North area (Phase 1) would be replaced, including two bridges with sufficiency ratings below 50. These bridges are the two Ilex Street bridges. In addition, six bridges with sufficiency ratings under 80 would also be replaced.

Both Build Alternatives would construct a split-diamond interchange from 13th Street to 1st Street through downtown Pueblo (see **Chapter 2 – Alternatives**, **Exhibit 2-29**) that would improve the safety of the interchanges and improve local mobility by disconnecting highway ramps from local streets, providing continuous, organized, and improved access to the downtown street network, and improving signage. The construction of the northbound frontage road would require that Bradford Avenue be made into a cul-de-sac on both ends. Kelly Road would be extended from Santa Fe Avenue into Goat Hill, improving local mobility by providing a second access point to the neighborhood.

Reconstruction of the US 50B interchange would increase safety by improving ramps with insufficient lengths and improve local mobility by providing access to 29th Street via a frontage road system (see **Chapter 2 – Alternatives**, **Exhibit 2-28**). CDOT would extend Dillon Drive south approximately 2 miles to US 50B, which would allow for improved local access to the Pueblo Mall and regional retail destinations in the North Area (Phase 1). This extension would provide additional off-highway local mobility for local users by shifting onto local roads those drivers who are using I-25 for local trips, thus reducing demand on I-25 parallel to Dillon Drive. Construction of pedestrian trails along I-25 to the north and south and across I-25 near Mineral Palace Park would improve pedestrian and bicycle mobility.

Bus Transit Route 6, which currently uses I-25, would have to be modified to accommodate the new interchange system from 13th Street to 1st Street through downtown Pueblo. It is expected that the new interchanges would provide for more efficient operation of the transit system in the City.

South Area (Phase 2)

Both Build Alternatives would improve the transportation network in the South Area (Phase 2) of the project corridor. Improvements to the mainline of I-25 would correct geometric and operational deficiencies. The exit ramp at Illinois Avenue would be removed, thus improving safety by removing a ramp that does not connect to an appropriate City street. The trails connecting Runyon Field Sports Complex and JJ Raigoza Park would improve pedestrian and bicycle mobility. The bridge at Pueblo Boulevard would be replaced, although this bridge does not have a low sufficiency rating.

Central Area (Phase 2)

Existing I-25 Alternative

The Existing I-25 Alternative would improve the transportation network in the Central Area (Phase 2) of the project corridor. Improvements to the mainline of I-25 would correct geometric and operational deficiencies and restore east-west connectivity that was severed when I-25 was built. Eleven existing bridges would be replaced in the Central Area (Phase 2). Five of these bridges have sufficiency ratings below 50: I-25 over Santa Fe Avenue bridge, the two bridges over Indiana Avenue, the Mesa Avenue bridge, and the Northern Avenue bridge. In addition, one bridge with a sufficiency rating under 80 would also be replaced.

Reconstruction of the interchange at Abriendo Avenue and removal of the interchange at Ilex Street would improve safety by increasing the spacing between interchanges. The reconstructed Abriendo Avenue interchange would increase local mobility by providing access to the east and west of I-25 through an indirect connection of Abriendo Avenue and Santa Fe Drive.

The connections between I-25 and local neighborhood streets at Central Avenue, Minnequa Avenue, and Illinois Avenue would be removed and replaced with connections to major roadways – including Abriendo Avenue, Northern Avenue, and Indiana Avenue – providing better east-west connectivity for highway users and reserving neighborhood streets for local traffic. Under the Existing I-25 Alternative, the interchange at Central Avenue would be removed and relocated to Northern Avenue (see **Chapter 2 – Alternatives**, **Exhibit 2-30**). The Northern Avenue interchange would become a split-diamond interchange with Abriendo Avenue, connected by a frontage road system. Improvements to the interchanges, the addition of frontage roads, and improvements to Mesa Avenue would improve off-highway local mobility for local users, thus reducing the demand on I-25. The new interchange system would improve east-west local mobility by providing access across I-25 in a location north of the Evraz Rocky Mountain Steel Mills, which currently acts as an eastern barrier at the Central Avenue interchange.

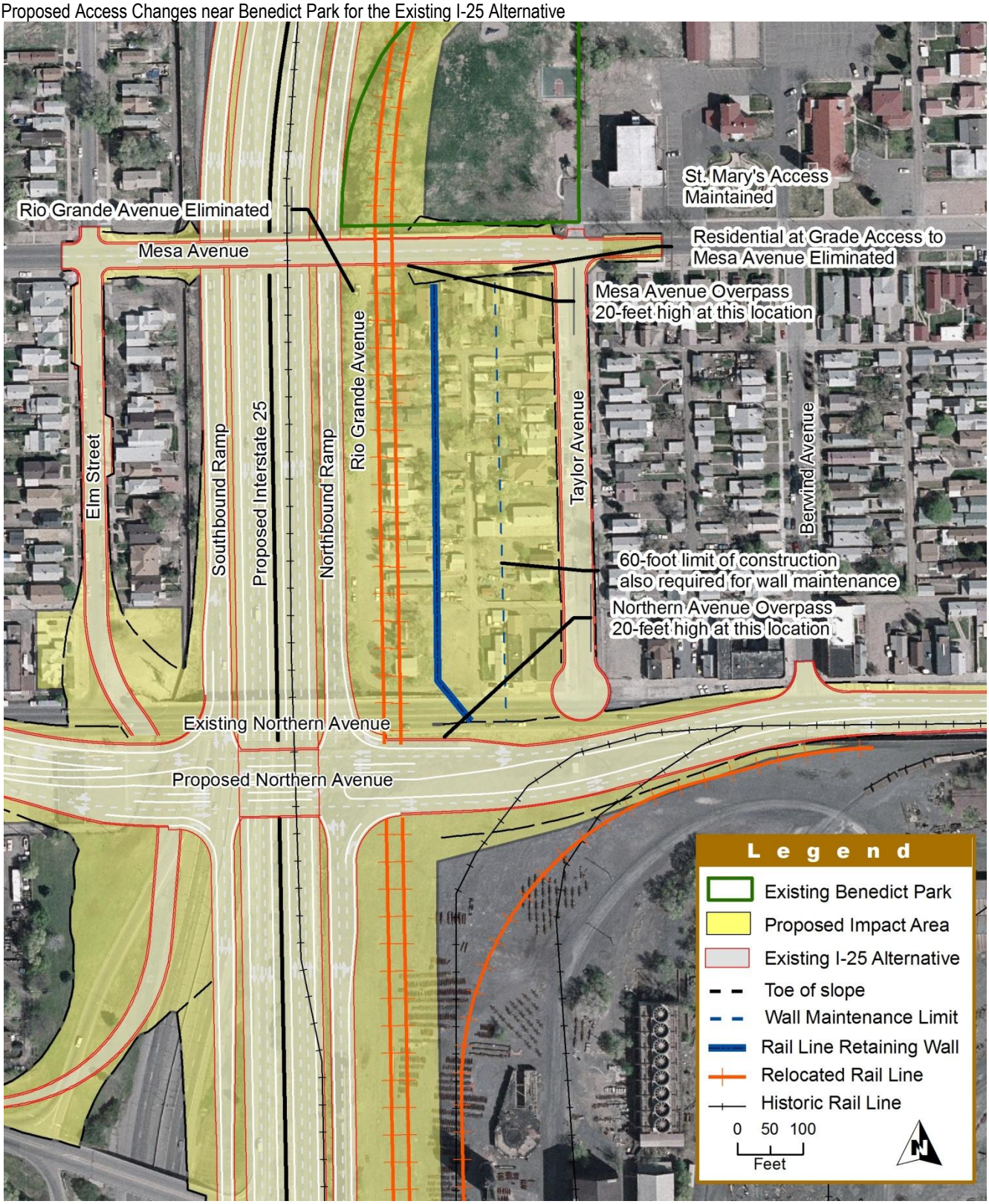
Access to some homes in the Bessemer Neighborhood can no longer be provided under the Existing I-25 Alternative due to the construction of the Northern Avenue Interchange, as shown in **Exhibit 3.1-9**. Rio Grande Avenue would be closed to allow for construction of the northbound ramp and rail lines in its place. Homes on the west side of Taylor Avenue would be acquired to allow for the construction and maintenance of a retaining wall adjacent to the rail lines. The elevation of Northern Avenue and Mesa Avenue would have to be raised to cross over the reconstructed I-25, which would remove access to some properties that front along these streets. The loss of access to the properties between Mesa Avenue and Northern Avenue would require the acquisition of these homes and businesses. Access to St. Mary's Church on Mesa Avenue would be maintained. More detail on property acquisitions can be found in **Section 3.4 Right-of-Way and Relocations.**

The interchange at Indiana Avenue would be reconstructed to remove ramps at Minnequa Avenue and Aqua Avenue. The removal of these ramps would improve safety by removing highway traffic from neighborhood streets and upgrading the interchange at Indiana Avenue to current design standards.

Under the Existing I-25 Alternative, the rail line located east of the current I-25 alignment would have to be moved to accommodate mainline reconstruction, causing impacts to the freight industry during construction. Approximately 1.41 miles of UPRR track would be moved east from roughly Abriendo Avenue to Minnequa Avenue and would tie back in to the existing line to the north and south of the relocation.

EXHIBIT 3.1-9

Proposed Access Changes near Benedict Park for the Existing I-25 Alternative



Regional pedestrian and bicycle mobility through the Central Area (Phase 2) would be improved with the construction of a trail "backbone" system that would connect JJ Raigoza Park in the south to destinations to the north such as HARP, Runyon Field Sports Complex, and Mineral Palace Park. The trails would cross I-25 at Mesa Avenue on sidewalks, providing additional east-west connectivity for pedestrians and bicyclists. An off-street pedestrian/bicycle trail is envisioned between JJ Raigoza Park and the Runyon Field Sports Complex. The Evans alleyway between Minnequa Avenue and Illinois Avenue is being considered as a potential alignment for the trail. For the non-motorized trail to be built using the alleyway between Minnequa Avenue and Illinois Avenue, property owners would need to agree to give up alley access.

Modified I-25 Alternative (Preferred Alternative)

The realignment of I-25 under the Modified I-25 Alternative (Preferred Alternative) would make it possible to improve the transportation network by substantially increasing both north-south and east-west local mobility throughout the Central Area (Phase 2). Improvements to the mainline of I-25 would correct geometric and operational deficiencies and improve local mobility by restoring off-highway connections that were removed when I-25 was originally constructed. A total of nine existing bridges would be replaced in the Central Area (Phase 2). Five of these bridges have sufficiency ratings below 50: I-25 over Santa Fe Avenue bridge, the two bridges over Indiana Avenue, the Mesa Avenue bridge, and the Northern Avenue bridge. In addition, one bridge with a sufficiency rating under 80 would also be replaced.

Additional north-south local mobility is provided by the extension of Stanton Avenue north and west to Santa Fe Avenue and south to Santa Fe Drive. The realignment of the mainline of I-25 to the east under the Modified I-25 Alternative (Preferred Alternative) (see **Chapter 2 – Alternatives**, **Exhibit 2-33**) allows for the extension of Santa Fe Avenue south to Minnequa Avenue using the current I-25 right-of-way. This extension would allow residents to use a local roadway to travel from neighborhoods in the south to downtown Pueblo, rather than having to rely on I-25. The extension would also provide a much needed additional local street crossing of the Arkansas River (reconnecting Santa Fe Avenue to Abriendo Avenue) and would restore the local street network that was severed when I-25 was built. The extension of Santa Fe Avenue is only available under the Modified I-25 Alternative (Preferred Alternative).

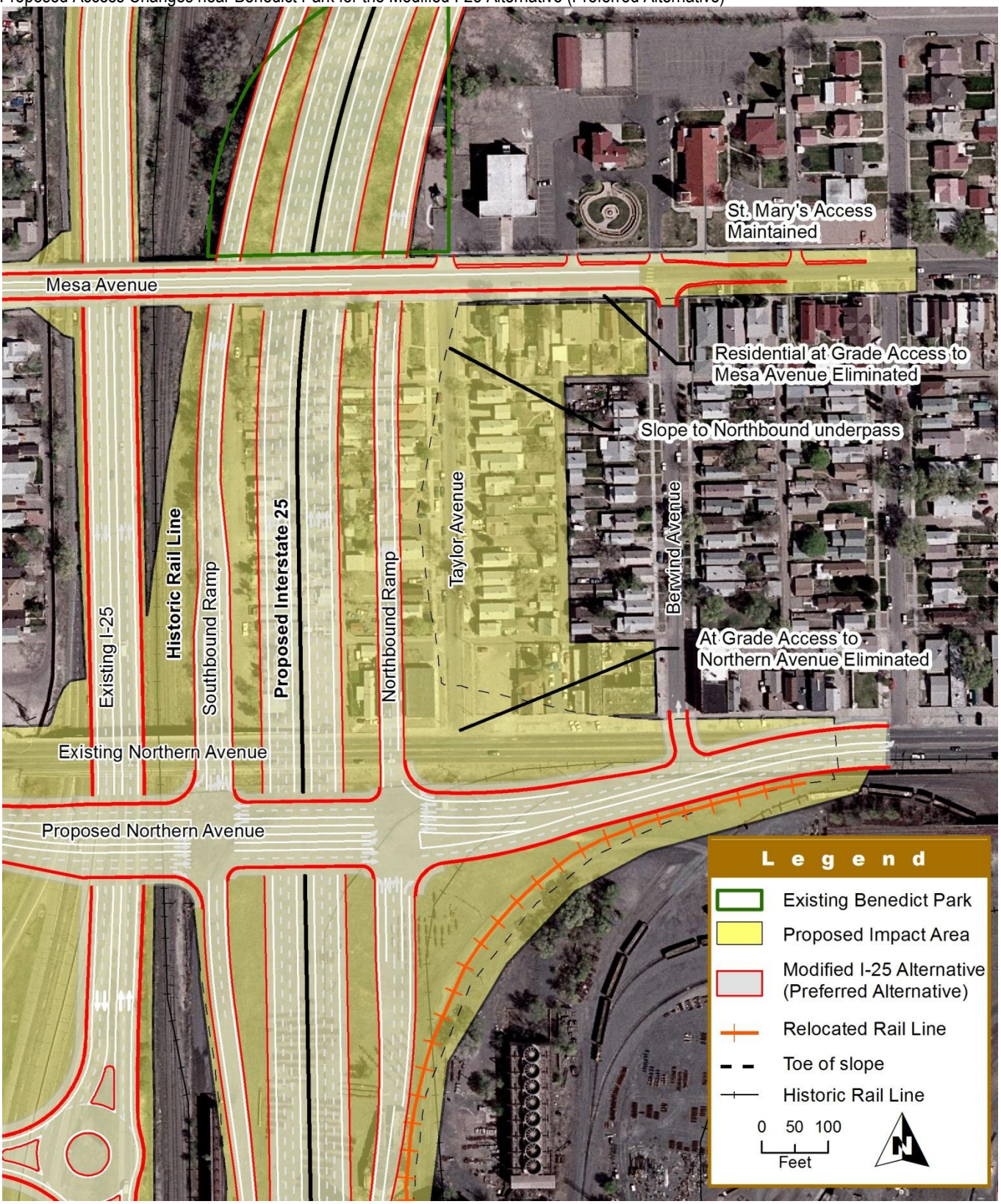
The extension of Stanton Avenue from Santa Fe Avenue near the existing Ilex Street interchange to Santa Fe Avenue just south of Santa Fe Drive reestablishes part of a local grid system. The Stanton Avenue connection was developed directly from community input and reflects the public's desire to use local roads for local trips. It also adheres to the City's long-range plans, which show Stanton Avenue connecting to D Street. Property acquisition required for the shift in I-25 alignment under the Modified I-25 Alternative (Preferred Alternative) makes this extension possible. These improvements provide approximately 23 lane miles of new local roads that would improve local mobility, increase safety, and reduce demand on I-25 from local users between 1st Street and Indiana Avenue. Ownership and maintenance of the new facilities are detailed in the Memorandum of Understanding between CDOT and the City of Pueblo, which was finalized in March 2010 (see **Appendix F**).

Under the Modified I-25 Alternative (Preferred Alternative), the interchange at Central Avenue would be removed and moved to Northern Avenue (see **Chapter 2 – Alternatives**, **Exhibit 2-33** and **Exhibit 2-34**).

The Northern Avenue interchange would become a split-diamond interchange with Abriendo Avenue, connected by a frontage road system. Improvements to the interchanges, the addition of frontage roads, and improvements to Mesa Avenue would improve local mobility for local users, reducing the demand on I-25. The new interchange system would improve east-west local mobility by connecting Abriendo Avenue across I-25 and providing access east of I-25 in a location south of downtown and north of the Evraz Rocky Mountain Steel Mills, which currently acts as an eastern barrier at the Central Avenue interchange.

Access to some homes in the Bessemer Neighborhood can no longer be provided under the Modified I-25 Alternative (Preferred Alternative) due to the construction of the Northern Avenue Interchange as shown in **Exhibit 3.1-10**.

EXHIBIT 3.1-10
Proposed Access Changes near Benedict Park for the Modified I-25 Alternative (Preferred Alternative)



Rio Grande Avenue would be closed to allow for construction of the shifted I-25 alignment. Taylor Avenue would be closed to allow for construction of the northbound ramp (including side-slopes) and due to the elevation changes of Northern Avenue and Mesa Avenue.

The elevation of Northern Avenue and Mesa Avenue would have to be raised to cross over the reconstructed I-25, which would remove access to some properties that front along these streets. The loss of access to the properties between Mesa Avenue and Northern Avenue requires the acquisition of these homes and businesses. Access to St. Mary's Church on Mesa Avenue would be maintained. More detail on property acquisitions can be found in **Section 3.4 Right-of-Way and Relocations.**

The interchange at Indiana Avenue would be reconstructed to remove ramps at Minnequa Avenue and Aqua Avenue. The removal of these ramps would improve safety by removing highway traffic from neighborhood streets and upgrading the interchange at Indiana Avenue to current design standards. Regional pedestrian mobility would be improved through a trail "backbone" system, as described for the Existing I-25 Alternative.

Bus Transit Route 11, which currently uses Santa Fe Avenue, would have to be modified to accommodate the Santa Fe Avenue and Stanton Street extensions. It is expected that the modifications to the local roadway network would provide for more efficient operation of the transit system in the City.

3.1.2.3 Indirect Effects

Indirect effects to transportation typically include changes in regional travel patterns or forced out-of-direction travel. On I-25 through Pueblo, modeling predicts that vehicle and person trips for the two Build Alternatives and the No Action Alternative would be similar. This is particularly true for north-south trips where vehicles would use either Build Alternative to bypass local traffic encountered at geometrically deficient interchanges. As safety deficiencies are reduced on the mainline, travel speed on I-25 would increase and VMT would be reduced. VMT would also be reduced on virtually every east-west road segment connecting to I-25. Both Build Alternatives would provide congestion relief on local roadways and improve travel times, whereas congestion and VMT would continue to worsen under the No Action Alternative.

In addition, corrections to traffic queuing at geometrically deficient interchanges would indirectly improve safety and access to and on the local road system. Once new traffic patterns are established, the improved geometry of the corridor would encourage and support the use of transit in the study area. Some out-of-direction travel would be indirectly created by removing access at Illinois Avenue, Illex Street, Aqua Avenue, and Minnequa Avenue; relocating traffic from Central Avenue to Northern Avenue; and reconstructing the Indiana Avenue interchange. This out-of-direction travel can be anticipated due to the proposed changes in access. Overall, the Build Alternatives would result in fewer VMT even with the creation of some out-of-direction travel. No other quantifiable indirect effects were identified for the transportation analysis.

3.1.3 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative):

- During construction, CDOT will conduct public information efforts (including the development of a Public Information Plan) to inform the public and affected businesses in advance of lane closures, detours, and interchange reconstruction activities. The Public Information Plan will include regular media releases to describe the upcoming construction activities and aid in communication with City staff. In particular, CDOT will maintain safe business access during construction and provide an extensive communications program with affected businesses to keep them informed of construction schedules. At all times during construction, access to downtown Pueblo will remain open through at least one access point. Signage will be provided to alert motorists of access changes and identify detour routes. To minimize the impact of construction on bus routing and service, CDOT will coordinate with the Pueblo Transit System prior to and throughout construction.

- CDOT will develop a traffic control plan during final design that details strategies to minimize traffic disruption from construction activities. These strategies include the following:
  - Whenever possible, the existing number of lanes will be maintained during construction. Typically, new capacity lanes will be constructed adjacent to the existing facility, and once these are ready, traffic will be diverted to them so that reconstruction can occur on the original lanes. The full benefits of the new lanes will not be realized until final project completion. This approach will be time-consuming and expensive, but avoids the dramatic impacts of temporarily reducing the number of lanes and diverting traffic to other nearby local streets. Where lane closures on I-25 are unavoidable for safety reasons (e.g., during placement or demolition of a bridge structure), such closures will typically occur at night.
  - Construction activities will be phased to minimize the number of times that traffic must switch between lanes (per the strategy described above).
  - Where temporary closure of a lane on a cross-street is unavoidable, the closure will take place only during off-peak hours. Access to properties will be maintained at all times. Wherever possible, impacted sidewalks and trails will be provided with a safe detour.
  - Lane closures will be avoided at times when there are planned special events within the region.
- CDOT will follow appropriate permitting, including coordination with the railroads for impacts to the rail lines during bridge construction under the Build Alternatives and track realignment under the Existing I-25 Alternative.
- CDOT will reduce speed limits in work zones.
- Impacts and mitigation associated with traffic and construction noise are provided in **Section 3.5 Noise**.
- Based on final design, commitments will be modified or adapted as needed to mitigate for both construction and operational effects of a Preferred Alternative. A mitigation monitoring and implementation plan will be developed during final design; any commitments to mitigation will be based on a higher level of design and can be considered preliminary at this stage of design.
- CDOT will revisit the off-street trail concept between JJ Raigoza Park and the Runyon Field Sports Complex during final engineering design. CDOT will survey each property owner along the east side of Evans Avenue between Minnequa Avenue and Illinois Avenue to determine the interest in converting the alleyway to a dedicated non-motorized facility.

3.2 HISTORIC PROPERTIES

Environmental laws and review processes at the federal, state, and local level require consideration be given to protecting significant historic, archaeological, and traditional cultural resources from damage or loss as a result of the project. CDOT and FHWA work with agencies, tribes, and other interested parties to identify significant properties and develop protection strategies. Federal laws such as the National Historic Preservation Act (NHPA) require that effects on significant cultural resources be considered during the public environmental review process. Section 106 of the NHPA, as amended, requires projects proposed or funded by federal agencies to identify cultural resources and assess effects to historic properties. This is generally accomplished through the Section 106 compliance process, which includes steps to: 1) identify consulting parties; 2) identify the Area of Potential Effect (APE); 3) identify and evaluate cultural resources; 4) assess effects to historic and archaeological resources eligible or listed on the National Register of Historic Places (NRHP); and 5) consult with the appropriate agencies to resolve and mitigate for adverse effects to historic properties.

Historic properties are resources that are listed, or considered eligible for listing, in the NRHP. Historic properties include districts, archaeological sites, buildings, structures, and objects that represent past human activities. The Section 106 process involves consultation with the State Historic Preservation Officer (SHPO) and other consulting parties. The following groups and organizations accepted invitations to be consulting parties in the Section 106 process for the New Pueblo Freeway Project:

- Bessemer Historical Society
- City of Pueblo Planning Department
- Colorado Preservation, Inc.
- National Trust for Historic Preservation
- Pueblo Historic Preservation Commission

The APE for historic and archaeological resources was developed through consultation with the SHPO and the consulting parties to encompass areas that could be directly or indirectly impacted by the project, including areas that may be susceptible to visual or noise impacts. In addition to contributing to the development of the APE, consulting parties were afforded the opportunity to review and comment on the eligibility and effects determinations and assist with the development of mitigation measures. Consultation on the project APE with the SHPO and the consulting parties was accomplished through a series of meetings in September 2003 and December 2003. The SHPO provided comments on the APE in correspondence dated September 13, 2004 (see **Appendix B**).

3.2.1 Native American Consultation

Section 106 of the NHPA and the Advisory Council on Historic Preservation regulations (36 Code of Federal Regulations [CFR] 800.2[c][2][ii]) mandate that federal agencies must involve interested Native American tribes in the planning process for federal undertakings. Consultation with federally recognized Native American tribes acknowledges the government-to-government relationship between the United States government and sovereign tribal groups. Federal agencies must be sensitive to the fact that historic properties of religious and cultural significance to one or more tribes may be located on ancestral, aboriginal, or ceded lands beyond modern reservation boundaries. Consulting tribes are offered the opportunity to identify concerns about cultural, traditional, and other resources and to comment on how the project might affect them. If it is found that the project would impact cultural resources that are eligible for listing in the NRHP or are of religious or cultural significance to one or more consulting tribes, their role in the consultation process may also include participation in resolving how best to avoid, minimize, or mitigate those impacts. By describing the proposed undertaking and the nature of known cultural sites (and consulting with the interested Native American community), CDOT and FHWA strive to effectively protect areas that are important to Native American people.

In August 2003, six federally recognized tribes with an established interest in Pueblo County were invited to participate as consulting parties:

- Apache Tribe of Oklahoma
- Cheyenne and Arapaho Tribes of Oklahoma
- Comanche Nation of Oklahoma
- Kiowa Tribe of Oklahoma

- Northern Arapaho Tribe
- Northern Cheyenne Tribe

One tribe (Kiowa Tribe of Oklahoma) responded to the invitation in writing, declining to participate as a consulting party (see **Appendix B**). No response was received from the remaining tribes.

3.2.2 Affected Environment

3.2.2.1 Historic Resources

A survey of all standing architectural features 45 years old and older within the APE was conducted between 2003 and 2005. The results of the survey and eligibility recommendations were submitted to the SHPO in 2007. At that time, the SHPO was unable to concur with 716 eligibility recommendations, or with the eligibility recommendations for potential historic districts, and the SHPO requested further information to complete the review. In response to this request for more information, the CDOT Project Team worked with the SHPO to develop a process to resurvey selected properties. As a result of this process, properties within the APE that would be directly impacted by only one of the two Build Alternatives were selected for resurvey. Properties outside of an NRHP-eligible historic district that would be impacted by both Build Alternatives or would not be impacted by the project were considered eligible for listing on the NRHP without resurvey. Properties within an NRHP-eligible historic district that would be impacted by both Build Alternatives or would not be impacted by the project were considered contributing elements to that historic district without resurvey. This process was devised in part because a full resurvey of all 716 properties for SHPO concurrence was not feasible within the schedule and financial constraints of the project.

Consultation with the SHPO and the consulting parties on NRHP eligibility determinations took place in July 2007, October 2008, March 2009, April 2009, August 2009, and May 2010. See **Appendix B** for the Section 106 correspondence associated with these efforts. A total of 886 historic resources were surveyed for the project. Of these, 200 are listed in the NRHP, or are officially NRHP-eligible.

These 200 properties are made up of 195 individual properties and 5 historic districts: North Side Historic District (6 contributing properties), Second Ward Historic District (33 contributing properties), Grove Historic District (76 contributing properties), Corona Park Historic District (6 contributing properties), and Steelworks Suburbs Historic District (465 contributing properties).

Each of these properties is detailed in the *Determination of Effects to Historic Properties: I-25 New Pueblo Freeway Improvement Project* (CH2M HILL, 2010a) and the *Addendum to the Determination of Effects to Historic Properties: I-25 New Pueblo Freeway Improvement Project, Pueblo, Colorado* (CH2M HILL, 2010b).

3.2.2.2 Archaeological Resources

A total of 127 historic archaeological sites were identified and documented within the APE. Of these, 16 were assessed as not eligible for listing in the NRHP and 5 were assessed as NRHP-eligible. The remaining sites were determined to need additional data prior to a final eligibility assessment. The SHPO concurred with these findings in letters dated March 6, 2009; May 5, 2011; and August 19, 2011 (see **Appendix B**).

Following the publication of the DEIS, CDOT determined that 13 of the remaining “need data” sites had the potential to be impacted by either Build Alternative. Testing conducted at 11 of these sites indicated that none of the 11 properties were eligible for nomination to the NRHP. No testing was completed at the remaining two sites because access was denied by the land owners. The SHPO concurred with the eligibility determination for these properties in correspondence dated January 11, 2012 (see **Appendix B**). The final two “need data” sites will be evaluated for eligibility and effects prior to construction when CDOT acquires the properties as part of a funded project. See *An Intensive Archaeological Resources Survey and Test Excavations for the I-25 New Pueblo Freeway Improvement Project, Pueblo County, Colorado* (CH2M HILL, 2008a) and *Evaluative Test Excavation of Eleven Historic Sites for the Colorado Department of Transportation I-25 New Pueblo Freeway Improvement Project, Pueblo County, CO* (Centennial Archaeology, 2011) for more information about the archaeological investigations.

3.2.3 Environmental Consequences

Under Section 106 of the NHPA, effects to historic properties are defined in one of the following ways:

- **No Historic Properties Affected:** Historic properties are either not present or not affected by the action.
- **No Adverse Effect:** A historic property is affected but the characteristics that qualify the property for inclusion in the NRHP are not affected.
- **Adverse Effect:** An action directly or indirectly alters the characteristics of a historic property that qualify it for inclusion in the NRHP.

3.2.3.1 No Action Alternative

The No Action Alternative consists of no capital improvements in the corridor study area but does include routine maintenance such as pavement overlays, restriping, etc. of the existing facility, as defined in the PACOG's financially constrained *Pueblo Area 2035 Long Range Transportation Plan* (PACOG, 2008). These activities would likely result in some effects to historic properties. For example, rail lines and ditches are likely to be affected as they are crossed, realigned, or repaired. Also, historic bridges may require maintenance and/or replacement. Because details about these activities are not yet known, it is difficult to evaluate the extent of the impacts.

3.2.3.2 Build Alternatives

Exhibit 3.2-1 details effects to historic properties for each of the Build Alternatives.

Determination of effects to historic properties was undertaken in consultation with the SHPO and other consulting parties. CDOT submitted effects determinations for SHPO and consulting party review in April 2010, May 2010, and December 2011. The SHPO responded in correspondence dated May 17, 2010, June 14, 2010, and January 11, 2012 (see **Appendix B**), and the consulting parties provided comments in correspondence dated August 3, 2010 (see **Appendix B**). Additional consultation with regard to the effects determinations for the North Side Historic District and Grove Historic District was conducted in October 2010 and December 2010 and is documented in letters dated October 21, 2010 and December 2, 2010 (see **Appendix B**). Detailed documentation supporting these determinations is presented in the *2010 Effects Report and Addendum* (CH2M HILL, 2010a; 2010b).

EXHIBIT 3.2-1
Summary of Effects to Historic Properties from the Build Alternatives

	Existing I-25 Alternative	Modified I-25 Alternative (Preferred Alternative)
No Historic Properties Affected	67	58
No Adverse Effect	104	107
Adverse Effect	33[1]	40[2]
Effect Determination Unknown[3]	1	0
Total	**205[4]**	**205[4]**

Sources: CH2M HILL, 2010a; CH2M HILL, 2010b.

I-25 = Interstate 25

[1] The Adverse Effect determinations for the Existing I-25 Alternative include 30 individual historic properties and three historic districts.

[2] The Adverse Effect determinations for the Modified I-25 Alternative include 34 individual historic properties, four historic districts, and two historic archaeological sites.

[3] An effects determination has not been made for the Colorado Smelting Retaining Walls (5PE6937). Segment 5PE6937.1 of these walls will be incorporated into right-of-way (ROW), but at this level of design it is unknown how this ROW will be used and what the effects to the overall property will be.

[4] The 205 historic properties include 200 historic resources and 5 historic archaeological resources.

North Area (Phase 1)

This section discusses impacts to historic properties in the north segment of the I-25 corridor, between 29th Street and Ilex Street. The Existing I-25 Alternative and Modified I-25 Alternative (Preferred Alternative) follow the same alignment in the North Area (Phase 1), so the impacts would be the same for both alternatives. Both Build Alternatives would result in adverse effects to the same 24 historic properties, including two historic districts. Historic properties with adverse effects in the North Area (Phase 1) are shown by location in **Exhibit 3.2-2** and described in **Exhibit 3.2-3**. For additional information and graphics detailing these effects, refer to the *2010 Effects Report and Addendum* (CH2M HILL, 2010a; 2010b). Adverse effects result from direct impacts to 22 resources and indirect impacts to 2 resources.

Neither Build Alternative would result in impacts to historic archaeological sites in the North Area (Phase 1).

- **Impacts:** Direct impacts would result in adverse effects to 22 properties. Seven of the 22 properties are residential properties (5PE4536, 5PE4545, 5PE4547, 5PE4549, 5PE4557, 5PE4562, and 5PE5304). Of these, six are single-family dwellings and one is a multi-family building at 212 & 212 1/2 3rd Street (5PE4545). All seven properties would be totally acquired and demolished.

  Twelve of the 22 properties are commercial properties (5PE5290, 5PE5291, 5PE5292, 5PE5293, 5PE5294, 5PE4484, 5PE5295, 5PE4498, 5PE4499, 5PE4504, 5PE4529, and 5PE4523). Two of these are hotels: one at 115 E. 8th Street (5PE4529) and another at 2424 N. Freeway (5PE5292). All 12 properties would be totally acquired and demolished. Three of the commercial properties (5PE4498, 5PE4499, and 5P4504) are directly impacted by measures proposed as mitigation for project impacts to Mineral Palace Park. The proposed Mineral Palace Park Restoration Plan (discussed in greater detail in **Section 3.3 Parks and Recreation**), includes expanding the 50.07-acre park to 52.38 acres and realigning the park to the south. Properties 5PE4498, 5PE4499, and 5P4504 would be acquired and demolished to allow room for a community gathering area, relocation of the swimming pool, additional green space, and parking for the expanded park. The land adjacent to the southwest corner of the proposed mitigation site would not be incorporated into the park in order to avoid a Synagogue that is located on this parcel.

Both Build Alternatives would impact Mineral Palace Park (5PE586) through partial acquisition of the property. The widening of I-25 adjacent to the park would impact a 1,500-foot-long strip that is approximately 50 feet wide along the eastern edge of the park (approximately 1.69 acres or 3 percent of the 50.07-acre park), resulting in an adverse effect to the property.

Mineral Palace Park, shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-23,** is also located within the North Side Historic District (5PE5517), shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-31**. The adverse effects to the park would result in adverse effects to the historic district as a whole. There are no other direct impacts to the North Side Historic District. The 1.69-acre impact to the park represents less than 1 percent of the 219.88-acre total area of the historic district.

Both Build Alternatives would directly impact the Second Ward Historic District (5PE5518) due to widening of I-25 through the downtown area and construction of the entrance and exit ramps for the downtown exits. The limits of this district are shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-32.** Of the 33 contributing properties in the historic district, seven would be removed, which represents a 21-percent loss. The remaining contributing properties would be indirectly affected by the loss of these seven properties and by any noise and visual impacts within the overall historic district. These direct and indirect impacts would result in an adverse effect on the Second Ward Historic District.

Indirect impacts would result in adverse effects to two residential properties (5PE564 and 5PE4522). Property 5PE564, shown in **Exhibit 3.2-2**, is a residential four-plex at 711 N. Albany Avenue. For both Build Alternatives, the structures on adjacent parcels to the east of the property would be removed and replaced with highway, frontage road, and a surface parking lot. The highway would be approximately 24 feet higher at this location than it is currently, as described in **Chapter 2 - Alternatives**. The noise level at this building would be close to 71 A-weighted decibels. A noise wall is not proposed for this area. The building currently faces a large surface parking area and a one-story structure, with no visual or noise intrusions from the existing I-25. The indirect visual and noise impacts would result in an adverse effect to this property.

Property 5PE4522, shown in **Exhibit 3.2-2,** includes two structures: a residence and a former commercial building that may be in use as a warehouse. Improvements between E. 9th Street and E. 4th Street, including a frontage road between E. 8th Street and E. 4th Street, an exit ramp from I-25 at 6th Street, and closure of N. Albany Avenue, would impact 5PE4522. The exit ramp would remove access to the residential building from N. Albany Avenue and would limit access to the commercial property. Access to both properties would be maintained from 5th Avenue. The property would also be impacted by increased noise levels and the visual intrusion of a 15-foot retaining wall across the street.

EXHIBIT 3.2-2

Adverse Effects to Individual Historic Properties and Historic Districts in the North Area (Phase 1)

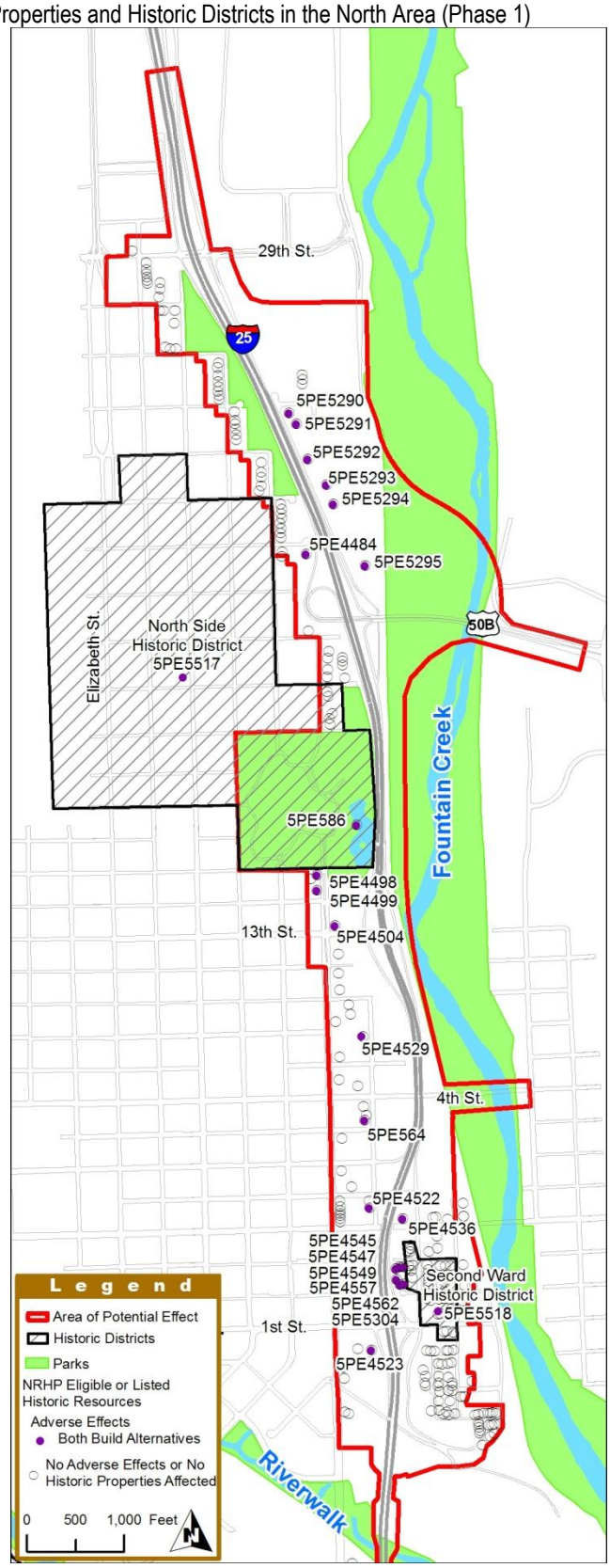


EXHIBIT 3.2-3
Historic Properties with Adverse Effects in the North Area (Phase 1)

Site Number	Description / Location	National Register of Historic Places Eligibility[1]	Summary of Effects	
5PE5290	A one-and–one-half-story commercial structure built circa 1940, located at 2520 N. Freeway in a primarily industrial and commercial area.	This property is eligible for the NRHP under Criterion A for its association with urban and neighborhood development in Pueblo.	Adverse effect resulting from total acquisition and demolition of structure due to the ultimate location of the northbound US 50B ramp and frontage road to 29th Street.	
5PE5291	A one-story commercial building built circa 1950, located at 2516 N. Freeway in a primarily industrial and commercial area.	This property is eligible for the NRHP under Criterion A for its association with urban and neighborhood development in Pueblo.	Adverse effect resulting from total acquisition and demolition of structure due to the ultimate location of the northbound US 50B ramp and frontage road to 29th Street.	
5PE5292	A one-story hotel built circa 1960, located at 2424 N. Freeway in a primarily commercial and industrial area.	This property is eligible for the NRHP under Criterion A for its association with urban and neighborhood development in Pueblo.	Adverse effect resulting from total acquisition and demolition of structure due to the ultimate location of the northbound US 50B ramp and frontage road to 29th Street.	
5PE5293	A large, one-story commercial building built circa 1955, located at 107 E. 24th Street.	This property is eligible for the NRHP under Criterion A for its association with urban and neighborhood development in Pueblo.	Adverse effect resulting from total acquisition and demolition of structure due to the ultimate location of the northbound US 50B ramp and frontage road to 29th Street.	
5PE5294	A one-story, vernacular commercial building built circa 1960, located at 106 E. 24th Street in a primarily commercial and industrial area.	This property is eligible for the NRHP under Criterion A for its association with urban and neighborhood development in Pueblo.	Adverse effect resulting from total acquisition and demolition of structure due to the ultimate location of the northbound US 50B ramp and frontage road to 29th Street.	

EXHIBIT 3.2-3
Historic Properties with Adverse Effects in the North Area (Phase 1)

Site Number	Description / Location	National Register of Historic Places Eligibility[1]	Summary of Effects	
5PE5295	A one-story, vernacular commercial building built circa 1955, located at 2200 N. Freeway.	This property is eligible for the NRHP under Criterion A for its association with urban and neighborhood development in Pueblo.	Adverse effect resulting from total acquisition and demolition of structure due to the realignment on US 50B at I-25.	
5PE4484	A one-story commercial establishment built in 1947, located at 100 W. 23rd Street.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of a post-war commercial building.	Adverse effect resulting from total acquisition and demolition of structure due to the southbound entrance ramp to US 50B.	
5PE586	Mineral Palace Park is an historic park located between the existing I-25 to the east and Court Street to the west. The southern boundary is E. 15th Street and the northern boundary is E. 19th Street.	This property is eligible for the NRHP under Criterion A and C for its associations with the development of public recreation in Pueblo, the growth of the City as an industrial center in the region, the Great Depression and the Work Projects Administration (WPA) period of local history, its landscape design values, and as a representative of park designs of the late 19th to early 20th century City Beautiful period.	Adverse effect resulting from partial acquisition of the property (approximately 1.4 acres, or 3 percent of the 50.07-acre park) due to the highway widening.	
5PE4498	A one-story commercial establishment built circa 1950, located at 1415 N. Santa Fe Avenue. It is currently identified as Mike Conley Auto Sales.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of a post-war commercial building.	Adverse effect resulting from total acquisition and demolition of structure (required to implement the Mineral Palace Park Restoration Plan).	
5PE4499	A one-story, vernacular commercial building with a side gable roof built in 1956, located at 1405 N. Santa Fe Avenue. The original name of the business was Zim's Used Cars and it still functions as a used car dealership.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of a post-war commercial building.	Adverse effect resulting from total acquisition and demolition of structure (required to implement the Mineral Palace Park Restoration Plan).	

EXHIBIT 3.2-3
Historic Properties with Adverse Effects in the North Area (Phase 1)

Site Number	Description / Location	National Register of Historic Places Eligibility[1]	Summary of Effects	
5PE4504	A set of associated commercial structures built in 1949 in the Novelty style common to the mid-20th century, located at 1300 N. Santa Fe Avenue.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of a post-war commercial building.	Adverse effect resulting from total acquisition and demolition of structure (required to implement the Mineral Palace Park Restoration Plan).	
5PE4529	A two-story building built in 1953 and originally called the Downtown Hotel, now the Bramble Tree Inn, located at 115 E. 8th Street.	This property is eligible for the NRHP under Criteria A and C for its association with the theme of Urban Development, Architecture, and Neighborhood Evolution (1890-1940) and as representative of the changing commercial and transportation patterns during the mid-20th century.	Adverse effect resulting from total acquisition and demolition of structure due to widening and loss of access at 8th Street.	
5PE564	A two-story, masonry, foursquare residential building built circa 1900, located at 711 N. Albany Avenue. The east elevation contains the main entry, facing N. Albany Avenue.	This property is eligible for the NRHP under Criteria A and C for its association with the theme of Urban Development, Architecture, and Neighborhood Evolution (1890-1940) and as a good example of a foursquare building type.	Adverse effect resulting from indirect impacts (increase in noise levels and visual impacts of the elevated roadway).	
5PE4522	A one-story bungalow with a hipped roof and brick exterior walls built in 1907, located at 415 N. Albany Avenue. The main entry is offset and faces east to N. Albany Avenue.	This property is eligible for the NRHP under Criteria A and C for its association with the theme of Urban Development, Architecture, and Neighborhood Evolution (1890-1940) and as an example of the bungalow architectural form.	Adverse effect resulting from indirect impacts (access changes on Albany Avenue, increase in noise levels, and visual impacts).	
5PE4536	A two-story residential building built circa 1900, located at 221-23 E. 4th Street.	This property is eligible for the NRHP under Criteria A and C for its association with the theme of Urban Development, Architecture, and Neighborhood Evolution (1890-1940).	Adverse effect resulting from total acquisition and demolition of structure due to the northbound frontage road connection to 8th Street.	

EXHIBIT 3.2-3
Historic Properties with Adverse Effects in the North Area (Phase 1)

Site Number	Description / Location	National Register of Historic Places Eligibility[1]	Summary of Effects	
5PE4545	A one-story, multiple-family, residential bungalow built in 1903, located at 212 and 212½ E. 3rd Street.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo as an example of a bungalow.	Adverse effect resulting from total acquisition and demolition of structure due to the realigned highway to the east.	
5PE4547	A one-story, L-shaped residential building from 1903, located at 216 E. 3rd Street.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of an early 20th century residential structure.	Adverse effect resulting from total acquisition and demolition of structure due to the realigned highway to the east.	
5PE4549	A one-story residential building, constructed in 1906, located at 220 E. 3rd Street.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of a bungalow.	Adverse effect resulting from total acquisition and demolition of structure due to the realigned highway to the east.	
5PE4557	A two-story residential building built in 1903, located at 219 E. 2nd Street.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of an early 20th century residential structure.	Adverse effect resulting from total acquisition and demolition of structure due to the realigned highway to the east.	
5PE4562	A one-story residential building built in 1909, located at 221 E. 2nd Street.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of an early 20th century residential structure.	Adverse effect resulting from total acquisition and demolition of structure due to the realigned highway to the east.	

EXHIBIT 3.2-3
Historic Properties with Adverse Effects in the North Area (Phase 1)

Site Number	Description / Location	National Register of Historic Places Eligibility[1]	Summary of Effects	
5PE5304	A one-story residential building built circa 1940, located at 217 E. 2nd Street.	This property is eligible for the NRHP under Criterion A for its association with urban and neighborhood development in Pueblo.	Adverse effect resulting from total acquisition and demolition of structure due to the realigned highway to the east.	
5PE4523	A two-story commercial building constructed circa 1930, located at 125 Hector Garcia Place.	This property is eligible for the NRHP under Criterion A for its association with urban and neighborhood development in Pueblo.	Adverse effect resulting from total acquisition and demolition of structure due to retaining walls required for the entrance and exit ramps at 1st Street.	
5PE5517 (North Side Historic District)	The North Side Historic District encompasses properties north and east of Mineral Palace Park on the east side of I-25.	This historic district is eligible for listing in the NRHP under Criterion A and C for association with patterns of early urban development in Pueblo and its diverse collection of architectural styles.	Adverse effect resulting from impacts to Mineral Palace Park (5EP586) due to the widening of the interstate and noise impacts.	
5PE5518 (Second Ward Historic District)	The Second Ward Historic District is located east of I-25 between 1st and 3rd streets.	This historic district is eligible for the NRHP under Criterion C for its collection of early examples of Pueblo's original architectural styles and housing types.	Adverse effect resulting from total acquisition and demolition of 7 of the 33 residential contributing properties (noise and visual impacts).	

Source: CH2M HILL, 2010a; 2010b.

I-25 = Interstate 25
NRHP = National Register of Historic Places
US 50B = United States Highway 50B
WPA = Work Projects Administration

[1] A property is eligible for the NRHP if it possesses historic integrity (such as maintaining original materials and design) and meets one or more of the following four criteria: (A) Is associated with important historical events or patterns; (B) Is associated with lives of persons significant in our past; (C) Embodies distinctive characteristics of an architectural type, period, or method of construction; or (D) Has yielded or is likely to yield information important in prehistory or history.

South Area (Phase 2)

No historic properties would be affected in the South Area (Phase 2).

Central Area (Phase 2)

Both Build Alternatives would result in adverse effects to historic properties and districts in the Central Area (Phase 2). All of these resources are located between Ilex Street and Nevada Avenue (2 blocks south of Exit 96). Impacts differ between the alternatives because the Modified I-25 Alternative (Preferred Alternative) would be shifted to the east at approximately Ilex Street. Adverse effects are detailed for each alternative below. Historic properties with adverse effects in the Central Area (Phase 2) are shown by location in **Exhibit 3.2-4** and described in **Exhibit 3.2-5**. For additional information and graphics detailing these effects, refer to the *2010 Effects Report and Addendum* (CH2M HILL, 2010a; 2010b).

Existing I-25 Alternative

The Existing I-25 Alternative would result in an adverse effect to nine historic properties, including one historic district. The Existing I-25 Alternative could also result in adverse effects to the Colorado Smelting Retaining Walls (5PE6937). Approximately 1,520 feet of segment 5PE6937.1 of the retaining walls would be incorporated into the ROW, but the property is not located within the toe of slope for the project. Because it is currently unknown how the ROW would be used or what the effect would be to the overall property, an effects determination has not yet been made. Effects to this property will be evaluated during final design.

- **Impacts**: Direct impacts would result in adverse effects to nine historic properties. Five of these would be totally acquired and demolished for the Existing I-25 Alternative, including three residential properties (5PE5090, 5PE5092, and 5PE5093), one commercial property (5PE4683), and the Santa Fe Avenue bridge (5PE3938). The Santa Fe Avenue bridge is functionally obsolete and structurally deficient. Under the Existing I-25 Alternative, traffic would be maintained on Santa Fe Avenue across the river, so a safe, sufficient, and functioning bridge would be required. A new bridge would be constructed at this location.

Impacts to the remaining four properties – the former Newton Lumber Company Complex (5PE5042), the Colorado & Wyoming (C&W) Railroad line (5PE5139), the Union Pacific Railroad (UPRR) rail line (5PE1776), and the Steelworks Suburbs Historic District (5PE5523) – are described in the following paragraphs.

Under the Existing I-25 Alternative, the highway would move approximately 200 feet closer to the former Newton Lumber Company Complex (5PE5042). This property is shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-41.** Approximately 0.06 acre of land would be acquired from the western portion of the parcel (2 percent of the property). None of the structures would be directly impacted, but the railroad spurs on the western edge of the property would become CDOT ROW, which would result in an adverse effect to the property.

The C&W Railroad operates a 4.5-mile switching line that connects the Evraz Rocky Mountain Steel Mill with the joint UPRR/BNSF rail line through Pueblo. The C&W rail line (5PE5139), shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-35**, carries coal, ore, and steel products and formerly ran the High Line Rail that remains on the site but is no longer in operation. The High Line Rail would be removed due to eastward movement and widening of I-25, and approximately 6,150 feet of the switching line would be relocated, causing an adverse effect.

Under the Existing I-25 Alternative, 1.41 miles (7,445 feet) of the southern segment of the UPRR line (5PE1776.15), shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-37**, would be realigned to the east starting from the Abriendo Avenue Extension on the north to just south of Logan Avenue on the south. The shift of I-25 to the east and the UPRR realignment would remove almost all of segment 5PE1776.16, shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-38**. The realignment of such a large segment of the track and the almost complete loss of the spur would result in an adverse effect to the UPRR line as a whole.

EXHIBIT 3.2-4
Adverse Effects to Historic Properties in the Central Area (Phase 2)

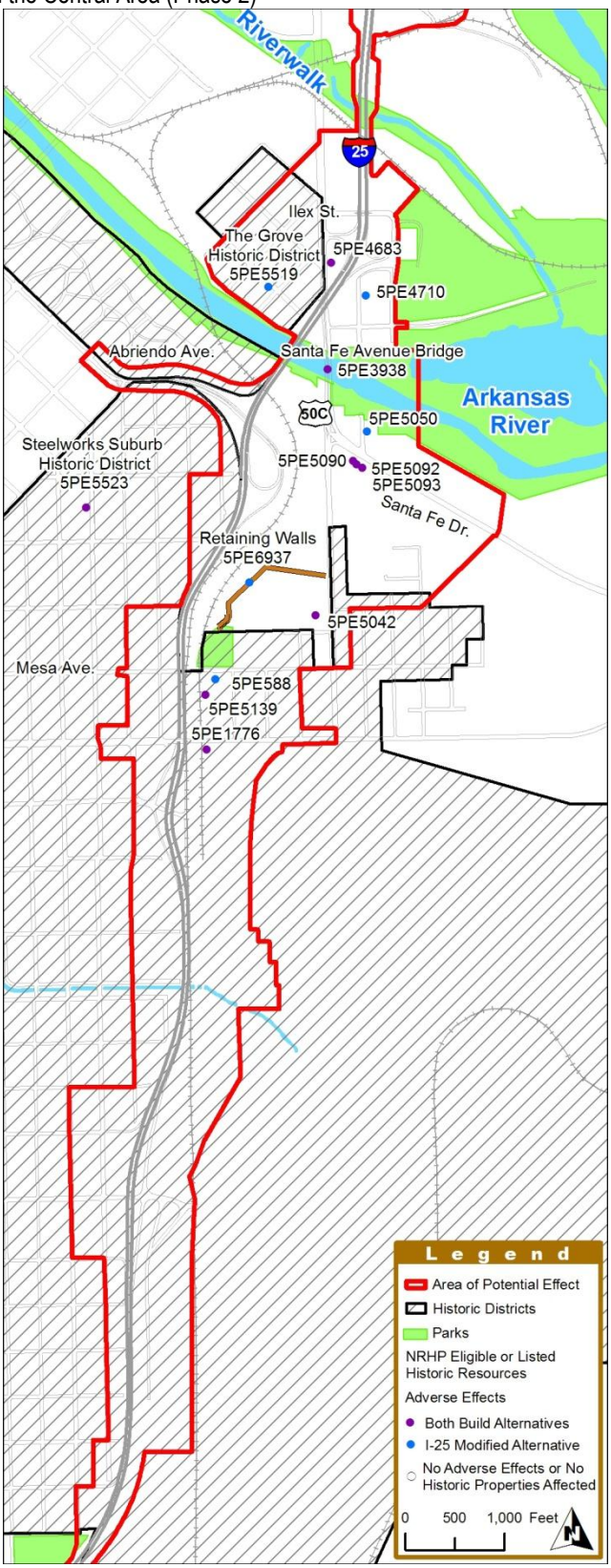


EXHIBIT 3.2-5
Historic Properties with Adverse Effects in the Central Area (Phase 2)[1]

Site Number	Description / Location	National Register of Historic Places Eligibility[2]	Summary of Effects	
5PE4683	A two-story, vernacular commercial building located at 440 S. Santa Fe Avenue constructed circa 1900. The building is currently being used as a restaurant (Pixie Inn) and the original use is listed by the assessor as a tavern.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of a late 19th Century Commercial structure.	Adverse effect resulting from total acquisition and demolition of structure due to highway widening in the Existing I-25 Alternative or due to grade changes along Santa Fe Extension in the Modified I-25 Alternative (Preferred Alternative). **Adverse effect occurs under either Build Alternative.**	
5PE4710	A one-story, shotgun form residential building constructed circa 1900, located at 516 Moffat Street.	The house is eligible for listing on the NRHP under Criterion C as a good example of the shotgun type of house.	Adverse effect resulting from total acquisition and demolition of structure due to the realignment of I-25 in the Modified I-25 Alternative (Preferred Alternative). **Adverse effect occurs under the Modified I-25 Alternative (Preferred Alternative) only.**	
5PE3938	The Santa Fe Avenue bridge is a publicly owned bridge over the Arkansas River at milepost 1.33 of US 50. The bridge is approximately 286 feet long and 41 feet wide.	This property is listed in the NRHP under Criterion A and C for transportation and engineering and for its significance to the City as part of an enormous public works program to revitalize the City after the massive flood of 1921.	Adverse effect resulting from total acquisition and demolition of structure. The bridge is functionally obsolete and will need replacement for the Existing I-25 Alternative. For the Modified I-25 Alternative (Preferred Alternative), the bridge is no longer needed for vehicular traffic. **Adverse effect occurs under either Build Alternative.**	
5PE5050	A one-story residential bungalow constructed circa 1930 is located at 736 Moffat Street. This structure is located in the Grove Neighborhood, which was traditionally an immigrant, working-class neighborhood in Pueblo.	This property is eligible for listing on the NRHP under Criterion C as an example of an early 20th century bungalow.	Adverse effect resulting from total acquisition and demolition of structure due to the realignment of I-25 in the Modified I-25 Alternative (Preferred Alternative). **Adverse effect occurs under the Modified I-25 Alternative (Preferred Alternative) only.**	

EXHIBIT 3.2-5
Historic Properties with Adverse Effects in the Central Area (Phase 2)[1]

Site Number	Description / Location	National Register of Historic Places Eligibility[2]	Summary of Effects	
5PE5090	A one-story residential building constructed in the early 1900s, located at 104 Santa Fe Drive. Part of a cluster of three residential buildings (5PE5090, 5PE5092, and 5PE5093) surrounded by commercial uses and large lots.	This property is eligible for the NRHP under Criterion A for its association with urban and neighborhood development in Pueblo.	Adverse effect resulting from total acquisition and demolition of structure. For the Existing I-25 Alternative, the property would be completely surrounded by roads. For the Modified I-25 Alternative (Preferred Alternative), the property would be located within the highway alignment. **Adverse effect occurs under either Build Alternative.**	
5PE5092	A one-and-one-half-story residential bungalow built in 1918, located at 106 Santa Fe Drive.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of an early 20th century bungalow.	Adverse effect resulting from total acquisition and demolition of structure. For the Existing I-25 Alternative, the property would be completely surrounded by roads. For the Modified I-25 Alternative (Preferred Alternative), the property would be located within the highway alignment. **Adverse effect occurs under either Build Alternative.**	
5PE5093	A one-story residential bungalow built in 1929, located at 108 Santa Fe Drive.	This property is eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of an early 20th century bungalow.	Adverse effect resulting from total acquisition and demolition of structure. For the Existing I-25 Alternative, the property would be completely surrounded by roads. For the Modified I-25 Alternative (Preferred Alternative), the property would be located within the highway alignment. **Adverse effect occurs under either Build Alternative.**	

EXHIBIT 3.2-5
Historic Properties with Adverse Effects in the Central Area (Phase 2)[1]

Site Number	Description / Location	National Register of Historic Places Eligibility[2]	Summary of Effects	
5PE6937 (Colorado Smelting Company Retaining Walls)	A network of roughly-squared stone retaining walls that range from 4 to more than 14 courses high and were constructed in the late 19th century as part of the Colorado Smelting Company. Segment 5PE6937.1 of the walls is located between the mainline of the UPRR line, St. Mary's School, and the former Newton Lumber Company properties.	The retaining walls are eligible for the NRHP under Criterion C for design, method of construction, and use of materials.	Adverse effect resulting from **partial acquisition** due to the alignment change of the highway **under the Modified I-25 Alternative (Preferred Alternative).** An effects determination has not been made for the Existing I-25 Alternative.	
5PE5042 (Newton Lumber Company)	The former Newton Lumber Company, constructed in the late 19th century and located at 1103-07 S. Santa Fe Avenue. The area is now occupied by Northern Colorado Paper Company.	This property is eligible for the NRHP under Criterion C as a good example of manufacturing/industrial architecture associated with a lumber operation.	Adverse effect resulting from partial acquisition because of the shifted highway alignment for both Build Alternatives. **Adverse effect occurs under either Build Alternative.**	
5PE588 (St. Mary's Genealogy Center)	Constructed in 1924, St. Mary's Genealogy Center is a former elementary school located at 211 E. Mesa Street.	This property is officially eligible for the NRHP under Criterion A and C for its association with urban and neighborhood development in Pueblo and as an example of the Catholic Church architecture. It is also a contributing element to the Steelworks Suburbs Historic District (5EP5523).	Adverse effect resulting from indirect impacts by relocating the I-25 ramp and associated retaining wall near Mesa Avenue closer to this property under the Modified I-25 Alternative (Preferred Alternative). **Adverse effect occurs under the Modified I-25 Alternative (Preferred Alternative) only.**	
5PE5139 (C&W Railroad)	The C&W Railroad operates a 4.5-mile switching line built circa 1900 that connects the steel mill with the UPRR/BNSF rail line through Pueblo. It carries coal, ore, and steel products and formerly ran the High Line Rail that remains on the site but is no longer in operation.	The C&W Railroad is considered eligible under Criteria A and C for its associations with the construction and evolution of the former CF&I plant in Pueblo. It represents the engineering, development, and evolution of an industrial railroad. It is also a contributing feature of the Steelworks Suburbs Historic District (5PE5523).	Adverse effect resulting from realignment (**under both Build Alternatives**) and complete loss of the High Line Rail (**under the Existing I-25 Alternative only**).	

EXHIBIT 3.2-5
Historic Properties with Adverse Effects in the Central Area (Phase 2)[1]

Site Number	Description / Location	National Register of Historic Places Eligibility[2]	Summary of Effects	
5PE1776 (UPRR)	Segment 5PE1776.15 of the UPRR is a 5.87-mile segment from Dillon Drive on the north to Illinois Avenue on the south. Segment 5PE1776.16 is a spur from the UPRR mainline south of Northern Avenue to north of Mesa Avenue. Both segments retain sufficient integrity to convey the significance of the line as a whole.	The UPRR is eligible for the NRHP under Criterion A for its contribution to the development of communities throughout Colorado and to the economic and industrial development of Pueblo.	Adverse effect resulting from realignment (**under the Existing I-25 Alternative only**) and complete loss of a spur (**under both Build Alternatives**).	
5PE5523 (Steel-works Suburbs Historic District)	Includes areas identified as the Bessemer, Minnequa Heights, and Lake Minnequa neighborhoods, as well as the Bessemer Works itself (now the Evraz Rocky Mountain Steel Mill), still in operation today (5PE5138, formerly the CF&I plant). The historic district is associated with the early development of the City of Bessemer in 1881.	The Steelworks Suburbs Historic District is eligible for listing on the NRHP under Criteria A and C for its significant role of the ethnically diverse workers of CF&I, the economic role the industry played in shaping the unique character of Pueblo, and as a cohesive group of similar building types, built for the purpose of housing workers at the neighboring steel plant.	Adverse effect resulting from total and partial acquisition of contributing properties, including some homes and the steel mill stacks (86 properties for Existing I-25 Alternative and 78 properties for Modified I-25 Alternative [Preferred Alternative]),as well as indirect effects. **Adverse effect occurs under either Build Alternative.**	
5PE5519 (Grove Historic District)	Encompasses properties west and northwest of the current I-25 alignment and north and northeast of the Arkansas River.	The Grove Historic District is eligible for the NRHP under Criterion A and C for association with patterns of early urban development, the settlement patterns of various ethnic groups in Pueblo, and its collection of intact examples of residential and commercial buildings dating from the late 19th and early to mid-20th century.	Adverse effect resulting from total acquisition and demolition of one contributing property due to changes in the roadway elevation for the Santa Fe Extension. **Adverse effect occurs under the Modified I-25 Alternative (Preferred Alternative) only.**	

Source: CH2M HILL, 2010a; 2010b.

APE = area of potential effect
BNSF = Burling Northern Santa Fe
CF&I = Colorado Fuel & Iron
NRHP = National Register of Historic Places
UPRR = Union Pacific Railroad
US 50B = United States Highway 50B
C&W = Colorado & Wyoming Railroad

[1] Exhibits 3.2-4 and 3.2-5 do not include the two NRHP-eligible historic archaeological sites (5PE5458 and 5PE5483) that would have adverse effects under the Modified I-25 Alternative (Preferred Alternative).

[2] A property is eligible for the NRHP if it possesses historic integrity (such as maintaining original materials and design) and meets one or more of the following four criteria: (A) Is associated with important historical events or patterns; (B) Is associated with lives of persons significant in our past; (C) Embodies distinctive characteristics of an architectural type, period, or method of construction; or (D) Has yielded or is likely to yield information important in prehistory or history.

A total of 86 properties within the Steelworks Suburbs Historic District (5PE5523) would be directly impacted by the Existing I-25 Alternative. The limits of the Steelworks Suburbs Historic District are shown in **Chapter 4 – Section 4(f) Evaluation, Exhibit 4-43 and Exhibit 4-44**. CDOT would acquire and demolish 78 properties within the historic district, 68 of which are contributing elements but are not individually eligible for listing on the NRHP. Eight properties would be partially acquired, including the steel mill, the Bessemer Ditch, the C&W rail line, and five residential properties. One full city square of properties would be demolished due to loss of access. The properties between Northern Avenue and Mesa Avenue on Taylor Avenue and Rio Grande Avenue would be removed, 33 of which are contributing elements to the historic district. There would be no adverse effects to St. Mary's Genealogy Center (5PE588), which is individually eligible for listing on the NRHP, or the Minnequa Steel Works Office Building & Dispensary (5PE4179), which was listed on the NRHP in 2002. Both are contributing properties to the historic district. Less than 1 percent (16.28 acres) of the Steelworks Suburbs Historic District (1,925.05 acres) would be impacted under the Existing I-25 Alternative.

The project would also result in visual impacts to the Steelworks Suburbs Historic District due to the demolition of some steel mill structures, noise walls, and street realignments. As a result of the direct and indirect impacts to the historic district, the integration between the steel mill and the residential neighborhoods it built would be lost, resulting in an adverse effect on the Steelworks Suburbs Historic District.

The Existing I-25 Alternative would not result in impacts to the NRHP-eligible historic archaeological sites.

Modified I-25 Alternative (Preferred Alternative)

The Modified I-25 Alternative (Preferred Alternative) would result in an adverse effect to 16 historic properties: 14 historic resources (including two historic districts) and two historic archaeological sites.

- **Impacts:** Direct impacts would result in adverse effects to 16 historic properties. Seven of these would be totally acquired and demolished for the Modified I-25 Alternative (Preferred Alternative), including five residential properties (5PE4710, 5PE5050, 5PE5090, 5PE5092, and 5PE5093), one commercial property (5PE4683), and the Santa Fe Avenue bridge (5PE3938). All but two (5PE4710 and 5PE5050) of the residential properties are the same as those acquired under the Existing I-25 Alternative.

Impacts to the remaining nine properties – the Colorado Smelting retaining walls (5PE6937), the former Newton Lumber Company Complex (5PE5042), St. Mary's Genealogy Center (5PE588), the C&W rail line (5PE5139), the UPRR line (5PE1776), the Steelworks Suburbs Historic District (5PE5523), the Grove Historic District (5PE5519), and two historic archaeological sites (5PE5458 and 5PE5483) – are described in the following paragraphs.

Under the Modified I-25 Alternative (Preferred Alternative), northbound and southbound lanes would be built over the Colorado Smelting retaining walls (5PE6937). Approximately 970 feet of segment 5PE6937.1 of the retaining walls would be incorporated into CDOT ROW, causing an adverse effect as shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-42**. Approximately 550 feet of segment 5PE6937.1 would remain intact.

Under the Modified I-25 Alternative (Preferred Alternative), the highway would move approximately 600 feet closer to the former Newton Lumber Company Complex (5PE5042). This property is shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-42.** Approximately 0.19 acre of land would be acquired from the western portion of the parcel (8 percent of the property), and the railroad spurs on the western edge of the property would become CDOT ROW. Although none of the structures would be acquired, these impacts would result in an adverse effect to the property.

Under the Modified I-25 Alternative (Preferred Alternative), approximately 6,885 feet of the C&W rail line, shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-36**, would be relocated (735 feet more than under the Existing I-25 Alternative), causing an adverse effect. However, the High Line Rail would not be removed and would remain between the present I-25, which would become the Santa Fe Avenue Extension, and the proposed improvements, which would be elevated along about half of the length of the Evraz Rocky Mountain Steel Mill property (shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-48**).

Under the Modified I-25 Alternative (Preferred Alternative), segment 5PE1776.15 of the UPRR would remain in place, as shown in **Chapter 4 – Section 4(f)**

Evaluation, **Exhibit 4-39**. Approximately half of segment 5PE1776.16 north of Mesa Avenue would be removed, which would result in an adverse effect to the UPRR line as a whole. This is shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-40**.

A total of 70 properties within the Steelworks Suburbs Historic District would be directly impacted by the Modified I-25 Alternative (Preferred Alternative). The limits of the Steelworks Suburbs Historic District are shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-45** and **Exhibit 4-46.** Of those, 69 are contributing elements to the historic district and one is non-contributing. CDOT would acquire and demolish 56 contributing properties, and 13 contributing properties would be partially acquired. A total of 27.20 acres of the 1,926.05-acre historic district (1.41 percent) would be impacted as a result of moving highway lanes east of the current I-25 alignment and repurposing the existing I-25 as the Santa Fe Avenue Extension. The reconstructed highway would range from 5 feet to 30 feet higher than the existing highway through the Steelworks Suburbs Historic District, with overpasses at Indiana Avenue and the railroad crossings. There would be no adverse effect to the Minnequa Steel Works Office Building & Dispensary (5PE4179), a contributing property to the historic district.

As with the Existing I-25 Alternative, the Modified I-25 Alternative (Preferred Alternative) would result in indirect visual impacts to the Steelworks Suburbs Historic District due to property demolitions, noise walls, and street realignments. There would be an adverse effect to St. Mary's Genealogy Center (5PE588), which is individually eligible for listing on the NRHP and a contributing property to the historic district, as a result of removing Benedict Park and moving I-25 closer to the property. These direct and indirect impacts would result in an adverse effect to the Steelworks Suburbs Historic District.

Two properties within the Grove Historic District would be directly impacted by the Modified I-25 Alternative (Preferred Alternative). The limits of the Grove Historic District are shown in **Chapter 4 – Section 4(f) Evaluation**, **Exhibit 4-49.** One of the affected properties is a contributing element to the historic district (5PE4681), and one is non-contributing (5PE4680). Both properties would be adjacent to a 20-foot retaining wall and would lose their existing access from Santa Fe Avenue; therefore, both properties would be incorporated into CDOT ROW. As a contributing element to the historic district, removal of 5PE4681 would result in an adverse effect to the historic district as a whole. These properties represent a 0.04-acre impact to the 35.74-acre total historic district, or 0.11 percent.

The Modified I-25 Alternative (Preferred Alternative) would result in an adverse effect to two of the NRHP-eligible historic archaeological sites: 5PE5458 and 5PE5483. Cut-and-fill activities during construction would likely destroy site 5PE5458. Mitigation proposed for impacts to Benedict Park as currently planned (relocating the park) would destroy site 5PE5483. Both of these sites are significant because of what can be learned by data recovery, and both have minimal value for preservation in place.

3.2.3.3 Indirect Effects

Indirect effects to historical properties would occur under either Build Alternative. These effects would not result in adverse effects beyond what has already been identified in Section 3.2.3.2, where indirect effects were found to result in adverse effects to three historic properties (5PE564, 5PE4522, and 5PE588). The proposed infrastructure, bridges, and traffic patterns have the potential to introduce or add to visual, vibration, and audible elements that could diminish the integrity of feeling and association related to a historic property's significant features and setting. Indirect effects from roadway noise, vibration, or visual intrusion would be minor for most properties as I-25 is an established feature of the setting through Pueblo.

Both Build Alternatives improve access between local roadways and I-25, which could attract new developments and/or redevelopment in the City. The majority of identified historical sites in the study area continue to be actively used and operated, and there is low potential for indirect effects on historical resources beyond the potential impacts cited above.

3.2.4 Avoidance and Minimization

A concerted effort was made to minimize effects to historic properties throughout the development of the project. The CDOT Project Team evaluated alternative strategies that bypassed the downtown area. While these strategies would have avoided many of the historic properties in the downtown area, they were eliminated from further

consideration because they were costly, had other significant environmental effects, and did not meet the project Purpose and Need.

Once the Build Alternatives were identified, the CDOT Project Team evaluated design options that would minimize effects to historic properties. For example, four interchange configurations were considered near Mineral Palace Park. The CDOT Project Team considered moving the north terminus south from 13th Street to protect Mineral Palace Park; however, it was determined through public meetings with affected neighbors and merchants and through technical analysis that a 13th Street connection is critical to the operation of this interchange.

In the North Area (Phase 1) and South Area (Phase 2), impacts to historic properties were minimized by staying as close to the existing alignment as possible. Options for adjusting the alignment in other locations were also considered. While some of these options minimized effects to properties in one location, each resulted in effects to historic properties in other locations. For example, avoiding a property on the west side of the highway would require widening to the east, which could result in effects to another historic property. Ultimately, the project is constrained by existing development, historic properties, Fountain Creek, and historic railroads; therefore, any options considered require a trade-off between historic properties.

CDOT will undergo further efforts to minimize impacts to historic properties during final design of the project.

3.2.5 Mitigation Measures

In consultation with the SHPO and the consulting parties, FHWA and CDOT have determined that the project results in adverse effects to historic properties. Under the Section 106 process, adverse effects to historic properties must be resolved and mitigated through consultation.

In January, June, August, and October 2011, CDOT held a series of meetings with the SHPO and the consulting parties (Colorado Preservation Inc., the National Trust on Historic Preservation, the Bessemer Historical Society, the City of Pueblo Historic Preservation Commission, and staff from Evraz Rocky Mountain Steel) to discuss and identify mitigation options for the project. These meetings resulted in the development of a Programmatic Agreement (PA) that outlines how FHWA and CDOT will conduct Section 106 consultation for future projects along the corridor and describes mitigation for adverse effects to historic properties. The draft PA was circulated to FHWA, CDOT, the SHPO, and the consulting parties for review and comment in February 2012. It was revised based on comments received, and a final PA was signed by the signatories and invited signatories in July 2012. Of the concurring parties, Colorado Preservation Incorporated signed the PA in August 2012. The National Trust for Historic Preservation, Steelworks Museum/-Bessemer Historical Society, and Evraz Rocky Mountain Steel Mill declined to sign the agreement. The City of Pueblo Historic Preservation Commission also was given an opportunity to review the PA but have not yet signed it. The PA reflects efforts by FHWA, CDOT, the SHPO, and the consulting parties to identify specific categories of mitigation for further consultation and investigation, including resource relocation (steel mill stacks and stoves), interpretive mitigation, and archival documentation. CDOT will also consider partnering opportunities with other groups and agencies to participate in funding and implementation of the mitigation plan, particularly in instances where resource relocation is concerned. The mitigation included in the PA will resolve the adverse effects to historic properties that would result from the project. The PA is included in **Appendix H**.

In October 2011, the Advisory Council for Historic Preservation (ACHP) was notified of the adverse effect determinations for the undertaking. In January 2012, ACHP declined participation in the PA (see **Appendix H**). FHWA and the SHPO were signatories to the PA; CDOT signed as an invited signatory; and the consulting parties were invited to sign as concurring parties.

3.3 PARKS AND RECREATION

Public parks and recreation facilities within the City are important community resources. The parks are open to the public for various outdoor recreation activities, including bicycle and pedestrian trails, roller-blading, jogging, and educational uses (such as, nature walks, riparian and wetland studies, and elementary classroom activities and programs).

This section addresses the impacts of the No Action Alternative, the Existing I-25 Alternative, and the Modified I-25 Alternative (Preferred Alternative) on parks and recreation facilities located within the study area. The analysis considers the affected environment and the environmental consequences of each of the alternatives. Mitigation measures to offset potential impacts from each Build Alternative are presented at the end of the section. While all park and recreational facilities in the study area were considered in the analysis and evaluated for impacts, only those that would be directly or indirectly affected by the project are addressed in this section.

Two key pieces of legislation were enacted in the 1960s to provide protection for public parks and recreation facilities. One is Section 4(f) of the United States Department of Transportation Act of 1966 (known as Section 4(f)), and the other is Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965.

The Section 4(f) legislation provides protection for publicly owned parks, recreation areas, wildlife or waterfowl refuges, and historic sites from conversion to a transportation use. The Secretary of the United States Department of Transportation may not approve a project that requires the use of any publicly owned land from a public park, recreation area, wildlife or waterfowl refuge, or historic site of national, state, or local significance unless there is no feasible and prudent alternative to the use of land from the property and the action includes all possible planning to minimize harm to the property resulting from such use (23 CFR 774.3). Section 4(f) analyses were conducted for the project, and the results are documented in **Chapter 4 – Section 4(f) Evaluation**.

Section 6(f)(3) of the LWCF Act ensures that federal investments in the LWCF are maintained for public outdoor recreation use. These properties include parks and recreation facilities that have been developed with the assistance of LWCF grants. Five properties within the corridor were developed with LWCF grant assistance: Fountain Creek Park Land (which includes a portion of the Fountain Creek Trail), Runyon/Fountain Lakes State Wildlife Area (which includes a trail system and the Arkansas River Pedestrian Bridge), Runyon Field Sports Complex, Benedict Park, and JJ Raigoza Park. These properties are described in Section 3.3.1. The potential for impacts to Section 6(f)(3) assisted property is evaluated in Section 3.3.2, and proposed mitigation measures are detailed in Section 3.3.3.

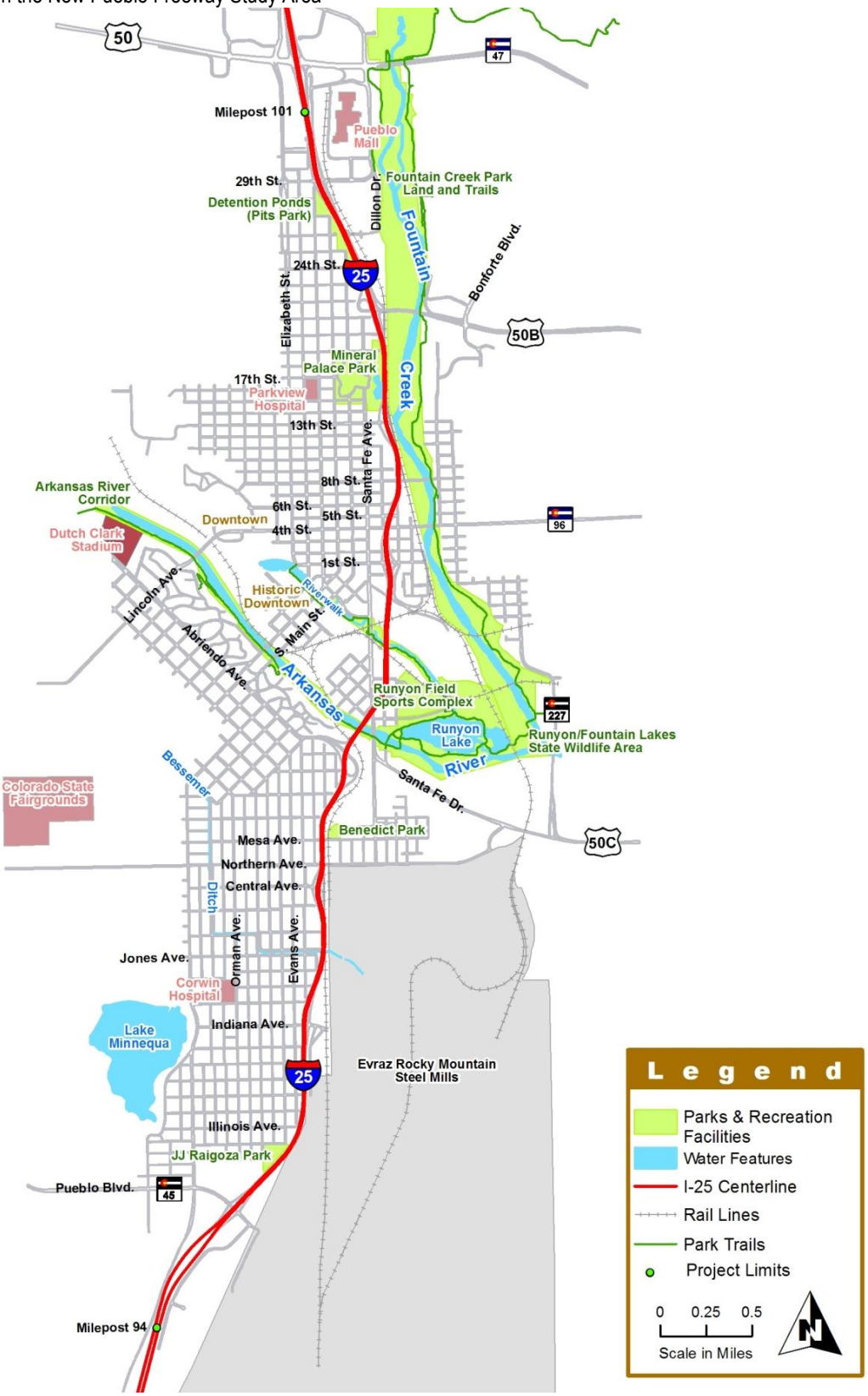
3.3.1 Affected Environment

Pueblo has numerous parks and recreation opportunities within the City and in the regional area, including small and large neighborhood parks, an extensive river trail system, sports ballparks and facilities, golf courses, auto and dog racing tracks, a zoo, nature center, and the Lake Pueblo State Park. The study area includes the following parks and recreation facilities, from north to south (shown in **Exhibit 3.3-1**):

- Detention ponds (Pits Park) between 29th Street and 24th Street adjacent to I-25
- Mineral Palace Park
- Fountain Creek Park Land and Trails
- Runyon Field Sports Complex
- Runyon/Fountain Lakes State Wildlife Area
- Arkansas River Corridor
- Benedict Park
- JJ Raigoza Park

All of the parks are owned by the City except the Runyon/Fountain Lakes State Wildlife Area, which is owned by the Pueblo Conservancy District and operated and maintained by Colorado Parks and Wildlife (CPW) as a State Wildlife Area, and the Runyon Field Sports Complex, which is owned by Pueblo County. A detailed analysis of each park and recreational facility was conducted in the study area. Brief descriptions of each park, from north to south, are provided in the following sections.

EXHIBIT 3.3-1
Parks and Recreation Facilities in the New Pueblo Freeway Study Area



3.3.1.1 Detention Ponds Between 29th Street and 24th Street Adjacent to I-25

The detention ponds between 29th Street and 24th Street adjacent to I-25 on the west side of the highway (shown in **Exhibit 3.3-1**) are commonly referred to as "Pits Park." The ponds were constructed and are owned and maintained by the City Parks and Recreation Department for the primary purpose of providing flood control and water detention along the west side of I-25 (to intercept and impound surface water runoff); however, this area is also used for informal and unprogrammed recreation uses. The site consists of two areas: a 0.49-acre area at 23rd Street and Main Street, and a larger 11.16-acre area located between 24th Street and 28th Street along the west side of I-25. Each area is covered with turf and maintained by the City Parks and Recreation Department. The turf area is used by nearby residents as playfields for soccer and other recreational sports activities.

Detention Ponds (Pits Park)

3.3.1.2 Mineral Palace Park

Mineral Palace Park (shown in **Exhibit 3.3-1** and in greater detail in **Exhibit 3.3-4**) is Pueblo's second largest park (after City Park). It is located on the west side of I-25, north of downtown. The 50.07-acre site is bounded by 19th Avenue on the north, 15th Avenue on the south, Court Street on the west, and I-25 on the east. A chain-link fence on the eastern boundary separates the park from the highway. Mineral Palace Park contains the maintenance headquarters for the City Parks and Recreation Department. The park features a small lake (Lake Clara) as well as an extensive network of flower gardens and landscaped park areas. Historic structures in the park include a band shell, pedestrian bridge, and boat house.

Historic Mineral Palace Park served as a tourist attraction from 1896 to 1943. In the early 1900s, the park extended south to 11th Street and east to the freight rail line that is currently located on the east side of I-25. The park was over 60 acres in size, and Lake Clara was three times larger than it is today. The original Mineral Palace building housed gems and minerals from around the world. In the ensuing years of the Great Depression in the 1930s, the park began its decline. For financial reasons, the City drained half of the lake and sold all of the parkland south of 14th Street.

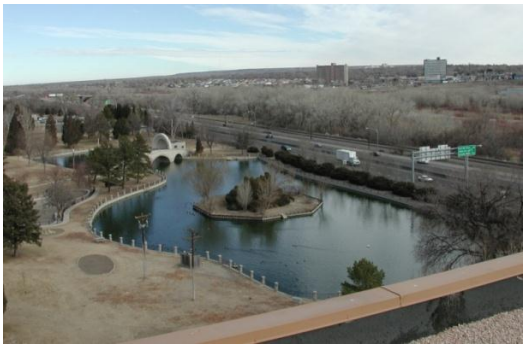
Original Mineral Palace Building

During the late 1930s, due to a series of Works Progress Administration Projects (WPA), the park experienced a revival, and most of the existing walls and structures seen in the park today were constructed during the WPA era. After 1935, both Lake Clara and the park were again reduced in size as US 85/87 was constructed along the eastern edge of the park. The western edge of the lake was filled in, and a large lawn was created as a seating area for the band shell between the boathouse and the lake. The Mineral Palace building was removed in 1943, marking the end of its period as a tourist attraction.

Other additional uses were added to the park after World War II, deviating from the original design of the park. These included the public swimming pool and the regional parks maintenance facility. With the construction and opening of I-25 in 1959, Lake Clara was resituated and reduced in size, and Mineral Palace Park was reduced to its current size of approximately 50.07 acres.

Today, the boat house is used by the Pueblo Art Guild, and the band shell is not used as a music venue. Recreational amenities include a swimming pool, tennis courts, picnic tables, and playground equipment. According to the City

Parks and Recreation Department staff, the park is currently undersized based on current uses and community needs. The eastern edge of the park is currently underutilized due to noise from I-25 and the freight rail line, which runs parallel to I-25. A portion of the northeastern area of the park is isolated (including the tennis courts) and is, therefore, underutilized. The existing swimming pool facilities are aging and require a significant amount of maintenance and repair. Maintenance of the small, irregularly shaped lake is difficult due to issues such as poor water circulation and algae growth.



Lake Clara at Mineral Palace Park

3.3.1.3 Fountain Creek Park Land and Trail

The Fountain Creek Park Land, owned and managed by the City of Pueblo, is entirely located within the Fountain Creek floodplain. The parkland was purchased in 1971 with funds from the U.S. Bureau of Outdoor Recreation (a former federal agency that was abolished in 1981) and consists of open space, a trail that serves regional and local bike traffic, a pedestrian trail, a location for environmental education opportunities at the elementary-school level, and a wildlife and naturally-vegetated corridor (City of Pueblo, 2004).

The Fountain Creek Park Land (shown in **Exhibit 3.3-1**) is approximately 400 acres of undeveloped, semi-arid high plains, predominantly covered with sagebrush, cactus, willow, cottonwood, and native grasses. Surface waters, riparian areas, and wetlands adjacent to the highway provide habitat for wildlife. Stormwater runoff from I-25 currently runs untreated into Fountain Creek and the wetland areas in the parkland, causing sedimentation issues and impacting wildlife habitat.

Fountain Creek Trail (shown in **Exhibit 3.3-1**) parallels I-25 on the east side of the highway and travels north and south along the Fountain Creek floodplain from north of 29th Street to the Arkansas River. Paved bicycle and pedestrian trails are located along the east side of Fountain Creek, along with a few picnic tables. There are also a number of trailheads adjacent to the trail. Much of the property is currently inaccessible to areas west of Fountain Creek. Portions of the Fountain Creek Park Land and Fountain Creek Trail were developed with grants from the LWCF.

Fountain Creek Park Land

3.3.1.4 Runyon Field Sports Complex

The Runyon Field Sports Complex (shown in **Exhibit 3.3-1**) is located on the east side of I-25, north of the Arkansas River. It is a heavily used community recreational facility with a rich baseball history and is considered a regional recreational amenity. The complex consists of four lighted baseball fields, including two regulation-sized diamonds, an intermediate field, and a small youth field. Associated with all four fields are concession stands, announcing booths, a clubhouse, permanent seating (bleachers), and paved parking.

Runyon Field Sports Complex

The Runyon Field Sports Complex was first established in the 1930s. In 1985, two additional fields were added to the complex, and a fourth field was added in 1994. In 1999, a new $300,000 club house was constructed and the original fence around Runyon/Hobbs Field was replaced. The land

and facilities associated with the complex are owned by Pueblo County, and the complex is operated by the Runyon Board of Directors, a nonprofit organization. The property was developed with assistance from the LWCF.

In 2010, more than 1,600 games were played by more than 97 youth teams (age 14 and under) at the Runyon Field Sports Complex. In addition, 21 high school and college teams use these fields. High school and middle school girls' softball teams also play home games at the Runyon Field Sports Complex. The baseball/softball season runs 6 days per week from April to October. All the fields are lighted, and night games are frequent. Access to the complex is from the Ilex Street interchange from I-25. The traffic generated by events at the complex has been known to backup through the interchange, often extending as far as I-25.

3.3.1.5 Runyon/Fountain Lakes State Wildlife Area

The Runyon/Fountain Lakes State Wildlife Area (shown in **Exhibit 3.3-1** and in greater detail in **Exhibit 3.3-2**) is a 40-acre wildlife protection area owned by the Pueblo Conservancy District and maintained and operated by the CPW. The lake and park area are located along the Arkansas River east of Santa Fe Avenue and south of the Runyon Field Sports Complex. The wildlife area provides public recreation opportunities, including shore fishing, hiking, picnicking, and wildlife watching. The park facilities include restrooms, three Americans with Disabilities Act (ADA)–compliant fishing piers, a biking and hiking trail, park benches, a memorial park bench, and a gravel surface parking lot, as shown in **Exhibit 3.3-2**. Downstream of the Arkansas River levee, a pedestrian bridge over the river connects the Fountain Creek and Arkansas River trails. The pedestrian bridge is owned and maintained by the City of Pueblo. North of Runyon Lake, the Thomas Phelps Creek Trail connects Runyon/Fountain Lakes State Wildlife Area to the Historic Arkansas Riverwalk of Pueblo (HARP).

A LWCF grant was awarded to the City of Pueblo in 1983 for the development of the pedestrian bridge and connecting trail and was amended to add picnic areas. LWCF funds also were used to develop the trails surrounding Runyon Lake.

3.3.1.6 Arkansas River Corridor

The Arkansas River Corridor (shown in **Exhibit 3.3-1**) extends east from the Runyon/Fountain Lakes State Wildlife Area to Lake Pueblo State Park. The area encompasses 280 acres of land in the corridor, including the water surface of the Arkansas River and the channelized embankment of the river. It serves as the site for the Arkansas River Trail that parallels the river and connects to various amenities in the community. In addition, the Pueblo Whitewater Park is a kayaking course on this section of the river that starts at the 4th Street bridge and continues to the Union bridge at Corona Street, upstream of the I-25 crossing of the Arkansas River. The area beyond the Union bridge is not used for recreation due to dangerous conditions such as debris or hydraulic backwash from a low-head dam.

3.3.1.7 Benedict Park

Benedict Park (shown in **Exhibit 3.3-1**) is located east of I-25 adjacent to the former St. Mary's School, now home to the St. Mary's Genealogy Center and John Gornick Slovenian Library. The 1.92-acre park was once associated with the school, but St. Mary's turned the site over to the City in 1980. Since that time, the City of Pueblo has owned and maintained it as a neighborhood park, primarily serving the nearby residents in the Bessemer neighborhood. The site is located on East Mesa Avenue east of I-25 and west of Eilers Avenue. Outdoor recreational facilities include an informal softball field with a backstop, turf grass, a basketball court, playground equipment, and picnic tables. The park is irrigated and has a working sprinkler system. A chain link fence provides a barrier between the park and Mesa Avenue. The park currently has no parking, pedestrian pathways, restrooms, or lighting. Benedict Park was developed with assistance from the LWCF.

A LWCF grant was awarded to the City of Pueblo in 1980 for the development of irrigation within Benedict Park.

Benedict Park

EXHIBIT 3.3-2

Facilities at the Runyon/Fountain Lakes State Wildlife Area

3.3.1.8 JJ Raigoza Park

JJ Raigoza Park (shown in **Exhibit 3.3-1**) is a 7.85-acre park roughly bound by Maryland Avenue to the north, Pine Avenue to the west, and I-25 to the southeast. The park primarily serves the Bessemer Neighborhood with amenities that include a tennis court, basketball court, playground equipment, restroom, and picnic table. The property was developed with assistance from the LWCF.

JJ Raigoza Park

Further detail on parks in the project area may be found in the *Parks Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2010c).

3.3.2 Environmental Consequences

To help the CDOT Project Team avoid and/or minimize impacts to the parks, a Park Advisory Committee (PAC) was established. The PAC was made up of local citizens and staff from the City Parks and Recreation Department, the City Planning Department, and the County Parks Department. Through a series of workshops, the PAC helped develop park mitigation plans. More information about the PAC activities can be found in **Chapter 6 – Comments and Coordination**.

This section analyzes impacts to parks in the corridor. **Chapter 4 –Section 4(f) Evaluation** also provides detailed descriptions of impacts and mitigation measures for Mineral Palace Park, Fountain Creek Park Land, Runyon/Fountain Lakes State Wildlife Area, and Benedict Park. This section also addresses impacts to properties protected under Section 6(f)(3) of the LWCF Act.

3.3.2.1 No Action Alternative

The No Action Alternative would not have any direct impacts to any parks in the corridor.

Existing effects to the park facilities due to the proximity of roads to the parks, including noise and visual impacts, would continue. Access to the Runyon Field Sports Complex would remain difficult before and after sporting events, with queues extending onto I-25.

Under the No Action Alternative, continued sedimentation and pollutant loading from stormwater runoff into surface waters, riparian areas, and wetlands adjacent to the highway could adversely affect wildlife habitat in the Fountain Creek Park Land.

3.3.2.2 Build Alternatives

This section describes the impacts of the Build Alternatives to each of the parks and recreation facilities adjacent to I-25.

Either Build Alternative would result in the conversion of Section 6(f)(3) assisted property. The LWCF Act requires that, prior to conversion of Section 6(f)(3) assisted property, the agency proposing the conversion must ensure that all practical alternatives to the conversion have been evaluated and rejected on a sound basis. The Section 6(f)(3) assisted properties affected by the project are also protected by Section 4(f) of the Department of Transportation Act, which requires a thorough analysis of avoidance alternatives. Six alternatives were evaluated for their potential to avoid all of the Section 4(f) and Section 6(f)(3) properties in the corridor. None of these alternatives were carried forward because they either did not meet the Purpose and Need for the project or would not avoid Section 4(f) or Section 6(f)(3) assisted properties. For a detailed description of these alternatives and the reasons they were dismissed, see **Chapter 4 – Section 4(f) Evaluation, Section 4.5**. Site-specific avoidance options also were evaluated for their potential to avoid each Section 6(f)(3) assisted property. This analysis is documented in correspondence with the CPW dated June 25, 2012 (see **Appendix B**).

North Area (Phase 1)

As shown in **Exhibit 3.3-3**, both Build Alternatives would directly impact Mineral Palace Park and the Fountain Creek Park Land. The detention ponds between 29th Street and 24th Street adjacent to I-25 and the Fountain Creek Trail would not be directly impacted by the Build Alternatives; however, there is a potential for noise impacts. Direct impacts to parks and recreation facilities in the North Area (Phase 1) are described in detail below and featured in **Exhibits 3.3-4, 3.3-5,** and **3.3-6**.

Detention Ponds between 29th Street and 24th Street Adjacent to I-25

Widening I-25 adjacent to the detention ponds would not impact the recreational uses of the ponds. The detention ponds are currently maintained by the City, and maintenance access would be retained. The two Build Alternatives include noise barriers to be built in CDOT right-of-way (ROW) to protect the detention ponds and surrounding neighborhoods from noise. With the noise barriers in place, the ponds would experience noise levels of approximately 58 to 61 A-weighted decibels (dBA), which is less than noise levels experienced at the park today. Noise impacts are detailed in **Section 3.5 Noise**. No property acquisition would occur as a result of the Build Alternatives.

Mineral Palace Park

As shown in **Exhibit 3.3-3**, I-25 is located between Mineral Palace Park to the west and an active historic rail line to the east, which is listed on the National Register of Historic Places (NRHP). Both the park and the railroad property are directly adjacent to CDOT ROW, which presented a design challenge for widening the highway.

Both Build Alternatives would impact Mineral Palace Park as follows:

- Widening I-25 adjacent to the park would result in loss of a strip approximately 50 feet wide along the eastern 1,500-foot edge of the park, which translates into approximately 1.69 acres (3 percent of the 50.07 acre park). This is the part of the park that is not currently used by recreationists because its current noise levels are approximately 65 dBA.
- The loss of the eastern portion of the park would result in loss of the northeast park road leading to a parking lot, as well as about 40 parking spaces, grass, small shrubs, and approximately 20 mature trees.
- Fifteen to 20 percent of Lake Clara would be eliminated, rendering it unable to function as a viable lake. The lake has been reduced in size several times in the past, making the un-functioning lake small and irregularly shaped and making healthy water circulation difficult. Highway improvements will further exacerbate the lake condition.
- A section totaling approximately 40 linear feet of a WPA lake wall would be eliminated along Lake Clara.
- Approximately 13 percent of the existing acreage of the park maintenance yard, located in the northeast corner of Mineral Palace Park, would be lost.
- The informal path that generally follows the eastern fence would be severed and would have to be reconnected.
- Construction of noise barriers would be needed to protect the park from additional noise impacts. With noise mitigation in place, the park would experience a decrease in noise levels of approximately 5 to 7 dBA. Noise impacts to Mineral Palace Park are detailed in **Section 3.5 Noise**.

The project impacts described above are shown in **Exhibit 3.3-4**.

Fountain Creek Park Land and Trail

As shown in **Exhibit 3.3-5** and **Exhibit 3.3-6**, the Build Alternatives would impact 7.68 acres of the Fountain Creek Park Land and Trail as follows:

- The extension of Dillon Drive to US 50B requires acquisition of undeveloped parkland along the east side of Fountain Creek, north of US 50B. This area around the extended road is made up of low-quality riparian habitat. Both the Existing I-25 Alternative and Modified I-25 Alternative (Preferred Alternative) would use 3.95 acres of parkland for the Dillon Drive extension. An additional 1 acre of land would be temporarily occupied during construction, but would be re-graded and reopened to recreation prior to project completion.
- The relocation of US 50B to the north and widening of US 50B over Fountain Creek would use approximately 2.17 acres of the parkland. An additional 1 acre of land would be temporarily occupied during construction, but would be re-graded and reopened to recreation prior to project completion.

EXHIBIT 3.3-3
Impacts to Parks and Recreation Facilities in the North Area (Phase 1)

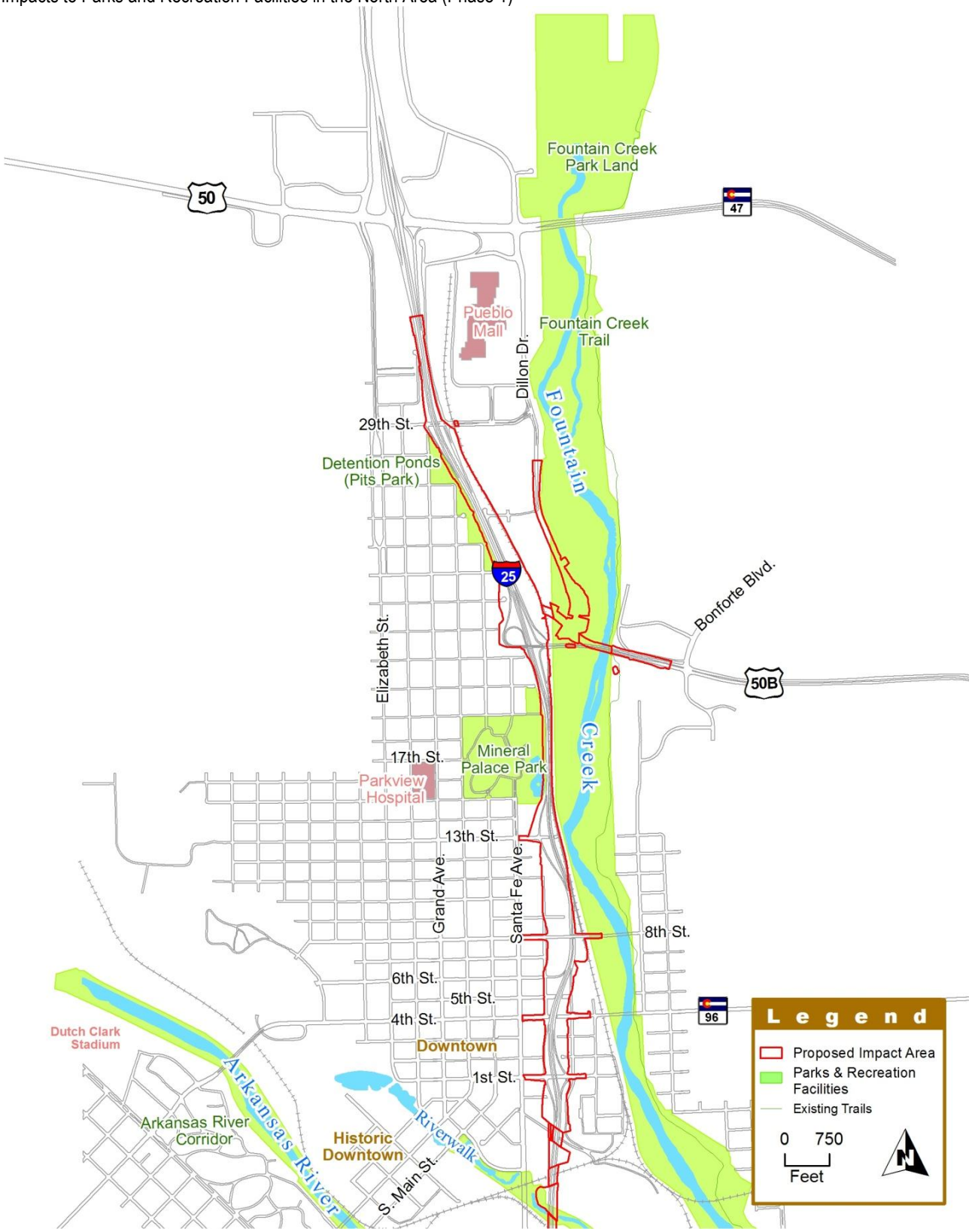
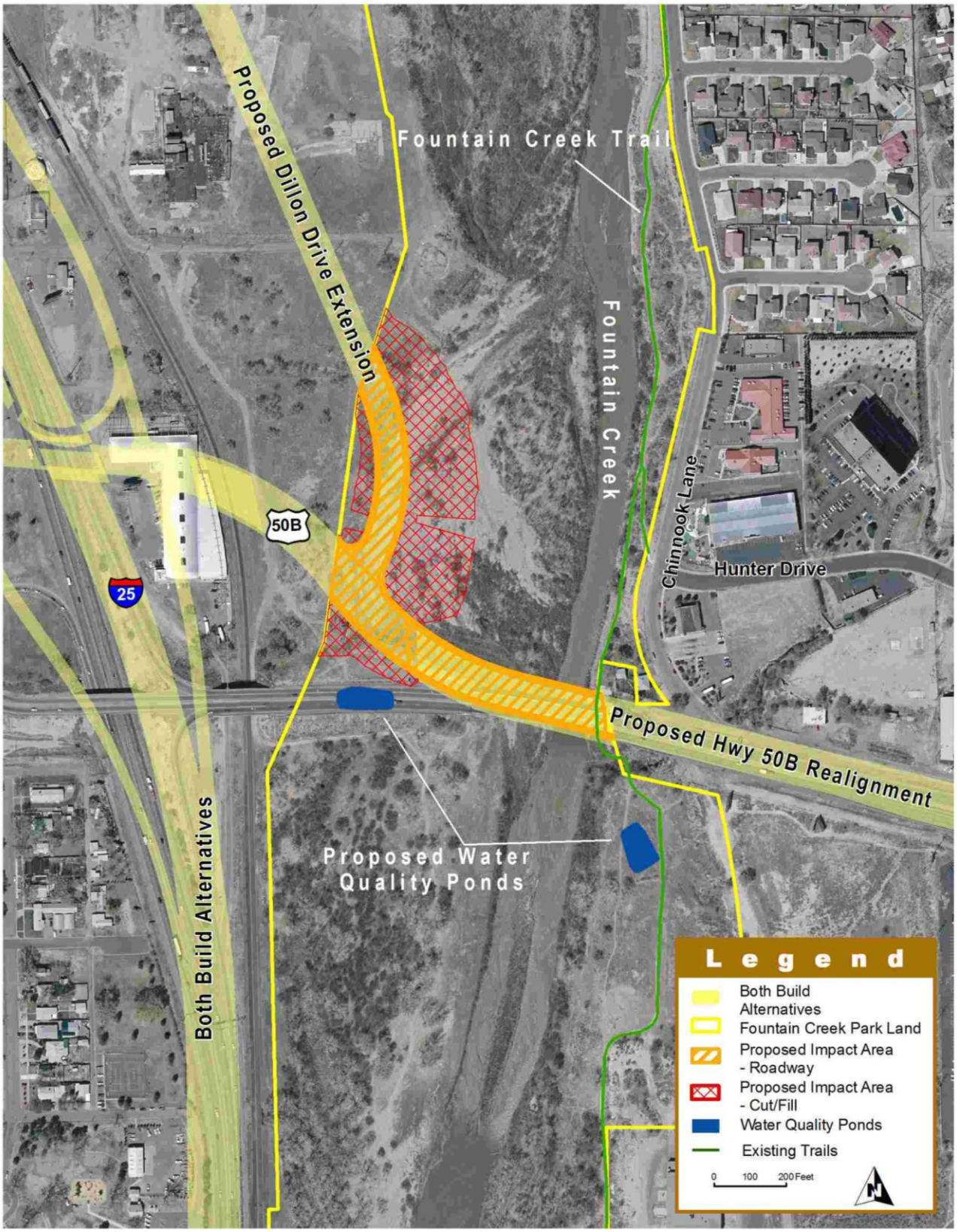


EXHIBIT 3.3-4
Mineral Palace Park Features and Impacts of the Build Alternatives

EXHIBIT 3.3-5
Fountain Creek Park Land and Impacts of the Build Alternatives at 8th Street

EXHIBIT 3.3-6
Fountain Creek Park Land and Impacts of the Build Alternatives at US 50B



- An improved connection to 8th Street on the east side of I-25 would require acquisition of approximately 0.14 acres of the parkland. The improvements would include the addition of two new sidewalks along the bridge. This portion of the Fountain Creek Park Land does not currently serve any active recreational purpose and is separated from the rest of the Fountain Creek Park Land by an active railroad line.
- Stormwater detention features included in the Build Alternatives will capture stormwater runoff and reduce the amount of pollution and sediment that reach surface waters, riparian areas, and wetlands adjacent to the highway. This would impact 1.42 acres of the property, but would have a beneficial effect on the Fountain Creek Park Land.
- Temporary detours and/or closures of the Fountain Creek Trail would be required to protect the public when construction is occurring above the trail (typically when bridge girders are set or bridge decks are poured).

Of the 7.68 acres of land that would be acquired from the Fountain Creek Park Land for the project, 6.26 acres would need to be replaced in an equal value exchange in accordance with the LWCF Act. The 1.42 acres of land associated with the stormwater detention features would not be considered a conversion of Section 6(f)(3) assisted property because the ponds would remain open for recreation and would still function as open space. The replacement property would need to be of reasonably equivalent usefulness, monetary value, and location.

South Area (Phase 2)

JJ Raigoza Park is the only park located in the South Area (Phase 2) of the project. As shown in **Exhibit 3.3-7**, neither Build Alternative would require ROW from JJ Raigoza Park and no Section 6(f)(3) assisted land or facilities would be converted. The Build Alternatives include a noise barrier to protect the park from noise. With the noise barriers in place, the park would experience noise levels of approximately 63 dBA, which is less than noise levels experienced at the park today. Noise impacts to JJ Raigoza Park are detailed in **Section 3.5 Noise**.

Central Area (Phase 2)

Existing I-25 Alternative

As shown in **Exhibit 3.3-8**, the Existing I-25 Alternative would not impact the Runyon Field Sports Complex; however, this alternative would affect the Runyon/Fountain Lakes State Wildlife Area, the Arkansas River Corridor, and Benedict Park. Impacts to these resources are described in detail below.

Runyon/Fountain Lakes State Wildlife Area

Construction of the Existing I-25 Alternative would temporarily impact the Thomas Phelps Creek Trail (shown in **Exhibit 3.3-2**), which is a part of the Runyon/Fountain Lakes State Wildlife Area. Temporary detours and/or closures of the trail would be required to protect the public when construction is occurring above the trail (typically, when bridge girders are set or bridge decks are poured). No other impacts to the Runyon/Fountain Lakes State Wildlife Area are expected.

Arkansas River Corridor

The Existing I-25 Alternative would require construction of a new bridge just to the east of the current I-25 bridge crossing the Arkansas River. Temporary detours and/or closures of the Arkansas River trail would be required to protect the public when construction is occurring above the trail (typically when bridge girders are set or bridge decks are poured).

Benedict Park

The Existing I-25 Alternative would impact the west side of Benedict Park as follows:

- The relocation of the historic freight rail line to the east of the current location would require the use of approximately 0.42 acre of land from the western edge of the park. This means that 1.50 acres of the park would remain, leaving a smaller park that would still function as a neighborhood “pocket” park.
- The informal athletic field would be eliminated; however, the playgrounds and basketball court could continue to be used by the neighborhood.

The impacts of the Existing I-25 Alternative to Benedict Park are shown in **Exhibit 3.3-9**.

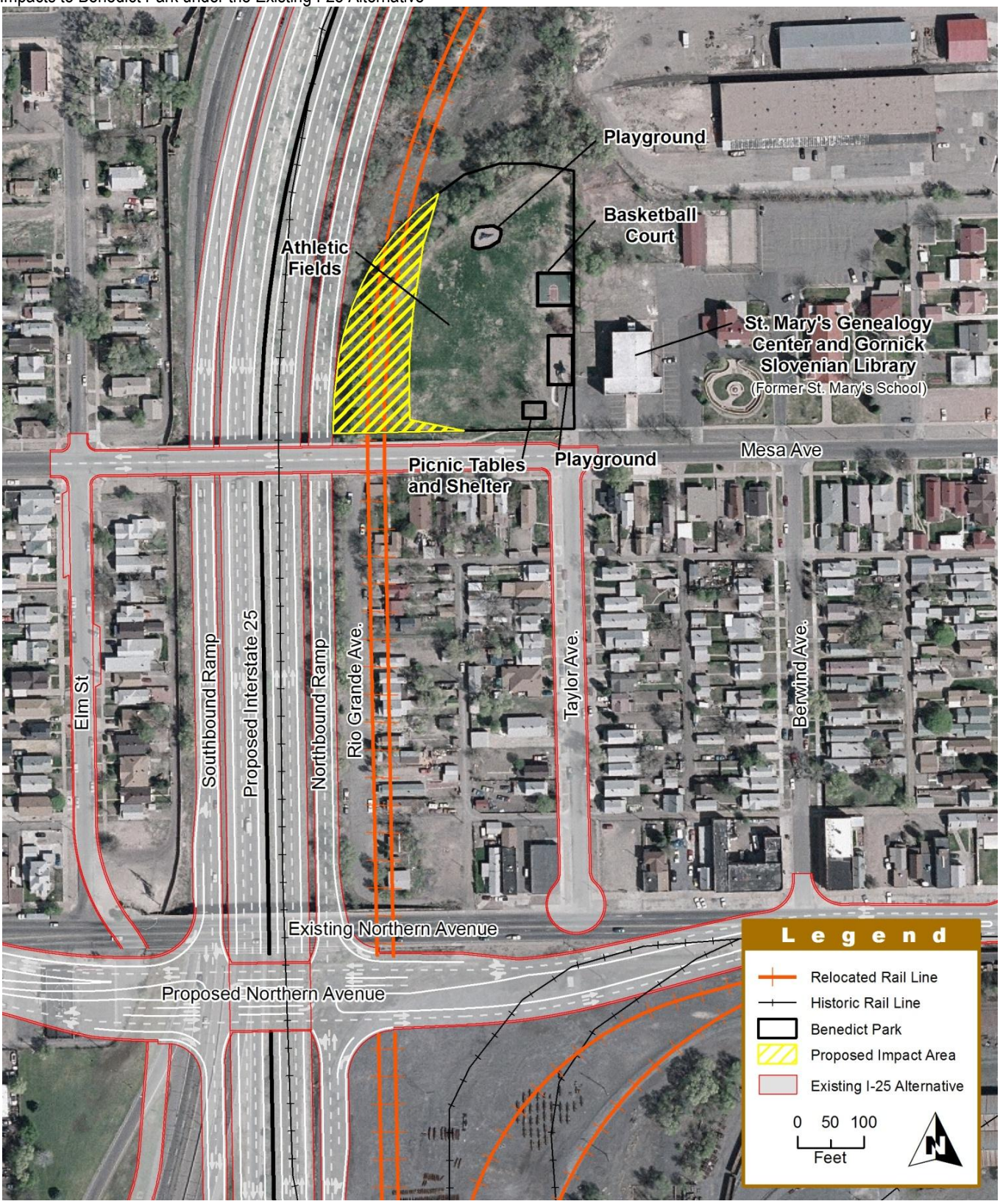
The 0.42 acre of land that would be acquired from Benedict Park would need to be replaced in an equal value exchange

EXHIBIT 3.3-7
Impacts to Parks and Recreation Facilities in the South Area (Phase 2)

EXHIBIT 3.3-8

Impacts to Parks and Recreation Facilities in the Central Area (Phase 2) under the Existing I-25 Alternative

EXHIBIT 3.3-9
Impacts to Benedict Park under the Existing I-25 Alternative



in accordance with the LWCF Act. The replacement property would need to be of reasonably equivalent usefulness, monetary value, and location.

Coordination between CDOT and the City resulted in a Memorandum of Understanding (MOU) in March 2010 in which the City agreed to allow CDOT to use Benedict Park for the New Pueblo Freeway Project and CDOT agreed to mitigate the impacts to the park as described later in this section (see **Appendix F**).

Modified I-25 Alternative (Preferred Alternative)

As shown in **Exhibit 3.3-10**, the Modified I-25 Alternative (Preferred Alternative) would have impacts to all of the parklands in the Central Area (Phase 2). These impacts are described in detail below.

Runyon Field Sports Complex

The Modified I-25 Alternative (Preferred Alternative) would have no direct impact to the Runyon Field Sports Complex. Under the Modified I-25 Alternative (Preferred Alternative), Stanton Avenue would be extended north and west to Santa Fe Avenue and south to Santa Fe Drive. Access to the Runyon Field Sports Complex would be provided from Stanton Avenue, allowing visitors to reach the park from the local street system rather than the off-ramp from I-25. This new road network would eliminate the queues of vehicles traveling to the Runyon Field Sports Complex that extend onto the highway, resulting in a benefit to the users of the complex and I-25.This benefit is not possible under the Existing I-25 Alternative.

Runyon/Fountain Lakes State Wildlife Area

Impacts of the Modified I-25 Alternative (Preferred Alternative) to the Runyon/Fountain Lakes State Wildlife Area are shown in **Exhibit 3.3-11** and detailed below.

- The Modified I-25 Alternative (Preferred Alternative) realigns the current I-25 alignment to the east, starting south of Ilex Street. The new highway alignment would require the construction of four new bridges over the Arkansas River and within the Runyon/Fountain Lakes State Wildlife Area. **Exhibit 3.3-11** illustrates how most of the I-25 mainline and adjacent ramps would bridge over park property; however, bridge abutments on the south side of the river would be placed in some of the State Wildlife Area.
- Stanton Avenue would be extended south on a bridge over the State Wildlife Area and the Arkansas River.
- Eighteen new bridge piers would be placed in the State Wildlife Area to support the bridges for I-25 and for the extension of Stanton Avenue. These improvements would impact 2.81 acres of the Runyon/Fountain Lakes State Wildlife Area[1]. Approximately 0.02 acre of this impact represents the land that would need to be acquired for the bridge piers. The remaining 2.79 acres of impact result from the new fill material that would be placed to support the slope from the new bridges, as well as the configuration of the structures, which would make the land between the ramps and the roadway inaccessible and no longer useful for recreation. The existing bridge piers that support I-25 would remain within the State Wildlife Area to carry Santa Fe Avenue. The old Santa Fe/US 50B Bridge over the Arkansas River would be removed, which would remove one pier from the State Wildlife Area.
- The existing pedestrian bridge that crosses the Arkansas River, connecting Runyon/Fountain Lakes State Wildlife Area on the north side of the river to the Arkansas River Trail on the south, would be removed to allow room for the I-25 bridges to span the river.
- The trail that leads to the footbridge would be relocated with a bridge that allows for crossing the Arkansas River and reconnecting to the Arkansas River Trail. The park benches and the memorial park bench would be moved to the east.
- The Thomas Phelps Creek Trail (shown in **Exhibit 3.3-2**) would be temporarily impacted by the construction of the I-25 mainline. Temporary detours and/or closures of the trail would be required to protect the public when construction is occurring above the trail (typically, when bridge girders are set or bridge decks are poured). No other impacts to Runyon/Fountain Lakes State Wildlife Area are expected.

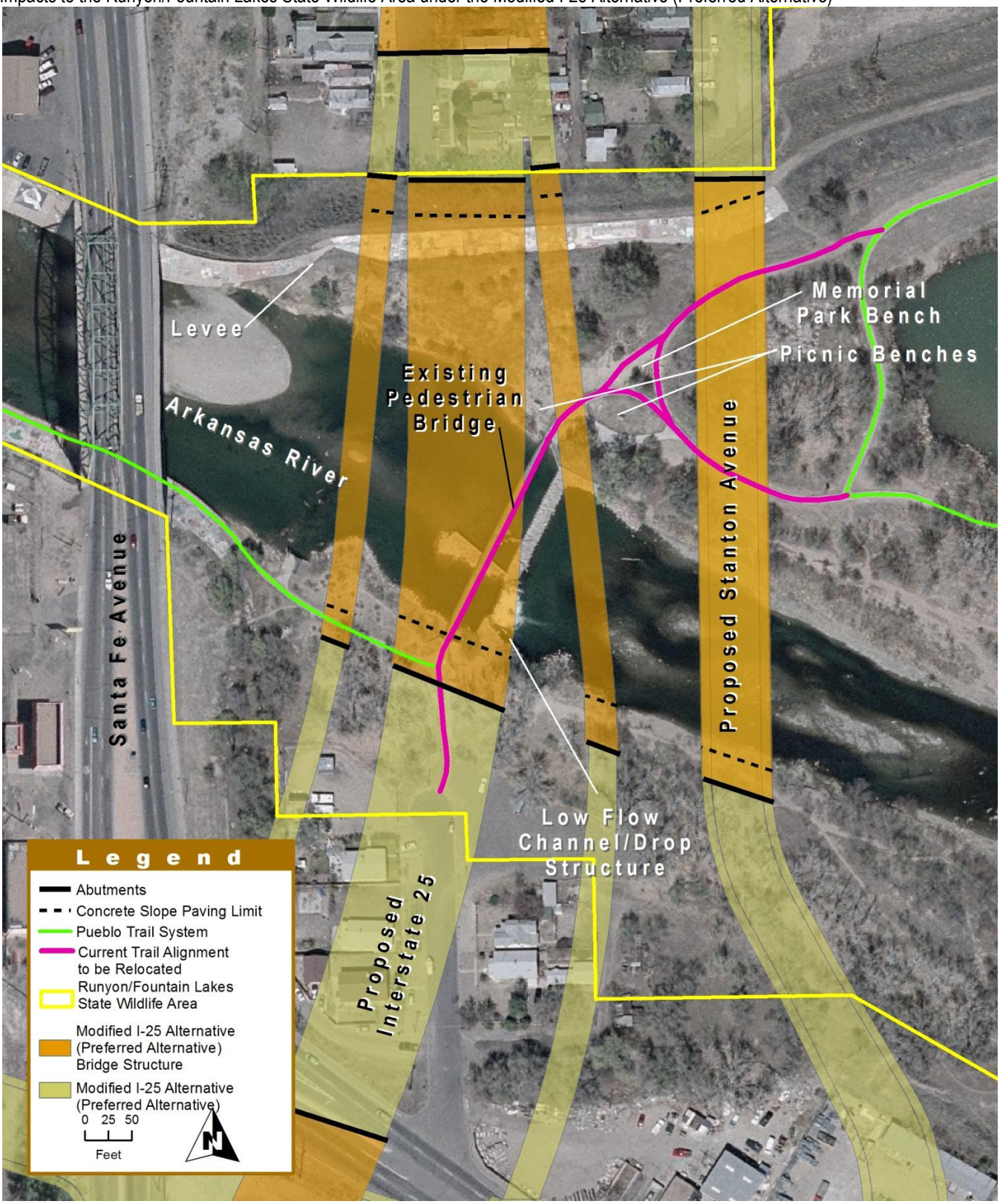
The 2.81 acres of land that would be converted from recreational use from within the Runyon/Fountain Lakes State Wildlife Area[1] and the Arkansas River pedestrian bridge would need to be replaced in an equal value exchange in accordance with the LWCF Act. The replacement property would need to be of reasonably equivalent usefulness, monetary value, and location.

[1] Based on boundary maps for the project, it is unclear whether this land is within the legal boundary for this property. This will be resolved in further consultation with CPW as the project is developed and funded.

EXHIBIT 3.3-10

Impacts to Parks and Recreation Facilities in the Central Area (Phase 2) under the Modified I-25 Alternative (Preferred Alternative)

EXHIBIT 3.3-11
Impacts to the Runyon/Fountain Lakes State Wildlife Area under the Modified I-25 Alternative (Preferred Alternative)



Arkansas River Corridor

Under the Modified I-25 Alternative (Preferred Alternative), new bridges east of the current I-25 bridge crossing the Arkansas River would be constructed. Temporary detours and/or closures of the Arkansas River trail would be required to protect the public when construction is occurring above the trail (typically when bridge girders are set or bridge decks are poured).

Benedict Park

The Modified I-25 Alternative (Preferred Alternative) would impact Benedict Park by completely shifting the highway east onto park property. The freight rail line would stay in its current location. All recreational elements would be removed. Impacts to Benedict Park are illustrated in **Exhibit 3.3-12**.

Benedict Park would need to be replaced in an equal value exchange in accordance with the LWCF Act. The replacement property would need to be of reasonably equivalent usefulness, monetary value, and location.

Coordination between CDOT and the City resulted in a MOU in March 2010 in which the City agreed to allow CDOT to use Benedict Park for the New Pueblo Freeway Project and CDOT agreed to mitigate the impacts to the park as described later in this section (see **Appendix F**).

3.3.3 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative). The following mitigation actions were developed in cooperation with citizens through the PAC workshops to be implemented during final design and construction activities.

CDOT will assure that there is an equal value exchange for all Section 6(f)(3) property acquired. Such exchange will be valued according to the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 for both properties acquired and for any properties used as part of the payment. In all situations where the valuation of the property acquired exceeds the value of the property to be used as payment, the difference shall be paid as cash, and that cash shall be used in a manner consistent with Section 6(f) principles. Appraisals are conducted as part of CDOT's right-of-way process, which occurs once design is more complete and project funds have been identified.

CDOT has coordinated with CPW and the DOI with regards to the conversion of Section 6(f)(3) assisted property (see correspondence dated June 25, 2012 and July 10, 2012 in **Appendix B**). The official conversion request and DOI concurrence will occur prior to project completion, and the value of the land will be assessed prior to the DOI final approval.

Detention Ponds between 29th Street and 24th Street, Adjacent to I-25

To alleviate potential noise impacts from I-25, CDOT will place two noise barriers between 29th Street and 24th Street on the east side parallel to I-25, starting at the north end and ending in the south. The barrier will mitigate potential noise from traffic on I-25 after roadway improvements have been made. Noise mitigation is detailed in **Section 3.5 Noise**.

Mineral Palace Park

City staff and citizens participated in an extensive public involvement process by the PAC as described earlier to determine adequate mitigation for impacts to Mineral Palace Park. This process resulted in the development of a restoration plan for the park that is illustrated in **Exhibit 3.3-13**. The restoration plan will adhere to a theme of celebrating the past and connecting to neighborhoods. The restoration plan is a master plan for the park restoration in general, not a design plan. Key components of the plan include the following:

- **Increase the size of Mineral Palace Park to 52.38 acres.** Land will be added adjacent to the park, south to 13th Street and north to the US 50B loop. Implementation of the mitigation measures for the park has been stipulated in a MOU between the City and CDOT (see **Appendix F**). The MOU contains commitments from CDOT to construct park improvements and lays out the responsibilities of the City to accept ownership and maintenance responsibility for those improvements, once completed.
- **Relocate the swimming pool.** The existing swimming pool will be moved out of the existing park. Although the pool is an important community amenity, it is not consistent with the historical uses of the park.

EXHIBIT 3.3-12

Impacts to Benedict Park under the Modified I-25 Alternative (Preferred Alternative)

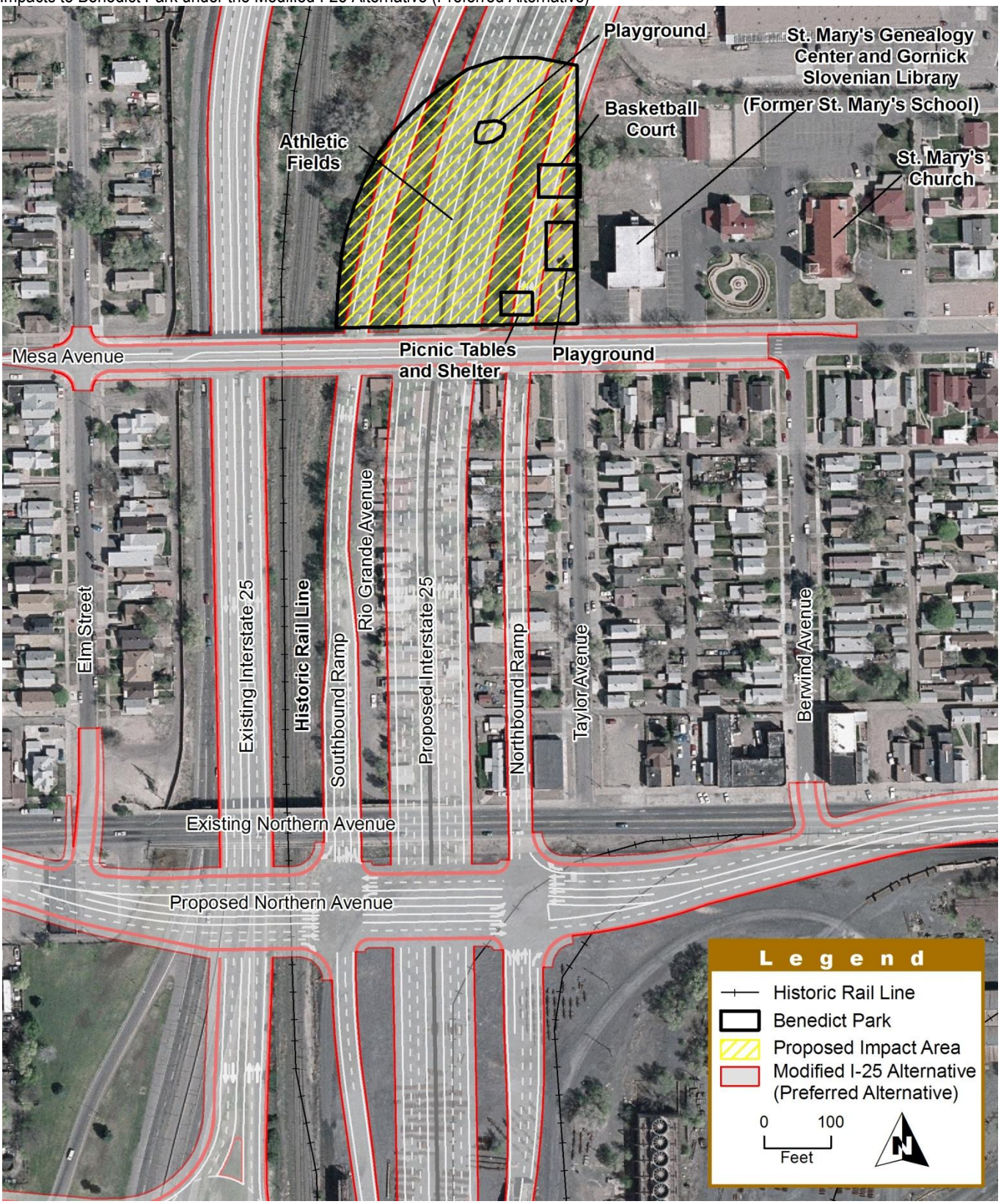


EXHIBIT 3.3-13
Mineral Palace Park Master Plan - Mitigation

- **Add new parking.** The parking that will be lost as a result of the I-25 widening will be replaced with new parking lots that include several handicap parking spaces in both the southern and northern parts of the park.
- **Construct a pedestrian bridge.** A pedestrian bridge will be constructed over I-25 to connect Mineral Palace Park to the Fountain Creek Park Land.
- **Add noise mitigation structures.** Noise mitigation features (such as walls and earthen berms) will be added to reduce noise from I-25. Noise mitigation is detailed in **Section 3.5 Noise**.
- **Add vegetation.** Vegetation will be planted along proposed sound walls and berms to soften views into and out of the park. More trees will be planted in the park as a nursery crop to replace the current shade trees that are on the decline because they are well over 100 years old.
- **Enlarge Lake Clara.** Lake Clara will be expanded so that it will function as a healthy lake with adequate space.
- **Move the maintenance facility.** The maintenance facility will be relocated out of the park to add more usable parkland.
- **Construct a fountain.** A fountain will be constructed to look similar to the original fountain that was once present in the park and was removed prior to the development of this project.
- **Relocate activities.** Facilities and activity areas that are not noise sensitive will be moved closer to the highway.
- **Increase access to the park and within the park.** Increased access will be provided by adding additional trail connections and improving the internal roadway and walk systems within the park.
- **Construct an amphitheater.** An amphitheater will be constructed to help reintroduce concerts and events to the park.
- **Construct a palace plaza**. A plaza will be constructed at the site of the original Mineral Palace to provide a place in the park where historical interpretation of Mineral Palace Park can be displayed.
- **Improve handicap access.** Handicap-accessible ramps and parking areas will be constructed, along with appropriate surfaces throughout the park.
- **Reconnect the boathouse with Lake Clara.** Lake Clara will be enlarged so the boathouse will be reconnected to the lake.
- **Introduce traffic calming features.** State-of-the-art traffic-calming techniques will be incorporated, where appropriate, to slow traffic along the perimeter of the park.
- **Restore the gardens.** Some of the gardens around the park will be restored to their historic splendor.

Fountain Creek Park Land and Trail

The following mitigation measures for the Fountain Creek Park Land and Trail would be implemented for both Build Alternatives.

- The existing US 50B alignment will be removed and the land within the floodplain will be turned over to the City of Pueblo to be part of the Fountain Creek Park Land. A total of 3.3 acres will be deeded to the City for recreational purposes, and this land is contiguous with the existing Fountain Creek Park Land.
- A detour for users of the Fountain Creek Trail will be provided during construction. The specific detour route will be determined during final design. Public notice of any closures and detour routes will be conducted prior to any closures, and signage and other instructions will be posted and maintained.
- Stormwater detention ponds will be built within the existing floodplain to capture stormwater runoff from the roadways to reduce impacts on vegetation and wildlife in the Fountain Creek Park Land.
- Areas of temporary occupancy will be regraded, revegetated, and returned to pre-construction conditions for recreational use after construction.
- Recreational access to the western bank of Fountain Creek, which is currently not accessible to pedestrians, will be provided via construction of a soft-surface trail, and additional picnic tables will be installed.
- The Dillon Drive extension will include sidewalks that will improve access to the western bank of the Fountain Creek Park Land, which currently has extremely limited accessibility.
- Pedestrian and motor vehicle access to recreational opportunities of the Fountain Creek Park Land will be improved by reconstructing 8th Street at I-25 and improving sidewalks.

- New pedestrian signage will be added to improve awareness of, and guide residents to, the Fountain Creek Park Land.
- A new information kiosk will be installed at Mineral Palace Park directing users to recreational opportunities along Fountain Creek (to be accessible from Mineral Palace Park via a new pedestrian bridge over I-25) and the role of LWCF in supporting preservation of outdoor recreation in this area.

Arkansas River Corridor

CDOT will provide advance notice to the public of river closures or temporary detours and/or closures of the Arkansas River trail during construction. Access will be maintained as much as possible to minimize impacts to users.

JJ Raigoza Park

CDOT will construct noise mitigation structures to reduce the noise impact to the Evans area between Maryland Avenue and Nevada Avenue. Noise mitigation is detailed in **Section 3.5 Noise**.

3.3.3.1 Mitigation for the Existing I-25 Alternative

The following mitigation measures would be implemented specifically under the Existing I-25 Alternative.

Runyon/Fountain Lakes State Wildlife Area

CDOT will provide advance notice to the public of temporary detours and/or closures of the Thomas Phelps Creek Trail during construction. Access will be maintained as much as possible to minimize impacts to users.

Benedict Park

CDOT will construct a 2.13-acre expansion of Benedict Park to the south of the existing park. The expanded park will total 4.05 acres, which will include remnant parcels of the land required for the relocation of the railroad, as described in **Section 3.1 Transportation**. The existing playground equipment and a paved basketball court will remain.

The mitigation for Benedict Park is illustrated in **Exhibit 3.3-14** and **Exhibit 3.3-15**. The new park plans proposed under the Existing I-25 Alternative will address several issues at the existing park, including lack of parking (the new park plan includes on-street parking along Taylor Street) and the need for a shelter house, trees, and improved lighting.

3.3.3.2 Mitigation for the Modified I-25 Alternative (Preferred Alternative)

The following mitigation measures would be implemented specifically under the Modified I-25 Alternative (Preferred Alternative).

Runyon/Fountain Lakes State Wildlife Area

The following mitigation measures were developed by the CDOT Project Team with input from the public and City staff.

- The Arkansas River Pedestrian Bridge and connecting trail would be reconstructed just east of the proposed Stanton Avenue Bridge (shown in **Exhibit 3.3-16**). It will be developed in consultation with both the City of Pueblo and the Colorado Parks and Wildlife Division.
- Detours or other safe and appropriate accommodations for users of the trails will be provided where possible. Public notice of any closures and detour routes will be conducted prior to any closures, and signage and other instructions will be posted and maintained.
- Trees and plantings will be included in the project to offset any loss of vegetation from shading that would occur under the new bridges.
- The additional bridge piers would not preclude the City of Pueblo's plans for a boat crossing of the Arkansas River.
- Any impacted trail segments that are currently surfaced with asphalt will be replaced and upgraded with concrete.
- The Stanton Avenue extension will also provide additional parking for the Runyon/Fountain Lakes State Wildlife Area.
- At least 0.66 mile of new trail will be constructed in the Runyon/Fountain Lakes State Wildlife Area, including a trail that will connect the Runyon Field Sports Complex and the Arkansas River area with several neighborhood parks to the south that are currently disconnected from recreational resources north of the Arkansas River, as shown in **Exhibit 3.3-16**.

  A sign acknowledging assistance from the LWCF will be posted in a prominent public area visible to all visitors.

The mitigation for the Runyon/Fountain Lakes State Wildlife Area is illustrated in **Exhibit 3.3-16**.

EXHIBIT 3.3-14
Mitigation for Benedict Park under the Existing I-25 Alternative

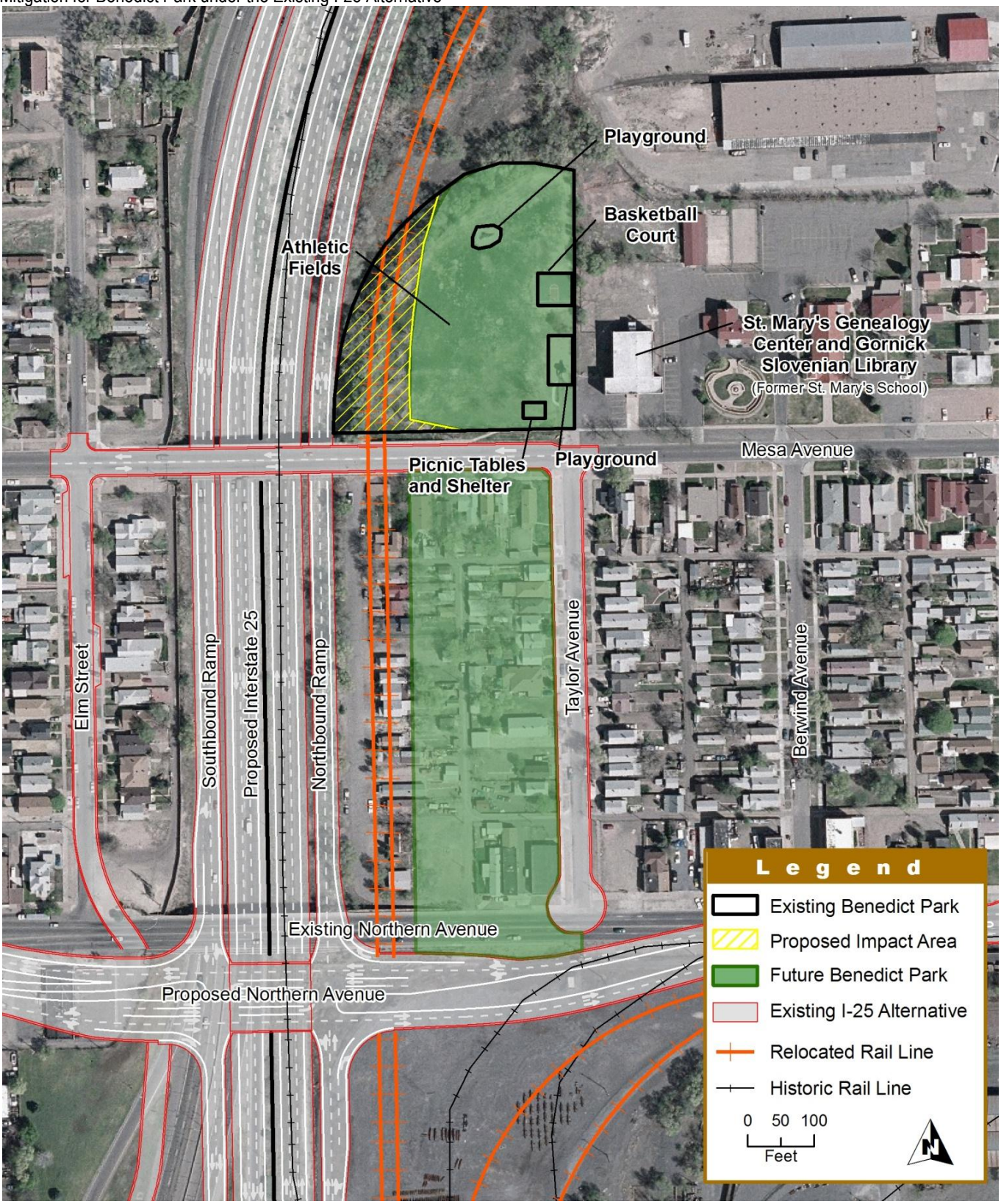


EXHIBIT 3.3-15
Mitigation for Benedict Park under the Existing I-25 Alternative

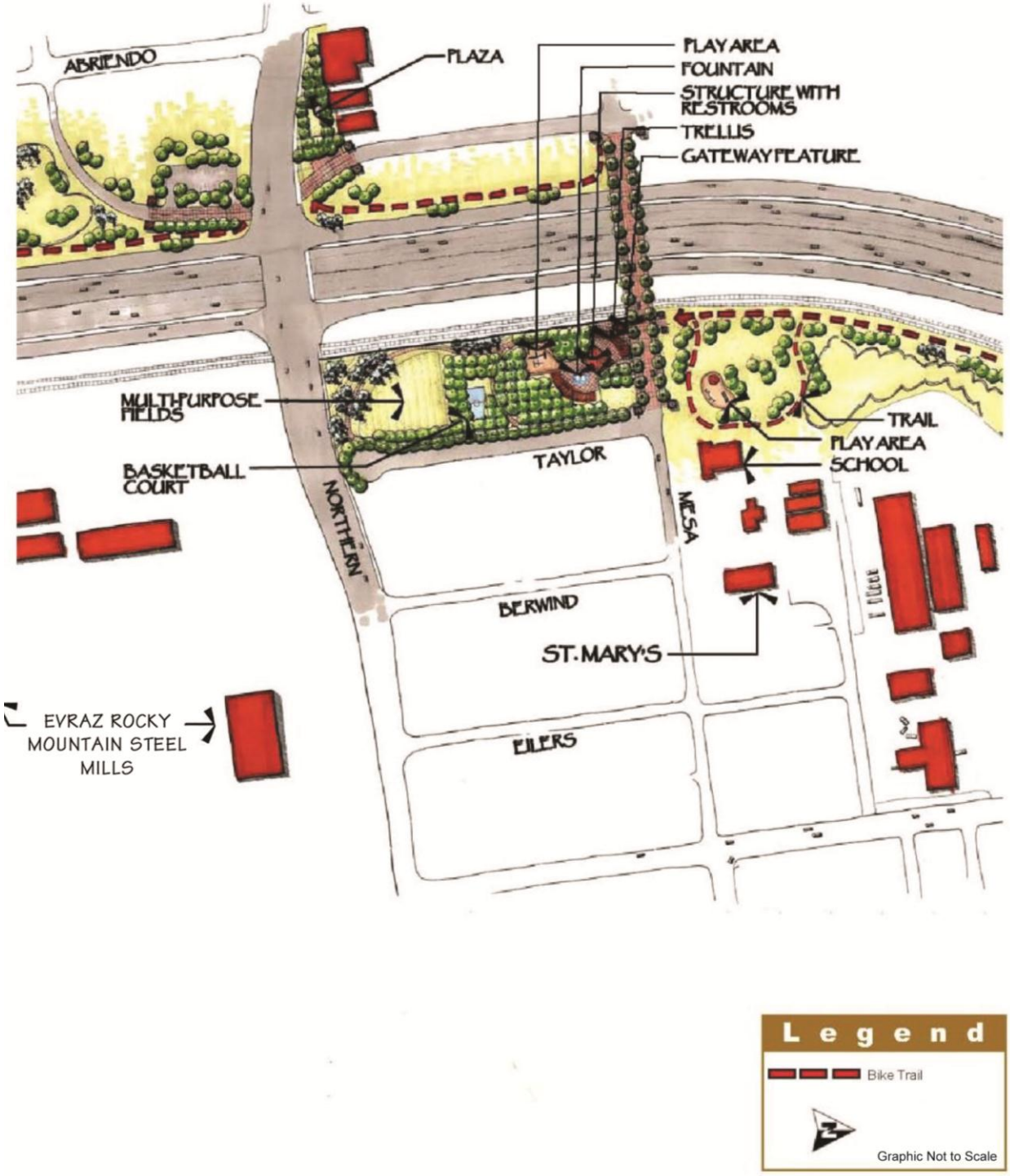
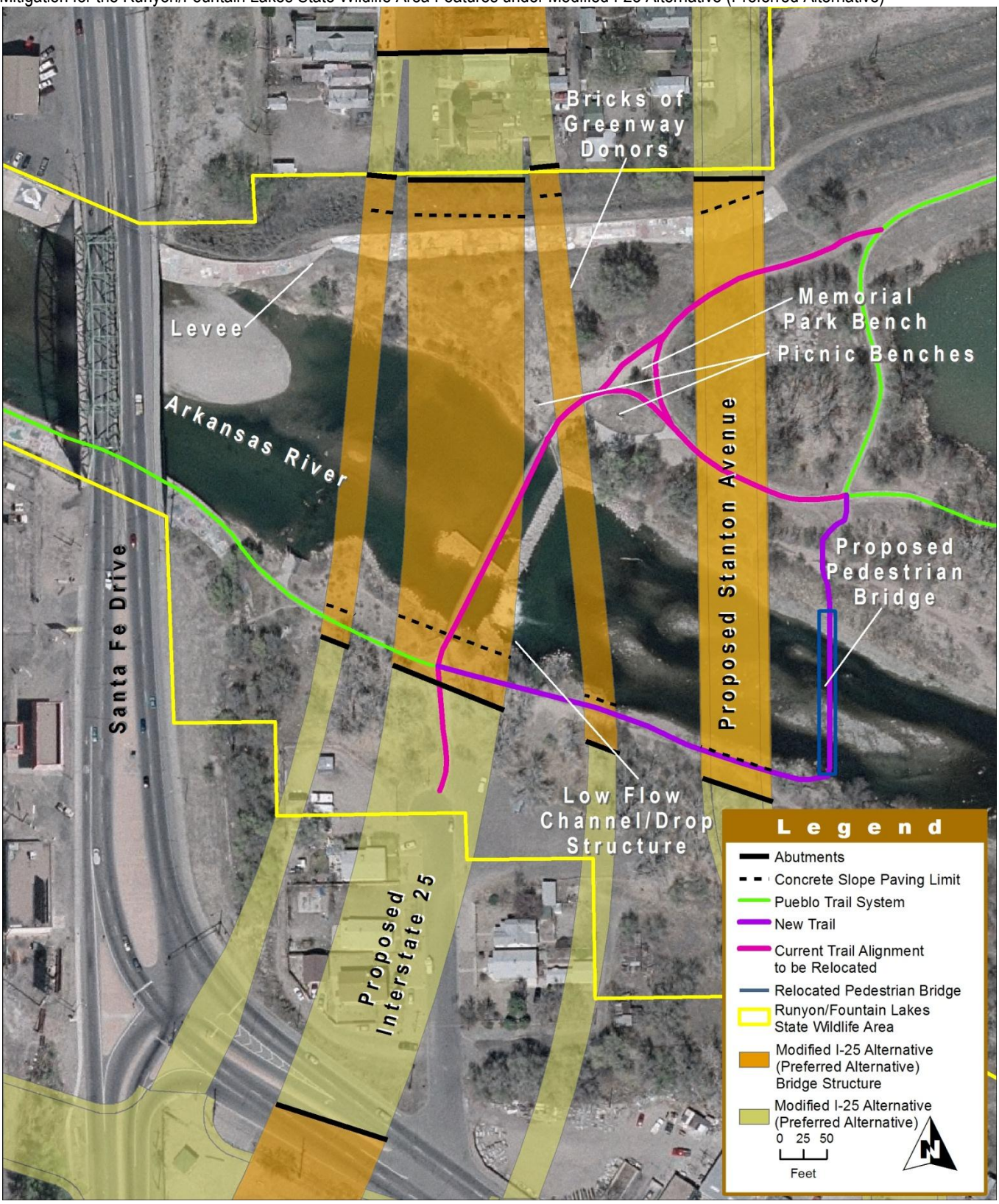


EXHIBIT 3.3-16
Mitigation for the Runyon/Fountain Lakes State Wildlife Area Features under Modified I-25 Alternative (Preferred Alternative)



Benedict Park

CDOT will construct a new Benedict Park south of the existing park location between Mesa Avenue and Northern Avenue. The new park would be a minimum 3.93 acres to a maximum 4.30 acres in size. This range reflects ongoing efforts to refine the design to avoid impacts to residential parcels south of Mesa Avenue. The new park will be constructed on remnant parcels of the land required for the changes in access due to the closures of Taylor Avenue and Rio Grande Avenue, as described in **Section 3.1 Transportation**. Playground equipment from the original Benedict Park will be relocated, most likely to the St. Mary's Church property. CDOT has discussed this mitigation with representatives from St. Mary's Church and will coordinate with the property owners prior to relocating the equipment. The mitigation plan for Benedict Park is illustrated in **Exhibit 3.3-17** and **Exhibit 3.3-18**. The new park plans proposed under the Modified I-25 Alternative (Preferred Alternative) address several issues at the existing park, including lack of parking and the need for a shelter house, trees, and improved lighting.

The elevation of Northern Avenue and Mesa Avenue would allow the new Benedict Park to be constructed on an elevated berm to allow for an overlook into the Ervaz Rocky Mountain Steel Mill. The mainline of the interstate will be constructed lower than the existing grade so it will be out of the line of sight for the new park. Moving the park south of Mesa Avenue would improve access and reconnect neighborhoods that were severed from the park by the original construction of I-25. Large pedestrian-friendly sidewalks are proposed on Mesa Avenue to connect the neighborhoods east and west of I-25.

In accordance with LWCF program requirements, no overhead wires will be installed at the park. A sign acknowledging the assistance from the LWCF will be posted in a prominent public area visible to all visitors.

Improvements to Benedict Park under the Modified I-25 Alternative (Preferred Alternative), which include a larger contiguous park area, more amenities, and improved access, will result in an overall positive impact to the park when compared to the No Action Alternative and the Existing I-25 Alternative. It is not possible to provide a contiguous park under the Existing I-25 Alternative.

EXHIBIT 3.3-17
Mitigation for Benedict Park under the Modified I-25 Alternative (Preferred Alternative)

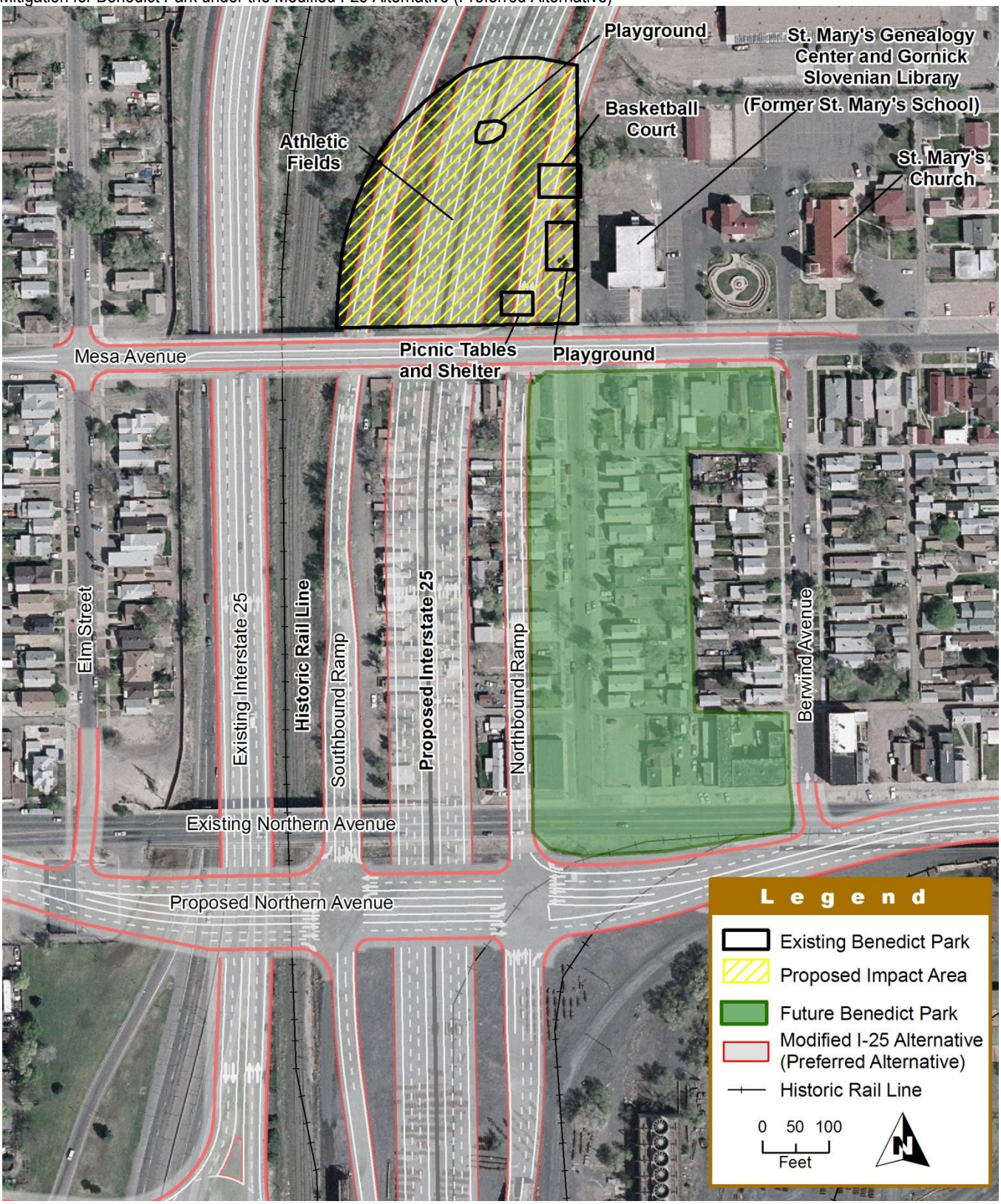
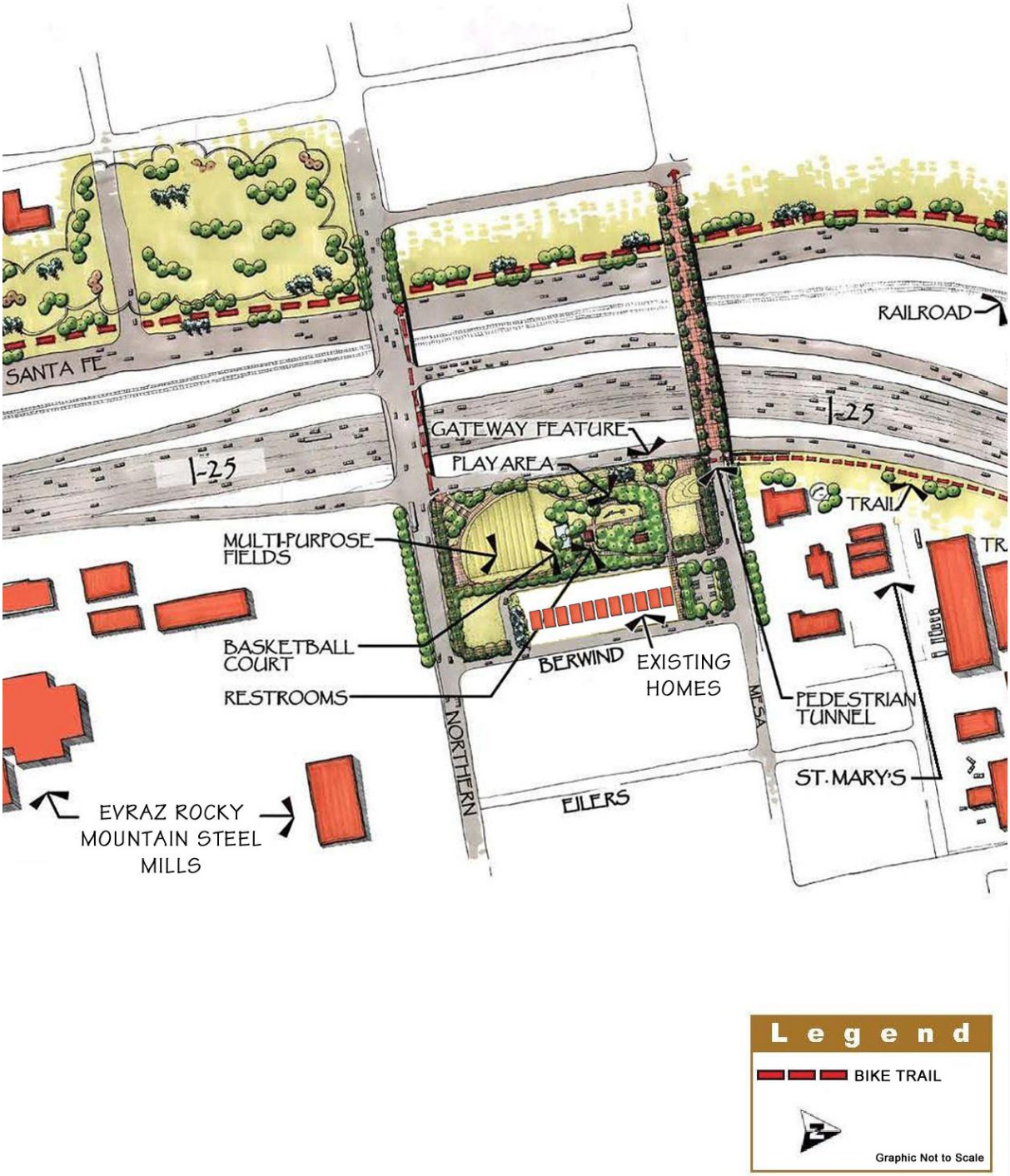


EXHIBIT 3.3-18
Mitigation for Benedict Park under the Modified I-25 Alternative (Preferred Alternative)



3.4 RIGHT-OF-WAY AND RELOCATIONS

This analysis identifies the property acquisitions and relocations needed for the two proposed Build Alternatives, as some property must be acquired by CDOT to reconstruct and widen I-25, reconstruct interchanges, and realign local roadways.

The impact analysis in this section compares the number of residential, commercial, vacant undeveloped, and publicly-owned properties potentially impacted by each Build Alternative and examines the needs of displaced parties or businesses, with an emphasis on finding equivalent housing stock or commercial space. The availability of real estate or land for relocations and any zoning considerations is also examined.

3.4.1 Affected Environment

The width of CDOT's right-of-way (ROW) along I-25, much of which was acquired in the 1950s, varies throughout the corridor. ROW widths range between approximately 100 feet and 180 feet along portions of the alignment that have no interchanges or frontage roads. The ROW widths are widest in areas with interchanges and frontage roads to accommodate these features.

In areas where the existing ROW width is constrained, ROW acquisition would be required to accommodate highway widening or realignment.

Land uses along I-25 within the project corridor are a mixture of undeveloped land, industrial, residential, and business uses. **Section 3.8 Land Use** and **Section 3.6 Social Resources, Economic Conditions, and Environmental Justice** provide a detailed description of land use and neighborhoods in the project corridor.

3.4.2 Environmental Consequences

The impact analysis identifies total and partial property acquisitions that CDOT would need to construct each of the proposed Build Alternatives. To identify ROW needs, the project footprint and each Build Alternative's alignment were overlaid on aerial maps with property boundaries provided by the City and the Pueblo County Assessor. The project footprint includes all permanent improvements to the highway, including side slopes required to tie into the adjacent land, and areas necessary to construct water quality features. The estimated ROW requirements were then refined to minimize ROW acquisition where feasible.

According to a Memorandum of Understanding (MOU) signed between CDOT and the City in March 2010, ROW for stormwater detention/water treatment ponds would not need to be acquired for the project when those facilities are located on City- or Pueblo County-owned property (see **Appendix F**). Maintenance and ownership of stormwater facilities will be in accordance with the MOU signed between CDOT and the City in March 2010. The analysis below describes the residential, commercial/industrial, public, and vacant undeveloped properties potentially impacted; the number of businesses that may be displaced; and zoning considerations for potential relocations, such as zoning requirements for restricted uses like liquor stores. The analysis also describes whether there is adequate available residential and commercial real estate for sale to accommodate residential relocations and business displacements.

Right-of-Way Definitions

Total Acquisition: Acquisition of an entire property.

Partial Acquisition: Acquisition of a portion of a property.

Business Displacement: Acquisition of a property on which a business operates. A single property may contain multiple businesses, resulting in several business displacements from the acquisition of one property.

Fair Market Value: The value at which a property could be sold in an open market under ordinary circumstances with a willing seller and a willing buyer.

The ROW estimates that have been identified at this time are conceptual due to the preliminary level of design for the project. Actual ROW impacts will be determined during final design. The CDOT Project Team made significant efforts during the design of each Build Alternative to minimize ROW acquisition throughout the corridor.

Some impacts to properties may be avoided or minimized during final design by using strategies such as steepening side slopes adjacent to roads, constructing retaining walls, and/or shifting road alignments. During final design, engineers and design staff will evaluate the practicality and benefit of such measures while weighing risk, safety, and the ability of the residence or business to function with

either direct or indirect impacts (such as loss of parking or limited access).

Properties are identified as "total acquisitions" if the Build Alternatives would traverse the principle structure on the property (such as a business or residence), even if the remainder of the property is not affected. Other properties would be totally acquired because ROW needs would impact most of the property, substantially impair access, or the project would so severely impact the property that it would become economically unviable.

Properties are identified as "partial acquisitions" if the alternative would acquire a portion of a property but would still allow the property to function normally. In this situation, the buildings on a property would remain and adequate access and parking would be maintained.

Business displacement would occur when a business operates on a property that would be totally acquired. In several locations, multiple businesses operate on a single property, whether housed in one building or separate buildings. The number of displacements does not include home-based businesses identified as residential properties by the Pueblo County Assessor's office or residential rental properties that generate income.

As discussed in **Chapter 5 – Phased Project Implementation**, CDOT would likely phase the project over multiple years, depending on the availability of funding for the project. Residences would be purchased over multiple years in order to locate comparable housing for displaced residents. When determining whether the housing market can absorb the relocated residences, CDOT has and will continue to evaluate comparable housing stock availability. If, during phasing, comparable housing is not available for impacted residents, CDOT will work with those impacted residents to find comparable or better homes under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act). The Uniform Act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from federal or federally assisted programs or projects. It was created to provide for and ensure that the provisions contained within this Act are applied "uniformly."

No major employers are present in the immediate study area. Major employers are those with more than 50 employees. The Evraz Rocky Mountain Steel Mill, while a major employer, has relocated the primary functional buildings that house employees away from the I-25 corridor. Therefore, relocation of employee-related functions on the steel mill property would not occur as a result of the New Pueblo Freeway project.

When evaluating whether businesses have sufficient places to relocate, business size, type, and location are essential considerations. Small employers (less than 50 employees) can be accommodated more readily compared to major employers as numerous smaller vacant commercial properties are available throughout the I-25 corridor. It is anticipated that comparable replacement sites can be found for the range of commercial relocations.

Comparable Housing as Defined by CDOT's Right-of-Way Manual (CDOT, 2011)

Displaced residents must be relocated to dwellings that are similar to the original dwellings that are being acquired. This is known as comparable housing. Comparable housing must be decent, safe, and sanitary, and must be adequate in size to accommodate all occupants. The principle features of comparable housing must be equivalent to the displaced dwelling, such as a similar number of rooms. Comparable housing must be in a location of similar desirability as the location of the displaced dwelling with respect to commercial and public facilities and access to the person's place of employment. Finding comparable housing means finding a home that can meet the needs of relocated residents as well as their current housing.

3.4.2.1 No Action Alternative

The No Action Alternative would not require ROW acquisitions or displacements.

3.4.2.2 Build Alternatives

Both of the Build Alternatives would require ROW acquisitions for proposed improvements. The detailed alternative maps (see **Appendix E**) provide additional information on the design of each alternative. The Existing I-25 Alternative would acquire approximately 36 fewer properties than the Modified I-25 Alternative (Preferred Alternative) and approximately 25 fewer acres of land area, including land acquired through both total and partial acquisitions. The Existing I-25 Alternative requires six fewer

businesses to be displaced than the Modified I-25 Alternative (Preferred Alternative).

Most of the residential properties to be acquired are single-family homes. Residential property acquisitions represent the largest category of total property acquisitions under both Build Alternatives. However, because residential properties are typically small, they account for the lowest total acreage.

The total land area acquired by property type under the Existing I-25 Alternative is composed of the following uses:

- 6 percent residential
- 8 percent public
- 42 percent vacant undeveloped
- 44 percent commercial

The total land area acquired by property type under the Modified I-25 Alternative (Preferred Alternative) is composed of the following uses:

- 8 percent residential
- 8 percent public
- 39 percent vacant undeveloped
- 45 percent commercial

Exhibit 3.4-1 lists an estimate of the ROW impacts for each of the Build Alternatives by property type. A more detailed discussion of acquisitions by corridor segment follows. The *Right-of-Way and Relocation Technical Memorandum, New Pueblo Freeway* contains an atlas of corridor improvements and property impacts (CH2M HILL, 2010d).

At the time of data collection, in 2004, the median square footage of homes in the project area was between 900 and 1,550 square feet. Most residences that would be potentially acquired were built around 1900 and have two or three bedrooms and one bathroom. The median square footage for the residences being acquired is in the range of 900 square feet. Approximately 150 comparable homes in Pueblo were listed for sale in 2006, most with a list price of $60,000 or less (Roberts, 2006).

The number of available homes indicates that there may be many opportunities to relocate displaced residents into comparable housing in Pueblo. Due to the potential high number of relocations, concerns exist over the ability of individual neighborhoods to accommodate relocated residents into comparable housing. No residential occupant will be required to relocate without comparable housing being provided. If comparable housing is not available for

EXHIBIT 3.4-1
Acquisitions by Property Type for Build Alternatives

Property Type	Existing I-25 Alignment[1]	Modified I-25 Alignment (Preferred Alternative)[1]
Residential	87 total acquisitions (9 acres) 2 partial acquisitions (< 1 acre) 89 all acquisitions (9 acres)	117 total acquisitions (14 acres) 0 partial acquisitions (0 acres) 117 all (14 acres)
Commercial[2]	53 total acquisitions (32 acres) 25 partial acquisitions (36 acres) 78 all acquisitions (68 acres)	56 total acquisitions (34 acres) 26 partial acquisitions (46 acres) 82 all (80 acres)
Public[3]	13 total acquisitions (6 acres) 13 partial acquisitions (6 acres) 26 all acquisitions (12 acres)	15 total acquisitions (9 acres) 15 partial acquisitions (6 acres) 30 all (15 acres)
Vacant Undeveloped	66 total acquisitions (27 acres) 14 partial acquisitions (37 acres) 80 all acquisitions (65 acres)	58 total acquisitions (27 acres) 22 partial acquisitions (42 acres) 80 all (69 acres)
Total	**219 total acquisitions (74 acres)** **54 partial acquisitions (80 acres)** **273 all acquisitions (154 acres)**	**246 total acquisitions (84 acres)** **63 partial acquisitions (94 acres)** **309 all acquisitions (178 acres)**

Source: CH2M HILL, 2010d.

[1] The sum of total and partial acquisition acreage may differ from all acquisition acreage presented in the table due to rounding.
[2] Includes commercial, industrial, utility, railroad, and other privately owned, non-residential properties.
[3] Includes properties owned by the City of Pueblo, Pueblo County, and other public entities.

impacted residents, CDOT will work with those impacted residents under the Uniform Act to move them into a comparable or better home. However, because construction of the project is being phased, relocations from either alternative would not occur at the same time, thereby allowing the housing market adequate time to absorb these relocations. **Section 3.6 Social Resources, Economic Conditions, and Environmental Justice** contains more information on individual neighborhood impacts.

North Area (Phase 1)

Both Build Alternatives would require ROW to widen the highway from four lanes to six lanes throughout the entire project corridor. In the North Area (Phase 1), both Build Alternatives would involve straightening I-25 adjacent to downtown, which would require the purchase of additional ROW. Other roadway improvements that would need new ROW in the North Area (Phase 1) include the modified interchange at US 50B, the extension of Dillon Drive between 26th Street and US 50B, the frontage roads from the US 50B interchange to 29th Street, a new split-diamond interchange at 13th Street and 1st Street, and an associated ramp between 13th Street and 1st Street. Property acquisitions in the North Area (Phase 1) are shown in **Exhibit 3.4-2**.

Total acquisitions would require relocation of residences, displacement of businesses, or other uses for the property because the entire property would be acquired by CDOT.

The total acquisitions in the North Area (Phase 1), between 29th Street (Exit 100B) and Ilex Street (Exit 98A), would be the same for both Build Alternatives because the two alternatives are coincident in the North Area (Phase 1).

Generally, partial acquisitions would not require displacements of residences or businesses because the existing buildings or major features (such as parking) on the properties would not be impacted. The partial acquisitions in the North Area (Phase 1) would be the same for both Build Alternatives.

Residential. In the North Area (Phase 1), 16 single-family homes would be acquired in the Downtown Neighborhood, east of I-25 between State Highway (SH) 96 (4th Street) and Clarence Street. No partial acquisitions are expected for residential properties. These properties are shown in **Exhibit 3.4-2**.

Commercial. Commercial properties represent the largest category of total acquisitions in the North Area (Phase 1). Commercial properties include commercial, office, industrial, utility, and other privately owned, non-residential properties. An estimated 28 commercial properties would be totally acquired to construct the proposed improvements.

Twelve commercial properties would be partially acquired under both Build Alternatives, which includes the extension of Dillon Drive south to US 50B and street widening or pedestrian improvements on east-west streets crossing I-25 (primarily 8th Street, SH 96 [4th Street], and 1st Street). CDOT would acquire a small portion of the properties' frontage or a small portion of the properties' parking along the east-west streets crossing I-25. These properties are shown in **Exhibit 3.4-2.**

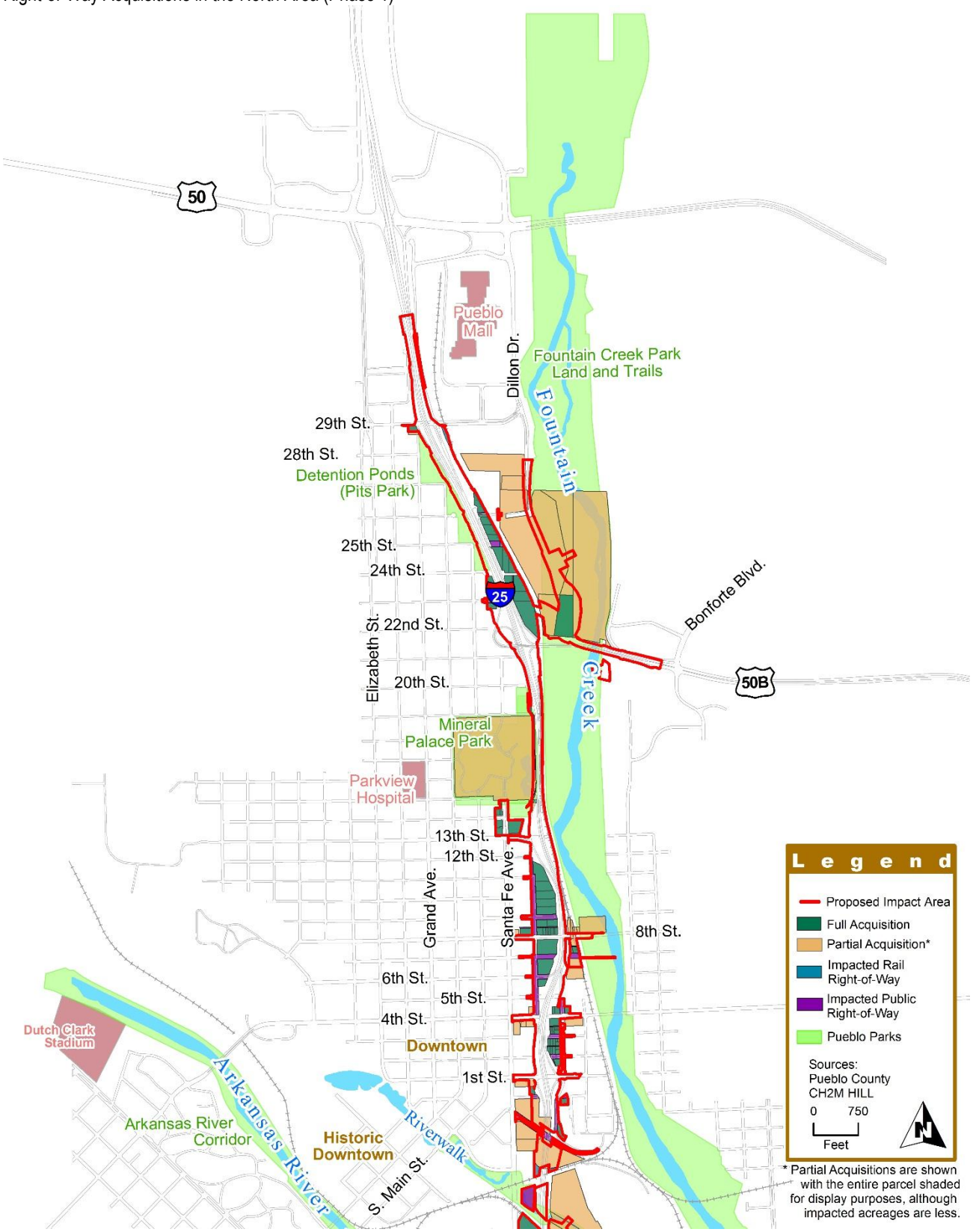
The former YMCA-owned property was considered a commercial property and business displacement for purposes of this analysis, although as of May 2010, the YMCA voluntarily relocated to another location and this parcel was acquired by CDOT. Another property qualified as a business relocation in the North Area (Phase 1) that may be totally acquired is the American Legion Hall (G.I. Forum).

Along the UPRR rail line, both Build Alternatives would encroach upon railroad property, resulting in a partial land acquisition, but neither alternative would require the relocation of tracks.

Public. Nine publicly-owned properties in the North Area (Phase 1) would be totally acquired and 11 would be partially acquired. These properties, shown in **Exhibit 3.4-2**, include City-owned park land along Fountain Creek, land at various locations between I-25 and the railroad, and a 50-foot-wide section along the entire east boundary of Mineral Palace Park (described further in **Section 3.2 Historic Properties**, **Section 3.3 Parks and Recreation**, and **Chapter 4 – Section 4(f) Evaluation**).

Vacant Undeveloped. Vacant undeveloped properties represent the second largest category of acquisitions in the North Area (Phase 1). In the North Area (Phase 1), 21 vacant undeveloped properties would be totally acquired and 5 vacant undeveloped properties would be partially acquired.

EXHIBIT 3.4-2
Right-of-Way Acquisitions in the North Area (Phase 1)



Business Displacements. In the North Area (Phase 1), 25 businesses would be displaced under both Build Alternatives. Many of these businesses employ full-time employees and have specific property considerations such as the need to be near the highway for access, visibility, or service to the existing neighborhood. These properties are shown in **Exhibit 3.4-2**. **Exhibit 3.4-3** lists the business types that would be displaced in the North Area (Phase 1) by either Build Alternative.

South Area (Phase 2)

Both Build Alternatives would need new ROW for the reconstructed interchange at Pueblo Boulevard, which would include a partial cloverleaf and realignment of SH 45 east of the cloverleaf. In addition, ROW would be needed to accommodate highway widening. Property acquisitions in the South Area (Phase 2) are shown in **Exhibit 3.4-5**.

Residential. No total or partial acquisitions of residential properties would be required in the South Area (Phase 2).

Commercial. The new interchange at I-25 and Pueblo Boulevard/SH 45 would require total acquisition of two commercial properties. Six commercial properties would be partially acquired, most because of the new interchange at I-25 and Pueblo Boulevard/SH 45. These properties are shown in **Exhibit 3.4-5.**

Public. No total or partial acquisitions of publicly-owned properties would be required in the South Area (Phase 2).

Vacant Undeveloped. The new interchange at I-25 and Pueblo Boulevard/SH 45 would require total acquisition of two vacant undeveloped properties. Seven vacant undeveloped properties would also be partially acquired in the South Area (Phase 2).

Business Displacements. In the South Area (Phase 2), four businesses would be displaced under either Build Alternative. **Exhibit 3.4-4** lists the business types that would be displaced in the South Area (Phase 2). These properties are shown in **Exhibit 3.4-5.**

Central Area (Phase 2)

Right-of-way impacts in the Central Area (Phase 2) of the corridor, between Ilex Street and Nevada Avenue (2 blocks south of Exit 96), vary by Build Alternative. The Existing I-25 Alternative would generally follow the existing alignment in this area and would require fewer acquisitions than the Modified I-25 Alternative (Preferred Alternative), which would realign I-25 to the east.

EXHIBIT 3.4-3
North Area (Phase 1) Businesses Displaced by both Build Alternatives[1]

Auto sales (6)	Radio station (1)
Auto/truck repair/service (2)	Restaurant (2)
Fitness center (2)	Retail merchandiser (4)
Food and beverage distributor (1)	Sign company (1)
Motel/lounge (3)	Telecommunications retailer (1)
Private club (1)	Veterinary clinic (1)

Source: CH2M HILL, 2010d.

[1] Numbers in parentheses indicate the number of businesses of this type.

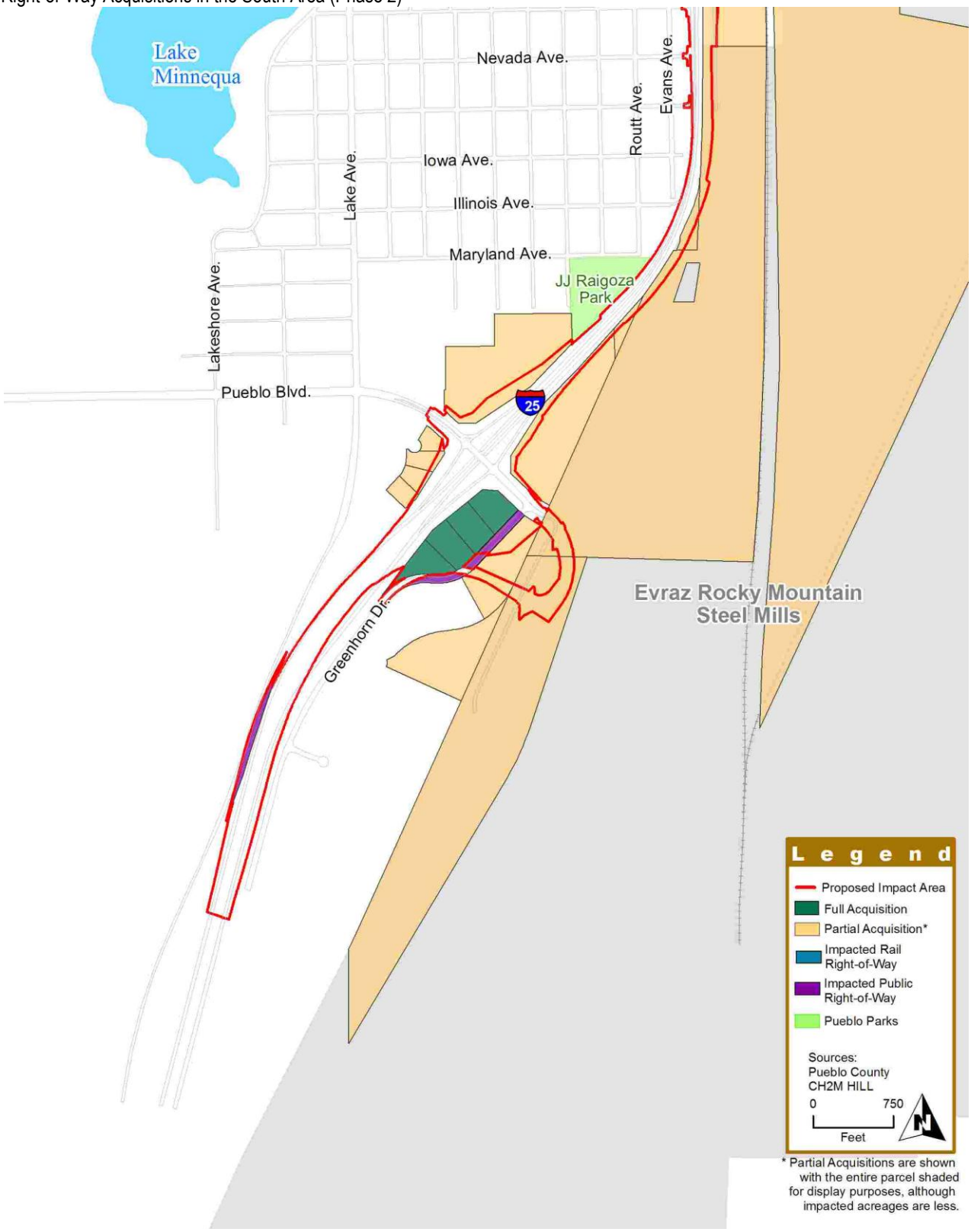
EXHIBIT 3.4-4
South Area (Phase 2) Businesses Displaced by both Build Alternatives[1]

Auto salvage (1)	Landscaping (1)	Construction/Contractor (2)

Source: CH2M HILL, 2010d.

[1] Numbers in parentheses indicate the number of businesses of this type.

EXHIBIT 3.4-5
Right-of-Way Acquisitions in the South Area (Phase 2)



Existing I-25 Alternative

In addition to ROW needed for highway widening, other roadway features would require ROW acquisition. New ROW would be required for three areas: the new split diamond interchange at Abriendo Avenue and Northern Avenue along with an associated frontage road system between Abriendo Avenue and Northern Avenue; the connection of Abriendo Avenue and Santa Fe Drive; and the reconstructed interchange at Indiana Avenue. Property acquisitions in the Central Area (Phase 2) under the Existing I-25 Alternative are shown in **Exhibit 3.4-6**.

Residential. Residential properties represent the largest category of acquisitions in the Central Area (Phase 2). An estimated 71 residential properties would be acquired to construct the proposed improvements. All of the homes that would be acquired in the Central Area (Phase 2) are in the Bessemer Neighborhood. Two residential properties would be partially acquired to construct proposed improvements. A portion of the backyards would be acquired to accommodate the new ramps south of Summit Avenue on Box Elder Street. These properties are shown in **Exhibit 3.4-6**.

Commercial. In the Central Area (Phase 2), 23 commercial properties would be totally acquired for road widening and interchange improvements. On seven properties, the land currently used for parking and equipment storage would be partially acquired. Businesses on these properties would be able to continue their existing operations because the impacted parking and equipment storage could be relocated to other portions of the properties. These properties are shown in **Exhibit 3.4-6**.

Public. Four small publicly-owned properties would be totally acquired in the Central Area (Phase 2). One is an undeveloped property adjacent to the river walk and another is an undeveloped property in the middle of highway ROW adjacent to Santa Fe Boulevard. Two publicly-owned properties in the Central Area (Phase 2) would be partially acquired: Benedict Park and parcels owned by the Pueblo Conservancy District (discussed in **Section 3.3 Parks and Recreation** and **Chapter 4 – Section 4(f) Evaluation**).

Vacant Undeveloped. Vacant undeveloped properties represent the second largest category of acquisitions in the Central Area (Phase 2). Forty-three vacant undeveloped properties would be totally acquired. Two vacant undeveloped properties would be partially acquired. These properties are shown in **Exhibit 3.4-6**.

New land would become available as a result of the reconfiguration of the Abriendo Avenue interchange. The MOU between CDOT and the City (March 2010) provides more details about the future use of this land (see **Appendix F**).

Business Displacements. Under the Existing I-25 Alternative, 30 businesses would be displaced from the Central Area (Phase 2). Many of these businesses employee full-time employees and have specific property considerations such as industrial zoning and the need to be near the highway for access, visibility, or service to the existing neighborhood. **Exhibit 3.4-7** lists the business types that would be displaced.

EXHIBIT 3.4-6

Right-of-Way Acquisitions in the Central Area (Phase 2) under the Existing I-25 Alternative

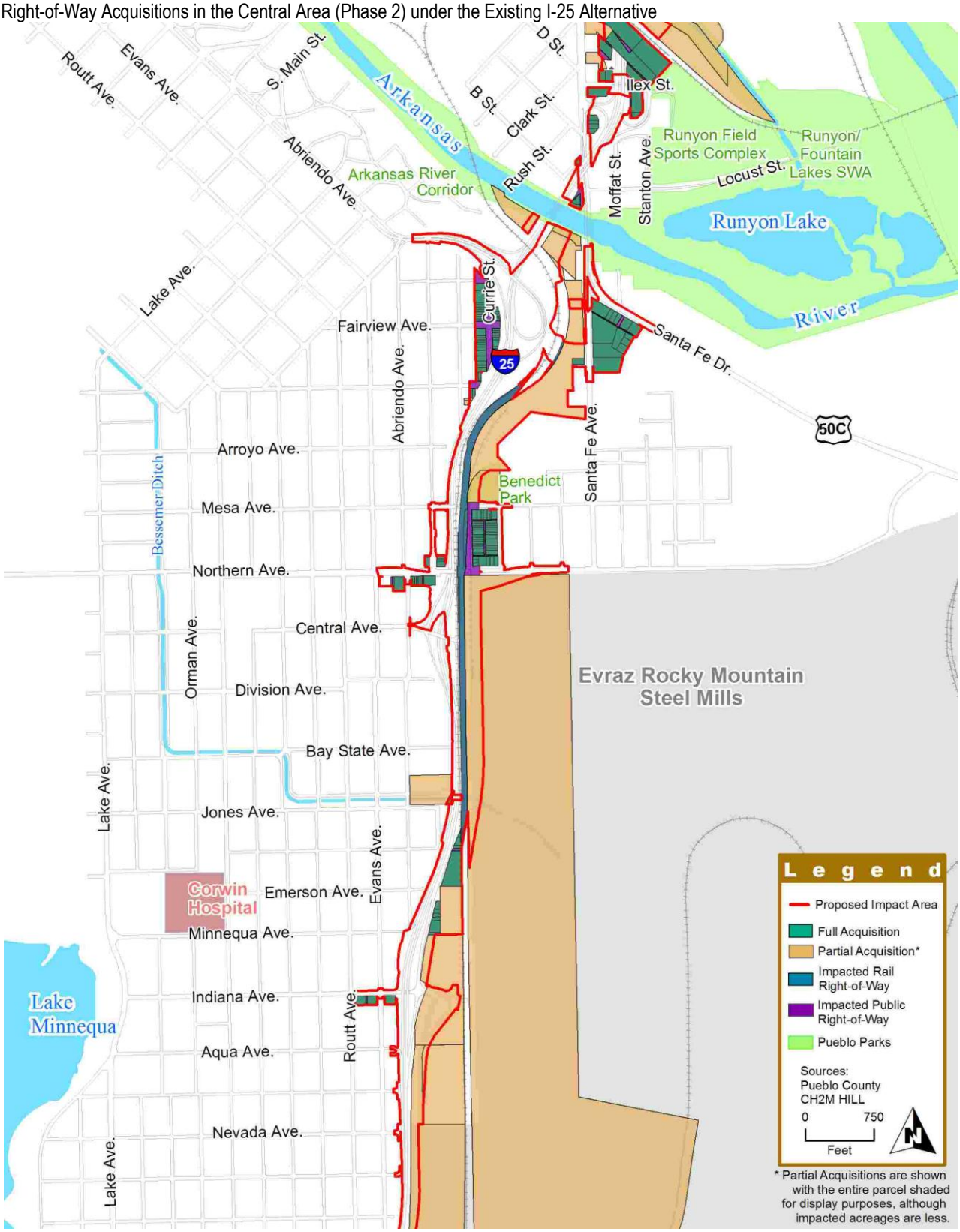


EXHIBIT 3.4-7
Central Area (Phase 2) Business Displacements[1] by Existing I-25 Alignment

Auto/truck repair/service (3)	Personal services (2)
Construction contractor (3)	Restaurant/caterer (2)
Convenience store (2)	Retail liquor (1)
Equipment rentals (1)	Retail merchandiser (6)
Food and beverage distributor (2)	Tavern (2)
Medical service (1)	Wholesale merchandiser (1)
Metals recycling/fabrication (2)	Unknown (2)

Source: CH2M HILL, 2010d.

[1] Numbers in parentheses indicate the number of displaced businesses of this type.

Modified I-25 Alternative (Preferred Alternative)

The Modified I-25 Alternative (Preferred Alternative) would move the highway alignment to the east between Ilex Street and Nevada Avenue and extend Santa Fe Avenue south along the existing I-25 ROW to Minnequa Avenue, requiring new ROW to be acquired. New ROW would be required for new interchanges at Abriendo Avenue, Northern Avenue, and Indiana Avenue; for the connection of Abriendo Avenue and Santa Fe Drive; and for the extension of Stanton Avenue south to Santa Fe Avenue. Property acquisitions in the Central Area (Phase 2) under the Modified I-25 Alternative (Preferred Alternative) are shown in **Exhibit 3.4-8**.

Residential. Residential properties represent the largest category of acquisitions in the Central Area (Phase 2). An estimated 101 residential properties would be acquired to construct the proposed improvements.

The residences in the Grove Neighborhood between I-25 and the Runyon Field Sports Complex would be acquired due to the redesigned highway alignment. The current alignment bisects this part of the Grove Neighborhood, and access to the neighborhood from the local street system is difficult. The majority of Grove Neighborhood residents have voiced their support of the Modified I-25 Alternative (Preferred Alternative) and the acquisition of their homes.

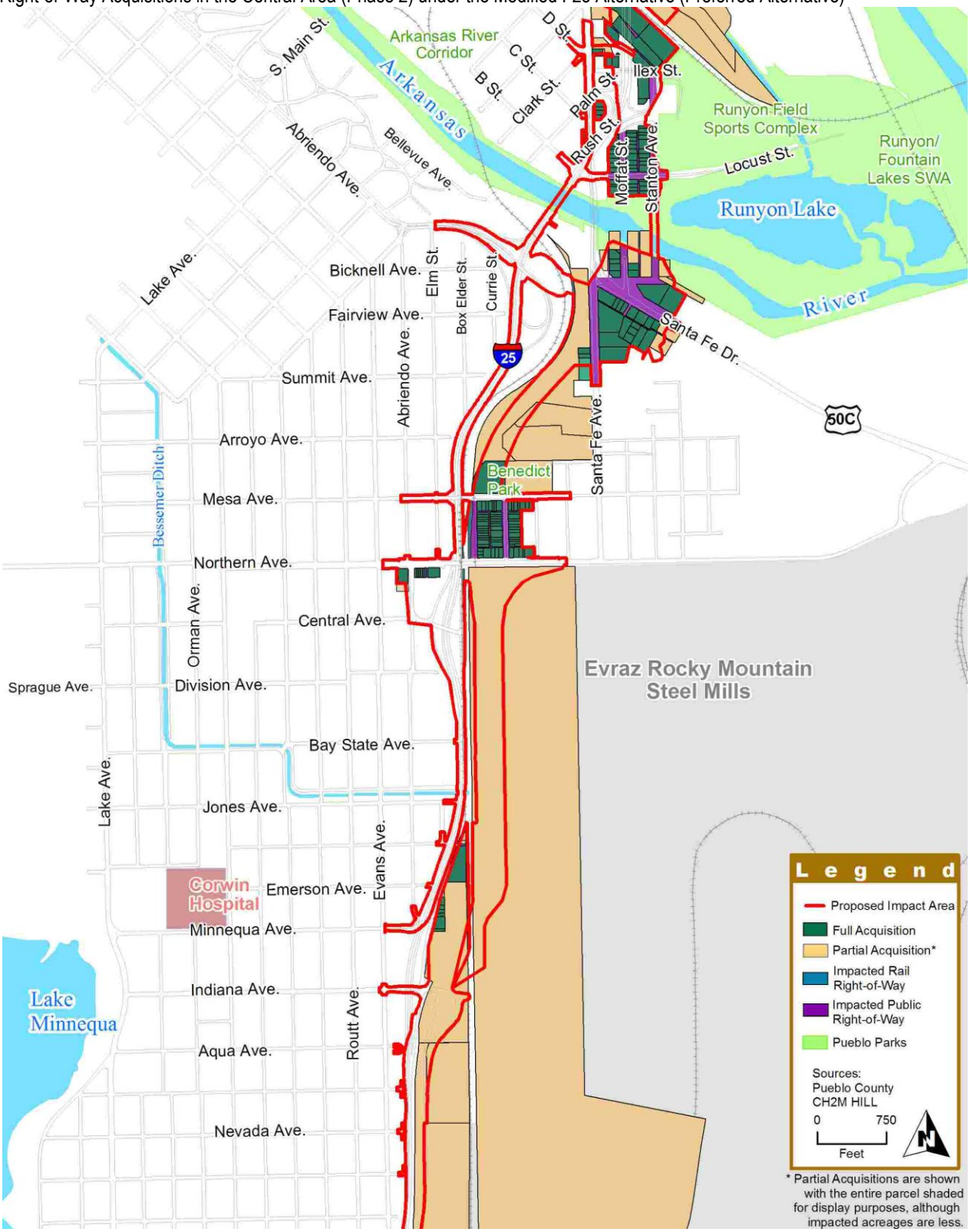
Homes in the Eiler Heights sub-area of the Bessemer Neighborhood (south of the existing Benedict Park) would be acquired as well. Most of the 2 blocks between Mesa Street and Northern Avenue and I-25 and Berwind Street would be acquired to accommodate the new highway alignment. These properties are included in **Exhibit 3.4-8**. **Section 3.6 Social Resources, Economic Conditions, and Environmental Justice** contains more information on neighborhood impacts.

No residential properties would be partially acquired.

Commercial. Twenty-six commercial properties in the Central Area (Phase 2) would be totally acquired for highway widening and interchange improvements. On eight properties, the land currently used for parking and equipment storage would be partially acquired. Businesses on these properties would be able to continue their existing operations because the impacted parking and equipment storage could be relocated to other portions of the properties. These properties are also shown in **Exhibit 3.4-8**.

EXHIBIT 3.4-8

Right-of-Way Acquisitions in the Central Area (Phase 2) under the Modified I-25 Alternative (Preferred Alternative)



Public. Six publicly-owned properties in the Central Area (Phase 2) of the corridor would be totally acquired. These six properties include Benedict Park and five small undeveloped properties.

Land would become available at the Abriendo Avenue interchange, between Santa Fe Boulevard and the railroad, and west of the new I-25 alignment between Minnequa Avenue and Indiana Avenue. The MOU between CDOT and the City (March 2010) provides more details about the future use of this land (see **Appendix F**).

Four parcels owned by the Pueblo Conservancy District would be partially acquired to accommodate the new I-25 alignment over the Arkansas River. These are open space properties in the Arkansas River corridor, immediately south of the Arkansas River.

Vacant Undeveloped. Vacant undeveloped properties represent the second-largest category of acquisitions in the Central Area (Phase 2). Thirty-five vacant undeveloped properties would be totally acquired to accommodate the new highway alignment and interchange improvements. Ten vacant undeveloped properties would be partially acquired.

Business Displacements. Under the Modified I-25 Alternative (Preferred Alternative), 36 businesses would be displaced from the Central Area (Phase 2). Many of these businesses employee full-time employees and have specific property considerations such as industrial zoning and the need to be near the highway for access, visibility, or service to the existing neighborhood. **Exhibit 3.4-9** lists the business types that would be displaced.

3.4.2.3 Indirect Effects

Parcels or tax lots might become uneconomic remainders through partial acquisition or change of access. While generally considered a direct impact, if acquired tax lots impede or change future development plans, they might be considered indirect impacts. Both Build alternatives would have the potential to create uneconomic remainders of tax lots. However, the potential for indirect effects is low because the majority of parcels are completely acquired (relocated) and those with partial acquisitions are generally "sliver" acquisitions that are adjacent to the existing ROW and do not create uneconomic remainder parcels.

EXHIBIT 3.4-9
Central Area (Phase 2) Business Displacements[1] by Modified I-25 Alternative (Preferred Alternative)

Auto/truck repair/service (4)	Restaurant/caterer (1)
Construction contractor (4)	Retail liquor (1)
Convenience store (1)	Retail merchandiser (6)
Equipment/auto rental (2)	Tavern (4)
Food and beverage distributor (2)	Wholesale merchandiser (1)
Medical service (2)	Unknown (3)
Metals recycling/fabrication (2)	Utility (1)
Personal services (2)	

Source: CH2M HILL, 2010d.

[1] Numbers in parentheses indicate the number of displaced businesses of this type.

3.4.3 Mitigation

The following legally required mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative):

- All property acquisition and relocation shall comply fully with federal and state requirements, including Uniform Act defined previously. CDOT requires Uniform Act compliance on any project for which it has oversight responsibility, regardless of the funding source. Additionally, the Fifth Amendment of the United States Constitution provides that private property may not be taken for a public use without payment of "just compensation." All impacted residential or commercial properties will be provided notification of CDOT's intent to acquire an interest in their property, including a written offer letter of just compensation specifically describing those property interests. A ROW Agent will be assigned to each property owner to assist them with this process.
- In certain situations, it may be necessary to acquire improvements that are located within a proposed acquisition parcel. In those instances where the improvements are occupied, it would become necessary to "relocate" those individuals from the subject property (residential or business) to a replacement site. The Uniform Act provides for numerous benefits to these individuals to assist them both financially and with advisory services related to relocating their residence or business operations.

  While the benefits available under the Uniform Act are far too numerous and complex to discuss in detail in this document, they are available to both owner occupants and tenants of either residential or business properties. In some situations, only personal property must be moved from the real property, and this is also covered under the relocation program. As soon as feasible, any person scheduled to be displaced shall be furnished with a general written description of the displacing Agency's relocation program, which provides, at a minimum, detailed information related to eligibility requirements, advisory services and assistance, payments, and the appeal process. It shall also provide notification that the displaced person(s) will not be required to move without at least 90 days advance written notice. For residential relocations, this notice cannot be provided until a written offer to acquire the subject property has been presented and at least one comparable replacement dwelling has been made available. Relocation benefits will be provided to all eligible persons regardless of race, color, religion, sex, or national origin. Benefits under the Uniform Act, to which each eligible owner or tenant may be entitled, will be determined on an individual basis and explained in detail by an assigned ROW Agent.
- CDOT would likely phase the project over multiple years, depending on the availability of funding for the project, and would purchase residences over multiple years in order to locate comparable housing for displaced residents. Based on research conducted for this FEIS, the current available housing is sufficiently small to raise concerns about the ability to concurrently relocate all impacted residents into comparable and adequate housing. However, because the project is being phased and all acquisitions would occur over the long-term planning horizon, all accommodations are expected to have comparable and available housing.
- During phasing, if comparable housing is not available for impacted residents, CDOT will work with those impacted residents under the Uniform Act to move them into a comparable or better home.
- For City-owned properties, acquisitions would likely take place through transfer of title from the City to the State of Colorado rather than through monetary compensation. These properties would be secured for construction of the Build Alternative, and a clear delineation of responsibility and ownership would be established prior to the transfer of ownership. These properties are considered mutually beneficial, and the MOU between CDOT and the City (March 2010) specifies the future land exchange, ownership, and maintenance responsibilities (see **Appendix F**). A future Intergovernmental Agreement will address ownership of excess ROWs.

For acquisition of property necessary to mitigate impacts to Mineral Palace Park, the City will assist in property acquisition as outlined in the MOU between CDOT and the City (see **Appendix F**) and as described in **Section 3.2 Historic Properties**.

3.5 NOISE

This section describes the current and predicted noise levels along the highway during the loudest traffic hour. By predicting the noise levels associated with the proposed Build Alternatives, analysts can determine whether there would be impacts to nearby residences, businesses, parks, and other adjacent properties. If noise impacts are identified, options for reducing the amount of noise heard at impacted properties are examined.

3.5.1 Noise Abatement Guidelines

To address traffic-related noise, CDOT follows FHWA regulations (23 Code of Federal Regulations [CFR] 772), the Highway Traffic Noise: Analysis and Abatement Guidance (FHWA, 2011), and the CDOT Noise Analysis and Abatement Guidelines (CDOT, 2011a). These guidelines establish "noise abatement criteria," which represent the maximum noise impact thresholds that various land uses can be exposed to before considering noise reduction or abatement measures. The noise abatement criteria for different activity categories are shown in **Exhibit 3.5-1**.

Noise abatement criteria established by CDOT are expressed in A-weighted decibels (dBA). A dBA measures the magnitude of sounds at different frequencies, as perceived by the human ear.

According to FHWA guidelines, a traffic noise impact occurs when: 1) predicted peak-hour noise levels at a location approach or exceed the noise abatement criteria; or 2) predicted noise levels substantially increase over the current noise levels (even though the predicted levels may not exceed noise abatement criteria).

EXHIBIT 3.5-1
Colorado Department of Transportation Traffic Noise Abatement Criteria

Activity Category	L_{eq} [1] (dBA)	Description of Activity Category
A	56 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	66 (Exterior)	Residential.
C[2]	66 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	51 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[2]	71 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	NA (NA)	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, ship yards, utilities (water resources, water treatment, electrical), and warehousing.
G	NA (NA)	Undeveloped lands that are not permitted for development.

Source: Hankard Environmental, Inc., 2012

dBA = A-weighted decibel L_{eq} = equivalent level

[1] Road noise changes from moment to moment, but noise energy over time can be described in terms of its "equivalent level" (abbreviated L_{eq}). The L_{eq} is a single level that has the same sound energy as the fluctuating level over a stated time. The L_{eq} used for the noise abatement criteria is the hourly A-weighted equivalent level for the "noisiest hour" of the day in the design year.

[2] Includes undeveloped lands permitted for this activity category.

FHWA provides state highway agencies the flexibility in establishing their own definition of what defines "approach" and constitutes a "substantial" increase. CDOT defines "approach" as noise levels within 1 dBA of the noise abatement criteria. For Activity Categories B and C, this is equal to 66 dBA. For Activity Category E, this is equal to 71 dBA. CDOT defines "substantial increase" as an increase of greater than 10 dBA over existing noise level conditions.

3.5.2 Methodology

Traffic noise is primarily related to traffic volumes and speed. When more traffic is added to the highway, noise levels increase as long as there is no decrease in speed. At the point when capacity of the highway is met and congestion occurs, there is a decrease in both vehicular speeds and noise levels; therefore, the "loudest hour" for highway noise occurs just before and just after periods of congestion. This is known as level of service (LOS) C: significant traffic volume traveling at relatively high speeds. LOS A and B have lower volumes, and LOS D, E, and F have lower speeds. A more detailed description of LOS can be found in **Section 3.1 Transportation**.

The TNM 2.5 computer model is used to predict noise levels for expected loudest-hour noise conditions. The noise prediction model considers factors such as roadway geometry, terrain, location, and land use of noise- sensitive areas (called "receptors"), and current traffic data (for example, volumes, speeds, and vehicle mix).

Noise specialists selected 40 receptor locations near I-25 that were representative of the residences, parks, and businesses in the area (these are mapped in **Exhibits 3.5-4, 3.5-6, 3.5-8, and 3.5-9**). All of these locations are considered to be either Activity Category B or Activity Category C. Noise levels were predicted for conditions from 2003 when this study began, No Action Alternative conditions (year 2035 traffic volumes), and the two Build Alternative conditions (year 2035 traffic volumes). These impacts are discussed in Section 3.5.3.

The TNM 2.5 noise model was also used to predict the level of traffic noise reduction that could be achieved with a barrier or wall at impacted receptors. According to CDOT's noise policy, for a barrier to be implemented, it must be considered feasible and reasonable, meeting the minimum criteria described below.

Feasibility is based on a minimum required noise reduction and constructability. The noise barrier must provide a minimum noise reduction of 5 dBA for at least one impacted receptor, and the barrier must be compatible with safety, drainage, utility, and constructability considerations.

The reasonableness evaluation is based on the noise reduction design goal, cost-effectiveness, and viewpoints of the benefited property owners and/or tenants. The noise barrier must achieve a 7 dBA noise reduction design goal at a minimum of one benefited receptor. A benefited receptor, whether impacted or not, is one that receives at least 5 dBA of noise reduction. The cost to construct the barrier should not exceed $6,800 per benefited receptor per decibel of reduction. A unit cost of $45 per square foot was used to calculate barrier cost. If the barrier is determined to meet the design goal and be cost-effective, the viewpoints of the benefited property owners and/or tenants must be solicited to determine the desire for building the noise barrier. These surveys will be conducted by CDOT ahead of signing of a Record of Decision that includes proposed noise mitigation.

If they are both feasible and reasonable, mitigation measures must be considered by CDOT for areas that would be impacted by future noise levels. Details regarding recommended mitigation associated with the Build Alternatives are included in Section 3.5.5.

3.5.3 Affected Environment

The noise study area extended approximately 500 feet beyond the project limits from the 29th Street interchange in the north to the Pueblo Boulevard interchange in the south. Year 2003 loudest-hour noise levels throughout the corridor were predicted as a baseline, against which the increase in future noise levels for each of the three alternatives could be compared. As shown in **Exhibit 3.5-2**, under year 2003 baseline conditions, five of the 40 selected receptor locations representing sensitive land use areas near I-25 were predicted to meet or exceed CDOT's noise abatement criteria levels.

3.5.4 Environmental Consequences

3.5.4.1 No Action Alternative

Noise levels from I-25 would increase between year 2003 baseline conditions and conditions for the design year (2035) primarily due to changes in traffic volume and traffic

speed. Noise levels predicted for the No Action Alternative in the design year (2035) for the impacted representative receptor locations are shown in **Exhibits 3.5-3, 3.5-5, and 3.5-7** for the North (Phase 1), South (Phase 2), and Central (Phase 2) areas, respectively.

The Central Area (Phase 2) of the corridor is currently operating near peak capacity; therefore, this area cannot absorb additional traffic without increasing traffic congestion and lowering speeds. Lower speeds result in reductions in traffic noise levels.

Under the No Action Alternative, none of the receptor locations would experience a substantial noise increase as defined by CDOT's 10 dBA increase criterion; however, seven of the 40 representative receptor locations would meet or exceed CDOT's noise abatement criteria. Most of the impacted receptors are concentrated in the northern and southern parts of the project area between US 50 and 13th Street and Aqua Avenue and Pueblo Boulevard, respectively. In general, residential-type locations within approximately 250 to 300 feet of the highway centerline would be impacted by noise under the No Action Alternative.

3.5.4.2 Build Alternatives

Noise levels for both Build Alternatives are anticipated to increase over year 2003 baseline conditions and No Action conditions. Noise level increases would be higher under the Build Alternatives than under the No Action Alternative primarily because the alignment of I-25 would be modified, thus bringing the highway closer to some receptors. Eighteen of the 40 representative receptor locations would meet or exceed the noise abatement criteria under the Existing I-25 Alternative, and 12 of the 40 representative receptor locations would meet or exceed the noise abatement criteria under the Modified I-25 Alternative (Preferred Alternative). The noise levels are predicted to increase up to 12 dBA under the Existing I-25 Alternative and up to 8 dBA under the Modified I-25 Alternative (Preferred Alternative). Two of the receptors would experience a substantial noise increase under the Existing I-25 Alternative as defined by CDOT's 10 dBA increase criterion. None would experience substantial noise increases under the Modified I-25 Alternative (Preferred Alternative). For the majority of areas, noise levels are predicted to increase by an average of 3 dBA under the Existing I-25 Alternative and 2 dBA under the Modified I-25 Alternative (Preferred Alternative). A change in noise level of less than 3 dBA is not perceptible by the human ear. Noise levels are predicted to decrease for areas where the Build Alternatives would shift away from that area.

Under both Build Alternatives, construction would generate noise from construction equipment. Construction noise at receptor locations would be dependent on the equipment operating at any given moment. Noise levels from diesel-powered equipment range from 80 dBA to 95 dBA at a distance of 50 feet, while impact equipment such as rock drills and pile drivers can generate louder noise levels. Construction noise impacts are temporary and can be mitigated as detailed in Section 3.5.5.

Impacts to noise receptors and general impact areas are discussed below for each separate area of the corridor: north, south, and central. The first exhibit provided for each area (**Exhibits 3.5-3, 3.5-5, and 3.5-7**) lists the receptors that would experience noise impacts under one or more of

EXHIBIT 3.5-2
Receptors that Exceed the Noise Abatement Criteria under Year 2003 Baseline Conditions

Noise Receptor #	Activity Category Type	General Location	Year 2003 Noise Level (dBA)
32	Residential	24th Street and Main Street	67
28	Park	Fountain Creek Park Land	66
6	Residential	Emerson Avenue and Abriendo Avenue	69
4	Residential	Aqua Avenue and Evans Avenue	70

Source: Hankard Environmental, Inc., 2012.

dBA = A-weighted decibel

the alternatives. All of the receptors subject to the Activity Category B and C noise abatement criteria of 66 dBA are residences or parks. Noise measurements noted with an asterisk in these tables indicate that noise levels meet or exceed the Category B 66 dBA noise abatement criteria. The second exhibit provided for each area (**Exhibits 3.5-4, 3.5-6, 3.5-8, and 3.5-9**) geographically illustrates the locations of the receptors and locations identified as impacted.

North Area (Phase 1)

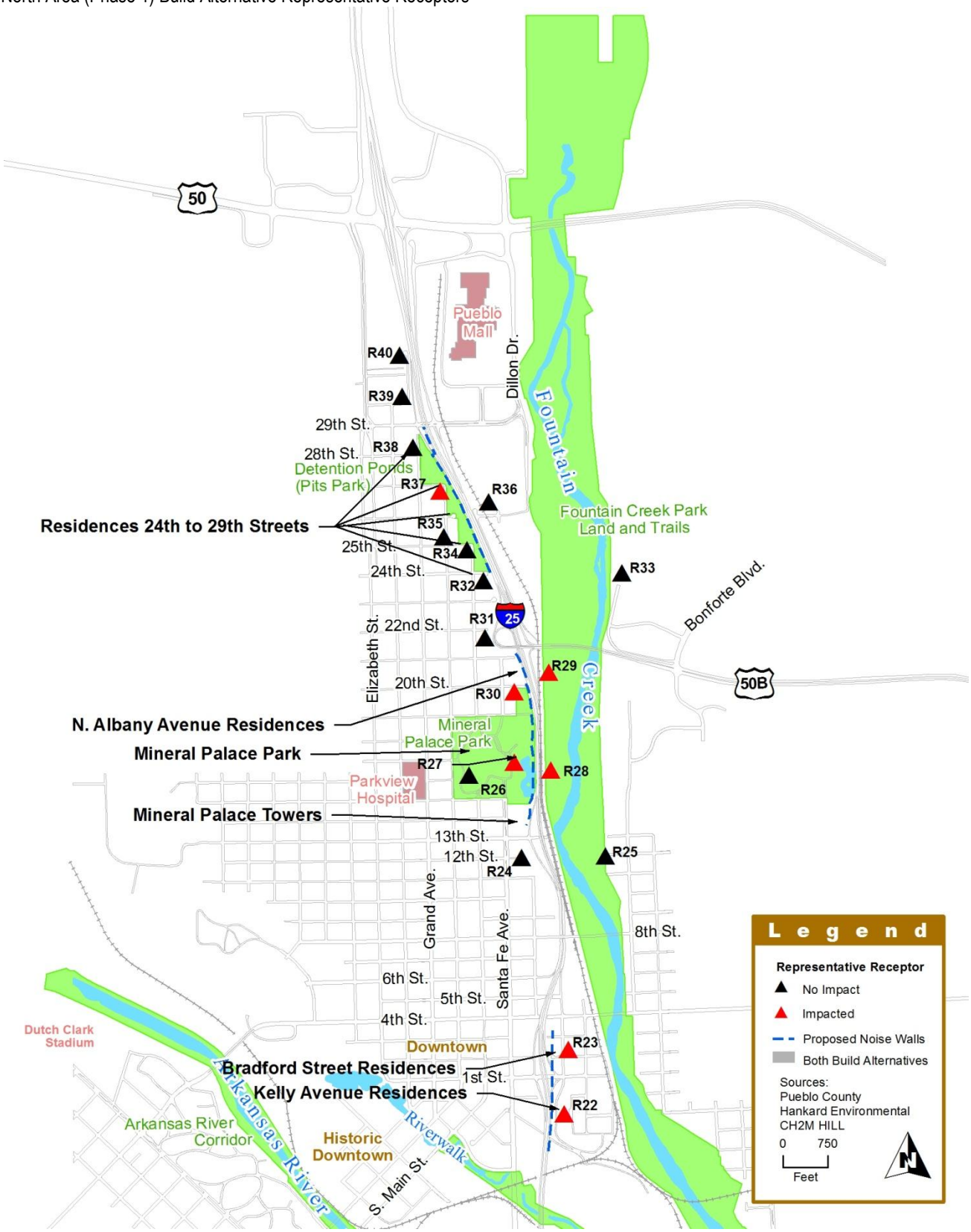
The predicted noise levels for noise receptors in the North Area (Phase 1) would be the same under both Build Alternatives because the alternatives share the same alignment in the North Area (Phase 1). Seven representative receptors, identified in **Exhibit 3.5-3**, would meet or exceed CDOT's noise abatement criteria. The North Area (Phase 1) would experience greater impacts than other areas of the corridor because this area contains more noise-sensitive receptors with higher existing noise levels than other areas of the corridor; therefore, even a small increase in future noise levels would cause noise levels to meet or exceed the noise abatement criteria at many receptors in this area. **Exhibit 3.5-4** illustrates areas of Build Alternative noise impacts in the North Area (Phase 1), where representative receptors indicate that noise levels would exceed the noise abatement criteria at sensitive receptors. **Exhibit 3.5-4** also shows the locations of proposed noise mitigation structures in the North Area (Phase 1). Noise mitigation structures are discussed in detail in Section 3.5.5.

EXHIBIT 3.5-3
North Area (Phase 1) Noise-Impacted Representative Receptors by Alternative (dBA)

Noise Receptor #	General Location	Baseline Conditions (2003)	Noise Abatement Criteria	No Action Alternative (2035)	Existing and Modified I-25 Alternatives (2035)	Increase Over Existing Levels
NORTH AREA (PHASE 1)						
22	Goat Hill Area – Kelly Avenue	65	66	66	71	6
23[1]	Goat Hill Area – Bradford Street	61	66	62	67	6
27	Mineral Palace Park	65	66	65	69	4
28	Fountain Creek Park Land	67	66	67	69	2
29	Open Field-SE Corner of I-25 and US 50B	61	66	61	68	7
30	20th Street and Santa Fe Avenue	65	66	66	67	2
37	27th Street and Court Avenue	66	66	69	69	3

Source: Hankard Environmental, Inc., 2004; 2010.
dBA = A-weighted decibel I-25 = Interstate 25
[1]This measurement was taken at receptor R23, which represents the second row of homes.

EXHIBIT 3.5-4
North Area (Phase 1) Build Alternative Representative Receptors



South Area (Phase 2)

The predicted noise levels at representative receptors in the South Area (Phase 2) were the same for both Build Alternatives because they share the same alignment in the South Area (Phase 2). Two representative receptors, shown in **Exhibit 3.5-5**, would meet or exceed CDOT's noise abatement criteria.

Exhibit 3.5-6 shows the areas of noise impacts in the South Area (Phase 2) where noise levels would exceed the noise abatement criteria at noise-sensitive receptors. **Exhibit 3.5-6** also shows the locations of proposed noise mitigation structures in the South Area (Phase 2). Noise mitigation structures are discussed in detail in Section 3.5.5.

Central Area (Phase 2)

The predicted noise levels for noise receptors in the Central Area (Phase 2) would differ between the two Build Alternatives because the alternatives would follow different alignments.

Existing I-25 Alternative

Exhibit 3.5-7 shows that, under the Existing I-25 Alternative, five receptors would meet or exceed CDOT's noise abatement criteria. Of these five receptors, none would experience substantial increases in noise levels over existing conditions.

Exhibit 3.5-8 shows the areas of noise impacts for the Existing I-25 Alternative in the Central Area (Phase 2), where noise levels would exceed the noise abatement criteria at sensitive receptors, and the location of proposed noise mitigation structures. Noise mitigation structures are discussed in detail in Section 3.5.5.

Modified I-25 Alternative (Preferred Alternative)

Under the Modified I-25 Alternative (Preferred Alternative), one receptor would meet or exceed CDOT's noise abatement criteria. None of the receptors would experience substantial increases in noise levels over existing conditions.

Exhibit 3.5-9 shows the areas of noise impacts for the Modified I-25 Alternative (Preferred Alternative) in the Central Area (Phase 2), where noise levels would exceed the noise abatement criteria at the sensitive receptor, and the location of proposed noise mitigation structures. Noise mitigation structures are discussed in detail in Section 3.5.5.

3.5.4.3 Indirect Effects

Indirect impacts would be limited to the noise barriers proposed for noise abatement (see Section 3.5.5). These barriers might interfere with the passage of air, interrupt scenic views, or create objectionable shadows. They could also create maintenance access problems, make it difficult to maintain landscaping, create drainage problems, and provide pockets for trash to accumulate.

EXHIBIT 3.5-5

South Area (Phase 2) Noise-Impacted Representative Receptors by Alternative (dBA)

Noise Receptor #	General Location	Baseline Conditions (2003)	Noise Abatement Criteria	No Action Alternative (2035)	Existing and Modified I-25 Alternatives (2035)	Increase Over Existing Levels
SOUTH AREA (PHASE 2)						
2	JJ Raigoza Park	64	66	65	69	5
3	Iowa Avenue and Evans Avenue	64	66	65	67	3

Source: Hankard Environmental, Inc., 2004; 2010.

dBA = A-weighted decibel I-25 = Interstate 25

EXHIBIT 3.5-6
South Area (Phase 2) Build Alternative Representative Receptors

EXHIBIT 3.5-7
Central Area (Phase 2) Noise-Impacted Representative Receptors by Alternative (dBA)

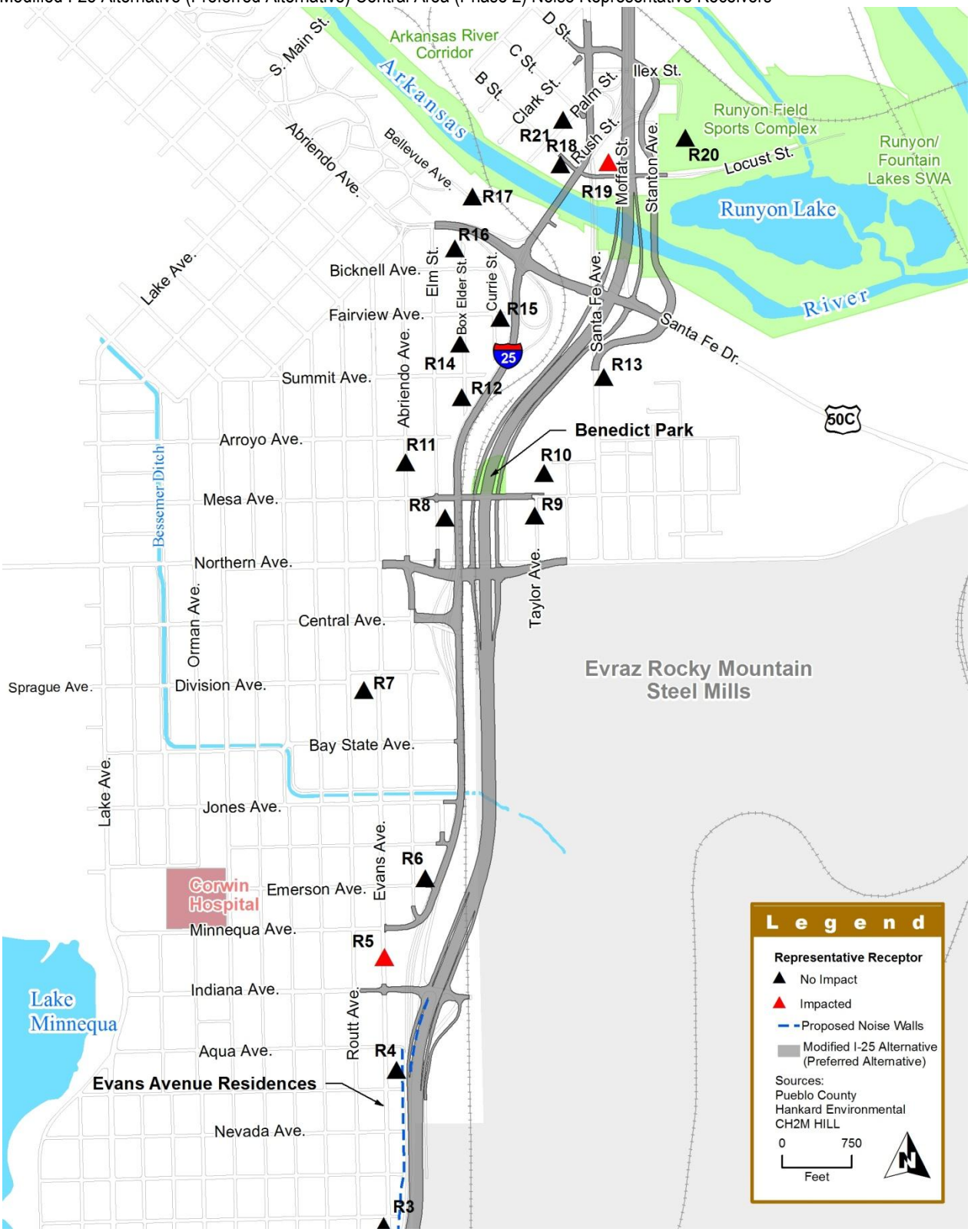
Noise Receptor #	General Location	Baseline Conditions (2003)	Noise Abatement Criteria	No Action Alternative (2035)	Existing I-25 Alternative (2035)	Modified I-25 Alternative (Preferred Alternative) (2035)	Increase Over Existing Levels (Existing I-25 Alternative)	Increase Over Existing Levels (Modified I-25 Alternative)
CENTRAL AREA (PHASE 2)								
4	Aqua Avenue and Evans Avenue	70	66	71	74	69	4	-1
5	Minnequa Avenue and Evans Avenue	61	66	62	66	63	5	2
6	Emerson Avenue and Abriendo Avenue	69	66	70	71	65	2	-4
18	B Street and Rush Street	65	66	66	67	60	2	-5
19	Locust Street and Moffat Street	64	66	65	66	- - [1]	1	2

Source: Hankard Environmental, Inc., 2012.
dBA = A-weighted decibel I-25 = Interstate 25
[1] This property would be acquired under the Modified I-25 Alternative (Preferred Alternative).

EXHIBIT 3.5-8
Existing I-25 Alternative Central Area (Phase 2) Noise Representative Receivers

**R15 would be acquired under the Existing I-25 Alternative for right-of-way. No noise impact would occur.*

EXHIBIT 3.5-9
Modified I-25 Alternative (Preferred Alternative) Central Area (Phase 2) Noise Representative Receivers



**R19 would be acquired under the Modified I-25 Alternative (Preferred Alternative) for right-of-way. No noise impact would occur.*

3.5.5 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative). Details regarding the predicted noise level reductions with mitigation, barrier effectiveness, cost, and other criteria used to determine the reasonableness and feasibility of noise mitigation are included in the *Noise Technical Memorandum, New Pueblo Freeway* (Hankard Environmental, Inc., 2012).

Some sites also qualify as Section 4(f) resources and are further protected by regulations that manage impacts to qualifying resources. Mineral Palace Park and JJ Raigoza Park are recommended for mitigation and have been evaluated for noise barriers. While the Fountain Creek Park Land is also a Section 4(f) resource, there are no active recreational uses within the area impacted by noise, and mitigation is not recommended at this time. **Chapter 4 – Section 4(f) Evaluation** provides additional details on Section 4(f) resources.

Due to the limited space adjacent to the I-25 corridor, only noise walls were analyzed for mitigation in most locations. Other types of mitigation measures, such as landscape berms, require more space than would be available and were therefore not considered. The one exception is Mineral Palace Park, where space is available and there is a public desire for berms, which better fit the context of the park. In this case, both noise walls and landscape berms are proposed for noise mitigation. Conceptual drawings of the proposed noise walls are shown in **Exhibits 3.5-10 and 3.5-11**. The *New Pueblo Freeway Aesthetic Guidelines* (see **Appendix C**) provide additional details on the aesthetics of these walls**.** If necessary, Options for other types of mitigation structures will be evaluated during final design.

As part of the CDOT Noise Analysis and Abatement Guidelines (CDOT, 2011a), CDOT will solicit current residential occupants and property owners‘ opinions on whether to build or not build the abatement measures recommended for the Modified I-25 Alternative (Preferred Alternative). A vote of equal standing will be provided one resident and one owner per benefited dwelling unit prior to the signing of the Record of Decision. When construction occurs in residential areas or other noise-sensitive areas, such as parks or hospitals, construction noise impacts will be mitigated by restricting construction to daylight hours when possible and requiring contractors to use well-maintained equipment. Additional noise analysis will be performed during final design to refine the final mitigation measures and dimensions.

North Area (Phase 1)

Exhibit 3.5-12 lists the properties in the North Area (Phase 1) that were evaluated for noise wall feasibility and reasonableness. **Exhibit 3.5-4** shows the locations of the noise impacted areas and the noise mitigation structures that will be constructed.

- Approximately 7,660 linear feet of noise mitigation structures will be constructed by CDOT to reduce the noise impact for either of the Build Alternatives in the North Area (Phase 1).

South Area (Phase 2)

Exhibit 3.5-13 lists the properties that were evaluated for noise wall feasibility and reasonableness. **Exhibit 3.5-6** shows the locations of the noise impacted areas and the noise mitigation structures that will be constructed.

- Approximately 4,840 linear feet of noise mitigation structures will be constructed by CDOT to reduce the noise impact at JJ Raigoza Park and the residences located along Evans Avenue between Maryland and Nevada in the South Area (Phase 2) of the corridor for either Build Alternative.

Central Area (Phase 2)

Under the Existing I-25 Alternative, there were two areas in the Grove Neighborhood – Grove Residential Area (B Street to C Street) and Moffat Street (Locust Street to Juniper Street) – for which noise mitigation was considered but ultimately not included because a 5 dBA noise reduction could not be achieved with a noise mitigation structure or because the cost would exceed the allowable cost per receptor per dBA of reduction. These areas are located on both sides of I-25 just north of the Arkansas River crossing. A total of 71 residences in these two areas would be impacted by noise levels exceeding the Category B noise abatement criterion.

The Modified I-25 Alternative (Preferred Alternative) would not create noise impacts in the Grove Neighborhood at Moffat Street (Locust Street to Juniper Street) because it would acquire all of the homes in the vicinity of the new alignment; thus, there would be no homes to impact. The

EXHIBIT 3.5-10
Noise Wall Mitigation Concepts

EXHIBIT 3.5-11
Noise Wall Mitigation from the New Pueblo Freeway Aesthetic Guidelines

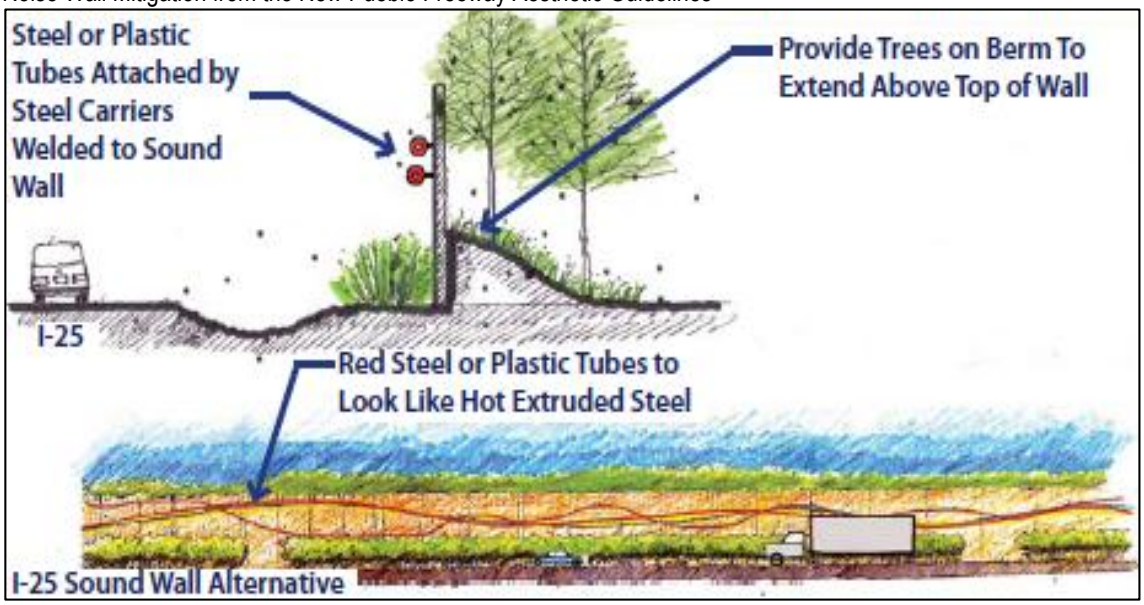


EXHIBIT 3.5-12
Summary of Noise Mitigation for Noise Impacted Areas under the Build Alternatives – North Area (Phase 1)

General Location of Noise Contour-Defined Impact	Noise Abatement Criteria Category/Type	Noise Mitigation Structure Analyzed (length [feet] x height [feet])	Mitigation to be Included in Project?	Notes
Pits Park Residences (24th Street to 29th Street and West of I-25)**(R34-R38)**	Category B/ Residential/; Category C/Park	2,870 x 20	Yes	$6,790 cost per receptor per dBA of noise reduction
N. Albany Avenue Residences (20th Street to 21st Street and West of I-25), **Mineral Palace Park, Mineral Palace Park Towers (R26-R30)**	Category B/ Residential; Category C/Park	2,998 x 18	Yes	$6,671 cost per receptor per dBA of noise reduction
Kelly Avenue Residences (Beech Street to 1st Street and East of I-25); **Bradford Street Residences** (Beech Street to 1st Street and East of I-25) **(R22-R23)**	Category B/ Residential	1,791 x 15	Yes	$4,149 cost per receptor per dBA of noise reduction
Fountain Creek Parkland (East of I-25)**(R28-R29)**	Category C/Park	None	No	The parkland is owned and maintained by the City as an undeveloped open space without any established outdoor recreation uses that could be impaired due to noise. There are trails and picnic areas east of Fountain Creek, but the area east of the creek is not impacted by noise (R25, R33).

Source: Hankard Environmental, Inc., 2012.

I-25 = Interstate 25

EXHIBIT 3.5-13
Summary of Noise Mitigation for Noise Impacted Areas under the Build Alternatives – South Area (Phase 2)

General Location of Noise Contour-Defined Impact	Noise Abatement Criteria Category/Type	Noise Mitigation Structure Analyzed (length [feet] x height [feet])	Mitigation to be Included in Project?	Notes
Evans Avenue Residences (Indiana Avenue to Illinois Avenue and West of I-25) **(R3-R4)**; **JJ Raigoza Park (R2)**	Category B/ Residential; Category C/Park	4,838 x 18	Yes	$4,614 cost per receptor per dBA of noise reduction

Source: Hankard Environmental, Inc., 2012.

I-25 = Interstate 25

Grove Area Residences from B Street to C Street would not be impacted because the alignment would shift to the east and away from these residences. The Modified I-25 Alternative (Preferred Alternative) would not create noise impacts for the existing Benedict Park because the entire park would be acquired and relocated; thus, there would be no park at that location to impact. The relocated Benedict Park would not be impacted by noise.

Exhibit 3.5-14 lists the properties that were evaluated for noise wall feasibility and reasonableness for the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative), respectively.

Exhibit 3.5-8 and Exhibit 3.5-9 show the locations of the noise impacted areas and the noise mitigation structures that will be constructed for the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative), respectively.

- Under the Existing I-25 Alternative, CDOT will construct approximately 3,480 linear feet of noise mitigation structures in the Central Area (Phase 2) to reduce noise impacts.
- Under the Modified I-25 Alternative (Preferred Alternative), approximately 4,840 linear feet of noise mitigation structures will be constructed by CDOT to reduce the noise impact at JJ Raigoza Park and the residences located along Evans Avenue between Maryland and Indiana in the Central Area (Phase 2) of the corridor. This barrier overlaps between the South (Phase 2) and Central (Phase 2) Areas of the corridor and is included in **Exhibit 3.5-13**.

EXHIBIT 3.5-14
Summary of Noise Mitigation for Noise Impacted Areas under the Existing I-25 Alternative – Central Area (Phase 2)

General Location of Noise Contour-Defined Impact	Noise Abatement Criteria Category/Type	Noise Mitigation Structure Analyzed (length [feet] x height [feet])	Mitigation to be Included in Project?	Notes
Moffat Street Residences (Locust Street to Juniper Street and East of I-25)**(R19)**	Category B/ Residential	970 x 21	No	The cost per benefited receptor is $23,058, which is considered unreasonable. The wall is not recommended.
Grove Area Residences (on Palm Street from B Street to C Street)**(R18)**	Category B/ Residential	516 x 20	No	Noise walls along I-25 could not achieve 5 dBA of noise reduction, which is considered infeasible.
Evans Avenue Residences (Indiana Avenue to Jones Avenue)**(R5-R6)**	Category B/ Residential	1,995 x 18	Yes	$4,377 cost per receptor per dBA of reduction combined with proposed barrier from JJ Raigoza to Indiana Street

Source: Hankard Environmental, Inc., 2012.

dBA = A-weighted decibel I-25 = Interstate 25

3.6 SOCIAL RESOURCES, ECONOMIC CONDITIONS, AND ENVIRONMENTAL JUSTICE

This section describes the social resources, economic conditions, and environmental justice issues for the Pueblo area along the I-25 corridor, the potential impacts of the Build Alternatives on these conditions, and potential mitigation measures. Additional information may be found in the *Socioeconomics Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2003), the *Environmental Justice Analysis Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005b), and the *Social Resources Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005c). Specific right-of-way (ROW) impacts to public and private properties are discussed in **Section 3.4 Right-of-Way and Relocations**, and impacts to parks are discussed in **Section 3.3 Parks and Recreation**.

3.6.1 Affected Environment

3.6.1.1 Population and Employment Characteristics

According to population estimates from the Colorado Department of Local Affairs (DOLA) (DOLA, 2009). Pueblo County had a population of 158,362 in 2009. The City of Pueblo is the largest municipality in Pueblo County, and at 106,895 residents in 2009, the City accounted for 68 percent of the County's population (DOLA, 2009). DOLA forecasts that the Pueblo County population will increase by nearly 85,000 residents, or 60 percent, between 2000 and 2030. This growth would be markedly higher than historic rates as the county grew by a total of only 25 percent between 1970 and 2009.

The U.S. Census Bureau collects American Community Survey (ACS) data in 1-, 3-, and 5-year forecast estimates, which means that they represent the characteristics of the population over a specific data collection period. Data are combined to produce 12 months, 36 months, or 60 months of data (U.S. Census Bureau, 2003). Five-year employment estimates from the ACS are the most recent available for Pueblo County. Data from the 2005-2009 ACS estimates a labor force of approximately 71,793 in Pueblo County (U.S. Census Bureau, 2009). The economic sectors that provided the most employment in Pueblo County for this period were educational services, health care, and social assistance (23.0 percent); wholesale and retail trade (15.3 percent); arts, entertainment, recreation, and other services (12.6 percent); and construction (8.4 percent). Approximately 59 percent of employment in Pueblo County is in these sectors.

In 2009, unemployment in Pueblo County was 8.7 percent, 1 percent higher than for the State of Colorado (7.7 percent). Pueblo County's historical unemployment rate has fluctuated from 3.9 percent to 9.3 percent. The highest unemployment was in the early 1900s when the Colorado Fuel & Iron (CF&I) Steel Mill (now known as the Evraz Rocky Mountain Steel Mills) closed (Southern Colorado Economic Development District, 2011).

3.6.1.2 Neighborhoods and Community Resources

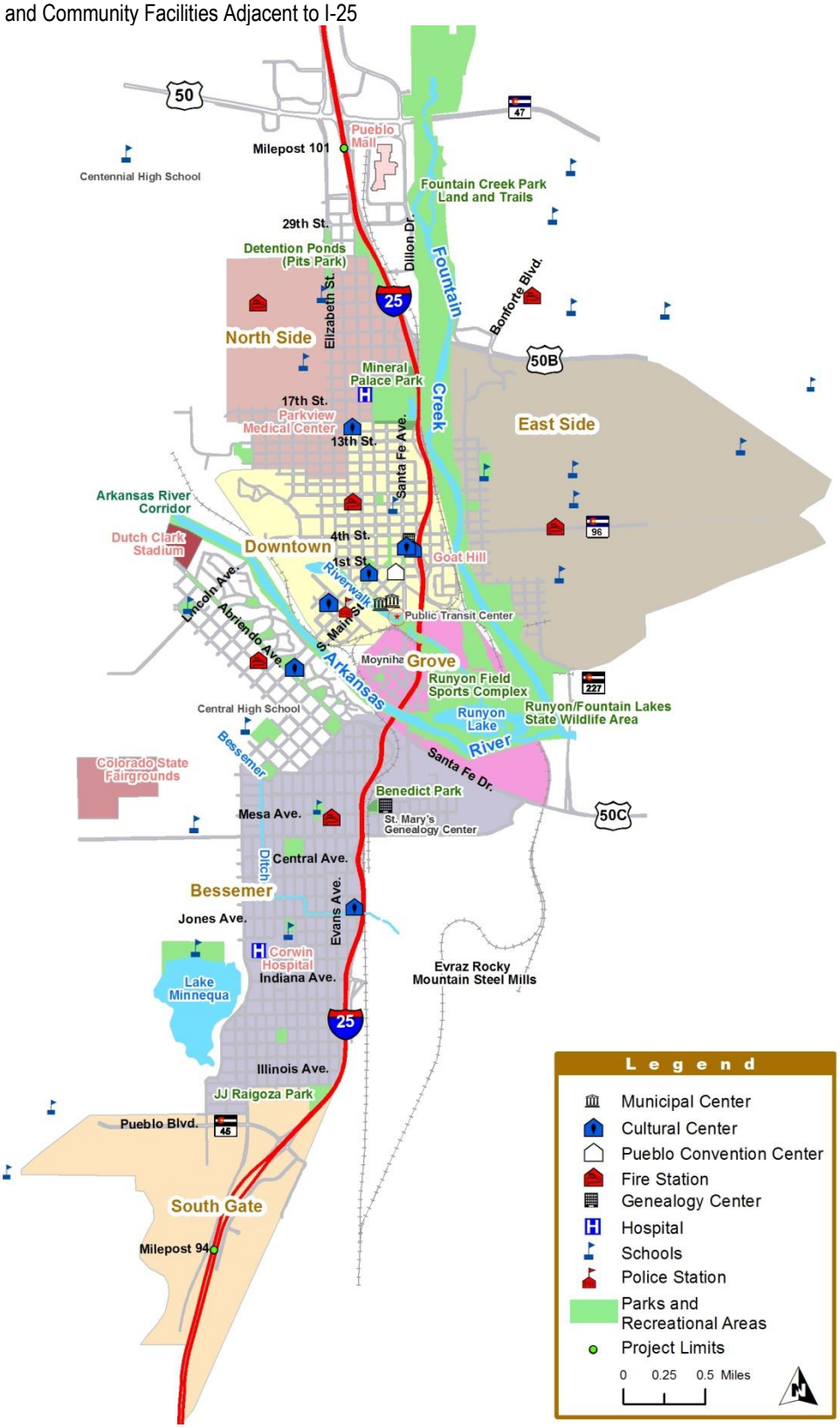
An initial delineation of neighborhood boundaries in Pueblo was developed as part of the 1980 U.S. Census Bureau Neighborhood Statistics Program. That delineation has evolved with the current activities of the City neighborhood planning program, which has revisited those boundaries. As shown in **Exhibit 3.6-1**, there are six neighborhoods (as defined by the City) adjacent to the I-25 corridor: North Side, East Side, Downtown, Grove, Bessemer, and South Gate.

Pueblo has numerous parks and recreation resources, government services, and community facilities. Community facilities typically include schools, hospitals, cultural facilities, and emergency services. The defining community resources and facilities are shown in **Exhibit 3.6-1** and described by neighborhood below.

North Side Neighborhood

The North Side Neighborhood skirts the northwest corner of the study area and extends from 27th Street to 11th Street to the south and I-25 to High Street to the west. This neighborhood is unique in location because it is situated close to the downtown amenities and in proximity to the Pueblo Mall, a popular shopping area. The neighborhood grew up around Mineral Palace Park, which is what remains of the Colorado Mineral Palace exhibit hall and grounds that were built in the 1890s to advertise Colorado's mineral resources to the world. The park is a defining factor in the history and promotion of real estate in this area. The citizens of Pueblo take pride in the beauty of Mineral Palace Park and cherish the role it has played in Pueblo's history.

EXHIBIT 3.6-1
Pueblo Neighborhoods and Community Facilities Adjacent to I-25



Residential subdivisions were developed by 1890, in addition to the original homes of the neighborhood. Lots tend to be larger in this area, resulting in lower housing density compared to other neighborhoods within Pueblo. After World War II, the character of the North Side Neighborhood began to change due to the increase in automobile use and relocation of middle class families toward the edges of the city. With the construction of I-25, the original eastern edge of the neighborhood was lost.

Homes in the North Side Neighborhood

The North Side Neighborhood contains commercial uses along 29th Street and Elizabeth Street. Community resources in and adjacent to the North Side Neighborhood include Mineral Palace Park (described further in **Section 3.3 Parks and Recreation**);Parkview Medical Center, the largest private sector employer in Pueblo (17th Street and Court Avenue); Fire Station #5 (2401 6th Avenue); and three schools (Somerlid Elementary, Freed Middle, and Centennial High).

East Side Neighborhood

The East Side Neighborhood is situated east of I-25 and its boundaries are shaped by Fountain Creek on the west, the Pueblo municipal boundary on the south and east, and US 50B to the north. The East Side Neighborhood has a mixture of older homes and recently constructed homes. The overall housing stock is predominately small single-story structures with a few architecturally unique "craftsman style" homes located throughout. There is a concentration of multi-family housing and mobile homes located in the eastern and northern parts of the neighborhood, and several active business districts are located along the major thoroughfares.

Community resources in and adjacent to the East Side Neighborhood include Fire Station #6 (1325 E. 4th Street), Fire Station #8 (1551 Bonforte Boulevard), multiple pocket and neighborhood parks, and ten schools. Of the schools, only Risley Middle School, located east of I-25 on Monument Avenue, has attendance boundaries that cross I-25.

Downtown Neighborhood

The Downtown Neighborhood consists of areas west of I-25, extending from Parkview Medical Center and Mineral Palace Park on the north to the Arkansas River on the south. This neighborhood is the historic commercial center of Pueblo, and many regional community, financial, and governmental resources are located in this area. I-25 divides the neighborhood, segregating an area known as Goat Hill between the highway and Fountain Creek. Goat Hill contains a mixture of residential, commercial, and industrial activities. I-25 is the western boundary for Goat Hill; however, prior to the construction of I-25, Goat Hill was an extension of the central business district. The majority of residences in this area are single-family homes, of which less than half are owner-occupied.

Homes in the Downtown Neighborhood East of I-25 (Goat Hill)

Community resources in the Downtown Neighborhood include Pueblo City Hall (200 South Main Street), Pueblo County Complex (215 West 10th Street), Pueblo Police Department (130 Central Main Street), Fire Station #1 (425 West 7th Street), the Rosemont Museum (14th Street and Grand Avenue), the Historic Arkansas Riverwalk of Pueblo (HARP), the Sangre de Cristo Arts and Conference Center (adjacent to I-25 at 2nd Street and Santa Fe Avenue), the Buell Children's Museum (located within the

Sangre de Cristo Arts and Conference Center), the El Pueblo History Museum (1st Street and Union Avenue), the Latino Chamber (215 South Victoria Avenue), and the Pueblo Convention Center. No schools are located within this neighborhood.

A cluster of government offices and services, including Pueblo City Hall, are located near the intersection of South Main Street and Grand Avenue. The area attracts those doing business with the City and seeking health care or law enforcement services. The Pueblo County Administrative Complex is located at 10th Street and Main Street. The complex consists of the courthouse and ancillary office buildings that house motor vehicle registration, the assessor and clerk's office, the Department of Emergency Management, and other administrative functions. The Pueblo County Health Department is nearby at 9th Street and Santa Fe Avenue.

Downtown Neighborhood Streetscape

Grove Neighborhood

The Grove Neighborhood, whose boundaries differ from the Grove Historic District, is bounded by Santa Fe Drive and the Arkansas River to the south, the Downtown Neighborhood to the north, and rail yards and rail lines to the west and east.

The Grove Neighborhood was established in 1891 by immigrants from the Austro-Hungarian Empire. Employed in the CF&I Steel Mill (now known as the Evraz Rocky Mountain Steel Mills), these Germans, Slovenians, and Slovakians represented just a part of the wave of immigrants from central Europe that settled in Pueblo during the late 19th and early 20th centuries.

The Grove Neighborhood is primarily residential, with an estimated 110 homes located to the west of I-25 and 34 homes to the east. There is also a mixture of land uses sprinkled throughout the neighborhood, including the Clark Spring Water Company, the Monastery of Our Heavenly Father, Mount Carmel Catholic Church, and the Grove tavern. The perimeter of the neighborhood is primarily industrial along D Street and commercial along Santa Fe Avenue.

Churches in the Grove Neighborhood reflect the diverse ethnic groups in the area, catering to Italians, Greeks, and other ethnic religious groups. Historically family-owned markets serviced this working-class neighborhood and also sold products on credit, a significant benefit to local residents. Many of the local grocery stores closed when competitor stores such as Safeway were built.

The Arkansas River flood of 1921 washed away much of the neighborhood, but most of the residents decided to rebuild rather than relocate, most likely because they depended on the nearby steel mill for employment. The eastern portion of the Grove Neighborhood was originally isolated by this flood. The construction of I-25 in the 1950s further divided the neighborhood, isolating homes from other residential and commercial areas within the neighborhood.

Community facilities in the Grove Neighborhood include the Runyon/ Fountain Lakes State Wildlife Area, the Runyon Field Sports Complex (both facilities are discussed further in **Section 3.3 Parks and Recreation**), and Moynihan Park. No schools are located within this neighborhood.

Bessemer Neighborhood

The Bessemer Neighborhood is located south of the Arkansas River a few miles south of Downtown Pueblo and straddles I-25. The Evraz Rocky Mountain Steel Mills forms the eastern and a portion of the southern border of the neighborhood. The remainder of the boundary is formed by a number of roads that surround the neighborhood.

The Bessemer Neighborhood is one of the oldest communities in both Pueblo and the state, corresponding to the opening of the CF&I Steel Mill in the late 1800s. The neighborhood was developed by generations of immigrants, primarily Eastern and Southern European, who relocated to America to work at the steel mill in the late 19th and early 20th centuries.

In the 1870s, a land grant was obtained for the development of a company town first called Bessemer and later renamed Minnequa. The steel mill hired a doctor to establish a hospital at Furnace Street and Elm Street. The original facility merged with St. Mary's Hospital, forming the current St. Mary-Corwin Hospital.

Company Houses in the Bessemer Neighborhood

Boardinghouses catering to single men were located along Northern Avenue; however, the neighborhood was primarily a family community. Development within the neighborhood was centered around various ethnic groups that settled near grocery stores whose owners were of the same nationality. Development patterns are closely associated with the construction of the steel mill and smelters and are reflective of the arrival date of each ethnic group. Banks, clothing and furniture stores, saloons, and grocery stores were amenities in the larger portion of the neighborhood, making it a self-sufficient community.

The diverse cultural heritage of the Bessemer Neighborhood is not well represented in the area's architecture. The housing stock was originally developed by the steel company housing division to house steel mill workers. The homes were not owned by the steel mill; rather, they were built by the company and sold to workers. As a result, many of the homes are small, generic, single-story structures. Approximately 50 percent of the housing was constructed before 1940, and an estimated 87 percent of the homes were constructed before 1970.

The construction of I-25 in the 1950s created a barrier within the community and divided the neighborhood, leaving a small portion of the Bessemer Neighborhood to the east of I-25 and north of the steel mill, known today as Eiler Heights. Unlike in the Grove Neighborhood, Eiler Heights was divided but not isolated, and the community has worked hard to maintain connections across I-25. Property acquisition for the original construction of I-25 through the Bessemer Neighborhood was minimized, leaving the remaining residents with their backyards immediately adjacent to the highway. Other residents must enter their homes from the alley because their streets were removed for construction of the highway.

The Bessemer Neighborhood is primarily residential. Aside from grocery shopping, gasoline, and fast food establishments, residents generally patronize businesses elsewhere in Pueblo.

Community resources in the Bessemer Neighborhood include Benedict Park (discussed further in **Section 3.3 Parks and Recreation**), Lake Minnequa (with access from Lake Avenue), St. Mary-Corwin Medical Center (Lake Avenue and Minnequa Avenue), the Bessemer Historical Society and Historical Library (located at the corner of Abriendo Avenue and Canal Street in the Main Administrative Complex and Dispensary of the CF&I Steel Mill), St. Mary's Genealogy Center (located in the old St. Mary's School at Mesa Avenue and Taylor Avenue), Fire Station #3 (123 W. Evans Avenue), Fire Station #4 (1201 E. Evans Avenue), Minnequa Elementary School, Corwin International Magnet School, Bessemer Academy, and Central High School. Each school has attendance boundaries that fall adjacent to or cross I-25 and depend on Northern Avenue and Mesa Avenue for access across I-25.

South Gate Neighborhood

The South Gate Neighborhood is located to the south of the Bessemer Neighborhood and encompasses Pueblo Boulevard and I-25. The land adjacent to I-25 consists primarily of commercial (such as, storage, truck rental, and auto parts), industrial, vacant land, and small pockets of residential development. There are a few hotels and retail services at the Pueblo Boulevard/I-25 interchange.

Community facilities in the South Gate Neighborhood include JJ Raigoza Park (discussed further in **Section 3.3 Parks and Recreation**), South Park Elementary School, and Beulah Heights Elementary School. The attendance boundaries for the schools fall adjacent to I-25, and no students are required to cross I-25.

3.6.1.3 Environmental Justice

"Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

—Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, 1994.

There are three fundamental environmental justice principles:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects (including social and economic effects) on minority and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations (FHWA, 2000).

The purpose of an environmental justice analysis is to determine whether a project will have a disproportionately high and adverse effect on minority and low-income populations. To accomplish this, the analysis must first evaluate whether impacts from the project would be predominantly borne by minority and low-income populations. It must then factor in off-setting benefits and proposed mitigation to determine whether impacts to these populations are disproportionately high and adverse. This analysis is presented in Section 3.6.3.

Bessemer Historical Society and Historical Library

Minority Populations

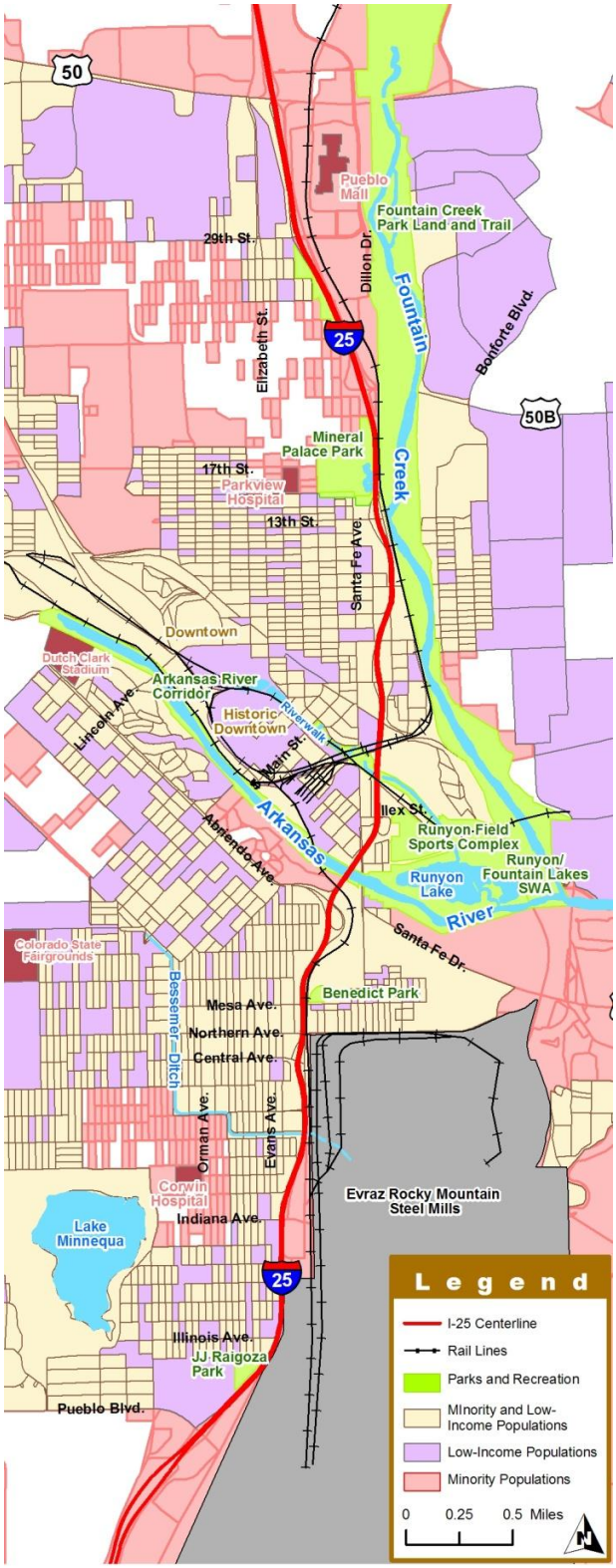
As defined in FHWA Order 6640.23, a minority is a person who is Black, Hispanic, Asian American, or an American Indian or Alaskan Native. Year 2010 U.S. Census Bureau data at the Census Block[1] level were used to evaluate minority populations. In accordance with *CDOT's Title VI and Environmental Justice Guidelines for NEPA Projects* (CDOT, 2004), minority populations are identified in locations where the minority population of the affected area (defined as Census Blocks within 0.5 mile of either Build Alternative) is greater than the minority population in the general population or other appropriate unit of geographical analysis (in this case, Pueblo County). In Pueblo County, 46 percent of the population is minority. This is substantially higher than the State of Colorado, which has an overall minority population of 30 percent.

Within the affected area, minorities represent approximately 74 percent of the total population. The minority population exceeds 46 percent in 2,012 of the 2,716 Census Blocks within 0.5 mile of the corridor. Minority populations are shown in **Exhibit 3.6-2**.

[1] Census Blocks are areas bounded on all sides by visible features, such as streets, roads, streams, and railroad tracks, and by invisible boundaries, such as city, town, township, and county limits, and property lines. Generally, Census Blocks are small in area; for example, a block bounded by city streets. However, Census Blocks in remote areas may be large and irregular.

EXHIBIT 3.6-2

Minority and Low-Income Populations within the Affected Area



Sources: U.S. Census Bureau 2010 Redistricting Data Summary File; U.S. Census Bureau 2005-2009 American Community Survey Data; U.S. Department of Housing and Urban Development Federal Year 2011 Section 8 Income Limits.

A large number of households within the affected area (as high as 15 percent in one Census Tract[2]) are linguistically isolated, meaning that no person over 14 years of age in the household speaks English "very well." Within the affected area, nearly all Census Tracts had more linguistically isolated households than either the City or County, where 3.75 percent and 3.12 percent, respectively, of households do not have any members that speak English "well."

Low-Income Populations

FHWA Order 6640.23 defines low-income as "…a household income at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines." A different threshold (such as, U.S. Census Bureau poverty threshold or Housing and Urban Development [HUD] Community Development Block Grant income thresholds) may be used as long as it is not selectively implemented and is inclusive of all persons at or below the HHS poverty guidelines. CDOT's recommended approach in determining low-income populations is to derive the low-income threshold from a combination of census average household size data at the Census Block Group[3] level and income limits set annually by HUD for the distribution and allocations of Community Development Block Grant funds. The low-income threshold established for this project using 2011 HUD income limits is $20,000 per year.

Low-income populations are identified where the percentage of low-income households (households earning less than $20,000 per year) within the affected area (defined as Census Block Groups within 0.5 mile of either Build Alternative) is greater than the percentage of low-income households in the general population or other appropriate unit of geographical analysis (in this case, Pueblo County). In Pueblo County, 24 percent of households are low-income.

Approximately 50 percent of the households in the affected area are low-income. The number of low-income households exceeds 24 percent in 73 of the 147 Census Block Groups within 0.5 mile of the corridor. Low-income populations are shown in **Exhibit 3.6-2**. Low-income populations are most concentrated (exceeding 50 percent of all households) in the Downtown, Grove, and Bessemer neighborhoods.

Minority-Owned Businesses

In 2007, CDOT interviewed 44 business owners along the corridor to provide information about the project, identify potential impacts, and identify any environmental justice issues. The majority of businesses within the corridor are well-established and can generally be characterized as highly stable. Of the businesses that were interviewed, nearly 75 percent employed one or more minority workers, which is reflective of minority composition within the affected area; however, the majority of these businesses (36 out of 44) are not minority-owned and 66 percent had no poverty-level wage (less than $9.25 per hour in 2007) employees.

Public Involvement and Outreach to Minority and Low-Income Populations

Extensive public involvement, including the organization of Community Working Groups, was conducted throughout the project planning process to identify important neighborhood features, evaluate the impacts of the Build Alternatives on community cohesion, and highlight where the Build Alternatives could be modified to better fit within the context of the neighborhoods. The Community Working Groups helped to shape the alternatives, reducing impacts within neighborhoods and identifying opportunities to make the transportation system function more effectively within neighborhoods and enhance community facilities.

Early in the development of the project, the CDOT Project Team determined that the entire length of the project area touches neighborhoods of minority and/or low-income populations. The public involvement program included specialized outreach to these populations. The intent of these efforts was to encourage minority and low-income populations to identify issues that should be addressed before they become complaints; provide easy access to project information and CDOT Project Team members; and provide opportunities throughout the project for meaningful involvement in the choice among alternatives, location of

[2] Census Tracts are small, relatively permanent statistical subdivisions of a county delineated by local participants as part of the U.S. Census Bureau's Participant Statistical Areas Program. Census Tracts generally have between 1,500 and 8,000 people, with an optimum size of 4,000 people.

[3] Census Block Groups are clusters of Census Blocks within a Census Tract. Census Block Groups generally contain between 600 and 3,000 people, with an optimum size of 1,500 people.

roadway features, and development of designs and mitigating measures.

Nearly all of the non-English speaking households in the affected area are Spanish-speaking; therefore, all project announcements were available in Spanish, and translators were available upon request for all neighborhood meetings. Many of the public involvement techniques employed for this project were designed with non-English speakers in mind. For example, invitations to meetings were sent in Spanish and English, meetings were advertised in the Spanish language newspaper, posters were displayed in neighborhood stores to advertise public events, flyers were hand-delivered to announce neighborhood-focused or issue-focused meetings, and meetings were announced on billboards in the project area. As the project progressed, feedback indicated that language was less of a barrier for participants than the technical nature of the information, and more emphasis was placed on presenting information in workshops and smaller group settings.

Outreach to low-income populations included conducting interviews with social services and community planning organizations to find effective ways to reach out to low-income citizens. Flyers and brochures were distributed to local charities that serve low-income residents, such as Meals on Wheels. Other recommendations that were adopted included holding meetings in consistent and convenient community locations at times that were convenient for working families, as well as expanding public outreach to established community events. Meetings were held in schools, churches, and community gathering centers throughout the corridor, and the project team set up booths in planned community events, such as the “Pack the Park” celebration in the Bessemer Neighborhood.

Twenty-three neighborhood workshops were held to provide neighborhood residents a forum to discuss issues affecting where they live, work, and play. One of the workshops was conducted in the Grove Neighborhood to discuss the possible acquisition of properties for the I-25 realignment. In the early 1900s, the Grove Neighborhood had a cohesive organization. Residents worked in the nearby steel mill, meatpacking houses, or on the railroads that served Pueblo and shopped at local neighborhoods stores. The organization of the neighborhood was altered substantially by the Arkansas River flood of 1921 and the construction of I-25 in the 1950s. Much of the cohesive structure was lost in the eastern portion of the neighborhood, where only 34 homes were left and connections to the western portion of the neighborhood were severed. Today, the 34 homes in the eastern portion of the Grove Neighborhood remain isolated from other residential and commercial areas and are surrounded by I-25 to the west and the Runyon Field Sports Complex to the east.

As shown in the detailed alternative maps (**Appendix E**) (Station 287 to 302), the Modified I-25 Alternative (Preferred Alternative) would directly impact all but one of the properties between Moffat Street and Stanton Avenue in the Grove Neighborhood. Because of the constraints surrounding this portion of the neighborhood (rail lines, the Runyon Field Sports Complex, and the Runyon/Fountain Lakes State Wildlife Area), only four or five structures west of the relocated highway (between Santa Fe Avenue and I-25) and one or two structures east of the relocated highway (between I-25 and Stanton Avenue) could potentially be avoided. However, these residences would be further isolated and surrounded by transportation infrastructure. Such a small number of residences would not be able to support a functioning neighborhood structure.

At the neighborhood workshop, the attendees agreed that they would prefer that all 34 homes in the eastern portion of the Grove Neighborhood be acquired, even if the project required acquisition of fewer homes (as would occur under the Existing I-25 Alternative). The group noted that leaving only a few homes in the eastern half of the neighborhood would degrade and further isolate the neighborhood, worsening the impacts of the original I-25 construction. This input was vital in the development of the Modified I-25 Alternative (Preferred Alternative), which would acquire all 34 homes instead of leaving a few along either side of the relocated highway.

At another neighborhood workshop, the residents of the east Bessemer Neighborhood voiced concerns about original plans for the I-25 realignment (the Existing I-25 Alternative) that would cause them to lose Santa Fe Avenue as a direct route to the downtown area. This concern prompted designers to “go back to the drawing board” and look for other solutions. The result is a proposed extension of Stanton Avenue, including a new bridge over the Arkansas River, included as an element of the Modified I-25

Alternative (Preferred Alternative). The new road would provide a direct route to downtown and greatly improve access to the Runyon Field Sports Complex.

During the 45-day public comment period for the Draft Environmental Impact Statement (DEIS), representatives from Eiler Heights expressed concern over impacts to their community, in particular, the number of property acquisitions that would be required south of Mesa Avenue. CDOT and the City of Pueblo met with representatives from the community in January 2012 and February 2012 to discuss these concerns and identify additional mitigation measures, which are documented at the end of Section 3.6.4 Mitigation.

In the North Side Neighborhood, residents of the neighborhood surrounding Mineral Palace Park, along with citizens throughout the Pueblo region, expressed a strong commitment to protecting the park. Through a series of public meetings, citizens were active participants in the development of mitigation strategies to address the impacts expected from widening I-25 next to Mineral Palace Park. To ensure mitigation strategies were not eliminated or scaled back due to costs to the project, the citizens developed a resolution that was passed by City Council stating adherence to these commitments.

In conjunction with the project, CDOT created www.EverybodyLovesARoadTrip.com, an interactive website that will teach 4th, 5th, and 6th graders (the future users of the highway) more about the development of roads and highways. The project demonstrates how social, community, and biological issues influence transportation and is currently in use in 5th grade classrooms in Pueblo.

CDOT will continue to conduct public involvement activities throughout the life of the New Pueblo Freeway project, through final design and construction activities. More information regarding the extensive public involvement effort for this project can be found in **Chapter 6 – Comments and Coordination**.

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

Under the No Action Alternative, population growth would likely occur at rates that are consistent with DOLA forecasts (DOLA, 2009). The No Action Alternative would not impact any community facilities within the corridor and would not affect community cohesion. Areas where the original construction of I-25 bisected neighborhoods and residential properties would remain unchanged, and I-25 would continue to be a community barrier. The residential area east of I-25 in the Grove Neighborhood and Goat Hill would remain isolated. In most locations along the corridor, noise levels would increase as a result of changes in traffic volumes and speeds on I-25. The predicted change in noise levels between the current condition and 2025 are detailed in **Section 3.5 Noise**. Because every neighborhood adjacent to I-25 contains minority and/or low-income populations, these impacts would be predominantly borne by these populations.

3.6.2.2 Build Alternatives

Impacts to social resources, economic conditions, and environmental justice are described below for each area of the corridor. All property acquisition and relocation shall comply fully with federal and state requirements, including Uniform Act defined previously in **Section 3.4 Right-of-Way and Relocations**.

North Area (Phase 1)

Both Build Alternatives would provide safer and more efficient access to I-25 from areas surrounding the highway but would not introduce new transportation infrastructure to areas that do not already have access. Population trends would not be influenced by either Build Alternative, and growth would occur as forecasted.

Both Build Alternatives would require the relocation of 16 minority and low-income residences from within the Goat Hill area. This represents approximately 15 percent of the housing stock in this area (there are approximately 108 residences in the Goat Hill Area.

Both Build Alternatives would relocate 25 businesses and more than 300 jobs in the North Area (Phase 1) (less than 1 percent of the total employment in Pueblo County). According to the business survey conducted by CDOT, the majority of these businesses are not minority-owned and do not play a critical role in the functioning of the community; that is, mainly auto repair shops, fast food establishments, and car dealerships would be affected and there are many of these throughout the corridor. Many of these businesses employee full-time employees and have specific property

considerations such as the need to be near the interstate for access, visibility, or service to the existing neighborhood. As indicated in **Section 3.4 Right-of-Way and Relocations**, there are considerable vacant and available commercial properties throughout the corridor that could serve as relocation sites. If these businesses are not relocated within Pueblo, tax revenues could decrease and the jobs they provide could be permanently lost.

A few businesses displaced by the project may not reopen at new locations. Employees working for businesses that do not reestablish would lose their jobs. Some of these employees would likely be minorities. Relocation could also result in labor reductions if the business is not as successful at its new location. Businesses relocating out of the neighborhood in which employees reside could also impact employees by making it more difficult to get to work.

Project construction would generate direct and indirect employment opportunities, and the local economy would benefit from the spending associated with construction.

Both Build Alternatives would directly impact community facilities in the North Side, East Side, and Downtown neighborhoods. Many of these facilities are used by residents throughout Pueblo, and loss of these facilities would affect the general population, including minority and low-income residents.

In the North Side and East Side neighborhoods, minority and low-income populations would benefit from improved access and neighborhood connections. Minority and low-income residents would also benefit from improved access to the Downtown Neighborhood and the Parkview Medical Center (with the new ramp at 13th Street).

Construction of the Build Alternatives would require the acquisition of property from Mineral Palace Park, as discussed in **Section 3.3 Parks and Recreation** and **Chapter 4 – Section 4(f) Evaluation**. Mitigation includes a restoration plan that would increase the size of the park and restore historic features and neighborhood connections, ultimately benefiting the surrounding community, which consists primarily of minority and low-income residents.

Both Build Alternatives would enhance community cohesion in minority and low-income areas by improving access for motorists and pedestrians. The extension of Dillon Drive to the south would improve local access to the Pueblo Mall and regional retail destinations for the North Side and East Side neighborhoods. In addition, it would shift onto local roads some of the drivers who are currently using I-25 for local trips. This would reduce the traffic load on I-25 and the potential for accidents since fewer vehicles would be entering, exiting, and changing lanes on the highway. Access would be provided to the land west of the Dillon Drive extension, allowing for commercial development and keeping regional retail in these neighborhoods. Construction of pedestrian trails along I-25 to the north and south and across I-25 near Mineral Palace Park would provide an additional connection for the residents of the North Side and East Side neighborhoods. This would allow North Side Neighborhood residents to visit the Pueblo Mall on foot and bicycle and would connect the East Side Neighborhood to Mineral Palace Park, the North Side Neighborhood, and the Downtown Neighborhood.

In the Downtown Neighborhood, both Build Alternatives construct a split-diamond interchange that would move highway ramps to arterials rather than local streets; provide continuous, organized, and improved access to the downtown street network; improve signage; and create a gateway to the neighborhood at 14th Street. The construction of the northbound frontage road would require that Bradford Avenue be made into a cul-de-sac on both ends and acquisition of 16 homes in Goat Hill.

Goat Hill is an isolated area (63 acres) with boundaries that were defined by the original construction of I-25 (separating it from the larger Downtown Neighborhood) and Fountain Creek. It contains a mixture of residential, commercial, industrial, and public land uses. Residences in this area are primarily single-family homes, of which more than half are occupied by renters. Public uses are associated with almost 25 percent of the land area (approximately 16 acres), the majority in the Fountain Creek Corridor. As noted in **Section 3.8 Land Use**, this area is under-developed and has been identified for re-development. Approximately 20 percent of the parcels in this area are vacant.

The acquisitions resulting from either Build Alternative would further isolate and alter the composition of the Goat Hill area as residences are relocated and replaced with transportation infrastructure. However, the diversity and distribution of land uses would persist, the majority of homes

would remain, and residents would continue to be concentrated between Bradford Street and Chester Avenue. Kelly Avenue would be extended from Santa Fe Avenue into Goat Hill, providing a second access point to the neighborhood. These features would improve neighborhood safety, reduce neighborhood through traffic, and foster a sense of community.

Detours, traffic delays, and access revisions would inconvenience residents, businesses, and community facilities during project construction.

South Area (Phase 2)

No residential properties would be acquired in the South Area (Phase 2) under either Build Alternative. Population trends would not be influenced by either alternative, and growth would occur as forecasted.

Both Build Alternatives would relocate four businesses and more than 62 jobs in the South Area (Phase 2). According to the business survey conducted by CDOT, the majority of the affected businesses are not minority-owned, do not play a critical role in the functioning of the community, and are not of unique importance to minority or low-income residents. If these businesses are not relocated within Pueblo, tax revenues could decrease and the jobs they provide could be permanently lost. Employees working for businesses that do not reestablish would lose their jobs. Some of these employees would likely be minorities.

Project construction would generate direct and indirect employment opportunities, and the local economy would benefit from the spending associated with construction.

Neither Build Alternative would impact community cohesion in the South Gate Neighborhood and the southern portion of the Bessemer Neighborhood. Community facilities in the South Area (Phase 2) would benefit from the construction of pedestrian trails connecting JJ Raigoza Park to neighborhoods as far north as the North Side Neighborhood.

Detours, traffic delays, and access revisions would inconvenience residents, businesses and community facilities during construction.

Central Area (Phase 2)

Existing I-25 Alternative

Population trends would not be influenced by the Existing I-25 Alternative, and growth would occur as forecasted. An estimated 71 residential properties in the Central Area (Phase 2) would need to be acquired for the construction of the Existing I-25 Alternative. All of these homes are located in minority and low-income portions of the Bessemer Neighborhood.

At one time, the Bessemer Neighborhood had a tight social fabric with strong connections among neighborhood development, traditional ethnic groups, and the employment provided by the former CF&I Steel Mill. These connections began to break down after the steel mill closed and the relationship between the neighborhood and its largest employer was diminished. The neighborhood retains many of its historic residences and churches, but the composition of its population has changed. Once dominated by Eastern and Southern European immigrants, the neighborhood is now predominantly Hispanic (60 percent of the population). In 2004, the City adopted the *Bessemer Neighborhood Plan*. This plan was developed in response to the lack of reinvestment in the community and identifies a framework for revitalization that incorporates the proposed improvements to I-25. The residential acquisitions resulting from the Existing I-25 Alternative would impact a very small portion of the Bessemer Neighborhood (primarily east of I-25 south of Benedict Park and west of I-25 south of the Arkansas River) and would not hinder the implementation of the *Bessemer Neighborhood Plan*.

Under the Existing I-25 Alternative, 36 residential properties east of I-25 in the area known as Eiler Heights would be acquired to accommodate the eastern shift of the interstate lanes, the frontage road, and the realignment of the railroad.

Community cohesion would be improved in the Bessemer Neighborhood by reconnecting local roadway and trail systems, restoring the east-west neighborhood connectivity that was severed when I-25 was built. Abriendo Avenue would be connected to Santa Fe Drive, restoring east-west connectivity in the neighborhood that was severed by the construction of I-25. The connections between I-25 and local neighborhood streets at Central Avenue, Minnequa Avenue, and Illinois Avenue would be removed and replaced with connections to major roadways, including

Abriendo Avenue, Northern Avenue, and Indiana Avenue, providing better east-west connectivity for highway users and reserving neighborhood streets for local traffic.

Regional pedestrian connectivity through the Bessemer Neighborhood would be improved with the construction of a trail "backbone" system that would connect JJ Raigoza Park in the south to destinations to the north such as HARP, the Runyon Field Sports Complex, and Mineral Palace Park. The trails would cross I-25 at Mesa Avenue, providing additional east-west connectivity within the neighborhood for pedestrians in minority and low-income neighborhoods.

The Existing I-25 Alternative would relocate 30 businesses in the Central Area (Phase 2), affecting more than 186 employees. According to the business survey conducted by CDOT, the majority of the affected businesses are not minority-owned, do not play a critical role in the functioning of the community, and are not of unique importance to minority or low-income residents. Many of these businesses employee full-time employees and have specific property considerations such as industrial zoning or the need to be near the highway for access, visibility, or service to the existing neighborhood. As indicated in **Section 3.4 Right-of-Way and Relocations**, there are considerable vacant and available commercial properties throughout the corridor that could serve as relocation sites. If these businesses are not relocated within Pueblo, tax revenues could decrease and the jobs they provide could be permanently lost.

A few businesses displaced by the project may not reopen at new locations. Employees working for businesses that do not reestablish would lose their jobs. Some of these employees would likely be minorities. Relocation could also result in labor reductions if the business is not as successful at its new location. Businesses relocating out of the neighborhood in which employees reside could also impact employees by making it more difficult to get to work.

Project construction would generate direct and indirect employment opportunities, and the local economy would benefit from the spending associated with construction.

The Existing I-25 Alternative would directly impact community facilities in the Central Area (Phase 2). The construction of a split-diamond interchange between Abriendo Avenue and Northern Avenue would require the acquisition of ROW from Benedict Park as discussed in **Section 3.3 Parks and Recreation** and **Chapter 4 – Section 4(f) Evaluation**. Mitigation proposed for the Existing I-25 Alternative would split Benedict Park into two areas across Mesa Avenue.

Community cohesion in the Grove Neighborhood would not be impacted under the Existing I-25 Alternative. Vehicle access into the Grove Neighborhood would remain unchanged, and limited improvements would be made to trail system connections from the neighborhood. Connectivity across I-25 would remain severed for motorists and pedestrians. The pocket of homes in the east Grove Neighborhood that were isolated by the original construction of I-25 would continue to be isolated.

Detours, traffic delays, and access revisions would inconvenience residents, businesses, and community facilities during construction.

Modified I-25 Alternative (Preferred Alternative)

Population trends would not be influenced by the Modified I-25 Alternative (Preferred Alternative), and growth would occur as forecasted. An estimated 101 residential properties in the Central Area (Phase 2) would need to be acquired for the construction of the Modified I-25 Alternative (Preferred Alternative). Sixty-seven of these homes are located in minority and low-income portions of the Bessemer Neighborhood. Residential acquisitions would be concentrated south of Benedict Park between Mesa Avenue and Northern Avenue in the area known as Eiler Heights. As with the Existing I-25 Alternative, the residential acquisitions resulting from the Modified I-25 Alternative (Preferred Alternative) would impact a very small portion of the Bessemer Neighborhood overall.

Under the Modified I-25 Alternative (Preferred Alternative), 56 residential properties would be acquired east of I-25 in the Bessemer Neighborhood area known as Eiler Heights. This represents 20 additional residential properties, or an additional 14 percent of the neighborhood, than would be acquired under the Existing I-25 Alternative. The impact to this area is greater under the Modified I-25 Alternative (Preferred Alternative) because the alignment is elevated in this area to avoid the UPRR. The Mesa Avenue and Northern Avenue overpasses would rise further to the east, requiring the closure of Taylor Avenue and the acquisition of the additional half block of homes east of Taylor Avenue.

The Modified I-25 Alternative (Preferred Alternative) would relocate 35 businesses and a group of newly constructed warehouses in the Central Area (Phase 2), affecting more than 209 employees. According to the business survey conducted by CDOT, the majority of the affected businesses are not minority-owned, do not play a critical role in the functioning of the community, and are not of unique importance to minority or low-income residents. Many of these businesses employee full-time employees and have specific property considerations such as industrial zoning or the need to be near the highway for access, visibility, or service to the existing neighborhood. As indicated in **Section 3.4 Right-of-Way and Relocations**, there are considerable vacant and available commercial properties throughout the corridor that could serve as relocation sites. If these businesses are not relocated within Pueblo, tax revenues could decrease and the jobs they provide could be permanently lost.

As with the Existing I-25 Alternative, a few businesses displaced by the project may not reopen at new locations. Employees working for businesses that do not reestablish would lose their jobs. Some of these employees would likely be minorities. Relocation could also result in labor reductions if the business is not as successful at its new location. Businesses relocating out of the neighborhood in which employees reside could also impact employees by making it more difficult to get to work.

Project construction would generate direct and indirect employment opportunities, and the local economy would benefit from the spending associated with construction.

The Modified I-25 Alternative (Preferred Alternative) would directly impact community facilities in the Central Area (Phase 2) by shifting the highway onto park property at the Runyon/Fountain Lakes State Wildlife Area and completely acquiring Benedict Park, as described in **Section 3.3 Parks and Recreation** and **Chapter 4 – Section 4(f) Evaluation**. However, access to the Runyon Field Sports Complex would be improved, allowing visitors to access the facility using the extended Stanton Avenue, a local road, rather than from the off-ramp of I-25. In addition, mitigation proposed for Benedict Park would result in the construction of a new, larger, and contiguous park that would provide a greater benefit to the surrounding community than the Existing I-25 Alternative, which can only mitigate for park impacts by expanding the park across Mesa Avenue.

Shifting I-25 east would acquire 34 residences in the east Grove Neighborhood, completely removing the pocket of homes that was isolated when I-25 was built. The majority of Grove Neighborhood residents prefer the acquisition of all 34 homes rather than leaving only a few homes, which would degrade and further isolate the neighborhood and worsen the impacts of the original I-25 construction. Section 3.6.1.3 provides a summary of the workshop held in the Grove Neighborhood.

The realignment of I-25 would make it possible to substantially increase both north-south and east-west connectivity throughout the Central Area (Phase 2). Santa Fe Avenue would be extended south of the Arkansas River to Minnequa Avenue. This extension would allow residents to use a local roadway to travel from neighborhoods in the south to the Downtown Neighborhood and North Side Neighborhood instead of having to rely on I-25. The extension would also provide a much-needed additional local street crossing of the Arkansas River (reconnecting Santa Fe Avenue to Abriendo Avenue) and would restore the local street network that was severed when I-25 was built. This extension is not possible under the Existing I-25 Alternative.

Additional connectivity to the north and south is provided by the extension of Stanton Avenue north and west to Santa Fe Avenue and south to Santa Fe Drive. Residents of the Bessemer Neighborhood east of I-25 would be more connected to the rest of the neighborhood, as well as the community resources in the Grove Neighborhood and Downtown Neighborhood. The Stanton Avenue connection was developed directly from community input and reflects the public's desire to avoid the use of I-25. It also adheres to the City's long-range plans, which show Stanton Avenue connecting to D Street. Property acquisition required for the shift in I-25 alignment under the Modified I-25 Alternative (Preferred Alternative) makes this extension possible. The overall impact of the Santa Fe Avenue and Stanton Avenue extensions would reestablish a grid system that improves emergency access, reconnects minority and low-income neighborhoods, and improves neighborhood cohesion.

Regional pedestrian connectivity would be improved through a trail "backbone" system, as described for the Existing I-25 Alternative. In addition, the Modified I-25 Alternative (Preferred Alternative) would improve pedestrian access in the Grove Neighborhood through the construction of trails and the new street grid network.

Detours, traffic delays, and access revisions would inconvenience residents, businesses, and community facilities during construction.

3.6.2.3 Indirect Effects

Indirect effects from the project improvements are related to the potential for higher traffic volumes on local roads, construction, and acquisitions in proximity to known concentrations of minority and low-income populations. These indirect impacts are outlined in their respective discipline sections: **3.1 Transportation**, **3.4 Right-of-Way and Relocations**, and **3.5 Noise**). Modest beneficial impacts to neighborhoods in the I-25 corridor could result from improved non-motorized accessibility and reduced delay in providing emergency services.

3.6.3 Considerations for Environmental Justice

The impact analysis for all resources was reviewed to determine whether either Build Alternative would result in adverse effects on all segments of the population, including minority and low-income populations. If no adverse effects were identified for a resource, no further environmental justice analysis was undertaken with regards to that particular resource. Elements of the Build Alternatives that would benefit minority and low-income communities and offset adverse effects were also considered. These benefits are discussed following **Exhibit 3.6-3**. Adverse effects were identified for the resources presented in **Exhibit 3.6-3**. Effects relevant to the environmental justice analysis are listed below; these effects would occur under either Build Alternative:

- Residential and commercial acquisitions and associated impacts to employment.
- Impacts to park and recreational resources, in particular Mineral Palace Park and Benedict Park.
- Increase in noise levels in some locations (in the absence of mitigation).
- Visual impacts resulting from the installation of retaining walls, noise barriers, structures, and other project elements.
- Disturbance of hazardous or potentially hazardous waste sites.
- Temporary construction-related impacts may include an increase in noise, detours, traffic delays, disruption in utility service, and exposure to particulate emissions (diesel emissions and fugitive dust).

  People most at risk from inhaling particulate emissions during construction are children, the elderly, and the health-impaired. Healthy individuals who work or spend substantial amounts of time outdoors can also be affected by prolonged dust exposure.

  The potential health effects of inhaling particulate matter generated by construction activities typically confined to localized areas where the ground is disturbed with earth-moving excavations and hauling of materials can kick up road dust (re-entrainment) and are temporary in duration. The potential health effects of inhaling particulate concentrated or prolonged emissions include irritation to the eyes, nose, and throat; respiratory distress, including coughing, difficulty breathing, and chest tightness; increased severity of bronchitis, asthma, and emphysema; and aggravated heart conditions.

Because all of the project improvements would occur in areas with minority and/or low-income populations, construction-related dust and diesel emissions would most likely affect these populations under either Build Alternative. As described in **Exhibit 3.6-3**, the CDOT Project Team has incorporated mitigation measures, enhancements, and off-setting benefits to reduce the intensity of dust and emissions and avoid disproportionately high and adverse effects. These measures are described below.

EXHIBIT 3.6-3
Environmental Justice Analysis

Summary of Impacts from the Build Alternatives	Are Impacts Predominantly Borne by Minority/Low-Income Populations?	Are Impacts to Minority/Low-Income Populations Considered Disproportionately High and Adverse?
SOCIAL RESOURCES AND ECONOMIC CONDITIONS		
❖ Changes in the transportation network to restore east-west and north-south connectivity, improve neighborhood cohesion, and provide local network redundancy. The impacts apply to both Build Alternatives, although the impact is greater under the Modified I-25 Alternative (Preferred Alternative) as a result of the extension of both Stanton Avenue and Santa Fe Avenue. ❖ Acquisition of residences from the Goat Hill area (16 under either Build Alternative), the Bessemer Neighborhood (71 under the Existing I-25 Alternative and 67 under the Modified I-25 Alternative [Preferred Alternative]), and the Grove Neighborhood (34 under the Modified I-25 Alternative [Preferred Alternative]). ❖ Acquisition of businesses (58 under the Existing I-25 Alternative and 65 under the Modified I-25 Alternative [Preferred Alternative]) and impacts to up to 600 jobs under either alternative. ❖ Generation of direct and indirect employment during construction under both Build Alternatives.	**Yes.** All residential and commercial acquisitions would be from minority and low-income neighborhoods.	**No.** Minority and low-income residents would benefit most from restored neighborhood connections and improvements in neighborhood cohesion. CDOT would mitigate property acquisitions and relocation effects by purchasing properties identified for acquisition and providing relocation assistance to displacees. In some cases, property owners prefer acquisition (e.g., in the Grove Neighborhood). The majority of businesses affected by either Build Alternative (Preferred Alternative) are not minority-owned or of particular importance to minority or low-income populations. Local residents would benefit from additional employment opportunities and the indirect spending associated with construction. CDOT's disadvantaged business enterprise (DBE) program provides a vehicle for increasing the participation of minority businesses in project construction contracts. Typically, the goal for DBE participation is identified during the bidding stage of a construction project.
PARKS AND RECREATION		
❖ Acquisition of property from park and recreational resources, in particular, Mineral Palace Park, Fountain Creek Park Land, and Benedict Park under both Build Alternatives. Impacts to Benedict Park would differ; the Existing I-25 Alternative would acquire 0.42 acre of the park and the Modified I-25 Alternative (Preferred Alternative) would acquire the entire 1.92 acre park. ❖ Potential increase in noise levels at Mineral Park, JJ Raigoza Park, and the detention ponds between 29th Street and 24th Street under both Build Alternatives. ❖ Improved access to the Runyon Field Sports Complex under the Modified I-25 Alternative (Preferred Alternative).	**Yes.** The general population of park users would experience some impacts, but impacts would be greatest for the minority and low-income residents adjacent to the project corridor.	**No.** Mitigation proposed for impacts to parks and recreational resources would enhance the parks system. Mineral Palace Park would increase in size, and historic features and neighborhood connections to the park would be restored. A new pedestrian trail would be constructed between JJ Raigoza Park in the South Gate Neighborhood to the North Side Neighborhood. Benedict Park would be reconstructed under both Build Alternatives, with the Modified I-25 Alternative (Preferred Alternative) providing a larger contiguous park. After construction of noise walls, noise levels at Mineral Palace Park, JJ Raigoza Park, and the detention ponds between 29th Street and 24th Street would be lower than current levels. Minority and low-income residents within the corridor would benefit most from these measures.

EXHIBIT 3.6-3
Environmental Justice Analysis

Summary of Impacts from the Build Alternatives	Are Impacts Predominantly Borne by Minority/Low-Income Populations?	Are Impacts to Minority/Low-Income Populations Considered Disproportionately High and Adverse?
NOISE		
❖ Increases in noise levels for the design year up to 7 dBA over 2003 existing levels under both Build Alternatives.	**Yes.** All of the noise impacts would occur in the minority and low-income neighborhoods adjacent to the project corridor.	**No.** Mitigation for noise impacts (walls and berms) would reduce noise levels for some residents, and in some locations noise levels after construction would be lower than current levels.
VISUAL		
❖ Visual impacts resulting from the installation of retaining walls, noise barriers, structures, and other project elements under both Build Alternatives.	**Yes.** While these elements would be dispersed throughout the project corridor and would affect the travelling public, impacts would be greatest for the minority and low-income residents adjacent to the project corridor.	**No.** In some cases, aesthetics within the corridor would improve, benefiting local residents and off-setting adverse effects.
AIR QUALITY		
❖ No adverse air quality impacts are anticipated under both Build Alternatives. Temporary construction-related air quality impacts are addressed below.	**No.** No adverse air quality impacts are anticipated.	**No.** No adverse air quality impacts are anticipated.
CONSTRUCTION		
❖ Temporary construction-related impacts, such as an increase in noise, detours, traffic delays, disruption in utility service, and exposure to particulate emissions (diesel emissions and fugitive dust), under both Build Alternatives. ❖ Under the Modified I-25 Alternative (Preferred Alternative), fewer major disruptions to the traveling public would be anticipated between Ilex Street and Nevada Avenue, where the highway would be constructed on a new alignment.	**Yes.** While the general population would experience some impacts throughout construction, impacts would be greatest for the minority and low-income residents adjacent to the project corridor.	**No.** The implementation of Best Management Practices, development of a construction monitoring plan for particulate emissions, and other mitigation measures implemented throughout construction would reduce the severity of these impacts so that remaining effects would no longer be considered high and adverse. In addition, the long-term benefits provided by the project would likely outweigh the remaining short-term effects during construction.

Source: CH2M HILL, 2005b.

CDOT = Colorado Department of Transportation
dBA = A-weighted decibel
I-25 = Interstate 25

Note: This analysis considers resources for which adverse effects have been identified. Impacts to natural resources (i.e., biological resources, wetlands, and floodplains) have been assumed not to have any direct impacts or indirect effects on human populations and are not included in this analysis.

Both Build Alternatives would improve safety and increase mobility and connectivity of Pueblo's transportation network. More than 10,000 feet of noise walls would be constructed, which would reduce noise impacts for some residents adjacent to the I-25 corridor. CDOT would also remediate hazardous waste sites disturbed by the project, which would lower health and safety risks. In some cases, the aesthetics of the corridor would improve.

Both Build Alternatives include changes in the transportation network that would restore east-west and north-south connectivity, improve neighborhood cohesion, and provide local network redundancy. These changes also help to alleviate some of the historic impacts that have occurred within minority and low-income neighborhoods as a result of the Arkansas River flood of 1921 and the original construction of I-25 in the 1950s. Local residents participated in the identification and development of many of these features.

To address the health effects of particulate emissions during construction, CDOT will coordinate with the Colorado Department of Public Health and Environment (CDPHE) to develop a construction monitoring plan. The monitoring plan will demonstrate how well the Preferred Alternative addresses construction-related particulate emissions by measuring the effectiveness of mitigation measures in controlling or minimizing adverse effects. For additional details regarding mitigation for air quality impacts, see **Section 3.10 Air Quality**.

Key project elements that improve the social and environmental justice environment are listed below.

- **Bridge Reconstruction at Mesa Avenue –** This overpass would be reconstructed as a local roadway facility with the intent of restoring connections between the Bessemer Neighborhood east and west of I-25. The new ramps that would be constructed at Northern Avenue would remain disconnected from Mesa Avenue to discourage regional and cut-through traffic. The new bridge would be wide enough to accommodate pedestrian uses and neighborhood activities, such as the local farmer's market. This improvement is illustrated in **Chapter 2 – Alternatives**, **Exhibit 2-30** (Existing I-25 Alternative) and **Exhibit 2-33** (Modified I-25 Alternative).
- **Reconstruction of Northern Avenue –** Northern Avenue would be shifted slightly south of its existing location. The new cross-section of the roadway would accommodate wide sidewalks, improving local pedestrian access across I-25 to Benedict Park on the east and local businesses on the west. A pedestrian plaza would be developed west of I-25 on the current alignment of Northern Avenue. Pedestrians would be able to access the new plaza directly from Northern Avenue. This improvement is illustrated in **Chapter 2 -Alternatives**, **Exhibit 2-30** (Existing I-25 Alternative) and **Exhibit 2-33** (Modified I-25 Alternative).
- **Mitigation for Impacts to Mineral Palace Park and Benedict Park –** Mitigation for impacts to Mineral Palace Park and Benedict Park under either Build Alternative would expand park and recreational resources and improve the quality of the adjacent neighborhoods. The reconstructed portion of Benedict Park south of Mesa Avenue would be safer because it would be surrounded by local streets. It would also be better integrated into the adjacent neighborhoods. This improvement is described and illustrated in **Section 3.3 Parks and Recreation, Exhibits 3.3-13, 3.3-15, and 3.3-18**.
- **Santa Fe Avenue Extension –** Under the Modified I-25 Alternative (Preferred Alternative), Santa Fe Avenue would be extended along the current I-25 alignment. This would improve north-south connectivity and would provide local network redundancy for neighborhoods in the south to the Downtown Neighborhood and North Side Neighborhood. A roundabout would be constructed at Central Avenue, which would provide a clear distinction between higher-traffic transportation infrastructure and local neighborhood streets. The roundabout would also serve as a gateway into the Bessemer Neighborhood, which would improve the visibility of and access to the Bessemer Historical Society. This improvement is illustrated in **Chapter 2 – Alternatives**, **Exhibit 2-33**.
- **Stanton Avenue Extension –** Stanton Avenue currently ends at Locust Street. The extension was designed to maintain a direct connection for the neighborhoods near Benedict Park to neighborhoods and services west of I-25 and improve access to the downtown area. The Stanton Avenue extension would be constructed only under the Modified I-25 Alternative (Preferred Alternative). This improvement is illustrated in **Chapter 2 – Alternatives**, **Exhibit 2-33**.

- **Trail Connections –** A new north-south trail would be constructed in the alley behind Evans Avenue between Minnequa Avenue and Illinois Avenue. For the trail to be built in this location, property owners would need to agree to give up their alley access. If property owners are not willing to give up access, the trail could be constructed as an on-street facility using Evans Avenue. No decision has been formalized at this time, and CDOT will revisit this trail concept during final engineering design through neighborhood-involved design charettes. Adding this segment of trail would connect minority and low-income neighborhoods to regional and local amenities throughout the corridor. Additionally, it would help to alleviate the historic impact of the original I-25 construction, which left the back of these homes in close proximity to the edge of highway pavement, by providing separation through a proposed noise wall and trail feature. This improvement is illustrated in **Chapter 2 – Alternatives**, **Exhibit 2-36**.
- **Access Revisions –** Exit ramps at Illinois Avenue and Minnequa Avenue would be disconnected to reduce the amount of cut-through traffic in adjacent neighborhoods. In these locations, the ramps that currently route exiting highway traffic onto local roads would be disconnected. This would reduce the number of trucks traveling through these neighborhoods en route to the steel mill. Similarly, Clark Street and D Street would be disconnected from Santa Fe Avenue and converted to cul-de-sacs to reduce cut-through traffic during events at the Runyon Field Sports Complex. This improvement is illustrated in **Chapter 2 – Alternatives**, **Exhibit 2-31** for the Existing I-25 Alternative and **Exhibit 2-34** for the Modified I-25 Alternative.

3.6.3.1 Summary

Because every neighborhood adjacent to I-25 throughout the affected area has minority and/or low-income populations, impacts from either Build Alternative would be predominantly borne by these populations. However, when off-setting benefits from the project and proposed mitigation are considered, these impacts would not be disproportionately high and adverse.

3.6.4 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative):

- All property acquisition and relocation will comply fully with federal and state requirements, including the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), as described in **Section 3.4 Right-of-Way and Relocations**.
- To address the potential relocation of jobs along the project corridor, relocation areas for businesses serving the City and region will be identified. The *Pueblo Regional Development Plan* (Pueblo Area Council of Governments [PACOG], 2002); the *Central Pueblo Framework Plan* (PACOG, 2005); and the *Pueblo Expanded Urban Renewal Project* (Urban Renewal Authority of Pueblo, 2008) generally identify locations for employment-related land uses along the corridor. Efforts will be made to relocate displaced businesses within the City limits in order to maintain employment and tax revenues to the City.
- The mitigation plan for Mineral Palace Park is described in detail **in Section 3.3 Parks and Recreation** and **Chapter 4 – Section 4(f) Evaluation**.
- Mitigation measures to enhance the aesthetics of the project elements will be implemented as identified in the March 2010 Memorandum of Understanding between the City of Pueblo and CDOT (see **Appendix F**).
- Noise walls are proposed throughout the project corridor to reduce noise impacts to residences and recreational resources. Details are provided in **Section 3.5 Noise**.
- During construction, signage and detours will be set in place to direct traffic to businesses impacted by temporary or permanent access changes.
- CDOT will provide advance notice to emergency service providers, schools, the community, and residents regarding road delays, access, and special construction activities.
- CDOT will make a public information plan available throughout construction. This plan and any information on construction activities and detours will be provided in both English and Spanish.
- CDOT will provide permanent directional signage ahead of the 13th Street exit, 6th Street slip ramp, and Santa Fe Drive interchange to indicate to motorists how best to access the Santa Fe Avenue business district.
- For the Existing I-25 Alternative, CDOT will mitigate impacts to Benedict Park by expanding Benedict Park south of the existing park. The mitigation for Benedict

Park under the Existing I-25 Alternative is discussed in detail in **Section 3.3 Parks and Recreation** and **Chapter 4 – Section 4(f) Evaluation**.

- For the Modified I-25 Alternative (Preferred Alternative), CDOT will construct a new Benedict Park south of the existing park location between Mesa Avenue and Northern Avenue. The new park would be a minimum of 3.93 acres to a maximum of 4.30 acres in size (2.01 acres to 2.38 acres larger than the existing park). The range in size reflects ongoing efforts to refine the design to avoid impacts to residential parcels south of Mesa Avenue. The mitigation for Benedict Park under the Modified I-25 Alternative (Preferred Alternative) is discussed in detail in **Section 3.3 Parks and Recreation** and **Chapter 4 – Section 4(f) Evaluation**.

During final design, CDOT will consider the following opportunities to minimize impacts to Eiler Heights:

- Options for redesign of structural walls that support the northbound ramp between Northern Avenue and Mesa Avenue.
- A lower design speed for Mesa Avenue. This would require the City of Pueblo to grant a variance from City design standards.
- A Value Engineering study to identify ways to reduce impacts throughout the corridor.

CDOT will continue to involve the community in the design of the new Benedict Park, including discussions regarding the potential relocation of the steel mill stacks. For more information regarding the relocation of the steel mill stacks, see **Section 3.2 Historic Properties**.

3.7 WETLANDS

As stated in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (1987), wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." Wetlands serve a number of important ecological functions. They help maintain water quality by slowly filtering excess nutrients, sediments, and pollutants before water seeps into other surface water or groundwater. Wetlands also help to absorb fast-flowing stormwater to aid in flood prevention and offer a breeding ground and/or habitat for fish, wildlife, and plants.

Presidential Executive Order (EO) 11990, "Protection of Wetlands," requires federal agencies to avoid (to the extent practicable) both long-term and short-term adverse impacts associated with the destruction or modification of wetlands. More specifically, EO 11990 directs federal agencies to avoid construction in wetlands unless there is no reasonable alternative and states that where wetlands cannot be avoided, the proposed action must include all practicable measures to minimize impacts to wetlands.

Wetlands are also regulated by the USACE under Section 404 of the Clean Water Act (CWA). Section 404 requires that impacts to wetlands be avoided or minimized to the extent practicable during construction projects and requires that CDOT obtain a permit from the USACE before filling or dredging can occur in jurisdictional wetlands. Section 404 also requires that unavoidable impacts to wetlands be minimized and mitigated through restoration or creation of additional wetland acreage. Jurisdictional wetlands are those regulated by the USACE under Section 404 of the CWA, whereas non-jurisdictional wetlands are not regulated by the USACE but must still be identified and mitigated for if impacted, in accordance with CDOT's *Project Development Manual* (2001). Based on EO 11990, CDOT's wetland policy emphasizes a "no net loss" of wetland resources and requires mitigation for all unavoidable impacts to wetlands, regardless of jurisdictional status.

In addition, wetlands are provided protection under Colorado Senate Bill (SB) 40 (33-5-101-107, Colorado Revised Statutes [CRS] 1973). The SB 40 clearance is administered by the Colorado Parks and Wildlife (CPW) and is required when a project may impact any stream, river, lake, or riparian habitat. (A riparian zone is the interface between land and a stream, river, or lake.) To maintain compliance with SB 40, a transportation project must demonstrate that measures have been taken to lessen or avoid impacts to protected waters, wetlands, and riparian habitat. The Arkansas River and Fountain Creek, as well as adjacent wetlands and riparian habitat, are located within the project corridor and may potentially be impacted by the project.

3.7.1 Affected Environment

Existing data and field surveys were used to characterize potential wetland areas within the project area. A field survey of the project area was conducted in 2003 to verify the presence or absence of potential wetland areas located with the project area. Wetlands in the study area were identified and boundaries were delineated using the procedures in the *USACE Wetlands Delineation Manual* (USACE, 1987).

A total of seven wetland areas (labeled WL-1 through WL-4, and WL-5a, 5b, and 5c) and three waters of the U.S., as defined under Section 404 of the CWA (the Arkansas River, Fountain Creek, and Runyon Lake), were identified during the field survey, as shown in **Exhibit 3.7-1**. The USACE issued a preliminary jurisdictional determination in a letter dated January 26, 2012, following a field visit with the CDOT project team. Six of the seven identified wetland areas and the three waters of the U.S. were determined to be jurisdictional; WL-1 was determined to be non-jurisdictional.

In May 2010, CDOT staff conducted a Functional Assessment of Colorado Wetlands (FACWet) analysis of wetlands in the study area, resulting in a Functional Capacity Index (FCI) score for each wetland. FCI provides a comparison of how an individual wetland performs compared to others of its type. A score of 1 is optimal functional capacity, and a score of 0 is no functional capacity.

EXHIBIT 3.7-1
Wetlands and Waters of the U.S. within Project Area

Wetland and Open Water Areas	Jurisdictional Determination	Cowardin Classification System[1]	Acreage within Project Area
WL-1	Non-jurisdictional	PEM/PFO	4.04
WL-2	Jurisdictional	PEM/PFO	1.06
WL-3	Jurisdictional	PSS/PFO	0.39
WL-4	Jurisdictional	PEM	0.10
WL-5a	Jurisdictional	PSS/PFO	1.80
WL-5b	Jurisdictional	PEM/PFO	4.35
WL-5c	Jurisdictional	PEM	2.11
Arkansas River	Jurisdictional	Riverine	9.06
Fountain Creek	Jurisdictional	Riverine	25.76
Runyon Lake	Jurisdictional	Riverine	2.42

Source: CH2M HILL, 2010e.

[1] The wetland areas were categorized using the Cowardin Classification System as follows (Cowardin, et. al, 1979):

Palustrine Emergent (PEM): Characterized by erect, rooted, herbaceous hydrophytes (water-loving plants), excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. All water regimes are included except subtidal and irregularly exposed.

Palustrine Scrub Shrub (PSS): Includes wetland areas dominated by woody vegetation less than 20 feet tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. All water regimes except subtidal are included.

Palustrine Forested (PFO): Similar to the PSS Classification; however, the PFO Classification is characterized by woody vegetation that is 20 feet tall or taller.

Riverine: Includes all wetlands and deepwater habitats contained within a channel with the exception of wetlands dominated by trees, shrubs, persistent emergents, and emergent mosses or lichens, as well as habitats with water containing ocean-derived salts in excess of 0.5 percent.

Although wetland area WL-2 was determined to be functioning impaired in terms of habitat connectivity and buffer capacity, it received a composite FCI score of 0.82. This relatively high score was due to the fact that this wetland is still highly functioning in terms of water storage, nutrient/toxicant removal, flood attenuation, and supporting aquatic habitat. Weed species constituted a minor portion of the wetland vegetation. Other wetlands within the study area were assessed with scores roughly equal to that of WL-2 or lower. Vegetation in other wetland areas included native species with a minor to moderate mixture of noxious weeds, exotic or invasive species, and cattails.

The wetland areas are primarily concentrated along the Arkansas River and Fountain Creek corridors. In addition to providing flood attenuation during periods of high water, the wetlands provide nesting habitat for migratory birds as well as food and habitat for other wildlife common to the area. Because the majority of wetlands in the project corridor are located in the low-lying areas adjacent to the Arkansas River and Fountain Creek, they have largely been avoided by roads. **Exhibits 3.7-2 through 3.7-5** illustrate the location of the seven wetland areas throughout the corridor.

A Wetland Finding has been prepared as part of the New Pueblo Freeway FEIS and is included in **Appendix D**. The Wetland Finding contains detailed descriptions of the specific wetland areas identified within the project area. This section presents relevant information from the Wetland Finding report related to project impacts. Detailed discussions of the proposed mitigation and a list of avoidance and minimization measures are included in the Wetland Finding in **Appendix D**.

EXHIBIT 3.7-2
Wetlands in the North Area (Phase 1)

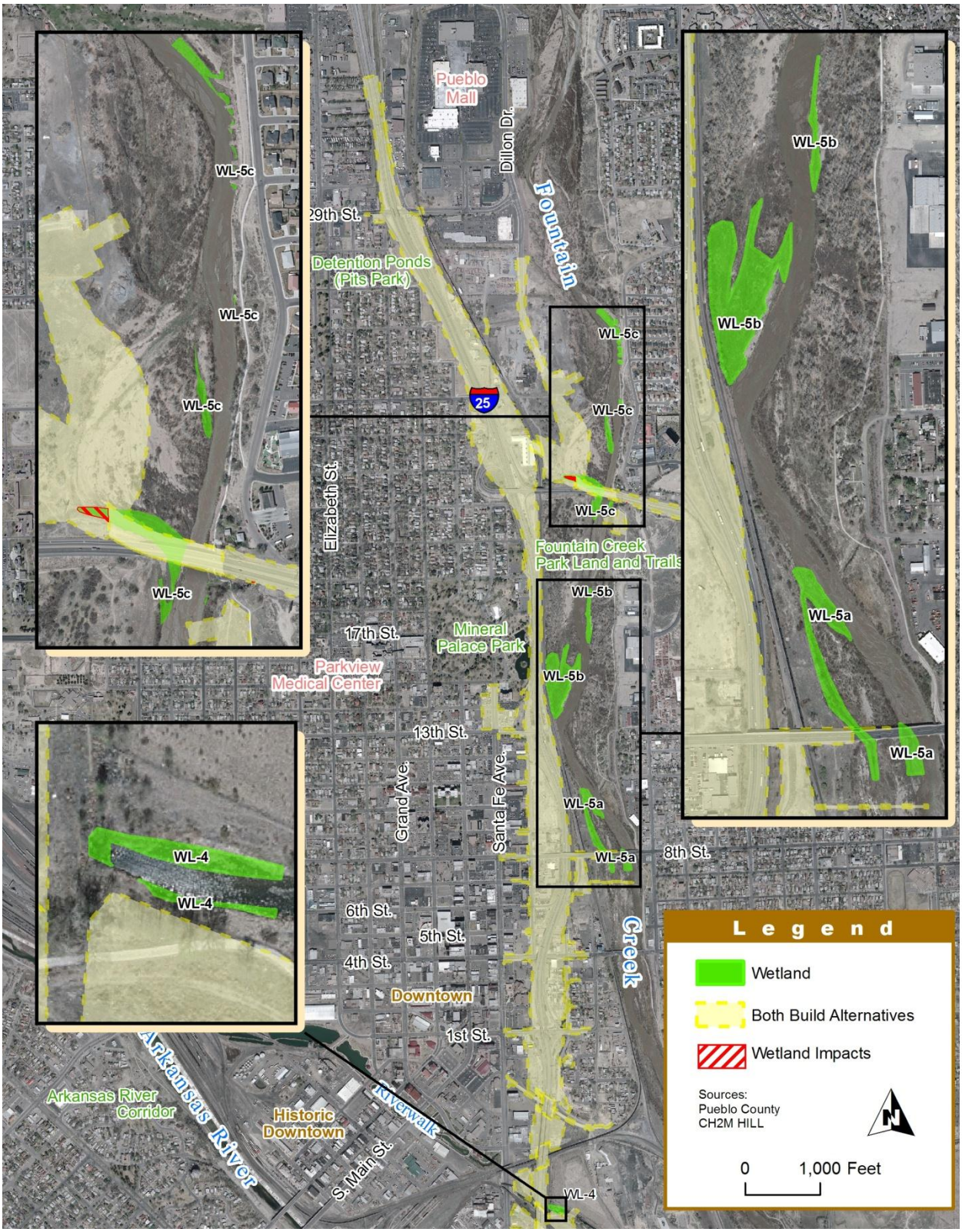


EXHIBIT 3.7-3
Wetlands in the South Area (Phase 2)

EXHIBIT 3.7-4
Wetlands in the Central Area (Phase 2) – Existing I-25 Alternative

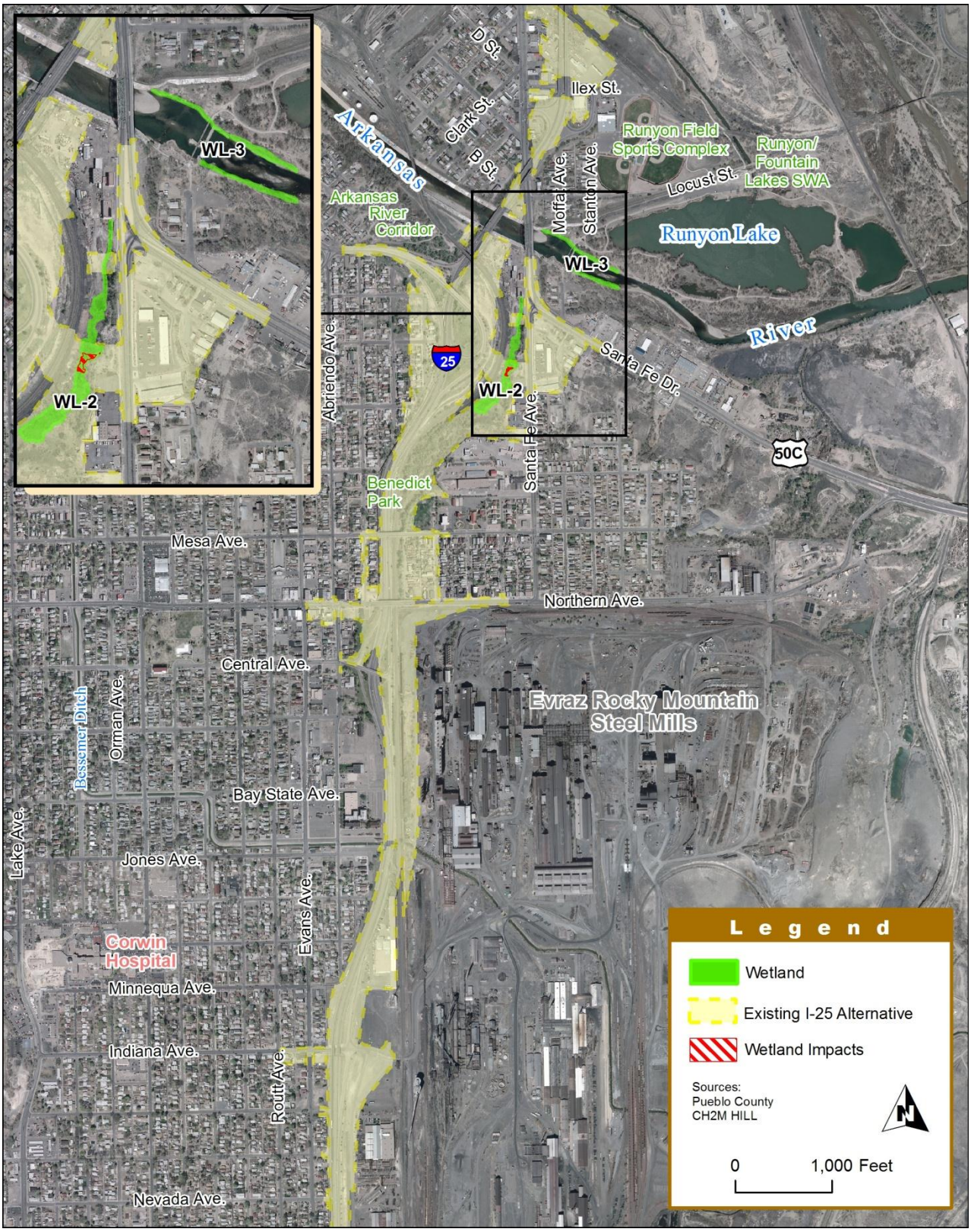
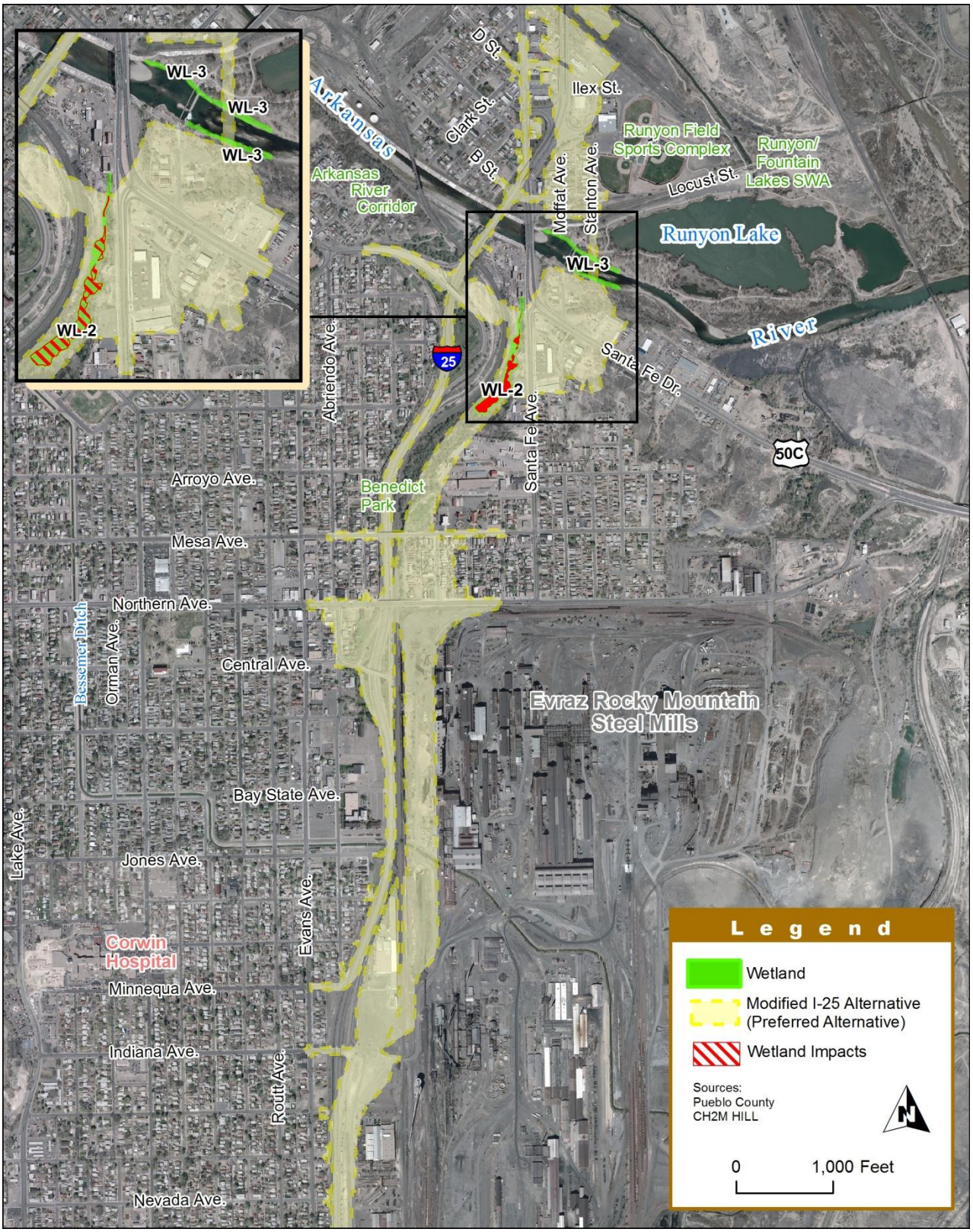


EXHIBIT 3.7-5
Wetlands in the Central Area (Phase 2) – Modified I-25 Alternative (Preferred Alternative)



3.7.2 Environmental Consequences

3.7.2.1 No Action Alternative

No wetlands or waters of the U.S. would be directly impacted under the No Action Alternative. However, it is expected that wetlands in the project area that are currently affected by the influx of pollutants contained in highway runoff (such as, sands, deicing salts, and contaminants from vehicles) would continue to degrade over time.

3.7.2.2 Build Alternatives

North Area (Phase 1)

As shown in **Exhibit 3.7-2**, wetland impacts in the North Area (Phase 1) would be limited to WL-5c, which is part of a larger complex of fringe wetlands located along Fountain Creek. Specifically, as shown in **Exhibit 3.7-6**, 0.13 acre of WL-5c would be impacted by construction activities associated with the extension of Dillon Drive near US 50B.

South Area (Phase 2)

As shown in **Exhibit 3.7-3**, wetland impacts in the South Area (Phase 2) would be limited to WL-1, a detention pond. WL-1 would be impacted because the Greenhorn Drive extension requires placement of a box culvert in the drainage ditch that extends south out of WL-1, resulting in the loss of 0.02 acre of the total 4.04-acre wetland (see **Exhibit 3.7-7**). An existing box culvert is already in place at the north crossing. The remainder of the wetland would not be impacted as the main portion of the wetland located northeast of the interchange would be avoided.

Central Area (Phase 2)

Existing I-25 Alternative

As shown in **Exhibit 3.7-4** and **Exhibit 3.7-8**, a total of 0.07 acre of wetland impacts would occur in the Central Area (Phase 2) under the Existing I-25 Alternative. Wetland impacts would be limited to WL-2, which would be fragmented and divided in half. Impacts would occur due to the extension of Abriendo Avenue to connect to Santa Fe Drive east of I-25. The single bridge pier currently in place at the Arkansas River crossing would be removed and replaced; however, the new pier would be placed in the same locations as the existing pier and designed to occupy a slightly smaller footprint. In addition, the bridge on Santa Fe would be widened, and the existing pier would be extended. As a result, there would be no net increase in impact acreage to the Arkansas River.

Modified I-25 Alternative (Preferred Alternative)

As shown in **Exhibit 3.7-5** and **Exhibit 3.7-9**, a total of 0.95 acre of unavoidable impacts to wetlands would occur in the Central Area (Phase 2) under the Modified I-25 Alternative (Preferred Alternative). These impacts would include 0.93 acre of wetland impacts to WL-2 and 0.02 acre of open water impacts to the Arkansas River. The Modified I-25 Alternative (Preferred Alternative) would almost entirely remove WL-2 to accommodate the bridge abutments over Abriendo Avenue on the realigned I-25. Impacts to the Arkansas River would occur due to the placement of eighteen new bridge piers in the Arkansas River to support the bridges for I-25, two ramps, and the extension of Stanton Avenue. The existing bridge piers that carry I-25 would remain within the Arkansas River to carry the repurposed Santa Fe Avenue. The old Santa Fe/US 50B Bridge over the Arkansas River would be removed, which would remove one existing pier from the Arkansas River.

3.7.2.3 Indirect Effects

No Action Alternative

Increased traffic and congestion on I-25 might increase pollutants in the untreated runoff that makes its way to wetlands, Fountain Creek, and the Arkansas River. However, commercial and industrial buildings surrounding the existing bridges have already heavily disturbed and fragmented the area.

Build Alternatives

Indirect impacts related to the Build Alternatives might include hydrological changes such as the alteration of surface drainage patterns, water quality, and quantity; the modification of groundwater levels and quantities; and the reduction or elimination of upland tree or shrub buffers between the proposed roadway and wetlands or non-wetland waters. Other indirect impacts might include soil erosion, water runoff, and dust, which may promote degradation of wetland vegetation and introduce noxious weeds.

EXHIBIT 3.7-6
North Area (Phase 1) Wetland Impacts

Wetland Area	Acreage within Project Area	Impacted Area (acres)
WL-5c	2.11	0.13
Total Impacted Area	-	0.13

Source: CH2M HILL, 2010e.

EXHIBIT 3.7-7
South Area (Phase 2) Wetland Impacts

Wetland Area	Acreage within Project Area	Impacted Area (acres)
WL-1 (non-jurisdictional)	4.04	0.02
Total Impacted Area	-	0.02

Source: CH2M HILL, 2010e.

EXHIBIT 3.7-8
Central Area (Phase 2) Wetland Impacts – Existing I-25 Alternative

Wetland Area	Acreage within Project Area	Impacted Area (acres)
WL-2	1.06	0.07
Total Impacted Area	-	0.07

Source: CH2M HILL, 2010e.

EXHIBIT 3.7-9
Central Area (Phase 2) Wetland and Open Water Impacts – Modified I-25 Alternative (Preferred Alternative)

Wetland Area	Acreage within Project Area	Impacted Area (acres)
WL-2	1.06	0.93
Arkansas River	9.06	0.02
Total Impacted Area	-	0.95

Source: CH2M HILL, 2010e.

3.7.3 Mitigation

To the extent practicable, impacts to wetlands were avoided as part of the alternatives development process as described in the Wetland Finding report (see **Appendix D**). However, complete avoidance of the wetlands areas was not possible due to the developed nature of the project area and the limited options for realignment.

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative).

- Once funding for construction of the project is identified, wetland boundaries will be re-evaluated to determine the need for additional delineations to confirm wetland boundaries.
- CDOT will obtain the appropriate Section 404 permit from the USACE under Section 404 of the CWA prior to construction. The policy of CDOT is to replace all

wetlands on a one-for-one basis. A wetland mitigation plan will be prepared as part of the Section 404 permitting process to mitigate for unavoidable impacts to area wetlands and waters of the U.S. While there are several potential mitigation locations within the study area, CDOT and FHWA will work with USACE staff to identify the best mitigation location and concept to replace the values of the impacted wetlands.

- CDOT will coordinate potential wetland mitigation locations with CPW and will provide CPW with the Section 404 permit for review.
- Additional mitigation measures that were identified by the USACE during a 2006 field visit include:
  - Place tree cuttings at the trailhead near the mouth of Fountain Creek.
  - Place tree cuttings along Fountain Creek at SH 47.
  - Place tree plantings near the Eagle Ridge interchange project, located north of the New Pueblo Freeway Project on I-25.
- Following final design, CDOT will apply for an SB 40 Wildlife Certification if the project does not fall within CDOT's Programmatic Agreement with the CPW, including detailed plans and specifications. The CPW will review the plans to make sure they are technically adequate to protect and preserve fish and wildlife species and will provide recommendations or alternative plans if the project would adversely affect riparian areas along the Arkansas River or Fountain Creek.
- Best Management Practices (BMPs) will be used to control erosion and sedimentation during construction. In addition to construction BMPs, temporary impacts due to construction activities will be managed and minimized by the following actions:
  - Construction impact boundaries will be clearly marked. Wetlands outside the authorized temporary impact areas will be clearly marked and fenced (orange and silt fencing) to prevent disturbance during construction.
  - Excavated materials will be removed to a stabilized upland site to prevent erosion back into the wetland areas.
  - Onsite storage of hazardous construction materials including fuels and oils will be located away from wetland and riparian areas to minimize the potential for spills or leaching into aquatic habitats.
  - Compliance inspections during construction are recommended to ensure adherence to BMPs, including erosion and sedimentation controls, and minimization of construction impacts.
  - All areas temporarily disturbed by construction activities will be restored and revegetated.
  - All salt cedar and Russian olive within the construction area will be removed.

3.7.4 Least Environmentally Damaging Practicable Alternative

The primary difference between the two Build Alternatives is that the Modified I-25 Alternative (Preferred Alternative) would result in a greater area of WL-2 being impacted due to the realignment of I-25. Impacts to the Arkansas River under the Modified I-25 Alternative (Preferred Alternative) would also be greater due to the increased number of bridge piers required to span the Arkansas River compared to the Existing I-25 Alternative. Impacts to WL-1 and WL-5c would be the same under both alternatives, and only a small amount of both wetlands would be affected. Total wetland impacts differ by less than 1 acre, with the Modified I-25 Alternative (Preferred Alternative) impacting 0.88 acre more wetlands than the Existing I-25 Alternative. Based on a 2010 FACWet study conducted by CDOT, WL-2 (which is impacted more by the Modified I-25 Alternative (Preferred Alternative) than by the Existing I-25 Alternative) is a highly functioning wetland, with several functional values determined to be impaired. Impacts to waters of the U.S. are nearly equal between the alternatives, with the Modified I-25 Alternative (Preferred Alternative) impacting just 0.02 acre of the Arkansas River. The impact would be greater due to the increased number of bridge piers required to span the Arkansas River.

The wetland resources impacted by the Build Alternatives are unavoidable. An alternative must be considered the Least Environmentally Damaging Practicable Alternative (LEDPA) to be permitted under the Clean Water Act. Although the Existing I-25 Alternative has the least adverse effect on the aquatic environment, the Modified I-25 Alternative (Preferred Alternative) (with the proposed mitigation) appears to cause the least overall harm to

Section 4(f) properties, as described in **Chapter 4 –Section 4(f) Evaluation**. The selection of the Existing I-25 Alternative as the LEDPA would cause non-compliance with Section 4(f) legislation and thus is not considered practicable. Therefore, FHWA and CDOT have identified the Modified I-25 Alternative (Preferred Alternative) as the LEDPA for detailed evaluation, and this was concurred upon by the USACE in December 2010. This coordination is documented in **Appendix B**.

3.8 LAND USE

This section discusses existing and future planned land uses in the I-25 corridor and the local planning documents that are relevant to the study area. Potential land use impacts from the Build Alternatives were analyzed for compatibility with existing and future planned land use and for consistency with local plans and policies.

3.8.1 Existing Land Use

Land use adjacent to I-25 was identified through the Pueblo County Assessor's parcel database, aerial photography, and field observations.

Land use along the I-25 corridor is stable and reflects the fact that the project is located in the earliest-established sections of the City, including the original areas incorporated in 1870 and the Bessemer Company Town incorporated in 1886. Most of the urban area in the I-25 corridor was developed before 1948 and predates the highway, although some of the neighborhoods at the northern and southern project limits were developed in the 1950s and 1960s.

The I-25 corridor contains a mix of uses typical of an established city the age of Pueblo, including residential neighborhoods, commercial businesses, financial and governmental centers, industrial sites, developed and undeveloped parks and open spaces, and undeveloped vacant lands. As shown in **Exhibit 3.8-1**, the majority of land use in the project area is residential. Further, almost 50 percent of the project area is made up of residential and industrial uses.

Of the land that is publicly-owned, the City and County own 80 percent, mostly for parks and open spaces. Other public land owners are the State of Colorado, the local school district, and religious and charitable organizations.

Existing land uses complement historical development patterns and physical land use constraints. Land adjacent to the rail tracks has been used as industrial sites and transfer points from rail to truck. The residential Bessemer Neighborhood adjacent to the historic Colorado Fuel & Iron (CF&I) plant, originally developed for employees of the plant, remains a cohesive neighborhood. The downtown area reflects activities associated with being the financial and governmental center of the region. The floodplains of the Arkansas River and Fountain Creek are used primarily for recreation, open space, and wildlife habitat and are restricted from development because of flooding concerns and dedicated recreation uses.

EXHIBIT 3.8-1
Existing Land Use in the Corridor Area[1]

Land Use Category	Acres	Percent
Agriculture	25	0.9
Residential	822	28.1
Commercial	349	11.9
City, State, Public	248	8.5
Industrial	615	21.0
Parks and Open Space	390	13.3
Railroad	19	0.6
Undeveloped Vacant	460	15.7
TOTAL	**2,928**	

Source: CH2M HILL, 2010f; Pueblo County Assessor's Office, 2004.

[1] Boundaries of corridor area used to determine the land use acreage are shown in **Exhibits 3.8-2 through 3.8-4**.

When I-25 was originally constructed in the 1950s, it was not compatible with adjacent land uses in the corridor. The highway divided some neighborhoods and closed local roads that once connected these neighborhoods to community services such as the local grocery store or church; however, over the last 50 years, adjacent land uses have evolved to accommodate the division. **Exhibits 3.8-2 through 3.8-5** illustrate the existing land use patterns in the corridor.

3.8.1.1 Local Plans and Policies

This section provides information about the following local plans and policies that are relevant to the New Pueblo Freeway project:

- *Pueblo Regional Development Plan: Pueblo's Comprehensive Plan (Pueblo Comprehensive Plan)* (Pueblo Area council of Governments [PACOG], 2002)
- *Pueblo Area 2035 Long-Range Transportation Plan (Pueblo Regional Transportation Plan)* (PACOG, 2008)
- *Pueblo Roadway Corridor Right-of-Way Preservation Plan* (PACOG, 2000)
- The Historic Arkansas Riverwalk of Pueblo (HARP) development plan
- *Central Pueblo Framework Plan* (PACOG, 2005)

Pueblo Comprehensive Plan

The *Pueblo Comprehensive Plan* was adopted by the Pueblo County Planning Commission, the Board of Pueblo County Commissioners, the Pueblo City Council, and PACOG in 2002 and amended in 2007, 2008, and 2011. The *Pueblo Comprehensive Plan* has a planning horizon of 2030 and was developed by PACOG to assist the region in accommodating the estimated future population of 200,000 people. The overall vision of the *Pueblo Comprehensive Plan* includes the following goals that are relevant to this project (PACOG, 2002):

- Maintain a strong and diverse job market and viable downtown.
- Maintain the character of Pueblo and preserve its natural setting and natural history while allowing for economic growth.
- Maintain the City's natural beauty, while still allowing reasonable and rational growth.
- Retain the intimate rural setting through thoughtful planning.
- Continue to preserve open space and agricultural land.
- Develop a well-planned and attractive community, particularly in the older areas.
- Provide recreational facilities that meet the full lifecycle of all citizens.
- Provide pedestrian trails and bikeways or greenways to connect neighborhoods.
- Plan thoughtfully and maintain infrastructure and public services.
- Build an efficient multi-modal transportation system that serves all citizens.
- Create strong, interconnected neighborhoods with all services and activities.

As noted within the *Pueblo Comprehensive Plan*, PACOG conducted a number of public meetings while developing the plan (PACOG, 2002). Citizens raised many concerns related to transportation and land use, including the lack of cross-town access and street connectivity in the region, traffic congestion, lack of pedestrian-friendly transportation systems, and the impact of traffic and roads on neighborhoods.

Pueblo Regional Transportation Plan

The *Pueblo Regional Transportation Plan* was produced by PACOG in January 2008 and amended in April 2011 (PACOG, 2008). This document serves as the 2035 regional transportation plan for the Pueblo area. The *Pueblo Regional Transportation Plan* consists of two primary sections, the Preferred Plan and the Fiscally Constrained Plan. The Preferred Plan identifies long-range improvements needed for the transportation network in the Pueblo region, without regard to available funding. The Fiscally Constrained Plan must include only those projects that can be funded with available funds from state and federal sources. PACOG is preparing an amendment to the Fiscally Constrained Plan that will identify between $300 and $315 million for New Pueblo Freeway project improvements. **Chapter 5 – Phased Project Implementation** provides additional information on the funding sources available for this project.

EXHIBIT 3.8-2
Existing Land Use Patterns in the North Area (Phase 1)

EXHIBIT 3.8-3
Existing Land Use Patterns in the South Area (Phase 2)

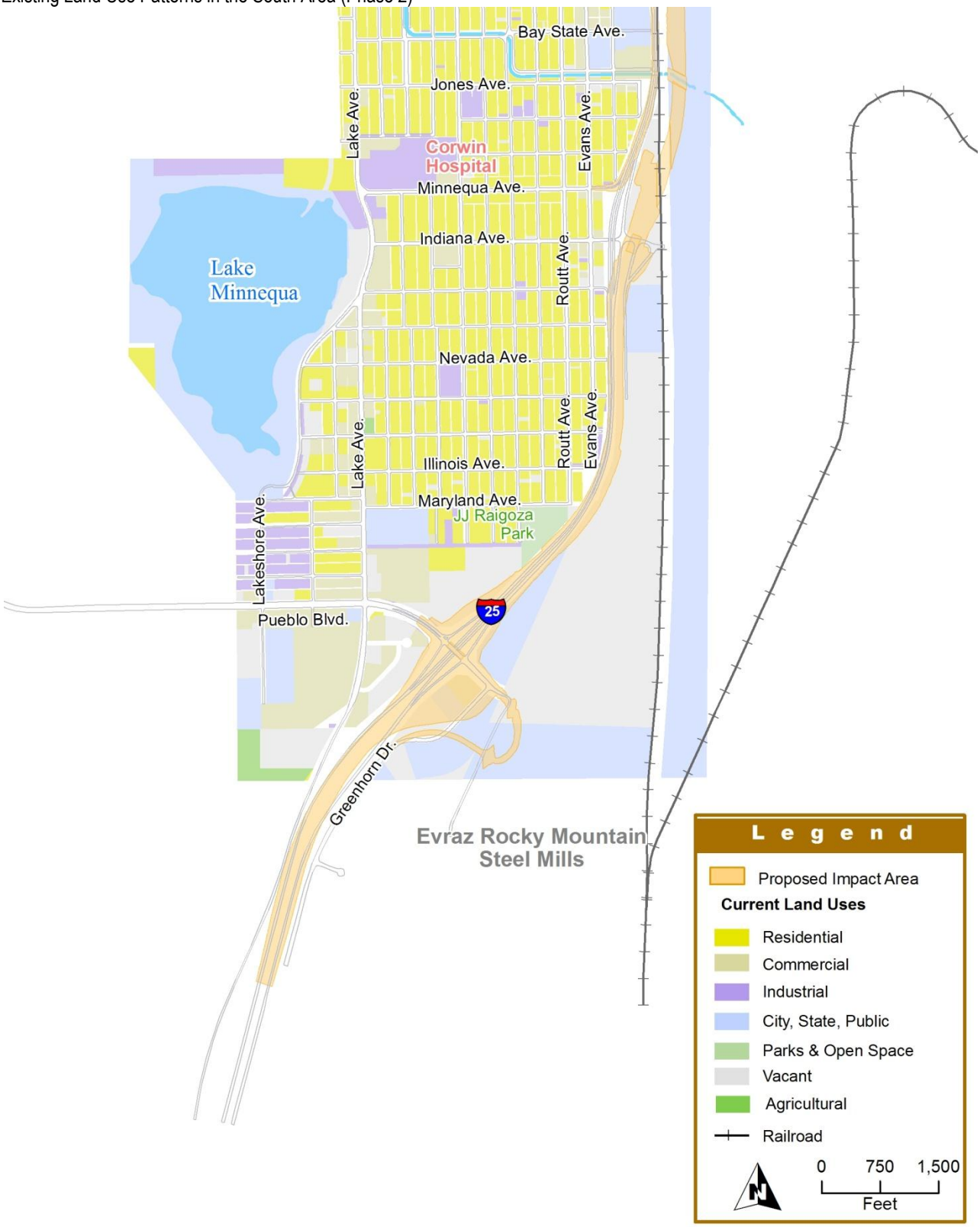
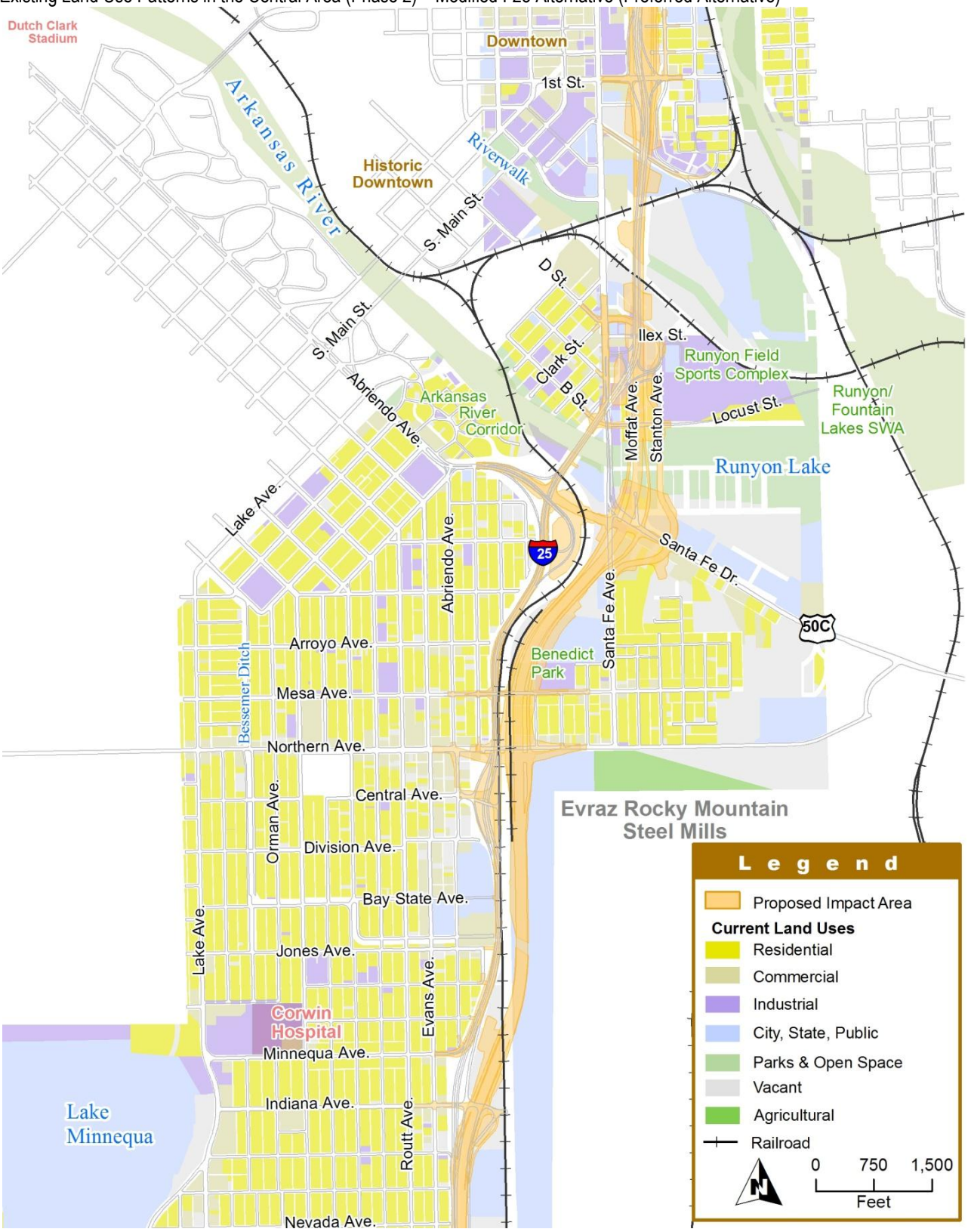


EXHIBIT 3.8-4
Existing Land Use Patterns in the Central Area (Phase 2) – Existing I-25 Alternative

EXHIBIT 3.8-5
Existing Land Use Patterns in the Central Area (Phase 2) – Modified I-25 Alternative (Preferred Alternative)



Pueblo Roadway Corridor Preservation Right-of-Way Plan

The PACOG Board adopted the *Pueblo Roadway Corridor Right-of-Way Preservation Plan* in December 2000 (PACOG, 2000). This plan provides for right-of-way (ROW) preservation along major transportation corridors. A north-south corridor to the east of I-25 is identified for corridor preservation to connect Dillon Drive to SH 227. There is no additional ROW identified for preservation along I-25.

The Historic Arkansas Riverwalk of Pueblo

The HARP development plan identifies the phased planned extension of the Riverwalk to the east. The multiple development phases include extending the waterway channel, known as the HARP Grand Canal, underneath I-25 to connect to the Runyon/Fountain Lakes State Wildlife Area. The development plan also proposes regional attractions, including a professional bull-riding sports complex and aquatics center.

Central Pueblo Framework Plan

The *Central Pueblo Framework Plan* (PACOG, 2005) serves as the primary document to guide development of the lower downtown area of Pueblo. The plan establishes three districts:

- **The Commercial District –** generally considered to be the area north of 1st Street and west of Santa Fe Avenue.
- **The Historic District –** located southwest of the Historic Arkansas Riverwalk of Pueblo.
- **The Civic District –** encompasses the Sangre de Cristo Arts Center and the areas south of 1st Street and west of Santa Fe Avenue. One of the major components of the plan is the importance of 1st Street as a gateway to central Pueblo. The street serves as a point of orientation to visitors and residents, and it is viewed as critical to creating an attractive entry into central Pueblo.

3.8.1.2 Future Land Use

Future land use along the I-25 corridor includes urban residential, arterial commercial, urban mixed use, institutional mixed use, special development area, and institutional mixed use. A special development area is defined by PACOG (2002) as an undeveloped area suitable for open space or Master Plan development scenarios. Several of these areas may be considered under-developed because they currently contain structures on the parcels.

As a developed corridor, future land use patterns along the I-25 corridor (shown in **Exhibits 3.8-6 through 3.8-9**) are expected to remain similar to the existing conditions, except for designated areas of change. Changes to existing land use will result from infill development and conversion of vacant land to commercial, residential, or industrial uses, as identified by the special development areas. The special development areas occur at three distinct locations across the study area (shown in **Exhibits 3.8-6 through 3.8-9**). Development in these areas may have a minor “spill over” effect, serving to spur development to nearby locations.

The urban residential area calls for maintenance of an existing mixture of single-family detached homes, duplexes, and multi-family residences, yet allows for the development of neighborhood-scale commercial services within walking distance of residences. This conserves existing land uses while allowing the modernization of land use patterns where infill opportunities permit. The *Pueblo Comprehensive Plan* (PACOG, 2002) classifies the City (including the I-25 corridor) as a “Developed Urban Area” and describes its future character as mixed-use residential, commercial, and office development, with cultural and governmental facilities within the downtown area. The dominant land use will continue to be medium- to high-density residential consistent with the established patterns of development.

The *Pueblo Comprehensive Plan* estimates that the Pueblo regional population will grow by 60,000 persons (30 percent) by the year 2030 (PACOG, 2002). This corresponds to 73,000 jobs, for a gross land demand of 9,790 acres, and 30,100 residential units, for a gross land demand of 21,270 acres. The City will continue to serve as the major retail, office, and service center for the region (PACOG, 2002).

Land development outside of traditional City boundaries accommodated historic population increases. The recovery period after the flood of 1921 marked a new period of suburbanized development in Pueblo. Additionally, the advent of the automobile as a primary mode of transportation, combined with a use-based zoning code, ultimately reformed the land use patterns. Regionally, land development extending beyond traditional City boundaries broadened the distance between residences and

EXHIBIT 3.8-6
Build Alternatives and Future Planned Land Use in the North Area (Phase 1)

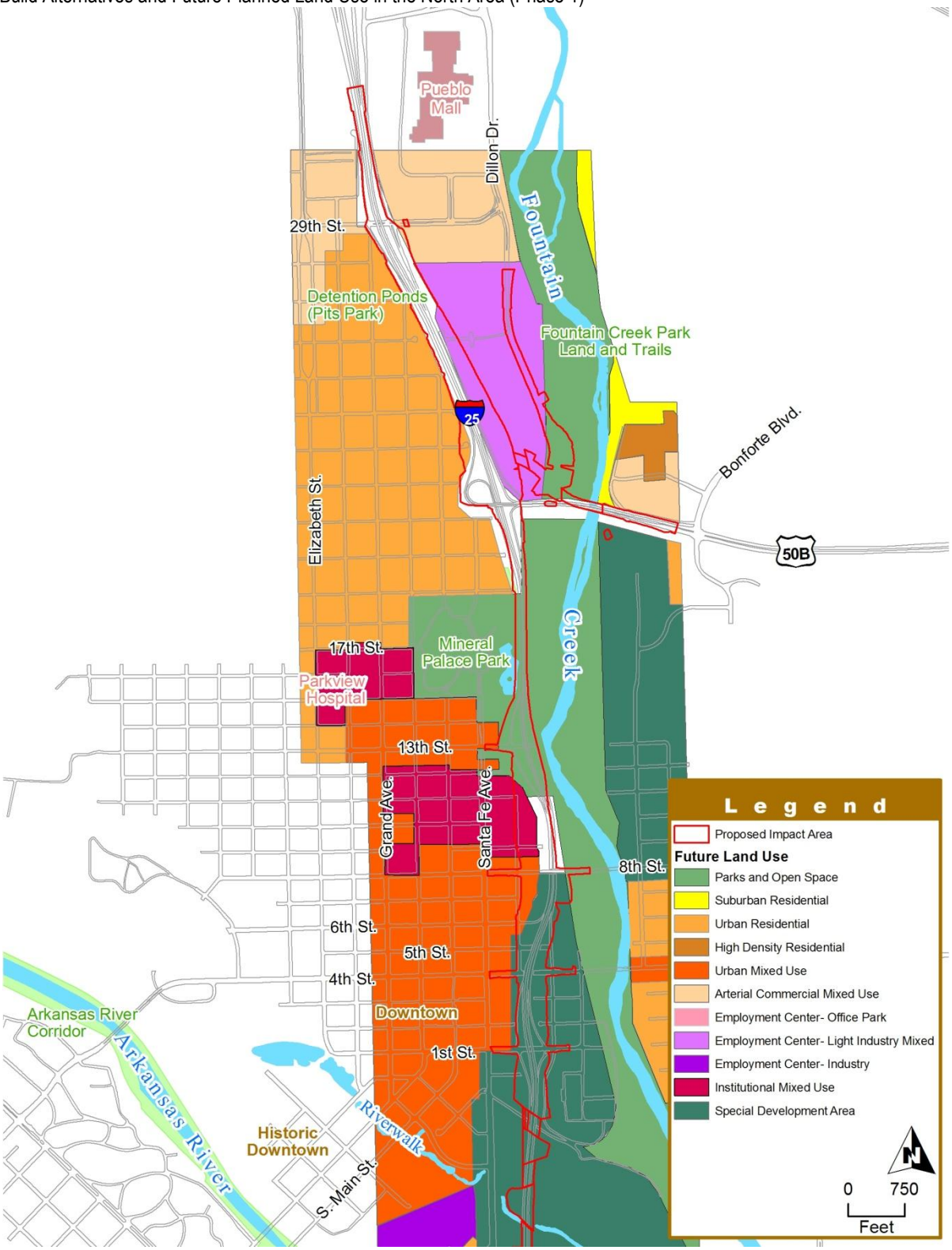


EXHIBIT 3.8-7
Build Alternatives and Future Planned Land Use in the South Area (Phase 2)

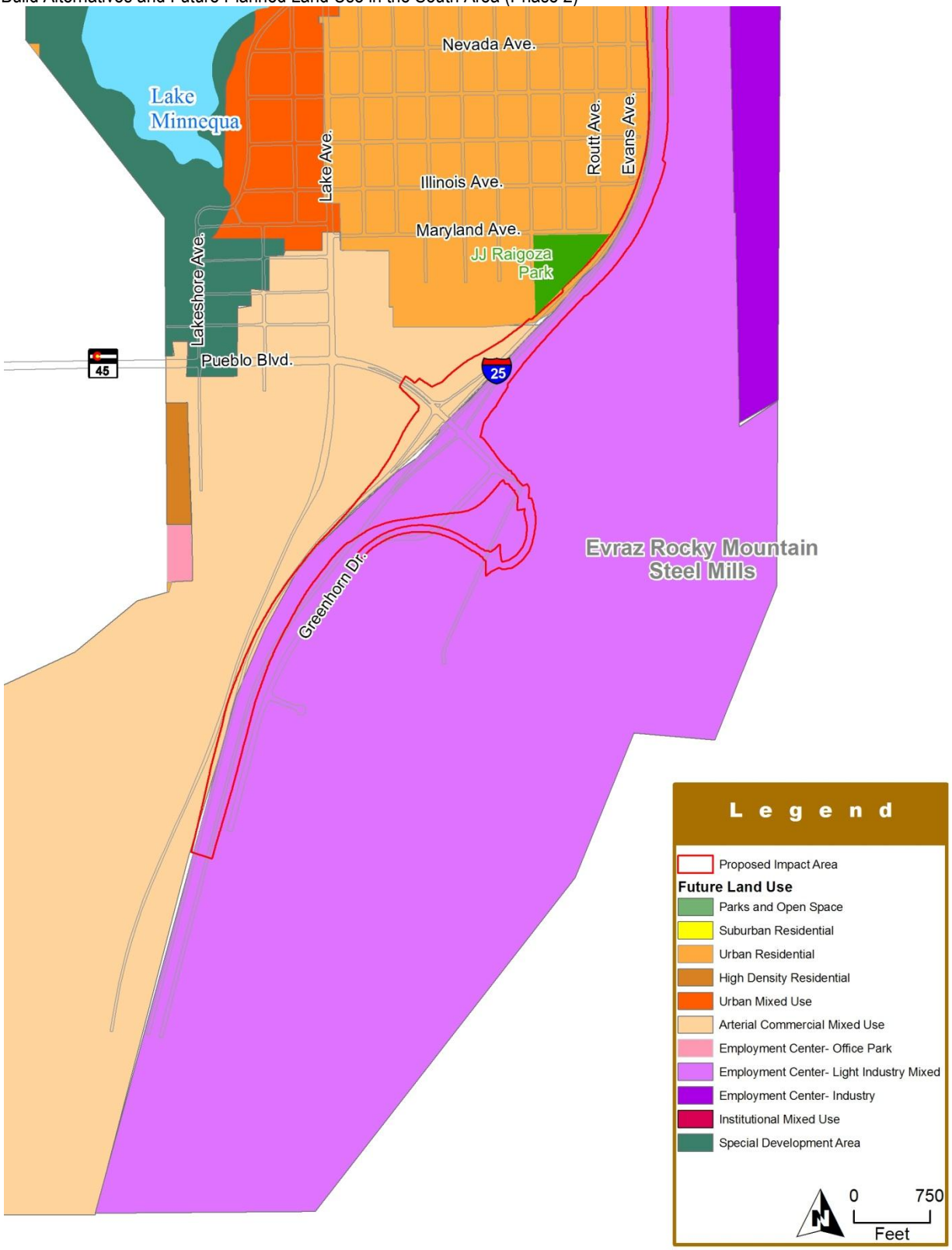


EXHIBIT 3.8-8

Existing I-25 Alternative and Future Planned Land Use in the Central Area (Phase 2)

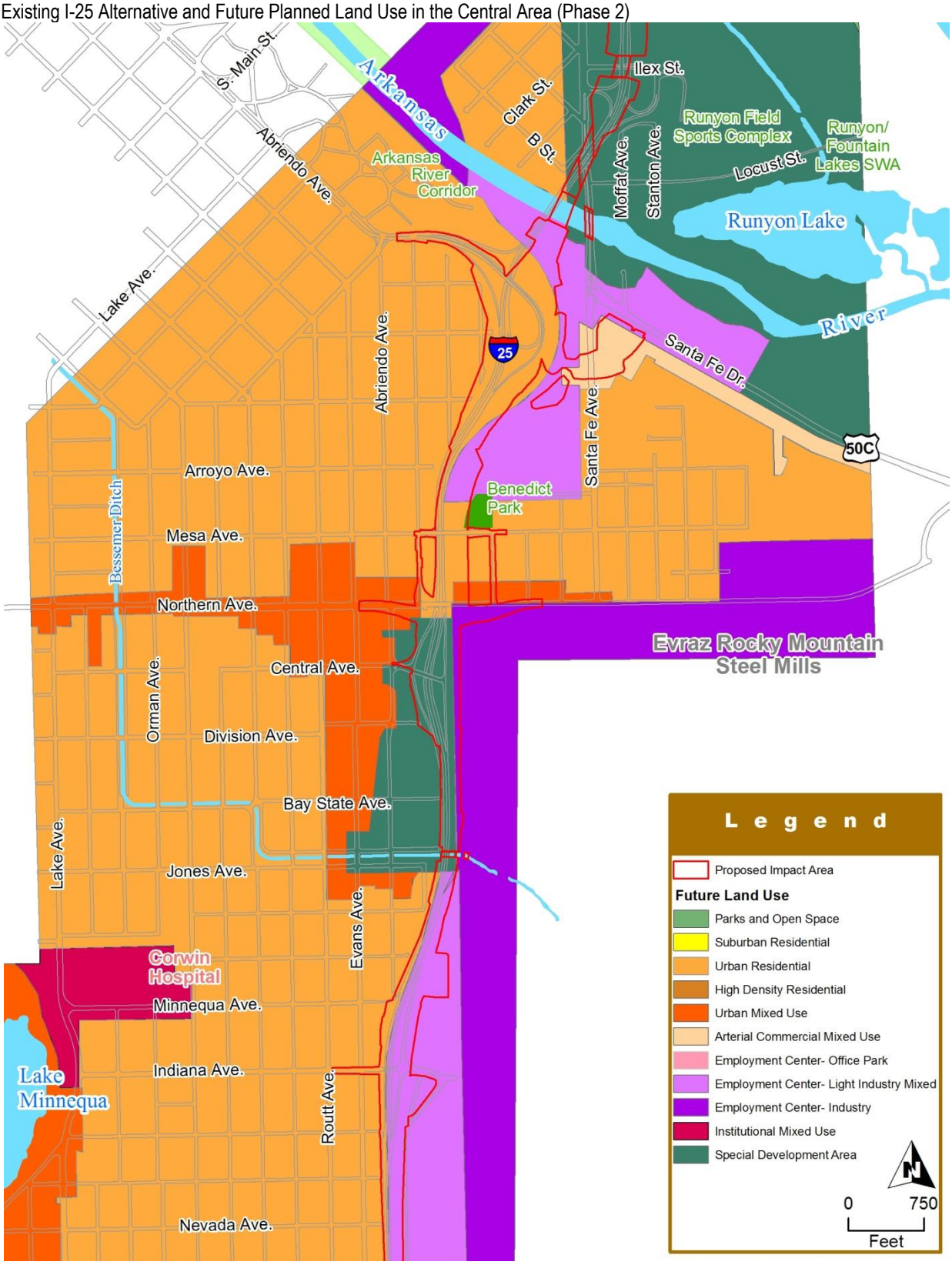
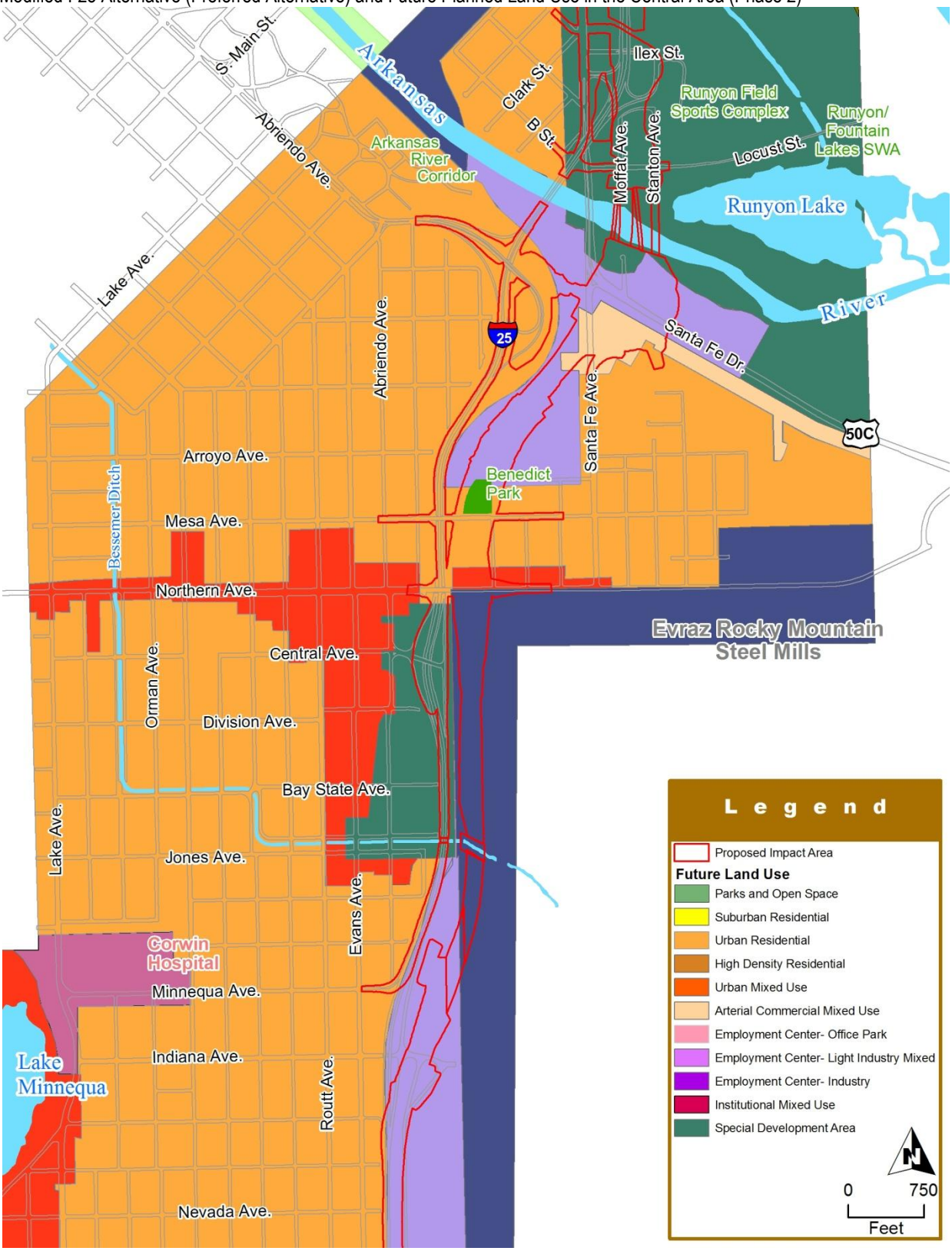


EXHIBIT 3.8-9
Modified I-25 Alternative (Preferred Alternative) and Future Planned Land Use in the Central Area (Phase 2)



employment centers. This suburbanization contributed to increased vehicle miles traveled. Future growth projections depend on development of peripheral lands in unincorporated Pueblo County to accommodate population and employment forecasts.

Further detail of land use in the project area may be found in the *Land Use and Economic Activity Technical Memorandum*, New Pueblo Freeway (CH2M HILL, 2010f).

3.8.2 Environmental Consequences

This portion of the land use analysis assesses the impacts of proposed improvements on land uses in the I-25 corridor, including compatibility with existing and planned future land uses. The alternatives are also analyzed for their consistency with local plans and policies.

3.8.2.1 No Action Alternative

Land Use

Existing land use patterns adjacent to I-25 would remain the same under the No Action Alternative. The No Action Alternative would not preclude the implementation of future planned land uses identified in the *Pueblo Comprehensive Plan* (PACOG, 2002), but due to the developed nature of the corridor, the No Action Alternative would likely have less influence on land use than community controls on growth and land use planning. Changes to existing land use would be privately funded undertakings and would likely occur through redevelopment of underutilized sites and infill development.

Consistency with Local Plans and Policies

The No Action Alternative does not advance the goals of the adopted land use plans, but it does not preclude the implementation of planned future land uses or investments in infrastructure by others. This alternative would not fulfill the goals of reconnecting neighborhoods or providing a more efficient transportation system along I-25; therefore, I-25 would continue to act as a barrier between the east and west sides of Pueblo.

The No Action Alternative would be consistent with the *Pueblo Roadway Corridor Right-of-Way Preservation Plan* (PACOG, 2000) because it would not preclude any future improvements in areas identified for corridor preservation.

The adopted HARP development plan would construct a channel extension under the No Action Alternative designed around the current I-25 alignment.

The *Central Pueblo Framework Plan* (PACOG, 2005) identifies 1st Street as an important gateway into Pueblo. The No Action Alternative would not provide improvements to 1st Street or its interchange with I-25, but it would not preclude landscaping or other design enhancements in this area.

3.8.2.2 Build Alternatives

Each of the Build Alternatives would require land acquisition for proposed improvements. Some land would be acquired and converted from its existing use to a transportation facility. Because the project is located in an already developed urban corridor, it is not anticipated that the project would stimulate the redevelopment of existing land uses that surround the corridor, except in localized occurrences. The proposed improvements could make land available for public or private use in areas where existing CDOT or City transportation facilities would be vacated. The Memorandum of Understanding (MOU) executed between CDOT and the City of Pueblo (March 2010) documents the transfer of any such vacated CDOT land and identifies the land uses for such public parcels (see **Appendix F**). ROW transferred to the City from CDOT or City-vacated ROW could become privately-owned parcels.

Exhibits 3.8-10 and 3.8-11 provide acreages of acquisition by land use for each Build Alternative. Overall, the amount of land required for the Existing I-25 Alternative would total approximately 154 acres and is listed by land use category in **Exhibit 3.8-10**. Overall, the amount of land required for the Modified I-25 Alternative (Preferred Alternative) would total approximately 178 acres and is listed by land use category in **Exhibit 3.8-11**. The percent acquired shows the percentage of land that would be acquired by use within the corridor area; some rounding may occur.

Land acquisition is discussed further under each specific area (North [Phase 1], South [Phase 2], and Central [Phase 2]). Additional information about land acquisitions in the corridor is detailed in **Section 3.4 Right-of-Way and Relocations**.

EXHIBIT 3.8-10
Acquired Parcels by Land Use under the Existing I-25 Alternative[1]

Land Use Category	Acres	Percent of Total Acquired
Agriculture	0	0
Residential	8.50	5.5
Commercial	19.79	12.8
City, State, Public	3.52	2.3
Industrial	45.64	29.6
Parks and Open Space	11.8	7.6
Railroad	0.59	0.4
Undeveloped Vacant	64.47	41.8
TOTAL	**154.31**	

Source: CH2M HILL, 2010f.

[1]Boundaries of corridor area used to determine land use acreage are shown in **Exhibits 3.8-2 through 3.8-5**.

EXHIBIT 3.8-11
Acquired Parcels by Land Use under the Modified I-25 Alternative[1] (Preferred Alternative)

Land Use Category	Acres	Percent of Total Acquired
Agriculture	0	0
Residential	13.82	7.8
Commercial	18.78	10.6
City, State, Public	6.02	3.4
Industrial	56.37	31.7
Parks and Open Space	13.0	7.3
Railroad	0.59	0.3
Undeveloped Vacant	69.09	38.9
TOTAL	**177.67**	

Source: CH2M HILL, 2010f.

[1]Boundaries of corridor area used to determine land use acreage are shown in **Exhibits 3.8-2 through 3.8-5**.

Growth Considerations

Both Build Alternatives would impact future growth in Pueblo as follows:

- The project would not provide additional access to available, undeveloped vacant land. It would improve access to established urban areas.
- Conversion of the built environment to more intensive uses in the I-25 corridor is not likely.
- Improvements to I-25 are not expected to prompt changes in economic, social, or demographic conditions within the City.
- Improvements to interchanges are expected to improve accessibility, especially in the downtown area. Changes to land use may occur on a localized scale, but given the developed nature of the corridor, overwhelming changes to the existing land use pattern are not anticipated.
- I-25 is a mature, existing transportation facility, and improvements are not expected to increase the ability of Pueblo to capture new jobs or households into the regional economy.
- There is no evidence of pressure for development or redevelopment along I-25 through Pueblo that is challenging zoning ordinances or other existing land use controls. Improvements to I-25 are not expected to shape or have a strong influence on existing and future development trends.

North Area (Phase 1)

Land Use. Land use changes due to proposed improvements would not change the overall land use patterns in the North Area (Phase 1) of the corridor. Therefore, the Build Alternatives would be consistent with current land uses (**Exhibit 3.8-2**) and future planned land uses (**Exhibit 3.8-6**).

Improvements that would require additional parcels of land outside of current ROW or that would make new land available where existing transportation facilities would be vacated are discussed below:

- The existing interchange between I-25 and US 50B would be reconfigured from a partial cloverleaf to a split diamond interchange, and one-way frontage roads would be constructed between the interchange and 29th Street. The interchange and frontage roads require more land area adjacent to I-25; land use in this area is manufacturing and light assembly/warehousing. CDOT would vacate some existing ROW at the interchange. This vacated land has been identified as a potential site for a water quality pond.
- Dillon Drive would extend south to US 50B through a sparsely developed area and the Fountain Creek floodplain. The surrounding land use is manufacturing.
- Widening I-25 would require the conversion of some parkland to highway use at Mineral Palace Park and adjacent to Fountain Creek.
- The alignment of the highway would be straightened through downtown, and frontage roads would be added to connect the new split diamond interchange between 13th Street and 1st Street. Land use surrounding the straightened alignment and new frontage roads is primarily undeveloped vacant, with some office, commercial business, and single-family residential uses.

Consistency with Local Plans and Policies. The Build Alternatives would be consistent with the goals of the *Pueblo Comprehensive Plan* (PACOG, 2002).

The extension of Dillon Drive south to US 50B would occur in the corridor currently preserved for this purpose. Therefore, the Build Alternatives would be consistent with the *Pueblo Roadway Corridor Right-of-Way Preservation Plan* (PACOG, 2000).

The *Central Pueblo Framework Plan* (PACOG, 2005) identifies 1st Street as a primary entryway into Pueblo, and implementation of either Build Alternative would allow this gateway to be developed. Therefore, the Build Alternatives would be consistent with the plan.

South Area (Phase 2)

Land Use. Land use changes due to proposed improvements would not change the overall land use patterns in the South Area (Phase 2) of the corridor. Therefore, the Build Alternatives would be consistent with current land uses (**Exhibit 3.8-3**) and future planned land uses (**Exhibit 3.8-7**).

Improvements that would require additional land outside of current ROW or that would make new land available where existing transportation facilities would be abandoned are discussed as follows:

- The interchange at Pueblo Boulevard would be reconfigured to a partial cloverleaf interchange, and Greenhorn Drive would be realigned to the east of the interchange. The Greenhorn Drive realignment would extend through undeveloped vacant, light assembly/ warehousing, and manufacturing land uses.

Consistency with Local Plans and Policies. The Build Alternatives would be consistent with the goals of the *Pueblo Comprehensive Plan* (PACOG, 2002). The *Pueblo Roadway Corridor Right-of-Way Preservation Plan* (PACOG, 2000) and the *Central Pueblo Framework Plan* (PACOG, 2005) are not relevant to this area of the corridor.

Central Area (Phase 2)

Land use impacts in the Central Area (Phase 2) of the corridor, from Ilex Street to Nevada Avenue (2 blocks south of Exit 96), vary by Build Alternative. The section below highlights improvements under each alternative that would impact land use in the Central Area (Phase 2). The section also discusses consistency of the alternatives with local plans and policies.

Existing I-25 Alternative

Land Use. The Existing I-25 Alternative would maintain the current I-25 alignment through the Central Area (Phase 2) of the corridor. Land use changes due to proposed improvements would not change the overall land use patterns in the Central Area (Phase 2). Therefore, this alternative would be consistent with current land uses (**Exhibit 3.8-4**) and future planned land uses (**Exhibit 3.8-8**).

Improvements that would require additional land outside of current ROW or that would make new land available where existing transportation facilities would be abandoned are discussed below:

- The interchange at Abriendo Avenue would be reconfigured to a split diamond interchange between Northern Avenue and Abriendo Avenue with one-way frontage roads connecting the ramps. Abriendo Avenue would be connected to Santa Fe Drive to the east of I-25. Land use in this area is composed of urban residential and urban mixed-use.
- The interchange at Indiana Avenue would be reconfigured to provide a single point diamond interchange, with all ramps entering and exiting I-25 from Indiana Avenue. This improvement would convert some land east of the existing interchange to highway use. Land use in this area is urban residential to the west of I-25 and light industry to the east.

Consistency with Local Plans and Policies. The Existing I-25 Alternative would be consistent with goals of the *Pueblo Comprehensive Plan* (PACOG, 2002). The *Pueblo Roadway Corridor Right-of-Way Preservation Plan* (PACOG, 2000) and the *Central Pueblo Framework Plan* (PACOG, 2005) are not relevant to this area of the corridor.

The adopted HARP development plan anticipated the selection of the Modified I-25 Alternative as the Preferred Alternative. However, the channel extension is not dependent upon the selection of the Modified I-25 Alternative (Preferred Alternative). The HARP channel extension could continue under the Existing I-25 Alternative, but the extension would need to be designed around the current I-25 alignment instead of the Modified I-25 Alternative (Preferred Alternative).

Modified I-25 Alternative (Preferred Alternative)

Land Use. The Modified I-25 Alternative (Preferred Alternative) would move the I-25 alignment to the east between Ilex Street and Nevada Avenue. In most locations, land use changes due to proposed improvements would not change overall land use patterns in the Central Area (Phase 2). Therefore, this alternative would be consistent with current land uses (**Exhibit 3.8-5**) and future planned land uses (**Exhibit 3.8-9**). However, residential land uses adjacent to the Runyon Field Sports Complex would be removed due to the shift in the I-25 alignment. While this change in land use would not be consistent with current land uses, it would be consistent with future land use plans. The area surrounding the Runyon Field Sports Complex is identified as a special development area in the *Pueblo Comprehensive Plan* (PACOG, 2002) future land use plan (**Exhibit 3.8-9**), and the removal of residential land use from this area would be considered consistent with the future land use plan.

Improvements that would require additional land outside of current ROW or that would make new land available where existing transportation facilities would be abandoned are discussed below:

- I-25 would shift east of its current alignment from Ilex Street to Nevada Avenue. As part of this shift, the interchange at Abriendo Avenue would be reconfigured to a split diamond interchange between Northern

Avenue and Abriendo Avenue with one-way frontage roads connecting the ramps. The interchange at Indiana Avenue would be reconfigured to provide a single point diamond interchange. The new I-25 alignment would travel through single-family residential, open space, light assembly/warehousing, manufacturing, and undeveloped vacant land uses. Land would become available north and south of Central Avenue and between Minnequa Avenue and Aqua Avenue. The land adjacent to Central Avenue has been identified as a potential site for water quality ponds.

- Santa Fe Avenue would be extended south along the current I-25 alignment from Ilex Street to Minnequa Avenue, and Abriendo Avenue would be extended east to Santa Fe Drive. The current interchange between I-25 and Abriendo Avenue would become the location of an intersection between Abriendo Avenue and the new Santa Fe Avenue. Land would become available around this intersection, and the southeast corner of the intersection has been identified as a potential site for a water quality pond.
- Stanton Avenue would be rebuilt from Santa Fe Avenue on the north to the Runyon Field Sports Complex on the south. Stanton Avenue would then extend south over the Arkansas River and would connect to Santa Fe Avenue. The new road would extend through light assembly/warehousing, manufacturing, commercial business, and undeveloped vacant land uses.

Consistency with Local Plans and Policies. The Modified I-25 Alternative (Preferred Alternative) would be consistent with the *Pueblo Comprehensive Plan* (PACOG, 2002). The *Pueblo Roadway Corridor Right-of-Way Preservation Plan* (PACOG, 2000) and the *Central Pueblo Framework Plan* (PACOG, 2005) are not relevant to this area of the corridor.

The Modified I-25 Alternative (Preferred Alternative) would support the HARP expansion. The proposed channel extension anticipates the construction of the Modified I-25 Alternative (Preferred Alternative).

3.8.3 Mitigation

No mitigation is necessary.

3.9 VISUAL RESOURCES

This section describes the views to and from I-25 within the project corridor. Views of significant features, vistas, and viewsheds — either natural (such as the mountains) or built (such as the Evraz Rocky Mountain Steel Mills) — are considered important visual resources that define the visual character of an area. Project alternatives are analyzed to determine how proposed improvements would impact the visual character of the corridor.

3.9.1 Affected Environment

Pueblo's regional planning efforts, as documented in the *Pueblo Regional Development Plan (Pueblo Comprehensive Plan)* (Pueblo Area Council of Governments [PACOG], 2002), identified visual resources as an issue of region-wide concern. As part of these planning efforts, Pueblo citizens provided lists of desired physical changes that included building an "attractive community." Building an attractive community would include implementation of beautification programs and creating attractive entrances into Pueblo along major highways such as I-25. Residents also expressed concern about the loss of mountain views and the lack of landscaping and vegetation in new residential and commercial developments.

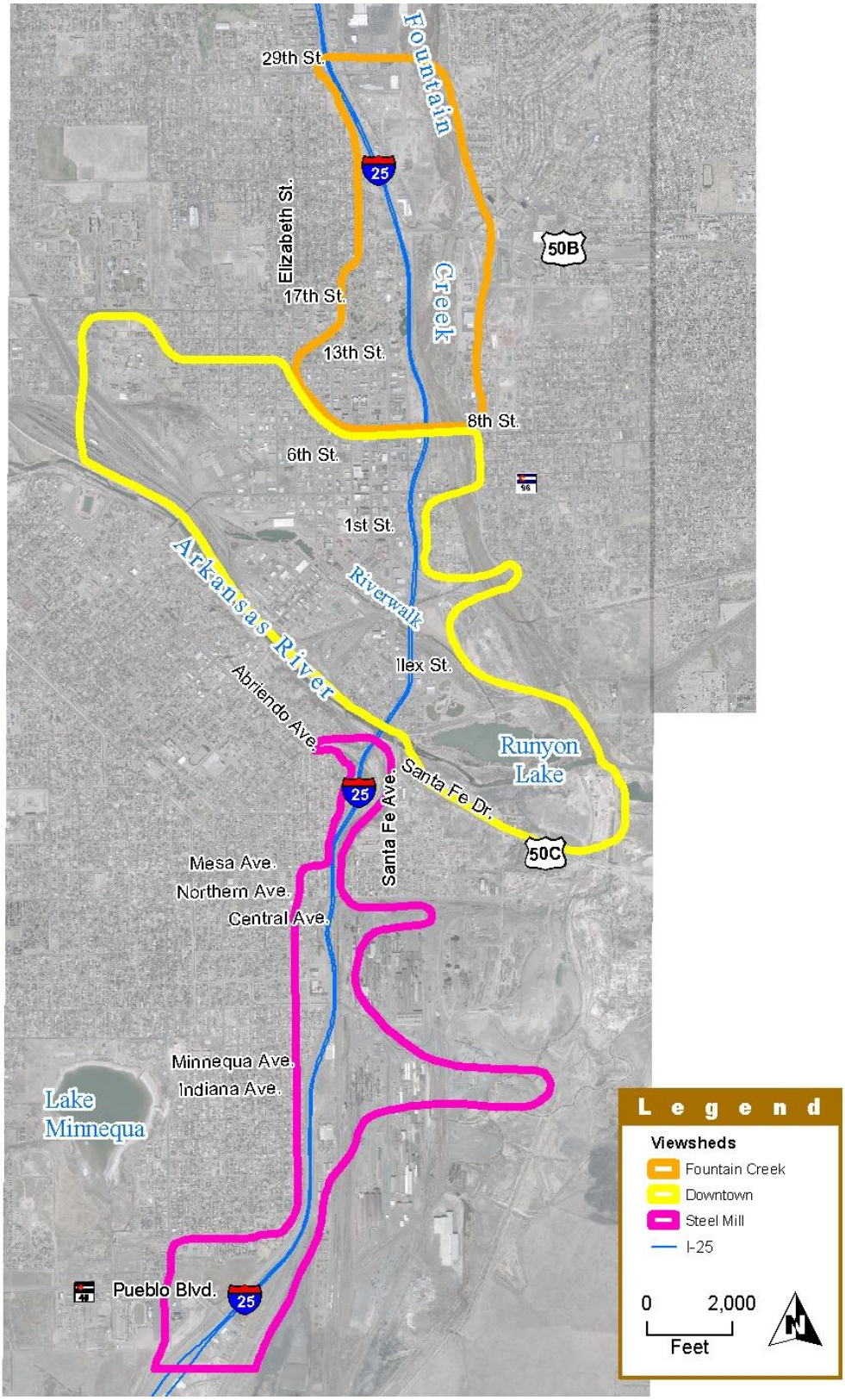
Fifteen guiding principles were developed as part of the planning process to establish a framework for the *Pueblo Comprehensive Plan*. One principle, "to encourage development that adds to the aesthetic quality of the region," relates directly to the preservation and enhancement of visual resources in Pueblo (PACOG, 2002).

To understand how the New Pueblo Freeway project could affect the aesthetic quality of the City, urban designers assessed the existing views within the I-25 corridor and identified viewsheds that define distinct scenic areas along the corridor. A viewshed is a geographical area that is defined on all sides by significant landforms or manmade elements that terminate a view. From whatever point within the viewshed a viewer stands, the view is contained or limited to the area of the viewshed. For the purposes of this FEIS, the study area has been defined by three different and distinct viewsheds: the Fountain Creek Viewshed, the Downtown Viewshed, and the Steel Mill Viewshed. **Exhibit 3.9-1** shows the boundaries of these three viewsheds. Each viewshed contains a mixture of highway infrastructure dating back to the original construction of I-25 and more recent infrastructure that has replaced aging fixtures. There is currently no cohesive aesthetics for infrastructure in this corridor.

Aesthetic Guidelines were prepared as part of the highway improvement design process, and are included in **Appendix C**. These guidelines were developed using a multidisciplinary approach that involved participation from stakeholders – interested citizens, businesses, local merchant groups, local artists, transportation and highway design professionals, elected officials, and staff from both the City of Pueblo and Pueblo County. They reflect community values that are sensitive to both environmental and community resources while achieving the Purpose and Need for the project. While the Aesthetic Guidelines were developed to enhance the three viewsheds in the study area, future transportation projects would be encouraged to draw from the Aesthetic Guidelines to incorporate a unified visual aesthetic throughout the corridor.

Further details on visual resources in the project area may be found in the *Visual Impacts Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2008b).

EXHIBIT 3.9-1
Viewsheds in I-25 Corridor



3.9.1.1 Fountain Creek Viewshed

The Fountain Creek Viewshed extends from the 29th Street interchange on the north to the 8th Street bridge on the south. This viewshed is unique within the study area due to a strong presence of mature tree stands that exist in the floodplain between Fountain Creek and I-25 and Mineral Palace Park. Fountain Creek and its surrounding floodplain is the dominant visual feature. Views into the floodplain, Mineral Palace Park, and the 29th Avenue detention ponds enhance the natural appearance of the viewshed for motorists on I-25 and local residents living in the area. Views both to and from I-25 are greatly opened up in the winter months when the extensive vegetation has lost its leaves. **Exhibit 3.9-2** shows a portion of the Fountain Creek Viewshed.

Views from I-25

The eastern edge of the viewshed is defined by residential and commercial buildings that line the Fountain Creek floodplain. In the northern portion of the viewshed, residential neighborhoods on the west side of the highway act as a visual barrier to motorists looking to the west on I-25. On the southern end of the viewshed, views to the west open up, exposing the north end of downtown Pueblo and mountain views to the west. Notable visual features in the Fountain Creek Viewshed include Mineral Palace Park, the Pueblo County building between 10th Street and 11th Street, Fountain Creek, and the flood wall with art tiles north of 8th Street along the east side of I-25.

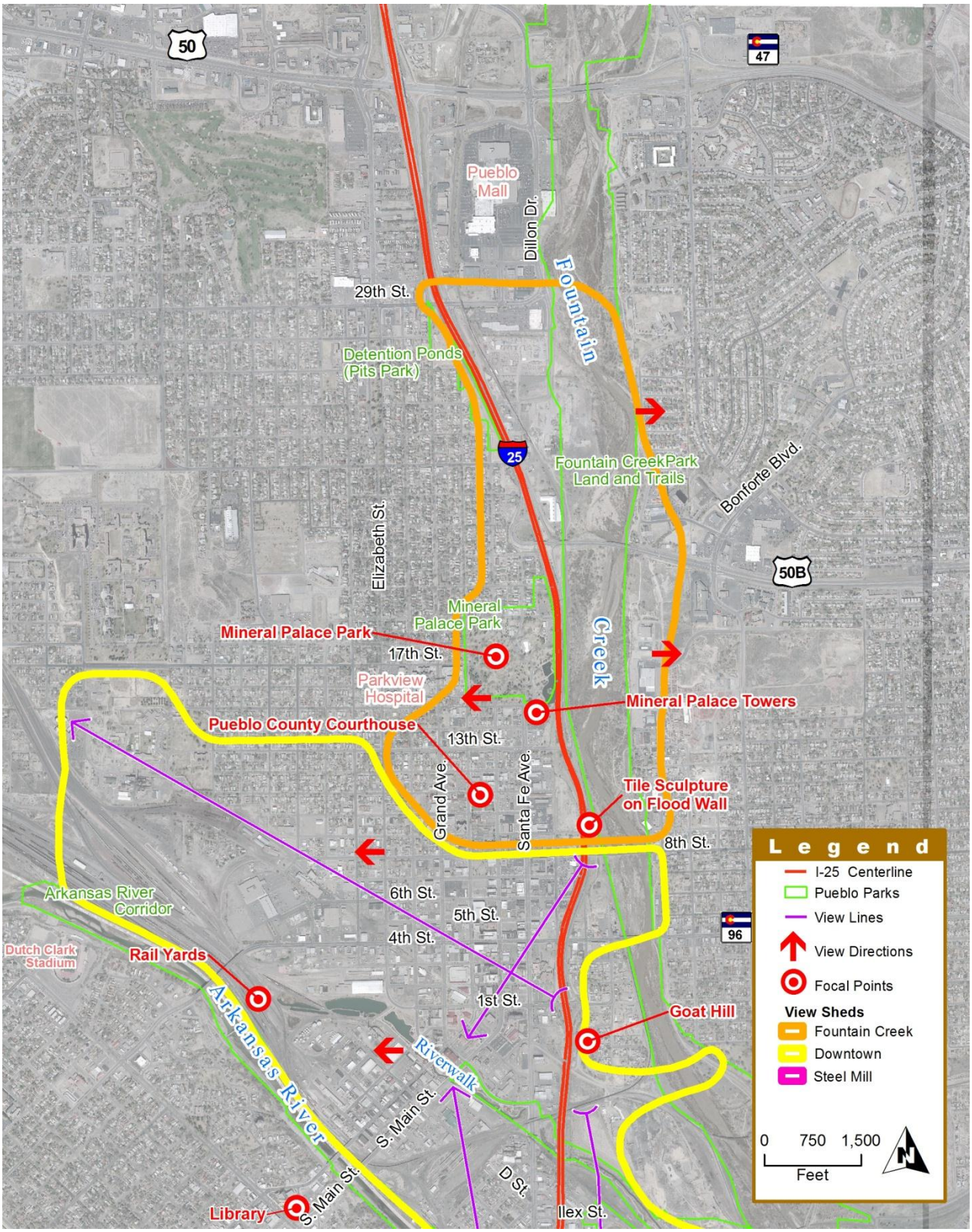
Views of I-25

In this viewshed, I-25 is visible to anyone standing in the Fountain Creek floodplain. Neighborhoods east of Fountain Creek and north of US 50B have a clear view of the highway, and residents in the North Side Neighborhood west of I-25 also have a good view of the highway. The I-25 right-of-way (ROW) is lined by a chain-link fence in this viewshed, so the highway is highly visible from Mineral Palace Park and Mineral Palace Towers (a senior residential high-rise building on the west side of the highway). Within the North Side Neighborhood, glimpses of I-25 can also be seen looking down the neighborhood streets.

Exhibit 3.9-3 shows the view directions and focal points of the Fountain Creek Viewshed and the northern portion of the Downtown Viewshed.

EXHIBIT 3.9-2
Fountain Creek Viewshed – View Looking South at I-25 and 21st Street

EXHIBIT 3.9-3
Visual Inventory Map for the Fountain Creek and Downtown Viewsheds



3.9.1.2 Downtown Viewshed

The Downtown Viewshed extends from the 8th Street bridge on the north to the bluffs above the Arkansas River on the south. Primarily urban, this viewshed is the largest within the project area. The Downtown Viewshed is a blend of the old and new, reflecting the heritage of Pueblo. Brick Victorian structures, the downtown rail yards, and views to the Evraz Rocky Mountain Steel Mills, the Art Center, and the Historic Arkansas River Walk Project all contribute to this blending.

On the east, the Downtown Viewshed is bounded by the eastern edge of the Fountain Creek floodplain. To the west, it is bounded by the bluffs just west of Pueblo. This viewshed is made up of the two converging floodplains associated with the Arkansas River and Fountain Creek. Along the Arkansas River, natural mature vegetation becomes a soft southern edge to the viewshed.

Views from I-25

The highway is elevated on a series of embankments and viaducts that provide motorists with an elevated view of downtown Pueblo. For the traveler, the curves along I-25 allow dramatic views of both the Evraz Rocky Mountain Steel Mills and Goat Hill. Views from I-25 into downtown Pueblo and longer-range views of the mountains to the west exist for the full length of the viewshed. The bluffs just east of the Runyon Field Sports Complex, along with Goat Hill, block long-range eastern views. Notable visual features in the Downtown Viewshed include Goat Hill, the Runyon Field Sports Complex, the bluffs along the Arkansas River, the downtown rail yards, and the Evraz Rocky Mountain Steel Mills.

Views of I-25

Although this viewshed is bounded by tall bluffs, the landscape within this viewshed is relatively flat. Because I-25 is elevated, it is a highly visible feature from downtown Pueblo and the surrounding neighborhoods. The highway is seen as a visual barrier that divides the community and this viewshed because it sits high in relationship to everything around it.

Exhibits 3.9-3 and 3.9-6 provide a visual inventory map of the Downtown Viewshed. **Exhibit 3.9-4** shows the view looking southwest from Goat Hill.

3.9.1.3 Steel Mill Viewshed

The Steel Mill Viewshed extends from the Arkansas River on the north to Pueblo Boulevard on the south. Many of the views to the east are limited by the steep embankments adjacent to I-25, along with the buildings and tailings piles at the steel mill. The western edge of the viewshed is defined

EXHIBIT 3.9-4
Downtown Viewshed – View Looking Southwest from Goat Hill

by steep side slopes adjacent to I-25, a noise wall, and the rows of houses in the Bessemer Neighborhood.

The visually dominant feature of this viewshed is the Evraz Rocky Mountain Steel Mills and the associated industrial properties along the eastern side of I-25. The visual character of the steel mill and surrounding property reflects a unique industrial appearance, as shown in **Exhibit 3.9-5**. The rich history of the viewshed is evident in the many older Victorian- and Mission-style buildings located on or around the steel mill property and by the company-town-style neighborhoods surrounding the steel mill.

Mature vegetation is a key feature of the Steel Mill Viewshed, particularly north of the steel mill. Most of the vegetation on the north end of the viewshed is natural. In the southern portion of the viewshed, the mature vegetation in the Bessemer Neighborhood and JJ Raigoza Park is predominantly deciduous trees and shrubs used for landscaping.

Views from I-25

Within this viewshed, mid-range and long-range views from I-25 are limited by the steep embankments adjacent to I-25. The available views include a northbound view to downtown at the Arkansas River and several northbound views toward the steel mill at the two gentle curves in I-25 north of Pueblo Boulevard. Dramatic views of the large steel mill buildings also exist from many of the I-25 overpasses and from the former Colorado Fuel & Iron (CF&I) Steel Mill Headquarters Building. Notable visual features in the viewshed include the railroad tracks parallel to I-25; the steel mill features such as the stoves, stacks, power house, and High Line Rail track; the former CF&I Steel Mill Headquarters Building; and the Bessemer neighborhood homes on the west side of I-25.

Views of I-25

Views of I-25 are somewhat limited in this viewshed because I-25 is recessed below adjacent neighborhoods. Mature vegetation and noise walls also block mid-range and long-range views. The High Line Rail track blocks some views of I-25 from the steel mill. The highway can be seen from the southern end of the steel mill, from JJ Raigoza Park, and down the east-west streets in the residential neighborhoods. Like the Fountain Creek Viewshed, mid-range views are opened up when the vegetation has lost its leaves in the fall and winter. **Exhibits 3.9-6 and 3.9-7** illustrate the Steel Mill Viewshed.

EXHIBIT 3.9-5
Steel Mill Viewshed – View Looking Southeast from the Northern Avenue Overpass

EXHIBIT 3.9-6

Visual Inventory Map for the Downtown and Steel Mill Viewsheds

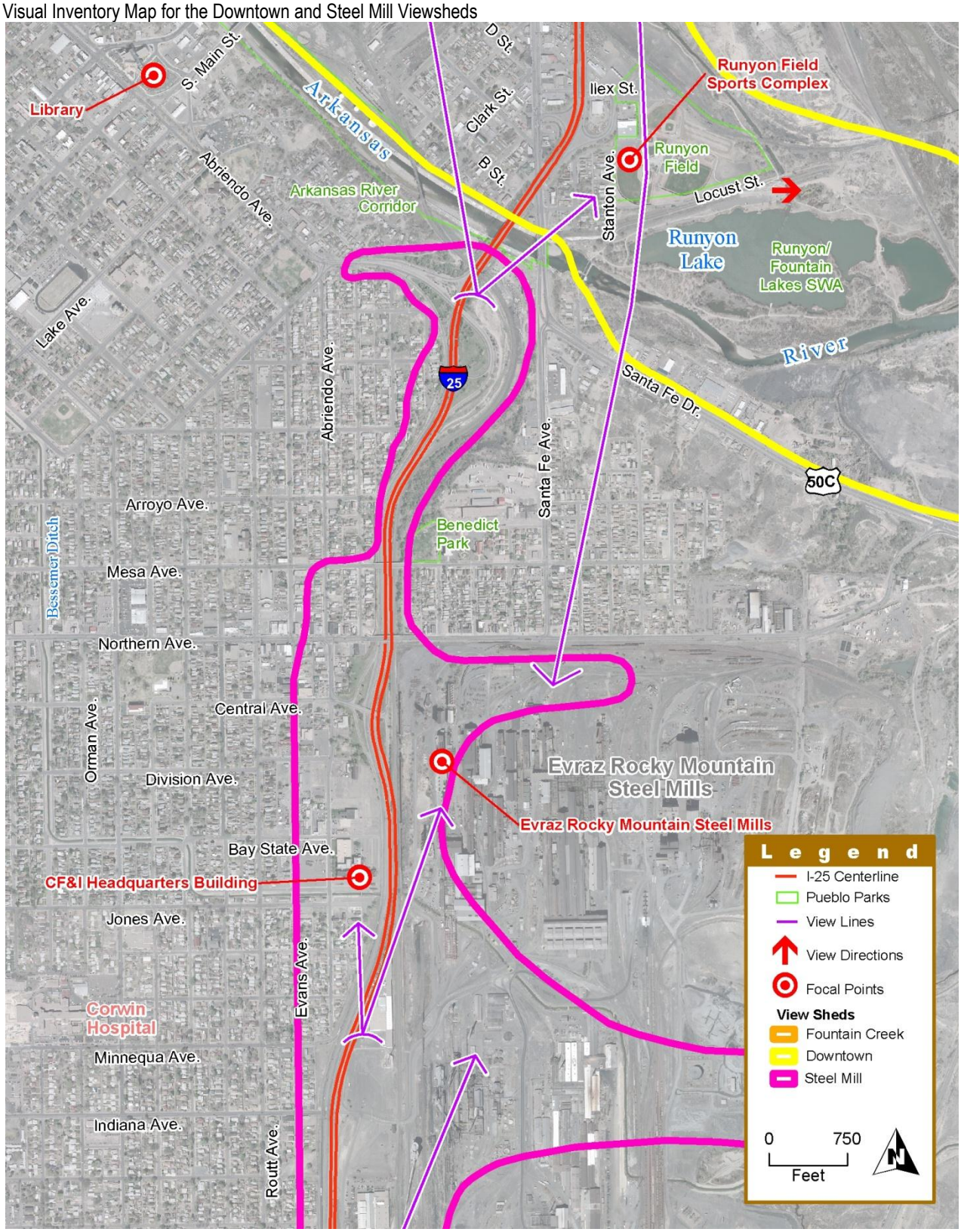
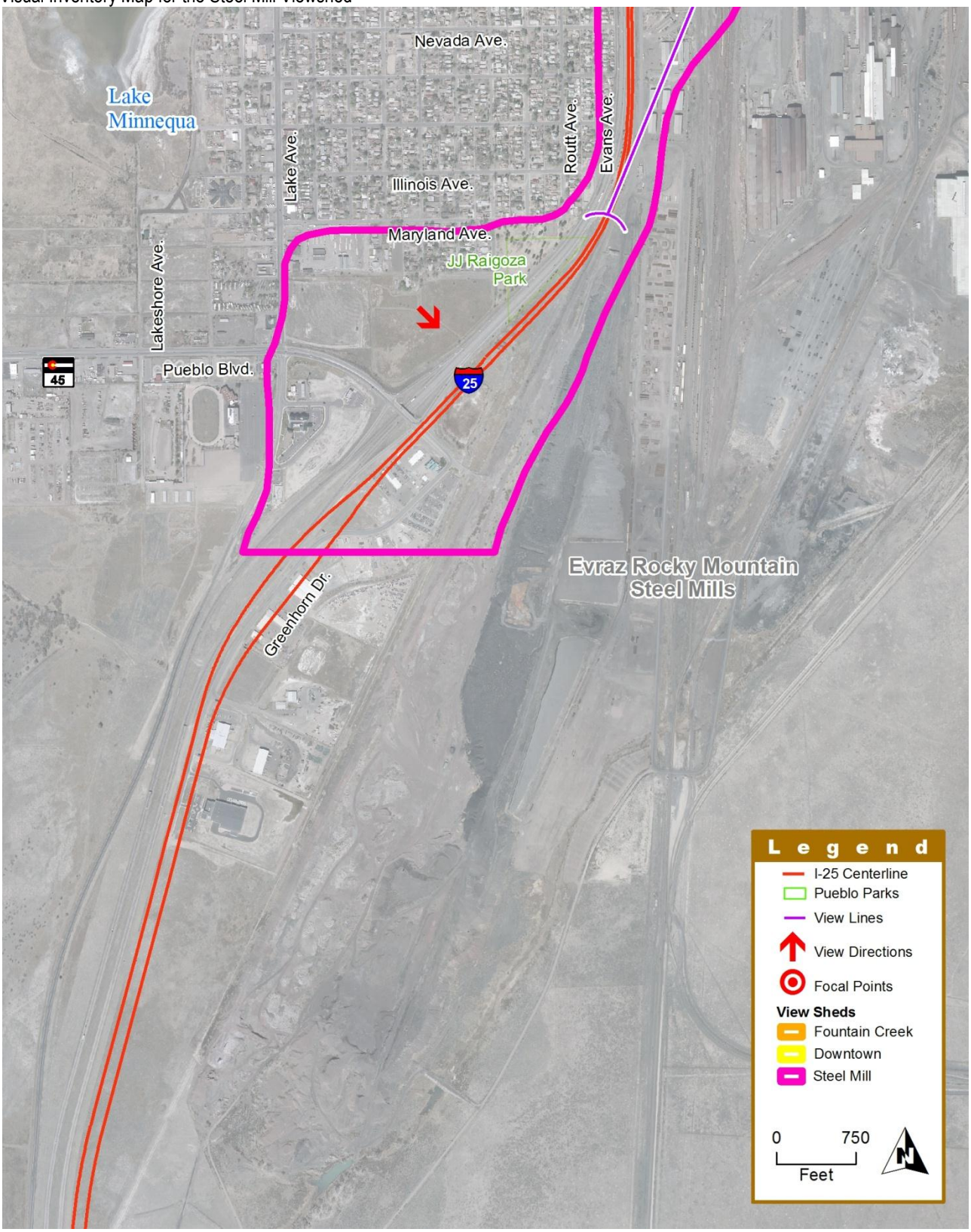


EXHIBIT 3.9-7
Visual Inventory Map for the Steel Mill Viewshed



3.9.2 Environmental Consequences

3.9.2.1 No Action Alternative

Under the No Action Alternative, I-25 would become increasingly congested. The resulting traffic would become more visually apparent in all viewsheds and to homes, businesses, parks, and public facilities that currently back up to the highway.

The I-25 corridor would continue to have an assortment of bridge types; fixtures with varied types of light sources; and other highway elements such as retaining walls, railings, and noise walls. Improvements to I-25 through Pueblo have been made over the past 50 years without sensitivity to its historic and environmental context.

3.9.2.2 Build Alternatives

The following discusses the impacts to viewsheds and other visual elements in the project area for the North (Phase 1), South (Phase 2), and Central (Phase 2) areas of the project.

North Area (Phase 1)

Noise walls would be installed to help mitigate highway noise; however, these structures can sometimes create visual impacts. This would be the case for Mineral Palace Park, the Downtown Neighborhood, the Grove Neighborhood, and other associated neighborhoods. Other visual impacts would come from the Dillon Road extension adjacent to Fountain Creek; the pedestrian bridge crossing of I-25 at Mineral Palace Park; and potentially from the construction of water quality ponds at US 50B, Mineral Palace Park, and 8th Street.

Fountain Creek Viewshed Impacts

The Existing I-25 Alternative and Modified I-25 Alternative (Preferred Alternative) have the same alignment north of Ilex Street. Both Build Alternatives would increase the width of the highway and modify interchanges, and both would have a higher capacity for traffic on I-25 than the No Action Alternative. Construction of the 29th Street connection, the US 50B interchange, and the 13th Street to 1st Street split-diamond interchange would all create more ramps, retaining walls, structures, and fill slopes. These modifications would contrast with the mature tree stands and park-like setting of the Fountain Creek Viewshed.

The I-25 improvements would impact views from historic Mineral Palace Park, Fountain Creek, and the adjacent historic neighborhoods by eliminating some trees and natural vegetation within the floodplain. Overall, the improvements in the Fountain Creek Viewshed would negatively impact the viewshed by giving the entire area a more developed appearance. This is a contrast to the natural and vegetated appearance in this viewshed that is valued by the community.

Downtown Viewshed Impacts

Within the Downtown Viewshed, the highway would continue to be elevated on a series of embankments, bridges, and viaducts between 6th Street and the Arkansas River. In several locations, I-25 would be 35 feet above its existing elevation between 13th Street and 6th Street, making the highway more visually apparent than it is today. Retaining walls and fill slopes along the raised portions of I-25 between 13th Street and the Arkansas River would also become a visual impact. The highway would continue to be a visually dominant element of the Downtown Viewshed, contrasting with the brick Victorian structures that are a part of Pueblo's heritage.

South Area (Phase 2)

The reconstructed interchange at Pueblo Boulevard would create more ramps, retaining walls, structures, and cut/fill slopes, contrasting with the historic company-town character of the Steel Mill Viewshed. Other visual impacts would result from the extension of Pueblo Boulevard east through the steel mill tailings pile and the water quality ponds at Pueblo Boulevard. Noise walls that are planned in the Bessemer Neighborhood would impact views both to and from JJ Raigoza Park.

Central Area (Phase 2)

Existing I-25 Alternative

South of Ilex Street, the physical alteration of I-25 would involve an increase in the width of the highway, modifications at interchanges, and lowering of the highway between the Arkansas River and Central Avenue. The reconstructed highway would follow the existing alignment, except at Abriendo Avenue and Central Avenue. The tight curves at these locations would be straightened to improve roadway safety. The retaining walls associated with lowering and straightening I-25 would limit the views of travelers on

I-25. The loss of mature, woody vegetation along I-25 in the Steel Mill Viewshed would impact all views in this viewshed.

Because several smoke stacks and stoves would be removed to accommodate the Existing I-25 Alternative, this alternative would have visual impacts to the steel mill. These steel mill structures are an obvious and key element of the South Pueblo skyline.

The reconstructed interchanges at Abriendo Avenue, Northern Avenue, and Indiana Avenue would create more ramps, retaining walls, structures, and cut/fill slopes, contrasting with the historic company-town character of the Steel Mill Viewshed. Other visual impacts south of Ilex Street would come from the Abriendo Avenue connection to Santa Fe Drive and the relocation of Benedict Park.

New water quality ponds at the Runyon Field Sports Complex, Abriendo Avenue, Central Avenue, and Indiana Avenue would create visual impacts. Overall, the improvements would make the highway a more visually apparent element of the viewshed, rivaling focal points like the steel mill structures and the former CF&I Steel Mill Headquarters Building. Widening the highway would require the removal of the historic High Line Rail track that runs parallel to the highway on the east side, creating a visual impact to the steel mill.

In both the Downtown Viewshed and the Steel Mill Viewshed, the Grove, Minnequa Heights, and Bessemer neighborhoods would experience visual impacts from noise walls that are planned as a part of the Existing I-25 Alternative.

Modified I-25 Alternative (Preferred Alternative)

South of Ilex Street, the physical alteration of I-25 involves the realignment of the highway to the east between Stanton Avenue on the north to Indiana Avenue. The former I-25 alignment between the Arkansas River and Minnequa Avenue would become an extension of Santa Fe Avenue. Multiple roadways, increased I-25 highway widths, new interchanges, and new intersections would create more ramps, structures, and cut/fill slopes within the company-town setting of the Steel Mill Viewshed. This would give the entire area a more urban appearance.

Visual impacts related to the realignment of I-25 in the Steel Mill Viewshed would result from raising the grade of I-25 approximately 30 feet on a bridge structure to pass over the existing railroad between the Bessemer Ditch and Indiana Avenue. This highway design would make I-25 more visually apparent from adjacent properties. Retaining walls in the raised portions would also have a visual impact. Raising the highway, along with the loss of mature, woody vegetation along I-25 in the Steel Mill Viewshed, would impact all views in this viewshed. This is especially true for the Mesa neighborhoods and the Runyon/Fountain Lakes State Wildlife Area east of I-25 because the highway would move east, closer to these areas.

The extension of Stanton Road and new water quality ponds located near the Runyon Field Sports Complex, Abriendo Avenue, Central Avenue, and Minnequa Avenue would create visual impacts. Because several smoke stacks and stoves would be removed to accommodate the highway realignments, the Modified I-25 Alternative (Preferred Alternative) would have visual impacts to the steel mill. These steel mill structures are an obvious and key element of the South Pueblo skyline.

In both the Downtown Viewshed and the Steel Mill Viewshed, the Grove, Minnequa Heights, and Bessemer neighborhoods would experience visual impacts from noise walls that are planned as a part of the Modified I-25 Alternative (Preferred Alternative).

3.9.3 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative).

- The *New Pueblo Freeway Aesthetic Guidelines* (see **Appendix C**) will be used during final design to help CDOT identify appropriate aesthetic design elements to ensure compatibility within the community and each viewshed. CDOT is committed to following the guidelines during final design and construction.

- Measures to soften and enhance the aesthetics of the highway improvements will be implemented as identified in the March 2010 Memorandum of Understanding between the City and CDOT (see **Appendix F**). The following measures are included:
  - Gateway features for the City boundaries, downtown, and neighborhoods.
  - Architectural treatments on retaining walls, bridges, and other structures designed to reflect the architectural character of the surrounding area.
  - Landscaping of roadway shoulders with dryland grasses and creation of naturalized areas that take advantage of local runoff to allow native vegetation, including trees and shrubs, to become established.

3.10 AIR QUALITY

The federal Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for air pollutants that pose a risk to public health and welfare. In accordance with the CAA, the EPA has established standards for six criteria pollutants: carbon monoxide (CO), ozone, particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), nitrogen oxide, sulfur dioxide, and lead. The EPA designates an area as being in attainment if the levels of these criteria air pollutants meet the established NAAQS standards.

In addition to the criteria air pollutants for which there are NAAQS, the EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources (such as, cars, trucks, and buses), non-road mobile sources (such as, airplanes and lawnmowers), and stationary sources (such as, factories, refineries and power plants), as well as indoor sources (such as, building materials). Some air toxics are also released from natural sources such as volcanic eruptions and forest fires.

Mobile Source Air Toxics (MSATs) are a subset of the 189 air toxics defined by the CAA. The seven priority MSATs are acrolein, benzene, 1,3-butadiene, diesel particulate matter (PM) plus diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter. MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxic compounds are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics result from engine wear or from impurities in oil or gasoline.

Historically and currently, Pueblo is in compliance with all air quality standards. Because Pueblo County is currently in attainment for the NAAQS for CO, nitrogen oxide, PM_{10}, and ozone, no micro-scale (project area) or regional air quality conformity analysis was required or performed for the New Pueblo Freeway project. A conformity analysis is required to be conducted in a nonattainment area or maintenance area to demonstrate that a project will not increase concentrations of nonattainment pollutants and will not interfere with the area becoming in attainment.

3.10.1 Affected Environment

In the 1980s, the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division managed the collection of CO data in Pueblo. This monitoring was discontinued in 1986 because the measured values were well below the CO NAAQS.

Currently, the CDPHE Air Pollution Control Division maintains PM_{10} and $PM_{2.5}$ monitors in downtown Pueblo. Criteria pollutant levels, including PM_{10}, were measured at an industrial site (the Evraz Rocky Mountain Steel Mills) located in the southeast portion of the City and very near to the southern portion of the study corridor. **Exhibit 3.10-1** presents the data available for PM_{10} monitoring in Pueblo. The 24-hour PM_{10} standard of 150 micrograms per cubic meter ($\mu g/m^3$) can be exceeded no more than once per year. The value shown in the table is the highest second-high value measured in any year during the period of record. Although the annual PM_{10} standard was revoked in December 2006, the monitor values are presented in **Exhibit 3.10-1** as a historical record of PM_{10} concentrations.

As indicated in the table, measured PM_{10} concentrations at the Evraz Rocky Mountain Steel Mills during the years 1999 through 2003 were well below the NAAQS.

The meteorological characteristics of the study area contribute to the current air quality conditions in Pueblo. Pueblo's climate is semi-arid and marked by large daily temperature variations ranging from an average temperature of 29 degrees Fahrenheit in January to an average temperature of 77 degrees Fahrenheit in July. According to the National Weather Service, average annual precipitation for Pueblo is 11 inches.

3.10.2 Environmental Consequences

Pueblo County is currently in attainment of the NAAQS for all criteria pollutants; therefore, no regional air quality conformity analysis or project/micro-scale analysis was required or performed for this project. Although not required for conformity purposes, a qualitative analysis was

EXHIBIT 3.10-1
Monitored PM_{10} Data

Monitoring Site	Period of Record	24-Hour Value[1] micrograms per meter cubed (µg/m³)	Annual Value[2] (µg/m³)
Air Pollution Control Division Main Monitor: 211 D Street	1999 to 2002	57	25
Air Pollution Control Division Evraz Rocky Mountain Steel Mills: 1411 Santa Rosa	May to December 2002	64	26
Evraz Rocky Mountain Steel Mills: 1141 Santa Fe	September to December 2002	40	21
Evraz Rocky Mountain Steel Mills: Site 1	September 2002 to August 2003	71	32
Evraz Rocky Mountain Steel Mills: Site 2	September 2002 to August 2003	59	26
National Ambient Air Quality Standard		150	50

Source: CH2M HILL, 2010g.

µg/m³ = micrograms per cubic meter
PM_{10} = particulate matter less than 10 microns in diameter
NAAQS = National Ambient Air Quality Standard

[1] High second-high concentration measured at the site. The NAAQS allows the standard to be exceeded no more than once per year; therefore, the second highest value for each year of the period of record is reported. This concentration is compared to the 24-hour NAAQS in accordance to the Clean Air Act.

[2] The annual PM_{10} NAAQS of 50 µg/m³ was revoked in December 2006. Values are presented for historical record of PM_{10} monitoring in the area.

performed for CO and PM_{10} because these pollutants are of particular concern for transportation projects.

3.10.2.1 Carbon Monoxide

Carbon monoxide is evaluated for transportation projects because high localized concentrations of this pollutant can occur near heavily traveled intersections. The CO analysis approach compares the level of service (LOS) of signalized intersections in the project area. Level of service is a measure of how well a signalized intersection operates using the letters A through F, with A being least congested and F being most congested. The project as a whole would have the overall effect of improving intersection operations in the project area.

With the increase in traffic in 2035, the Existing I-25 Alternative and Modified I-25 Alternative (Preferred Alternative) are projected to improve operations compared to the No Action Alternative. The percent LOS for each alternative is presented in **Exhibit 3.10-2**.

Based on the current attainment status of Pueblo, as well as the generally improved traffic congestion in 2035 compared to the No Build Alternative, neither Build Alternative is expected to cause or contribute to a new violation of the CO NAAQS.

EXHIBIT 3.10-2
Intersection Level of Service Percent Summary for the Analysis Year 2035

Level of Service	No Action Alternative	Existing I-25 Alternative	Modified I-25 Alternative (Preferred Alternative)
LOS A to C	73%	81%	82%
LOS D	14%	11%	10%
LOS E	4%	5%	3%
LOS F	8%	4%	5%

Source: CDOT Project Team, 2010.

Note: Values are rounded to nearest whole number and therefore may not add up to 100 percent.

3.10.2.2 Particulate Matter

PM_{10} is of particular concern with vehicle exhaust, especially from diesel engines. As previously discussed, Pueblo is an attainment area for PM_{10}, with recently measured levels well below the NAAQS. Several of the monitoring stations were located at or near the Evraz Rocky Mountain Steel Mills. Although local effects of activities at the steel mill probably influenced data collected from these monitoring stations, the measured levels remained well below the NAAQS. As a result, NAAQS for PM_{10} are not expected to be exceeded under the Build Alternatives, and the PM_{10} exceedances under the No Action Alternative are expected to be minimal.

3.10.2.3 Mobile Source Air Toxics

MSATs are hazardous air pollutants that are known to cause or suspected of causing cancer or other serious health ailments. Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of MSATs, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure are limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision making within the context of the National Environmental Policy Act (NEPA). Due to the scientific limitations and uncertainties surrounding MSAT analysis, and in accordance with 40 CFR 1502.22 regarding incomplete or unavailable information in EISs, FHWA guidance provides a three-tiered approach to analyzing the MSAT effects of transportation projects under NEPA (FHWA, 2012). The level of analysis is related to the expected size and effect of the project, as follows:

- No analysis for projects with no potential for meaningful MSAT effects; or
- Qualitative analysis for projects with low potential MSAT effects; or
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The estimated average annual daily traffic (AADT) volume for the New Pueblo Freeway project is shown in **Exhibit 3.10-3**. For each of the alternatives, the AADT is much lower than the 140,000 AADT threshold where a quantitative MSAT analysis would be necessary or meaningful. The effects from each alternative were evaluated qualitatively.

EXHIBIT 3.10-3
Projected Corridor Maximum AADT on I-25 (2035)

Alternative	Total AADT
No Build Alternative	108,400
Existing I-25 Alternative	108,900
Modified I-25 Alternative (Preferred Alternative)	106,700

Source: CH2M HILL, 2005a; 2010h; 2011b.

For all alternatives, the amount of MSATs emitted is proportional to the vehicle miles traveled (VMT), assuming that other variables, such as fleet mix, are the same for each alternative. As shown in **Exhibit 3.10-4**, the corridor VMT estimated for both Build Alternatives is higher than for the No Action Alternative; the Build Alternatives provide additional capacity, which increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. The increase in VMT for the Build Alternatives would lead to higher MSAT emissions along the I-25 corridor, along with a corresponding decrease in MSAT emissions along parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOBIL6.2 model, emissions of the priority MSATs except for diesel PM decrease as speed increases. The extent to which these speed-related emissions decreases will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of the technical models.

EXHIBIT 3.10-4
Vehicle Miles Traveled in the Project Area (2035)

Alternative	Peak-Hour VMT	Daily VMT
No Build Alternative	68,650	683,800
Existing I-25 Alternative	74,630	717,900
Modified I-25 Alternative (Preferred Alternative)	80,490	739,400

Source: CH2M HILL, 2005a; 2010h; 2011b.

The additional travel lanes contemplated as part of the Build Alternatives will have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under each alternative, there may be localized areas where ambient concentrations of MSAT could be higher under the Build Alternatives than under the No Action Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built at the Eiler Heights neighborhood under the Modified I-25 Alternative (Preferred Alternative). However, the magnitude and duration of these potential increases compared to the No Action Alternative cannot be reliably quantified due to incomplete or unavailable information for forecasting project-specific MSAT health impacts. In summary, the localized level of MSAT emissions resulting from highway widening under the Build Alternatives could be higher relative to the No Action Alternative. However, this could be offset by increased speeds and reduced congestion, which are associated with lower MSAT emissions. Also, MSAT will be lower in other locations when traffic shifts away from these locations. On a regional basis and over time, EPA's vehicle and fuel regulations, coupled with fleet turnover, will result in substantial emissions reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than current conditions.

Regardless of the alternative chosen, design-year emissions will likely be lower than present levels as a result of EPA's national control programs that are projected to reduce MSAT emissions by 72 percent between 1999 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures; however, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases. Additional information about MSATs is presented in the *Air Quality Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2010g).

3.10.3 Mitigation

Because no adverse air quality impacts are anticipated to occur as a result of the proposed improvements, mitigation is not required from an air quality standpoint. Temporary air quality impacts may occur during construction, including an increase in fugitive dust. Measures to reduce temporary air quality impacts during construction are described below.

- Contractors will be required to reduce fugitive dust emissions during construction by implementing best management practices (BMPs), such as spraying or covering exposed soils, covering trucks when transporting material, minimizing mud tracking by vehicles, controlling vehicle speeds on construction access roads, and stabilizing construction entrances per CDOT M-208-1 requirements.
- All work performed on the project will be in accordance with appropriate CDOT Standard Specifications for Roadway and Bridge Construction.
- The following specific construction mitigation measures to reduce impacts will be used where appropriate:
  - Require construction vehicle engines to be properly tuned and maintained.
  - Use water or wetting agents to control dust
  - Have a wheel wash station and/or crushed stone apron at egress/ingress areas to prevent dirt being tracks onto public streets.
  - Use vacuum-powered street sweepers to remove dirt tracked onto streets
  - Use a binding agent for long-term excavated materials
  - Schedule work outside of normal hours for sensitive receptors; this should be necessary only in extreme circumstances, such as construction immediately adjacent to a health care facility, church, outdoor playground, or school.

3.11 HAZARDOUS MATERIALS

Areas within the project area that are contaminated or potentially contaminated with hazardous materials have been considered as a part of this FEIS. The term hazardous materials includes solid waste, hazardous waste, and other wastes contaminated with hazardous materials, radioactive materials, petroleum fuels, toxic substances, pollutants, and other contaminants as defined by and regulated by various state and federal laws. Lead-based paint and asbestos may be present on bridges and in buildings. Sites with these conditions are referred to as a recognized environmental condition (REC). In addition to RECs, "areas of potential environmental concern" have been identified to address those environmental issues that do not specifically meet the definition of a REC but do warrant further consideration.

The discovery of hazardous materials can potentially affect a proposed project in terms of cost, schedule, and agency/public involvement. Potential hazardous material sites must be identified so that they can be avoided, if reasonably possible. If they cannot be avoided, then it is important that these areas are identified so that appropriate corrective actions can be taken to protect the health and safety of the public and workers during construction and maintenance and to ensure proper disposal of hazardous materials disturbed by construction activities.

What is a Recognized Environmental Condition (REC)?

A REC is defined in American Society of Testing and Materials practice E1527-00 as a condition that indicates an existing release, a past release, or a material threat of a release of any hazardous substance or petroleum products into structures on the property or into the ground, groundwater, or surface water of the site.

To identify potential hazardous material site locations, hazardous material assessments are conducted prior to the selection of the Preferred Alternative and acquisition of right-of-way (ROW). Within the project area, a Phase I Initial Site Assessment (ISA) was conducted to identify any sites that may present a potential for environmental contamination. The Phase I ISA was conducted in accordance with the American Society of Testing and Materials (ASTM) practice E1527-05, *Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process*, and included a records search of standard state and federal sources, as well as field review by a qualified environmental professional.

3.11.1 Affected Environment

Fourteen sites were identified as potential hazardous material sites during the Phase I ISA: Eight REC sites and six areas of potential environmental concern. These sites are individually described below and illustrated in **Exhibits 3.11-1, 3.11-2, and 3-11.3**.

3.11.1.1 Recognized Environmental Condition Sites

The following sites are considered RECs.

River Street Property

The State of Colorado maintains a list of sites that have been accepted for cleanup as part of the Colorado Voluntary Cleanup Program, which is intended for sites that have not been covered by existing regulatory programs. The River Street property is part of the Voluntary Cleanup Program. It is located near the Convention Center and is bordered by River Street to the north, I-25 to the east, Santa Fe Avenue to the west, and a dirt road to the south. The site's soils were contaminated with various chemicals that were removed in 1997. Following the soil removal activities, the site received a No Further Action Determination from the Colorado Department of Public Health and Environment (CDPHE) for commercial or industrial uses compatible with the nearby Convention Center. Groundwater beneath the site is contaminated with bis-2-ethylhexylphthalate, a chemical commonly added to plastics to make them flexible; however, the source of contamination was detected offsite. Because of this, the River Street property is considered a REC.

Rockwool Industries

The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database includes information on potential and actual hazardous material sites that have been reported to the U.S. Environmental Protection Agency (EPA). The CERCLIS No Further Remedial Action Planned (NFRAP) database provides information regarding CERCLIS sites that have been designated as NFRAP and removed from CERCLIS.

EXHIBIT 3.11-1
Potential Hazardous Material Sites in the Project Area (Both Build Alternatives): North Area (Phase 1)

EXHIBIT 3.11-2
Potential Hazardous Material Sites in the Project Area (Both Build Alternatives): South Area (Phase 2)

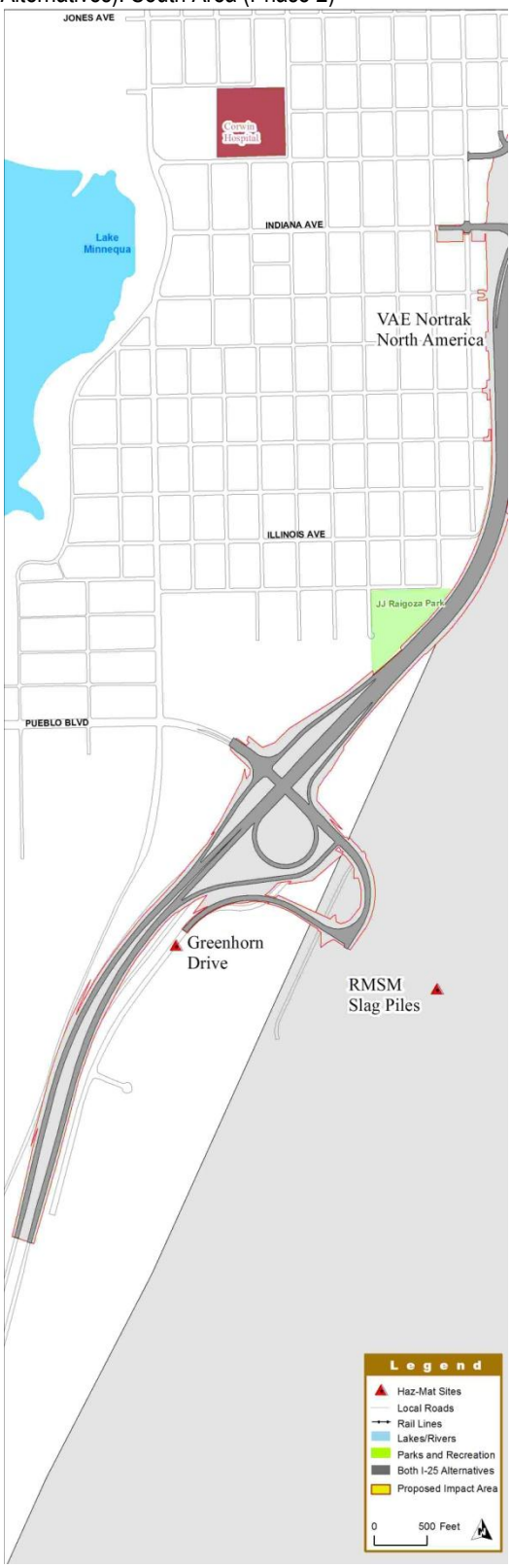
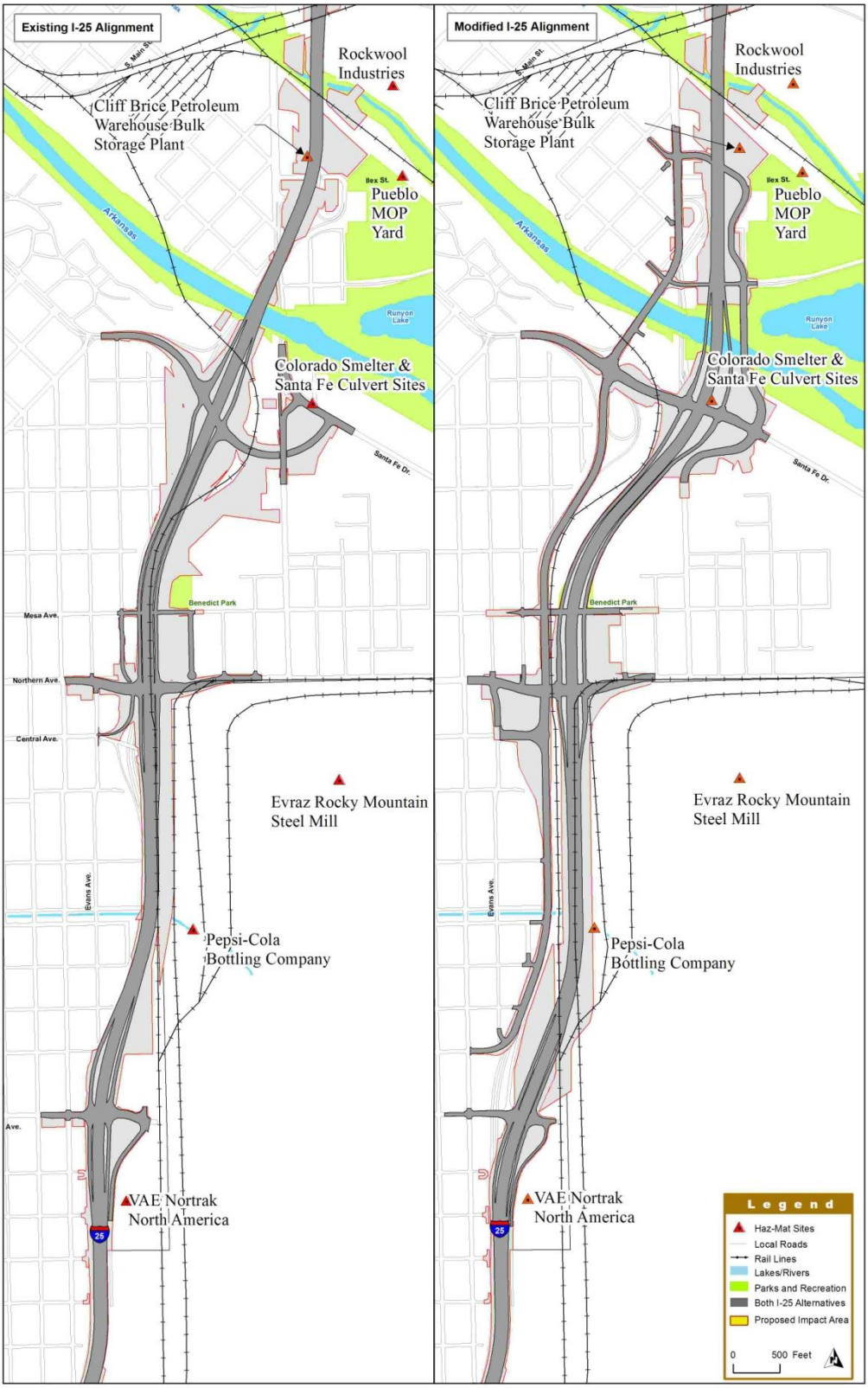


EXHIBIT 3.11-3

Potential Hazardous Material Sites in the Project Area (Existing I-25 Alternative (L) and Modified I-25 Alternative (Preferred Alternative) (R)): Central Area (Phase 2)



These NFRAP sites may be sites where no contamination was found following an initial investigation, the contamination was removed quickly without the site being included on the National Priority List (NPL), or the contamination was not serious enough to require NPL consideration.

The Rockwool Industries facility is listed on the NFRAP. The 39-acre site is located adjacent to the eastern side of I-25 near the confluence of Fountain Creek and the Arkansas River, north of the Runyon Field Sports Complex. The facility produced mineral fiber insulation using slag (a byproduct of the metal smelting process) and coke (a fuel derived from coal). A shot pile (an abrasive used for sandblasting steel) located along the western 12 acres adjacent to I-25 was landfilled onsite in the early 1990s. A boiler evaporation pond that received wastewater from the boiler and baghouse dust facilities was located adjacent to the shot pile. At one point, the site had three underground storage tanks, an above-ground storage tank for tar storage, an oil storage tank, and two resin tanks. Historic references indicate that a smelter (essentially, a large furnace) processing silver ores operated on the site from approximately 1880 to 1920. Based on past site use and the possible presence of hazardous materials, Rockwool Industries is considered a REC.

Pueblo MOP Yard

The Pueblo MOP yard is also known as the former Missouri Pacific Yard, located adjacent to I-25 to the east and north of the Runyon Field Sports Complex, is part of the Colorado Voluntary Cleanup Program. The parking lot for the Runyon Field Sports Complex forms the southern boundary of the site. Soils at the site were found to have elevated levels of total petroleum hydrocarbons, arsenic, and lead. Groundwater has also been impacted by metals, primarily arsenic, cadmium, chromium, lead, and selenium. Selenium is the only constituent present above maximum contaminant levels, and it is believed to originate from an offsite source. The site received a No Further Action Determination Approval for industrial use in 2003. The former Missouri Pacific Yard is considered a REC because the site has residual soil contamination.

Colorado Smelter and Santa Fe (Bridge) Culvert Sites

These two sites (also known as the Arkansas River and Santa Fe Street sites) are listed in the CERCLIS database. This site, also known as the Boston and Colorado Smelter according to CDPHE records, is bounded by Santa Fe Drive to the southwest, the south bank of the Arkansas River to the north, Main Street to the northwest, and Colorado Street to the east. The Boston and Colorado Smelting Company was established in 1883 and dismantled in 1915. There were historically six smelters located in and around this area.

The site contains a large slag heap, forming a 30-foot-high escarpment along the western side of Santa Fe Avenue. Water leaching through this waste slag pile may be impacting groundwater at the site. Sampling has indicated that the following metals and one compound exceed Superfund Chemical Data Matrix soil benchmark standards for one or more samples: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, cyanide, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, thallium, vanadium, and zinc. In samples collected at the site, arsenic, chromium, and lead exceed CDPHE standards for residential soil. The Colorado Smelter and Santa Fe (Bridge) Culvert Sites are considered a REC due to the residual soil contamination and are sources of heavy metal-contaminated groundwater on the sites.

The EPA is currently investigating the extent and types of contaminants associated with this site in order to better determine if the site should be included on the NPL. The EPA will consult with the public and local agencies before making a decision on listing in a Record of Decision (ROD) separate from the CDOT Environmental Impact Statement process. Any recommendations for cleanup will be included in the EPA's ROD.

Evraz Rocky Mountain Steel Mills (RMSM)

The Evraz Rocky Mountain Steel Mills facility is an operating steel mill located east of the current I-25 alignment, stretching from Northern Avenue past Pueblo Boulevard. A total of 82 onsite solid waste management units (SWMU) are being investigated by the site owner and remediated at the site, as required by the facility's Resource Conservation and Recovery Act (RCRA) permit, issued by the CDPHE under 6 Code of Colorado Regulations 1007-3, Part 100 (CDPHE hazardous waste rules).

Only two of the 82 SWMUs (SWMU 69 and SWMU 80) are within the ROW boundary for both Build Alternatives for this

project and the area of influence of the project appears to overlap several other SWMUs: 19, 20, 44, 45, and 49. Until 1981, SWMU 69 was used to manage particulates removed from the exhaust of the blast furnace and stoves. Until 1964, SWMU 80 was used to manage particulates removed from the blast furnace flue gas. The Evraz Rocky Mountain Steel Mills demolished the above-ground structures at both SWMU 69 and 80 in 1989. The resulting demolition debris, including particulate material, was disposed of offsite. Sampling was conducted in 2001 to determine if there was a release of hazardous constituents to soil at SWMUs 69 and 80 and any remaining particulate material was removed and disposed offsite in a licensed disposal facility. The CDPHE determined that there were no releases of hazardous material to the environment from either SWMU that would warrant remediation. Both SWMUs were closed in 2001 with a No Further Action Determination by CDPHE. The Evraz Rocky Mountain Steel Mills facility is considered a REC because of the past history of wastes containing heavy metals on the site.

Additional relevant information regarding the steel mill site features and alternative impacts is presented in **Chapter 4 – Section 4(f) Evaluation**, as well as in the *Hazardous Materials Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2011d).

Pepsi-Cola Bottling Company

The Pepsi-Cola Bottling Company site consists of an open underground storage tank with groundwater impacted by hydrocarbon and benzene, ethylene, toluene, and xylene. The site is located adjacent to I-25 and is just west of the Evraz Rocky Mountain Steel Mills facility, north of the Indiana Avenue exit from I-25. Groundwater is encountered at approximately 20 to 25 feet below ground surface, and several monitoring wells are located within the project area. Contaminated soils are expected to be encountered near the former tank location in the middle of the parking lot adjacent to I-25. Currently, the site does not have any operating remedial systems and relies on monitoring to detect any free product and determine movement of the benzene plume. The monitoring activity would continue until the site attains closure status from the Colorado Division of Oil & Public Safety (DOPS). The Pepsi-Cola Bottling Company site is considered a REC because the facility has an open leaking tank investigation and the site is adjacent to the project corridor.

Evraz Rocky Mountain Steel Mills Slag Piles

Linear piles of slag from the Evraz Rocky Mountain Steel Mills facility extend south from Indiana Avenue to the southern boundary of the project corridor. Depending on the concentrations and leachability of the metals, the material may be considered hazardous. The Evraz Rocky Mountain Steel Mills slag piles are considered a REC because of the past history of wastes containing heavy metals on the site.

Rampart Supply

This site is a Colorado Voluntary Cleanup Program (VCP) site. It is located near the corner of East 4th Street and Bradford Street in the northern area of the alignment. It is immediately outside of the proposed impact area. An NFA letter was issued for soil conditions at the site; however, groundwater contaminated with benzene, toluene, ethylene, and total xylenes (BTEX) at concentrations above State standards continues to be of concern. The plume is migrating to the east-southeast, and depth to water is expected to be encountered at approximately 30 feet below ground surface. The Rampart Supply site is considered a REC due to the heavy metal-contaminated groundwater on the sites.

3.11.1.2 Areas of Potential Environmental Concern

The following sites are considered areas of potential environmental concern.

Industrial Facilities South of Dillon Drive

Located south of the intersection of Dillon Drive and West 26th Street, the area has several industrial facilities; some appear to have been abandoned. The Freeway Truck and Auto Repair site, located at approximately 2400 North Freeway, had several drums in an area directly behind the building; for this reason, the industrial facilities are considered an area of potential environmental concern.

VAE Nortrak North America (formerly Meridian Rail)

The VAE Nortrak facility is a RCRA small-quantity generator. The site is located adjacent to I-25 to the east, just south of the Indiana Avenue exit. The northwest corner of the site operates as a parking lot. Releases of chromium, manganese (air release only), and creosote (air and land surface release) have been recorded at the site. This site is an area of potential concern for hazardous materials.

Stoehr Cleaners

This leaking underground storage tank (LUST) site is located north of the intersection of 29th Street and Elizabeth Street and approximately 800 feet west of the proposed impact area. The shallow groundwater at the site is contaminated with BTEX fuel constituents as a result of a LUST that was removed in 1997. Active remediation is occurring at the site under a DOPS Corrective Action Plan (CAP). Although this site and the groundwater plume are located outside of the proposed impact area boundary, additional monitoring of shallow groundwater during construction may be necessary depending on current site conditions.

Greenhorn Drive

There are several industrial facilities along Greenhorn Drive, including a Budweiser facility and an auto salvage yard, near the southern end of the project area. The auto salvage yard had a visible drum storage area located near the southern property boundary identified during a 2011 site visit. The potential to encounter soil and/or groundwater contamination should be considered during construction or demolition of these facilities; therefore, these sites are considered areas of potential environmental concern.

Silo Building 4392

This LUST is located approximately 500 feet to the east of the proposed impact area at 3130 North Freeway and west of the Pueblo Mall and was observed during the field reconnaissance. The remediation of this site is being implemented under a DOPS CAP. Additional investigation of a potential methyl tertiary butyl ether (MTBE) plume may be necessary prior to construction in this area. The direction, flow, and velocity of the groundwater plume of MTBE are unknown. The site is outside of the proposed impact area, but additional groundwater monitoring may be necessary if roadway excavation is intended to reach groundwater in the area.

Cliff Brice Petroleum Warehouse and Bulk Storage Plant

Several aboveground storage tanks (AST) and portals for underground storage tanks (UST) were identified during the site reconnaissance. At least 22 ASTs are located at the property. Gasoline, diesel, and kerosene are stored in the various ASTs, with volume capacities greater than 1,000 gallons. The proximity of the facility to I-25 and the proposed impact area may necessitate special precautions when conducting construction activities adjacent to this facility.

3.11.2 Environmental Consequences

This section describes the sites that will be directly impacted by the Build Alternatives. The Phase I ISA identifies a number of sites that are adjacent to the study area. More detailed information is included in the *Hazardous Materials Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2011d). A summary of impacts is shown in **Exhibit 3.11-4**.

3.11.2.1 No Action Alternative

The No Action Alternative would not disturb any hazardous material sites within the project area. Under the No Action Alternative, the various RECs and areas of potential environmental concern would be addressed through the appropriate regulatory process by the owner(s) of these properties. In the absence of improvements related to this project, there would be no further change to the existing environmental conditions with respect to hazardous materials.

3.11.2.2 Build Alternatives

Hazardous materials pose a possible risk for human health and safety and for contamination of other property nearby. Under the Build Alternatives, property that is owned or may be acquired by CDOT would be dealt with in accordance with appropriate regulatory processes.

Both Build Alternatives would impact RECs and areas of potential environmental concern, with the Existing I-25 Alternative impacting 12 sites and the Modified I-25 Alternative (Preferred Alternative) impacting 13 sites. Most of the sites that would be impacted are common to both Build Alternatives, with the exception of the Colorado Smelter and Santa Fe (Bridge) Culvert Sites, which would be impacted only by the Existing I-25 Alternative. The VAE Nortrak and the Pueblo MOP Yard sites would be impacted only by the Modified I-25 Alternative (Preferred Alternative). All of the sites identified as either RECs or areas of potential concern are shown in **Exhibit 3.11-4.**

North Area (Phase 1)

Both Build Alternatives would impact four areas of potential environmental concern and two REC sites located in the North Area (Phase 1) of the project corridor. The RECs are the River Street property and Rampart Supply; the areas of potential environmental concern are the industrial facilities south of Dillon Drive, Cliff Brice Petroleum Warehouse/Bulk Plant, Stoehr Cleaners, and Silo Building 4392.

EXHIBIT 3.11-4
Summary of Impacts to Potential Hazardous Material Sites

Site Name	Type of Environmental Concern	Impacted by Existing I-25 Alternative	Impacted by Modified I-25 Alternative (Preferred Alternative)
Colorado Smelter and Santa Fe (Bridge) Culvert Sites	REC (CERCLA)	X	
Rockwool Industries	REC (CERCLA NFRAP)	X	X
Evraz Rocky Mountain Steel Mills	REC (RCRA COR ACT)	X	X
VAE Nortrak Corporation	AOPC (RCRA-SQG)		X
Stoehr Cleaners	AOPC (LUST)	X	X
Silo Building 4392	AOPC (LUST)	X	X
Industrial Facilities Southwest of Dillon Drive	AOPC (Unidentified Drums)	X	X
Pepsi-Cola Bottling Company	REC (LUST)	X	X
River Street Property	REC (VCP)	X	X
Pueblo MOP Yard (Also known as Former Missouri Pacific yard)	REC (VCP)		X
Rampart Supply	REC (VCP)	X	X
RMSM Slag piles	REC	X	X
Greenhorn Drive	AOPC	X	X
Cliff Brice Petroleum Warehouse/Bulk Plant	AOPC (USTs and ASTs)	X	X

AOPC = area of potential concern
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act
NFRAP = No Further Remedial Action Planned
REC = recognized environmental condition
SQG = small quantity generator
VCP = Voluntary Cleanup Program
AST = aboveground storage tank
COR ACT = corrective action
LUST = leaking underground storage tank
RCRA = Resource Conservation and Recovery Act
RMSM = Evraz Rocky Mountain Steel Mill
UST = underground storage tank

South Area (Phase 2)

Both Build Alternatives would impact the Greenhorn Drive area of potential environmental concern and potentially encounter contaminated soils outside of the Evraz Rocky Mountain Steel Mills slag piles near Pueblo Boulevard, which are REC sites.

Central Area (Phase 2)

Existing I-25 Alternative

The Existing I-25 Alternative would impact three RECs in the Central Area (Phase 2) of the project corridor. The RECs include the Colorado Smelter and Santa Fe (Bridge) Culvert Sites, the Evraz Rocky Mountain Steel Mills property, and the Rockwool Industries sites.

Modified I-25 Alternative (Preferred Alternative)

The Modified I-25 Alternative (Preferred Alternative) would impact four RECs and one area of potential environmental concern in the Central Area (Phase 2) of the project corridor. The RECs include the Pueblo MOP Yard, the Evraz Rocky Mountain Steel Mills property and slag piles, and the Pepsi-Cola Bottling Company. The area of potential environmental concern is the VAE North America Rail facility. Asbestos is suspected in soils at the Evraz Rocky Mountain Steel Mills property.

Both Build alternatives would impact the Pepsi-Cola Bottling Company site, which has several groundwater monitoring wells. The contaminated groundwater would need to be addressed during and after construction, and final design will determine whether the existing monitoring wells would need to be relocated. Regardless, sampling would continue until the site has attained closure status from DOPS.

3.11.3 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative).

- A site-specific Phase I Environmental Site Assessment or ISA will be conducted prior to construction or acquisition of any site. The nature and extent of any soil or groundwater contamination will be assessed to determine whether remediation will be required or modifications to project design can be made.
- A Phase II ISA may be performed on sites identified as RECs or areas of potential environmental concern. Contaminated material will be dealt with in accordance with environmental regulations. Prior to construction activities, a Health and Safety Plan will be developed in accordance with appropriate CDOT specifications.
- For areas with known soil and groundwater contamination, a Materials Management Plan (MMP), which includes procedures for handling asbestos-containing materials (ACM), and a Health and Safety Plan will be developed in accordance with appropriate CDOT specifications.
- The level of remediation will be determined in accordance with applicable federal and state laws and based on the final project alignment, ROW requirements, and the degree of subsurface disturbance during construction.
- Engineering controls will be considered to minimize potential disposal costs and to avoid contamination.
- If dewatering is necessary, groundwater will be managed in accordance with appropriate CDOT specifications and permitted by the CDPHE Water Quality Control Division.
- Groundwater monitoring wells at the Pepsi-Cola Bottling Company site that are abandoned will be plugged in accordance with appropriate CDOT specifications and in compliance with the Colorado Department of Natural Resources, Division of Water Resources, State Engineer Water Well Construction Rules.
- Prior to demolition of any structure, the structure will be surveyed for any regulated materials. CDOT will meet all state and federal regulations pertaining to demolition of buildings and other structures. Regulated materials must be removed from any structures prior to demolition and appropriately recycled or disposed.
- CDOT will evaluate any potentially asbestos-containing materials, including landfill material, construction debris, utilities, or other ACM, in accordance with appropriate CDOT specifications regarding the potential for asbestos-containing construction debris in soil.
- Byproducts of steel manufacturing shot and slag have been stockpiled at the Evraz Rocky Mountain Steel Mill site and will likely be encountered during construction. Special waste-handling and excavation requirements will be necessary during construction and will be developed once the chemical composition and volume of the material is known. Requirements may include disposal at a landfill that is permitted to accept this type of material, personal protective equipment for workers disturbing these areas, additional dust control measures and monitoring, and decontamination of the construction equipment.

3.12 FISH AND WILDLIFE HABITAT

This section describes existing fish and wildlife species within the study area, their associated habitat, and impacts to these species and habitat as a result of the Build Alternatives. Fish and wildlife species that are recognized as threatened or endangered pursuant to the federal Endangered Species Act (ESA) are discussed separately in **Section 3.13 Sensitive Species**.

3.12.1 Fish and Wildlife Laws and Regulations

Colorado Senate Bill (SB) 40 Wildlife Certification (33-5-101-107) is meant to protect and preserve all wildlife associated with streams in Colorado. SB 40 (33-5-101-107, Colorado Revised Statutes [CRS] 1973) requires state agencies to obtain certification from Colorado Parks and Wildlife (CPW) when that agency plans construction in any stream or its banks or tributaries. The bill emphasizes the protection of fishing waters, although it does also acknowledge the need to protect and preserve all wildlife associated with streams in Colorado. Additionally, CRS 33-5-102 sets forth legislation protecting fishing streams from agency actions. The CPW administers SB 40, and a certification is required whenever construction would affect any stream, river, lake, or riparian habitat and the wildlife habitat those areas provide. To comply with SB 40, a transportation project must demonstrate that measures have been taken to lessen or avoid impacts to protected waters and riparian habitat. The Arkansas River, Fountain Creek, and adjacent wetland and riparian habitats are located within the project corridor and may be impacted by the New Pueblo Freeway project.

Migratory birds, such as ducks and hawks, are protected under the federal Migratory Bird Treaty Act (MBTA) (16 USC 703-712), which provides full federal protection of migratory birds. According to the MBTA, a migratory bird is any bird, whatever its origin and whether or not it was raised in captivity, which belongs to a species listed in 50 Code of Federal Regulations (CFR) 10.13 or which is a mutation or hybrid of any such species, including any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof.

The take (capture or kill) of a migratory bird, including disturbance of eggs or nests, is a violation of the MBTA. The New Pueblo Freeway project would cross habitat that may be used by migratory birds.

3.12.2 Affected Environment

The settlement of the City of Pueblo and the original construction of I-25 significantly reduced the amount of available wildlife habitat in the study area. As the area has been urbanized, a predominant lack of vegetation exists in areas outside of the Fountain Creek Park Land and Arkansas River Corridor; the urban habitats are low quality and inhabited predominantly by the common urban wildlife species listed in **Exhibit 3.12-1**.

Wildlife surveys were conducted for this project in 2003. The study area did not extend east of the railroad tracks in most areas because project impacts would not occur in this area. Emphasis was placed on the following wetlands and wildlife habitat areas because these are the main sizable, non-urban habitats in the study area:

- A wetlands area (stormwater pond) located adjacent to the existing Pueblo Boulevard exit.
- The unnamed drainage located between the existing I-25 (and parallel railroad tracks) on the west, Santa Fe Avenue on the east, Mesa Avenue on the south, and the Arkansas River on the north.
- The Arkansas River crossing area.
- Fountain Creek.
- The Arkansas River Riverwalk Bypass channel located north of Ilex Street.

The developed areas adjacent to I-25 consist of commercial, industrial, recreational, and residential land uses. The vast majority of wildlife habitat in the study area is located in the North Area (Phase 1) and Central Area (Phase 2) along the Arkansas River and Fountain Creek, and comprises open water, riparian areas, wetlands, and wooded uplands. **Exhibit 3.12-2** details the acres of wildlife habitat in the study area.

The Arkansas River is an important east-west movement corridor for birds, mammals, fish, and reptiles. Fountain Creek is an important north-south riparian corridor that serves as a movement corridor for mammals and breeding habitat for raptors and small fish. Both the Arkansas River

and Fountain Creek corridors provide fish and wildlife habitat for feeding, breeding, cover, and movement.

Further details on wildlife in the project area may be found in the *Fish and Wildlife Habitat Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005d).

EXHIBIT 3.12-1
Observed Wildlife in the Study Area

Species	Habitat Type	Characteristics
OBSERVED DURING FIELD SURVEYS		
mule deer (*Odocoileus hemionus*)	Widely distributed	Mammal, Urban Tolerant
white-tailed deer (*Odocoileus virginianus*)	Widely distributed	Mammal, Urban Tolerant
striped skunk (*Mephitis mephitis*)	Widely distributed	Mammal, Urban Tolerant
raccoon (*Procyon lotor*)	Widely distributed	Mammal, Urban Tolerant
red fox (*Vulpes vulpes*)	Open areas	Mammal, Urban Tolerant
Common Crow (*Corvus brachyrhynchos*)	Open areas	Migratory Bird, Urban Tolerant
Black-billed Magpie (*Pica pica*)	Open areas	Migratory Bird, Urban Tolerant
Blue Jay (*Cyanocitta cristata*)	Wooded and open areas	Migratory Bird, Urban Tolerant
Northern Flicker (*Colaptes auratus*)	Wooded, and open areas	Migratory Bird, Urban Tolerant
desert cottontail (*Sylvilagus audubonii*)	Wooded, and open areas	Mammal, Urban Tolerant
fox squirrel (*Sciurus niger*)	Wooded areas	Mammal, Urban Tolerant
Killdeer (*Charadrius vociferus*)	Open areas	Migratory Bird
Blue-winged Teal (*Anas discors*)	Aquatic areas	Migratory Bird
Great Blue Heron (*Ardea herodias*)	Aquatic areas	Migratory Bird
Cattle Egret (*Bubulcus ibis*)	Aquatic areas	Migratory Bird, Urban Tolerant
Black Duck (*Anas rubripes*)	Aquatic areas	Migratory Bird
Belted Kingfisher (*Ceryle alcyon*)	Aquatic areas	Migratory Bird
Spotted Sandpiper (*Actitis macularia*)	Aquatic and open areas	Migratory bird
Mallard Duck(*Anas platyrhynchos*)	Wetlands	Migratory Bird
LIKELY TO BE PRESENT		
gray fox (*Urocyon cinereoargenteus*)	Widely distributed	Mammal
coyote (*Canis latrans*)	Widely distributed	Mammal, Urban Tolerant
Great Horned Owl (*Bubo virginianus*)	Wooded and open areas	Migratory Bird
Swainson's Hawk (*Buteo swainsoni*)	Open areas	Migratory Bird
Red Tailed Hawk (*Buteo jamaicensis*)	Open areas	Migratory Bird, Urban Tolerant
deer mouse (*Peromyscus maniculatus*)	Widely distributed	Mammal
white-footed mouse (*Peromyscus leucopus*)	Wooded areas	Mammal
Muskrat (*Ondatra zibethicus*)	Aquatic areas	Mammal

EXHIBIT 3.12-1
Observed Wildlife in the Study Area

Species	Habitat Type	Characteristics
mink (*Mustela vison*)	Aquatic areas	Mammal
long-tailed weasel (*Mustela frenata*)	Widely distributed	Mammal
little brown bat (*Myotis lucifugus*)	Aquatic areas	Mammal
Song Sparrow (*Melospiza melodia*)	Open areas	Bird
plains leopard frog (*Rana blairi*)	Aquatic areas	Amphibian, State Special Concern
western chorus frog (*Pseudacris triseriata*)	Aquatic areas	Amphibian
western terrestrial garter snake (*Thamnophis elegans*)	Open areas	Reptile
bluegill (*Lepomis macrochirus*)	Aquatic areas	Fish
channel catfish (*Ictalurus punctatus*)	Aquatic areas	Fish
common carp (*Cyprinus carpio*)	Aquatic areas	Fish
fathead minnow (*Pimephales promelas*)	Aquatic areas	Fish
gizzard shad (*Dorosoma cepedianum*)	Aquatic areas	Fish

Source: U.S. Fish and Wildlife Service, 2010a; U.S. Fish and Wildlife Service. 2010b.

EXHIBIT 3.12-2
Total Wildlife Habitat in the Study Area (acres)

	Aquatic Areas			Wooded Uplands	Total
	Open Water	Riparian	Wetlands		
Habitat within Study Area	10.22	39.45	9.62	15.51	75

Source: CH2M HILL, 2005d.

3.12.3 Environmental Consequences

Impacts to fish and wildlife are closely linked to impacts to the habitat they require. When analyzing the impacts to fish and wildlife, it must be determined whether actual habitat would need to be acquired for the project and whether the project would create any problems, such as a barrier along a migration route or a forced change in migration patterns. Impacts to wildlife may occur due to habitat fragmentation, disturbance of spawning beds used by aquatic species, or removal of woodlands used by birds and mammals for both nesting and foraging.

Wildlife using the Arkansas River and Fountain Creek corridors may be affected by encroachment of the highway improvements and associated construction activities, but the disturbance would be minimal and would not change the routes of migratory birds or prevent the movement of the animals using these areas. Impacts may include the loss or fragmentation of nesting habitat, increased avoidance of the project area, and increased vehicle collision mortality. The following sections discuss the potential impacts of each alternative in detail.

3.12.3.1 No Action Alternative

Under the No Action Alternative, the current I-25 would not be improved and no permanent or temporary impacts to wildlife would occur; therefore, wildlife within the study area would continue to inhabit the existing habitats along the Fountain Creek and Arkansas River. It is expected that the

quality of wetlands in the project area that are currently affected by the influx of pollutants contained in highway runoff (such as sand, salt, and contaminants from vehicles) would continue to degrade over time.

3.12.3.2 Build Alternatives

North Area (Phase 1)

Impacts to wildlife within the North Area (Phase 1) under both Build Alternatives would include the loss of wetland and riparian habitat along the west side of Fountain Creek due to the extension of Dillon Drive north of US 50B and the construction activities associated with the extension. The widening of the existing 8th Street bridge over Fountain Creek would require construction of additional bridge piers that would result in a permanent loss of habitat. A total of 0.13 acre of wetlands and 4.91 acres of riparian habitat would be impacted by the project in these two locations.

The impacted wetland and riparian areas, shown in **Exhibit 3.12-3**, represent only a small portion of the total wetland and riparian habitat located along Fountain Creek and would not impede wildlife movement along the corridor. Although construction activities would result in some loss of nesting habitat for migratory birds and other wildlife using the impacted wetland and riparian areas, these areas are relatively low quality when compared to habitat found in less disturbed areas. This area is considered low quality due to prior disturbances and the invasion of the noxious weed tamarisk (tamarisk is discussed further in **Section 3.18 Noxious Weeds**). Because tamarisk is a heavy consumer of water and spreads rapidly in disturbed areas, it would directly compete with native species found in the area that provides better habitat and food for wildlife.

South Area (Phase 2)

Both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative) would impact approximately 0.02 acre of wetland habitat in the South Area (Phase 2). The impacts would result from the placement of a box culvert in the wetland channel located southeast of the Pueblo Boulevard interchange, as shown in **Exhibit 3.12-4**. The impacted wetland area represents only a small reduction in the overall wetland size, and the majority of the wetland would remain intact and useable by wildlife. Bessemer Ditch is a concrete-lined channel in the study area that is subject to seasonal fluctuations in flows due to irrigation demands and therefore does not provide suitable habitat.

Central Area (Phase 2)

Existing I-25 Alternative

Impacts to habitat caused by the Existing I-25 Alternative are shown in **Exhibit 3.12-5**.

The Existing I-25 Alternative would involve construction of a single new bridge to replace the two existing bridges for I-25 to cross the Arkansas River, as well as the widening of the existing Santa Fe Bridge. The new bridge piers would encroach on approximately 0.01 acre of open water in the river. This would be a “transverse encroachment,” meaning that the encroachment is perpendicular to the flow of the stream. The new piers would be similar in size to the piers that currently support the highway. Therefore, the impact would be expected to be negligible because the new piers would not alter the river’s surface flows, as modeled in the *Floodplain Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005f), restrict the passage of fish upstream or downstream, or present a new obstacle for recreational users.

Both the wetland and the wooded upland located east of I-25 and south of the Arkansas River would be impacted under the Existing I-25 Alternative. Although only 0.07 acre of the wetland and 3.81 acres of the wooded upland would be impacted due to construction activities resulting from right-of-way (ROW) encroachment, these areas would be divided in half to accommodate the extension of Abriendo Avenue.

Modified I-25 Alternative (Preferred Alternative)

Impacts to habitat caused by the Modified I-25 Alternative (Preferred Alternative) are shown in **Exhibit 3.12-6**. The Modified I-25 Alternative (Preferred Alternative) would impact 0.02 acre of open water, 2.54 acres of riparian habitat, 0.93 acre of wetlands, and 9.49 acres of wooded upland habitat.

EXHIBIT 3.12-3
North Area (Phase 1) Build Alternative Habitats

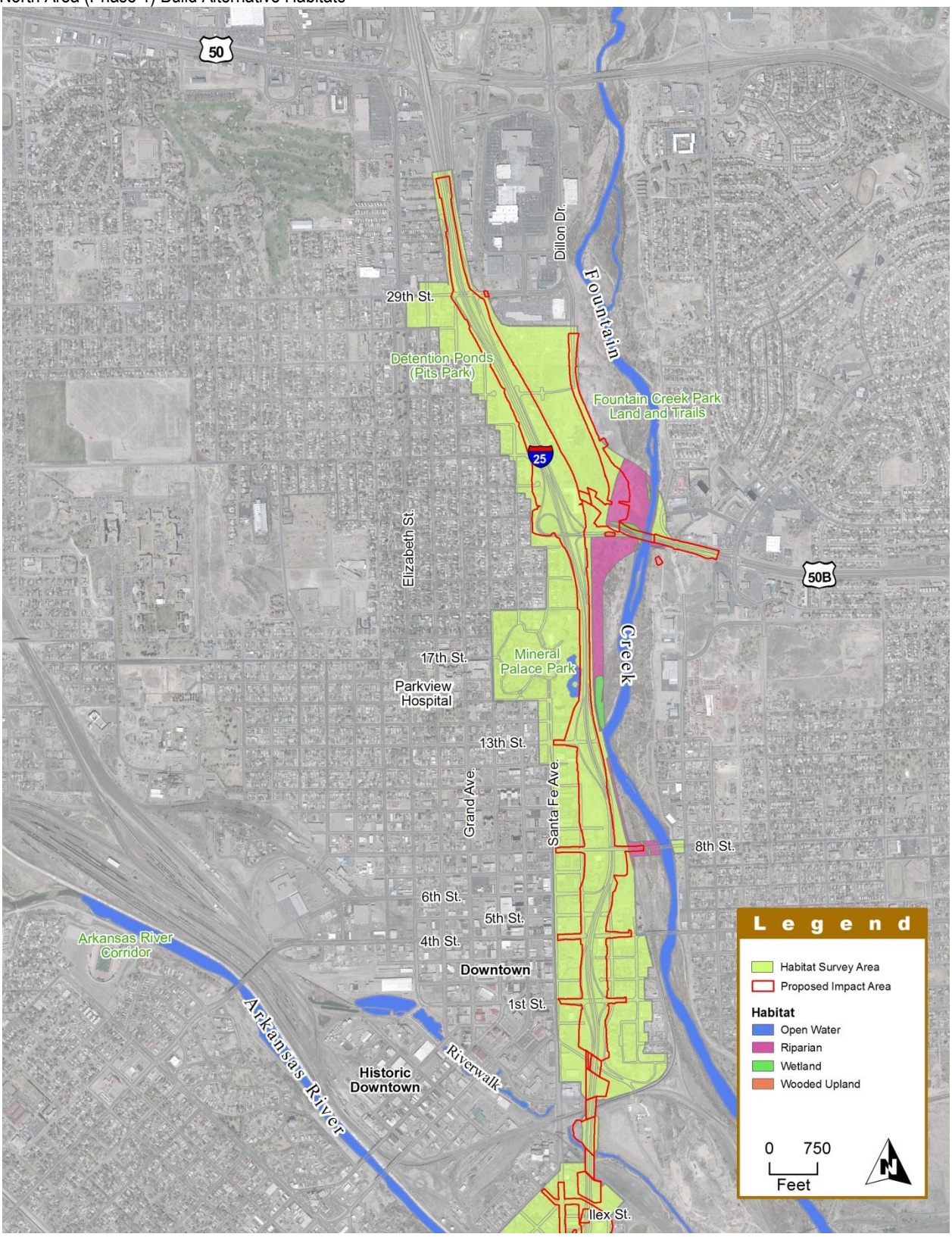


EXHIBIT 3.12-4
South Area (Phase 2) Build Alternative Habitats

EXHIBIT 3.12-5
Central Area (Phase 2) Habitats – Existing I-25 Alternative

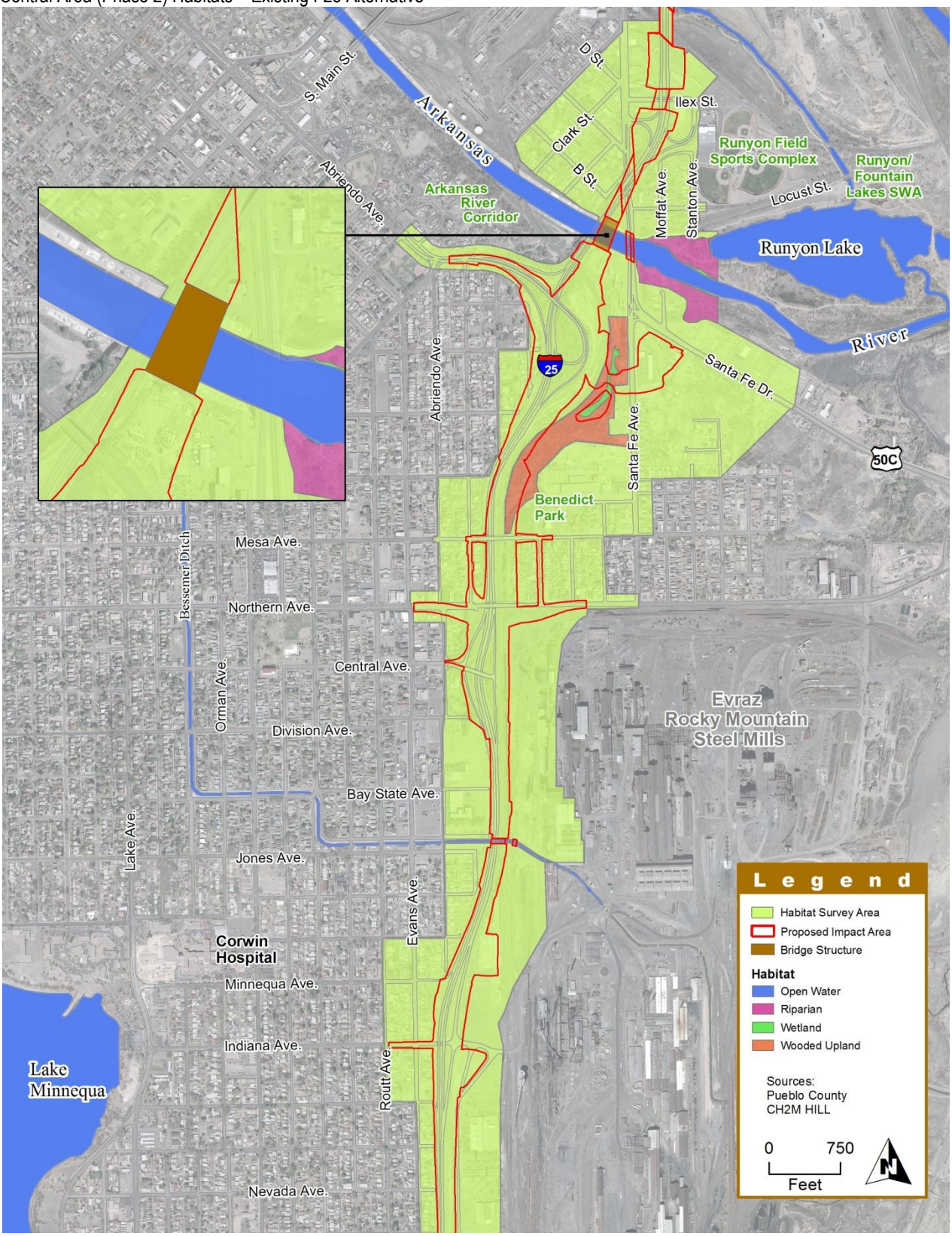
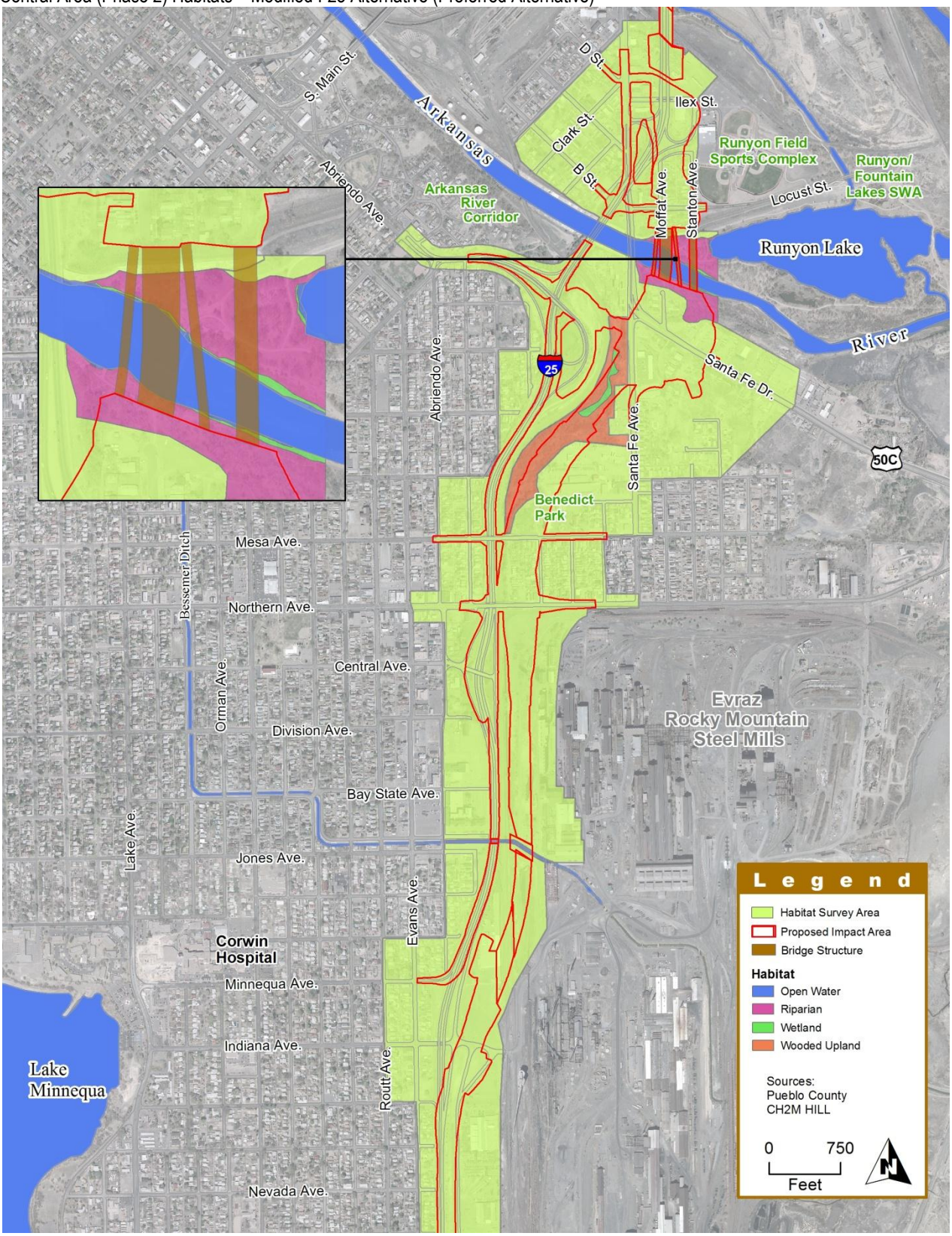


EXHIBIT 3.12-6

Central Area (Phase 2) Habitats – Modified I-25 Alternative (Preferred Alternative)



A total of 0.02 acre of open water habitat would be lost due to the placement of 18 new bridge piers in the Arkansas River streambed that would carry the new I-25 alignment and the two additional ramps. The existing piers carrying I-25 would remain within the Arkansas River to carry the repurposed Santa Fe Avenue. The old Santa Fe/US 50B Bridge over the Arkansas River would be removed, which would remove one existing pier from the Arkansas River. Similar to the Existing I-25 Alternative, the additional bridge piers would not substantially alter surface flows or restrict the passage of fish upstream or downstream (CH2M HILL, 2005f). As a result, the impacts to fish species are expected to be minimal.

The riparian area adjacent to the south bank of the Arkansas River would be impacted due to construction activities resulting from ROW encroachment. The impacts would not prevent the movement of wildlife but would result in the permanent loss of nesting habitat for migratory birds, as well as cover and feeding habitat for other wildlife species commonly found in riparian areas.

The Modified I-25 Alternative (Preferred Alternative) would reduce the size of the wooded upland area located south of the Arkansas River and east of I-25 by more than half due to roadway encroachment, and the remaining habitat would be fragmented. Although approximately 40 percent of the wooded area would remain, the alignment would divide the remaining area into three individual tracts. The Modified I-25 Alternative (Preferred Alternative) would almost entirely remove the wetland located within the wooded upland area. It is anticipated that the loss of wooded upland and wetland habitat would result in a loss of wildlife species in this area.

3.12.4 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative).

CDOT will mitigate to offset impacts to wildlife habitat resources within the study area. Although avoidance and minimization techniques were used to the extent feasible during the design process to limit or reduce impacts to area wildlife habitat, minor impacts are still expected to occur. Additional wildlife surveys will be conducted prior to final design and construction to identify additional opportunities to avoid and minimize impacts to fish and wildlife. Specific mitigation actions that CDOT will implement include the following:

- Best management practices (BMPs) will be adopted to minimize construction impacts on wildlife and habitat resources within the study area. Management techniques include limiting sedimentation and erosion into area receiving waters, including open water areas, wetlands, and adjacent riparian areas; stabilizing disturbed areas by quickly revegetating stripped areas with approved erosion control seed mixes; and clearly marking construction boundaries to prevent equipment or other intrusion into habitat located outside the construction zone.
- Habitat replacement, restoration, or enhancement will be conducted to mitigate for impacts that could not be avoided, including impacts to the wetland and riparian areas along Fountain Creek and adjacent to the Arkansas River. Examples of habitat restoration and enhancement include planting of native species beneficial to wildlife and removal and management of noxious weeds.
- Under the MBTA, construction activities that would otherwise result in the take of migratory birds, eggs, young, and/or active nests should be avoided during the nesting season. Most migratory bird nesting activity in eastern Colorado occurs each year between April 1 and August 31.
- If construction is planned during raptor nesting season (generally February 1 through July 31), nest surveys will be conducted by a qualified biologist prior to construction to determine the absence or presence of nesting migratory birds. Any unoccupied nests will be removed by CDOT in advance of construction. If an active nest is located within the limits of construction, construction will be suspended and the U.S. Fish and Wildlife Service will be contacted to develop a plan of action. Raptor nest surveys will be conducted during the appropriate nesting season to evaluate the presence of active raptor nests. Seasonal buffer zones or monitoring may be established around active nests during construction to avoid disturbance while nesting, if deemed necessary.
- Prior to the removal of trees, shrubs, and grasses, a bird nesting survey will be conducted. If an active nest is found, construction activities with a potential to impact the success of the nest will not be allowed until the young have fledged or until the nest becomes inactive. Individual trees important for raptor perching

that are to be removed in the ROW will be replaced at a 1:1 ratio or as specified by state and federal wildlife agencies to ensure raptor perch trees are replaced for future use. New trees may be planted near areas that naturally receive adequate water, such as near drainage areas or wetlands, or as determined by CDOT to ensure survival (if irrigation is available, that would be sufficient as well). Artificial perches may be temporarily erected where important large perch trees are removed to provide perches until newly planted trees have matured.

- Updated wildlife surveys will be completed prior to construction, including surveys of prairie dogs and burrowing owls. CDOT will coordinate with CPW on the results of the wildlife surveys prior to construction and will seek input on impact avoidance and mitigation plans.
- To avoid injury or mortality to bat species, CDOT will survey for bats prior to repairing or replacing bridges, and if found, efforts will be made to remove them humanely.
- CDOT may be required to obtain an SB 40 permit from the CPW. Following final design, an application for SB 40 Wildlife Certification may be required if the project does not fall within CDOT's Programmatic Agreement with the CPW, including detailed plans and specifications. Plans will be reviewed by the CPW to make sure that they are technically adequate to protect and preserve fish and wildlife species and provide recommendations or alternative plans if the project would adversely affect a riparian area along the Arkansas River or Fountain Creek.
- All bridge work on the project will be performed in accordance with appropriate CDOT Standard Specifications for Roadway and Bridge Construction and will comply with applicable laws and MOAs.
- A concrete truck washout area will be constructed at the project site with the following specifications:
  - Suitable locations within the CDOT ROW will be set aside for the washout area.
  - A pit with sufficient capacity to hold all anticipated wastewaters will be constructed at least 50 feet away from any state waters; the bottom of the pit will be at least 5 feet higher than groundwater.
  - The area will be signed as a concrete wash water clean-out area, and the access road leading to a paved road or highway will have a stabilized construction entrance in accordance with appropriate CDOT specifications.
- No fertilizer, hydrofertilizer, or hydromulching will be allowed adjacent to any stream or wetland.
- Please refer to **Section 3.18 Noxious Weeds** for detailed information on weed control mitigation measures.
- Please refer to **Section 3.7 Wetlands** for detailed information on wetland mitigation measures.

3.13 SENSITIVE SPECIES

Threatened and endangered (T&E) species are species that have been identified pursuant to the federal Endangered Species Act (ESA) of 1973, as amended (16 USC 1531-1543). A species listed as "endangered" is one that is in danger of extinction throughout all or a significant portion of its range. A species listed as "threatened" is one that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. In addition to being listed as threatened or endangered, a species can also be listed as a "species of concern." Species of concern are recognized by the U.S. Fish and Wildlife Service (USFWS) and Colorado Parks and Wildlife (CPW) (formerly the Colorado Division of Wildlife [CDOW]) as species with declining populations or requiring conservation efforts to prevent decline but are not provided protection.

The ESA provides federal protection for species listed as threatened or endangered by the USFWS. The ESA prohibits any federally-funded or federally-authorized project from harming or killing a listed species or adversely affecting designated critical habitat for such species. A project could be considered a taking of a listed species if it modifies habitat, precludes or impedes development of habitat, would likely disturb feeding or breeding activities, or would harm or kill an individual of that species. Coordination between CDOT and the USFWS is necessary when a project may affect federally-listed species or designated critical habitat, even if the effects are expected to be beneficial.

Under Section 7 of the ESA, federal agencies such as FHWA are required to consult with the USFWS to ensure they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroying or adversely modifying designated critical habitat. (Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species.) The State of Colorado also protects T&E species under Colorado Revised Statute, Title 33, Article 2. The Colorado Natural Heritage Program (CNHP) and CPW maintain databases of state-listed T&E species and species of concern. On a statewide level, CPW and CNHP track species diversification and abundance (rarity), and the CNHP database provides species information on an advisory level.

Impacts to T&E species are closely linked to impacts to the habitat they require because they typically have low populations and are sensitive to disturbances such as the loss or fragmentation of habitat. As a result, it is necessary to determine a project's effects on habitat when evaluating potential impacts to T&E species.

3.13.1 Affected Environment

A T&E species assessment was conducted through consultation with federal (USFWS) and state (CPW) resource agencies, a literature review (including search results from the CNHP location and status database), field surveys, and correspondence with local bird experts from the CPW and U.S. Army Corps of Engineers. Field surveys were completed in 2003 as a means of confirming the presence of individuals or suitable habitat for any of the listed species.

In a letter dated March 9, 2005, the USFWS provided a list of federally designated threatened or endangered species that may be located within or near the project area. The species identified consisted of the bald eagle (prior to their delisting in July 2007), greenback cutthroat trout, and Colorado butterfly plant (see **Appendix B**). The USFWS also responded that, while it has no known records verifying the presence of the Arkansas darter in the project area, suitable habitat exists along the Arkansas River and Fountain Creek. The greenback cutthroat trout requires cold, clear headwater streams, which are not known to occur in the project area. The Colorado butterfly plant is a regional endemic that is typically found in wetland habitats along meandering stream channels. The plant is not known to occur in Pueblo County. As the area has been urbanized, a predominant lack of vegetation exists in areas outside of the Fountain Creek Park Land and Arkansas River corridor. The urban habitats present in the project area are of low quality and inhabited predominantly by common urban wildlife species. Because no suitable habitat for the Colorado butterfly plant or the greenback cutthroat trout occurs in the project area, these species are not discussed further in this FEIS. Likewise, no suitable habitat for the greenback cutthroat trout occurs in the project area, and this species is not discussed further.

In correspondence dated November 22, 2004, CPW stated that it had no records indicating the presence of any state-listed species within the project area. Therefore, state-listed species were evaluated based on suitable habitat requirements found in the project area. Species that have been known to occur or may potentially occur in the project area based on habitat requirements are listed in **Exhibit 3.13-1**.

EXHIBIT 3.13-1
Threatened and Endangered and Rare Species Known to Occur or Potentially Occurring in the Project Area

Species	Regulatory Status[1]	Rarity[2]	Habitat	Occurrence Potential
Amphibians				
Plains Leopard Frog (*Rana blairi)*	SC	S3/G5	Wetlands and riparian areas adjacent to open water/open water.	Historically observed along the shore of Arkansas River in the project area.
Birds				
bald eagle (*Haliaeetus leucocephalus)*	SC	G5, S1B, S3N	River floodplains, lakes, reservoirs, and prairie dog towns.	Possible winter visitor in the project area; however, use of the project area is incidental to more heavily used upstream areas.
Fish				
Arkansas Darter (*Etheostoma cragini)*	FC, ST	S2/G3G4	Spring-fed, pebble, or sand bottomed pools of small spring-fed streams and wetlands, open water.	Possible that some ephemeral habitat may be present in the form of overflow pools on Fountain Creek wetlands in the project area.

Sources: Andrews and Righter, 1992; Kingery, 1998; Colorado Rare Plant Technical Committee, 1999; Colorado Department of Parks and Wildlife (CPW [formerly CDOW]), 2003a; CPW, 2003b; Colorado Natural Heritage Program (CNHP), 2001; Hammerson, 1999; Pantle, 2003; U.S. Fish and Wildlife Service, 2003.

[1]FC = federal endangered or threatened species candidate; FE = federal endangered species; FT = federal threatened species; SC = state special concern; SE = state endangered species; ST = state threatened species

[2]Colorado Natural Heritage Program Ranking Scheme:
S1/G1 = critically imperiled in the state/globally (five or fewer occurrences)
S2/G2 = imperiled in the state/globally (6 to 20 occurrences)
S3/G3 = vulnerable throughout the state/globally or found locally in a restricted range (21 to 100 occurrences)
S4/G4 = apparently secure in state/globally, though may be rare in parts of range, especially periphery
S5/G5 = demonstrably secure state/globally, though it may be quite rare in parts of its range
S#B = refers to breeding season rareness
S#N = refers to non-breeding season rareness
G= global ranking – imperilment of species over its entire range

3.13.1.1 Species Known to Occur

Plains Leopard Frog

The plains leopard frog occurs along creek and river channels (wetlands and riparian areas adjacent to open water) in southeastern Colorado (Hammerson, 1999). The plains leopard frog is not a state or federal protected (listed) T&E species, but it is considered a state special concern species by CPW and is listed by CNHP as a rare and vulnerable species. This species is designated by CNHP as S3, meaning that between 21 and 100 occurrences occur in the state. Species population status within Colorado has not been accurately determined; however, water projects, cattle grazing, and predation/ competition with the bullfrog (*Rana catesbeiana*) are considered threats to this species.

3.13.1.2 Species Potentially Occurring

Bald Eagle

The USFWS developed the National Bald Eagle Management Guidelines to help avoid and minimize impacts on bald eagles after their delisting in July 2007. The guidelines are intended to advise landowners, land managers, and others who share public and private lands with bald eagles about when and under what circumstances the protective provisions of the Bald Eagle Protection Act

may apply to their activities. Although the bald eagle has been delisted from federal status, it remains a state-listed species of concern and may occur incidentally in the project area as a winter migration visitor. This species is designated by CNHP as S1B/S3N, meaning there are 5 or fewer breeding pairs and 21 to 100 non-breeding occurrences known to exist in the state. Andrews and Righter (1992) show the bald eagle distributed throughout the Arkansas River corridor (open water, riparian, and wetland habitats) as a winter migrant from Pueblo County to eastern Colorado; however, communication with a local avian expert suggests only casual winter/migratory use of the Arkansas River in the project area by bald eagles (Truan, 2003). This was confirmed by a second regional avian expert who stated that the primary bald eagle concentration is upstream of the project area at Pueblo Reservoir (Pantle, 2003). Thus, the occurrence of this species in the project area would be ephemeral at best. Due to the minimal potential for occurrence in the project area, the bald eagle was not considered for further analysis in this FEIS.

Arkansas Darter

The Arkansas darter is a state-threatened species and a federal candidate for listing under the ESA. The CNHP designation is S2, meaning that there are between 6 and 20 occurrences of this species in the state. Potential habitat exists in the project area, although presence of the species has not been confirmed (CPW, 2003b [CDOW]). This species is known to inhabit Fountain Creek (open water and wetland habitats) in El Paso County north of Pueblo, and CPW believes that Arkansas darters may inhabit small overflow ponds in Fountain Creek wetlands in the project area when they are washed downstream from El Paso County during flood events.

Other Species

Six federally-listed threatened or endangered species were identified as "potentially occurring" in the study area but are not known to occur due to lack of suitable habitat:

- The Mexican Spotted Owl requires dense conifer stands and steep canyons.
- The whooping crane is a migratory species that requires open water and shallow lakes.
- The greenback cutthroat trout requires cold, clear headwater streams.
- The black-footed ferret requires prairie dog colonies.
- The Canada Lynx requires subalpine and montane conifer forests.
- The Preble's Meadow Jumping Mouse does not occur south of Colorado Springs.

Other species potentially occurring in the project area are not discussed in this FEIS due to lack of suitable habitat or because they have not been observed in the project area.

Further details on sensitive species in the project area may be found in the *Threatened and Endangered Species Assessment Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005e).

3.13.2 Environmental Consequences

Impacts to T&E species could occur if the proposed project modifies habitat, precludes or impedes the development of habitat, has the likelihood of disturbing species' feeding or breeding activities, or results in the taking of an individual. This section describes impacts to the plains leopard frog and the Arkansas darter resulting from loss of habitat under the No Action Alternative, the Existing I-25 Alternative, and the Modified I-25 Alternative (Preferred Alternative).

3.13.2.1 No Action Alternative

Under the No Action Alternative, the existing I-25 would remain and only routine maintenance would occur. No permanent or short-term impacts would occur to the habitats of the plains leopard frog or the Arkansas darter. It is expected that the quality of T&E habitat in the project area that is currently affected by the influx of pollutants contained in highway runoff (such as sand, salt, and contaminants from vehicles) would continue to degrade over time.

3.13.2.2 Build Alternatives

The loss of plains leopard frog and Arkansas darter habitat due to right-of-way (ROW) encroachment represents only a small portion of the total habitat available along the Arkansas River and Fountain Creek. The remaining open water, wetlands, and riparian areas would remain intact and usable by both species. As a result, although both species would be affected due to the loss of habitat, the impacts are not likely to result in an adverse affect to either species.

Consultation under Section 7 of the ESA occurs during the National Environmental Policy Act (NEPA) process if listed species or their critical habitats would be affected by the proposed action. The six federally-listed threatened or

endangered species potentially occurring in the study area are not known to occur due to lack of suitable habitat. FWHA and CDOT finds the project would have no effect on the black footed ferret (FE), Canada Lynx (FT), Prebles Meadow Jumping Mouse (FT), Greenback Cutthroat Trout (FT), Whooping Crane (FE), and Mexican Spotted Owl (FT). Therefore, formal Section 7 consultation with the USFWS is not required.

North Area (Phase 1)

Under either Build Alternative, impacts to plains leopard frog and Arkansas darter habitat would occur in the wetlands and riparian areas along the west side of Fountain Creek, as shown in **Exhibit 3.13-2**. A total of 0.13 acre of Arkansas darter habitat would be impacted by the conversion of wetlands to new ROW for the extension of Dillon Drive near US 50B. A total of 5.04 acres of plains leopard frog habitat would be permanently impacted due to construction activities. This includes 4.91 acres of riparian habitat that would be impacted by the extension of Dillon Drive to the south and 8th Street to the east, in addition to the 0.13 acre of wetlands mentioned above.

The loss of plains leopard frog and Arkansas darter habitat represents a small portion of the total habitat for these species located along this stretch of Fountain Creek through Pueblo. The remaining wetlands and riparian areas along Fountain Creek throughout Pueblo would remain intact and usable by both species.

South Area (Phase 2)

Both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative) would impact approximately 0.09 acre of plains leopard frog habitat in the South Area (Phase 2), as shown in **Exhibit 3.13-3**. The impacts would result from the placement of a box culvert in the wetland channel located southeast of the Pueblo Boulevard interchange. The impacted wetland represents only a small reduction in the overall wetland size, and the majority of the wetland would remain intact. The Bessemer Ditch does not provide suitable habitat because it is a concrete-lined channel that is subject to seasonal fluctuations in flow due to irrigation demands.

Central Area (Phase 2)

Existing I-25 Alternative

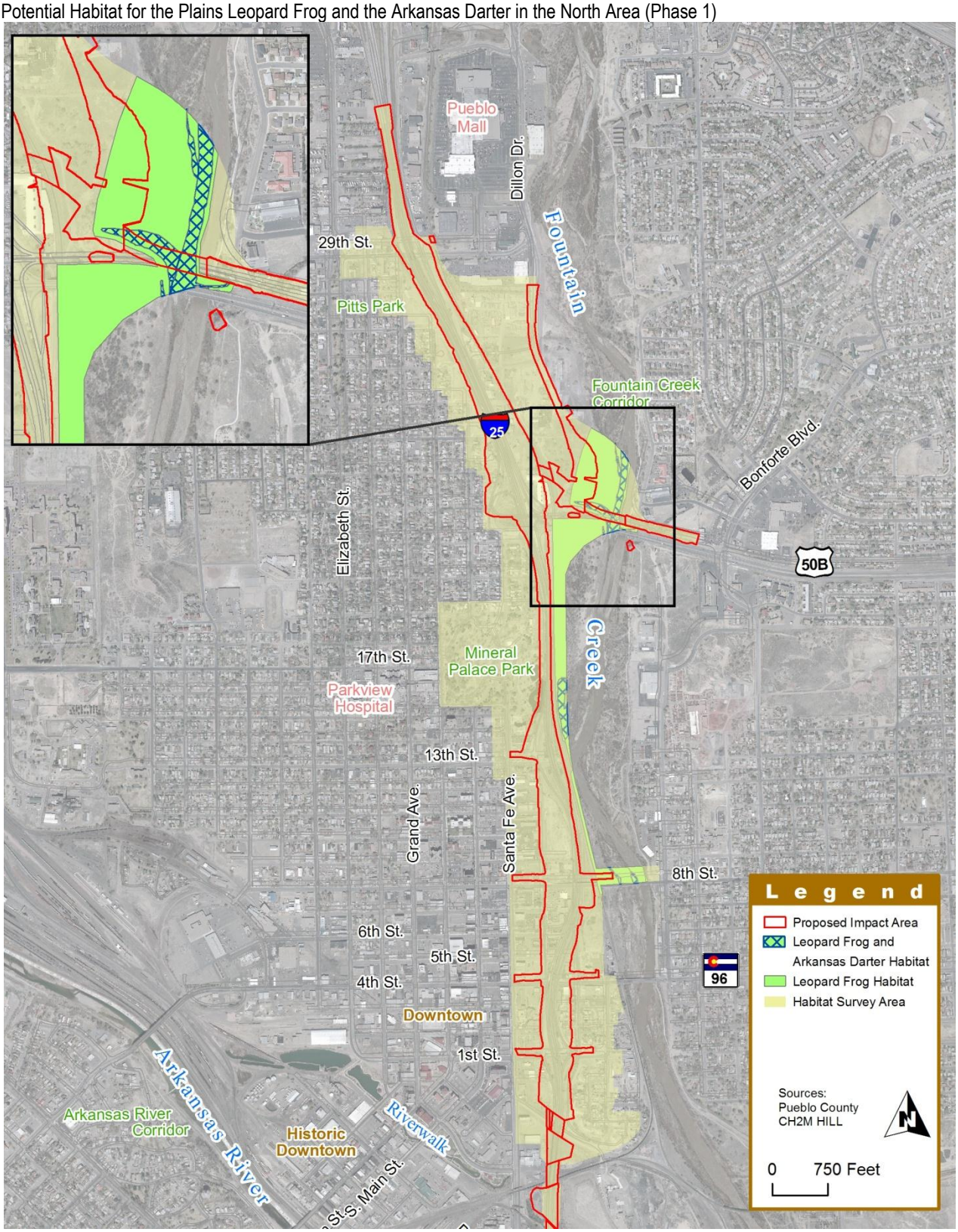
In the Central Area (Phase 2), the Existing I-25 Alternative would involve construction of a single new bridge to replace the two existing bridges for I-25 to cross the Arkansas River, as well as the widening of the existing Santa Fe Bridge. The new bridge piers would encroach on approximately 0.01 acre of open water habitat, as shown in **Exhibit 3.13-4**. This would be a “transverse encroachment,” meaning that the encroachment is perpendicular to the flow of the stream. The new piers would be similar in size to the piers that currently support I-25. The impact is expected to be negligible because the new piers would not alter river surface flows or restrict the movement of fish or frogs. The wetland located east of I-25 and south of the Arkansas River provides habitat for the plains leopard frog. Although only 0.07 acre of the wetland would be impacted due to construction activities, these areas would be fragmented and divided in half to accommodate the extension of Abriendo Avenue to the east of I-25 to connect Abriendo Avenue to Santa Fe Drive. It is anticipated that the remaining areas would continue to provide suitable habitat for the plains leopard frog.

Modified I-25 Alternative (Preferred Alternative)

In the Central Area (Phase 2), the Modified I-25 Alternative (Preferred Alternative) would impact a total of 0.02 acre of potential habitat for the Arkansas darter and 3.49 acres of potential habitat for the plains leopard frog, as shown in **Exhibit 3.13-5**. Specifically, a total of 0.02 acre of open water habitat for both species would be lost due to the placement of 18 new bridge piers in the Arkansas River streambed that would carry the new I-25 alignment and the two additional ramps. The existing piers that currently support I-25 will remain within the Arkansas River to carry the repurposed Santa Fe Avenue. The old Santa Fe/US 50B Bridge over the Arkansas River would be removed, which would remove one existing pier from the Arkansas River. Similar to the Existing I-25 Alternative, the additional bridge piers would not substantially alter river surface flows or restrict the passage of either species upstream or downstream, as modeled in the *Floodplain Technical Memorandum* (CH2M HILL, 2005f). On the south bank of the Arkansas River, an additional 2.54 acres of riparian habitat for the plains leopard frog could be impacted due to the placement of the southern bridge abutment.

EXHIBIT 3.13-2

Potential Habitat for the Plains Leopard Frog and the Arkansas Darter in the North Area (Phase 1)



EXHBIT 3.13-3

Potential Habitat for the Plains Leopard Frog and the Arkansas Darter in the South Area (Phase 2)

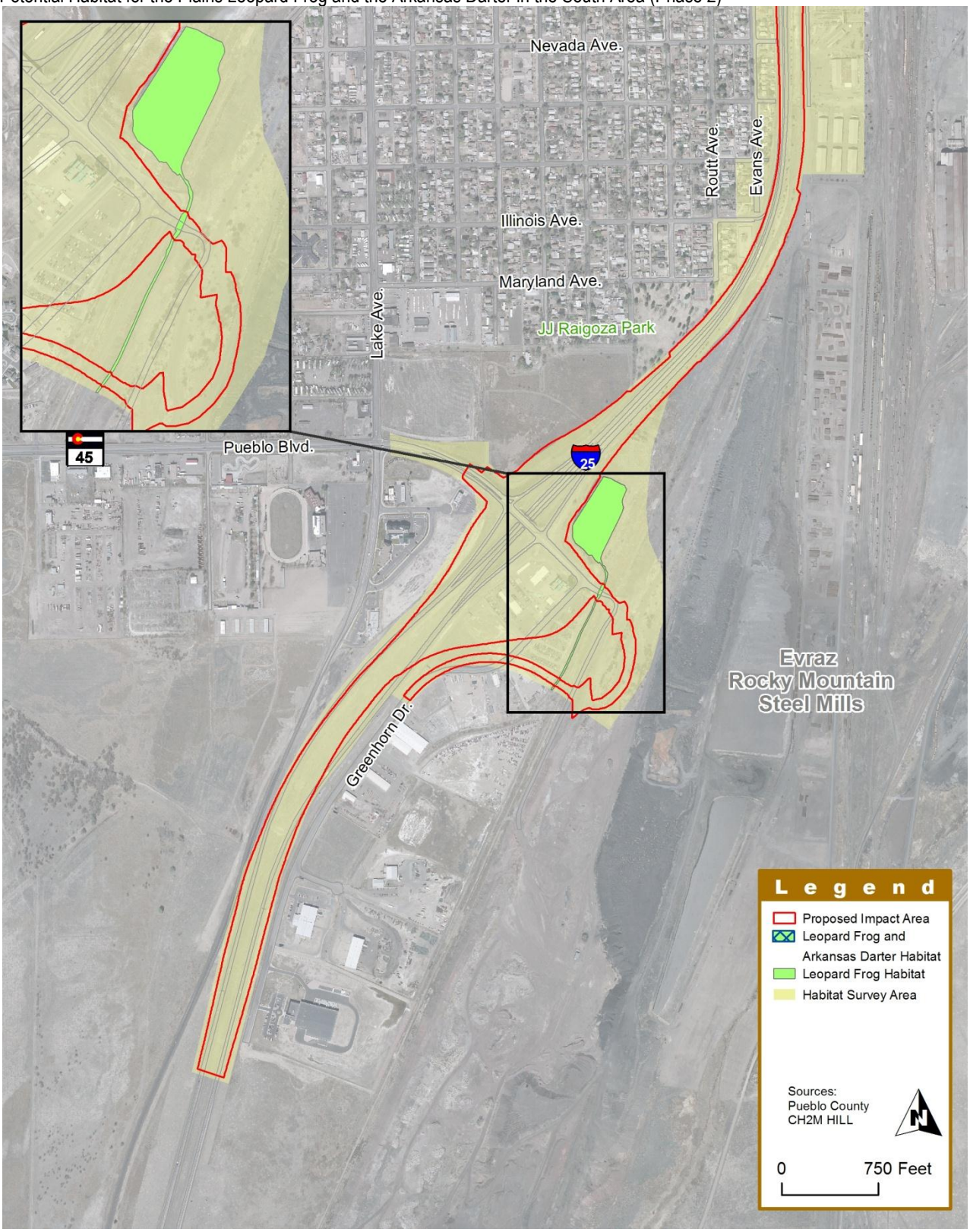


EXHIBIT 3.13-4

Potential Habitat for the Plains Leopard Frog and the Arkansas Darter in the Central Area (Phase 2) under the Existing I-25 Alternative

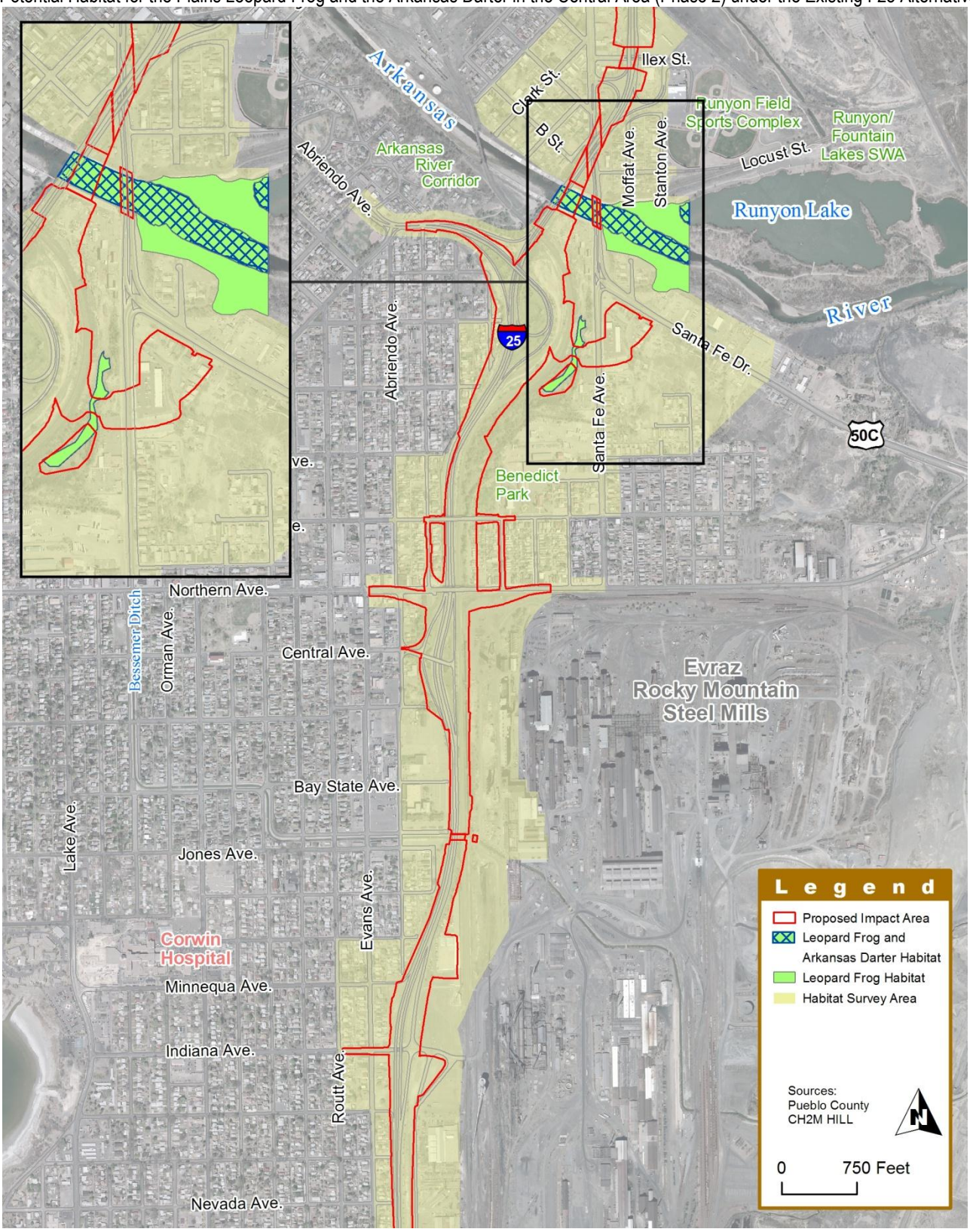
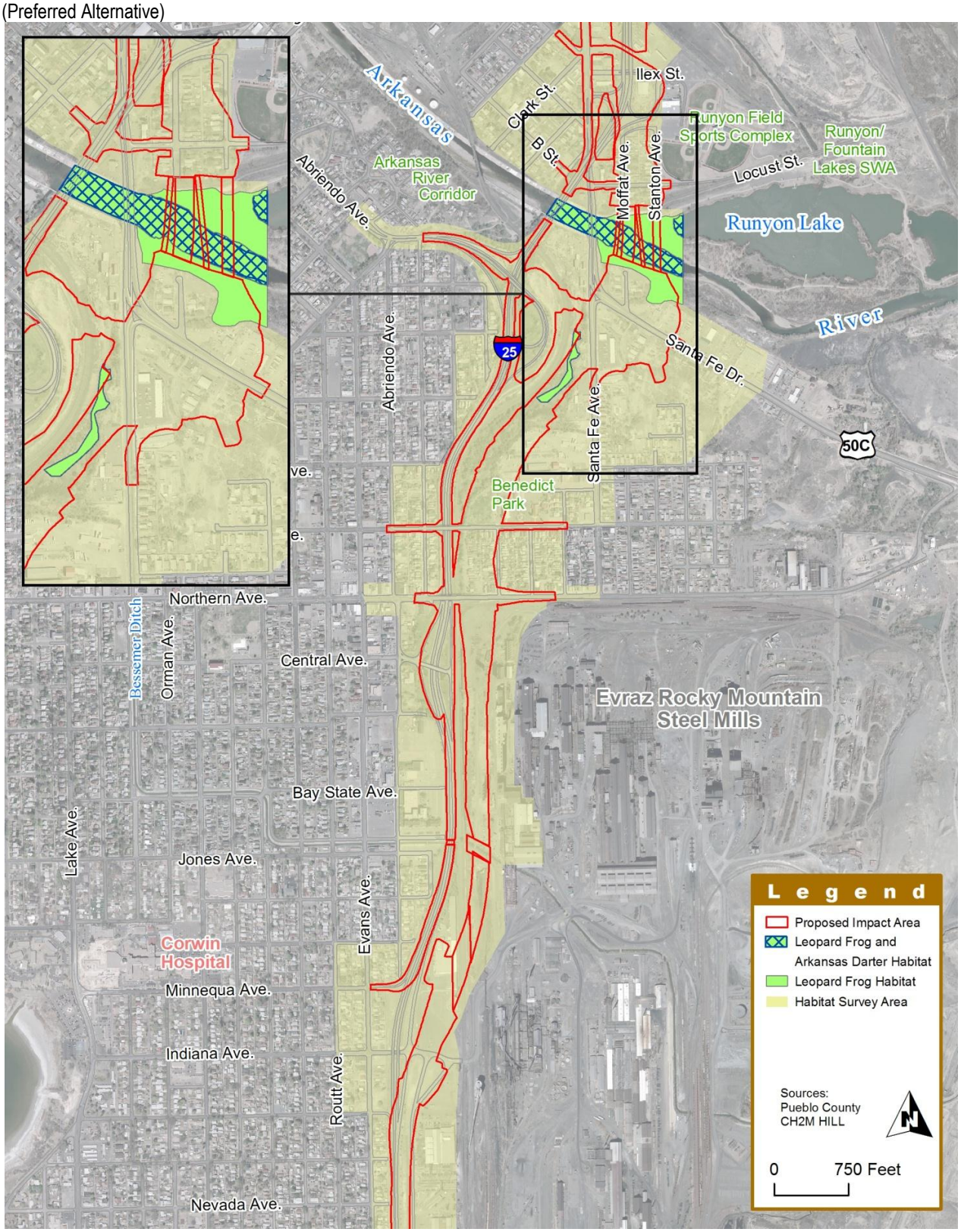


EXHIBIT 3.13-5

Potential Habitat for the Plains Leopard Frog and the Arkansas Darter in the Central Area (Phase 2) under the Modified I-25 Alternative (Preferred Alternative)



South of Abriendo Avenue, the new alignment of I-25 would remove almost an entire wetland, resulting in a loss of 0.93 acre of wetland habitat for the plains leopard frog.

3.13.2.3 Indirect Effects

It is expected that either Build Alternative could result in temporary impacts to plains leopard frogs and their habitat, including mortality and injury, primarily from increased turbidity in the Arkansas River, increased siltation, and vibration from construction equipment. However, these impacts are considered minor compared to the areas and habitat available to the plains leopard frog in other locations. The primary impact of either Build Alternative on sensitive species is expected to be temporary in nature and associated with construction activities.

In the context of the Arkansas River and Fountain Creek, any species displacement caused by the project would be very minor and is not expected to affect the long-term health or survival of the species.

Because the Modified I-25 Alternative (Preferred Alternative) would move I-25 to the east on a new alignment, the new bridge over the Arkansas River would result in greater impacts to Arkansas darter and plains leopard frog habitat when compared to the Existing I-25 Alternative.

3.13.3 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative).

Mitigation will be required to offset impacts to Arkansas darter and plains leopard frog habitat within the project area. Although avoidance and minimization techniques were used to the extent possible during the design process to limit or reduce impacts to habitat, minor impacts are still expected to occur.

Additional surveys will occur prior to final design and construction to identify additional opportunities to avoid and minimize impacts to sensitive species and habitat. Specific mitigation actions that CDOT will implement during final design are listed below.

- The mitigation measures to compensate for impacts on wetlands, wildlife, flowing water, and riparian habitats used by the plains leopard frog and Arkansas darter are presented in sections **3.7 Wetlands**, **3.12 Fish and Wildlife**, **3.15 Water Quality**, and **3.18 Noxious Weeds.** These mitigation measures might benefit terrestrial and aquatic plant and wildlife species by improving and protecting potential habitat along the Arkansas River and Fountain Creek, as well as their respective floodplains. Implementing these mitigation measures might enlarge the size of contiguous blocks of wetlands and riparian habitats, improve habitat connectivity, and enhance functions of the existing habitat. Such results would provide functional benefits for sensitive species.
- Habitat restoration or enhancement will be conducted to mitigate for impacts that could not be avoided, including impacts to the wetlands and riparian areas along Fountain Creek and adjacent to the Arkansas River. Examples of habitat restoration and enhancement include planting of native species beneficial to wildlife and removal and management of noxious weeds.
- A Colorado Senate Bill 40 certification will be obtained by CDOT, as discussed in **Section 3.12 Fish and Wildlife**.
- Wildlife surveys will be completed prior to construction. CDOT will coordinate with CPW on the results of the wildlife surveys prior to construction and will seek input on impact avoidance and mitigation plans.
- Please refer to **Section 3.18 Noxious Weeds** for detailed information on weed control mitigation measures.
- Please refer to **Section 3.7 Wetlands** for detailed information on wetlands mitigation measures.

3.14 FLOODPLAINS

Floodplains are the areas bordering streams or ponds that are subject to flooding. Floodplains are protected by local and federal regulations. The regulated floodplain area is defined as the 100-year floodplain, which is the area that will flood in the event of a 100-year storm (a storm severity with the likelihood of occurring, on average, once every 100 years). If any portion of a proposed highway project may encroach upon the 100-year floodplain, more detailed analysis is required to determine the significance of the encroachment and identify alternatives that may reduce or eliminate impacts. This section discusses floodplain impacts related to flooding hazards that may result from the New Pueblo Freeway project. Impacts on wildlife habitat due to floodplain modifications are discussed in **Section 3.12 Fish and Wildlife Habitat**. Impacts to the recreational values of the floodplains are discussed in **Section 3.3 Parks and Recreation**.

Development in floodplains must be carefully managed to prevent losses to public and private property due to flooding. Encroachment (alteration) of the floodplain that reduces flood storage capacity will displace flood waters and may cause flooding upstream or downstream of the encroachment. Obstructions in a stream or river (such as for the placement of a bridge pier) can restrict the channel, cause erosion or scour, and increase flood elevations upstream. For highway projects, this type of obstruction generally occurs at river crossings and is referred to as a transverse encroachment, meaning that the encroachment is perpendicular to the flow of the stream. Transverse encroachment is relatively easy to manage and usually does not result in significant impacts to the floodplain. Longitudinal encroachment refers to the placement of improvements such as new construction, development, or fill within the floodplain, such as for building a road parallel to the edge of a river. This type of encroachment reduces the storage capacity of the floodplain (constricting the area through which water can flow), causes higher peak flows, and potentially creates flooding downstream.

The federal government has developed a national floodplain management program that is administered by the Federal Emergency Management Agency (FEMA) through the National Flood Insurance Program. Delineating the 100-year floodplain and mapping those boundaries on Flood Insurance Rate Maps (FIRM) is the responsibility of FEMA.

In addition to the FIRM, FEMA prepares a Flood Insurance Study (FIS) describing the modeling and analyses conducted to support the FIRM. The Pueblo Floodplain Manager, like local officials throughout the country, is charged with administering a floodplain management program that regulates development in the 100-year floodplain. Under the National Flood Insurance Program, all construction activities or alterations to existing structures within the 100-year floodplain need a development permit from the local permit official.

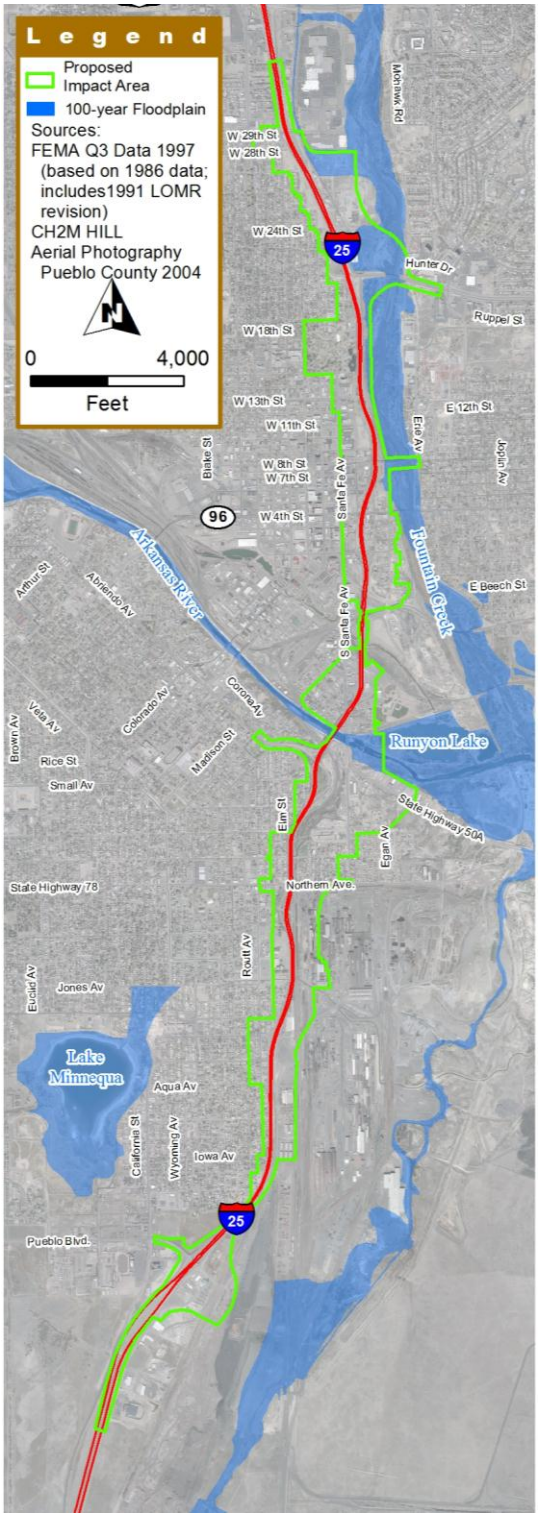
Executive Order (EO) 11988, “Floodplain Management” (Federal Register May 24, 1977), directs federal agencies, including FHWA, to “avoid direct or indirect support of floodplain development wherever there is a practicable alternative.” Under EO 11988, the evaluation of potential impacts to floodplains and alternatives considered to mitigate adverse impacts are to be disclosed in environmental documentation prepared under the National Environmental Policy Act (NEPA). The FHWA policy (as codified in 23 CFR 650.103) is to avoid longitudinal and significant encroachments on floodplains where practicable. Significant encroachments include development with the potential to impact critical transportation facilities, pose a significant risk, or create a significant adverse impact on the natural values of floodplains (23 CFR 650.105). The Modified I-25 Alternative (Preferred Alternative) was developed to be in compliance with 23 CFR 650.103, which fulfills the requirements of EO 11988. The Modified I-25 Alternative (Preferred Alternative) was designed to avoid or minimize impacts to the floodplain.

3.14.1 Affected Environment

There are two FEMA-regulated floodplains in the vicinity of the project limits: Fountain Creek and the Arkansas River. The 100-year floodplain boundaries have been delineated for both waterways and are shown in **Exhibit 3.14-1**. The Fountain Creek floodplain is located in the North Area (Phase 1) of the proposed highway improvements, adjacent to the east side of the existing I-25 north of SH 96. South of SH 96, Fountain Creek flows southeast away from the project area. I-25 crosses the Arkansas River floodplain at

approximately the midpoint of the Central Area (Phase 2) of the project. Each floodplain is described below.

EXHIBIT 3.14-1
100-Year Floodplain Boundaries for Fountain Creek and the Arkansas River



3.14.1.1 Fountain Creek

The Fountain Creek watershed or drainage basin is the land area that drains into Fountain Creek. This area encompasses approximately 927 square miles from Colorado Springs to Pueblo. The watershed is approximately 65 miles long and fluctuates in width from less than 1 mile to more than 32 miles. It encompasses a number of cities, counties, and regional governments. The watershed varies in elevation from 4,625 feet to 14,110 feet above mean sea level.

Portions of the existing I-25 are adjacent to the 100-year Fountain Creek floodplain in the northern portion of the project area between 8th Street and 29th Street. In addition, bridges span Fountain Creek at US 50B and 8th Street; therefore, project improvements north of 8th Street have the potential to impact the Fountain Creek floodplain. The project area south of 8th Street is outside the 100-year Fountain Creek floodplain, and project improvements in this area would not impact the 100-year floodplain.

Significant flooding caused by spring snowmelt and high-intensity rain events has occurred throughout the watershed. In April 1999, a serious flood occurred upstream of Pueblo in Manitou Springs, resulting in more than $40,000,000 in damage and a Presidential Disaster Declaration. In 2000, a group of local and regional governments cooperatively initiated a comprehensive study of the Fountain Creek watershed to better understand changes that have occurred in the watershed. The resulting *Fountain Creek Watershed Plan* (Pikes Peak Area Council of Governments, 2003) describes the existing conditions; documents problems related to erosion, sedimentation, and flooding; and establishes priorities and recommendations for future work in the Fountain Creek watershed. According to the *Fountain Creek Watershed Plan*, flooding, erosion, and sedimentation are serious concerns for the reach of Fountain Creek within the City of Pueblo.

The current FIS for Fountain Creek within the City of Pueblo was completed in 1986. A number of projects impacting the floodplain have been completed since the publication of the FIS. The following projects and studies have been completed or initiated since 1986:

- The U.S. Army Corps of Engineers (USACE) constructed a levee on the east bank of Fountain Creek from approximately 8th Street to 13th Street and a floodwall on the west bank from 8th Street to 11th Street to protect I-25 and the existing railroad tracks. The levee and floodwall prevent overflow of the creek banks in the area north of 8th Street that was shown in the 1986 FIS. As a result of these projects, FEMA issued a Letter of Map Revision (LOMR) in 1991 reflecting the elimination of overbank flows in this area.
- The USACE installed rip rap (large, loose rocks) along the banks of Fountain Creek in various locations between 8th Street and SH 47 to protect the highly erodable banks. These projects were intended to stabilize the existing banks and did not result in any map revisions by FEMA.
- CDOT completed improvements to the US 50/SH 47/I-25 interchange in 1998. This project included extending Dillon Drive from SH 47 to 28th Street, which created an embankment on the west side of the Fountain Creek floodplain between SH 47 and 28th Street. In 1998, FEMA accepted a Conditional Letter of Map Revision (CLOMR) revising the floodplain boundaries.
- It is widely accepted by FEMA and USACE that significant geomorphic changes have occurred to Fountain Creek in this area since the FIS was published in 1986. In an effort to understand these changes, the USACE prepared the *Fountain Creek Watershed Study, Hydraulics Report* (USACE, 2006). This study consists of updated hydrologic and hydraulic analyses of the Fountain Creek watershed. Generally, hydrologic analyses determine peak flows and hydraulic analyses determine the capability of structures to convey peak flows and identify areas of flooding potential. In 2006, the USACE completed the hydrologic and preliminary hydraulic analyses. Results of the hydrologic analysis show significant decreases in the expected flood flows in Fountain Creek. The regulatory (100-year high) flow for Fountain Creek is currently 64,000 cubic feet per second (cfs); the regulatory flow proposed as a result of the updated hydrologic study is 41,000 cfs. Results of the hydraulic modeling show that the 100-year floodplain would be contained within the east bank levee in future conditions, provided that ongoing maintenance of the levee occurs during this time. Once the FCWS is complete, FEMA would update the FIRM for the project area. The CDOT Project Team worked with FEMA staff to update the Fountain Creek floodplain information to reflect currently understood conditions.

Fountain Creek Floodplain

3.14.1.2 Arkansas River

The Arkansas River watershed encompasses more than 4,700 square miles and extends from the river's origin in Leadville, Colorado through Kansas, Oklahoma, and Arkansas before terminating at the Mississippi River. I-25 and Santa Fe Avenue cross the 100-year Arkansas River floodplain in the Central Area (Phase 2) of the project just north of Santa Fe Drive.

A significant concern in the project area is flooding caused by spring snowmelt and high-intensity rain events within the Arkansas River watershed. Prior to the construction of the Pueblo Dam in the early 1970s, the Arkansas River flooded every 10 years on average. The most significant of these floods occurred in 1921 when flooding destroyed entire neighborhoods and more than half of the City's businesses. No major flooding has occurred since the completion of Pueblo Dam. Flooding in the project area is also controlled by the backwater created when Fountain Creek is at flood stage.

The current FIS for the Arkansas River within the City of Pueblo was completed in 1986. The Arkansas River through Pueblo is confined between floodwalls, and no significant

development has taken place within the floodplain in the project vicinity since completion of the FIS.

Further details on floodplains in the project area may be found in the *Floodplain Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005f).

3.14.2 Environmental Consequences

3.14.2.1 No Action Alternative

Under the No Action Alternative, only minor improvements, repairs, and routine maintenance of I-25 would occur, and there would be no changes to existing floodplains in the project area.

3.14.2.2 Build Alternatives

Where possible, project designers developed the Build Alternatives to avoid or minimize impacts that could raise or widen the base floodplain. Floodplain analyses were prepared to determine the potential impacts of the Existing I-25 Alternative and Modified I-25 Alternative (Preferred Alternative) on flooding conditions for both waterways (CH2M HILL, 2005f). The Build Alternatives would be designed in compliance with EO 11988, which requires federal agencies to avoid direct or indirect support of floodplain development whenever a practicable alternative exists.

North Area (Phase 1)

Proposed development within the Fountain Creek floodplain includes replacement of the US 50B bridge, reconstruction of the I-25/US 50B interchange, and an extension of Dillon Drive from 29th Street to US 50B; therefore, analysis is focused in these areas (Sections 8100 to 6749 on **Exhibit 3.14-2**).

Exhibit 3.14-2 shows the current floodway limit and areas of impact to the 100-year floodplain and labels the cross sections that were used in the Floodplain Analysis Model (CH2M HILL, 2005f). A floodway is defined as the portion of the available flow cross section that, if obstructed, will cause an increase in the water-surface elevations resulting from a 100-year flood of more than the regulated amount (usually 1 foot). Each cross section represents the elevation and width of the floodplain at that given location. As shown in **Exhibit 3.14-2**, there are two longitudinal encroachments of the Fountain Creek floodplain resulting from the extension of Dillon Drive. The new US 50B bridge would have a wider span than the existing bridge, so it would have greater conveyance capacity. However, there is a slight increase in inundated area at these sections caused by the bridge abutments and Dillon Drive embankment where it encroaches on the floodplain. The overall floodplain width either remains the same or decreases over most cross sections, with the exception of Sections 6950 and 7000 and at the widened US 50B bridge.

Exhibit 3.14-3 shows the change in BFE, floodplain width, and velocity that would result from the encroachment into the floodplain and floodway caused by the Dillon Drive extension under either Build Alternative. In much of the study area, the floodplain is not adversely impacted; however, the embankment created by the Dillon Drive extension would result in an increase in the BFE and floodplain width upstream of the embankment (between Sections 7050 and 6950). Channel velocity would increase below the embankment just upstream of the bridge.

If mitigation measures are not included in the final design, the result could be increased scour and erosion around the bridge piers at the US 50B bridge. Additionally, a small area near the bridge that would be inundated by the 100-year flood is not currently within the 100-year floodplain boundaries. This area comprises a total of 3.35 acres (the area within the limits of construction between Sections 6950 and 7000 and not hatched in blue on **Exhibit 3.14-2**), of which 0.19 acre is privately owned, and 3.16 acres are owned by the City. Any structures developed on this land could be at risk from a 100-year storm event.

South Area (Phase 2)

Because neither the Fountain Creek nor Arkansas River floodplains are present in the South Area (Phase 2), there are no floodplain impacts in the South Area (Phase 2) under either Build Alternative.

Central Area (Phase 2)

Existing I-25 Alternative

Impacts to the Arkansas River floodplain for the Existing I-25 Alternative would be limited to replacement of the existing I-25 bridge in its approximate current location, as shown in **Exhibit 3.14-4**. In the Central Area (Phase 2), the Arkansas River is confined on both banks by the existing floodwalls. Implementation of the Existing I-25 Alternative would not flood any new areas that are not within the existing 100-year floodplain.

EXHIBIT 3.14-2
Areas of Impact to the 100-Year Floodplain in the North Area (Phase 1)

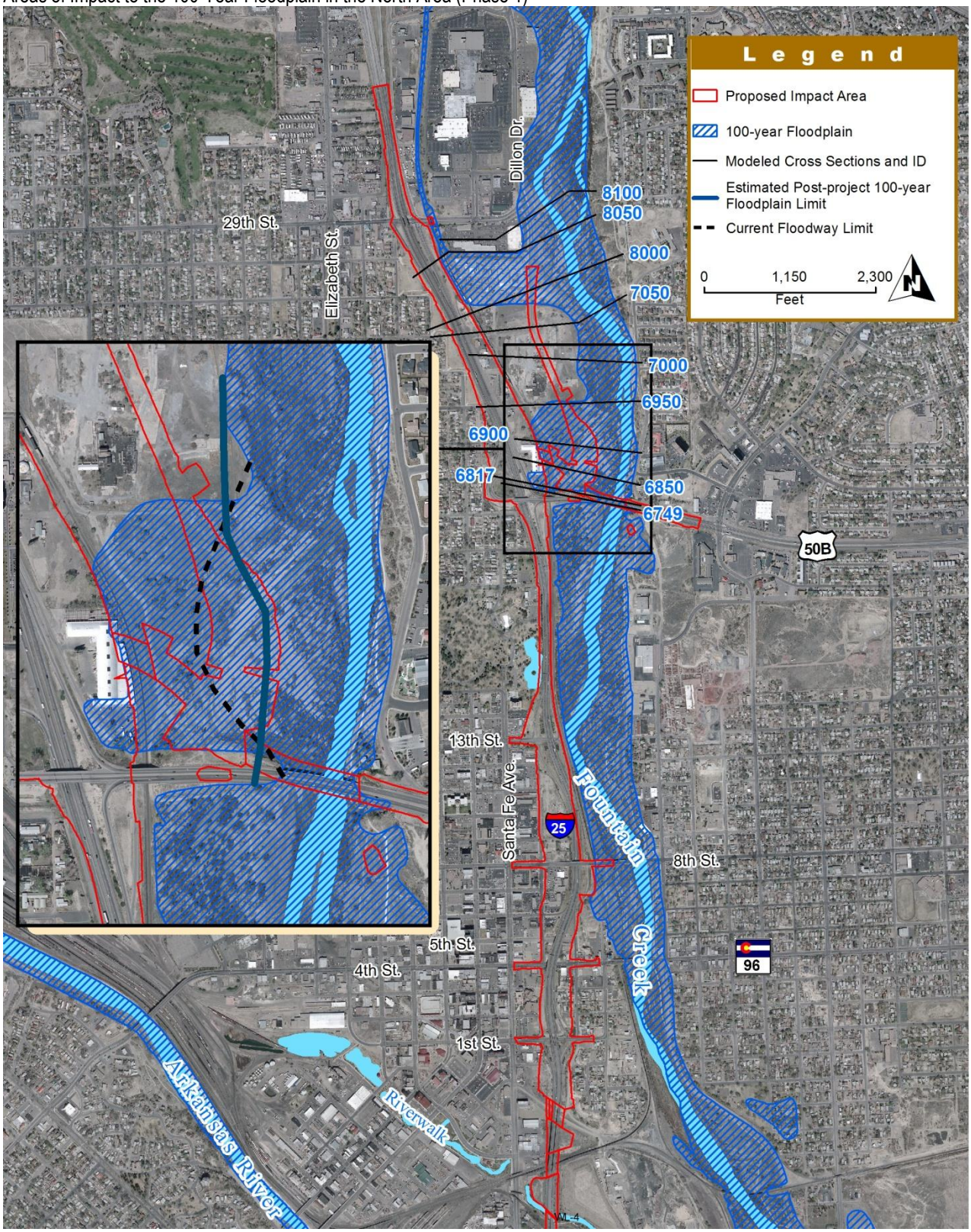


EXHIBIT 3.14-3
Fountain Creek Floodplain Analysis: Modeled Changes to Base Flood Elevation, Floodplain Width, and Velocity From Build Alternatives

Section[1]	Increase in Base Flood Elevation (feet)	Increase in Floodplain Width (feet)	Existing Velocity (increase in velocity) measured in feet per second
8100	0.0	3	10.2 (0.0)
8050	0.1	-88	10.5 (-0.1)
8000	0.0	-15	8.9 (+0.2)
7050	0.3	1	7.9 (-0.6)
7000	1.3	110	14.3 (-1.1)
6950	1.9	192	8.5 (-0.8)
6900	-1.8	-858	12.7 (+7.7)
6850	-4.8	-1018	13.3 (+9.3)
6817	-2.2	116	16.1 (-1.3)
6749	-1.8	118	11.6 (-1.5)

Source: CH2M HILL, 2005f.

[1] Section numbers were assigned in the Floodplain Analysis Model.

The existing I-25 bridge has one set of piers between the floodwalls. The proposed bridge would also have a single set of piers, but located inside the floodwalls. The similar configuration of the new bridge would result in minimal impact to the Arkansas River floodplain and floodway, which have the same boundaries in this area. In the area where the new piers would be placed, Floodplain Analysis Model results showed a 0.1-foot decrease in BFE, a 3-foot reduction in floodplain width, and between 0.3 and 0.4 feet per second (ft/s) increase in velocity (CH2M HILL, 2005f), which would be an improvement to the existing floodplain.

Modified I-25 Alternative (Preferred Alternative)

The Modified I-25 Alternative (Preferred Alternative) includes construction of new bridges across the Arkansas River, new access ramps to I-25, an extension of Stanton Avenue, and realignment of Santa Fe Avenue to make use of the existing I-25 bridge. The new I-25 bridge would be located east of the existing bridge and would result in a new transverse encroachment on the floodplain and floodway, as shown in **Exhibit 3.14-5**. The downstream portion of the new crossing is located outside of the area confined by the floodwalls, creating a longer bridge span and adding piers within the floodplain. The south abutment of the new bridge is proposed to be located within the Arkansas River floodplain. In this area, Floodplain Analysis Model results showed no change to the BFE. The overall floodplain width would increase by 2 feet just north of and at the bridge location; however, the floodplain width drops by approximately 129 feet just downstream, where the velocities are predicted to increase by 0.1 ft/s (CH2M HILL, 2005f).

As described previously, two conditions exist for flooding on this portion of the Arkansas River. Encroachments on the floodplain are mostly confined to the portion of the river that is controlled by backwater from Fountain Creek; however, velocity in this area is low (less than 2 ft/s), and the impacts of encroachments are minimal. Implementation of the Modified I-25 Alternative (Preferred Alternative) would not flood any new areas that are not within the existing 100-year floodplain. Limited scour of new bridge piers is expected because velocities are so low.

EXHIBIT 3.14-4

Areas of Impact to the 100-year Floodplain in the Central Area (Phase 2) under the Existing I-25 Alternative

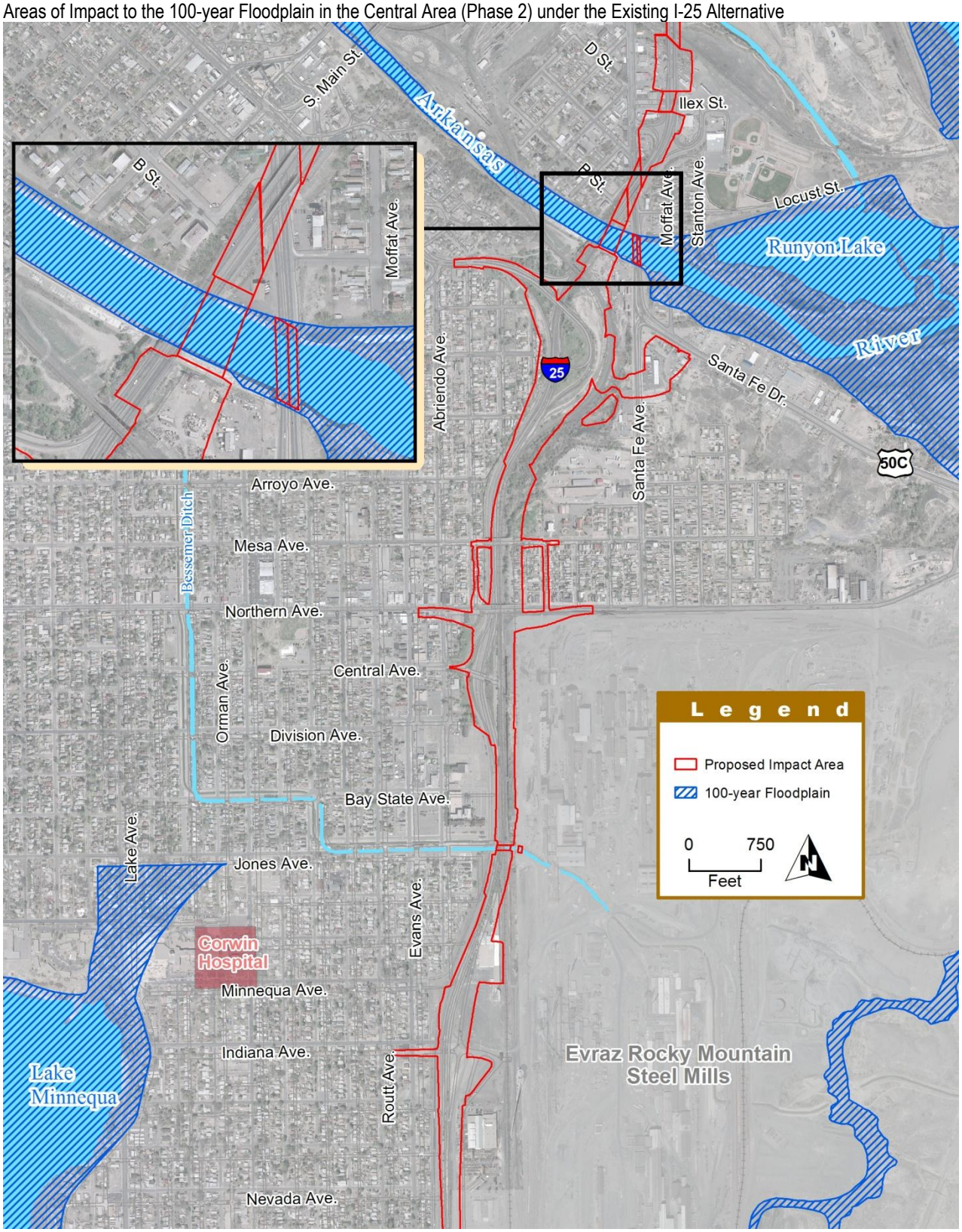
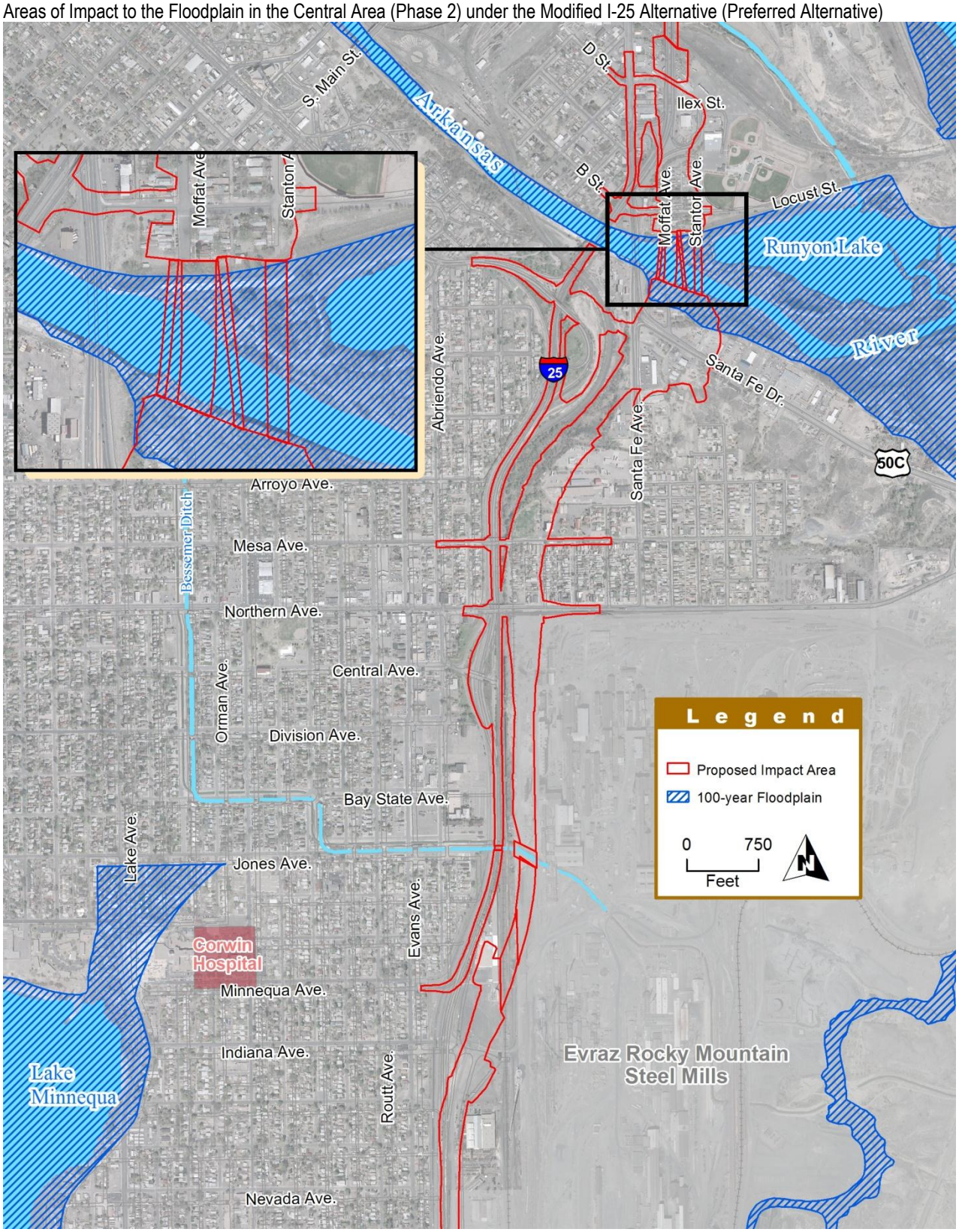


EXHIBIT 3.14-5

Areas of Impact to the Floodplain in the Central Area (Phase 2) under the Modified I-25 Alternative (Preferred Alternative)



3.14.3 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative) .

Mitigation measures outlined in this section are based on impacts identified using the currently approved data. As noted previously, FEMA is planning a major update to the FIS, which will likely result in a narrower floodplain boundary than is currently represented on the FIRM.

- Further floodplain analysis will be required during final design, both as a result of project design refinement and model revisions by FEMA. Depending on the results of the floodplain analyses using the revised modeling and the final design configuration of I-25, CDOT will likely need to apply for FIRM revisions through FEMA. If there are significant impacts to the floodplains or expected encroachments on the floodways, a CLOMR application will need to be submitted and approved prior to construction. The CLOMR is FEMA's comment on a proposed project that would impact a floodplain. If no significant impacts to the floodplains or floodway encroachments are expected, FEMA may allow the project to proceed without a CLOMR.
- In either case, a LOMR application will be required if there is any substantial encroachment on the floodplain. The LOMR is FEMA's modification to an effective FIRM. It would be prepared using as-built data from improvements and would detail the effects of the improvements upon the floodplain(s). A CLOMR or LOMR may be required if there is encroachment on the Fountain Creek or Arkansas River floodplains.

  Should there be encroachment on the Fountain Creek or Arkansas River floodplains, the following mitigation measures would be implemented.

- The small additional area in the North Area (Phase 1) within the Fountain Creek floodplain that is currently shown to be inundated during the 100-year flood event (see **Exhibit 3.14-2**) will be managed to reduce impacts. Approximately 0.2 acre of private property may be acquired by CDOT, and the estimated 3.2 acres of City property will be managed in perpetuity as part of the Fountain Creek recreation area. The City has agreed in its March 2010 Memorandum of Understanding with CDOT that no structures will be permitted in this area (see **Appendix F**).
- In the North Area (Phase 1), streambed and bank stabilization measures will be included in the final project for the area surrounding the US 50B bridge that is currently shown to be subjected to increased flow velocity as a result of the proposed development under either Build Alternative. Examples of such mitigation include channel bed stabilization with rip rap or construction of grade control structures, rip rap lining or slope paving of banks, and guide banks to reduce velocity near fill slopes. This work may require that CDOT obtain a Section 404 permit from the USACE under Section 404 of the Clean Water Act prior to construction. Specific mitigation measures will be developed during design when expected flow conditions are more accurately defined (that is, after the completion of the FCWS).
- Per the analysis, impacts to the Arkansas River floodplain and floodway are expected to be minimal, and required mitigation measures will be limited to erosion protection for bridge structures. New bridge structures will have foundations designed to limit scour, and proposed abutments within the floodplain will be protected from erosion. Measures that may be used to protect the bridges include rip rap armoring of banks and slope paving.
- The design of any selected alternative will comply with EO 11988, "Floodplain Management." In addition, State of Colorado drainage design standards will be applied to achieve results that will not increase or significantly change the flood elevations and/or limits.

3.15 WATER QUALITY

This section discusses water resources in the project area, existing water quality, and potential impacts to water resources from the No Action Alternative, Existing I-25 Alternative, and Modified I-25 Alternative (Preferred Alternative).

3.15.1 Water Quality Regulations Affecting the Project

The National Pollutant Discharge Elimination System (NPDES) program was established by the U.S. Environmental Protection Agency (EPA) under the Clean Water Act (CWA) to control the discharge of pollutants into waters of the United States. Under the NPDES program, Phase I Stormwater Regulations require CDOT to acquire a NPDES permit for its stormwater discharges. The EPA delegates the administration of the NPDES permit program in Colorado to the Colorado Department of Public Health and Environment (CDPHE) under the Colorado Discharge Permit System (CDPS).

Under the CDPS, CDOT has been issued a Municipal Separate Storm Sewer Systems (MS4) Discharge Permit that covers "state and interstate highways and their rights-of-way (ROW) within the jurisdictional boundary of CDOT served by, or otherwise contributing to discharges to state waters from, municipal separate storm sewers owned or operated by CDOT."

As a requirement of the MS4 permit, CDOT is required to "develop and implement a program that ensures that new highway projects and significant highway modifications are reviewed for the need to include permanent stormwater best management practices." In response to this requirement, CDOT established the New Development and Redevelopment Program. According to the criteria established under this program, the New Pueblo Freeway project is a significant highway modification requiring permanent best management practices (BMPs), such as hydrodynamic separators or detention ponds.

In addition, the New Pueblo Freeway project is within the jurisdictions of the City of Pueblo and Pueblo County, which have obtained Phase II MS4 permits under the CDPS; therefore, CDOT is required to comply with the requirements of the City and County MS4 permits, only if they are more stringent than CDOT's requirements.

Under the CDPS, CDPHE requires CDOT to obtain a General Permit for Stormwater Discharges Associated with Construction Activities, which authorizes discharges to groundwater from construction dewatering activities, but not to surface waters. CDOT is required to prepare and implement a Stormwater Management Plan (SWMP) to address typical construction issues such as erosion and sediment control. In addition to the SWMP, a construction dewatering discharge permit may be required for groundwater dewatering activities to discharge to surface waters. The post-construction requirements are governed by CDOT's New Development and Redevelopment Program, which requires consideration of mechanisms to protect water quality on a long-term basis after the construction phase of a project is complete.

The CDPHE's Colorado Water Quality Control Commission is responsible for the establishment of the acceptable water quality standards by water body segment, and standards are assigned to preserve the beneficial uses or improve the water quality of the stream segments. The Water Quality Control Commission is required through Section 303(d) of the CWA to develop a list of water bodies within the state that are not meeting water quality standards or have impaired uses. These impaired waters were identified in Colorado State Regulation 93, *Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List*, updated in March 2012 (CDPHE, 2012). The use classifications for the impaired water body segments that are located in the New Pueblo Freeway project area are defined in Colorado State Regulation 32, *Classification and Numeric Standards for Arkansas River Basin*, updated in January 2012 (CDPHE, 1982), and are summarized in **Exhibit 3.15-1**.

3.15.2 Affected Environment

Pollutants entering streams, rivers, and lakes impact the water quality of those water bodies. Pollutant-loaded stormwater runoff from roadways impacts receiving water bodies. Levels of pollutants in roadway runoff are influenced by many factors such as meteorological, hydrological, and geological conditions and land use practices. The quantity of

EXHIBIT 3.15-1
List of Impaired Water Body Segments in Upper Arkansas and Fountain Creek Sub-basins Showing Water Quality Designation and Use Classification

Stream	Segment [1]	Segment Description	Water Quality Designations and Use Classifications [2]
Fountain Creek	2b, Fountain Creek Basin	Mainstem of Fountain Creek from a point immediately above the State Highway 47 Bridge to the confluence with the Arkansas River	Warm Water Aquatic Life, Class 2 Recreation, Class E Water Supply Agriculture
Arkansas River	6, Middle Arkansas River Basin	Mainstem of the Saint Charles River from a point immediately above the CF&I diversion canal near Burnt Mill to the confluence with the Arkansas River	Use Protected Warm Water Aquatic Life, Class 2 Recreation, Class E Water Supply Agriculture
Arkansas River	1a, Lower Arkansas River Basin	Mainstem of the Arkansas River from a point immediately above the confluence with Fountain Creek to immediately above the Colorado Canal headgate near Avondale	Use Protected Warm Water Aquatic Life, Class 2 Recreation, Class E Water Supply Agriculture
Tributaries to Fountain Creek	4, Fountain Creek Basin	All tributaries to Fountain Creek that are not within the boundaries of National Forest or Air Force Academy lands, including all wetlands, lakes, and reservoirs, from a point immediately above the confluence with Monument Creek to the confluence with the Arkansas River, except for the specific listings in segments 5, 6, 7a, and 7b.	Use Protected Warm Water Aquatic Life, Class 2 Recreation, Class E Agriculture

Source: CH2M HILL, 2005g; 2011c.

[1] Segment numbering per the Colorado Department of Public Health and Environment's Colorado Water Quality Control Commission.

[2] Water Quality Designation and Use Classification terminology is defined in Colorado State Regulation 31, *The Basic Standards and Methodologies for Surface Water*, dated January 1, 2012. Specific uses are defined as follows:

Use Protected: These surface waters have been determined by the Water Quality Control Commission to not warrant the special protection provided by the outstanding waters designation or the antidegradation review process.

Warm Water Aquatic Life, Class 2: These surface waters are not capable of sustaining a wide variety of cold or warm water biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species.

Recreation, Class E: These surface waters are used for primary contact recreation or have been used for such activities since November 28, 1975.

Water Supply: These surface waters are suitable or intended to become suitable for potable water supplies.

Agriculture: These surface waters are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and are not hazardous as drinking water for livestock.

flow is characterized by amount, frequency, intensity, duration, and pattern of precipitation. Increased traffic volumes, congestion, and impervious roadway surfaces lead to an increase in highway pollutant levels in stormwater runoff. Infrequent precipitation also results in buildup of higher pollutant concentrations (CH2M HILL 2005g; 2011c).

Exhibit 3.15-2 lists potential pollutants resulting from transportation projects that may impact water resources.

EXHIBIT 3.15-2
Potential Contaminants from Transportation Projects that may Impact Water Resources

Source	Pollutants
CONSTRUCTION PHASE	
Adhesives	Phenols, formaldehydes, asbestos, benzene, and naphthalene
Cleaners	Metals, acids, alkali, and chromium
Plumbing	Lead, copper, zinc, and tin
Painting	VOCs, metals, phenolics, and mineral spirits
Wood	BOD, formaldehyde, copper, and creosote
Demolition	Asbestos, aluminum, zinc, dusts, lead
Masonry/concrete demolition	Acids, sediment, metals, and asbestos
Yard operations and maintenance	Oils, grease, coolants, benzene and derivatives, vinyl chloride, metals, BOD, sediment, disinfectants, sodium arsenate, dinitro compounds, rodenticides, and insecticides
Landscaping and earthmoving	Pesticides, herbicides, fertilizers, BOD, alkali, metals, sulfur, and aluminum sulfate
Materials storage	Spills, leaks, dust, and sediment
OPERATION PHASE	
Leaks, spills, accidents	Oil, gasoline, diesel, grease, VOCs, chemicals, and other potentially hazardous materials
Vehicle traffic	Oils, grease, gasoline, diesel, benzene and derivatives, aromatic hydrocarbons, coolants, rust (iron), heavy metals (lead, zinc, iron, chromium, cadmium, nickel, copper), rubber, and asbestos
Winter sanding	Sediment
Deicing	Calcium, sodium, magnesium, and chloride
Landscape maintenance	Herbicides, pesticides, fertilizers, BOD, alkali, metals, sulfur, and aluminum sulfate
Adhesives	Phenols, formaldehydes, asbestos, benzene, and naphthalene
Cleaners	Metals, acids, alkali, and chromium
Painting	VOCs, metals, phenolics, and mineral spirits

Source: CDOT, 2008.
BOD = biological oxygen demand VOC = volatile organic compound

The major water bodies located in the project area are the Arkansas River, Fountain Creek, and Runyon Lake. Smaller water bodies include Salt Creek, Saint Charles Reservoir Nos. 1 and 2, Bessemer Ditch, and several unnamed ephemeral (intermittent depending on precipitation) tributaries that cross under I-25. These water bodies are all part of the Arkansas River Basin. Within the Arkansas River Basin, the project area is located in the Upper Arkansas River watershed and in the lower Fountain Creek watershed. The Upper Arkansas watershed occupies approximately 3,671 acres, and the Fountain Creek watershed occupies approximately 2,595 acres. The City of Pueblo occupies the lower end of the Fountain Creek watershed and the lower end of the Upper Arkansas watershed. The Water Quality Control Commission divides watersheds into “segments” for the purpose of classifying surface water uses and establishing water quality standards. **Exhibit 3.15-1** lists the segments of water bodies within each watershed that are listed as impaired by the CDPHE Water Quality Control Commission.

The project area is also located within the Lower Groundwater Basin. Agriculture is the primary use of groundwater in the Lower Groundwater Basin, although there are some domestic and municipal uses as well. Generally, the groundwater quality of the Lower Groundwater Basin degrades downstream, from good in the upper portion to poor in the lower portion, and is only marginally useful for irrigation and livestock watering due to salinity. Limited groundwater monitoring data were available for the project area.

Domestic-use water supplies that may be potentially impacted are the St. Charles Mesa Water District and, to a lesser extent, Pueblo Water Works. The source of water for the St. Charles Mesa Water District is a combination of surface water from the Arkansas River and Bessemer Ditch, as well as groundwater. Sources of drinking water provided by Pueblo Water Works include rivers, lakes, streams, and reservoirs originating in the mountains near Leadville, Colorado. The majority of point-source pollutants (discernible, confined, and discrete pollutant sources) near Pueblo are located outside the project area and, therefore, would not be impacted by the project.

The following stream segments in the project area are included in the Colorado State Regulation 93, *Colorado's Section 303(d) List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads* (CDPHE, 2004) (as of March 2012):

- Fountain Creek Basin Segment 2b
- Lower Arkansas River Basin Segment 1a
- Middle Arkansas River Basin Segment 6
- Fountain Creek Basin Segment 4

These segments have been listed because the existing level of dissolved selenium, dissolved sulfate, or *E. coli* is higher than the State standard; however, none of these constituents has been shown as a pollutant of concern associated with highway runoff by CDPHE. These stream segments have been listed as impaired, but there are no Total Maximum Daily Load (TMDL) requirements for these segments.

Further details on water quality in the project area may be found in the *Water Quality Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005g; 2011c).

3.15.3 Methodology

For the proposed New Pueblo Freeway project, the FHWA Driscoll Model was used to estimate potential water quality impacts from pollutants associated with roadway runoff. Site-specific information is entered into the computer model, and the model computes the magnitude and frequency of concentrations of pollutants. The model compares the once-in-3-year concentration to the acute toxicity value defined by the EPA. The comparison indicates whether a water quality problem is likely.

A calculation was performed in accordance with methodology contained in the *Federal Highway Administration Evaluation and Management of Highway Runoff* (FHWA, 1996) to determine the total annual amount of pollutants (annual mass load) that could be expected as a result of the project.

3.15.4 Environmental Consequences

3.15.4.1 No Action Alternative

Under the No Action Alternative, water quality in the project area would continue to degrade due to the projected increase in highway traffic volumes. Traffic volume increases in the project area would result in increased congestion along I-25, which would increase contaminant concentrations in the highway runoff being released into area surface waters, further degrading water quality in the project area. In addition, there are no structural water quality facilities in place to address the existing and expected increase in future pollutant loadings from I-25 in the Pueblo area. As a result, further water quality degradation would be anticipated in the Arkansas River and Fountain Creek, as well as in the surrounding wetlands and other nearby surface waters.

3.15.4.2 Build Alternatives

Water quality impacts are discussed in order of three segments (1, 2, and 3), a departure from the North Area (Phase 1), South Area (Phase 2), and Central Area (Phase 2) discussed in other resource sections. **Exhibit 3.15-3** presents the geographic areas for the water quality analysis segments compared to the North (Phase 1), South (Phase 2), and Central (Phase 2) study areas.

EXHIBIT 3.15-3
Comparison of Segments versus Areas in the Water Quality Assessment

Segments	Areas
1: SH 47 (milepost 102) to 1st Street	North (Phase 1): 29th Street (milepost 101) to Ilex
2: 1st Street to Northern Avenue	Central (Phase 2): Ilex Street to Nevada Avenue
3: Northern Avenue to south of Pueblo Boulevard (milepost 94)	South (Phase 2): Nevada Avenue to Pueblo Boulevard (milepost 94)

Source: CDOT Project Team, 2010.

The increase in impervious surface (as well as several other parameters, such as the mean annual rainfall volume and the average number of storm events per year) was used to predict the increase in pollutant loads associated with the additional highway runoff created by the Build Alternatives. An increase in impervious surface results in an increase of pollutant loads.

Prior to mitigation, pollutants found in highway runoff would be expected to increase over existing levels between a range of approximately 72 percent (Segment 1) and 86 percent (Segment 2) under the Existing I-25 Alternative. Pollutants would be expected to increase between a range of approximately 65 percent (Segment 3) to 91 percent (Segment 2) over existing levels under the Modified I-25 Alternative (Preferred Alternative). The largest increase in pollutants is estimated in Segment 2 for both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative) (86 and 91 percent, respectively).

Pollutants not associated with highway runoff (such as selenium) would continue to impact water quality unless measures are taken to limit the amount of pollutants entering area receiving waters.

Given the increase in pollutant loads resulting from the additional impervious surfaces, there would be a potential for pollutant levels to be elevated above water quality standards during storm events, without mitigation. Although mass pollutant loads are predicted to increase both during and after construction, implementation of the recommended BMPs discussed in Section 3.15.5 is expected to reduce the amount of pollutants actually entering area receiving waters. As a result, the impacts to area water quality are expected to be minimal.

Construction activities for the Build Alternatives may result in erosion and sediment control issues if earthwork for paving or construction of structures results in bare surfaces. These surfaces are highly susceptible to erosion from rain and wind because they lack the protection that established vegetation provides. Erosion and sediment control issues during construction will be managed through the development and implementation of a site-specific SWMP (see Section 3.15.1).

Exhibit 3.15-4 provides a summary of the quantitative analysis conducted to determine the increase in annual mass loading rates from the project area for each project segment and alternative. Annual mass loading results are expressed in kilograms per year. Site characteristics and values for some parameters from FHWA were used directly in equations to determine discharge flow rate, runoff volume, and pollutant mass loading rate. Loading analysis has shown that there is a potential for lead, copper, and zinc concentrations to be elevated above the water quality standard during storm events under both Build Alternatives without mitigation.

A segment-by-segment discussion of the impacts of the additional pollutant loadings to the receiving streams listed in **Exhibit 3.15-4** is provided below.

Segment 1

The alignment of I-25 is the same under both Build Alternatives in Segment 1, with an approximate increase of 26 acres of impervious surface (from 36 to 62 acres, a 72 percent increase) as a result of I-25 improvements. As such, the increase in urban runoff and associated pollutants to Fountain Creek would also increase by 72 percent without mitigation.

EXHIBIT 3.15-4
Expected Annual Mass Loading of Pollutants from Highway Runoff for the No Action Alternative and Build Alternatives Prior to Mitigation

Pollutants	Parameters Analyzed							
	Total Suspended Solids	Total Organic Carbon	Chemical Oxygen Demand	Nitrate + Nitrite	Phosphorus (as PO_4)	Total Copper	Total Lead	Total Zinc
Average Event Mean Concentration[1] (mg/L)	174	31	140	0.93	0.49	0.066	0.49	0.40
ANNUAL MASS LOADING OF NO ACTION ALTERNATIVE (KG/YR)								
Segment 1 (kg/yr)	8,379	1,493	6,741	45	24	3	24	19
Segment 2 (kg/yr)	5,201	927	4,185	28	15	2	15	12
Segment 3 (kg/yr)	8,661	1,543	6,969	46	24	3	24	20
ANNUAL MASS LOADING OF EXISTING I-25 ALTERNATIVE (KG/YR)								
Segment 1	14,686	2,617	11,816	78	41	6	41	34
Segment 2	9,720	1,732	7,821	52	27	4	27	22
Segment 3	15,204	2,709	12,233	81	43	6	43	35
ANNUAL MASS LOADING OF MODIFIED I-25 ALTERNATIVE (PREFERRED ALTERNATIVE) (KG/YR)								
Segment 1	14,686	2,617	11,816	78	41	6	41	34
Segment 2	9,979	1,778	8,029	53	28	4	28	23
Segment 3	14,310	2,549	11,514	76	40	5	40	33

[1] Source: FHWA, 1996.
ha = hectares
kg/yr = kilograms per year
I-25 = Interstate 25
mg/L = milligrams per liter

Segment 2

Existing I-25 Alternative

The Existing I-25 Alternative would increase the amount of impervious area in Segment 2 by approximately 19 acres, from 22 acres to 41 acres. This 86-percent increase in impervious surface also represents an approximate 86-percent increase in pollutant levels without mitigation.

Modified I-25 Alternative (Preferred Alternative)

The Modified I-25 Alternative (Preferred Alternative) would increase the amount of impervious area in Segment 2 by approximately 20 acres, from 22 acres to 42 acres. This 91-percent increase in impervious surface also represents an approximate 91-percent increase in pollutant levels without mitigation.

Segment 3

Existing I-25 Alternative

The Existing I-25 Alternative would increase the amount of impervious area in Segment 3 by approximately 28 acres, from 37 acres to 65 acres. This 76-percent increase in impervious surface also represents an approximate 76-percent increase in pollutant levels without mitigation.

Modified I-25 Alternative (Preferred Alternative)

The Modified I-25 Alternative (Preferred Alternative) would increase the amount of impervious area in Segment 3 by approximately 24 acres, from 37 acres to 61 acres. This 65-percent increase in impervious surface also represents an approximate 65-percent increase in pollutant levels without mitigation.

3.15.4.3 Indirect Effects

Construction of either Build Alternative would result in an increase in stormwater runoff from additional impervious areas. Mitigation of runoff through the BMPs that are part of the design would limit the indirect effect on water resources. With increased stormwater runoff treatment, a net indirect benefit might be achieved over time for water quality in the project area.

3.15.5 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative).

The mitigation measures will comply with the CDPHE MS4 Discharge Permit and the CDOT New Development and Redevelopment Stormwater Management Program. The percent of pollutant removal from captured roadway runoff will be calculated during final design when structural BMPs are determined. BMPs will be selected such that there is no increase in pollutant loading in any of the three segments studied as a result of the New Pueblo Freeway project.

- CDOT will construct water quality ponds adjacent to I-25 in compliance with the CDPS MS4 permit requirements to enhance water quality in the project area; 17 ponds will be constructed under the Existing I-25 Alternative and 16 ponds will be constructed under the Modified I-25 Alternative (Preferred Alternative). The sizing and design of these ponds will be refined during final design. Ownership and maintenance of the water quality ponds is detailed in the Memorandum of Understanding signed between CDOT and the City in March 2010 (see **Appendix F**). Under the Modified I-25 Alternative (Preferred Alternative), one of the detention ponds is designed to capture runoff solely from City streets.
- Pond volumes will be based on detaining and treating only the flows originating within the project area (onsite basins and side streets), while allowing the offsite basins to pass through undetained. Stormwater runoff from offsite basins will be conveyed through the proposed drainage system without flow attenuation or stormwater quality treatment. Allowable release rates also will affect pond volumes. Although criteria allows for the release at pre-development rates, preliminary design assumes release at the more conservative historic rates; the size of the ponds will be refined during final design, which may result in smaller pond sizes.

  The determination of which local streets contribute flow to the drainage system was based on the proposed roadway grades. All streets that could drain into the system without excessive pipe depths were accepted into the system.
- CDOT will develop Tier 1 BMPs because the project is considered a significant highway modification and the receiving waters are classified as sensitive waters (listed on 303(d) high quality use classification or existence of threatened or endangered species). Tier 1 BMPs require that 100 percent of the required water quality capture volume be provided for by the BMPs.
- CDOT will design and construct permanent BMPs (such as extended detention ponds, infiltration trenches, or constructed sand filters) within the guidelines set by the CDOT New Development and Redevelopment Program. All highway runoff will be collected and treated to the level required by the New Development and Redevelopment Program. An adequate storm drainage system for the existing and proposed improvements near the interchange will be developed to prevent high levels of sediment and pollutants from being carried into wetlands, natural drainageways, and irrigation ditches. BMPs with pollutant removal for lead, zinc, copper, and selenium shall be incorporated where applicable. These BMPs could prevent impacts to aquatic life through bioaccumulation of metals. Suitable permanent BMPs include detention ponds with sedimentation facilities, enlarged detention basins, constructed sand filters, grass swales and buffers, and innovative vault-type structures where space is limited. These permanent BMPs can be constructed, where appropriate, to intercept, divert, and collect surface runoff and convey accumulated runoff to an acceptable outlet point (see Chapter 6 in the *CDOT Erosion Control and Stormwater Quality Guide* [ECSQG] [CDOT, 2002]).
- CDOT will use an interconnected system of onsite dry detention facilities and offsite basins for reducing peak runoff flow rates and will utilize a conveyance network for routing flows along their existing flow paths either to the Arkansas River or Fountain Creek. Because Tier 1 BMPs are required, extended detention basins were selected because they can be used in conjunction with a peak flow control drainage system. The exact number of ponds may be modified based on design.
- Non-structural BMPs (such as pesticide and fertilizer application guidelines) and anti-icing and deicing guidelines will be employed to improve water quality in conjunction with BMP implementation. Other non-structural BMPs (such as water quality signage adjacent to the receiving streams and irrigation ditches) will be considered for implementation.

- In accordance with CDOT's CDPS General Permit for Stormwater Discharges Associated with Construction Activities, the following activities will be employed to mitigate both short-term and permanent impacts to water bodies as a result of the proposed project:
  - CDOT will adhere to NPDES regulations for stormwater quality, including obtaining a CDPS stormwater construction discharge permit and Section 402 dewatering permit, during construction.
  - All work performed on the project will be performed in accordance with appropriate CDOT Standard Specifications for Roadway and Bridge Construction (101.95;107.25; 208; 212; 213; 216; 620) and the CDOT 2012 M&S Standards Plans (CDOT, 2012b).
  - CDOT will develop a SWMP, per the SWMP template and in accordance with appropriate CDOT specifications, that will detail the structural and non-structural BMPs to be used for construction. Specific BMPs from the CDOT 2012 M&S Standards Plans (CDOT, 2012b) are outlined below:
    - CDOT will revegetate adjacent disturbed slopes with native plant species to protect exposed soils from erosion. This will be used for temporary or permanent cover for disturbed areas and to improve wildlife habitat and aesthetics.
    - Where temporary or permanent seeding operations are not feasible due to seasonal constraints, CDOT will stabilize slopes with topsoil, soil amendment, seed, mulch, mulch tackifier, soil binder, or other CDOT-approved methods to protect soils and slopes from erosion, thereby preventing adverse impacts to aquatic and wildlife habitat.
    - CDOT will use erosion control (that is, soil retention) blankets and/or turf reinforcement mats as appropriate on newly seeded slopes to control erosion and promote the establishment of vegetation as well as protect channels against erosion from concentrated runoff.
    - Where appropriate, CDOT will utilize temporary berms or diversions to protect the sensitive areas in the project area from impacts related to concentrated flows. Additional erosion control measures such as silt fences and erosion bales can be implemented, but with care and as appropriate. Erosion bales and/or erosion logs will be free of noxious weeds.
    - CDOT will use erosion bales and/or erosion logs as sediment barriers and filters along the toe-of-fills adjacent to surface waterways and drainages and at the cross-drain inlets, where appropriate, with additional reinforcement and in conjunction with other erosion control measures such as temporary berms.
    - Where appropriate, CDOT will use silt fences to intercept sediment-laden runoff before it enters a water body (such as a wetland), but only in conjunction with other erosion control measures such as temporary berms.
    - Where appropriate, CDOT will use slope drains (or embankment protectors) to convey concentrated runoff from the top to the bottom of disturbed slopes. Slope and cross drain outlets will be constructed to trap sediment.
    - CDOT will use check dams, where appropriate, to slow the velocity of water through roadside ditches and swales, thereby deterring erosion and harmful impacts to aquatic life.

3.16 UTILITIES

It is important to consider the location of and possible effects on utility lines during any roadway construction. In the early planning stages of a project, CDOT designers coordinate with owners and conduct an inventory of utilities within and adjacent to the project area. Once the list of utilities is known, an evaluation of opportunities for utility improvements and potential utility conflicts is conducted, and an assessment of utility impacts is prepared.

For the New Pueblo Freeway project, utilities (including water, sanitary sewer, storm drainage, telephone, fiber optics, cable television, natural gas, and electrical lines) were found to intersect and parallel the project corridor.

More than 14 entities provide utility services to residential, commercial, and industrial areas along I-25, including the City of Pueblo and other local, regional, and state agencies. This section pertains to utilities that may be affected by the project and is based on information obtained through research and communication with the utility owners and other public and private sources, as detailed in the *Utilities Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005h). This analysis did not include field surveys, potholing, or other physical explorations to confirm the location of underground utilities. As a part of future engineering design efforts for this project, field investigations will be conducted to confirm the location, dimension, and characteristics of utilities found within the project area. Impacts to railroad facilities are discussed in **Section 3.1 Transportation**.

3.16.1 Affected Environment

The presence of private or public utilities in highway right-of-way (ROW) means that CDOT would need to coordinate with utility owners if a utility has the potential to conflict with proposed road construction. This coordination would take place during final project design when the exact impacts to utilities are better known.

As many as 113 utility lines are located in the project corridor, including water; sanitary sewer; storm drainage; telephone, fiber optics, and cable television; and natural gas and electric utilities. These lines run above and below ground both parallel to and across the I-25 corridor. The following sections identify the primary utility lines of concern for the New Pueblo Freeway project. Further details on utilities in the project area may be found in the *Utilities Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005h).

3.16.1.1 Water

Municipal water is supplied by the City-owned Pueblo Board of Water Works. Water is conveyed by a network of pipelines throughout the project area. Lines intersect I-25 at most major street intersections from 29th Street to Pueblo Boulevard. The larger water lines (with diameters from 20 to 24 inches) are located adjacent to both banks of the Arkansas River and along 27th Street, 8th Street, and 4th Street.

Coolant water is supplied to the Evraz Rocky Mountain Steel Mills through two privately-owned supply systems that convey water from the Stem Beach reservoirs south of Pueblo. Both lines are located parallel to and east of I-25. An older, 48-inch wooden pipeline that is located immediately adjacent to I-25 (across the highway from JJ Raigoza Park and Illinois Avenue) is no longer actively used but has been identified by Evraz Rocky Mountain Steel Mills staff as an emergency backup conveyance system. A 60-inch pipeline located east of the 48-inch wooden pipeline provides the primary source of cooling water for the steel mill.

The Bessemer Ditch is a concrete-lined facility built in the 1890s that delivers irrigation water to farms east of Pueblo. The ditch crosses I-25 just north of Jones Avenue between the Central Avenue and Minnequa Avenue/Indiana Avenue interchanges.

3.16.1.2 Sanitary Sewer Service

Sanitary sewer services are provided by the City of Pueblo Public Works Department. Sewer lines run parallel and cross beneath I-25, including under residential alleys near I-25 in the Bessemer Neighborhood.

3.16.1.3 Storm Drainage

Storm drainage in the corridor is provided by the City of Pueblo Public Works Department. A network of storm sewer lines runs parallel to and across (beneath) I-25 throughout its length. Currently, I-25 does not have a significant

enclosed storm drainage system. A storm drain system with pump stations is located at 29th Avenue, and four detention basins are located west of I-25 between 24th Street and 28th Street.

A 72-inch storm sewer approaches the project corridor on the south side of the Arkansas River just west of the I-25 bridge. On the river's north bank, a 100-inch brick-lined storm sewer dating to the early 1900s runs south on Santa Fe Avenue, turns east along Locust Street south of the Runyon Field Sports Complex, and outfalls east of the Runyon Field Sports Complex and the Fountain Lakes State Wildlife Area.

3.16.1.4 Telephone, Fiber Optics, Cable Television

Telephone service in the project area is provided by Qwest Communications and MCI. Qwest's lines intersect I-25 at six major intersections: copper lines cross at Pueblo Boulevard, Abriendo Avenue, and 25th Street; major copper and fiber optic lines cross at Santa Fe Drive, 4th Street, and 21st Street/US 50B. MCI owns fiber optic lines that parallel the rail tracks and are within railroad ROW. MCI lines cross I-25 south of Arkansas River near Santa Fe Drive and near Grand Avenue.

Touch America maintains a fiber optic line east of I-25 in the railroad ROW. In 2005, CDOT installed fiber optic lines east of I-25 from 1st Street to US 50B. Comcast provides cable television through a line that crosses I-25 at 4th Street.

3.16.1.5 Natural Gas and Electrical Services

Natural gas in Pueblo is provided by Xcel Energy, the company that maintains gas lines in the corridor. The Xcel "south town" transfer station serves more than 30,000 customers in the south part of the City and is located southeast of the Santa Fe Avenue/Santa Fe Drive intersection.

Xcel Energy also owns the Comanche Station, a coal-fired, steam-electric generating station located outside the study area, southeast of the Evraz Rocky Mountain Steel Mills. The Comanche Station provides the Evraz Rocky Mountain Steel Mill's electric utility, and all other electricity generated is transported to the power grid or sold to the Pueblo-area electric distribution company, Black Hills Energy.

Black Hills Energy has 11 overhead crossings of I-25, including a 69-kilovolt line at Maryland Avenue. Black Hills Energy owns the Freemary electrical substation located west of I-25 between Maryland Avenue and Illinois Avenue.

3.16.2 Environmental Consequences

The New Pueblo Freeway project would impact utilities in the project area during highway construction and infrastructure improvements; further impacts would be unlikely following construction. Because utility relocations and coordination with utility owners can be expensive and time consuming, project designers would attempt to develop project alternatives that avoid or minimize impacts.

3.16.2.1 No Action Alternative

The No Action Alternative would include minor improvements, repair, and routine maintenance to I-25; therefore, there would be no impacts to utilities. Standard upgrades and maintenance to utility lines would continue to be performed by utility owners.

3.16.2.2 Build Alternatives

The Build Alternatives would impact a number of utilities in the project area. The utility infrastructure network includes numerous above- and below-ground lines that intersect and parallel the highway. Utility lines are concentrated at Pueblo Boulevard, Northern Avenue, Mesa Avenue, the north and south banks of the Arkansas River, 4th Street, 8th Street, and 29th Street – all of which would be impacted by reconstructing I-25 under either Build Alternative. The Build Alternatives provide the opportunity to improve storm drainage from I-25 by constructing an enclosed trunk line that allows treatment of stormwater before it is discharged. This beneficial impact is discussed in more detail in **Section 3.15 Water Quality**.

North Area (Phase 1)

For both Build Alternatives, the above- and below-ground utility lines concentrated at 4th Street, 8th Street, and 29th Street would be impacted by reconstructing I-25.

South Area (Phase 2)

Both Build Alternatives would encroach on the alternate 48-inch line conveying coolant water to the Evraz Rocky Mountain Steel Mills between JJ Raigoza Park and Illinois Avenue. This line acts as the alternative coolant water source for the Evraz Rocky Mountain Steel Mills. The primary line could be impacted during construction of the Modified I-25 Alternative (Preferred Alternative).

Central Area (Phase 2)

Existing I-25 Alternative

The Existing I-25 Alternative would affect storm drainage and natural gas utilities. Specifically, this alternative would:

- Approach the 72-inch storm sewer line that outfalls on the south bank of the Arkansas River west of the I-25 bridge and cross over the 100-inch storm sewer line located under Santa Fe Avenue and Locust Street.
- Require relocation of Xcel Energy's south town natural gas transfer station at the southeast corner of the Santa Fe Drive/Santa Fe Avenue intersection.

Irrigation utilities also would be impacted by the Existing I-25 Alternative. Widening of I-25 would slightly encroach on the Bessemer Ditch, requiring widening of the existing box culvert. The existing ditch crossing would be designated as an on-street bike path.

Modified I-25 Alternative (Preferred Alternative)

The Modified I-25 Alternative (Preferred Alternative) would affect the storm drainage and natural gas utilities in the same way as the Existing I-25 Alternative. The Modified I-25 Alternative (Preferred Alternative) would require a new crossing for I-25 over the Bessemer Ditch. The existing I-25 roadway and crossing would remain in place and become Santa Fe Avenue.

3.16.3 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative).

- During future design efforts, the location of all utilities in the I-25 corridor will be confirmed by field investigations, including locating lines below ground. If public or private utilities are expected to be affected by the project, alternate delivery systems will be provided to ensure uninterrupted service, and lines or stations will be relocated as needed. When appropriate, CDOT will look for opportunities to provide space for new utilities or upgrade existing ones.
- CDOT will negotiate an agreement (through purchase of either a temporary or permanent easement) with the Bessemer Ditch Company for the new roadway structure over the irrigation ditch under the Modified I-25 Alternative (Preferred Alternative) or for the widening of the existing box culvert that encroaches on the ditch in the Existing I-25 Alternative.
- The 100-inch brick-lined storm sewer located on the Arkansas River's north bank is a potential historic resource. If, during future design efforts, impacts to this line are identified, CDOT will engage in National Historic Preservation Act Section 106 consultation with the State Historic Preservation Officer and consulting parties regarding this resource.

3.17 ENERGY

During the construction and operation of any transportation system or project, energy is consumed for uses ranging from petroleum consumption for heavy equipment to electricity for street lights. Energy is used during construction to manufacture and transport materials and to operate construction machinery. Energy is used during project operation in the form of fuel consumed by vehicles using the transportation facilities and a small amount of electrical energy for signals, lighting, and maintenance. Vehicle fuel consumption depends on the vehicle miles traveled (VMT) and travel conditions, including vehicle type, speed of travel, roadway grade, and pavement type. For any given vehicle, speed is the most important factor affecting fuel consumption.

This section analyzes future corridor transportation system energy consumption, measured in British thermal units (Btu), and energy that would be required to construct the Build Alternatives. The energy-consuming regional and corridor transportation system consists of passenger automobiles, trucks, and buses. The energy calculations are based on the regional travel demand model projections prepared by the Pueblo Area Council of Governments for 2035 (PACOG, 2008). This section does not measure the energy used by manufacturing and maintenance activities for transportation facilities. Potential changes to future greenhouse gas emissions are discussed in **Section 3.23 Cumulative Impacts**.

3.17.1 Affected Environment

3.17.1.1 Assumptions

Energy sources for transportation in the Pueblo region are primarily petroleum fuels for automobiles, trucks, and buses. Estimates of VMT were determined from the travel demand modeling (PACOG, 2008) to represent regional conditions and from the traffic operational analysis for corridor conditions (CH2M HILL, 2005a; 2011b). Due to the modest amount of VMT occurring via buses and the fact that transit services are the same for all of the alternatives, representative bus VMT was assumed (less than one-tenth of 1 percent of total VMT). Existing regional truck percentages (3.5 percent of total traffic) and average corridor truck percentages (7 percent of total traffic) were applied to total VMT to represent truck VMT. Energy consumed during construction was estimated based on the amount of road lane miles constructed on grade and on structure.

3.17.1.2 Methodology

Energy consumption for the No Action Alternative and Build Alternatives was estimated by determining and comparing the energy consumed during construction and daily operation of each alternative using criteria developed by the U.S. Department of Energy Oak Ridge National Laboratory (Davis and McFarlin, 1993). The regional and corridor VMT estimates were separated into automobile miles, heavy truck miles, and bus miles. The energy consumed during operation for each motorized mode was calculated based on the following criteria:

- One passenger vehicle mile = 6,233 Btu(s)
- One heavy-duty vehicle (truck) mile = 22,046 Btu(s)
- One diesel bus mile = 41,655 Btu(s)

The amount of energy required to construct one lane mile of roadway on bridge structure (elevated) is nearly ten times greater than for one lane mile of roadway constructed at grade. The energy consumed during construction for each alternative was based on the following criteria:

- One surface road lane mile = 13,885 million Btu(s)
- One elevated road lane mile(bridge or structure) = 130,739 million Btu(s)

3.17.2 Environmental Consequences

In the construction and operation of any transportation system, energy is consumed for uses ranging from petroleum consumption for heavy equipment to electricity for street lights. All of the alternatives have the potential to affect environmental resources not regulated at the federal, state, or local levels, including energy use. Such impacts can include the consumption of natural resources such as fossil fuels and raw materials like gravel.

Energy consumption for the Build Alternatives is dependent on the VMT, construction of the roadway, and operation of the roadway. **Exhibit 3.17-1** presents VMT within the I-25 corridor during the PM peak hour. The PM peak hour was determined to be most representative of peak-hour corridor conditions and has been used throughout the resource evaluation. **Exhibit 3.17-2** presents the estimated daily VMT by alternative for the 2035 planning year in the entire Pueblo region.

For the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative), PM peak-hour corridor VMT (and consequently energy use) would be higher than for the No Action Alternative; however, on a daily basis, the difference in transportation energy use between all the alternatives would be negligible. The Modified I-25 Alternative (Preferred Alternative) would require 15.5 percent more energy to construct (295,000 million more Btu[s]) than the Existing I-25 Alternative due to the higher total lane miles and elevated structure lane miles.

Applying the per-mile estimates for energy use by mode, **Exhibit 3.17-3** presents the total energy use for VMT within the I-25 corridor during the PM peak hour. **Exhibit 3.17-4** presents the estimated daily Btu(s) by alternative for the 2035 planning year in the entire Pueblo region.

Recognizing that energy has already been expended to construct and modify the existing corridor and that energy would continue to be expended for maintenance, the existing condition serves as a baseline to represent the No Action Alternative.

The Existing I-25 Alternative would include construction of both surface and elevated roadways. The total at-grade lane miles would be approximately 73.68, which includes mainline I-25 (40.53 lane miles), ramps (11.01 lane miles), and local roads (22.14 lane miles). The Existing I-25 Alternative would also include 6.70 lane miles of elevated roadway (structure), for a total of 80.38 lane miles.

The Modified I-25 Alternative (Preferred Alternative) would include construction of both surface and elevated roadways. The total at-grade lane miles would be approximately 82.12, which includes mainline I-25 (40.80 lane miles), ramps (9.84 lane miles), and local roads (31.48 lane miles). The Modified I-25 Alternative (Preferred Alternative) would also include 8.06 lane miles of elevated roadway (structure). With 90.18 total lane miles, the Modified I-25 Alternative (Preferred Alternative) would have 9.8 more lane miles than the Existing I-25 Alternative (80.38 total lane miles).

Impacts of the alternatives on energy use are described in detail by alternative in the following subsections.

EXHIBIT 3.17-1
2035 Daily Vehicle Miles Traveled in the I-25 Corridor

Alternative	Automobile VMT	Truck VMT	Bus VMT	Total VMT
No Action Alternative	681,100	2,400	300	683,800
Existing I-25 Alternative	715,100	2,500	300	717,900
Modified I-25 Alternative (Preferred Alternative)	736,500	2,600	300	739,400

Source: CH2M HILL, 2005a; 2010h; 2011b.

I-25 = Interstate 25 VMT = vehicle miles traveled

EXHIBIT 3.17-2
2035 Daily Vehicle Miles Traveled in the Pueblo Area Council of Governments Planning Region

Alternative	Automobile VMT	Truck VMT	Bus VMT	Total VMT
No Action Alternative	4,167,800	14,600	2,100	4,184,500
Existing I-25 Alternative	4,165,100	14,600	2,100	4,181,800
Modified I-25 Alternative (Preferred Alternative)	4,170,200	14,700	2,100	4,187,000

Source: CH2M HILL, 2005a; 2010h; 2011b.

I-25 = Interstate 25 VMT = vehicle miles traveled

EXHIBIT 3.17-3
Peak-Hour Transportation Energy Consumption in the I-25 Corridor (PM Peak)

Alternative	Millions of Btu(s) Consumed
No Action Alternative	4,312
Existing I-25 Alternative	4,526
Modified I-25 Alternative (Preferred Alternative)	4,662

Source: Davis and McFarlin, 1993.

Btu = British thermal unit I-25 = Interstate 25 NA = not applicable

EXHIBIT 3.17-4
Daily Transportation Energy Consumption in the Pueblo Area Council of Governments Planning Region

Alternative	Millions of Btu(s) Consumed
No Action Alternative	26,387
Existing I-25 Alternative	26,370
Modified I-25 Alternative (Preferred Alternative)	26,402

Source: Davis and McFarlin, 1993.

Btu = British thermal unit I-25 = Interstate 25 NA = not applicable

3.17.2.1 No Action Alternative

Under the No Action Alternative, energy would continue to be expended for automobile, truck, and bus transportation. Energy has already been expended to construct and modify the existing I-25 corridor and would continue to be expended for maintenance.

3.17.2.2 Build Alternatives

Existing I-25 Alternative

The Existing I-25 Alternative would result in similar daily regional VMT and resulting energy use as the No Action Alternative and slightly higher PM peak-hour VMT and energy consumption in the corridor. The peak-hour energy used in the corridor would be less than for the Modified I-25 Alternative (Preferred Alternative), but still 5 percent higher than for the No Action Alternative. This may be partially explained by the increased mobility in the corridor due to the additional east-west connectivity, but not as much mobility as the Modified I-25 Alternative (Preferred Alternative), which would also have improved north-south routes.

The Existing I-25 Alternative would have less total lane miles, less at-grade lane miles, and less lane miles on structure than the Modified I-25 Alternative (Preferred Alternative). The 80.38 total lane miles would require 1,899,000 million Btu(s) to construct.

Modified I-25 Alternative (Preferred Alternative)

On a daily basis, the expected regional VMT and resulting energy consumption of the Modified I-25 Alternative (Preferred Alternative) would be similar to the No Action Alternative. The higher PM peak-hour VMT and energy consumption suggest that, while there is considerable variability on a segment-by-segment basis, more vehicles would utilize the corridor in the PM peak hour under the Modified I-25 Alternative (Preferred Alternative) than under the No Action Alternative. This may be explained by the reduction in peak-hour congestion resulting from the increase in corridor capacity and improved mobility provided by the additional east-west and north-south routes.

The Modified I-25 Alternative (Preferred Alternative) would have 9.8 more total lane miles and 1.36 more elevated lane miles than the Existing I-25 Alternative, and would require 2,194,000 million Btu(s) to construct. Based on these estimates, the amount of energy used during the construction of new road lane miles on grade and on structure for each of the Build Alternatives was determined and is presented in **Exhibit 3.17-5**.

EXHIBIT 3.17-5
Energy Consumption for the Construction of the Build Alternatives

Alternative	Type of Construction	Lane Miles	Millions of Btu(s) per lane mile	Millions of Btu(s) Consumed
No Action Alternative	At grade (Surface)	NA	NA	0
	Elevated (Structure)	NA	NA	0
	Total	NA	NA	0
Existing I-25 Alternative	At grade (Surface)	73.68	13,885	1,023,000
	Elevated (Structure)	6.70	130,739	876,000
	Total	80.38	NA	1,899,000
Modified I-25 Alternative (Preferred Alternative)	At grade (Surface)	82.12	13,885	1,140,200
	Elevated (Structure)	8.06	130,739	1,053,800
	Total	90.18	NA	2,194,000

Source: Davis and McFarlin, 1993.
Btu = British thermal unit I-25 = Interstate 25 NA = not applicable

3.17.3 Mitigation

As part of its environmental ethic and policy, CDOT encourages its staff, consultants, and contractors to identify opportunities and methods to reduce the impact of projects and programs on environmental resources. This encouragement includes a commitment to allow innovative programs and flexibility in project planning, construction, and maintenance for the use of sustainable processes and materials. This may include such concepts as natural resource conservation, waste minimization, materials reuse, minimal use of native virgin materials, conservation and efficient use of water and energy, air pollution prevention, preference for “green” purchasing (including recycled and minimally processed items), and preference for locally available resources.

CDOT encourages the identification and incorporation of proven materials that are longer lasting and require less maintenance when use of such materials is consistent with CDOT’s ability to meet its primary obligations of providing a safe and efficient transportation system. Alternative materials and practices can and must meet the performance goals of CDOT construction specifications, demonstrate legitimate expenditure of public funds, and comply with all other applicable laws and regulations.

To the extent practicable, CDOT will implement sustainability practices into the project planning, construction, and maintenance to minimize impacts and reduce energy use.

3.18 NOXIOUS WEEDS

Noxious weeds are undesirable, non-native invasive plant species that have negative impacts on crops, native plant communities, wildlife, livestock, and the management of natural or agricultural resources. Transportation systems can facilitate the spread of plants through the movement of seed and plant parts on motor vehicles. Noxious weeds are commonly spread through various construction activities, including excavation and movement of borrow materials, land clearing, reclamation, and the mobilization of construction vehicles. Removal of existing vegetation and other ground disturbance activities may eradicate some of the weeds but could encourage germination of seeds in soil seed banks (areas with dormant seeds within the soil) and may allow the spread of noxious weeds through seed dispersal.

Management of noxious weeds is required under Federal Executive Order (EO) 13112, "Invasive Species"; the Federal Noxious Weeds Act; the Colorado Noxious Weed Act (Colorado Revised Statute Title 35, Article 5.5); Colorado EO D006-99, "Development and Implementation of Noxious Weed Management Programs"; and Colorado EO D002-03, "Directing State Agencies to Coordinate Efforts for the Eradication of Tamarisk on State Lands." The State of Colorado, CDOT, and Pueblo County maintain lists of noxious weed species that may potentially be found in the New Pueblo Freeway project area. CDOT is responsible for taking measures to prevent the spread of noxious weeds on CDOT property, including right-of-way (ROW) (CDOT, 2000).

3.18.1 Affected Environment

A formal weed inventory (CH2M HILL, 2005i) was completed in October 2003 to determine the locations and densities of noxious weeds within and adjacent to the project area. Weed populations were mapped using a global positioning system. Weeds considered for the inventory included those managed by Pueblo County, CDOT, and the State of Colorado. A total of six species of noxious weeds were identified within the project area, as shown in **Exhibit 3.18-1**.

EXHIBIT 3.18-1
Noxious Weeds Present in the New Pueblo Freeway Survey Area

Common Name	Scientific Name	Pueblo County Weed List	Colorado Department of Transportation Weed List	State of Colorado Noxious Weeds List	Acreage within Survey Area
Field bindweed	*Convolvulus arvensis*	X	X	C[1]	3.75
Canada thistle	*Cirsium arvense*	X	X	B[2]	42.48
Kochia	*Kochia scoparia*	X			266.27
Russian olive	*Elaeagnus angustifolia*		X	B	82.27
Russian thistle	*Salsola collina*	X			157.04
Tamarisk	*Tamarix ramosissima*	X	X	B	128.39

Source: CH2M HILL, 2005i.

[1] List C noxious weed species are species for which the Commissioner of Agriculture (in consultation with the state noxious weed advisory committee, local governments, and other interested parties) will develop and implement state noxious weed management plans designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands. The goal of such plans will not be to stop the continued spread of these species but to provide additional educational, research, and biological control resources to jurisdictions that choose to require management of List C species.

[2] List B noxious weed species are species for which the Commissioner of Agriculture, in consultation with the state noxious weed advisory committee, local governments, and other interested parties, will develop and implement state noxious weed management plans designed to stop the continued spread of these species. Until such time as these plans are developed and implemented by rule, all persons are recommended to manage List B species but are not required to do so by these rules (although other state or local jurisdictions may require such action).

Three of the identified species (field bindweed, Canada thistle, and tamarisk) are listed as noxious weeds by the State of Colorado, CDOT, and Pueblo County. Russian olive is listed as a noxious weed by both CDOT and the State of Colorado. The remaining two species (kochia and Russian thistle) are managed solely by Pueblo County. CDOT has an active weed control program, and conditions may have changed since the formal weed inventory was conducted in October 2003. Surveys will be updated during growing season prior to project construction.

Due to the disturbed nature of the I-25 corridor through Pueblo, most of the undeveloped land within the project area contains noxious weeds. Although noxious weeds were identified throughout the corridor, the majority of the noxious weed stands identified during the survey were located in the North Area (Phase 1) between 29th Street and 4th Street along both sides of Fountain Creek.

Kochia and Russian thistle were the dominant weed species identified during the survey and were most prevalent in the North Area (Phase 1) of the project corridor east of I-25, although high concentrations were identified in the Central Area (Phase 2) and South Area (Phase 2) as well. Field bindweed was evenly distributed throughout the project area but was generally limited to scattered individuals and small patches. Canada thistle and Russian olive were generally present in small patches and were concentrated primarily in the North Area (Phase 1); however, both species were largely absent in the stands of noxious weeds identified in the Central Area (Phase 2) and South Area (Phase 2). Tamarisk was more prevalent than both Canada thistle and Russian olive, generally present in medium-sized patches and identified throughout the project area. Detailed information about the existing site conditions and noxious weeds inventory can be found in the *Noxious Weeds Technical Memorandum, New Pueblo Freeway* (CH2M HILL, 2005i).

3.18.2 Environmental Consequences

3.18.2.1 No Action Alternative

The No Action Alternative would have no new direct impacts on the number or distribution of noxious weeds. Noxious weeds currently present in the project area would continue to grow and spread, although the weeds located within CDOT ROW would be managed under CDOT's noxious weed management practices conducted through their interstate maintenance program.

3.18.2.2 Build Alternatives

The State of Colorado highway ROWs are increasingly at risk of noxious weed invasions. In Pueblo, any improvements to I-25 will require the removal of existing vegetation during construction. Site disturbance would eliminate some roadside noxious weeds but may encourage the establishment of noxious weeds; germination of seeds in soil seed banks; and the spread of noxious weeds through dispersal of seeds or plants by wind, construction equipment, vehicle undercarriages, or transport of soil.

Noxious weeds often thrive on disturbed sites and out-compete native vegetation. Impacts may occur through ground disturbance in areas currently infested with noxious weeds, which has the potential to spread those species to adjacent property as well as to wetland and riparian habitats not currently infested with noxious weeds. Areas adjacent to the project area may be impacted because noxious weeds can be spread by the transportation of topsoil that contains weed seeds and roots from one area to another during earth moving or on construction vehicles. Acres of noxious weeds within the project footprint have been estimated for both Build Alternatives and are presented in **Exhibit 3.18-2**. Note that impacted areas provide opportunities for eradication of noxious weeds through careful restoration and seeding of native plant communities.

EXHIBIT 3.18-2
Noxious Weed Occurrences within the Project Footprint

Alternative	Noxious Weeds (acres)
Existing I-25 Alternative	180.2
Modified I-25 Alternative (Preferred Alternative)	169.4

Source: CH2M HILL, 2005i.

I-25 = Interstate 25

3.18.3 Mitigation

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative).

- Prior to the start of construction activities, CDOT will conduct a new noxious weed survey to map existing weeds requiring mandatory eradication and management to stop their spread within the project area and develop and implement a Noxious Weed Management Plan that incorporates herbicides, mechanical removal, and potential biological controls in accordance with the Colorado Noxious Weed Act to control and prevent weed infestation and spread. CDOT will provide the Noxious Weed Management Plan to CPW for review prior to its completion.
- Measures to be used in all construction areas for either the Existing I-25 Alternative or the Modified I-25 Alternative (Preferred Alternative) to prevent the spread of noxious weeds will include the following:
  - Noxious weeds observed in and near the construction area at the onset of construction will be treated with herbicides or physically removed to prevent seed distribution into areas disturbed during construction. In sensitive areas, such as wetland and riparian areas, appropriate control measures will be implemented according to the Noxious Weed Management Plan.
  - Areas of topsoil salvage will be assessed for the presence and abundance of noxious weeds prior to salvage. Topsoil from heavily infested areas will be properly disposed of offsite or buried during construction. Contractor-furnished topsoil will be free of subsoil, refuse, stumps, roots, brush, weeds, or other substances detrimental to the development of vegetative growth.
  - Disturbed areas will be reclaimed immediately after the completion of construction and seeded with an appropriate native seed mix. Seed will be certified for purity and weed seed content. In areas that cannot be immediately seeded due to the time of year, mulch and mulch tackifier (to hold the mulch in place) will be used for temporary erosion control until seeding can occur.
  - Certified weed-free seed mixes and straw bales for use in stormwater management and erosion control will be specified in the plan sets for construction. Native grasses and forbs will be used on all CDOT ROW for revegetation purposes.
  - All construction equipment will be thoroughly washed before being brought into the project area or being moved between construction sites to avoid introducing undesirable plants and noxious weeds. Equipment will remain on designated roadways and will stay out of weed-infested areas until these areas are treated.
  - To the extent possible, weed management efforts will be coordinated with local jurisdictional agencies and adjacent landowners.
  - After construction, CDOT ROW will be managed through standard CDOT maintenance operations.

3.19 PALEONTOLOGICAL RESOURCES

Paleontology is the study of past geological periods as known from fossil remains. This section provides information on the existing geology and paleontology in the I-25 project corridor and the analysis of any impacts to these resources.

3.19.1 Affected Environment

In accordance with the Colorado Historical, Prehistorical, and Archaeological Resources Act of 1973, pedestrian field surveys were conducted in April 2004 along the I-25 corridor. The corridor is within the City of Pueblo urban area, with much of the outcrop covered by construction projects or vegetation; however, exposures of the underlying bedrock do occur, primarily in roadcuts and behind buildings. The bedrock exposures and anthills associated with these outcrops were examined for fossils. In addition, fossil localities and information about paleontological resources in the study corridor were gathered from U.S. Geological Survey publications and the fossil locality databases at the University of Colorado Museum and the Denver Museum of Nature and Science (CH2M HILL, 2004b).

Literature research identified seven surficial deposits overlying three bedrock units in the I-25 corridor. The highway rests on these surficial deposits for most of the length of the study corridor. The deposits are largely covered by vegetation or pavement throughout the area, especially on the terraces south of the Arkansas River. These surficial deposits rest on bedrock that is visible north of the Arkansas River and south of Goat Hill, as well as in artificial cuts south of the Arkansas River (CH2M HILL, 2004b).

No fossils have been documented in the I-25 corridor by the University of Colorado Museum, the Denver Museum of Nature and Science, or U.S. Geological Survey published reports. The only fossils found during the April 2004 field survey were fragments of inoceramid (extinct saltwater clam) shells located in a cut south of Santa Fe Drive between Santa Fe Avenue and Trail Avenue. Publications have documented that fossils are locally abundant in Pueblo, although generally poorly preserved as impressions in the bedrock. No other locally occurring surficial units are known to contain fossils (CH2M HILL, 2004b).

3.19.2 Environmental Consequences

3.19.2.1 No Action Alternative

Because the No Action Alternative includes only minor improvements, repairs, and routine maintenance, it would not create new areas of disturbance in the I-25 area; therefore, no disturbance of subsurface paleontological resources would occur.

3.19.2.2 Build Alternatives

Neither the Existing I-25 Alternative nor the Modified I-25 Alternative (Preferred Alternative) would impact any known significant paleontological resources.

3.19.3 Mitigation

If any fossils or other paleontological resources are found anywhere in the project area during construction, construction activities will be halted and the CDOT staff paleontologist will be contacted immediately to assess the significance of the find and make further recommendations.

3.20 SOILS AND GEOLOGY

This section discloses potential impacts of the project on local soils and geology.

3.20.1 Affected Environment

The existing I-25 highway is constructed primarily on fill soil, including waste steel mill slag in the southern portion of the corridor. Geologic conditions that could affect the project include expansive soils, shallow bedrock, unstable or potentially unstable slopes, or seismic risks. Mapping from the National Resource Conservation Service indicates the study area is located in an area of silty clay, clay loam, and sandy loam soils. The highway through Pueblo is located in an urban setting.

3.20.2 Environmental Consequences

3.20.2.1 No Action Alternative

The No Build Alternative would not involve new construction and therefore would not affect soils or geologic conditions.

3.20.2.2 Build Alternatives

Because both Build Alternatives generally follow the current I-25 alignment, which was built on fill, it is unlikely that the Build Alternatives would encounter unstable soils or geological hazards during construction.

3.20.2.3 Indirect Effects

Obtaining sufficient quantities of construction fill for the Build Alternatives may require the purchase of material from several commercial quarries in the region. Aggregate for concrete and other granular material for construction fill would be mined from borrow pits distant from the project area, reducing by a small amount the regional availability of aggregate and fill for use on other projects. Because material extraction would occur farther away from the project area compared to other construction activities, this is an indirect impact of the Build Alternatives. The volume of aggregate used for construction of either Build Alternative would be small in comparison with the regional supply.

3.20.3 Mitigation

A detailed geotechnical and soils analysis of the subsurface will be required during the final project design process to determine the structural stability and load-bearing capacity of geology and soils in the study area. The results of the geotechnical analysis will be used to establish the final roadway and structures designs.

3.21 RELATIONSHIP OF LOCAL SHORT-TERM USES VERSUS LONG-TERM PRODUCTIVITY

Short-term impacts and uses of the environment are generally associated with the construction phase of a project. These impacts need to be assessed relative to the long-term gains associated with the project to determine if impacts are generally acceptable or can be mitigated by the benefits of the project.

Implementation of either of the Build Alternatives (the Existing I-25 Alternative and Modified I-25 Alternative [Preferred Alternative]) would involve the use of environmental resources to reach the long-term productivity gains and benefits offered by that Build Alternative. These uses and benefits vary between the No Action Alternative and the Build Alternatives. Short-term impacts on existing noise levels, visual resources, water quality, parks, community resources, and neighborhoods should be evaluated for residents and business owners affected during construction. Traffic delays and detours could result in loss of revenue for businesses and cause disruption or delays for local residents.

3.21.1 No Action Alternative

The No Action Alternative would result in fewer temporary impacts (or short-term uses of resources). However, due to the condition of the existing facilities, current deficiencies such as bridge obsolescence, roadway safety, and decreased mobility and accessibility, as well as future congestion, would remain on I-25.

3.21.2 Build Alternatives

The Build Alternatives would have similar environmental uses and long-term benefits; consequently, they are discussed together. Each Build Alternative would use environmental resources typical of large-scale road construction projects. The Build Alternatives would assist in the long-term safety and mobility and increased capacity of the I-25 corridor. The Build Alternatives also would improve safety and overall emergency response times. These long-term beneficial effects of the Build Alternatives outweigh the potentially great but mitigated short-term impacts on the environment that would result primarily from project construction. Construction can be “staged” to minimize some of the short-term uses.

Short-term uses associated with the Build Alternatives include:

- Loss of soil through erosion and fugitive dust.
- Temporary disruption of traffic in the proposed construction areas.
- Temporary degradation of air quality due to reduced traffic speed through construction zones and use of heavy equipment.
- Temporary impacts on businesses and residents as a result of detours or modifications of access and emergency vehicle response time.
- Temporary impacts on water resources as a result of increased run-off, chemical compounds, or disturbance of geological substrate during construction.
- Increased energy consumption during construction.
- Temporary visual impacts associated with construction staging during construction for corridor travelers.
- Potential for light and noise pollution affecting adjacent residential areas during construction.
- Temporary noise and/or vibration impacts due to construction.
- Temporary use of land for construction staging and storage of materials.
- Temporary impacts to local parks and recreation opportunities from trail closures and restricted access during construction.
- Relocation of businesses and residences from current locations.

Where possible, these short-term uses would be mitigated as discussed in each of the resource sections in this chapter.

Long-term uses of resources that would result from the Build Alternatives include permanent use of land use, air quality, and water quality, as described in detail in **Section 3.8 Land Use**, **Section 3.10 Air Quality**, and **Section 3.15 Water Quality**.

The following long-term benefits of the Build Alternatives are anticipated to outweigh the commitment of these resources:

- Improved safety and mobility on Pueblo’s primary north-south transportation corridor for local and regional motorists.

- Re-establishment of local east-west road connections, which would improve local access.
- Capture and treatment of all stormwater runoff that falls within CDOT right-of-way, improving the quality of water that re-enters receiving water bodies and benefitting downstream users.
- Improved open water habitat for fish and wildlife species due to improved water quality.
- Modernization of outdated and deteriorating highway facilities, including addition of capacity to accommodate future demands, resulting in less congestion for local and regional motorists.
- Increased park acreage with improved park facilities for local residents.
- Reconnection of neighborhoods severed by the original construction of I-25.
- Reduced noise in many neighborhoods adjacent to the corridor.
- Coordinated aesthetic design of highway structures regionally throughout Pueblo.
- Improved local emergency vehicle access.
- Improved access to businesses within the study area.

3.21.3 Mitigation

No mitigation is required.

3.22 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable resource commitments refer to the use of nonrenewable resources and the effects the use of these resources would have on future generations. The resources could be natural, physical, human, or fiscal. Irreversible commitments involve permanent loss of resources or loss of resources that cannot be replaced within a reasonable period. Irretrievable commitments involve the loss in value of an affected resource for a period of time.

3.22.1 No Action Alternative

The No Action Alternative would include routine maintenance of existing transportation facilities but no capital improvements to the I-25 corridor project area. Therefore, the No Action Alternative would not involve a commitment of resources to construction activities but would require natural, physical, and fiscal resources to maintain the current infrastructure. Some of these commitments, such as the energy required to produce and overlay asphalt, are irretrievable. In addition, travelers would lose money and time due to loss of mobility on I-25 through Pueblo.

3.22.2 Build Alternatives

Construction of either Build Alternative would involve a commitment of resources, including a range of natural, physical, human, and fiscal resources. Because the scale of the alternatives is similar, their irreversible and irretrievable commitments are also similar. Irreversible commitments for construction of the Build Alternatives include loss of historic properties and wetlands, expenditure of public funds, and displacement of residences and businesses that would need to be relocated due to right-of-way (ROW) requirements. Irretrievable commitments for construction of the Build Alternatives include acquisition of ROW, changes in land uses, changes to the visual landscape, and loss of vegetation and habitat.

Considerable amounts of fossil fuels, labor, and construction materials (such as asphalt, steel, aggregates, sand, gravel, and cement) would be expended during construction of the Build Alternatives. These resources are generally not retrievable, although some materials can be and are recycled or reused to minimize consumption of new (virgin) materials.

Construction of the Build Alternatives would have immediate and positive effects on the economy and employment in the Pueblo region. The Build Alternatives also would have long-term benefits to the social, economic, and natural environments. Travelers and residents would benefit from improved mobility and safety. Time and money would be saved, and crashes resulting in injuries or fatalities would occur less frequently. Operation of the improved transportation network would continue to provide economic benefits by attracting businesses and providing better access to existing businesses. The design of new bridges and roadways will incorporate best management practices (BMPs) in resource conservation, and facilities will require less maintenance and associated energy/materials usage. Water quality treatment features would provide long-term improvement to water body quality and improve environmental sustainability. These positive effects of the Build Alternatives would offset some of the irretrievable and irreversible losses of resources.

3.22.3 Mitigation Measures

Employing the concepts of sustainability and BMPs can reduce the impacts associated with resource losses. CDOT encourages the identification and incorporation of proven materials that are longer lasting and require less maintenance when the use of such materials is consistent with meeting the primary obligation of providing a safe and efficient transportation system. Alternative materials and practices must meet the performance goals in the construction specifications, demonstrate legitimate expenditure of public funds, and comply with all other applicable laws and regulations. Sustainable practices will be explored during the project design phase to the extent practicable. Some of the concepts to be explored may include, but are not limited to:

- Resource conservation
- Material reuse
- Waste minimization
- Minimal use of virgin materials
- Conservation and efficient use of water and energy
- Air pollution prevention
- Use of locally available resources

3.23 CUMULATIVE IMPACTS

This section describes the analysis conducted to evaluate the cumulative environmental impacts associated with the implementation of the New Pueblo Freeway project. The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] 1508.7) define cumulative impacts as *"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."*

The cumulative impacts analysis was guided by agency scoping identification of resources, identification of the project's temporal and spatial boundaries, and documentation of impacts on selected resources. The analysis is resource-specific and generally performed for environmental resources that would be directly impacted by construction of one of the Build Alternatives. However, the analysis also focuses on resources for which the New Pueblo Freeway project would have effects similar to other past, present, and future actions and/or resources that have been historically affected by cumulative actions. The results of this impact analysis are discussed for the overall project except where there are differences in impacts between the two Build Alternatives (the Existing I-25 Alternative and the Modified I-25 Alternative [Preferred Alternative]).

3.23.1 Methodology and Framework for Assessing Cumulative Impacts

The key environmental resources selected for a cumulative impact assessment for the New Pueblo Freeway project were identified through project scoping ongoing agency coordination and project impact evaluation. Project scoping was completed in 2003 for the New Pueblo Freeway project, as described in **Chapter 6 – Comments and Coordination**. The scoping meetings included representatives from CDOT, FHWA, resource agencies, local government, and the public. Resources evaluated for cumulative effects were identified by public agencies during the scoping process and included community cohesion, historic resources, parks and recreation, and the Fountain Creek floodplain.

3.23.2 Key Resources and Geographic Extent

Key environmental resources were selected based on the potential for direct or indirect impacts as a result of the project action, resources of concern by the public, and those identified during project scoping as resources of importance. The key resources that were considered as part of the cumulative impacts assessment are:

- Transportation
- Historic Resources
- Parks and Recreation
- Wetlands
- Noise
- Social Resources and Land Use
- Fish and Wildlife
- Floodplains
- Global Climate Change

The geographic area of analysis was developed to encompass the area in which a cumulative impact on key resources would be expected to occur, as well as areas that may affect regional travel patterns (such as new developments).

3.23.3 Timeframe for Analysis

The proposed timeframe for past and reasonably foreseeable future activities was established as 1949 through 2035. The analysis begins in 1949 with the initial construction of I-25. This timeframe allows a view of the history of the corridor as well as an understanding of how the highway has affected the area. The year 2035 was selected because it is the current planning horizon year for the Pueblo Area Council of Governments (PACOG) and this FEIS.

3.23.4 Identification of Past, Present, and Future Projects

The identification of other past, present, and reasonably foreseeable future projects is important in assessing how the New Pueblo Freeway project, in conjunction with other actions, may contribute to cumulative impacts on key resources. A list of these projects, separated into

transportation and urban development projects, is included in **Exhibit 3.23-1**.

While the actions listed are not intended to be an exhaustive list of every project in the study area, they provide a representative illustration of the quantity and magnitude of projects affecting the overall trend for each resource.

The reasonably foreseeable future projects were identified through coordination with local officials and projects listed in state and local transportation and land use plans.

This list encompasses projects currently planned, and these projects may change (either over time or by location) as development pressures fluctuate and local politics and policies affect private development decisions, as acknowledged in the amended (April 2011) *Pueblo Area 2035 Long Range Transportation Plan (Pueblo Regional Transportation Plan* (PACOG, 2008).

EXHIBIT 3.23-1
Past, Present, and Future Projects in the Study Area

Project	Timeframe	Description
TRANSPORTATION PROJECTS		
I-25	Past	Construction of the Pueblo Freeway through Pueblo between 1947 and 1959.
US 50B	Past	Construction of US 50 expressway bypass in 1957.
SH 96	Past	Rerouted south in 1971 to accommodate Pueblo Reservoir.
SH 47	Past	Regional connection for northeastern Pueblo. Construction of SH 47 from I-25 to Bonaforte 1971; Bonaforte to US 50/SH 96 1979; US 50/SH 96/ SH 47 interchange 1982.
I-25/US 50/SH 47	Past	Interchange improvements to US 50/SH 47 in 2002; includes extension of Dillon Drive between SH 47 and 29th Street, improvements to Eagleridge, Gateway, 29th Street interchanges; improved stormwater conveyance.
Pueblo Transit Center	Past	Transportation hub constructed in 2004 in downtown Pueblo.
Dillon Drive/Eden-Platteville Boulevard Interchange	Present	Planned construction of new interchange at Dillon Drive with I-25 to facilitate east-west regional connection.
4th Street Bridge Replacement	Present	Safety improvements and replacement of existing bridge.
US 50 Corridor East Tier 1 EIS	Present	Environmental study of four-lane widening from Pueblo to Kansas state line.
Defense Access Roads to Chemical Agent Destruction Pilot Plant	Present	Widening and overlay of existing facilities, construction of new roadway to complete Defense Access Roads. Expected in 2011.
US 50 West Congestion Relief	Future	Expansion of US 50 from four lanes to six lanes between Morris Avenue and Baltimore Avenue.
US 50 West PEL	Future	Study of seven interchanges Swallows Road and Baltimore Avenue.
DEVELOPMENT PROJECTS		
Pueblo Memorial Airport	Past	Originally constructed in 1942, Pueblo Army Air Base becomes City-owned Pueblo Memorial Airport for commercial flights in 1953.

EXHIBIT 3.23-1
Past, Present, and Future Projects in the Study Area

Project	Timeframe	Description
Southern Colorado State College (now Colorado State University-Pueblo)	Past, Present	College relocated from its Orman campus downtown to its current campus at SH 47 and Bonaforte in 1964; 275 acres, 5,000 students currently; Crestone residence hall constructed 2009 (253 student capacity); Greenhorn and Culebra residence halls, Fall 2010 (500 student capacity).
Pueblo West	Past, Present, Future	Establishment of the unincorporated community of Pueblo West in 1969; development and expansion of community continues.
Pueblo Dam	Past	One of five reservoirs constructed under the Fryingpan-Arkansas Project for flood control purposes and winter water storage in 1970.
Lake Pueblo State Park	Past	Became state recreational facility in 1974; third most visited recreational site in Colorado.
Pueblo Mall	Past	Original construction of 561,000 square feet of enclosed retail in 1976.
Fountain Creek Levees and Channelization Projects	Past	Project to improve flooding conditions in the Fountain Creek floodplain in 1989.
Historic Arkansas Riverwalk of Pueblo	Past, Present, Future	Urban renewal project consisting of commercial and residential uses along the historic location of the Arkansas River. Construction began in 1996.
Eagleridge Shopping Center	Past	Regional shopping center constructed at the Eagleridge/I-25 interchange in 1997.
Vestas Towers	Present	Construction of 600,000 square-foot facility for the production of wind energy towers; will provide as many as 500 jobs.
Southern Delivery System	Present	Underground pipeline project to bring water from the Pueblo Reservoir to the communities of Pueblo West, Security, Fountain, and Colorado Springs.
North Vista	Future	New 1,200-acre mixed-use development near Colorado State University-Pueblo.
Seranto	Future	New 1,100 acre mixed-use development north of Pueblo.
Ice House	Future	Redevelopment of historic warehouse into residential and retail space.
Sol Plaza	Future	New development of 20,000 square feet of retail on Pueblo Boulevard near Mirror Street.
Pueblo Chemical Agent Destruction Pilot Plant	Future	Construction of facility to destroy the chemical weapons stockpile currently in storage at the United States Army Pueblo Chemical Depot.

Source: CDOT Project Team, 2010.

EIS = Environmental Impact Statement
I-25 = Interstate 25
SH = State Highway
US = United States Highway

3.23.4.1 Development Patterns and Cultural Context

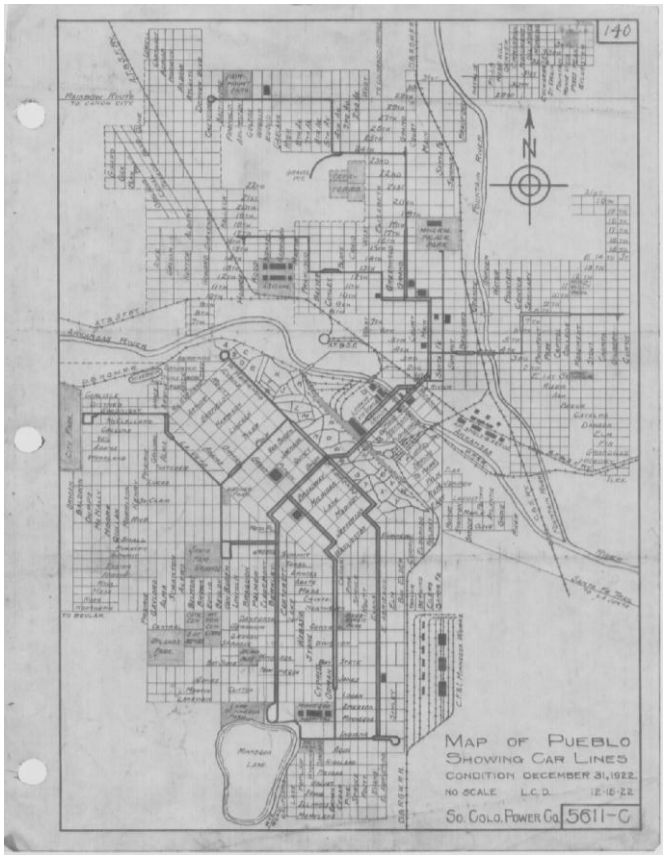
Early History of Pueblo

When the City of Pueblo incorporated in 1870, the original City boundary included 7th Street to the north, Bradford Street to the east, River Street to the south, and Grand Avenue to the east. The arrival of the railroad gave rise to expanded settlement, including South Pueblo (the Mesa Junction neighborhood) and Central Pueblo. The town of Bessemer was incorporated in 1886 as the company town for the Colorado Fuel & Iron Company (CF&I). Pueblo, South Pueblo, and Central Pueblo consolidated into one community in 1886, and Bessemer was annexed into the City of Pueblo in 1894.

Pueblo was primarily a smelting town and secondly a railroad town. The urban environment was typical of early settlement patterns, with integrated land uses. The first residential neighborhoods in Pueblo were established adjacent to jobs, including the Goat Hill, Smelter Hill, and Grove neighborhoods. Steel workers lived in the Bessemer Neighborhood, and railroad workers lived in the Blocks Neighborhood (now known as Mesa Junction). Professionals, steel mill managers, and bankers tended to reside in the North Side and Goat Hill neighborhoods. The early growth in Pueblo's immigrant population saw the expansion of ethnic neighborhoods. Within these communities, ethnic grocery stores and churches sprouted up to serve immigrant needs.

The flood of the Arkansas River and Fountain Creek in 1921 marked a new period of suburbanized development in Pueblo. The Arkansas River shifted its course from approximately Elizabeth Street to its current location near Abriendo Avenue, causing a permanent population shift. Residents migrated from the center of town to the peripheries, away from the river. Additionally, the flood forced the closure of the last remaining smelting operation, signaling the end of an economic era.

Modern Pueblo developed along streetcar lines that served as the original transportation spines around which City services and planned developments expanded. Service by horse-drawn streetcars commenced in the 1880s and was replaced by the electric streetcar in the 1890s. Rubber tire buses replaced the electric streetcar in 1947, but they continued to follow the same routes. The contemporary local roadway network remains along the original streetcar lines, as illustrated in the map below.



Historic Transportation Network (1922)

The advent of the automobile as a primary mode of transportation, combined with a land use-based zoning code, ultimately reformed Pueblo's land use patterns, replacing many neighborhood businesses with automobile-centric uses and segregating residential neighborhoods from commercial districts. However, the growth of the automobile coupled with the influence of the railroad reinforced Pueblo's importance as the business and trade center of southeastern Colorado in the early 20th century.

Throughout the Depression years in the 1930s, the fundamental patterns of manufacturing and trade remained intact, but the New Deal recovery programs launched construction of new public infrastructure and facilities throughout Pueblo and contributed to a new layer of the City's urban fabric. The boom of World War II led to resurgence in Pueblo's economy with the steel mills and other war-related plants operating at capacity (Dodds, 1982).

Construction of I-25 through Pueblo

The Federal Highway Act of 1916 examined the need for a national highway system. Between the 1920s and the end of the 1940s, US 85-87 provided the principal route through Pueblo north to Colorado Springs and south to Walsenburg. Originally, the route travelled through the center of town on Lake-Union-Main-15th-Court-25th-Elizabeth. However, the 1949 highway alignment departed from the previously used local network.

On a federal level, the Cold War underscored the need for a modern interstate highway network. Furthermore, Colorado's leaders understood the importance that highway travel played in economic development. The Pueblo Freeway project, a modernization of US 85-87, started in 1949. After 10 years of construction, the segment of highway through Pueblo opened in 1959.

The Pueblo Freeway (later named I-25) marked a new era for the City and its role as a transportation hub in southeastern Colorado. Modern architectural movements and the demand for denser housing influenced the styles and forms of new infill in older neighborhoods. Construction of the new highway severed neighborhoods (particularly Grove, Goat Hill, and Bessemer), and much of Pueblo's historic urban fabric was lost, as evidenced by the deterioration of housing stock abutting the highway. In commercial areas, changing shopping and merchandising patterns led to a loss of older commercial establishments. New development was often at a larger scale or with dramatically different setbacks and forms to accommodate the automobile.

Land Use Changes – 1950 through Present

Pueblo experienced the largest expansion of population during the 1950s and 1960s due to the steel boom. To house new residents, new residential development occurred on the north, east, and southwest edges of the City. Unlike the older neighborhoods, these new neighborhoods were mostly developed as tract housing. Between 1940 and 1970, the City's population grew from 52,000 to 97,774 (PACOG, 2008b), accounting for 82 percent of the total Pueblo County population in 1970. **Exhibit 3.23-2** presents past U.S. Census Bureau populations and future projections.

Despite the economic strengthening of the former CF&I Steel Mill in the 1950s and 1960s, the United States steel industry became unable to compete with low foreign wages and subsequently collapsed. With the bankruptcy of the former CF&I Steel Mill and near closure of the plant during the 1980s, the Pueblo region lost thousands of jobs. More than anything, the disappearance of the neighborhood grocery stores indicated the change in business environment from locally supported to nationally owned.

By the end of the 20th century, the clothing retail district in Pueblo completely shifted as well. Union Avenue was the center of this shopping activity during the early decades of the century. However, by the 1990s, most of these stores

EXHIBIT 3.23-2
Past, Existing, and Future Populations

	City of Pueblo		Pueblo County	
Year	Population	Rate of Growth	Population	Rate of Growth
U.S. Census 1960	91,181	n/a	118,707	n/a
U.S. Census 1970	97,774	7.2	118,213	-0.4
U.S. Census 1980	101,686	4.0%	125,972	6.5%
U.S. Census 1990	98,640	-3.0%	123,051	-2.3%
U.S. Census 2000	102,121	3.5%	141,472	15.0%
U.S. Census 2010	106,595	4.4%	159,063	12.4%
Projected 2015	121,390	16.5%	179,706	18.9%
Projected 2025	140,928	16.1%	212,115	18.1%
Projected 2035	163,194	15.8%	248,012	16.9%

Source: PACOG, 2008b; DOLA, 2009.

were found on Dillon Drive, the site of a newly constructed commercial district of strip shopping centers strung along I-25 north of town (Polk, 1997). This shift, from a centrally located shopping district to shops on the City's edges, reflected the trends found in most parts of the United States during the late 20th and early 21st centuries.

Pueblo's economy, which had been heavily dependent on steel and government jobs from the World War II economic era, diversified during the 1980s. Pueblo lacked the high-tech manufacturing jobs that other Colorado communities gained. However, as the number of manufacturing jobs was reduced, jobs in the service, retail, and wholesale industries increased.

Initial, unconstrained employment forecasts estimate 98.9 percent job growth between 2005 and 2035 (PACOG, 2008). However, even as Pueblo witnesses economic strengthening, approximately one third of Pueblo County's workforce commutes outside of the County for work; 10 percent of those workers commute to El Paso County (PACOG, 2008b). Population growth reflects this similar trend. The City continues to experience a population shift away from the City center into emerging population centers, including Pueblo West. This has produced and will continue to produce commuting patterns outside of places of residence, and peripheral growth trends and unrestrained mobility will encourage development outside of the City. It is anticipated that by 2030, only 62 percent of Pueblo County's total population will reside in the City (PACOG, 2004).

3.23.4.2 Cumulative Impacts Assessment

This section evaluates the potential for cumulative impacts caused by the New Pueblo Freeway project in conjunction with other actions. The analysis was conducted by identifying the potential impacts of past, present, and reasonably foreseeable future projects on key resources in the project area.

The following discussion describes potential cumulative effects by key resource. **Exhibit 3.23-3** lists the projects that have occurred or are planned within the geographic extent of study for cumulative effects, along with their potential contribution to resource impacts within the study area. The effects of the past, present, and reasonably foreseeable projects are considered in conjunction with the No Action Alternative, which serves as a baseline against which the Build Alternatives are assessed.

Transportation

The geographic extent of study for the cumulative effects to transportation includes the roads comprising the regional network between I-25 milepost 102 on the north and milepost 94 on the south. A cumulative impact to transportation results in diminished mobility from increased congestion or an incongruent roadway network. A cumulative benefit adds to a network's mobility, improves safety, and relieves congestion.

Beginning in the 1950s, growth of the greater Pueblo metropolitan area generated the need for development of a regional roadway network. The past transportation projects listed in **Exhibit 3.23-1**, including the original Pueblo Freeway (I-25), SH 47, US 50B, and SH 96, established the regional network needed to connect the emerging communities. Many routes ringed the City (SH 47) or improved east-west connections (SH 96 and US 50). The Pueblo Freeway rerouted US 85-87 from its downtown alignment on the local road network to the current I-25 highway alignment, providing the main north-south connection through the City. The construction also severed many local roadway connections. Construction of I-25 closed some local routes, limited others, divided neighborhoods, and limited east-west access across Pueblo. Without a separate route for US 85-87, I-25 through Pueblo serves as the sole north-south connection for both through-travelers and local traffic. The highway no longer serves today's operational needs, with its insufficient capacity, inadequate spacing between interchanges, tight curves, and short on- and off-ramps. Continued development on the periphery of the City has increased vehicle miles traveled (VMT) and has increased demand on I-25 and other highways and local roads. Recently completed and current transportation projects continue to expand or enhance the roadway network by adding new connections, including the Dillon Drive extension at Platteville Boulevard and from US 47 to 29th Street. These projects increase connectivity (Defense Access Roads), improve transit mobility (Pueblo Transit Center), provide congestion relief (US 50 West), and replace aging infrastructure (4th Street bridge).

EXHIBIT 3.23-3
Summary of Contribution of Cumulative Effects to Resources within the Study Area by Project

Project	Transportation	Historic Resources	Parks and Recreation	Wetlands	Noise	Social Resources/ Land Use	Fish and Wildlife	Floodplains
Transportation Projects								
Construction of I-25 *(1947-1959)*	X	X	X	X	X	X	X	X
Pueblo Airport *(1942, 1953)*	X			X			X	X
Construction of US 50 *(1957)*	X	X		X	X	X	X	X
Reroute of SH 96 *(1971)*	X	X		X	X	X	X	X
SH 47 *(1971-1982)*	X	X		X	X	X	X	X
I-25/US 50/SH 47 Interchange *(2002)*	X	X		X	X	X	X	X
Pueblo Transit Center *(2004)*	X							
Dillon Drive *(2011-2012)*	X			X			X	
4th Street Bridge Replacement *(2007-Present)*	X	X		X				
US 50 Corridor East EIS *(Present)*	X			X		X	X	X
Defense Access Roads to Chemical Agent Plant *(Present)*	X							
US 50 West Congestion Relief *(Future)*	X			X		X	X	X
US 50 West PEL *(Future)*	X					X		
Development Projects								
Colorado State University-Pueblo *(1969-Present)*	X							
Pueblo West *(Past, Present, Future)*	X		X	X		X	X	X
Pueblo Dam *(1970)*	X			X			X	X
Lake Pueblo State Park *(1974)*	X		X					
Pueblo Mall *(1976)*	X			X		X	X	X
Fountain Creek Levees and Channelization *(1989)*				X			X	X
Pueblo Historic Arkansas River Project (HARP) *(1996)*	X	X				X		
Eagleridge Shopping Center *(1997)*	X			X		X	X	X
Vestas Towers *(2010-Present)*	X							
Southern Delivery System *(Present)*				X		X		
North Vista Development *(Present, Future)*	X		X	X		X	X	X
Seranto Development *(Future)*	X		X	X		X	X	
Ice House Re-development *(Future)*	X	X	X			X		
Sol Plaza Urban Renewal Development *(Future)*	X		X					
Pueblo Chemical Agent Destruction Pilot Plant *(Future)*	X							

*Note: the area of influence evaluated for cumulative impacts from all past, present, and reasonably foreseeable future projects is defined for each resource in the text for this section. While some projects may have impacted a resource within that project's study area, if it not located within this project area of influence, it would not be considered a cumulative impact and is not included on the above chart.

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Population, employment, recreation, and retail centers serve as regional traffic generators and include the Pueblo Mall, Eagleridge Shopping Center, Lake Pueblo State Park, Pueblo Airport, Colorado State University-Pueblo, Vestas Towers facility, and the Chemical Agent Destruction. As the future development projects in **Exhibit 3.23-1** are realized, and population growth continues as shown in **Exhibit 3.23-2**, roadway improvements will be needed to serve the City's increased transportation demand.

The past, present, and future transportation projects continue to expand the network and improve mobility regionally, but the residual impacts that the original I-25 construction had on the local network remain. Additionally, the population, employment, and retail centers included in the past, present, and future development projects have been and will continue to be large traffic generators.

The Build Alternatives being considered for the New Pueblo Freeway would provide the capacity to meet increased demand on I-25 caused by development and population growth, correct existing safety deficiencies, reestablish east-west connections across I-25, and ultimately encourage travelers to use local roads for local trips. Under both Build Alternatives, sidewalks and multi-use paths would be constructed for increased pedestrian and bicycle mobility and safety. Both Build Alternatives would enhance the local roadway network by extending Dillon Drive between 26th Street and US 50B. In addition, the Modified I-25 Alternative (Preferred Alternative) would shift I-25 to the east, and Santa Fe Avenue would be extended between Ilex Street and Minnequa Avenue. Both the Dillon Drive extension and the Santa Fe Avenue extensions would offer a north-south alternative to I-25. Both Build Alternatives would connect Abriendo Avenue to Santa Fe Drive/US 50C. The Modified I-25 Alternative (Preferred Alternative) would reconfigure Stanton Avenue to provide alternative access to the Runyon Field Sports Complex and over the Arkansas River.

The Build Alternatives, combined with the past, present, and future transportation projects, would provide a cumulative benefit for both local and regional transportation networks and facilitate mobility between population, employment, retail, and recreational centers.

Historic Properties

Historical development patterns in Pueblo have resulted in a high concentration of historic properties and historic districts adjacent to I-25. The study area under consideration for the cumulative effects analysis includes the North Side, Second Ward, Goat Hill, Corona Park, Grove, and Steelworks Historic Districts, and the eligible and contributing properties located within the Area of Potential Effect (APE). Refer to **Section 3.2 Historic Properties** for a detailed description of these resources and definition of the APE.

The original construction of the Pueblo Freeway severed some historically contiguous neighborhoods and divided the former CF&I Steel Mill from the company housing to the west where many employees resided. It also contributed to the loss of historic structures in these historic districts and in the APE. The US 50 bypass bisected the first and second filings of the Belmont subdivision of the East Side Neighborhood and isolated the Eastwood Heights subdivision of the East Side Neighborhood (Historitecture, 2009). The present and reasonably foreseeable future transportation projects that have been identified in **Exhibit 3.23-1** are located outside of the APE.

Private development projects (specifically infill and urban redevelopment) that demolish or alter properties also contribute to the loss of historic resources. Development projects that restore buildings to their original state contribute to the preservation of historic properties. While the Pueblo has lost historic structures and sites to development, redevelopment, and transportation projects, the restoration efforts of community organizations have made an overall improvement to the conditions of the City's "historic core." The City has preserved and maintained the Union Avenue Historic District, which invested in reconditioning and connecting the depot and City Hall for retail, tourism, and historic educational opportunities. The Ice House and Historic Arkansas Riverwalk of Pueblo (HARP) are two of the development projects listed in **Exhibit 3.23-1** that refurbished historic buildings, contributing to the preservation of historic properties in Pueblo.

Many historic structures still exist in the historic districts within the APE. The maturity of the neighborhoods and well-established land uses in the study area (paired with limited redevelopment) have helped to maintain the integrity of

many of the historic neighborhoods and historic properties. The Existing I-25 Alternative would adversely affect 33 historic properties in the study area. The Modified I-25 Alternative (Preferred Alternative) would adversely affect 40 historic properties, including two historic archaeological sites. The Steelworks, North Side, and Grove Historic Districts would also be adversely affected by the acquisition of historic structures that contribute to the Districts.

CDOT developed mitigation measures for adverse impacts to historic properties agreed to by FHWA, SHPO, and the consulting parties that will be explored in more detail for their economic and environmental feasibility. This includes resource relocation, interpretive mitigation, and archival documentation. The Programmatic Agreement contains the details of the mitigation options (see **Appendix H**).

The Build Alternatives, when combined with past, present, and reasonably foreseeable future projects, would result in a cumulative adverse impact on the historic districts and structures in Pueblo.

Parks and Recreation

A cumulative impact to parks and recreation facilities occurs from the addition to or removal of lands, amenities, or other features from parks, trails, or recreational facilities over time. For this analysis, the study area includes the parks and recreational resources located in the neighborhoods adjacent to I-25.

Some of Pueblo's parks date back to the late 19th and early 20th centuries, and many more have been built or expanded upon since that time. Today the City's Parks and Recreation Department manages over 3,330 acres of City parks and continues to develop new parks. Additionally, as new residential development occurs, neighborhood parks have been and will continue to be incorporated into those communities. Because of the City's parkland dedication requirements, new development projects that add residential units will improve and add to the parks system. These include some of the development projects listed in **Exhibit 3.23-1**, such as North Vista and Ice House. The City and private development projects have contributed to an overall gain in parkland acreage in Pueblo since the creation of the City's Parks and Recreation Department.

Although overall park acreage in Pueblo has increased over time, the acreage of Mineral Palace Park has been gradually reduced. Original construction of Mineral Palace Park occurred in 1891. For financial reasons, in the 1930s the City drained half of Lake Clara and sold all of the parkland south of 14th Street. Both Lake Clara and the park were again reduced in size as US 85-87 was constructed along the eastern edge of the park in 1935. Construction of the Pueblo Freeway in 1949 further reduced the size of the park along the eastern edge. Mineral Palace Park was the only park resource in the I-25 corridor study area to be impacted by the original Pueblo Freeway construction.

Section 4(f) of the U.S. Department of Transportation Act of 1966 mandates the avoidance, minimization, and mitigation of impacts to park resources by federally funded transportation projects. Section 6(f) legislation requires that parklands that have been purchased or improved with Land and Water Conservation funds, and that would be converted by any federally funded project, must be replaced with like parkland or improvements. Given the requirements to replace parkland under Section 4(f) and Section 6(f) legislation, it is unlikely that the reasonably foreseeable transportation projects (which are all federally funded) listed in **Exhibit 3.23-1** would generate an anticipated loss of parkland.

Both Build Alternatives require the acquisition of parklands from Mineral Palace Park, Benedict Park, and Fountain Creek Park Land. The Modified I-25 Alternative (Preferred Alternative) would have temporary impacts to the Runyon Lakes State Wildlife Area, but would not have a permanent impact on recreation. Noise impacts would occur at the detention ponds (Pits Park), Mineral Palace Park, and JJ Raigoza Park. The Modified I-25 Alternative (Preferred Alternative) would improve access to the Runyon Field Sports Complex by providing access via the local street network instead of by I-25.

After mitigation, the Build Alternatives would result in an overall beneficial impact to parks and recreational resources in Pueblo. The Build Alternatives would reverse the trend of the loss of acreage of Mineral Palace Park. Mitigation would include increasing the size of Mineral Palace Park from 50.07 acres to 52.38 acres, restoring the historic rose garden, constructing gateway features, and providing a swimming pool, among other amenities. Under the Existing I-25 Alternative mitigation, Benedict Park, which is currently 1.92 acres, would be enlarged to 4.05 acres; under the

Modified I-25 Alternative (Preferred Alternative), a minimum 3.93-acre to a maximum 4.30-acre park would be newly constructed. Trail linkages between Fountain Creek Park Land and Mineral Palace Park would be strengthened, and a pedestrian overpass over I-25 would be provided.

The Build Alternatives in conjunction with other past, present, and reasonably foreseeable future projects would result in increased acreage of parklands, improved trails and connections among parklands, and improved park amenities. These actions would result in beneficial cumulative effects on parklands in Pueblo.

Wetlands

The wetlands study area includes the Lower Fountain Creek watershed and the Upper Arkansas River watershed. Due to Colorado's unique hydrology, wetlands primarily occur within riparian corridors. The riparian corridors associated with the Arkansas River and Fountain Creek have been reduced over time as urban growth has converted these corridors to developed lands. After the flood of 1921, the Arkansas River was channelized through the City of Pueblo to contain the floodway and prevent future flooding.

In 1938, Fountain Creek flooded, and historic photos of this time show only scrub and desert climate vegetation due to repeated flood scouring; no wetlands vegetation was present. Channelization of both waterways limited the opportunity for wetlands to expand or for new wetlands to establish. Flood control structures also removed the water source of existing wetlands along the Arkansas River. After flood control measures were installed on the Arkansas River and Fountain Creek between 1939 and1942, channels were more stable and wetlands vegetation was able to establish.

The original construction of the Pueblo Freeway, specifically the 13th Street interchange and the segment of I-25 between US 50B and 8th Street, approached Fountain Creek just east of Mineral Palace Park and immediately west of the existing railroad tracks. By constructing along the edge of Fountain Creek and reinforcing the boundary created by the railroad tracks, the Pueblo Freeway limited the opportunity for wetlands to expand or for new wetlands to establish; however, due to repeated flood scouring, large tracts of wetlands would not have been present at the time the Pueblo Freeway was constructed.

The construction of US 50B over Fountain Creek in 1957 also removed wetlands where the road bisects the Fountain Creek riparian corridor. Additionally, urban development has encroached upon riparian corridors and has limited the opportunity for expansion of existing wetlands or establishment of new wetlands. The flood control measures listed in **Exhibit 3.23-1** (such as the levee system in 1989 and Pueblo Dam in 1970) have led to channelization of surface water features and reduction of flooded areas adjacent to them. These actions have led to a loss of wetland acreage in the study area over time.

Prior to the issuance of the federal Clean Water Act (CWA) of 1972, impacts to wetlands, including the removal of wetlands, were not regulated. The CWA requires all projects impacting greater than 0.10 acre of jurisdictional wetlands to mitigate for those losses. The Pueblo Mall, constructed in 1976, removed a wetland from near Fountain Creek. The construction of the Dillon Drive extension associated with the I-25/US 50/SH 47 transportation project in 2002 impacted approximately 1.5 acres of wetlands; however, those impacts were offset by wetland mitigation requirements, thus resulting in no net wetland loss from the projects. The Southern Delivery System impacts 16.3 acres of isolated and jurisdictional wetlands that will be replaced in kind. It is unlikely that the reasonably foreseeable future transportation projects listed in **Exhibit 3.23-1** would generate a net loss of wetlands because of the requirements to replace wetlands under CWA legislation. The Fountain Creek Watershed Study, commissioned by the U.S. Army Corps of Engineers (USACE) in 2006, revealed that wetlands in the Lower Fountain Creek sub-watershed have decreased slightly from 3,189 acres to 3,069 acres between the 1970s and 1990s (USACE, 2006). Additionally, USACE provided records of CWA Section 404 permit applications in Pueblo County for the period between 2001 and 2005. For the 16 permits granted, a total of 2.975 acres of wetlands were impacted in Pueblo County (USACE, 2006).

The Existing I-25 Alternative would impact 0.22 acre of wetlands (0.20 acre of which are jurisdictional), and the Modified I-25 Alternative (Preferred Alternative) would impact 1.1 acres of wetlands (1.08 acres of which are jurisdictional). However, avoidance, minimization, and mitigation measures will be implemented after the FEIS to

determine final impacts and identify mitigations needed to offset impacts to wetlands. Location-specific mitigation measures have not yet been agreed upon by the USACE and FHWA, but the study area includes several locations that may be suitable for replacing the functional values of the wetlands that would be lost or impacted by the New Pueblo Freeway project. Discussions will continue as the project progresses. CDOT mitigates impacts to all wetlands, including wetlands not under the jurisdiction of the USACE. Therefore, the Build Alternatives are not expected to result in a net loss of wetlands in the Fountain Creek and Arkansas River watersheds. Because all impacted wetlands would be replaced, the project would contribute to neutral cumulative impacts to wetlands in the watersheds. CDOT will work with USACE to determine an acceptable mitigation site to establish replacement wetlands.

Noise

A cumulative noise impact occurs when an increase or decrease in noise levels from the proposed project is added to noise level changes from previous projects in the area and/or future projects that are likely to occur. The community has been subjected to noise since the construction of the railroad and the steel mill. Because noise effects are localized based on the surrounding activities, the New Pueblo Freeway project does not contribute to the cumulative noise effects outside of the area impacted by the Build Alternatives. Therefore, the geographic extent of the cumulative effects analysis for noise encompasses I-25 and 500 feet on either side of the highway edge of pavement.

Noise in the corridor has increased over time with the construction of I-25 and the increase in traffic. The original highway construction cut through residential neighborhoods in the North Area (Phase 1) and Central Area (Phase 2) of the project, introducing high traffic volumes and speeds that generate noise. Highway noise in the South Area (Phase 2) has likely been less noticeable given the industrial nature of the corridor, which includes a steel mill and railroads. Two past transportation projects, US 50B and I-25/US 50/SH 47, have expanded the roadway network, bringing heavily travelled roads closer to residences and businesses. Increased noise levels occur in the North Area (Phase 1), near the US 50B and I-25/US 50/SH 47 projects, and existing measurements (2003) indicate noise impacts at residences, the detention ponds (Pits Park), and the Fountain Creek Park Land. Modifications near the I-25/US 50/SH 47 interchange within the last 5 to 10 years included the removal of some homes and the addition of an acceleration lane on I-25, bringing traffic closer to sensitive receptors. Elsewhere in the study area, noise impacts occur at residences where the highway abuts the neighborhoods.

For the majority of sensitive receptors in the corridor, noise levels are predicted to increase above current or No Action Alternative levels by an average of approximately 3 A-weighted decibels (dBA) under the Existing I-25 Alternative and by approximately 2 dBA under the Modified I-25 Alternative (Preferred Alternative). Noise levels are predicted to decrease at some limited locations where I-25 would shift from its current alignment away from sensitive receptors. Under both Build Alternatives, noise barriers would be constructed to mitigate noise impacts associated with the project, as detailed in **Section 3.5 Noise**.

Cumulative noise impacts are controlled by the successful abatement of noise for major transportation actions. Under both Build Alternatives, noise mitigation measures are expected to result in a decrease in current noise levels adjacent to the project, as detailed in **Section 3.5 Noise**. The proposed noise mitigation benefits would impact businesses and residences along the corridor.

All of the transportation and development projects listed in **Exhibit 3-23.1** already experience urban noise levels at 60 to 70 dBA (see **Section 3.5 Noise, Exhibits 3.5-3, 3.5-5, and 3.5-7**). Noise generated at these levels is jointly contributed by non-transportation urban activities as well as freeway and local road noise. There are no sites within the study area that currently experience near-rural levels of quiet, and the urban quality of life is not anticipated to change with construction of the New Pueblo Freeway. However, the impacts of the Build Alternatives, along with the past, present, and reasonably foreseeable future projects in the study area, would reduce noise and provide a cumulative benefit to noise receptors.

Social Resources and Land Use

Cumulative impacts to social resources occur when community facilities are removed or enhanced, neighborhood cohesion is reduced or strengthened, or pedestrian and bicyclist safety is degraded or improved. A cumulative impact to land use occurs when a transportation project serves as the impetus for large changes to existing land use patterns. The cumulative impacts study area for social resources and land use includes the neighborhoods adjacent to I-25 between SH 47 and Pueblo Boulevard.

Residential and commercial neighborhoods in the study area were established prior to the construction of the Pueblo Freeway and other transportation projects. Many neighborhoods developed around employment centers (steel mill, smelters, railroads), and many were formed by pockets of various ethnic groups who worked for these employers. Since the original development of Pueblo, land uses along the I-25 corridor have evolved. The City witnessed the evolution of auto-centric development patterns in the corridor. In many cases, national chains replaced iconic, locally owned, neighborhood-serving retailers. Vacant plots of land have been developed into commercial and residential uses. Where transportation projects were constructed through an established urban area, impacts to neighborhoods were felt; where highways were constructed along the peripheries of neighborhoods, new access often provided growth opportunities for new neighborhoods and community resources. For example, US 50B and I-25/US 50/SH 47 skirted the Sky View, Club and Belmont, and East Side neighborhoods, while the Pueblo Freeway bisected many residential neighborhoods. The I-25/US 50/SH 47 project provided new access to the west, around which Pueblo West developed.

Populations forecast by PACOG are anticipated to increase by 16 percent every 10 years between 2010 and 2035 (PACOG, 2002). In April 2011, PACOG updated the *Pueblo Regional Transportation Plan* (PACOG, 2008) and published population forecasts out to 2035. The agency found that although developments have slowed or postponed growth since approval in 2007, these projects would not change the future corridor vision plans (including reconstruction of I-25) proposed in the *Pueblo Regional Transportation Plan* (PACOG, 2008). The cumulative effect of the Build Alternatives and past, present, and foreseeable future projects would support the predicted population growth in the City of Pueblo and Pueblo County.

In the past, transportation projects were implemented with limited consideration for environmental or human concerns. When the Pueblo Freeway was first built, it bisected many of the City's original neighborhoods, including the Goat Hill area (bisected from downtown), Grove, and Bessemer neighborhoods. The chosen alignment for I-25 formed isolated pockets of these neighborhoods, separated neighborhood businesses from their service base, and resulted in insensitive right-of-way (ROW) acquisition along the corridor. Examples include the residences along Schley Street that no longer have access to a neighborhood street and must be entered through an alleyway, the removal of rows of homes, and leaving some houses to back directly up to I-25.

ROW acquisitions and relocations occur as part of transportation projects when existing ROW is constrained. Transportation projects that come before urban development generally require less ROW acquisition and result in less change to land uses than those projects that transect established development.

Neighborhood-focused community resources have given way to regionally important social resources. Past, present, and future private development projects occurring within Pueblo generate opportunities for the rebirth of community cohesion by providing gathering locations, park or plaza space, or community resources. These projects include the Pueblo Mall, HARP, Eagleridge Shopping Center, Colorado State University-Pueblo, and Lake Pueblo State Park. Furthermore, the growth of new communities, such as Pueblo West, offers opportunities for new neighborhoods to expand. The Southern Delivery System is a capital improvement project constructed to meet the future water consumption demands of Pueblo West and will allow that community to continue to grow. The past, present, and foreseeable future development projects have increased the number of community resources available to the residents of Pueblo.

Continuing cumulative impacts social resources and land use would include increased traffic and associated noise intrusion into areas where neighborhoods of low-income and minority populations are prevalent. There are higher

concentrations of low-income and minority populations in Pueblo than regionally or in the state overall, and these concentrations are within older, established neighborhoods located along I-25, as shown in **Section 3.6 Social Resources, Economic Conditions, and Environmental Justice, Exhibit 3.6-2**. Outside of direct impacts from construction of the freeway, the projects listed in **Exhibit 3.23-1** are not anticipated to cumulatively contribute to relocations of low-income or minority populations within the study area. On the other hand, improvements to I-25 and other local roads would provide better access for all populations, including low-income and minority populations.

One benefit of the New Pueblo Freeway project is that it corrects some of the historic construction impacts and ensures social resources are not further degraded by the Build Alternatives. Embedded within the Build Alternatives are benefits to historically affected neighborhoods along the corridor. Both Build Alternatives would result in improvements in these neighborhoods, including a safer transportation system, improved mobility for motorists and emergency responders, restoration of neighborhood connectivity, installation of noise barriers for existing and future noise impacts, improvements to neighborhood parks, and coordinated aesthetics of highway infrastructure throughout the I-25 corridor to replace the aging transportation facilities now in place.

Extensive outreach targeted at these neighborhoods helped the Build Alternatives take shape with an emphasis on restoring community cohesion. The Existing I-25 Alternative restores east-west connections between neighborhoods in the Central Area (Phase 2) and South Area (Phase 2). The Modified I-25 Alternative (Preferred Alternative) restores neighborhood connectivity by re-connecting severed neighborhoods and re-establishing local east-west and north-south street connections in the Central Area (Phase 2) and South Area (Phase 2). Both Build Alternatives improve Mineral Palace Park and Benedict Park (see **Section 3.3 Parks and Recreation**). Mineral Palace Park is a historic and regional community amenity. Benedict Park is an under-utilized neighborhood pocket park that when reconstructed will be able to serve as a neighborhood gathering place. The Build Alternatives would result in improvements to community cohesion and connectivity in Pueblo.

The Build Alternatives do generate impacts to residences and businesses. Both the Existing I-25 Alternative and Modified I-25 Alternative (Preferred Alternative) could displace 87 to 117 residences and 53 to 55 businesses along the corridor, respectively. CDOT will work to relocate those businesses and residences within the City. The project would change land use in localized areas of the study area, but it is not anticipated to spur large-scale changes to land use and remains consistent with adopted future land use plans.

The Build Alternatives in conjunction with other reasonably foreseeable future projects would provide a cumulative benefit to community cohesion in Pueblo by re-establishing neighborhood connections and creating opportunities for community gathering places to reemerge at Benedict Park and Mineral Palace Park. They would generate a neutral cumulative impact upon land use due to the developed character of the study area.

Fish and Wildlife

A cumulative impact to fish and wildlife in the study area consists of the collective loss of habitat or the disruption of wildlife migration linkages from multiple projects as Pueblo has incorporated north and west of the City center. Conversely, a cumulative benefit can include the restoration of wildlife migration linkages and habitat or improvement in habitat quality. Because wildlife effects are contained to a primarily urbanized corridor, and suitable habitats only exist in the Fountain Creek Park Land and Arkansas River corridor, the New Pueblo Freeway project does not contribute to the cumulative effects on wildlife outside of the area impacted by the Build Alternatives. Therefore, the geographic extent of the cumulative effects analysis for fish and wildlife resources consists of habitats within the parks and at locations crossing the Arkansas River and Fountain Creek.

Prior to the City's acquisition of the Fountain Creek parklands in 1971, the Fountain Creek corridor was barren and provided minimal fish and wildlife habitat. Photos provided by the City Engineering Division of the Fountain Creek flooding in 1938 show extensive scour and siltation. When the City and the Bureau of Reclamation added the levees and flood control structures to Fountain Creek, vegetation, fish, and wildlife reclaimed Fountain Creek and its floodplain. With the acquisition of the Fountain Creek

parkland in 1971, habitats were protected for fish and wildlife.

Where I-25 crosses the Arkansas River, below the existing riprap dam and east of the Runyon/Fountain Lakes State Wildlife Area, habitats consist of the river and riparian areas in the woodland understory on the primary flood terrace. Similar to the Fountain Creek habitats, this area provides wildlife habitat for nesting migratory birds and other wildlife using the impacted wetland and riparian areas. The Runyon/Fountain Lakes State Wildlife Area, located east of I-25, also provides important wildlife habitat.

Urban uses of parks and recreation resources along wooded uplands, wetlands, and riparian corridors, and the degradation of open water habitat, has resulted in an overall loss of fish and wildlife habitat in the study area. Remaining fish and wildlife habitat in urban Pueblo occurs principally along the Arkansas River and Fountain Creek; these habitat areas (floodplains and riparian areas) have been protected through incorporation as parks. The Fountain Creek parkland, Runyon/Fountain Lakes State Wildlife Area, and Arkansas River corridor are protected from future local development through Federal Emergency Management Agency and local regulations (including long-range plans for infill redevelopment). Therefore, construction and operation of the New Pueblo Freeway would not contribute to cumulative effects on fish and wildlife habitat within these parks resulting from future or unplanned development.

As transportation projects convert undeveloped land to a transportation facility, fish and wildlife habitat is lost. This is especially true of the transportation projects that are located along waterways. The original construction of the Pueblo Freeway, I-25/US 50/SH 47, and 4th Street Bridge Replacement projects constructed transportation infrastructure in and near the Arkansas River and Fountain Creek, depleting fish and wildlife habitat. The proximity of the Pueblo Mall and the Eagleridge Shopping Center to Fountain Creek, and the conversion of undeveloped land to commercial land, resulted in further loss of habitat. The Fountain Creek channelization project also narrowed the floodplain, which resulted in a decrease in riparian and wetland habitat. Planned future developments will re-construct existing development or newly construct on never-before-developed greenfields that do not acquire habitats and are therefore not anticipated to impact fish or wildlife habitat.

The Build Alternatives would benefit open water habitat by treating stormwater runoff before it enters water bodies. The Existing I-25 Alternative would impact 8.95 acres of combined wooded uplands and wetland habitats. The Modified I-25 Alternative (Preferred Alternative) would impact 18.04 acres of habitat; it would remove up to 60 percent of the wooded upland habitat and almost all of the wetlands near Santa Fe Avenue. Even after mitigation, both Build Alternatives would result in a loss of fish and wildlife habitat.

The Build Alternatives, in combination with past, present, and reasonably foreseeable future projects, contribute to a cumulative loss from directly impacted wooded upland and riparian habitat in the study area and a cumulative benefit to open water habitat.

Floodplains

Cumulative impacts to floodplains result from continual encroachment by development into the floodplain or from an increased rate at which stormwater flows into receiving bodies; this can lead to flooding and erosion of streambeds and banks. Conversely, a cumulative benefit to floodplains involves removing structures from the floodplain, reducing the flood volumes where possible, or slowing the rate at which runoff enters a water body. The study area used to evaluate cumulative impacts to floodplains includes the Lower Fountain Creek watershed and the Upper Arkansas River watershed 100-year floodplains through the City of Pueblo. The Arkansas River is channelized through the City to restrict flooding. None of the current I-25 alignments is located within the Fountain Creek floodplain, but project improvements at US 50B and 8th Street occur within the floodplain.

Flooding along Pueblo's two main water bodies has shaped the face of Pueblo today. The Arkansas River flood of 1921 served as an impetus to shift development away from the confluence of the Arkansas River and Fountain Creek. The Fountain Creek flood of 1965 prompts the construction of the Fountain Creek Levees in Pueblo (FCVTF, 2009).

Past public improvement projects increased the conveyance capacities of waterways, reduced the width of the floodplain, stabilized channels, and slowed the attenuation of

stormwater into receiving bodies throughout Pueblo. The Fryingpan-Arkansas River Project, which included construction of the channelized portion of the Arkansas River, construction of the levee and flood wall along Fountain Creek, bank stabilization of Fountain Creek, the Pueblo dam, and construction of the Pueblo reservoir to prevent flooding of the Arkansas River, greatly reduced the width of the floodplain along these waterways and removed many structures that were contained within or adjacent to the floodplain.

Past, present, and future transportation projects that have impacted the Fountain Creek or Arkansas River floodplains also include the I-25/US 50/SH 47 project, which widened the bridge over Fountain Creek to convey greater volumes of water to reduce flooding, constructed an embankment on the west side of the floodplain between SH 47 and 8th Street, and provided multiple detention ponds to slow the peak discharge of stormwater into receiving water bodies. Non-transportation projects, such as the Pueblo Mall, contribute greater impervious surfaces that also drain to these floodplains. However, stormwater collection and off-channel treatment, such as the detention ponds (Pits Park), reduce stormwater discharges and improve flood conditions. The combination of past, present, and reasonably foreseeable future projects in the study area minimize the size of the floodplain and stabilize channels.

For future projects, local development standards require stormwater detention facilities to be constructed for large-scale commercial and residential developments to slow the volume of stormwater being discharged back into the waterways after a storm event. Additionally, local development standards have been adopted that restrict the construction of structures within the floodplains. Future local development projects will be required to locate outside of the floodplain. These two local development standards contribute to an overall benefit to the floodplains in the study area.

Both Build Alternatives encroach upon the Fountain Creek floodplain at the Dillon Drive extension, but the replacement US 50B bridge would have a wider span than the current bridge and would convey greater volumes of water, reducing the base flood elevation (BFE) downstream and improving conditions over the current configuration. A slight rise in BFE at the US 50B bridge over Fountain Creek is anticipated, although the Fountain Creek floodplain is wide enough to accommodate the rise.

The Existing I-25 Alternative would replace the existing I-25 bridge over the Arkansas River and would reduce the floodplain width; the river is confined on both banks by floodwalls. The Modified I-25 Alternative (Preferred Alternative) includes the construction of new bridges over the Arkansas River for the realigned highway and for the Stanton Avenue extension and would encroach upon the floodplain. The Existing I-25 Alternative bridge over the Arkansas River has one set of piers between the floodwalls. The proposed bridge would also have a single set of piers inside the floodwalls. The similar configuration of the bridges would result in minimal impacts to the BFE of the Arkansas River floodplain.

The Modified I-25 Alternative (Preferred Alternative) bridge over the Arkansas River would be located east of the existing bridge and confined to the portion of the river that is controlled by backwater from Fountain Creek. In this area, channel velocity is significantly lower, and the effect of new piers on the BFE would be minimal.

The Arkansas River analysis showed minimal impacts to the 100-year floodplain and floodway flow characteristics regardless of the Build Alternative chosen. Impacts to the floodplain are minimized because most improvements are located in a portion of the river that is controlled by backwater from flooding in Fountain Creek.

Cumulative impacts from other projects crossing these floodplains include the 4th Street Bridge Replacement and the HARP redevelopment. The 4th Street Bridge Replacement project (CDOT, 2006) replaced piers in the floodplain and added 0.2 inch of rise to the Arkansas River BFE. When adding cumulative impacts from all projects on the Arkansas River, the BFE would be below the allowable rise of 1.0 feet in a Zone A floodplain and would not constitute a significant impact to floodplains.

The encroachments by the Build Alternatives may be less than estimated. In some places, the encroachments may be reduced or removed from the floodplain once the Fountain Creek Watershed Study is completed (USACE, 2006); this study is anticipated to indicate that the flood limits are much smaller than indicated in the 1986 Flood Insurance Rate Map (FIRM).

Through appropriate mitigation, reasonably foreseeable impacts to the floodplain from the New Pueblo Freeway project would be minimal. The Build Alternatives, along with the past, present, and reasonably foreseeable future projects listed in **Exhibit 3.23-1**, would not significantly contribute to cumulative effects on either the Fountain Creek or Arkansas River floodplains.

Global Climate Change Cumulative Impacts Discussion

Climate change is an important national and global concern. While the earth has gone through many natural changes in climate in its history, there is general agreement that the earth's climate is currently changing at an accelerated rate and will continue to do so for the foreseeable future. Anthropogenic (human-caused) greenhouse gas (GHG) emissions contribute to this rapid change. Carbon dioxide (CO_2) makes up the largest component of these GHG emissions. Other prominent transportation GHGs include methane (CH_4) and nitrous oxide (N_2O).

Many GHGs occur naturally. Water vapor is the most abundant GHG and makes up approximately two thirds of the natural greenhouse effect. However, the burning of fossil fuels and other human activities are adding to the concentration of GHGs in the atmosphere. Many GHGs remain in the atmosphere for time periods ranging from decades to centuries. GHGs trap heat in the earth's atmosphere. Because atmospheric concentration of GHGs continues to climb, our planet will continue to experience climate-related phenomena. For example, warmer global temperatures can cause changes in precipitation and sea levels.

To date, no national standards have been established regarding GHGs, nor has the United States Environmental Protection Agency (EPA) established criteria or thresholds for ambient GHG emissions pursuant to its authority to establish motor vehicle emission standards for CO_2 under the Clean Air Act. However, there is a considerable body of scientific literature addressing the sources of GHG emissions and their adverse effects on climate, including reports from the Intergovernmental Panel on Climate Change, the US National Academy of Sciences, and EPA and other federal agencies. GHGs are different from other air pollutants evaluated in federal environmental reviews because their impacts are not localized or regional due to their rapid dispersion into the global atmosphere, which is characteristic of these gases. The affected environment for CO_2 and other GHG emissions is the entire planet. In addition, from a quantitative perspective, global climate change is the cumulative result of numerous and varied emissions sources (in terms of both absolute numbers and types), each of which makes a relatively small addition to global atmospheric GHG concentrations. In contrast to broad scale actions such as actions involving an entire industry sector or very large geographic areas, it is difficult to isolate and understand the GHG emissions impacts for a particular transportation project. Furthermore, presently there is no scientific methodology for attributing specific climatological changes to a particular transportation project's emissions.

Under NEPA, detailed environmental analysis should be focused on issues that are significant and meaningful to decision-making.[1] FHWA has concluded, based on the nature of GHG emissions and the exceedingly small potential GHG impacts of the proposed action, as discussed below and shown in **Exhibit 3.23-4**, that the GHG emissions from the proposed action will not result in "reasonably foreseeable significant adverse impacts on the human environment" (40 CFR 1502.22(b)). The GHG emissions from the project Build Alternatives will be insignificant, and will not play a meaningful role in a determination of the environmentally preferable alternative or the selection of the Preferred Alternative. More detailed information on GHG emissions "is not essential to a reasoned choice among reasonable alternatives" (40 CFR 1502.22(a)) or to making a decision in the best overall public interest based on a balanced consideration of transportation, economic, social, and environmental needs and impacts (23 CFR 771.105(b)). For these reasons, no alternatives-level GHG analysis has been performed for this project.

The context in which the emissions from the proposed project will occur, together with the expected GHG emissions contribution from the project, illustrate why the project's GHG emissions will not be significant and will not be a substantial factor in the decision making. The transportation sector is the second largest source of total GHG emissions in the U.S., behind electricity generation.

[1] *See* 40 CFR 1500.1(b), 1500.2(b), 1500.4(g), and 1501.7

EXHIBIT 3.23-4
Statewide and Project Emissions Potential, Relative to Global Totals

	Global CO_2 emissions, MMT[5]	Colorado motor vehicle CO_2 emissions, MMT[6]	Colorado motor vehicle emissions, % of global total	Project study area VMT, % of statewide VMT	Percent change in statewide VMT due to project
Current Conditions (2005)	27,700	24.6	0.0888%	0.78%	(None)
Future Projection (2035)	42,380	25.9	0.0611%	0.00069%	0.497%

MMT = million metric tons.

Notes:

Global emissions estimates are from International Energy Outlook 2010, data for Figure 104, projected to 2035.

Colorado emissions and statewide VMT estimates are from MOVES2010b.

The transportation sector was responsible for approximately 27 percent of all anthropogenic (human caused) GHG emissions in the U.S. in 2010.[2] The majority of transportation GHG emissions are the result of fossil fuel combustion. CO_2 makes up the largest component of these GHG emissions. U.S. CO_2 emissions from the consumption of energy accounted for about 18 percent of worldwide energy consumption CO_2 emissions in 2010.[3] U.S. transportation CO_2 emissions accounted for about 6 percent of worldwide CO_2 emissions.[4]

While the contribution of GHGs from transportation in the U.S. as a whole is a large component of U.S. GHG emissions, as the scale of analysis is reduced the GHG contributions become quite small. Using CO_2 because of its predominant role in GHG emissions, **Exhibit 3.23-4** presents the relationship between current and projected Colorado highway CO_2 emissions and total global CO_2 emissions, as well as information on the scale of the project relative to statewide travel activity.

Based on emissions estimates from EPA's Motor Vehicle Emissions Simulator (MOVES) model[7], and global CO_2 estimates and projections from the Energy Information Administration, CO_2 emissions from motor vehicles in the entire state of Colorado contributed less than one tenth of

[2] Calculated from data in U.S. Environmental Protection Agency, Inventory of Greenhouse Gas Emissions and Sinks, 1990-2010.

[3] Calculated from data in U.S. Energy Information Administration International Energy Statistics, Total Carbon Dioxide Emissions from the Consumption of Energy, http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=90&pid=44&aid=8, accessed 2/25/13.

[4] Calculated from data in EIA figure 104: http://www.eia.gov/forecasts/archive/ieo10/emissions.html and EPA table ES-3: http://epa.gov/climatechange/emissions/downloads11/US-GHG-Inventory-2011-Executive-Summary.pdf

[5] These estimates are from the EIA's *International Energy Outlook 2005*, and are considered the best-available projections of emissions from fossil fuel combustion. These totals do not include other sources of emissions, such as cement production, deforestation, or natural sources; however, reliable future projections for these emissions sources are not available.

[6] MOVES projections suggest that Colorado motor vehicle CO_2 emissions may increase by 15.5% between 2005 and 2035; more stringent fuel economy/GHG emissions standards will not be sufficient to offset projected growth in VMT.

[7] http://www.epa.gov/otaq/models/moves/index.htm. EPA's MOVES model can be used to estimate vehicle exhaust emissions of carbon dioxide (CO_2) and other GHGs. CO_2 is frequently used as an indicator of overall transportation GHG emissions because the quantity of these emissions is much larger than that of all other transportation GHGs combined, and because CO_2 accounts for 90-95% of the overall climate impact from transportation sources. MOVES includes estimates of both emissions rates and VMT, and these were used to estimate the Colorado statewide highway emissions in Exhibit 3.23-4.

one percent of global emissions in 2005 (0.0888 percent). These emissions are projected to contribute an even smaller fraction (0.0611 percent) in 2035.[8] Vehicle miles traveled (VMT) in the project study area represents 0.78 percent of total Colorado travel activity (CH2M HILL, 2010g); and the project itself would increase statewide VMT by 0.0002 percent. (Note that the project study area, as defined for the mobile source air toxics (MSAT) analysis, includes travel on many other roadways in addition to the proposed project.) As a result, based on the Build Alternative with the highest VMT[9], FHWA estimates that the proposed project could result in a potential increase in global CO_2 emissions in 2035 of 0.00069 percent (less than one thousandth of one percent), and a corresponding increase in Colorado's share of global emissions in 2035 of 0.497 percent. This very small change in global emissions is well within the range of uncertainty associated with future emissions estimates.[10, 11]

To help address the global issue of climate change, the U.S. Department of Transportation is committed to reducing GHG emissions from vehicles traveling on our nation's highways. USDOT and EPA are working together to reduce these emissions by substantially improving vehicle efficiency and shifting toward lower carbon intensive fuels. The agencies have jointly established new, more stringent fuel economy and first ever GHG emissions standards for model year 2012-2025 cars and light trucks, with an ultimate fuel economy standard of 54.5 miles per gallon for cars and light trucks by model year 2025. Further, on September 15, 2011, the agencies jointly published the first ever fuel economy and GHG emissions standards for heavy-duty trucks and buses.[12] Increasing use of technological innovations that can improve fuel economy, such as gasoline- and diesel-electric hybrid vehicles, will improve air quality and reduce CO_2 emissions future years.

Consistent with its view that broad-scale efforts hold the greatest promise for meaningfully addressing the global climate change problem, FHWA is engaged in developing strategies to reduce transportation's contribution to GHGs—particularly CO_2 emissions—and to assess the risks to transportation systems and services from climate change. In an effort to assist states and Metropolitan Planning Organizations in performing GHG analyses, FHWA has developed a Handbook for Estimating Transportation GHG Emissions for Integration into the Planning Process. The Handbook presents methodologies reflecting good practices for the evaluation of GHG emissions at the transportation program level, and will demonstrate how such evaluation may be integrated into the transportation planning process. FHWA has also developed a tool for use at the statewide level to model a large number of GHG reduction scenarios and alternatives for use in transportation planning, climate action plans, scenario planning exercises, and in meeting state GHG reduction targets and goals. To assist states and Metropolitan Planning Organizations in assessing climate

[8] Colorado emissions represent a smaller share of global emissions in 2035 because global emissions increase at a faster rate.

[9] Selected to represent a "worst case" for purposes of this comparison; the Preferred Alternative may have a smaller contribution.

[10] For example, Figure 114 of the Energy Information Administration's International Energy Outlook 2010 shows that future emissions projections can vary by almost 20%, depending on which scenario for future economic growth proves to be most accurate.

[11] When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency is required make clear that such information is lacking (40 CFR 1502.22). The methodologies for forecasting GHG emissions from transportation projects continue to evolve and the data provided should be considered in light of the constraints affecting the currently available methodologies. As previously stated, tools such as EPA's MOVES model can be used to estimate vehicle exhaust emissions of carbon dioxide (CO_2) and other GHGs. However, only rudimentary information is available regarding the GHG emissions impacts of highway construction and maintenance. Estimation of GHG emissions from vehicle exhaust is subject to the same types of uncertainty affecting other types of air quality analysis, including imprecise information about current and future estimates of vehicle miles traveled, vehicle travel speeds, and the effectiveness of vehicle emissions control technology. Finally, there presently is no scientific methodology that can identify causal connections between individual source emissions and specific climate impacts at a particular location.

[12] For more information on fuel economy proposals and standards, see the National Highway Traffic Safety Administration's Corporate Average Fuel Economy website: http://www.nhtsa.gov/fuel-economy/.

change vulnerabilities to their transportation networks, FHWA has developed a draft vulnerability and risk assessment conceptual model and has piloted it in several locations.

At the state level, there are also several programs underway in Colorado to address transportation GHGs. The Governor's Climate Action Plan, adopted in November 2007, includes measures to adopt vehicle CO_2 emissions standards and to reduce vehicle travel through transit, flex time, telecommuting, ridesharing, and broadband communications. CDOT issued a Policy Directive on Air Quality in May 2009. This Policy Directive was developed with input from a number of agencies, including the State of Colorado's Department of Public Health and Environment, EPA, FHWA, the Federal Transit Administration, the Denver Regional Transportation District, and the Denver Regional Air Quality Council. This Policy Directive and implementation document, the CDOT Air Quality Action Plan, address unregulated MSATs and GHGs produced from Colorado's state highways, interstates, and construction activities.

As a part of CDOT's commitment to addressing MSATs and GHGs, some of CDOT's program wide activities include:

1. Developing truck routes/restrictions with the goal of limiting truck traffic in proximity to facilities, including schools, with sensitive receptor populations.
2. Continue researching pavement durability opportunities with the goal of reducing the frequency of resurfacing and/or reconstruction projects.
3. Developing air quality educational materials, specific to transportation issues, for citizens, elected officials, and schools.
4. Offering outreach to communities to integrate land use and transportation decisions to reduce growth in VMT, such as smart growth techniques, buffer zones, transit-oriented development, walkable communities, access management plans, etc.
5. Committing to research additional concrete additives that would reduce the demand for cement.
6. Expanding Transportation Demand Management efforts statewide to better utilize the existing transportation mobility network.
7. Continuing to diversify the CDOT fleet by retrofitting diesel vehicles, specifying the types of vehicles and equipment contractors may use, purchasing low-emission vehicles such as hybrids, and purchasing cleaner burning fuels through bidding incentives where feasible. Incentivizing is the likely vehicle for this.
8. Exploring congestion and/or right-lane only restrictions for motor carriers.
9. Funding truck parking electrification (note: mostly via exploring external grant opportunities)
10. Researching additional ways to improve freight movement and efficiency statewide.
11. Committed to incorporating ultra-low sulfur diesel for non-road equipment statewide.
12. Developing a low-volatile organic compound emitting tree landscaping specification.

Even though project-level mitigation measures will not have a substantial impact on global GHG emissions because of the exceedingly small amount of GHG emissions involved, the following measures during construction will have the effect of reducing GHG emissions. The above-identified activities are part of a program-wide effort by FHWA and CDOT to adopt practical means to avoid and minimize environmental impacts in accordance with 40 CFR 1505.2(c).

This document does not incorporate an analysis of the GHG emissions or climate change effects of each of the alternatives because the potential change in GHG emissions is very small in the context of the affected environment. Because of the insignificance of the GHG impacts, those impacts will not be meaningful to a decision on the environmentally preferable alternative or to a choice among alternatives. As outlined above, FHWA is working to develop strategies to reduce transportation's contribution to GHGs—particularly CO_2 emissions—and to assess the risks to transportation systems and services from climate change. FHWA will continue to pursue these efforts as productive steps to address this important issue. Finally, the CDOT policy generated practices described above represent practicable programmatic-level measures that, while not substantially reducing global GHG emissions, may help reduce GHG emissions on an incremental basis and could

contribute in the long term to meaningful cumulative reduction when considered across the federal-aid highway program.

3.23.5 Conclusion

Overall, the Build Alternatives, in combination with past, present, and reasonably foreseeable future projects, contribute to a beneficial cumulative impact on transportation, noise, social resources, and parks in the project area. The Build Alternatives would produce a neutral cumulative effect on land use, wetlands, floodplains, and GHG emissions. Historic properties and fish and wildlife would both experience adverse cumulative impacts as a result of the Build Alternatives in combination with other past, present, and reasonably foreseeable future projects.

CDOT developed mitigation measures for adverse impacts to historic properties agreed to by FHWA, SHPO, and the consulting parties that will be explored in more detail for their economic and environmental feasibility. This includes resource relocation, interpretive mitigation, and archival documentation. The Programmatic Agreement contains the details of the mitigation options (see **Appendix H**).

Fish and wildlife habitat replacement, restoration, or enhancement will be conducted to mitigate for impacts that could not be avoided, including impacts to the wetland and riparian areas along Fountain Creek and adjacent to the Arkansas River. BMPs such as limiting sedimentation, revegetation, and clearly marking construction boundaries to prevent equipment or other intrusion into habitat located outside the construction zone will be adopted to minimize construction impacts on wildlife and habitat resources within the study area.

3.24 REQUIRED PERMITS AND APPROVALS

Transportation projects must comply with a wide range of federal and state environmental laws and regulations, permits, reviews, notifications, consultations, and other approvals. **Exhibit 3.24-1** lists the permits, notifications, or concurrences that are required and must be obtained prior to project construction. Additional permits may be required for other activities, such as:

- Erosion control/grading
- Utility access, relocation, or surveying
- Construction, slope, and utility easements
- Access and authorizations for consistency with local plans and policies

Many of the approvals will be addressed through the National Environmental Policy Act process and documented in the Record of Decision (ROD).

EXHIBIT 3.24-1
Summary of Permits and Approvals

Agency	Division	Activity
Federal Highway Administration		❖ Preparation of EIS and issuance of a Record of Decision (ROD) ❖ Issuance of an "Only Practicable Alternative" finding in regards to floodplain encroachment (Executive Order [EO] 11988) ❖ Issuance of an "Only Practicable Alternative" finding in regards to construction in wetlands (EO 11990) ❖ Approval of an Interchange Justification Report for a new or modified interchange on an interstate highway
U.S. Army Corps of Engineers		❖ Issuance of a Section 404 Permit for discharge, dredge or fill material within Waters of the U.S., including wetlands
Federal Emergency Management Agency		❖ Floodplain encroachment with possible Conditional Letter of Map Revision (CLOMR); Letter of Map Revision (LOMR)
Colorado Department of Public Health and Environment	Water Quality Control Division	❖ Clean Water Act Section 401 Certification for impacts to water quality ❖ Clean Water Act Section 402 Permit for dewatering ❖ National Pollutant Discharge Elimination System (NPDES) for stormwater discharge ❖ Stormwater General Permit for Construction Activities
	Hazardous Materials and Waste Management Division	❖ Coordination and approval for Hazardous Materials handling and management plan
	Air Pollution Control Division	❖ Air Quality Permit for demolition and emissions from units used in construction such as asphalt plants, concrete plants, or rock crushing ❖ Fugitive Dust Permit for construction
Colorado Division of Parks and Wildlife		❖ Senate Bill 40 Certification alteration of stream banks, stream ❖ channels, and riparian areas
Colorado Historical Society Office of Historical Preservation		❖ National Historic Preservation Act Section 106 effects determination for impacts to cultural resources
Colorado Public Utilities Commission		❖ License or Easement for construction of grade-separated railroad crossing
Union Pacific Railroad		❖ Temporary Occupancy License/agreement
City of Pueblo		❖ The City of Pueblo requires an MS4 permit for stormwater management and coordination for temporary occupancy of public rights-of-way during construction