SECTION 3

Impacts and Mitigation

This section summarizes the results of the environmental analyses conducted for this EA. The resource areas that were studied are consistent with the National Environmental Policy Act (NEPA) and implementing regulations, as well as CDOT and Federal Highway Administration (FHWA) guidelines. Detailed studies for these resource areas were completed, and the resulting information is contained in Technical Memoranda. The Technical Memoranda are contained in the Technical Appendices to this EA.

The project study area can generally be described as extending approximately one-half mile from either side of the centerline of I-25, as shown in Figure 1-2 in Section 1. However, the project study area does vary for different resource areas. For instance, when observing economic conditions, it is useful to look at El Paso County in its entirety, or the whole region that I-25 serves.

As described in Section 2 of this EA, transportation alternatives were identified early in the process in the I-25 *Mode Feasibility Alternatives Analysis*. Many public workshops were held to refine the ideas developed around the various alternatives. This process resulted in the development of a Concept Design that first avoids impacts, then minimizes impacts that could not be avoided, and finally mitigates any potential impacts. The end result is the Proposed Action, which is discussed in detail in this section. The No-Action Alternative is also discussed for comparison.

Section 3 is organized as follows: (1) a discussion of each resource and the current conditions of that resource; (2) a description of the impacts of both the Proposed Action and the No-Action Alternatives; and (3) a description of the mitigation that is being committed to as a way to offset unavoidable impacts. Specific discussions can be found on the following pages.

Concept Development Process

In order to identify and quantify anticipated impacts, it was necessary to understand the configuration and the "footprint" of the improvements that comprise the Proposed Action. This did not require detailed, final engineering plans and specifications, but did require conceptual-level plans that convert the planning-level project description into a three-dimensional template. This level of detail was needed to be able to understand the potential impacts of the Proposed Action.

It was noted in the description of the Proposed Action that efforts were made to avoid environmental impacts in the development of interchange reconstruction concepts. The same approach was used in developing proposed alignments and elevations for the freeway mainline. For example, efforts were made to minimize right-of-way impacts and encroachment into parks and floodplains.

The engineers and designers who developed interchange alternatives and mainline alignments took environmental constraints into account throughout the conceptual design process. The hierarchy of steps that was followed in this process was as follows:

1. AVOIDANCE: impacts to environmental resources were avoided wherever possible (example: mainline design speed on a curve was lowered to avoid impacting a floodplain).
2. MINIMIZATION: in cases where complete avoidance of an environmental resource was not feasible, design solutions were developed to minimize unavoidable impacts (example: roadside retaining walls were incorporated into the conceptual design to minimize right-of-way impacts).
3. MITIGATION: after avoiding and minimizing environmental impacts as much as possible, mitigation techniques were proposed to address any remaining, unavoidable impacts (example: materials from displacing a small portion of an historic stone wall will be used to restore other wall sections displace by an earlier, unrelated project).

For each interchange reconstruction project, multiple public meetings were held, always in the immediate vicinity of the proposed project. Various interchange types were presented to the public for review and input, and multiple aspects of each alternative were evaluated. Traffic operations, constructibility, cost, right-of-way impacts, and environmental impacts were among the factors considered in the overall evaluation of each concept.

ENVIRONMENTAL APPROACH FOLLOWED IN THE DESIGN CONCEPT PROCESS:

1. Avoidance of environmental impacts

2. Minimization of any unavoidable impacts

3. Mitigation of any remaining unavoidable impacts

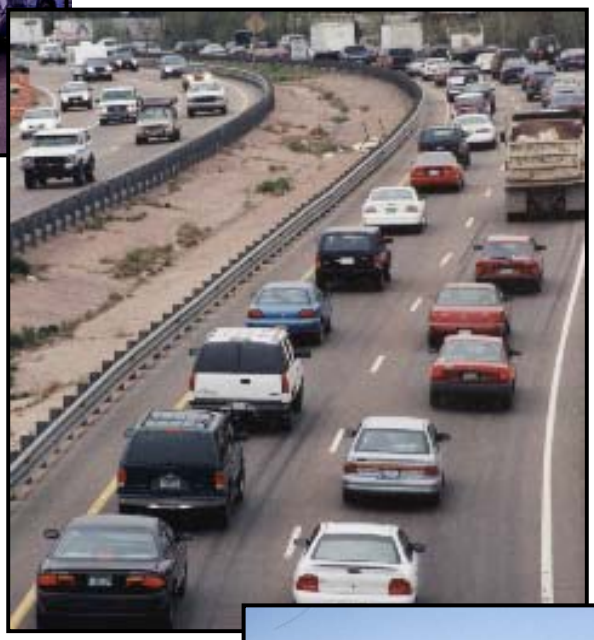
One interesting development in this process took place with respect to the proposed reconstruction of the Fillmore Street Interchange. After the entire concept selection process for Fillmore had been completed in June 2001, CDOT officials were concerned that the selected diamond interchange concept still had too great an impact on the surrounding residential area to the west. A previously considered alternative called a single point urban interchange was revisited and refined, then brought back to the public for consideration. A definite tradeoff was involved: the urban interchange was inferior to the diamond interchange in terms of expandability and driver expectation, but offered the advantage of taking fewer residential properties. At a subsequent public meeting held in October 2002, CDOT proposed and the public embraced changing the concept to the urban interchange design.

Avoidance of environmental impacts at the concept selection stage was followed by efforts to also minimize adverse impacts. In converting the Proposed Action to a three-dimensional conceptual design, the engineers modified horizontal and vertical alignments of the roadway where feasible to minimize the project's impacts to adjacent properties.

It is anticipated that additional opportunities for impact minimization will be available in the process of taking the conceptual plans to the more detailed level of actual engineering plans for construction. Therefore, the magnitude of remaining project impacts described in this section is expected to be a "worst-case" scenario. Appropriate mitigation has been identified to address these impacts.

Transportation Resources and Issues

This subsection addresses traffic, transit, and related intermodal issues. Trails are discussed in a later subsection, under the topic of “Parks and Recreation.”



Transportation Resources and Issues

Existing traffic conditions in the I-25 corridor are known from data collected by CDOT or local governments. Projected future conditions are based on the *Destination 2025 Regional Long Range Transportation Plan*, prepared by the regional planning agency—the Pikes Peak Area Council of Governments (PPACG). Traffic forecasts for 2025 were derived based on outputs from TRANPLAN, which is PPACG's regional traffic forecasting model. Adopted PPACG economic data and roadway networks were used as model inputs.

Current Conditions

Current conditions of traffic and transit as they pertain to the I-25 corridor are described below.

Traffic

I-25 through Colorado Springs was opened on July 1, 1960, replacing the previous north-south routing of traffic through the city on Nevada Avenue (State Highway 85). Thus, the freeway is now approximately 43 years old. Also 43 years old are the bridge structures for a number of interchanges that have not yet been reconstructed. Table 3-1 presents a chronology of interchange construction and modifications over the years.

From Table 3-1, it can be seen that the seven oldest, previously unimproved interchanges in this 26-mile section of I-25 are the same interchanges identified for major reconstruction in the Proposed Action, namely Baptist, North Gate, North Nevada, Rockrimmon, Fillmore, Bijou, and Cimarron.

The majority of the interchanges along the corridor are designed in a diamond configuration, but various other configurations do exist (e.g., cloverleaf at North Gate, partial cloverleaf at Cimarron, trumpet designs at Briargate and Interquest). There is only one single-point urban interchange (at Garden of the Gods Road) in the study area, and no interchanges employ roundabouts.

At its opening, I-25 carried 8,500 vehicles per day. Volumes increased steadily over four decades, amounting to an additional 100,000 vehicles daily using the same two through-lanes per direction.

An automated traffic recorder located just north of Bijou Street has chronicled the growth of I-25 traffic over the years and also provides insights to hourly, daily, weekly, and seasonal variation. For example, the ten busiest days of traffic at this location in the year 2002 were all Fridays in the spring or summer, with volumes ranging from 116,000 to 121,500 vehicles (all lanes, northbound plus southbound). Average weekday traffic is lower than these peak daily counts, closer to 110,000 vehicles daily.

TABLE 3-1
Chronology of I-25 Interchange Projects

Exit	Interchange	Year Built	Year Added	Year Reconstructed
161	SH 105 (Monument)	1959		2004
158	Baptist	1963		*
156	North Gate/future Powers	1959		*
153	Interquest		2000	
151	Briargate		1987	
150	North Academy	1958		1997
149	Woodmen	1960		2003
148B	Corporate Center		1983	**
148A	N. Nevada	1959		*
147	Rockrimmon	1959		*
146	Garden of the Gods	1959		1988
145	Fillmore	1959		*
144	Fontanero	1959		1999
143	Uintah	1959		1999
142	Bijou	1959		*
141	Cimarron	1959		*
140	S. Nevada/Tejon	1959		2003
139	MLK/US 24 Bypass		1990	
138	Circle/Lake	1959		2000
135	South Academy		1971	

*Denotes interchange major reconstruction included in the Proposed Action for the current I-25 EA.
**Under the Proposed Action, Exit 148B will be eliminated.
Source: Colorado Department of Transportation

Interstate 25 traffic volumes at other locations in the corridor have been derived from automated mainline counts and counts of vehicles exiting or entering the freeway at interchange ramps. Figure 3-1 presents average weekday traffic volumes by freeway segment. The highest volumes in the corridor are observed through central Colorado Springs, between Bijou and Fillmore Streets.

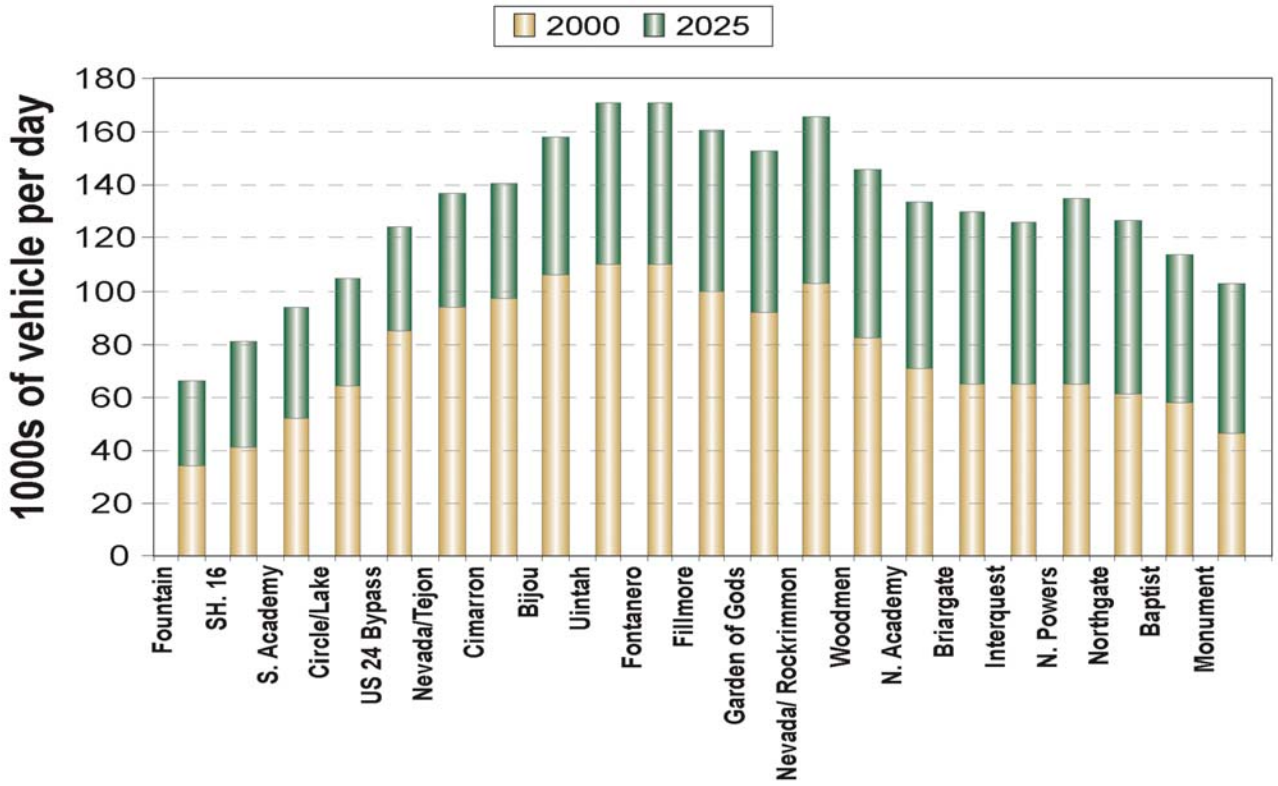


FIGURE 3-1
Average Weekday Traffic on Interstate 25, Year 2000 (Existing) and 2025 (Proposed Action)
(Note: bar chart depicts total two-way mainline I-25 traffic volumes between interchanges.)

To the north, toward Denver, traffic volumes generally decline with each successive interchange, reaching a low of less than 50,000 daily vehicles at the Douglas County Line. To the south, toward Pueblo, volumes exceed 50,000 daily vehicles as far as South Academy Boulevard. Volumes then decline to approximately 35,000 at the Pueblo County Line.

From analysis of this traffic pattern it has been determined that through the congested part of central Colorado Springs, the vast majority (over 75 percent) is made up of local trips, not interstate through traffic. This is due in part to major employment centers being located along the I-25 corridor and due in part to a lack of attractive alternative routes nearby for travel to central Colorado Springs.

Analysis of hourly traffic data for an entire year (1998) indicated that the hours of the day with the highest traffic volumes are from 7:00 a.m. to 8:00 a.m. and from 3:00 p.m. to 6:00 p.m. on weekdays. Volumes during these hours ranged from 7 to 7.5 percent of all-day total traffic. A graph depicting the weekday hourly traffic variation is provided in Figure 3-2.

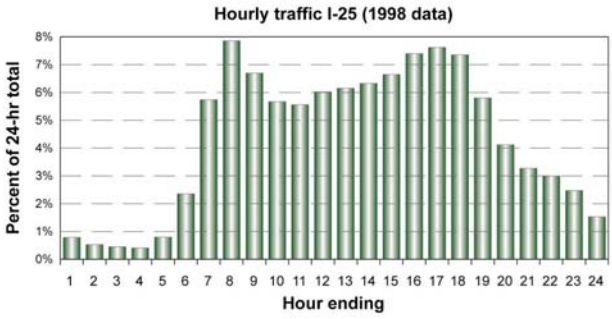
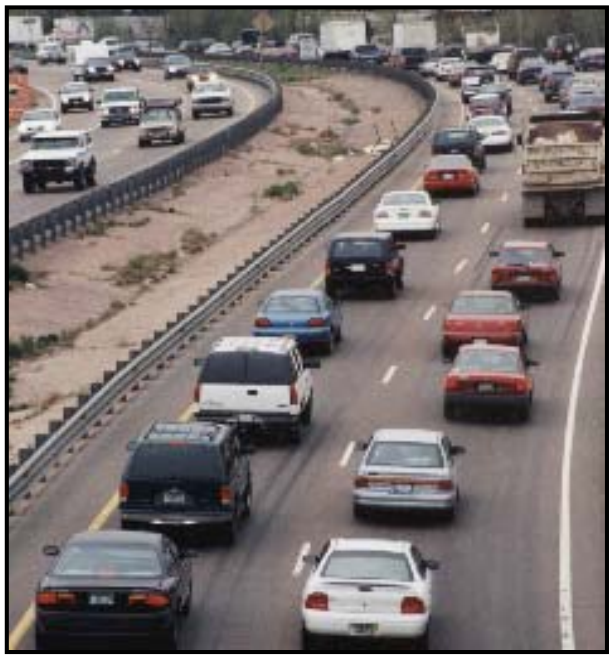


FIGURE 3-2
Weekday Hourly Traffic Variation on I-25 (North of Bijou Exit)

Highway capacities are evaluated primarily in terms of one-hour increments. Theoretically, capacities of up to 2,200 vehicles per lane per hour are attainable on a four-lane freeway, under ideal conditions (no trucks, no grades, no obstructions, etc.). Accounting for local grades, truck percentages, and other limiting conditions, a

capacity of 2,000 vehicles per hour per lane was determined to be generally applicable capacity for the I-25 corridor. The threshold for defining congested conditions is 85 percent of this level, or 1,700 vehicles per lane. This level of traffic was exceeded on 99 percent of all normal weekdays on I-25 in central Colorado Springs. Traffic volumes exceeding 2,000 vehicles per hour were observed on one out of every four weekdays.

Based on the general approach described in the *I-25 Mode Feasibility Alternatives Analysis*, it was reported that approximately 9 miles of the I-25 corridor were considered congested (routinely operating at LOS E or worse during peak periods) in the year 2000. That analysis recently was revisited in greater detail using the methods in the year 2000 update of the *Highway Capacity Manual*. The results of this work indicate that 16 miles of I-25 from central Colorado Springs to northern El Paso County were congested, based on year 2000 traffic volumes.



16 miles of I-25 today routinely experience congestion (Levels of Service E or F) during the morning peak, the afternoon peak, or both.

Recent I-25 safety projects in the corridor addressed the locations in the study area where accident rates were highest in the mid to late 1990s. The number of annual accidents reported on I-25 in El Paso County amounted to 1,366 in 1997, and 1,146 in 1999. Road rage is cited as an increasing cause of accidents. Statewide, the Colorado State Highway Patrol issued 32,000 citations for aggressive driving in the 12 months that ended in June 1999.

Transit

Fixed-route and demand-responsive transit services in the Pikes Peak Region is provided by the City of Colorado Springs. Today's publicly owned fleet of 67 buses represents little change over the fleet of 51 buses operated privately more than four decades ago. In fact, since the city has grown in area and population, the number of buses operated per capita has declined by 80 percent since 1960. However, the current fixed-route service is supplemented with demand-responsive paratransit services for elderly and disabled persons.

The entire Colorado Springs transit system carries an average of 13,600 fixed-route trips per weekday and another 300 demand-responsive trips (source: first quarter 2003 data reported by the American Public Transit Association). For comparison, this total ridership is equivalent to the number of vehicles per day carried on a typical minor arterial street in downtown Colorado Springs.

Funding for Springs Transit operations come directly from the City's General Fund, as there is currently no separate, dedicated funding source for transit in the region. A 1997 referendum to establish a transit district and a sales tax dedicated for transit use did not receive approval from Colorado Springs voters. A grass-roots transit advocacy group is hoping to bring a similar proposal back to the voters within the next several years.

The only two bus routes that currently use I-25 are Route #91 (Union Express) and Route #94 (Monument Express). For clarification, the system does not have 94 routes—the number 9 in these route numbers designates them as express routes. The Monument Express service was inaugurated in 2002 as a demonstration project. Usage of this specially funded route during the trial period will help to determine whether resources will be allocated to continue the service on a more permanent basis.

A bicyclist is shown mounting his bike on an express bus at the Monument Park-and-Ride lot.

The region's only formal Park-and-Ride lots are located along the I-25 corridor. There is a 96-space lot west of I-25 near the Woodmen Road Interchange, served twice each morning and twice each evening by Express Route #91. A 60-space lot at State Highway 105 in Monument is being relocated and expanded on the east side of I-25, and is served by Express Route #94 (four times in the morning, five times each evening). In 2003, CDOT completed construction of a new Park-and-Ride lot east of I-25 at the Fountain Interchange (Exit 128), south of the EA study area. Due to recent service cuts, this lot currently does not receive any transit service.

According to the Journey-to-Work sample collected in the Year 2000 Decennial Census, carpooling in El Paso County accounts for approximately 12 percent of commuter work trips, and 78 percent drove alone. Transit serves just less than 1 percent of the area's work trips.

Impacts of No-Action Alternative

In the absence of capacity improvements, I-25 would become increasingly more congested, thus decreasing travel speeds and increasing travel times. The *I-25 Mode Feasibility Alternatives Analysis* indicated that today's 35-minute peak-period commute from downtown Colorado Springs to Monument would increase by 60 percent to 56 minutes under the No-Action Alternative.

Traffic congestion (Level of Service E or F) that is currently experienced on I-25 in Colorado Springs for one hour in the morning and three hours in the afternoon would last ten hours per day—nearly from dawn to dusk—by the year 2025.

The latest, most detailed traffic projections for the corridor indicate that 16 miles of I-25 were congested in 2000, but all 26 miles of I-25 between South Academy and Monument would experience peak-period congestion in the year 2025 under the No-Action Alternative.

According to the regional traffic modeling, projected congestion on I-25 in the No-Action Alternative would result in increased traffic volumes on nearby alternative routes, including Nevada Avenue and nearby local streets.

CDOT is constructing a larger, more modern Park-and-Ride lot to replace this outdated facility along I-25 in Monument.

The No-Action Alternative would provide no new accommodations for transit, carpooling, or bicycle/pedestrian travel. Use of those modes might increase, however, in response to the increased frustration of driving alone in increasingly congested conditions.

The *Colorado Springs Regional 2025 Long Range Public Transportation Plan* recommends transit system improvements that include increased transit service in the I-25 corridor. In the No-Action Alternative, carpools and transit vehicles would be stuck in mixed traffic on the 26-mile congested I-25 corridor.

Impacts of Proposed Action

Completion of the Proposed Action would have long-term mobility benefits for I-25 motorists, and short-term construction impacts on motorists and transit, as discussed below.

Traffic

The all-day traffic volumes on I-25 are depicted in Figure 3-1. Detailed peak-hour projections for I-25 mainlines, ramps, and cross-streets are provided in a separate report (*FHWA Interchange Access Request, I-25 Capacity Improvements, El Paso County, Colorado*) and is summarized below.

The analysis indicates that the Proposed Action would reduce the extent and duration of congested conditions (LOS E or F) on I-25. Instead of 16 miles congested as experienced today, or 26 miles congested under the No-Action Alternative, the Proposed Action would result in excellent traffic flow through most of the corridor, with only isolated segments of LOS E. Figure 3-3 and Table 3-2 describe the projected changes to Level of Service.

The Level of Service analysis reflected in the figure and table is based on the busiest single hour in the morning peak and the busiest single hour in the evening peak. Under existing conditions in 2000, the evening peak is nearly three hours long (depicted earlier in Figure 3-2). By improving capacity and thus improving level of service to conditions better than are experienced today, it can be expected that the duration of the morning and evening peak congestion in the future will be comparable to or possibly even shorter than the duration of congested conditions experienced today.

To help maintain traffic flow during accidents, special events, and other freeway incidents, the Proposed Action includes incident management devices such as surveillance cameras, loop detectors, and variable message signs, which will be connected to the existing City of Colorado Springs Traffic Operations Center.

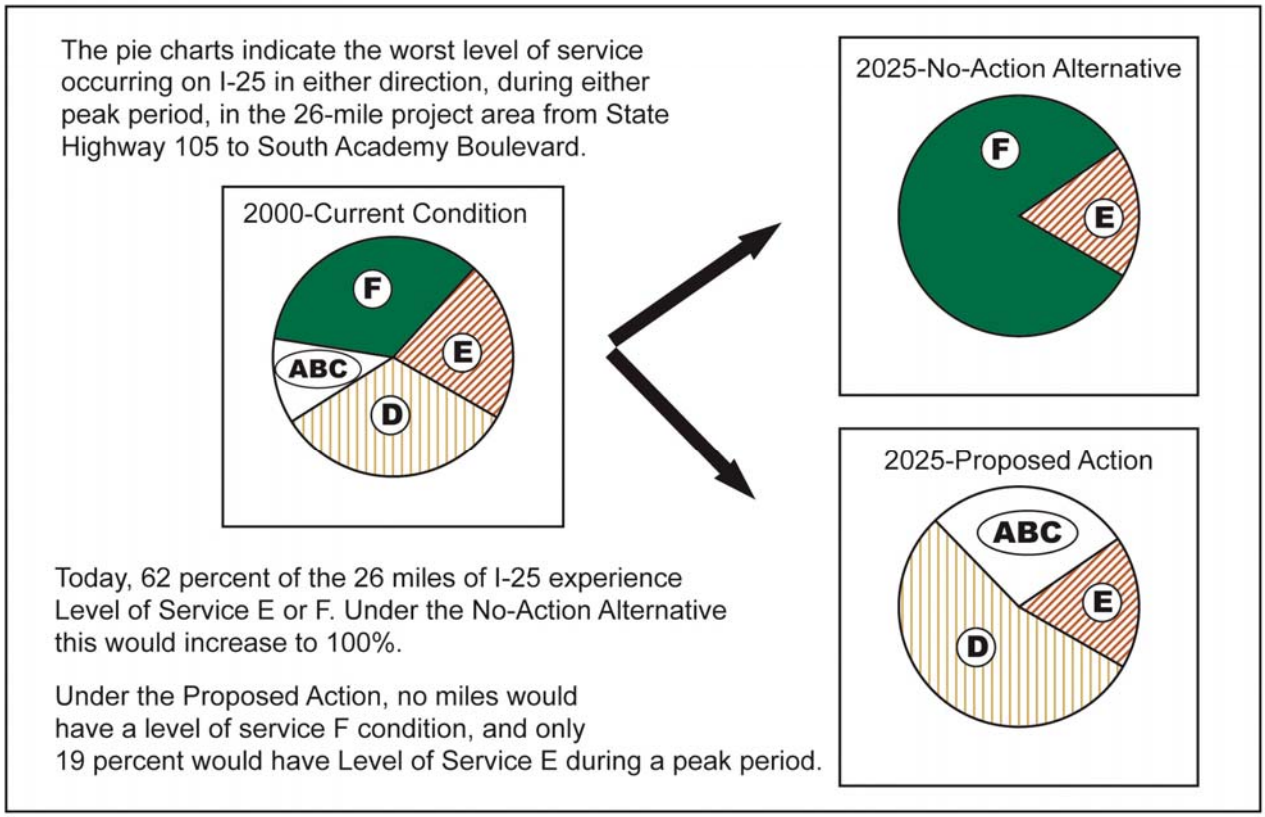


FIGURE 3-3
Percentage of I-25 Miles Experiencing Traffic Congested Levels of Service During Any Peak Period

TABLE 3-2
Level of Service by Scenario, Peak Period, and Direction

			Miles of I-25 at Level of Service			
	Peak	Dir.	ABC	D	E	F
Existing 2000	AM	NB	9	13	4	0
No-Action 2025	AM	NB	5	11	10	5
Proposed 2025	AM	NB	22	4	0	0
Existing 2000	AM	SB	4	6	9	7
No-Action 2025	AM	SB	3	1	5	17
Proposed 2025	AM	SB	15	7	4	0
Existing 2000	PM	NB	12	12	2	0
No-Action 2025	PM	NB	0	0	4	22
Proposed 2025	PM	NB	8	17	1	0
Existing 2000	PM	SB	9	14	2	1
No-Action 2025	PM	SB	1	1	10	14
Proposed 2025	PM	SB	21	5	0	0

Peak: AM means morning, PM means evening
Direction: NB is northbound, SB is southbound

The provision of peak-period high occupancy vehicle lanes on Interstate 25 would be the first use of HOV facilities in the region. The lanes would attract most of the existing carpools from the general purpose lanes, and would also provide an incentive for solo drivers to form new carpools. Carrying the comparable numbers of passengers per hour as a general purpose lane but in fewer vehicles, the HOV lanes are expected to yield a higher average travel speed than the adjacent general purpose lanes during peak periods.

Usage of HOV lanes by at least 800 vehicles per hour in each direction is expected by the year 2025, and is needed so that the lane will not appear to be underutilized. With two or more occupants in each vehicle, 800 vehicles in the lane would carry 1,600 or more people per hour. This would be comparable to the number of person-trips carried by a general purpose lanes with mostly single-occupant vehicles at Level of Service D. The productivity of the HOV lanes increases substantially if they are also used by transit buses.

Transit

The Proposed Action includes provision of 12 miles of lanes that, during peak periods, will be available for use by buses and carpools only. This will provide a travel speed and time savings advantage for transit users (up to one minute per mile traveled in the HOV lane), and may provide an incentive for Springs Transit to modify certain routes to take advantage of this facility.

Many of the interchanges to be modified as part of the Proposed Action have no current transit service, and therefore no existing bus stops. These include Baptist, North Gate/Powers, Commerce Center Drive (to be eliminated), North Nevada, Rockrimmon, and Cimarron.

One existing bus route (#18 Holland Park) uses the Bijou Street bridge and follows Chestnut Street across Fillmore Street, thus interfacing with two of the interchange reconstruction projects included in the Proposed Action. During construction affecting these interchanges, temporary relocation of bus stops and/or temporary minor route modifications may be necessary. Following construction, these bus stops will be moved to their permanent locations based on the new interchange configurations.

Impacts to multi-use trails and other bicycle and pedestrian facilities are discussed elsewhere in this section of the EA under the heading of “Parks and Recreation.”

Traffic During Construction

Construction activities at I-25 interchanges have the potential to affect traffic and access, which may result in loss of revenue for the nearby businesses. This is a consideration at several of the interchanges that will be reconstructed as part of the Proposed Action (e.g., Nevada/Rockrimmon, Fillmore Street, Bijou Street, and others). CDOT plans its construction activities to maintain business access during construction and maintains an extensive communications program with affected businesses and the public to keep them fully informed of construction schedules.

Mitigation

With regard to transit, CDOT will coordinate with the Transit Service staff at the City of Colorado Springs to ensure that existing transit services are maintained through the Bijou and Fillmore Interchange areas during construction. Also, existing transit amenities (i.e., bus stop signs, benches, and shelters) will be relocated to appropriate locations for all local transit routes affected by interchange reconstruction.

- CDOT will accommodate transit stops in consultation with the Transit Services staff of the City of Colorado Springs to ensure that service on Route 18 can be maintained during construction.

- In the vicinity of the I-25 Interchanges at Bijou and Fillmore, existing transit stop amenities (signs and/or benches) will be replaced and/or moved to a safer location based upon the new interchange configuration. This will also be done in consultation with Transit Services staff.

With regard to potential roadway traffic impacts during construction, CDOT will maintain active public information efforts to inform the public and especially affected businesses in advance of lane closures, detours, and interchange reconstruction activities. In particular, CDOT will maintain business access during construction and provide an extensive communications program with affected businesses to keep them informed of construction schedules.

In addition, CDOT uses a number of strategies to minimize traffic disruption from construction activities. These strategies include the following:

- The existing number of lanes is maintained during construction. Typically, the new capacity lanes are constructed adjacent to the existing facility, and once these are ready, traffic is diverted to them so that reconstruction can occur on the original lanes. Although the full benefits of the new lanes are not realized until final project completion, there is no net lane reduction during the construction phase. This approach is time-consuming and expensive, but avoids the dramatic impacts that would occur if the number of lanes were temporarily reduced and traffic were diverted to other nearby local streets.

- Construction activities are phased to minimize the number of times that traffic must be switched between lanes (per the strategy described above).

- Where lane closures on I-25 are unavoidable for safety reasons (e.g., during placement or demolition of a bridge structure), such closures occur only at night.

- Where temporary closure of a lane on a cross-street is unavoidable, the closure is limited to one lane per direction and takes place only during off-peak hours.

- Lane closures are avoided at times when there are planned special events within the region (e.g., United States Air Force Academy graduation, Air Force Falcons football games, or major events at the World Arena).

Safety considerations during construction are paramount. The temporary impact of construction activity is a less safe environment for motorists on the affected facility, as well as a risk to the construction crews themselves. As a mitigation step, reduced speed limits are often established for work zones. Colorado statutes allow for a doubling of standard fines for speeding when it occurs within such work zones. The impact for law-abiding motorists is a slight increase in travel time due to the reduced speed limits.

CDOT recognizes potential construction effects and specifies requirements for its contractors to avoid, minimize, and mitigate adverse impacts using best management practices. For example, watering of exposed dirt for dust suppression is a cost item routinely included in construction contracts. Additionally, contractor construction activities are routinely inspected to ensure compliance with contractually required mitigation efforts.

Human Resources and Issues

Grouped under the category “Human Resources and Issues” are the following subsections:

- Socioeconomics
- Environmental Justice
- Right-of-Way

Socioeconomics

Population, income, and employment in El Paso County are evaluated in this subsection. The analysis is based primarily on data from the 2000 Census and local governments.

The I-25 corridor is an important connection between destinations vital to the region's economy, including major residential and employment centers along the interstate. I-25 also is an essential link to tourism sites in and around Colorado Springs, which drew more than 6 million visitors last year.

Residents throughout El Paso County depend on I-25 for travel to and through Colorado Springs. Few trips can be made to the city or within the city without driving on the interstate. No efficient bypass exists at this time—Academy Boulevard and Nevada Avenue (Business Route I-25) are congested, and Powers Boulevard does not connect to I-25 at the north. Until Powers Boulevard is connected to I-25, I-25 remains the primary route for north-south travel to and through Colorado Springs.

Several of the city's largest employment centers are located along I-25, thus commercial activity depends on the interstate for incoming and outgoing delivery of materials and products. The U.S. Air Force Academy and the Briargate neighborhood with substantial commercial and retail activity are at the north end of Colorado Springs. The central part of the I-25 corridor includes a high tech manufacturing district along Garden of the Gods Road, as well as the high-density municipal, financial, and retail center of the Central Business District. Fort Carson is located at the south end of the city.

Visitors use the I-25 corridor to reach tourism destinations in and near Colorado Springs. Major attractions include Garden of the Gods (1.7 million visitors annually), the U.S. Air Force Academy (1.4 million visitors), and the Olympic Training Center (138,000 visitors). Mountain destinations west of Colorado Springs—including Pikes Peak (250,000 visitors), Manitou Springs, Cripple Creek, and the Pike National Forest—are accessed by U.S. 24 from its I-25 interchange near downtown.

Current Conditions

Population

El Paso County was home to approximately 517,000 residents in 2000. The county gained 120,000 new residents between 1990 and 2000, the largest increase among Colorado counties, and a 30 percent rise in population. Figure 3-4 shows the historic and forecast populations for Colorado Springs and El Paso County.

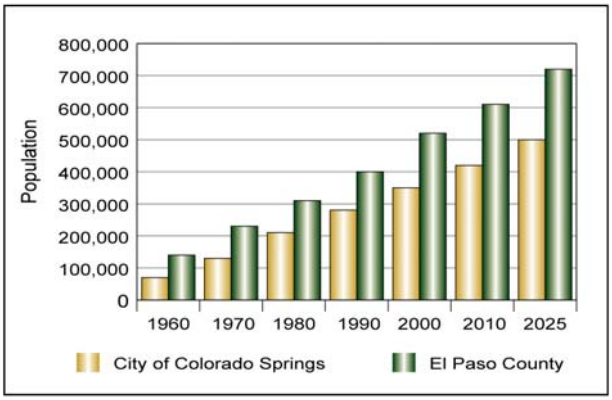


FIGURE 3-4
Population of Colorado Springs and El Paso County (Projected 2010, 2025)
Source: U.S. Census Bureau 2000 and PPACG

The City of Colorado Springs is the largest municipality in El Paso County, with a population in 2000 of approximately 360,000. The city accounts for about 70 percent of the county's population, a proportion that has increased from less than 50 percent in 1960. Other communities in El Paso County include Monument (2,000 residents) and Palmer Lake (2,200) to the north, Fountain (15,200) to the south, and Manitou Springs (5,000) to the west.

The PPACG published its long-range plan *Destination 2025 Regional Long Range Transportation Plan* in 2003. The plan forecasts the county population will increase by more than 200,000 residents, or 40 percent, between 2000 and 2025. Much of this growth is anticipated to occur on the city perimeter, reflecting limited infill opportunities in Colorado Springs. The most growth is predicted to occur north along I-25, from Palmer Lake to Black Forest, and south of the city near Security and Widefield.

Income

"Median household income" reflects the amount of earnings at which an equal number of households earn greater and lesser amounts. This measure of earnings varies from an "average" by identifying the middle value in a list that is ranked from high to low, and is not weighted by the dollar amounts of earnings. Median household income in El Paso County was $46,800 in 1999, within one percent of the $47,200 median for the state.

Employment

With estimated total employment of 236,200 in 2000, El Paso County is the second-largest labor market in the state, after the Denver metropolitan area where 1.4 million persons were employed. Unemployment in El Paso County was 4.7 percent of the civilian labor force in 2000, slightly higher than the 4.3 percent figure for Colorado. Unemployment, of course, varies based upon local, State, and national economic conditions.

The Census Bureau classifies employment by industry, which illustrates the character and diversity of a region's economy. Except for military employment, little difference existed in 2000 between El Paso County and the state with respect to the five industries with the largest employment, as shown in Table 3-3. This suggests the county's economy is nearly as diverse as the much larger state economy.

TABLE 3-3
Employment by Industry

Industry	Percent of Total Labor Force	
	El Paso County	Colorado
5 Largest Industry Employers in Colorado		
Education, health, social services	15.6	16.1
Retail trade	11.1	11.1
Professional, scientific, management	10.5	11.0
Manufacturing	9.7	8.6
Arts, entertainment, recreation, food services	7.6	8.6
Military employment		
Armed Forces	8.5	1.2

Source: U.S. Census Bureau 2000

The military employed 23,700 persons in El Paso County in 2000—86 percent of Armed Forces employees in Colorado. These jobs are based at Fort Carson, the U.S. Air Force Academy, Peterson Air Force Base, Schriever Air Force Base, Cheyenne Mountain Air Force Station (North American Aerospace Defense Command, or NORAD), and the new Northern Command (homeland defense facility). Military employment accounts for 8.5 percent of the County's total labor force, far above the 1.2 percent statewide level of military employment. The bases also employ a substantial number of civilian support staff.

According to the Southern Colorado Economic Forum at the University of Colorado–Colorado Springs, total active duty military plus civilian employment in the region was more than 43,000 workers in 2001. The U.S. Air Force Academy and Fort Carson are accessed locally from I-25, while the other bases are located on U.S. 24 east of Colorado Springs and may be accessed regionally from I-25.

The Pikes Peak Area Council of Governments predicts that employment in the region will grow by nearly 40 percent between 2000 and 2025, proportional to population growth. PPACG forecasts that job growth will be dispersed across El Paso County, while the most concentrated employment centers will remain along I-25, and along the commercial corridors on Academy Boulevard and on Powers Boulevard in the eastern Colorado Springs.

I-25 will remain an important regional transportation corridor in the future. PPACG's planned improvements, such as the Powers Boulevard extension, will improve circulation within the city but will not reduce the importance of I-25 as a regional travel corridor.

Impacts of No-Action Alternative

The No-Action Alternative would not directly impact population, income, or employment, but it would make local and regional trips on I-25 slower and less efficient.

As described in more detail in the "Transportation Resources and Issues" subsection of this EA, the congestion and delays currently experienced during peak traffic periods would deteriorate further and for longer periods, as illustrated in Table 3-4.

TABLE 3-4
Traffic Congestion with No-Action Alternative[1]

Measure	2000	No-Action 2025
Congested miles on I-25	16	26[2]
Congested weekday hours on I-25	4[3]	10[4]

[1] Congestion is operating at Level of Service E or F, see "Transportation Resources and Issues" subsection for definition

[2] Includes I-25 through entire study area

[3] Includes 1 hour in AM peak period, 3 hours in PM peak period

[4] Includes daytime from nearly dawn to dusk

Employees traveling to and from work would experience increased congestion. Similarly, tourists to destinations such as Garden of the Gods, the U.S. Air Force Academy, and the Olympic Training Center would experience traffic congestion and increased travel times. Gross revenues from tourism totaled $1.2 billion in 2002, according to the Colorado Springs Convention and Visitors Bureau. Tourism visits to the region, an important component of the city's economy, could decline under the severely congested conditions that would result under the No-Action Alternative.

Impacts of Proposed Action

I-25 is an existing transportation corridor. Apart from providing a new connection for Powers Boulevard (a regional facility with no local access), the Proposed Action would not introduce new transportation infrastructure to areas that do not already have access to the interstate. Improvements to I-25 would, however, help maintain access to the region's major businesses and employment centers, including military bases, that are located along the interstate.

The existing, substandard southbound off and on ramps at Corporate Drive (Exit 148B) will be closed, but access to the adjacent business area ("Furniture Row" and others) will be replaced by a new connection to North Nevada Avenue.

Construction of the Proposed Action would have positive, short-term impacts on the local economy. The overall cost of improvements is on the order of approximately a half billion dollars, but expenditures would occur over a number of years, depending upon availability of project funding.

During construction the project would employ construction workers, and contractors and workers in industries that provide supplies and support. Construction workers have been employed on I-25 safety projects in the region since the late 1990s, so continued activity on this scale would not represent a major change to existing conditions in the regional employment market. As described in the "Right of Way" subsection of this section, relocation assistance would be provided to 11 businesses that occupy commercial parcels identified for full acquisition. Employees of the relocated businesses would be affected by moving work addresses, but at this time the locations, change in distance from home to workplace, and the number of employees affected cannot be determined.

The impact on the sales tax base of local governments is negligible as well. The project would create only temporary disruption to 11 of the nearly 13,400 privately owned businesses in Colorado Springs, and lost property taxes on the 17 properties acquired would be insignificant relative to all property taxes. Neither school districts nor special tax districts would be affected by the Proposed Action.

Project payrolls would increase local household income, business revenues, and may increase income for local businesses. The Proposed Action would not have substantial or long-term impacts on regional income levels.

The Proposed Action provides a number of benefits in the study area, including reducing congestion and improving efficient movement of goods and services through the community. The Proposed Action also is consistent with PPACG's long-term planning, and enhances opportunities to meet the *Destination 2025 Regional Long Range Transportation Plan* goal to "improve access to regional activity destinations for all citizens."

Mitigation

The Proposed Action will not adversely impact population, employment, tax revenues, or income levels in the region, and no mitigation measures are necessary.

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, was issued by President Clinton in 1994. The order prevents federal policies and actions from creating disproportionately high and adverse health and environmental impacts to minority and low-income populations.

For example, minority and low-income residents potentially could be affected by a transportation project in several different ways. The most direct negative potential impact is that homes or businesses could be displaced, or portions of property affected in such a way that would require the occupants' relocation. Potential negative impacts also include indirect effects such as dividing an ethnically homogeneous neighborhood with new construction, or increasing traffic congestion in a low-income neighborhood.

A transportation project also could provide benefits to minority and low-income residents if transportation efficiency improves or if transit services are made more accessible or convenient.

Public Outreach Efforts

During this EA, the CDOT project team conducted interviews and held public and private meetings with business owners, community groups, and residents. Multiple efforts were made to reach out to minority and low-income residents and business owners to involve them in project planning and to assess any impacts that may occur as a result of implementing the proposed action. These outreach efforts are summarized below, and described in detail in meeting summaries and a Technical Memorandum titled "Environmental Justice Impacts."

- Eleven meetings were held with community organizations and agencies, such as the Mesa Springs Neighborhood Association and Pikes Peak Legal Aid.
- Twelve public meetings were held in or near the Near Westside, Westside and Mesa Springs neighborhoods, which have higher proportions of minority and low-income residents than other locations along the corridor. The meetings were held in a variety of locations, including the First Presbyterian Church on Bijou Street and the Ramada Inn at the Fillmore/Sinton intersection.
- Twenty-eight personal meetings were conducted with individuals or small groups of residents and business owners to discuss the project.
- Thirteen interviews were conducted with owners of residential and commercial properties that will be acquired.
- Advertisements for public meetings were placed in the *Hispania News*, a local paper serving the Hispanic population of the southern Colorado Springs metropolitan area and southern Colorado.
- Twenty-three community organizations were contacted for comment or information, such as Meals on Wheels, Hispanic Chamber of Commerce, Springs Rescue Mission, and the Korean Association of Colorado Springs.
- Written information about the project was distributed to 18 locations near minority and low-income neighborhoods, such as the Red Cross Shelter and the Bijou House.

Based upon the information obtained by CDOT during the public outreach effort, it was determined that no disproportionate impacts would occur to minority and low-income populations from implementing the Proposed Action.

Current Conditions

Minority Populations

In this analysis, minority residents include those who are of non-White races and persons of Hispanic ethnicity, as identified in the inset box. Under this definition, an individual who is White and Hispanic would be identified as a minority resident.

Persons of minority races represent 18.8 percent of the population in El Paso County, slightly higher than the 17.2 percent racial minority population for the State of Colorado.

How Minority Residents are Defined in the 2000 Census

Race
Black/African American
American Indian/Alaska Native
Asian
Native Hawaiian/Other Pacific Islander
Other NonWhite Race
Two or More Races

Ethnicity
Hispanic

Approximately 58,400 El Paso County residents, 11.3 percent of total population, are of Hispanic origin, considerably lower than the 17.1 percent proportion of the state. Eleven percent of the County's residents primarily speak a language other than English, well below the 15 percent statewide.

El Paso County hosts approximately 41,300 businesses, of which about 4,000, or 10 percent, are minority-owned. Table 3-5 illustrates the racial and ethnic diversity of El Paso County, which is the same geographic area as the Colorado Springs metropolitan statistical area, and the state.

Within the I-25 study area, according to the 2000 Census, the highest concentrations of minority population are found west of the interstate south of Fillmore Street and on both sides of I-25 south of South Nevada Avenue, as shown in Figure 3-5. Figure 3-5 illustrates the census block groups in the study area where the percentage of minority residents are greater than the El Paso County average of 20 percent.

TABLE 3-5
Racial and Ethnic Composition

Race and Ethnicity	Percent of Population	
	El Paso County	Colorado
Race		
White	81.2	82.8
Black/African American	6.5	3.8
American Indian/Alaska Native	0.9	1.0
Asian	2.5	2.2
Native Hawaiian/Other Pacific Islander	0.2	0.1
Other Race	4.7	7.2
Two or More Races	4.0	2.9
Ethnicity[1]		
Not Hispanic	88.7	82.9
Hispanic	11.3	17.1

Source: U.S. Census Bureau 2000

[1]Hispanic ethnicity is reported by the Census Bureau separate from racial characteristics. For this analysis, minority populations include both persons of non-White races and persons of Hispanic ethnicity.

Low-Income Populations

For this analysis, low-income populations are defined as persons whose household income is at or below the poverty threshold used by the Department of Health and Human Services. In the year 2000, this amount was $17,603 for a family of four.

Fewer people in El Paso County (8.0 percent) than in Colorado (9.3 percent) were living below the poverty level in 1999. Table 3-6 illustrates the poverty characteristics in El Paso County and Colorado.

Median household income in El Paso County was $46,800 in 1999, within one percent of the $47,200 median for the state.

Within the I-25 study area, the highest concentration of low-income populations is between Uintah Street and Lake Avenue/South Circle Drive, particularly east of I-25, as shown in Figure 3-5. Figure 3-5 also illustrates the Census block groups where at least 20 percent of the residents live in poverty. Income levels vary across this area, and these neighborhoods do not uniformly comprise low-income residents.

TABLE 3-6
Income and Poverty

Characteristic	El Paso County	Colorado
Persons living in poverty[1]	8.0%	9.3%
Poverty threshold[2]	$17,603	

Source: U.S. Census Bureau 2000

[1] Proportion of total population living in poverty, 1999

[2] Department of Health and Human Services poverty threshold in 2000 for family of four

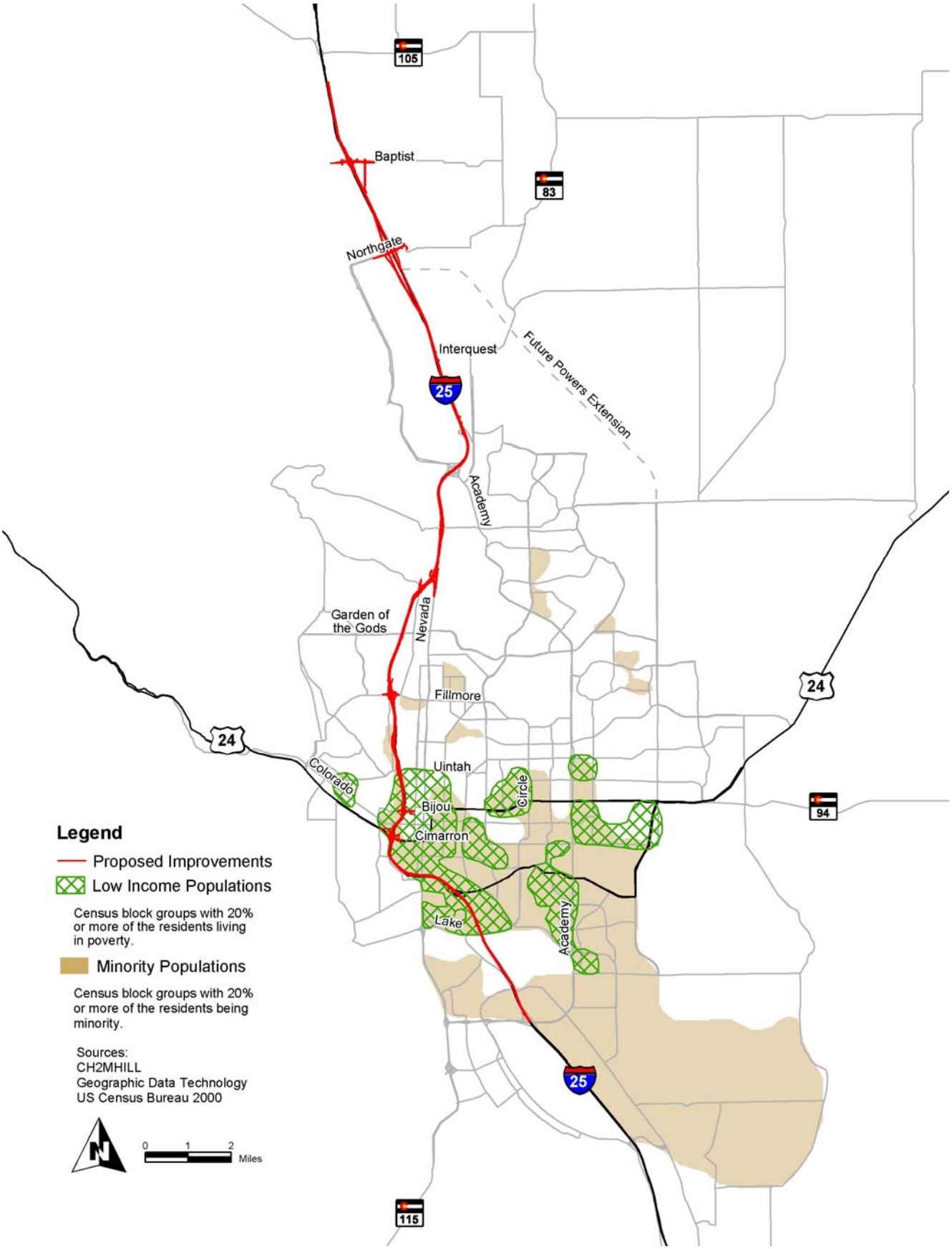


FIGURE 3-5
Low-Income and Minority Populations within the Project Area

Minority and Low-Income Neighborhoods

Two neighborhoods have comparatively higher proportions of minority and low-income residents than other portions of the I-25 study area. The Near Westside and Westside neighborhoods together measure about one-half square mile near Bijou Street west of I-25. Twenty-six percent of these neighborhoods' residents are minorities, and 29 percent live below the poverty level. The Near Westside and Westside neighborhoods include residents who are 22 percent non-White races and 17 percent Hispanic; 29 percent of these residents live below the poverty level. These neighborhoods are home to numerous agencies serving low-income and minority populations. These neighborhoods are illustrated in Figure 3-6.

FIGURE 3-6
Neighborhoods Along the I-25 Corridor

The population of the Mesa Springs area southwest of I-25 near Fillmore Street includes approximately 23 percent non-White races and 16 percent Hispanic; 12 percent of the residents live below the poverty level.

Impacts of No-Action Alternative

The No-Action Alternative would not improve I-25, therefore no property belonging to minority or low-income residents would be acquired for right-of-way, and no relocations would be required. The No-Action Alternative does not alleviate congestion on I-25, however, and thus may cause increased cut-through traffic on neighborhood streets. Increased neighborhood traffic could be expected throughout the I-25 corridor where convenient cut-through opportunities exist, and would not be concentrated in minority or low-income neighborhoods.

Potential environmental impacts associated with cut-through traffic—to safety, noise, and air quality—would be borne equally by all residents adjacent to I-25 and not be experienced disproportionately by minority or low-income residents. The same would be true for impacts related to congestion on I-25 itself—predominantly localized air quality—which would affect all residents adjacent to the highway.

The No-Action Alternative would result in no potential disproportionate adverse impacts to minority and low-income populations.

Impacts of Proposed Action

The Proposed Action to improve 26 miles of freeway would require the relocation of five households (one minority-owned) and 16 commercial businesses (including three that are minority owned or operated). Based on analysis of demographic data, evaluation of potential impacts after mitigation, and response from affected community residents, implementing the Proposed Action would not cause disproportionately high and adverse effects to minority and low-income populations.

Minority-Owned Businesses Impacted by the Proposed Action

1 Hispanic-owned business property

1 African-American business operator

1 Asian-American business operator

The Proposed Action would require temporary detours, relocating transit routes, or moving transit stops during construction of the project.

Near Fillmore Street, the Proposed Action would require total acquisition of five single-family residences, four commercial properties, and one vacant commercial lot, and partial acquisitions from four commercial properties. Near Bijou Street, the Proposed Action would require total acquisition of six commercial properties, one of which houses three tenants, and partial acquisitions of nine commercial properties. Table 3-7 lists characteristics of each of the properties to be acquired in total.

TABLE 3-7
October 2003 Ownership, Tenancy, and Use of Right-of-Way Parcels to be Acquired in Total

FILLMORE INTERCHANGE VICINITY			
Parcel	**Owner**	**Tenant**	**Business**
Liquor & fuel/ convenience	Corporation	Owner-operated Local (minority)	Fuel/ convenience Liquor store
Fuel/ convenience	Corporation	Owner-operated	Fuel/ convenience
Fuel/ convenience	Local (non-minority)	Local (minority)	Fuel/ convenience Auto repair
Auto sales	Local (non-minority)	Local (non-minority) Local (non-minority)	Auto sales Motorcycle sales
BIJOU-CIMARRON INTERCHANGES VICINITY			
Parcel	**Owner**	**Tenant**	**Business**
Fuel/ convenience	Corporation	Owner-operated	Fuel/ convenience
Car rental	Local (non-minority)	National chain	Car rental
Liquor store	Local (non-minority)	Local (non-minority)	Liquor store
Auto repair	Local (minority)	Owner-operated	Auto repair
Commercial building	Local (non-minority)	Local (non-minority) Local (non-minority) Local (non-minority) Local (non-minority)	Commercial painting Motorcycle sales/service Auto racing Property management
Mobile truck repair	Local (non-minority)	Local (non-minority)	Mobile truck repair

Of the properties being acquired in full for this project, one residence and one commercial property are minority-owned; two tenants of commercial properties that would be acquired also are minority-owned businesses.

As reported in the "Right of Way" subsection of this document, adequate residential and commercial real estate inventories exist currently to allow relocation to similar properties.

During interviews for this project, owners of businesses affected by the Proposed Action reported that their employment base is not from minority or low-income populations, not transit dependent, nor drawn from the surrounding neighborhoods. The types of businesses that occupy properties to be acquired typically pay their employees minimum wage or similar lower rates. However, 25 percent of the businesses do not employ anyone other than the owner, and several others employ only one or two people. None of the owners reported that their neighborhood is dependent on their business for goods and services. These statements contribute to the conclusion that relocating businesses will not impact minority or low-income residents.

Potential impacts to minority and low-income communities such as noise and visual impacts would be experienced proportionately by residents throughout the project corridor. As discussed in the "Noise" subsection of this EA, projected noise levels would approach or exceed abatement criteria near ten residential locations from Stratmoor Valley to Pulpit Rock. Although noise levels are expected to increase along the project corridor, the impacts would be mitigated where reasonable and feasible, and remaining impacts would not be borne disproportionately by low-income and minority neighborhoods. Affected neighborhoods include a variety of minority and non-minority residents representing a cross-section of economic conditions.

The Proposed Action includes sidewalks, bike lanes, crosswalks, pedestrian islands, and crossing signals at the Bijou Street Interchange. These improvements would provide better and safer access to the central business district from the Near Westside neighborhood.

The Proposed Action does not divide or segment neighborhoods, nor introduce new streets in residential neighborhoods. Additional information

on related topics is provided in this section's subsections regarding "Transportation Resources and Issues," "Neighborhoods," "Visual Resources," "Air Quality," and "Noise."

Mitigation

Since there are no disproportionate adverse impacts to minority and low-income populations under the Proposed Action, special mitigation actions focused toward these populations are not needed. The manner in which other mitigation actions will affect these populations is discussed below.

One existing local bus route (#18 Holland Park) uses the Bijou Street bridge and follows Chestnut Street across Fillmore Street, thus interfacing with two of the interchange reconstruction projects included in the Proposed Action. Existing transit service will be maintained along this route with modified bus stop locations as needed, and any temporary alterations will be signed in advance to minimize riders' inconvenience. Transit services are discussed in more detail in the "Transportation Resources and Issues" subsection of this document.

When acquisition of right-of-way is necessary, it is done in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. This mitigation measure is discussed in more detail in the "Right-of-Way" subsection of this document. Compliance with the Act assures that all persons regardless of race, color, religion, sex, national origin, disability or age will be fairly and equitably treated.

Mitigation required for noise and visual impacts throughout the corridor are discussed in those subsections of this section.

Right-of-Way

The land upon which a highway is constructed, together with any related ramps, medians, shoulders and adjacent land owned for highway-related purposes, is termed "right-of-way." If additional land is needed by CDOT for transportation improvements, the right-of-way is purchased from the property owner.

In some cases where houses or businesses are on the land needed for transportation improvements, the properties must be acquired in their entirety. Where this occurs, the displacement of residents or businesses from structures or land needed for right-of-way also results in relocation impacts. In other cases, it is possible to acquire a small portion of land while still leaving the remainder of the lot viable for its existing or planned use.

When acquisition of right-of-way is necessary, it is done in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended), the purpose of which is to provide for uniform and equitable treatment of all persons displaced from their homes, businesses, or farms. "Fair market value" based upon appraisals will be paid for all property acquired. No person shall be displaced by a federal aid project unless and until adequate replacement housing has been offered to all affected persons regardless of race, color, religion, sex, national origin, disability, or age.

This subsection of the EA describes the right-of-way and relocations that would be necessary for the I-25 Proposed Action.

Current Conditions

For much of the corridor through Colorado Springs, the existing I-25 right-of-way is 300 feet wide. Typically, this width is adequate for freeway lanes, medians, paved shoulders, and landscaping areas. Near interchanges, where additional lanes are needed for on-ramps and off-ramps, the I-25 right-of-way is sufficient to accommodate existing ramps, but this right-of-way would not be adequate in all cases where a different geometric configuration is proposed.

For approximately seven miles, from north of the North Gate Interchange (Exit 156) to south of the North Academy Boulevard Interchange (Exit 150), I-25 and its interchanges are on U.S. Air Force Academy (Air Force Academy) property. The Air Force Academy allows CDOT the use of this land under the terms of an easement. The easement boundaries have been modified several times during the past 40 years to accommodate interchange construction.

Impacts of No-Action Alternative

Under the No-Action Alternative, no additional right-of-way would be needed. Additionally, no buildings or property would need to be acquired, and no households or businesses would need to be displaced.

Impacts of Proposed Action

The Proposed Action would require a modification of the Air Force Academy easement, as well as the acquisition of five houses in the vicinity of the Fillmore Interchange and 11 commercial or other properties in the vicinity of the Fillmore, Bijou and Cimarron interchanges, as depicted in Figure 3-7. The Proposed Action would require relocation of the five households and 16 businesses (due to the fact that some of the affected commercial properties have multiple tenants).

In addition, partial acquisitions from approximately 40 other properties will be needed. These properties are all associated with the five interchanges that will be reconstructed. Partial acquisition means that the entire property will not be acquired, but a portion of the property will be needed for highway purposes. In these cases, the affected parcel will remain useable and the owner will be compensated for the property acquired. In total, the Proposed Action would require the purchase of approximately 46 acres of property, plus Air Force Academy approval for 53.6 acres of expanded easement.

The right-of-way acquisitions needed for the Proposed Action are discussed below, in the context of the interchange complex with which they are associated. These interchanges are:

- Baptist Road
- North Gate/Powers
- Nevada/Rockrimmon
- Fillmore
- Bijou/Cimarron

FIGURE 3-7
Right-of-Way Impacts, Excluding Partial Acquisitions

Baptist Road

Property required for the Baptist Road Interchange is anticipated to involve no total acquisitions, but several partial acquisitions. Reconnecting the Struthers frontage road will require partial acquisitions from the back ends of six five-acre residential lots in the Chaparral Hills rural subdivision. To reconstruct access along Baptist Road, the Proposed Action will also require partial acquisitions from two vacant parcels, a fuel/convenience store, and a hardware/lumber operation.

North Gate/Powers

The interstate in the vicinity of the North Gate Interchange and future Powers Boulevard connection is constructed on an easement with the underlying property owned and controlled by the Air Force Academy. The I-25 easement on Air Force Academy property has been modified several times during the past 40 years and will need to be modified again. The easement modification is needed to accommodate the North Gate/Powers Interchange plus replacement of the Ackerman Overlook.

The total area of the current Air Force Academy easement is approximately 658 acres, configured in a largely linear manner to encompass nearly seven miles of highway. This is roughly 3.6 percent of the entire Air Force Academy installation (18,455 acres). The amount of additional easement proposed for the improved North Gate Interchange, including Powers Boulevard connections, is approximately 48.4 acres.

The Ackerman Overlook is a small, roadside parking area where I-25 motorists can view a number of Air Force Academy scenic features, as well as flight training and parachuting exercises. The overlook is located just along the west side of I-25 just north of the Briargate Interchange (Exit 151). It will be replaced by a new facility approximately 2,300 feet to the north. The new facility design will be more context-sensitive by improving traffic safety and better meeting Air Force Academy's aesthetic standards and security needs.

An estimated 5.2 acres of dedicated easement are needed for the public-use portion of the new Ackerman Overlook. This facility will also require a temporary construction easement of 7.2 acres for grading beyond the proposed security fence, on Air Force Academy property that will not be accessible to I-25 motorists.

Other property required for the North Gate/Powers Interchange will include partial acquisitions from a residential subdivision and a privately owned mining museum.

Nevada/Rockrimmon

For this interchange, partial acquisitions will be required from a church property, a railroad, an office park, a hotel property, a vacant tract, three retail properties, and five residential properties. The partial acquisitions from residential properties are needed to build noise barriers to protect the homes. No relocations are anticipated, and many of the partial takings will be small.

Reconstructing the Fillmore Interchange will require acquisition of five houses on the west side of North Chestnut Street, just west of I-25 and south of Fillmore.

Fillmore

Reconstructing the Fillmore Interchange will include realignment of Fillmore's intersections with Sinton Road and Chestnut Street (east and west of I-25, respectively). Total acquisitions will include five single-family homes and five commercial parcels, including one vacant commercial lot. The five single-family houses requiring acquisition are on the west side of North Chestnut Street, just west of Interstate 25. They range in size from about 700 to 1,250 square feet, and several are rental properties.

The five houses on Chestnut Street are on the northeastern edge of the Mesa Springs Neighborhood. Although built in the 1950s, these structures are not considered eligible for designation as historic resources.

Business acquisitions are shown in Table 3-7 and are described here for the vicinity of the Fillmore and Bijou/Cimarron interchanges.

Total acquisitions of commercial property needed for the Fillmore Interchange are as follows:

- a liquor store/fuel/convenience store
- two fuel/convenience stores
- an automobile sales operation
- one vacant commercial lot

From the above list, only one of the properties is located on the east side of the interchange. It is a single lot on Sinton Road that has both the liquor store and a fuel/convenience store. The other properties are all located west of I-25.

While all three fuel/convenience stores at the Fillmore Interchange will be removed, there are other nearby gasoline stations that can serve the area. Three comparable stores are located just a half-mile east on Fillmore, and additional stations are located at the next I-25 exit to the north (Garden of the Gods Road).

Four partial acquisitions are anticipated north of Fillmore Street to accommodate access improvements. East of I-25, land will be needed from a mobile home park to build a noise barrier, and from a motel. West of I-25, land will be needed from a motel property and a vacant commercial lot for changes to access.

Bijou/Cimarron

The right-of-way takings required to support the reconstruction of the Bijou/Cimarron interchanges involve both partial and total acquisitions along the west side of I-25, since the freeway is bordered by Monument Creek to the east. The anticipated total acquisitions are as follows:

- an auto repair business
- a liquor store
- a heavy equipment repair shop
- a commercial office building with five tenants
- a fuel/convenience store
- an automotive rental business

Partial acquisitions along I-25 will be needed from a discount store site, the Humane Society of the Pikes Peak Region, a landscaping business, a broadcasting company, an auto restoration business, a glass company, and an office building complex. Additionally, a partial acquisition will be required from a hotel site and a restaurant property along Bijou Street.

In the vicinity of the Cimarron Interchange, the Proposed Action would require acquisition of this commercial building with five tenants.

Avoidance and Minimization of Impacts

In the development of the concept design for the Proposed Action, efforts have been made to avoid and minimize right-of-way and relocation impacts to the extent feasible. This was done with the alignment decisions and the use of engineering features including a cantilevered section of the highway and retaining walls.

In addition, after considering alternatives and selecting a proposed configuration for the Fillmore Street Interchange, CDOT revisited this design and developed a new version requiring fewer property acquisitions. A public meeting was conducted for public review and comment of the revised configuration, which was subsequently incorporated into the Proposed Action for this EA.

CDOT and the Federal Highway Administration coordinated extensively with the Air Force Academy regarding design alternatives for the North Gate/Powers interchange, to minimize intrusion of roadways on its property, especially on the west side of the existing highway. This is reflected in the design of the interchange configuration that ultimately was selected for inclusion in the Proposed Action.

During the development of the concept design for the Proposed Action, CDOT met individually with right-of-way stakeholders (owners and users of potentially affected properties) to keep them informed of the EA process, and to proactively seek their review and comments on interchange design alternatives. Many of these stakeholders also attended design open houses and public meetings to comment on the design concept and to express their views and concerns. The owners of all the properties with right-of-way impacts identified above are aware that the Proposed Action would affect their properties.

Mitigation

In full compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended), fair compensation will be made to property owners for all property that will need to be acquired in total or in part. Also in accordance with the Act, any eligible owner or tenant will be provided assistance in relocating their business or residence at the time of displacement. Benefits under the Uniform Act, to which each eligible owner or tenant would be entitled (including early or hardship acquisition), will be determined on an individual basis and explained to them in detail, along with information regarding their financial options.

The successful relocation of businesses subject to total acquisition involves many steps. Therefore, business relocations will be planned with as much lead time as possible. Locating suitable, zoned property available to a business, completing any necessary construction or building modifications,

and obtaining utility connects, licenses, and permits can take considerable time. Through planning and coordination with affected parties, CDOT will strive to keep business downtime to a minimum.

With regard to Air Force Academy property, easement modifications will be needed in the vicinity of the North Gate/Powers Boulevard connection, and for the new Ackerman Overlook. CDOT will work with the Air Force Academy throughout project design to minimize right-of-way impacts.

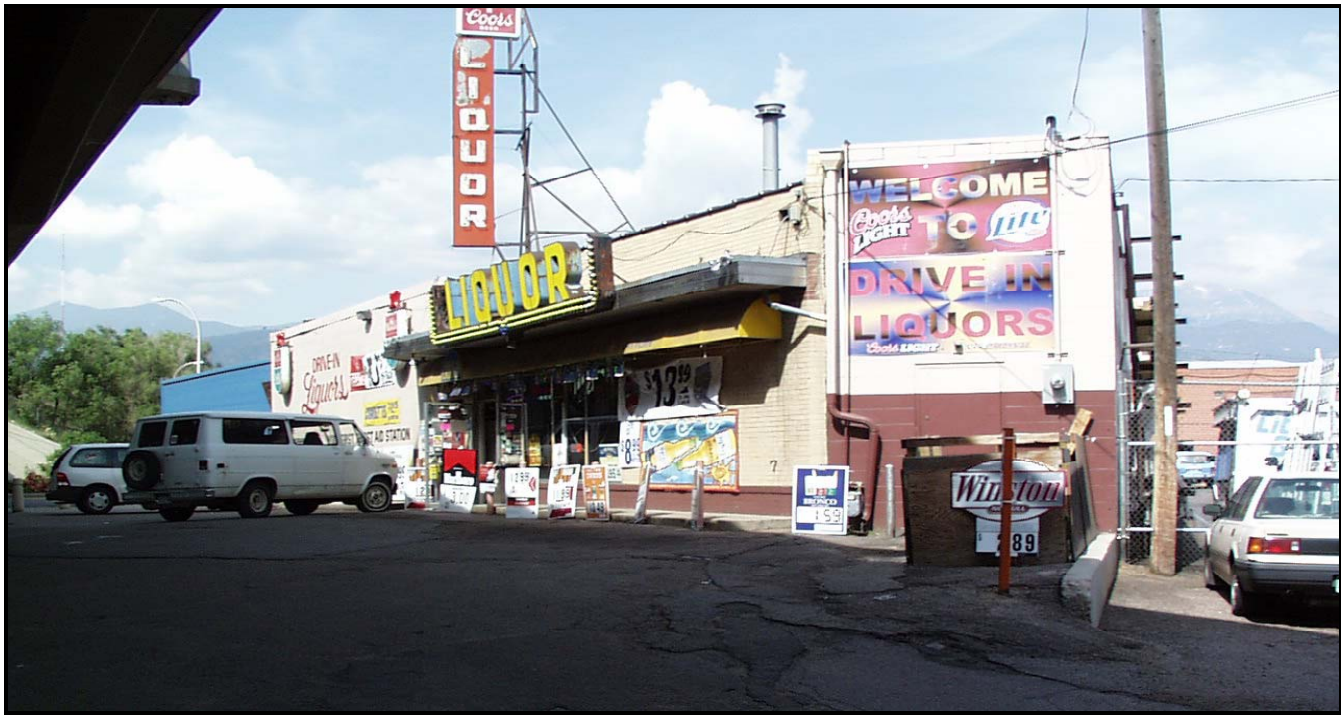
Availability of Replacement Housing and Land

Real estate inventories in El Paso County are adequate to provide single-family housing in a comparable price range for the five households being displaced from Chestnut Street.

In a review of properties listed for sale as of mid-2003, eight similar homes were for sale in the same Mesa Springs neighborhood as the five houses identified for right-of-way acquisition. Similar properties were also available in nearby neighborhoods as well.

With regard to commercial and industrial property, real estate inventories also appear adequate to absorb the businesses displaced by the Proposed Action.

The types of businesses being can be accommodated in areas with commercial, office or industrial zoning, as appropriate. One business will require industrial zoning. The two displaced liquor stores will need sites that are compatible with liquor licensing requirements (e.g., not next to schools, etc.). Desirable sites for relocation of the four displaced fuel/convenience stores would be arterial streets with high traffic volumes. For this reason, the immediate vicinity of the Fillmore Interchange will remain an attractive site for a fuel/convenience store if the property owner so chooses.

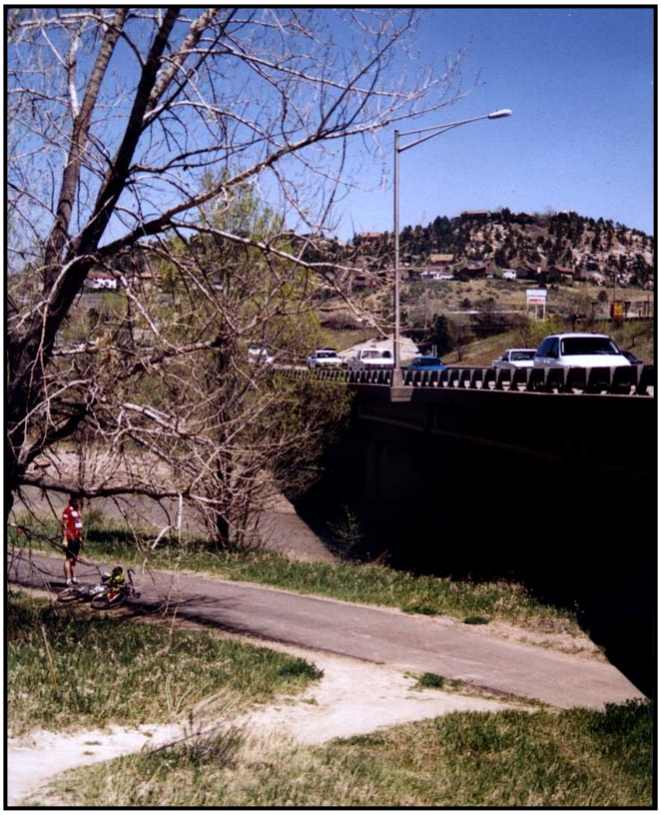


Among the 11 commercial property total acquisitions needed for the Proposed Action are a vacant lot, four gasoline/convenience stores and two liquor stores, including the one pictured above. An I-25 bridge is visible in the upper left corner of this photo.

Community Resources and Issues

Grouped under the category “Community Resources and Issues” are the following subsections:

- Neighborhoods
- Parks and Recreation
- Land Use
- Visual Resources
- Air Quality
- Noise



Neighborhoods

> "A high-quality standard of living for all Americans means we must protect the essential elements of existence, including neighborhoods and community values. The assessment of community impacts supports sustainable, livable communities; promotes community values and thriving neighborhoods; and contributes to general well-being."
>
> *Source: Community Impact Assessment. U.S. Department of Transportation. Federal Highway Administration*

As part of this EA, the relationship between transportation improvements to Interstate 25 and potential community impacts was assessed. I-25 through Colorado Springs has been part of the region's urban fabric since the highway was constructed in 1960. While it provides needed access through and within Colorado Springs, improvements to this facility have the potential to affect the quality of life within adjacent neighborhoods. An evaluation of potential affects on neighborhood cohesion, local travel patterns, physical character, safety, and neighborhood services has been an important focus in the planning of this project.

The first step of the analysis was to understand community values. These values are stated very well in the City's Comprehensive Plan. The Plan states that protection of this resource is a core value in Colorado Springs. Chapter 2 in the plan, for example, is devoted solely to neighborhoods because of the strong desire of residents to protect, enhance, preserve, and maintain the character of the city's neighborhoods. Similar values are expressed in various El Paso County plans as well.

Current Conditions

When I-25 was opened as a four-lane highway in 1960, it followed natural and man-made geographic features that already functioned as barriers limiting east/west travel in the City of Colorado Springs. The natural barrier is Monument Creek, and the man-made barrier is the active rail line adjacent to the creek. In 1960, the City had a population of approximately 70,000, which has grown to the current population of over 360,000 (with over half a million people now residing in all of El Paso County). The city and all its neighborhoods and neighborhood services grew up on either the west or east side of I-25, the creek, and the railroad tracks. Outside of the city, I-25 followed in large part the alignment of U.S. 85, which divided farm and ranch land.

Neighborhoods adjacent to I-25 are identified in Figure 3-8 and are discussed below. These neighborhoods vary in age of development and physical and natural characteristics. To the north of the corridor between Monument and the North Gate Interchange, the Parkview Ridge, Chaparral Hills and Glenegle neighborhoods are large residential subdivisions in a natural, rural setting surrounded by native vegetation, including ponderosa pine and scrub oak. These relatively new subdivisions (less than 20 years old) are high-growth areas north of the city boundaries.

FIGURE 3-8
Neighborhoods Along the I-25 Corridor

Between the North Gate Interchange and the North Academy Boulevard Interchange, the property west of I-25 is the U.S. Air Force Academy. Because it is a place where people live, learn, play and work, the Academy is an identified neighborhood. Characterized by its natural, foothills setting, this neighborhood has limited, carefully planned development. On-base housing on the Academy is located well west of I-25 and across Monument Creek. On the east side of I-25, there are several large subdivisions under development (e.g. North Gate and Briargate) along with a few developing large business/office parks.

A transition from rural to more urban neighborhoods occurs between the North Academy Interchange and the Fillmore Street Interchange. West of I-25 are the Pine Creek Estates, Pine Cliff, and Holland Park neighborhoods. East of I-25 is the Pulpit Rock neighborhood. These four neighborhoods vary in housing stock, density, and terrain, but most have an urban form that has commercial and industrial uses adjacent to I-25.

Most of the City's older more established neighborhoods are between the Fillmore Street Interchange and the South Circle Drive Interchange. Neighborhoods on the west side of I-25 include Mesa Springs, Near Westside, Westside, Ivywild, and Stratton Meadows. East of I-25 are the Old North End and Near North End neighborhoods, and the Downtown area. Single-family homes dominate these neighborhoods, with some homes and commercial and industrial uses found next to I-25. Park and open space lands along Monument and Fountain Creeks contain native stands of cottonwood and riparian vegetation that help to soften the urban pattern along I-25.

South of South Circle Drive are two more neighborhoods: Stratmoor Hills (west of I-25) and Stratmoor Valley (east of the highway). Stratmoor Valley is a small residential neighborhood made up of homes built in the 1950s and 1960s. North of this neighborhood is urban development including office, commercial, and industrial uses. Stratmoor Hills is a residential area that tends to be made up of custom homes built in the 1960s, which have mature landscaped vegetation.

Impacts of No-Action Alternative

Under the No-Action Alternative, increased congestion on I-25 could result in more neighborhood cut-through traffic from frustrated motorists seeking alternative routes to I-25. Additional traffic on neighborhood streets could impact public safety, increase street noise, and degrade air quality. Insufficient capacity on I-25 could also result in longer morning and afternoon rush hours. An increase in the extent and duration of rush hours on I-25 would expose residents to longer periods of highway noise and would have an adverse effect on quality of life issues.

Under the No-Action Alternative, the barrier posed by I-25 to east-west travel by bicycles and pedestrians would remain.

Impacts of Proposed Action

As discussed in "Current Conditions" on the previous page, natural and man-made barriers limit east/west travel in the corridor. Improvements to I-25 would not increase the impact of those barriers. With the exception of the interchanges to be reconstructed, improvements to I-25 would occur in the existing highway right-of-way. No neighborhoods would be newly divided or isolated, nor would any existing community service boundaries, such as school districts, police or fire districts, be severed or bisected.

The project would improve bike and pedestrian access from one side of I-25 to the other, making neighborhoods more accessible through the use of nonmotorized travel modes.

Travel patterns of motorized vehicles in neighborhoods would be altered temporarily during the construction phase. No permanent neighborhood access or traffic patterns would be changed, but the elimination of the Corporate Center exit would reroute access to the businesses located southwest of the I-25/Woodmen Road Interchange.

Existing neighborhood character would be maintained for all of the neighborhoods described above. However, some neighborhoods would be impacted beneficially by noise walls, and some neighborhoods would experience aesthetic impacts

due to the construction of noise walls and loss of mature trees. Noise and visual resource impacts of the Proposed Action can be found in the "Noise" and "Visual Resources" subsections, respectively, of this section.

Five residences and five commercial properties, including one vacant commercial lot, would be removed from the northeastern edge of the Mesa Springs Neighborhood to accommodate improvements to Fillmore. These businesses include two fuel/convenience stores, a combined fuel/liquor store, and an automobile sales operation.

In the vicinity of the Bijou and Cimarron interchanges, the Westside neighborhood would experience a loss of six commercial properties that include an auto repair business, a liquor store, a heavy equipment repair shop, a commercial office building, a fuel/convenience store and an automotive rental business.

Mitigation

Proposed noise mitigation at a total of 8 locations collectively will protect 270 residences, plus several features of Monument Valley Park. Additional information about mitigation measures can be found in the Noise subsection of this section.

Aesthetic elements for noise walls and landscaping for one proposed berm will be developed using context-sensitive design. For example, noise walls will be designed with an architectural treatment on both sides. Additional mitigation for aesthetic impacts to neighborhoods is detailed in the Visual Resources subsection of this section.

Residential and commercial right-of-way acquisition mitigation measures are located in the Right-of-Way subsection of this section.

Access to businesses on Corporate Drive will be provided by a new bridge connecting Corporate Drive to the reconfigured I-25 Nevada/ Rockrimmon Interchange.

CDOT will coordinate with the City or County in advance of any temporary closures or detours affecting local streets.

Parks and Recreation

Parks and recreation facilities are important community resources that are highly valued by residents of the Pikes Peak region. Multi-use trails and other bicycle and pedestrian facilities also provide recreational opportunities, as well as serving as key linkages to recreational facilities. Together, these resources not only provide residents with natural places for passive and/or active recreation, but also function as important linkages between individual neighborhoods.

This subsection discusses the extent to which parks and recreation facilities are positively or negatively impacted by the No-Action and the Proposed Action alternatives. Indirect or "proximity" impacts, such as noise and visual impacts, are also described. Proximity impacts were considered to determine whether any impacts could be so severe that activities, features, or attributes would be substantially impaired.

Current Conditions

The City of Colorado Springs and El Paso County maintain sizable park systems. The City Department of Parks, Recreation and Cultural Services manages seven regional parks, eight community parks, 123 neighborhood parks, six sports complexes, and 40 open space areas. Combined, there are more than 12,000 acres of parks, trails, and open space and the City continues to acquire and maintain additional land as planned for in the City's 2000-2010 Parks, Recreation and Trails Master Plan.

El Paso County's Parks and Leisure Services Department maintains three major regional trails and eight regional parks and open space facilities. Two County trails, the New Santa Fe Trail in northern El Paso County, and the Fountain Creek Regional Trail south of Colorado Springs, are within the I-25 Study Area. Together with the City's Pikes Peak Greenway, these facilities comprise the region's primary north-south spine trail. This system closely parallels I-25.

Within the I-25 Study Area, there are three sports complexes, portions of eight trails, eight parks, and three open space areas. Of these, the Proposed Action would only affect three parks and portions of the trail system.

Parks

The three parks that would be affected by the Proposed Action are all located in central Colorado Springs (see Figure 3-9). They include two of the City's oldest, Monument Valley Park and Dorchester Park, and its newest, Confluence Park (construction began in 2002). Each of these parks is described below.

None of these affected parks was acquired using Land and Water Conservation Act funds, so none are subject to the provisions of Section 6(f) of the Act.

Monument Valley Park is a century-old park that is centrally located just west and north of downtown Colorado Springs. It was built next to the Denver and Rio Grande Railroad tracks by the City's founder, General William Jackson Palmer. The park has been determined eligible for listing on the National Register of Historic Places. In addition to the discussion of park issues found here, Monument Valley Park is discussed in the "Historic Resources" subsection of this section.

Officially addressed at 170 West Cache La Poudre Street, this 159-acre linear park is just to the east of Interstate 25 and the railroad tracks (now the Burlington Northern Santa Fe Railroad), approximately between Bijou and Fontanero Street. Due to its location, size and amenities, it is one of the City's most heavily used parks.

The northern portion of the park, between Uintah and Fontanero Streets, lies predominantly on the east side of Monument Creek. Park amenities in this portion of the park include a soccer field, open spaces (both landscaped and native), and the Pikes Peak Greenway. The Greenway here includes two trails, one on each side of Monument Creek. The older, more heavily used trail is east of the creek, adjacent to the main portion of the park. Across the creek to the west (closer to I-25) is a newer, second creekside trail, adjacent to City Parks and Recreation storage areas and the City's Glen Avenue equipment maintenance yards. The Greenway is configured as a two-mile long trail couplet from approximately the Rock Island Railroad tracks, north of Fontanero Street, to the Monument Creek footbridge located approximately 900 feet north of Bijou Street (in the southern portion of the park).

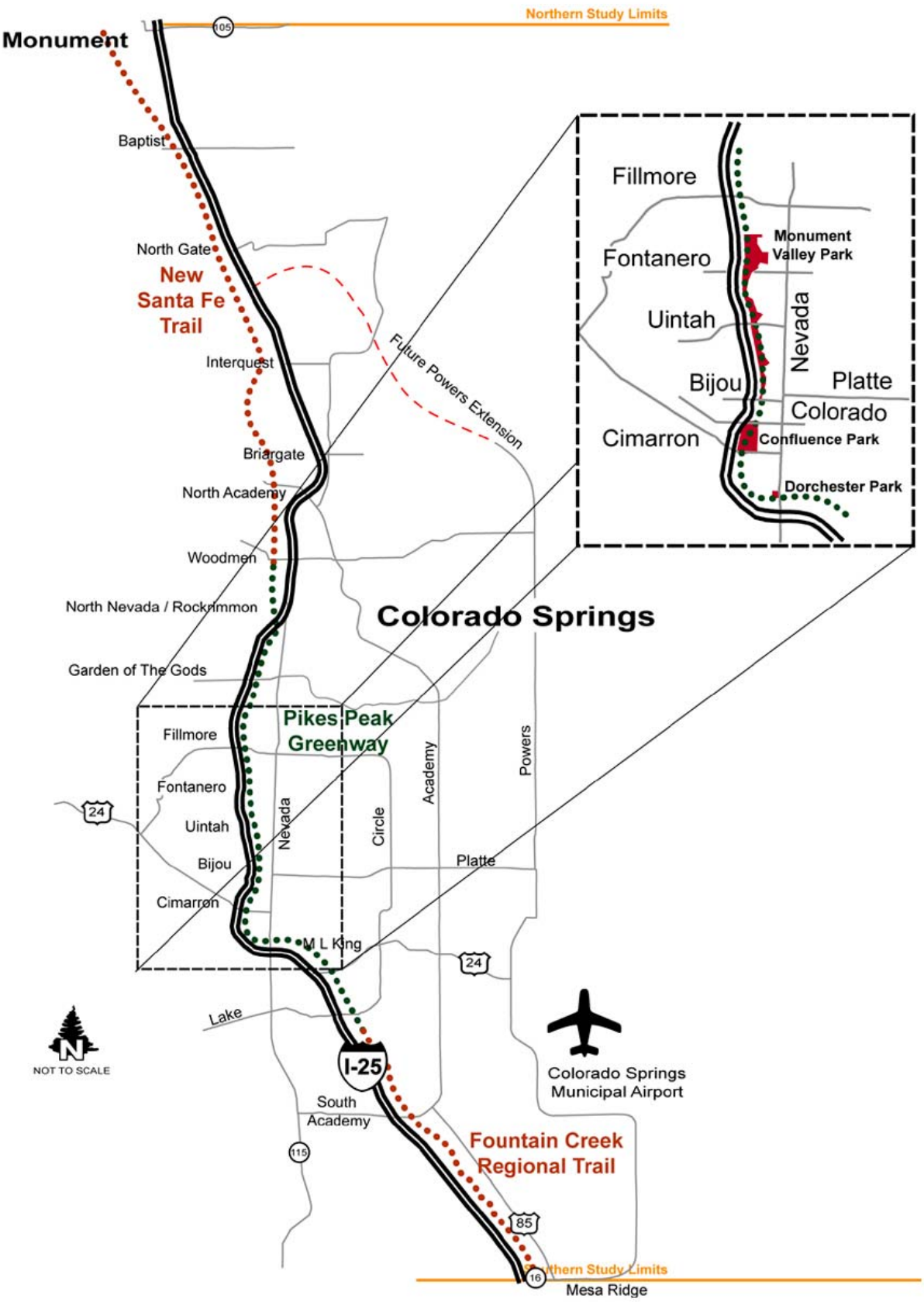


FIGURE 3-9
Parks Affected by the Proposed Action

The southern portion of the park, between Bijou and Uintah Streets, encompasses land on both sides of Monument Creek and has a variety of active uses including a baseball diamond, swimming pool, tennis courts, and playground. The more passive uses in this portion of the park include the Horticultural Demonstration Gardens, a picnic pavilion, and duck feeding at Willow Haven Lake. The Pikes Peak trail couplet is heavily used by walkers, joggers, and bicyclists.

Confluence Park is a planned, 30-acre park that is under construction just to the east of Interstate 25 and east of Monument Creek, bounded by Cimarron Street to the south and extending northward beyond Colorado Avenue. At the eastern edge of the site are BNSF freight railroad tracks and a multi-track switching yard. Approximately 30 trains per day rumble through this area, including coal trains making deliveries to the City Power Plant located immediately south of the planned park. Walkways will be built to carry pedestrians from downtown over the railroad tracks to reach the Park Core. The park will eventually include a fountain, promenade, and other park features along Monument Creek. At the edges adjacent to the railroad tracks and city streets, the Master Plan calls for a pedestrian mall, cafes, shops, and residences in a variety of price ranges. The first usable park amenity, a 15,000-square foot playground, was opened to the public in October 2003.

In choosing to build Confluence Park next to a busy freeway and railroad tracks, the City of Colorado Springs recognized that this site would experience the sights and sounds of these transportation facilities. The Park's July 2000 Master Plan Report, which was developed concurrently with the I-25 EA, acknowledged that the I-25 EA was underway to address mainline capacity needs on the I-25 mainline and the Cimarron interchange. The Master Plan recognized the noisy urban setting for this park, and therefore did not incorporate noise-sensitive uses into the park concept. The Master Plan indicated that existing and future noise levels were high, and this would limit the types of uses that would be appropriate in the park. For example, the Master Plan concluded that an outdoor amphitheater would not be feasible. The Master Plan indicates that the park is meant to be visible from I-25, and to replace "unsightly" development with an attractive public space at one of the primary entries to downtown.

Dorchester Park is a neighborhood park of 7.67 acres located south of downtown Colorado Springs, along and to the north of Fountain Creek.

The park includes an improved, northern portion with grassy areas and park facilities, and an unimproved southern portion that straddles the Fountain Creek floodplain. The park is bounded by two busy arterial streets, Nevada Avenue and Tejon Street, which have I-25 on-ramps and off-ramps (Exit 140), just south of Fountain Creek.

The northern portion of this park, beginning 500 feet north of Interstate 25, contains a small parking lot and restrooms, a small shelter with one picnic table, a larger shelter with multiple picnic tables, and a playground. The park attracts heavy visitation by homeless individuals, likely because the nearby Springs Rescue Mission provides assistance to this population. The City considers this park to be underutilized. This may be due, in part, to its setting in a commercial services, light industry, and warehouse area.

The southern portion of the park, closest to I-25, consists of natural (non-maintained) area along Fountain Creek, including a densely vegetated riparian area. The only designated use in this southern area is the Pikes Peak Greenway, a trail that traverses the park in an east-west direction along the northern bank of Fountain Creek.

Bicycle and Pedestrian Facilities

During the 1990s, a major north-south spine trail system was constructed parallel to I-25. This includes the County's New Santa Fe Trail (extending from Palmer Lake and Monument to the south end of the U.S. Air Force Academy), the City's Pikes Peak Greenway (from that point south to about Circle Drive), and the County's Fountain Creek Regional Trail (from that point south to Fountain Creek Regional Park, near State Highway 16).

This north-south trail system crosses I-25 only once, with Monument Creek, near the I-25/ Rockrimmon interchange. This trail system roughly parallels I-25, and typically is located at a considerable distance from the highway, but does closely approach the highway in some locations. This trail system is depicted in Figure 3-10.

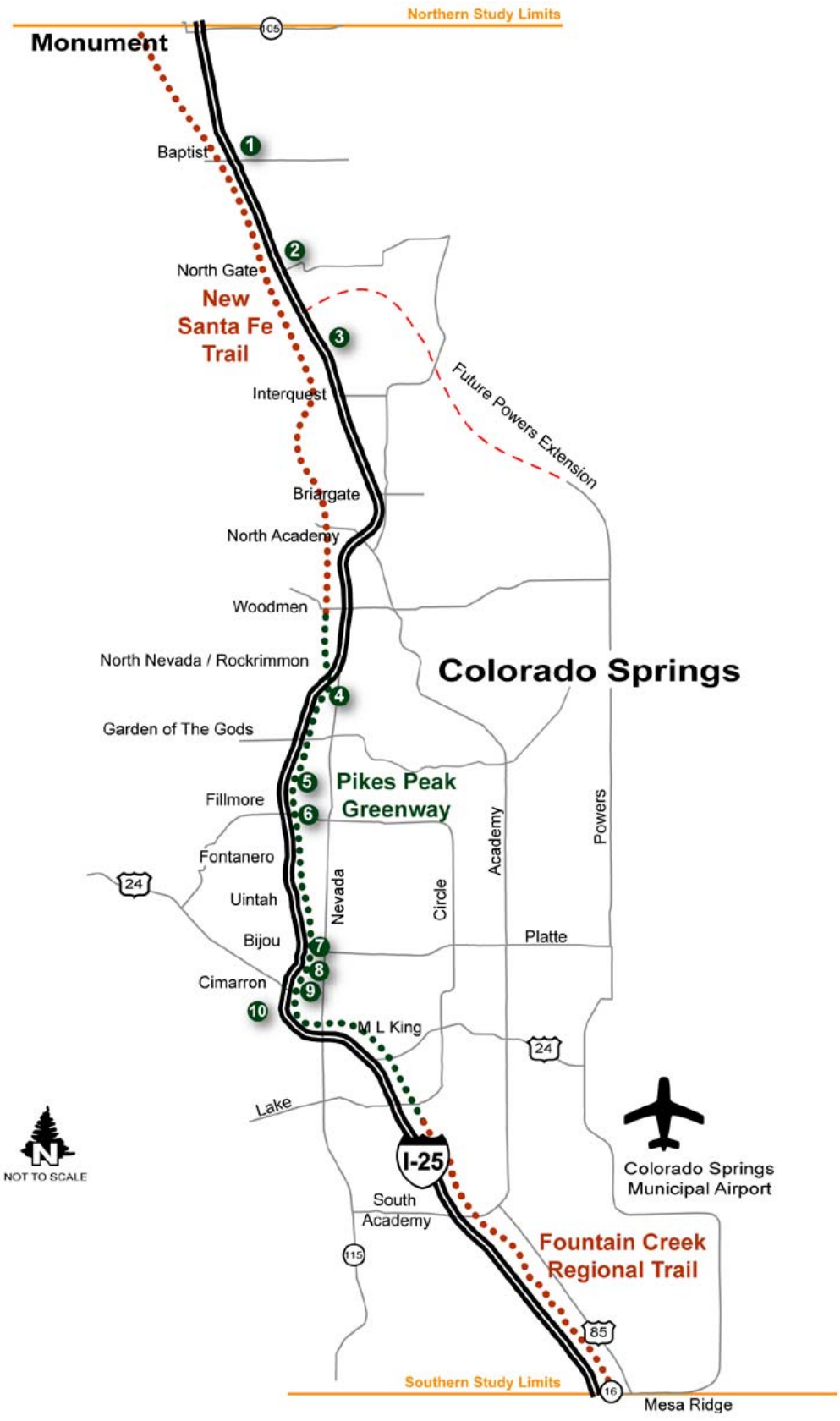


FIGURE 3-10
Proposed Improvements to Bicycle, Pedestrian, and Multi-Modal Trail Crossings of I-25

Throughout the corridor, there are east-west trails that cross or are planned to cross I-25 to access the north-south spine trail. These crossings include multi-use trails, on-street bike lanes, and/or sidewalks.

A listing of I-25 interchanges and their existing bicycle/pedestrian accommodations is provided in Table 3-8. Bicycle and pedestrian use of I-25 itself is prohibited between North Academy Boulevard (Exit 150) and State Highway 16 (Exit 132) due to safety issues.

Impacts of the No-Action Alternative

Under the No-Action Alternative, there would be no direct impacts to these three parks and trails near the I-25 corridor. However, the parks and trails in proximity to I-25 would be exposed to increased traffic noise from the adjacent freeway in the range of one to two decibels by 2025. With this increase, year 2025 No-Action Alternative noise levels in the portions of Monument Valley Park that are closest to I-25 would approach or slightly exceed the 66-decibel CDOT noise

TABLE 3-8
Existing Bicycle and Pedestrian Crossings of I-25

Location (north to south)	None	Sidewalk	On-Street Bike Lane	Trail/ Other	Details
State Highway 105 (Monument)		X			Now under reconstruction
Baptist Road	X				Rural area
North Gate Road	X				Air Force Academy property
LaForet Trail (Milepost 154)				X	Multi-use trail
Interquest	X				Air Force Academy property
Briargate	X				Air Force Academy property
North Academy Boulevard	X				Air Force Academy property
Woodmen Road		X	X	X	Now under reconstruction
North Nevada Avenue	X				No through-street to west
Commerce Center	X				No through-street to east
Pikes Peak Greenway (I-25 at Monument Creek				X	Trail crosses under I-25
Rockrimmon	X				Street does not cross I-25
Mark Dabling Road			X		
Garden of the Gods Road		X			
Ellston Road			X		Street crosses under I-25
Fillmore Street		X			Sidewalk on south side only
Fontanero Street		X	X		Provides trail connection to Pikes Peak Greenway Trail
Uintah Street		X	X		Serves Colorado College campus
I-25 Pedestrian Overpass				X	Links Monument Valley Park with neighborhood west of I-25
Bijou Street		X			Heavily used; not in good repair
Colorado Avenue		X			
Midland Trail (temporary)				X	Crosses at railroad underpass
Bear Creek				X	Bear Creek Trail
S. Nevada Avenue		X			Newly reconstructed
S. Tejon Street		X			Newly reconstructed
Martin Luther King Jr./US 24 Bypass	X				No through-street to west
Circle Drive/Lake Avenue		X		X	Includes pedestrian overpasses
South Academy Boulevard	X				

abatement criteria for park uses. For example, noise levels in 2025 would be 67 decibels near the Horticultural Demonstration Gardens. For a detailed explanation of traffic noise and a definition of the noise terms used here, see the "Noise" subsection of this EA.

No-Action noise levels in 2025 at both the planned Confluence Park and Dorchester Park would not exceed 66 decibels in the active-use portions of these parks. However, portions of the trail system within 500 feet of I-25 would experience noise levels ranging from about 64 to 69 decibels.

Impacts of Proposed Action

Parks

The Proposed Action would not require the acquisition of any park land, but would result in noise and visual impacts to parks. These proximity impacts are discussed below, as well as in the "Noise," "Visual Impacts," and "Historic Resources" subsections of this section.

The Proposed Action includes noise barriers to protect portions of Monument Valley Park. With the noise barriers in place, the majority of the activity areas in Monument Valley Park would be protected. These areas include the baseball fields, Horticultural Demonstration Gardens, and Willow Haven duck ponds. In consultation between CDOT and the City, it was agreed that these active-use areas would benefit from noise mitigation. Figure 3-11 depicts the locations of these areas in relationship to the proposed noise barriers, and shows the 66-decibel noise contour line (depicted in blue) that would result with all proposed mitigation in place.

Areas that would remain unprotected and would experience noise levels in excess of 66 decibels also can be seen in Figure 3-11. They are the trail access point along Recreation Way (north of the Parks Department headquarters); the service area and parking located northwest of the Horticultural Demonstration Gardens; the open area between the north end of the park's existing noise wall and proposed noise wall protecting the Horticultural Demonstration Gardens; the park's edge just west of the volleyball courts; and the open areas immediately adjacent to the Bijou Street Bridge. These locations correspond to the areas in Figure 3-10 where the 66-decibel contour for 2025 intrudes into the park. Among the unprotected areas, the only active use other than sidewalks and trails is one tennis court. Noise levels of about 66 decibels by the year 2025 are not expected to substantially impair tennis play, nor the use of the nearby sidewalks.

At both the western side of the planned Confluence Park and the southern (unimproved) portion of Dorchester Park, the Proposed Action would result in a 2-decibel increase in traffic noise by 2025, compared to the No-Action Alternative. No noise mitigation is proposed for either Confluence Park or Dorchester Park. At Confluence Park, visibility into the park is a high priority; therefore, noise barriers to protect this park were not desired by the City of Colorado Springs. However, the City urged the use of solid guardrail barriers instead of standard, open guardrails in this vicinity (This type of barrier is available as a design treatment, but would not be considered noise mitigation). Confluence Park was planned concurrently with the I-25 EA, and recognizing the urban setting of this site, noise-sensitive uses were not incorporated into the park concept.

At Dorchester Park, only the unimproved southern portion of the park, which also includes the Pikes Peak Greenway trail, would be impacted by noise levels in excess of 66 decibels by 2025. This is a 2-decibel increase compared to the No-Action Alternative. Other than the trail, there are no active-use areas in this southern portion of Dorchester Park. At the trail, noise levels are expected to range from about 66 to 68 decibels. Noise at these levels would not substantially impair the use of this trail. Active-use areas in the northern portion of this park would not exceed 66 decibels.

No visual impacts as a result of the Proposed Action are expected to occur at Confluence or Dorchester Park, but Monument Valley Park would experience visual impacts as a result of adding noise walls on CDOT right-of-way to the west of the park. The noise walls would block mid-range views to the west, predominantly of the Interstate, from the Willow Haven duck ponds and Horticultural Demonstration Gardens. The proposed earth berm west of the baseball fields would also block view of the highway. From most vantage points, these noise barriers would not obstruct the longer views to Pikes Peak and mountains to the west. The railroad tracks adjacent to the park would remain highly visible, however.

Blue line in photo denotes
66 decibel sound contours in 2025
with proposed mitigation in place

PHOTO SIMULATIONS OF PROPOSED MITIGATION

Noise Barrier Protecting Willow Haven Lake

Noise Barrier Protecting Demonstration Garden

Enhanced Visual Screen for Volleyball Courts

Earth Berm Protecting Baseball Field

FIGURE 3-11
Monument Valley Park Mitigation

Additionally, there is a minor impact to the south entrance of Monument Valley Park along Bijou Street. The proposed work to build new bridges for Bijou Street will result in an elevation increase of Bijou Street along the boundary of Monument Valley Park, including the Bijou Street Entrance Gate area. Plans include building two sets of steps to allow pedestrians to continue to use the sidewalk on Bijou and access the park. One set of about three steps would be located near the Bijou Street Entrance Gate to accommodate the 22-inch vertical change from the street sidewalk to the park sidewalk. The other set of about five steps would be located farther to the west. Plans also include the construction of a retaining wall, ranging in height from zero at the east end to four feet at the bridge, along the park's edge. Attached to the top of the retaining wall will be a handrail 42 inches in height. These modifications will slightly alter the pedestrian access and the visual character of this park entrance.

In summary, the noise and visual "proximity" impacts would not substantially impair the continued function and use of activity-areas in these parks.

Bicycle and Pedestrian Facilities

The Proposed Action would maintain or improve bicycle, pedestrian, and multi-modal trail crossings of I-25. There would be no permanent closure or circuitous rerouting of a bicycle or pedestrian facility. Temporary impacts would occur due to construction activities, including temporary closures and detours.

The following improvements are included in the Proposed Action. The improvements are numbered below to correspond with the locations depicted in Figure 3-10.

1. **Baptist Road (Exit 158):** A 10-foot sidewalk will be added to the north side of Baptist Road to link users of the Jackson Creek Trail east of I-25 to the New Santa Fe Trail west of I-25.
2. **North Gate (Exit 156):** A 10-foot multi-use trail will be provided to link the Smith Creek Trail to the trailhead of the New Santa Fe Trail on the grounds of the Air Force Academy.
3. **LaForet Trail:** The existing drainage structure that enables this trail to cross under I-25 will be lengthened, and the entrance/exit points will be improved.
4. **Rockrimmon/North Nevada (Exit 147):** When these two non-standard interchanges are reconstructed and connected, a 6-foot sidewalk will be provided at Nevada and a 10-foot sidewalk will be provided at the Rockrimmon interchange.
5. **Ellston Road (half-mile north of Fillmore):** The existing Ellston Road crossing under I-25 will be widened, providing more room and better visibility for users of the existing on-street bike lanes.
6. **Fillmore Street (Exit 145):** Where a narrow sidewalk exists today, only on the south side of the Fillmore bridge over I-25, the reconstructed interchange will have standard 10-foot sidewalks on both sides of the new Fillmore bridge structure.
7. **Bijou Street (Exit 142):** Existing narrow sidewalks along Bijou Street over I-25 are in poor condition and will be replaced with new handicap-access sidewalks.
8. **Colorado Avenue:** The existing Colorado Avenue crossing under I-25 will be improved to include two 8-foot sidewalks and two 6-foot on-street bike lanes.
9. **Midland Trail:** Just north of the Cimarron Interchange (Exit 141), a new 16-foot multi-use trail crossing of I-25 will be provided along Fountain Creek, connecting the Midland Trail west of I-25 to the Pikes Peak Greenway east of the freeway. This will replace a temporary crossing that exists 850 feet to the north.
10. **Bear Creek Trail:** Just south of the Cimarron Interchange (Exit 141), the existing Bear Creek Trail crossing under I-25 will be improved. The trail currently runs under I-25 through an existing drainage culvert. This will be replaced with a bridge, improving visibility and openness for trail users.

Along the Pikes Peak Greenway, in the vicinity of the Colorado Avenue bridge, a minor realignment of the trail would be needed between I-25 and Monument Creek. This realignment is related to the mainline freeway design that would be cantilevered over the WPA floodwall.

The Proposed Action would also result in increased noise affecting nearby bicycle and pedestrian facilities, including portions of the north-south spine trail system. Under the Proposed Action, sidewalks, bike lanes, and portions of the trail system within 500 feet of I-25 would experience noise levels ranging from about 66 to 71 decibels, a 2-decibel increase from the No-Action Alternative. This takes into account not only the projected increased traffic volumes, but also the proposed change in proximity of the roadway to the bicycle and pedestrian facilities.

Due to the linear nature of bicycle and pedestrian facilities, the construction of noise barriers to protect them would be impractical and would have adverse impacts to users, such as the loss of an open setting, and reduced safety due to the isolation.

While bicycle and pedestrian facilities close to the interstate and other busy roadways would be noisy, this is not unusual in such an urban setting. These facilities were originally planned with the understanding that traffic noise and transportation facilities would be a part of the auditory and visual setting, and this is understood by most users. The changes included in the Proposed Action would not substantially alter the setting. For example, a 2-decibel change in noise, between the No-Action Alternative and the Proposed Action by 2025, would be barely perceptible to most users. These proximity impacts of the Proposed Action would not substantially impair the use of bicycle and pedestrian facilities.

Mitigation

Parks

The City's Parks, Recreation, and Cultural Services staff and the City's Parks and Recreation Advisory Board were consulted with regard to potential impacts from the Proposed Action. For Monument Valley Park, areas of park use where noise-sensitive activities occur were identified, and potential mitigation options were developed. Based on the results of this consultation, the proposed mitigation for noise impacts to Monument Valley Park includes three elements:

- A noise barrier about 20 feet high and approximately 1,060 feet long (in two segments) will be constructed in CDOT right-of-way west of the park and immediately south of the Uintah Street interchange (Exit 142), to protect the Willow Haven Lake duck ponds and eight nearby residences.
- A noise barrier on will be constructed on CDOT right-of-way west of the park to protect the Horticultural Demonstration Gardens facility north of the Mesa Road bridge. The noise barrier is expected to be approximately 625 feet long and 20 feet tall.
- An earth berm will be constructed on CDOT right-of-way west of the park and just north of Bijou Street, to provide noise reduction for the Pikes Peak Greenway and the baseball fields in the park. This berm is proposed to extend 890 feet in length and range in height from 5 feet to 20 feet.

Also, for visual mitigation (no sound reduction benefit), additional trees will be planted between existing cottonwood trees west of the volleyball courts that are just north of the baseball fields.

Noise mitigation measures for Confluence Park and Dorchester Park were also considered, but will not be included in the project, as discussed above and in the Noise subsection of this Section.

To address visual impacts at the Bijou Street Entrance Gate into Monument Valley Park, CDOT will coordinate with the State Historic Preservation Office to ensure that appropriate design and materials are used for the construction of the short Bijou Street retaining wall and handrail.

Bicycle and Pedestrian Facilities

The changes to bicycle and pedestrian facilities as described above have been coordinated with City and County planning and recreation staff. Continued coordination will occur during final design.

To address temporary construction impacts to bicycle and pedestrian facilities, CDOT will provide signs, fencing, and barricades for safe, temporary detour routes in compliance with City guidelines. Additionally, advance notification will be made to City and County offices, the Trails and Open Space Coalition, and to the news media. All detours and temporary closures will be coordinated with appropriate City and County offices.

Land Use

Regional and local community plans are developed to ensure economic, social and physical health, as well as the safety and welfare of the community. Deviations from these plans may lead to the degradation of the community, reduced employment opportunity, inefficient development of infrastructure, and reduced sustainability. Due to the relationship between access and development, the provision of transportation infrastructure is an important element in land use planning. It is therefore important that the vision for land use is closely correlated with proposed transportation improvements. To assure this condition, the *PPACG Destination 2025 Plan Regional Transportation Plan* is closely correlated to local population, employment and land use projections prepared by local member governments.

Current Conditions

The study area is characterized by transformation from low density and rural land uses to suburban and urbanizing in its northern segments, to near build-out conditions in central Colorado Springs. More than 200,000 additional residents are projected by PPACG to live in El Paso County by 2025, and the locations of their homes, workplaces, and other land use needs are largely guided by current City and County plans and supported by the PPACG *Destination 2025* Plan. The land use characteristics of the study area are presented below moving from north to south. Figures 3-12 and 3-13 present existing and future land uses. As shown on the figures, future land use will mirror the existing condition with vacant parcels being transformed to commercial and residential uses. Further, the more rural segments to the north that are now characterized as rural will become urban. Areas south of Academy Boulevard will change less, with some increase in density as in-fill development occurs on the remaining vacant land.

There are no farmlands in the study area that are considered to be prime, unique or of statewide or local importance.

SH 105 to Interquest Interchange. To the east, the area is predominantly vacant and used occasionally for grazing. However, residential development at various densities is increasing and some large office buildings currently exist. Most of this area is slated for development, and much of the vacant land is currently zoned as residential. For seven miles, the land immediately adjacent to I-25 is on Air Force Academy property and is designated by the Academy as open space-preserved natural. The expansion of the highway will have no affect on the Academy's land use designations.

Interquest Interchange to South Academy Boulevard. From the Interquest interchange south, the corridor continues to be dominated by the Air Force Academy to the west, and commercial and industrial land uses to the east. South of the Air Force Academy, low- to medium-density residential land uses are located to the west, with a high-density area of commercial and industrial development along west Garden of the Gods Road. East of I-25 the land use is characterized by a mixture of commercial and residential development. From Garden of the Gods Road to South Academy Boulevard, land uses include industrial/commercial and park land to the east of I-25 and medium-density residential and commercial property to the west.

South of Academy Boulevard. South of Academy Boulevard, land use returns to a mix of commercial and industrial to the east and low- to medium-density residential and vacant land to the west of the Interstate.

Impacts of No-Action Alternative

Current land use plans for the area emphasize the importance of I-25 for serving future planned development. Implementation of the No-Action Alternative would be inconsistent with PPACG's *Destination 2025 Plan.* Furthermore, it would not support the intent of the City's Comprehensive Plan, which calls for efficient land uses including in-fill development. The No-Action Alternative would result in reduced levels of service on I-25, increased congestion and would potentially result in failure to meet air quality conformity (also refer to the "Air Quality" subsection of this section).

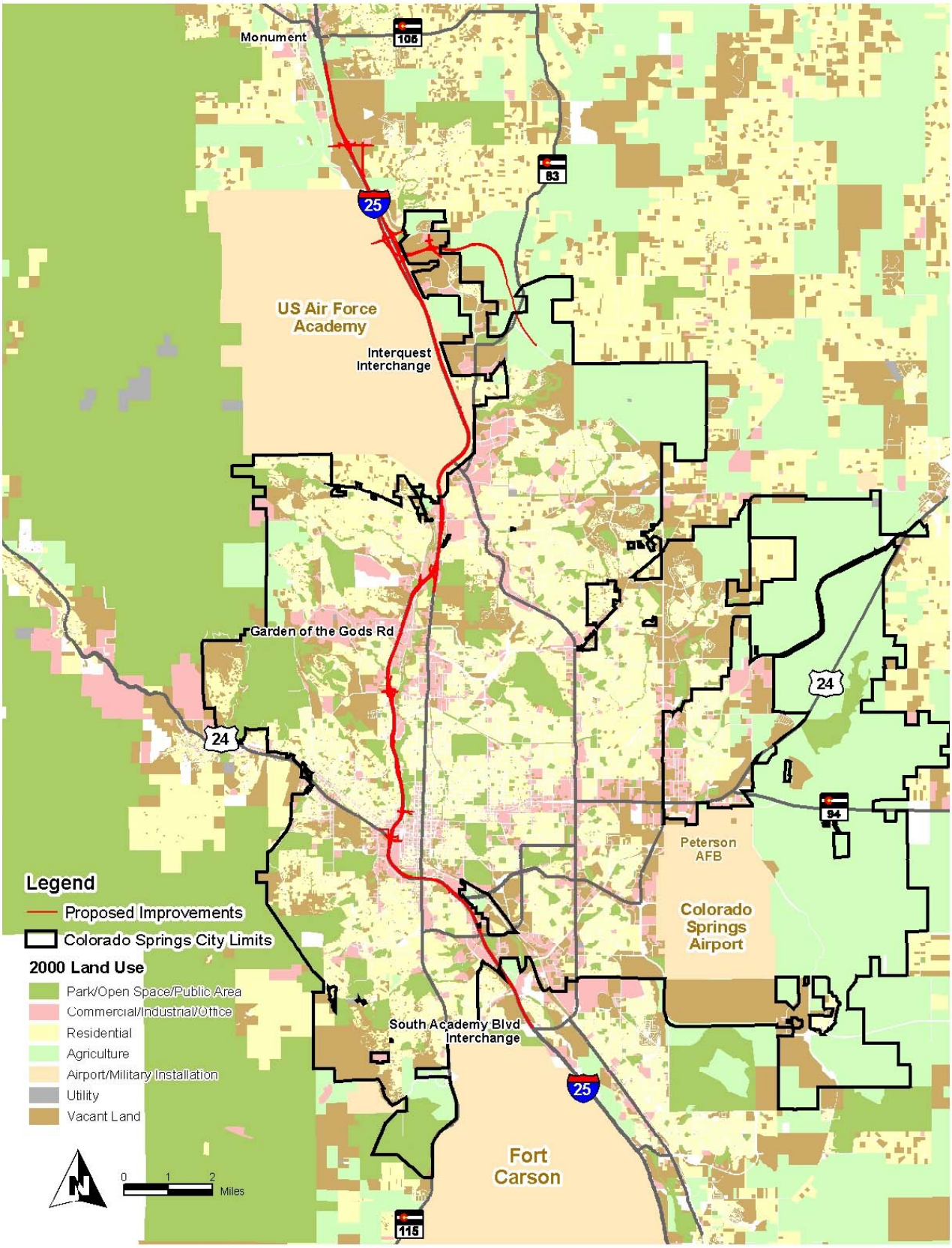


FIGURE 3-12
Land Use as of Year 2000

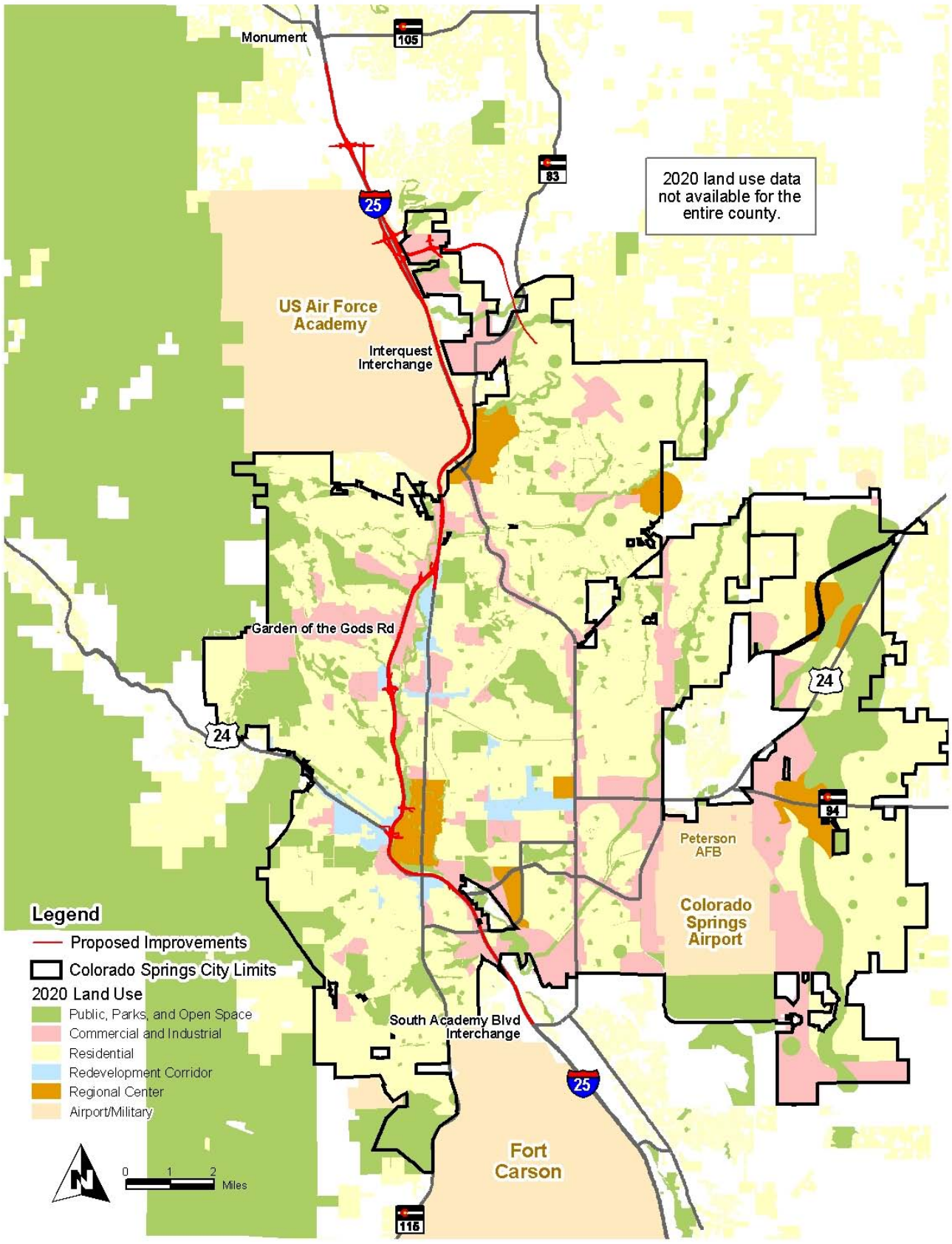


FIGURE 3-13
Proposed Land Use as of Year 2020

Impacts of Proposed Action

The following narrative discusses the compatibility and consistency with surrounding land uses and approved plans.

Land use compatibility. Current land uses have developed in part due to the presence of I-25. Widening of existing pavements would largely occur within the existing CDOT right-of-way, thus avoiding most concerns relating to adjacency and compatibility. As such, the Proposed Action does not result in violations of existing zoning ordinances and is compatible with the transportation corridor character of the area. Concerns relating to the compatibility of a widened I-25 to parkland and noise receptors are addressed in other subsections of this section.

Effects on approved plans. The Proposed Action is supportive of and consistent with the PPACG *Destination 2025 Regional Long Range Transportation Plan* and local land use plans.

The construction of transportation facilities is often considered a contributor to urban sprawl, as improved access to vacant land under some circumstances makes it prime for development. This is often referred to as induced growth, a situation where growth is attracted to an area due to easy access and limited traffic congestion. This concern is especially applicable to the construction of new access to undeveloped areas, assuming that all of the other supporting development stimulants are in place.

The demand for new development, especially housing, is dictated foremost by local land use policy, economic conditions, availability and suitability of land, and other conditions that cause a community to grow. Transportation in itself will not have an effect on land development in absence of these other factors. Refusal to provide transportation infrastructure will reduce localized development pressure or affect timing of development, but will not reduce the overall growth pressures on a metropolitan area.

The Proposed Action is not a new facility, providing new service to undeveloped areas. Rather, it would fulfill regional and local policies established in approved plans that have been prepared in response to population "control totals" established for the region by the State of Colorado and allocated within the study area by PPACG. The Proposed Action would accommodate development as currently planned in the vacant areas adjacent to I-25. Most of this development is planned to occur in the northern and northeastern portions of the study area. The Proposed Action will not direct development to areas that are not planned for development.

Changing land uses from current conditions to a different type of use would unlikely be a result of the Proposed Action. Changes to existing land uses would be determined by local and regional planning processes and implemented through local planning and zoning ordinances.

Mitigation

The Proposed Action is consistent with existing land use plans and the PPACG *Destination 2025 Regional Long Range Transportation Plan*. No mitigation is necessary.

Visual Resources

During the process of assessing potential changes to the environment, it is important to consider how the proposed I-25 improvements will change the look or visual character of an area. This is typically done by defining view sheds from the highway, both away from the highway as a driver would see the views, and back toward the highway as a resident would perhaps see the highway.

Current Conditions

I-25 through El Paso County is a visually appealing corridor, both to tourists and to the local community. Pikes Peak is a dominant visual feature, seen to the west from many views along I-25. Pikes Peak is an important visual feature that provides a unique visual identity for Colorado Springs, different from other cities in Colorado, even along the Front Range of the Rocky Mountains. It contributes to the quality of life for the community and is a major element in the promotion of tourism.

The central business district of Colorado Springs also rises in the horizon as a striking visual feature as one drives along I-25 (although compared to larger metropolitan areas such as Denver, Colorado Springs does not have a large number of tall buildings, and their height is also relatively modest, restricted by City ordinance). Planners hope to enhance the visual attraction of downtown from I-25 with the construction of Confluence Park, and feel it is very important that I-25 motorists have views into this new park and the central business district.

In general, over the last few decades, there has been a gradual loss of undeveloped or natural areas in the I-25 corridor due to urban development. As a result, I-25 is visually becoming more confined. Not all of this view shed is natural or rural. The foreground in places is becoming highly suburbanized. As residential vegetation grows, it is changing the character of the landscape from open meadows to urban and suburban development.

In contrast, the two large military bases, the Air Force Academy on the north end of the project study area and Fort Carson on the south end, have substantial amounts of undeveloped land, that contribute to a rural feeling along those parts of the corridor.

Other natural features such as creeks and open fields can be seen along I-25 as well.

The I-25 corridor also has its share of less attractive views, including industrial and commercial buildings, a municipal maintenance yard, car dealerships, and a power plant. Furthermore, the I-25 corridor in general has relatively minimal, low-maintenance landscaping.

The I-25 noise wall on the west side of the freeway from Bijou to Fillmore was constructed with a design that is based on the mountain backdrop, and was built with subdued colors that do not detract or distract from the mountain view beyond. Another I-25 visual feature is the pedestrian bridge over the freeway, connecting Monument Valley Park to the west side neighborhoods. The walls and bridge reflect careful aesthetic design practiced in accordance with design guidelines that have been developed for the I-25 corridor.

For the purposes of this EA, the study area has been defined by five different view sheds, as described below and shown in Figure 3-14. These are the Monument View Shed, the Air Force Academy View Shed, the Northern Colorado Springs View Shed, the Central Colorado Springs View Shed, and the Security/Widefield View Shed.

Monument View Shed

The Monument view shed is a large bowl-shaped area with I-25 running through the bottom. The edges of the view shed consist of minor ridges and drainages with a great deal of native vegetation, including ponderosa pine and scrub oak. The view shed generally appears mountainous with a very natural setting. However, housing developments can be seen on both sides of the interstate and are particularly noticeable on the east side of the view shed.

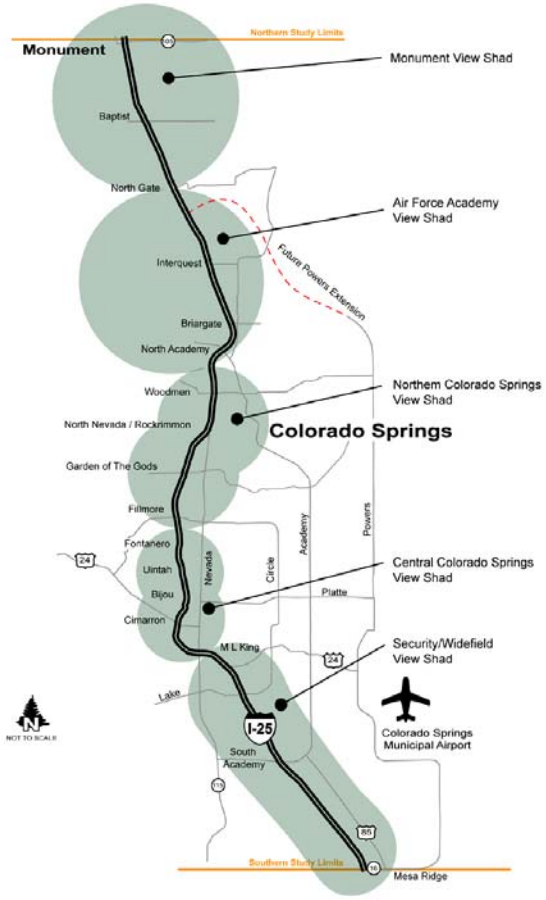


FIGURE 3-14
View Sheds in the I-25 Project Area

Air Force Academy View Shed

The overall Air Force Academy view shed appears mountainous with a natural, rural setting. The Academy, on the western edge of the view shed, is a scenic resource for the Pikes Peak region. The natural appearance of the site, punctuated by carefully sited landmarks such as the Cadet Area and Falcon Stadium, provide a scenic approach to the City of Colorado Springs for travelers on I-25.

Additionally, the Air Force Academy's main airstrip is located very close to the highway and can be seen from an existing roadside viewing area called the Ackerman Overlook. Glider training and parachute training activities can be readily seen from the highway.

The natural scenery of the Air Force Academy provides the foreground and middle ground component of the unbroken vista of Rampart Range to the west. The effect is a visual break in the urban fabric to the south, which is rapidly spreading to the east and north of the Academy. Driving on I-25 through the Air Force Academy property provides a welcome visual respite from the increasingly developed surrounding areas.

View westward from I-25 across Academy property

The quality of the scenic resource was an important factor in selecting the site for the Air Force Academy more than 40 years ago, and it has been an important factor in planning the use and development of the site throughout its history. Protection of scenic values continues to be a major goal for management of the Air Force Academy resources.

I-25 runs north-south along the Air Force Academy's eastern edge. Although a thin strip of property east of the highway belongs to the Air Force Academy and will not be developed, the area further to the east is quickly developing with large commercial and office buildings, as well as multi-family housing units.

Northern Colorado Springs View Shed

This view shed is framed by Austin Bluffs on the east, which is relatively undeveloped with natural upland ponderosa forests and grasslands, and Popes Bluff to the west with natural upland ponderosa forests on the side slopes. The view shed generally appears urban in the bottom, filtering up into more mountainous, natural areas on the edges of the Monument Creek drainage basin.

Central Colorado Springs View Shed

This view shed is urban, but has park and open space along Monument Creek and Fountain Creek, with native stands of cottonwood, riparian areas, and introduced vegetation. Monument Valley Park is a dominant visual feature through this view shed. Much of the view shed in this area as observed from I-25 is confined by the noise walls along the west side of I-25.

View westward from I-25 toward Pikes Peak

The urban setting, particularly in the Central Colorado Springs view shed, includes a power plant, a railroad corridor, commercial and industrial buildings and downtown office buildings. There is also a large concentration of automobile dealerships called Motor City located along the west side of I-25 immediately north of the Nevada/Tejon Interchange, which some may find visually distracting.

View southward from Uintah Street on-ramp toward I-25 and downtown in the Central Colorado Springs view shed

Security/Widefield View Shed

The north end of the Security/Widefield view shed is urban, with office, commercial, and industrial uses in the bottom of the view shed along I-25 and Fountain Creek. Both the west and east edges of the view shed include single- and multi-family homes. The exception is the bluffs that create the west edge of the view shed from South Academy Boulevard to Magrath Avenue. These bluffs are native grassland in an undeveloped portion of Fort Carson. The southern portion of the view shed is more rural, with grassland slopes to the west, the Fountain Creek drainage on the east, and the suburban areas of Security and Widefield on the eastern edge of the view shed.

Colorado Springs Visual Inventory

The City of Colorado Springs in 1990 produced the *Colorado Springs Urban Growth Area Inventory and Evaluation of Natural Resources*, recognizing that areas which are characterized by ridgelines, bluffs, view corridors, foothills, mountain backdrop, excessive slope, unique vegetation, natural drainage, rock outcroppings, geologic conditions, wildlife habitats, and other physical factors, are significant natural features worthy of preservation. Some of these features have since been protected from development through the City's Hillside Overlay zoning ordinance.

The City's study indicated that I-25 is a visually sensitive corridor due to its large number of users, including tourists. The future northern connection of Powers Boulevard to I-25 also was identified as a corridor of visual importance. Monument Creek, Fountain Creek, and the tributaries to these waters were identified as important elements contributing to the visual variety in the I-25 corridor.

Impacts of No-Action Alternative

Under the No-Action Alternative, I-25 would become increasingly congested. The resulting traffic will become more visually apparent in all view sheds.

Under the No-Action Alternative, the I-25 corridor would continue to have an assortment of bridge types, lighting and other highway elements that were built over the past forty years, prior to the development of design guidelines for the corridor that are more sensitive to the context of I-25.

Impacts of Proposed Action

The Proposed Action would accommodate more I-25 traffic than is seen today, and also more traffic than could be carried under the No-Action Alternative. There would be physical alteration of some portions of I-25, including increased width of the highway and modifications at interchanges. The Powers Boulevard connection and North Gate interchange would create more ramps, structures, and cut/fill slopes within the natural setting of the Air Force Academy view shed. These interchange improvements would impact views from the New Santa Fe Trail by eliminating some trees and riparian vegetation. Overall, the improvements in this view shed would give the entire area more of an urban appearance.

While noise walls are installed to help mitigate noise, they can sometimes create visual impacts as well. This would be the case for the Pulpit Rock, Holland Park, and Holiday Village neighborhoods, located in the Northern Colorado Springs view shed. Other visual impacts in this view shed would come from raising the grade of I-25 approximately 16 feet at the Nevada/Rockrimmon interchange. This highway design would make I-25 more visually apparent in the foreground and for mid-range views from adjacent properties. Retaining walls in the raised portions would also become a visual impact in the foreground and mid-range views.

In the Central Colorado Springs view shed, the Mesa Springs neighborhood and the Westside neighborhoods would experience visual impacts from noise walls planned for the Proposed Action. The existing noise wall between Bijou and Fillmore has created a monochromatic backdrop to the traffic on I-25, making the movement of traffic more visually apparent.

The addition of noise walls to the west edge of Monument Valley Park will block mid-range views. The loss of mature, woody vegetation along I-25 in the Central Colorado Springs view shed would impact all views in this view shed.

Noise walls that would be constructed adjacent to the Stratmoor Valley neighborhood in the Security/ Widefield view shed would also have visual impacts.

The additional pavement width, along with more structures and signs, would be more visually intrusive for motorists along I-25. Extra signage would be needed to explain how to use the high-occupancy vehicle lanes (i.e., the peak-period restriction of the leftmost lanes for use by buses and carpools only during peak hours).

Mitigation

Design guidelines for the I-25 corridor have been developed by CDOT to ensure overall consistency of roadway features. At the same time, aesthetic elements will be developed using context-sensitive solutions that will better integrate the highway within the local community.

For portions of the Proposed Action on U.S. Air Force Academy property, CDOT will work closely with Air Force Academy staff to ensure that the project design is compatible with their aesthetic expectations. For example, techniques will be used that alter the typical engineered slope and grade and make a more natural transition from the roadway to the existing grade. Also, the color and texture of any bridges or other structures will blend with the surroundings.

CDOT will work closely with the City of Colorado Springs and the Air Force Academy to provide visually appealing landscaping that is easily maintainable. Landscaping templates have been developed for I-25, and the selection of the landscaping level to be implemented will depend on intergovernmental and public/private commitments to address long-term maintenance costs. Cooperation with private-sector entities will be crucial to developing attractive landscaping along the corridor.

A major drought that resulted in lawn watering restrictions in 2002 has raised public awareness of the need to conserve water. This important public sensitivity reinforces the importance of landscaping with plants and trees that are native to this semi-arid region.

Many additional actions will be taken to maintain or improve the visual quality of the corridor, including:

- Ensuring that new highway structures are visually appealing in design, reflect community values, and are painted with colors and textures that blend with the surroundings.
- Maintaining views to the Air Force Academy Cadet area, stadium, and other important features.

- Working with the Air Force Academy to apply landscape design concepts that will soften the effects to the visual landscape and minimize urban elements that would negatively affect important Academy vistas.
- Planting additional trees in Monument Valley Park as a visual screen for impacts from I-25.
- Keeping drainages open and natural looking.
- Minimizing the constant cut and fill slope angles, which typically look linear in the landscape by varying slopes to look more natural and transition better into the existing slopes.
- Where feasible, replanting lost native trees and shrubs in a way that is integrated with existing natural associations in the immediate area of disturbance.
- Revegetating disturbed slopes with native species wherever feasible.
- Controlling weeds in I-25 right-of-way.
- Designing noise walls with an architectural treatment on both sides. The interstate side of the wall should have a bolder, simpler statement due to the speed at which these walls will be viewed by the traveler. The residential side of the walls should have a finer level of detail, since the viewer is likely to be relatively static.

Air Quality

Since well before the passage of the Clean Air Act of 1970, transportation has been recognized as major contributor to air pollution. Fortunately, technological improvements in motor vehicle technology and fuels have actually led to improved air quality in most U.S. metropolitan areas, including the Colorado Springs Urbanized Area, over the past two decades.

Transportation/air quality "conformity" regulations developed during the 1990s require forecasting of future motor vehicle emissions. Under the conformity regulations, transportation plans, programs and federal transportation projects cannot be approved unless the projections of future air quality are within State-adopted and federally approved limits. These requirements are found both in Federal regulations and in Colorado's air quality State Implementation Plan.

National Ambient Air Quality Standards

As mandated by Congress in the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards for six types of air pollutants to protect the public from the adverse health effects associated with air pollution. These six "criteria" pollutants are:

- carbon monoxide (CO)
- ozone (ground level) (O_3)
- oxides of nitrogen (NO_x)
- sulfur dioxide (SO_2)
- fine particulate matter, 10 microns or smaller in diameter (PM_{10}), and
- lead (Pb)

The Pikes Peak Region is in maintenance or attainment for all six "criteria" pollutants that have national air quality standards.

Transportation/Air Quality Conformity Requirements

Clean Air Act "conformity" provisions introduced in 1977 and greatly strengthened in 1990 link the important issues of transportation improvements and protection of air quality. Section 176 (c) of the Clean Air Act mandates that transportation plans, programs, and projects cannot be funded or approved by the U.S. Department of Transportation and metropolitan planning organizations if they would cause or contribute to an air quality violation. These requirements were intended to ensure that in areas with air quality violations, Federal transportation actions should be part of the solution, rather than part of the problem.

The provision related to conformity applies in all nonattainment and attainment-maintenance areas for transportation-related criteria pollutants, O_3, CO, NO_X, and PM_{10}, for which the area is designated nonattainment or has a maintenance plan. The requirements apply to the Pikes Peak region because this area formerly violated the carbon monoxide standard (most recently, in 1989), and is currently considered a CO maintenance area.

Metropolitan planning organizations are required to assess future emissions of air pollutants from mobile sources (vehicle traffic) to ensure that projected future emissions are within limits (the "emissions budget") that enable the region to meet national ambient air quality standards.

If the region has a long-range (at least 20-year) transportation plan and a short-range (at least 3-year) transportation improvement program (TIP) that meet the conformity criteria, and a proposed Federal transportation project is included in those two documents, the project can be approved for implementation. If the project is not in both the approved transportation plan and TIP, it must be analyzed to determine whether or not it could meet the conformity criteria. Currently, there is an approved, conforming long-range transportation plan for the Pikes Peak region (PPACG's *Destination 2025 Plan*) and an approved, conforming TIP for the region.

Colorado Air Quality Control Commission Regulation No. 10, "Criteria for Analysis of Conformity" enacts the federal conformity requirements as part of Colorado's State Implementation Plan (SIP) for air quality. As part of the Colorado SIP development process, an emissions budget for carbon monoxide is established for non-attainment and attainment-maintenance areas to maintain the national air quality standards.

In addition, Regulation No. 10 sets the requirements for air quality analysis for regional and "hot-spot" air quality on a project level. This includes the requirements for modeling and the screening analysis of the selected project. These requirements have been incorporated in this air quality analysis for the I-25 EA.

Current Conditions

Meteorology and Climate

The geographical and meteorological characteristics of the study area contribute to air quality conditions. The study area is located at the foot of the Piedmont east of the Rocky Mountains, at a high-altitude elevation of 6,035 feet above sea level. It is in the subdrainage basin of Monument and Fountain Creeks, which drain into the Arkansas River south of the area.

The climate is moderate, with low humidity and with average daily maximum temperatures ranging from approximately 42°F in January to 85°F in July. The region is semi-arid, with average annual precipitation of 16.4 inches.

Air Quality Levels

The project study area is part of the Pikes Peak Air Quality Control Region, which includes El Paso, Teller, and Park counties. The Pikes Peak region is classified as maintenance area for CO, and as an attainment area for the other "criteria" pollutants.

Because the Colorado Springs Urbanized Area is currently classified as maintenance for carbon monoxide, the projected mobile source (vehicular) emissions of CO resulting from the entire regional transportation system (including the Proposed Action) must not exceed the regional emissions budget of 270 tons per day as set forth in the State Implementation Plan. Table 3-9 indicates the projected levels of CO emissions from the *PPACG Destination 2025 Regional Transportation Plan* and the *2002-2007 Transportation Improvement Program* conformity analyses. Both the long-range plan and TIP include I-25 capacity improvements consistent with the Proposed Action. An updated TIP, covering fiscal years 2004-2009, was approved by PPACG in July 2003.

TABLE 3-9
Projected Mobile-Source Carbon Monoxide Emissions with Implementation of the Regional Long-Range Transportation Plan

Year	CO Emissions (tons per day)
2007	205.9
2015	227.8
2025	266.0
Regional Emissions Budget is:	**270.0**

Source: Pikes Peak Area Council of Governments

On December 18, 2003, the Colorado Air Quality Control Commission approved the 2nd Revised Carbon Monoxide Maintenance Plan for the Colorado Springs Attainment/Maintenance Area. As of February 2004, this revised plan has not received approval from the U.S. Environmental Protection Agency.

The revised plan would change the CO mobile sources emission budget from 270 tons per day to 531 tons per day, using the new MOBILE 6.2 emissions model. The revised plan would also eliminate the Vehicle Inspection/Maintenance Program because the program would no longer be necessary to maintain the carbon monoxide standard. The *Destination 2025 Long-Range Transportation Plan*, which reflects the Proposed Action, would meet the 531 tons per day CO emissions budget.

Air quality monitoring stations at key locations in the Pikes Peak region keep track of air pollutant concentrations

Additionally, the region has experienced increasing ozone concentrations within the past decade, and trend analysis strongly suggests the likelihood of an ozone violation before 2010. Stop-and-go traffic results in substantially higher emissions of ozone precursor pollutants (hydrocarbons and oxides of nitrogen) than traffic at moderate, free-flow speeds.

Impacts of No-Action Alternative

The No-Action Alternative would not meet the air quality conformity requirements on a regional basis, based on the approved, currently applicable CO emissions budget. Traffic congestion under this scenario would reduce travel speeds and increase emissions per mile traveled. As a result, the total daily tons of carbon monoxide from mobile sources would exceed the region's mobile-source carbon monoxide emissions budget. However, the analysis of localized carbon monoxide concentrations at intersections in the I-25 corridor (those intersections studied also for the Proposed Action) did not result in any projected violations at these intersections for years modeled through 2025.

Impacts of the Proposed Action

The results of the modeling analysis indicate that the Proposed Action, as part of the *PPACG Destination 2025 Long-Range Transportation Plan* and the 2004-2009 Transportation Improvement Program, would meet air quality conformity requirements. The Proposed Action is reflected in and consistent with these projections.

Carbon Monoxide "Hot Spot" Modeling Analysis for Selected Intersections

Another requirement for air quality conformity, "hot-spot" modeling, applies at the project-level, rather than at the regional level. Microscale or "hot-spot" modeling, is used to predict carbon monoxide concentrations at a specific project location, such as a signalized intersection. For this EA, hot-spot modeling was performed using the State- and federally approved CAL-3QHC mathematical model and MOBILE 6 emission factors. This was done to determine whether the air quality standard would be exceeded, potentially resulting in a violation of the carbon monoxide standard.

Under Colorado requirements, hot-spot modeling is performed for intersections that currently operate or are predicted to operate in the future at congested levels of service (D, E or F). The SYNCHRO model was used to determine the current and future levels of service for the signalized intersections nearest to I-25 interchanges.

A carbon monoxide "hot spot" analysis was conducted for each intersection that demonstrated a traffic Level of Service D, E, or F, during peak-hour with the highest traffic volume, and assuming worst case meteorological conditions. "Hot-spot" analysis is an estimation of likely future localized CO pollutant concentrations.

The definition of a carbon monoxide "hot spot" violation is when air quality levels create a new, or worsen an existing, exceedance of the following federal CO standards:

- 1-hour Standard: 35 parts per million
- 8-hour Standard: 9 parts per million

If the "hot spot" modeling analysis were to result in no new or worsened violations of the federal carbon monoxide standard, then it would be inferred and concluded that no violations will occur for any other scenario at these locations on a localized level.

Table 3-10 presents the highest modeled 8-hour carbon monoxide concentrations predicted for intersections in the I-25 corridor under the No Build Alternative and the Proposed Action for the years 2007, 2015, and 2025. The location of the highest concentration was not necessarily the same from year to year or for the Proposed Action and No-Action Alternatives. It can be seen that under all scenarios, no intersection is predicted to have a concentration that would exceed the national carbon monoxide standard of 9.0 parts per million for an eight-hour average.

Table 3-10 presents the highest modeled 8-hour carbon monoxide concentrations predicted for intersections in the I-25 corridor under No Build Alternative and the Proposed Action for the years 2007, 2015, and 2025. These years were selected for modeling because they correspond to the scenarios that were modeled for air quality conformity emissions calculations in the PPACG *Destination 2025 Regional Transportation Plan*. The location of the highest concentration was not necessarily the same from year to year or for in both the Proposed Action and No-Action Alternatives cases Alternatives. Five of the six

results shown are for evening peak periods. It can be seen that under all scenarios modeled build scenario cases, no intersection is predicted to have a concentration that would exceed the national carbon monoxide standard of 9.0 parts per million for an eight-hour average.

TABLE 3-10
Highest Modeled Carbon Monoxide Concentration at Intersections in the I-25 Corridor*

Year	No-Action Alternative*	Proposed Action*
2007	7.78	7.78
2015	7.09	8.43**
2025	8.16	8.83**
National air quality standard is 9.0 ppm		

*Eight-hour average carbon monoxide concentrations in parts per million (ppm)

** Highest readings modeled for the Proposed Action are for different time periods and/or different locations than for the No-Action Alternative; to avoid an "apples and oranges" comparison, the results should be compared only to the national standard, and not to each other.

For the year 2007, carbon monoxide concentrations were modeled for twelve congested intersections along the I-25 corridor. The highest modeled eight-hour carbon monoxide concentrations, 7.78 parts per million, resulted in the evening peak period at the intersection of Nevada Avenue and Austin Bluffs Parkway (east of I-25 Exit 146, Garden of the Gods Road). The same value was modeled for the No-Action Alternative and the Proposed Action. This is not surprising because between now and 2007, not much progress could be made in building and opening new roadway capacity under the Proposed Action.

For the year 2015, carbon monoxide concentrations were modeled for 23 congested intersections along the I-25 corridor. More congested intersections are predicted for 2015 than for 2007 because traffic congestion throughout the region is expected to increase over time. The highest modeled eight-hour carbon monoxide concentrations, 7.09 ppm for No-Action and 8.43 ppm for the Proposed Action, were modeled at I-25/South Nevada (northbound ramp in the morning peak) and I-25/Cimarron (southbound ramp, evening peak), respectively.

For the year 2025, carbon monoxide concentrations were modeled for 38 congested intersections along the I-25 corridor. More congested intersections are predicted for 2025 than for 2015 because traffic congestion throughout the region is expected to increase over time. The highest modeled eight-hour carbon monoxide concentrations, 8.16 ppm for No-Action and 8.83 ppm for the Proposed Action, were both modeled at I-25/Cimarron: for the southbound ramp the morning peak, and for the northbound ramp, evening peak, respectively.

The result that the highest modeled concentrations will increase over time is consistent with the predicted increase in daily background carbon monoxide emissions from mobile sources in the region, presented earlier in Table 3-9. The result that the highest concentration may closely approach the carbon monoxide standard in the year 2025 is consistent with the fact that predicted mobile-source emissions in 2025 will closely approach the regional emissions budget. As presented in Table 3-9, 266 tons per day are predicted, as compared to the 270 tons per day allowable. This is a difference of less than 1.5 percent. These increases in pollution will occur over a time period when the region's population is expected to increase by more than 200,000 residents. No new pollution control measures were assumed in the modeling for this I-25 Environmental Assessment.

Based on the intersection modeling for years through 2025, the Proposed Action would not result in any new or worsened violations of the CO standards. Therefore, there are no violations projected on a localized level as a result of the Proposed Action.

Impacts of Construction

The majority of air emissions during construction will be fugitive dust (including PM_{10}) from the excavation of soil and backfill. All contractors will be required to obtain a construction permit and develop a control plan for particulate emissions, to be implemented during construction in accordance with the Colorado Air Quality Control Commission Regulation No. 1, Part 3D, and Regulation No. 3, Applicable Permit Requirements.

Regional Haze/Visibility

Emissions from mobile sources – including highway motor vehicles, trains, aircraft, and non-road vehicles such as snowmobiles and all-terrain vehicles – contribute to visibility degradation

throughout the country. Although the relative contribution of mobile source emissions is not as great as contributions from other sources, direct emissions and re-entrained road dust from motor vehicles contribute to urban emissions plumes that are transported for long distances. For example, emissions from the Denver metro area have been shown to impact air quality in Rocky Mountain National Park.

The Clean Air Act requires states to protect visibility and reduce visibility impairment in 156 "Class I" areas in the United States. Class I areas are defined as national parks and wilderness areas over a certain size that were in existence as of August 1977. There are 12 Class I areas in Colorado; the closest to this project are the Great Sand Dunes National Park and Rocky Mountain National Park. Because of the distance, location, and terrain between the parks and the I-25 corridor, the Proposed Action will not affect visibility or regional haze in these areas.

The Clean Air Act and EPA's 1999 Regional Haze Rule require states to develop plans to improve visibility in 10-year increments, with the goal of reaching natural background conditions within 60 years. The Colorado Department of Public Health and Environment is currently developing its first 10-year plan and is coordinating with CDOT and the urban area metropolitan planning organizations to ensure that these agencies' long-range travel forecasts are incorporated into the plan.

With respect to the Proposed Action, the emissions from travel on I-25 in future years are incorporated into the State's visibility plan, which is required by federal law to demonstrate the necessary visibility improvements in Class I areas. EPA-mandated improvements in vehicle emissions technology over the next 20 years will reduce emissions regardless of the alternative chosen, resulting in visibility improvements statewide.

Urban Air Toxics

In addition to the national air quality standards set forth by EPA for the six criteria pollutants, EPA also has established a list of 33 urban air toxics. Urban air toxics, also known as hazardous air pollutants, are those pollutants that cause or may cause cancer or other serious health effects or adverse environmental and ecological effects. Most air toxics originate from human-made sources, including road mobile sources (e.g., cars, trucks, buses), non-road mobile sources (e.g., airplanes, lawnmowers, etc.), and stationary sources (e.g., factories, refineries, power plants), as well as indoor sources (e.g., building materials). Some air toxics also are released from natural sources such as volcanic eruptions and forest fires.

Science has been providing more evidence about the risks these pollutants pose to human health. The health risks for people exposed to urban air toxics at sufficiently high concentrations or lengthy duration include an increased risk of cancer or other serious health effects, including damage to the immune system and neurological, reproductive, developmental, respiratory, and other health problems.

To better understand the harmful effects urban air toxics from road sources have on human health, in 1996 the EPA developed a list of 22 mobile source air toxics, such as acetaldehyde, benzene, formaldehyde, diesel exhaust, acrolein, and 1,3-butadiene, and assessed the risks of various kinds of exposures to these pollutants on human health.

In July 1999, the EPA published a strategy to reduce urban air toxics, and subsequently, in March 2001, the EPA issued regulations for the producers of urban air toxics to decrease the amounts of these pollutants by target dates in 2007 and 2020. Under these regulations, between 1990 and 2020, on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde will be reduced by 67 to 76 percent. On-highway diesel particulate matter emissions will be reduced by 90 percent. These reductions will be the result of national mobile source control programs, including the reformulated gasoline program, a new cap on the toxics content of gasoline, the national low-emission vehicle standards, the Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and the heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. These are net emission reductions; that is, the reductions will be experienced even after growth in vehicle miles traveled is taken into account.

The EPA has not yet determined how best to evaluate the impact of future roads and intersections on the ambient concentrations of urban air toxics. There are no standards for mobile source air toxics and there are no tools to

determine the significance of localized concentrations or of increases or decreases in emissions. Without the necessary standards and tools, the specific impacts of the Proposed Action cannot be analyzed in any meaningful way.

With the information currently available, all we can conclude is that 1) there are likely to be localized concentrations of air toxics along I-25 that are similar to those at similar distances from other similar corridors, and 2) regardless of the alternative selected, emissions in the project area will decrease over time due to EPA's national control programs.

High-Occupancy Vehicle Lanes

The Proposed Action includes provision of through lanes that will be reserved for High Occupancy Vehicles (buses and carpools) during peak commuter periods. This approach is consistent with regional land use and transportation plan policies that call for reduced reliance on single-occupant use of motor vehicles. Air quality plans for the region currently do not include or rely upon HOV lanes for any emissions reduction credit.

Mitigation

Because there are no adverse air quality impacts as a result of the Proposed Action, further design or operational mitigation is not required.

Implementation of dust control practices during construction will be required, in accordance with Colorado Air Quality Control Commission Regulation No. 1 regarding fugitive emissions.

Noise

Noise is the environmental issue that attracted the most public concern and comment during the course of this I-25 Environmental Assessment.

In the Federal-Aid Highway Act of 1970, Congress directed the Federal Highway Administration (FHWA) to develop standards for highway noise levels compatible with different land uses. These standards are found in the Code of Federal Regulations under Title 23, Part 772, entitled "Procedures for Abatement of Highway Traffic Noise and Construction Noise."

Key terms helpful to understanding the noise abatement procedures are defined in Table 3-11. The CDOT noise abatement criteria are shown in Table 3-12.

TABLE 3-11
Noise Terminology

Leq: Noise from roadways changes from moment to moment, but it is possible to describe the noise energy over time in terms of its "equivalent level" (abbreviated Leq). The Leq is a single level that has the same sound energy as the fluctuating level over a stated time period. The Noise Abatement Criteria are expressed in terms of a "loudest-hour" equivalent level.
Decibel: Sound is the fluctuation of pressure in the air, and the human ear is capable of detecting a very large range of pressure fluctuations. To facilitate easier discussion, sound is expressed on the decibel, or logarithmic scale. On this scale, a doubling of pressure is equal to a 3 dB increase, which is a barely perceptible change to most people. A ten-fold increase in pressure is equal to a 10 dB increase, which is perceived as a doubling of loudness to most people.
dB(A): The human ear does not detect certain low-pitched and high-pitched sounds equally. Mathematical adjustments can be made to measured sounds the way that the average person hears them. The adjusted measurements are called A-weighted decibels, abbreviated dB(A). The sound of normal conversation at a distance of 6 feet is in the range of 55 to 65 dB(A).
Receptor: Locations at which noise is measured are referred to as noise receptors. Noise receptors are defined as places where people are typically located, such as residences, hotels, commercial buildings, parks, etc. Usually, one noise receptor location is used to analyze an area unless the area is quite large and covers various distances from the roadway. Primary consideration for the location of noise receptors is in exterior areas of frequent human use. For residential and other structures, this typically would be in the exterior area of frequent human use facing the proposed highway project.

This wall on the west side of I-25 between Bijou and Fillmore is one of five noise barriers that have been built in the corridor to mitigate for previous I-25 improvements.

Federal and State Noise Abatement Guidelines

FHWA's noise policy is implemented on CDOT projects using CDOT's *Noise Analysis and Abatement Guidelines* (December 2002). The guidelines state that noise mitigation must be considered for any receptor (e.g., a park or a residence) where predicted traffic noise levels, using design-year (in this case, 2025) traffic volumes and roadway conditions, approach or exceed the CDOT Noise Abatement Criteria, shown in Table 3-12.

In addition to the criteria shown in Table 3-12, the noise guidelines state that noise mitigation must be considered for any receptors where predicted noise levels for design-year conditions are greater than existing noise levels by 10 dB(A) or more.

TABLE 3-12
CDOT Noise Abatement Criteria (based on FHWA Noise Abatement Criteria, 23 CFR 772)

Activity Category	Leq[1, 2](dB(A))	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	66 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	71 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	51 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

[1]Hourly A-weighted equivalent level for the noisiest hour of the day in the design year.
[2]CDOT noise impact criteria are 1 dB(A) lower (more stringent) than FWHA values in 23 CFR 772, to identify noise levels that "approach" the FHWA criteria.

Noise Analysis Methods

Mathematical models are used to predict noise levels for expected loudest-hour noise conditions. The FHWA has sponsored research and development of numerous noise models over the years. The STAMINA 2.0 model, currently approved by FHWA for predicting noise levels on highway projects, was used in this EA to predict noise levels along the I-25 corridor. More detailed information about STAMINA and about the noise analysis conducted for the I-25 EA can be found in the Noise Technical Report, attached to this EA as Appendix 3.

For use in this I-25 EA, noise measurements were collected at locations along the I-25 corridor. Data regarding the key conditions under which the measurements were collected (e.g., traffic volumes, distance from the road, terrain factors and wind speed/direction) were entered as inputs to the STAMINA 2.0 model, and the resulting modeled noise levels were compared against the sound levels measured in the field.

The differences between modeled and measured noise were found to be well within acceptable accuracy requirements. This comparison verified that the model was producing reasonable noise predictions for the conditions existing in this corridor. The model outputs also appeared to be consistent with other past results modeled for the corridor, including a major study completed by the firm of Harris Miller Miller & Hanson in 1992.

Due to the importance of noise issues in the I-25 corridor, a substantial effort was made in the EA process to assist the public in understanding the policies and criteria used by CDOT to make noise mitigation decisions. This included a series of noise-specific meetings in 2000 to inform the public of the noise analysis procedure and to solicit input on existing noise problems. At the noise meetings, acoustical experts explained the noise abatement criteria, the model validation process, and the process for determining how it is determined whether mitigation would be feasible and reasonable

Current Conditions

Noise has been an important issue along the I-25 corridor through central Colorado Springs for more than a decade. Previous I-25 environmental studies have resulted in the construction of noise walls at five locations along the corridor (refer to the locations labeled E1 through E-5 in Figure 3-15 on page 3-70):

1. On the west side of I-25 between Bijou and Fillmore Streets, protecting residential areas
2. On the east side of I-25 north of Bijou, protecting the Pavilion area in Monument Valley Park
3. Along the US 24 Bypass off-ramp, protecting a large apartment complex
4. On the east side of I-25 south of Circle Drive, protecting Gorman Middle School

5. On the east side of I-25, north and south of the Fountain Interchange (Exit 128), protecting residences there.

A sixth wall will be constructed to protect the Pine Creek Estates neighborhood, northwest of the I-25/Woodmen Road Interchange.

In addition, most new concrete pavement constructed in the corridor has been treated with longitudinal saw-cut grooves, which CDOT determined is quieter than transverse concrete grooving or a smooth, polished concrete surface.

Existing Noise Levels

Noise measurements taken for this EA in May and June 2001 are summarized in Table 3-13. Current noise levels range from 54 to 67 dB(A), and the average measurement is 60 dB(A). The highest recorded value was 67 dB(A), in the vicinity of the Bijou Interchange, and this level exceeds the 66 dB(A) noise abatement criterion.

TABLE 3-13
I-25 Corridor Current Noise Measurements

Location	Average Noise Level dB(A)
Baptist Road Area	55
Pulpit Rock Area	61
Garden of the Gods Road	63
Old North End – North	54
Old North End – South	57
Bijou Street	67
Circle-Lake Area	60
Stratmoor Valley – North	58
Stratmoor Valley – South	60

Generally, the sites with the highest measured noise were those closest to the Colorado Springs central business district.

The noise levels shown above are only a snapshot of conditions along the I-25 corridor and are useful in understanding the general order of magnitude of traffic noise today. As described above in the methodology, other measurements were also used in the noise modeling efforts for this EA. These numbers alone do not tell the whole story. Mitigation decisions must be made based on a consideration of all applicable portions of the CDOT noise policy.

Impacts of No-Action Alternative

Under the No-Action Alternative, noise levels from I-25 would change between existing and 2025 conditions mainly due to increases in traffic volume and decreases in travel speed. Noise is expected to increase along the corridor by 3 decibels or less, due to existing and predicted traffic congestion.

Traffic noise is at its loudest when there is a large volume of traffic traveling at relatively high speeds. On the traffic congestion scale, this corresponds to Level of Service C conditions. (See page 1-4 of this EA for Level of Service definitions.)

In the central portion of the study area, LOS C conditions are not observed during rush hours, but occur before and after rush hours. Under the No-Action Alternative, I-25 would be more heavily congested during daylight hours, and traffic noise would decrease slightly at those times.

In terms of noise magnitude, LOS C worst-case noise in the No-Action Alternative would not be different than existing LOS C noise. It would change only in terms of the duration and the time of day of occurrence.

In the northernmost and southernmost portions of the corridor, current traffic volumes do not routinely exceed I-25's capacity. In these areas, under the No-Action Alternative, traffic would increase to the level of routinely congested conditions during rush hours. Generally speaking, a doubling of traffic would increase noise levels by about 3 decibels. Under the No-Action Alternative, traffic would not be able to increase by that amount because additional lanes would not be provided, so any noise increases along the corridor would be less than three decibels.

Impacts of Proposed Action

Additional traffic in the future, carried on the additional lanes included in the Proposed Action, would generate higher noise levels than are measured today. The magnitude of noise increases in the corridor was determined using the CDOT- and FHWA-approved noise prediction model STAMINA 2.0. Direct noise impacts were assessed by comparing noise levels predicted for the Proposed Action to the Noise Abatement Criteria shown previously in Table 3-13.

Noise levels were predicted for year 2025 traffic volumes under LOS C conditions and the proposed roadway configuration. The model was used to predict the location of the 66 dB(A) and 71 dB(A) noise level contours. These noise levels correspond to CDOT's standards for Activity Category B and C receptors, respectively. A noise mitigation analysis was conducted for each of the Category B land uses located between the 66 dB(A) contour and I-25 and for each of the Category C land uses located between the 71 dB(A) noise contour and I-25. The average distances from the centerline of the Proposed Action to the 66 dB(A) and 71 dB(A) noise contours are 450 feet and 225 feet, respectively.

Table 3-14 lists the resulting Category B properties. These residential areas, parks, and hotels could be expected to experience noise levels in excess of the 66 dB(A) level in the year 2025 if no mitigation were provided. There are a number of Category C land uses within the future 71 dB(A) contours (i.e., office buildings and restaurants). These are discussed later in this subsection with respect to mitigation considered for "commercial properties."

Abatement is also considered for sites where a proposed action would cause a noise increase of 10 dB(A). This noise increase criterion is normally tested by comparing current modeled noise levels with design-year noise levels. In response to citizen comments regarding cumulative effects of previous improvements in the I-25 corridor, 1990 was used as the base year, thereby resulting in evaluation of noise increases over a 35-year period (1990 to 2025). Forty sites along the corridor were evaluated, and no site was found to have an increase of more than 7 decibels over that time period. The average for long-term increase at all 40 sites was 5 decibels.

Sites Meeting Noise Abatement Criteria

In accordance with Federal and State noise guidelines, specific mitigation analyses were conducted for each of the receptors where predicted 2025 noise levels approach, equal, or exceed the Noise Abatement Criteria (i.e., those sites listed in Table 3-14).

There are a number of measures available to mitigate highway noise, such as walls, earthen berms, buffer zones, vegetation and speed reduction. However, only walls and berms were deemed feasible.

Through the EA public involvement process, some citizens suggested the use of a rubberized asphalt pavement on I-25 for the purpose of noise reduction. However, alternative pavement types are not considered a proven noise mitigation measure by FHWA and CDOT. Instead, pavement selection is based upon life cycle costs, taking into account durability, maintenance, and traffic disruption factors. Other potential mitigation measures, such as moving or depressing the highway, were deemed infeasible due to the developed nature of the area, and due to groundwater or drainage constraints.

Table 3-15 provides the results of the project noise abatement evaluation for feasibility and reasonableness.

A key criterion among the factors that determine feasibility is whether mitigation could be expected to provide at least 5 dB(A) of noise reduction to affected receptors. Other feasibility issues include safety, maintenance, and constructibility. A key criterion among the factors that determine reasonableness is whether the cost per affected receptor per decibel of noise reduction is within affordable cost limits. Other reasonableness issues include the desires of affected property owners, and the length of time the subject development has been in existence. The full set of criteria is specified in CDOT's *Noise Analysis and Abatement Guidelines.*

Additional discussion of the mitigation analysis is provided below, by type of property considered.

Residential Properties

For each neighborhood with impacted properties, a mitigation analysis was conducted to determine if a barrier would be feasible (i.e., would it be physically possible to construct a barrier, would there be "fatal-flaw" maintenance or safety issues, and would the barrier achieve at least 5 dB of noise reduction at front-row residences?). Determining if a barrier is reasonable included assessing whether or not the barrier meets CDOT's criterion of $4,000 per benefited receiver per decibel of noise reduction. The noise reduction expected from proposed barriers was predicted using the STAMINA 2.0 model with 2025 Proposed Action conditions. Noise wall costs were calculated using an estimate of $30 per square foot, which is a standard cost derived by CDOT.

TABLE 3-14
Category B Receptors with Projected Noise Approaching or Exceeding the Noise Abatement Criteria

Land Use	Name	Location
Residential Areas	Stratmoor Valley	East side of I-25, both sides of Academy Boulevard
	Stratton Meadows	Along Arvada Street near Nevada/Tejon Interchange
	Glen Avenue	East side of I-25, south of Uintah Street
	San Miguel	West side of I-25, south of Uintah Street
	Mesa Springs	West side of I-25, south of Fillmore Street
	Holiday Village	East side of I-25, north of Fillmore Street
	Park Terrace Apartments	West side of I-25, north of Fillmore Street
	Holland Park	West side of I-25, north of Fillmore Street
	Garden Terrace Apartments	West side of I-25, north of Garden of Gods Road
	Pulpit Rock	East side of I-25, north of N. Nevada Avenue
Parks	Dorchester Park	Near the Nevada/Tejon Interchange
	Confluence Park	Between Cimarron and Colorado
	Monument Valley Park	Between Bijou and Fontanero Interchanges
Hotels	Residence Inn	Circle-Lake Interchange
	Fairfield Inn	Circle-Lake Interchange
	Sheraton Hotel	Circle-Lake Interchange
	Quality Inns	Circle-Lake Interchange
	Howard Johnson	Nevada/Tejon Interchange
	Red Lion Hotel	Bijou Interchange
	Ramada Inn	Fillmore Interchange
	Best Western - Palmer House	Fillmore Interchange
	Motel 6	North of Fillmore Interchange
	Super 8 Motel	North of Fillmore Interchange
	Budget Inn	North of Fillmore Interchange
	AmeriSuites	Garden of Gods Interchange
	Super 8	Garden of Gods Interchange
	Days Inn	Garden of Gods Interchange
	Extended Stay America	Rockrimmon Interchange
	Hampton Inn	Woodmen Interchange
	Embassy Suites	Woodmen Interchange

The number of benefited receivers was determined as the number of living units predicted to receive at least three decibels of noise reduction from the proposed barrier.

Parks and Trails

As shown in Table 3-14, three parks will be affected by noise as a result of the Proposed Action. Table 3-16 indicates the specific portions of these resources that will be affected. The decision of whether to provide mitigation for parks is based in part on how the park facilities are used, and on the desires of the park's owners. All three parks listed above are owned by the City of Colorado Springs, and managed by the City's Parks, Recreation and Cultural Services. In cases where mitigation for parks was determined to be feasible, consultation was conducted to obtain the City's input.

In the case of Dorchester Park, mitigation was deemed to be infeasible because 5 dB(A) of noise reduction could not be achieved due to the contribution of noise from Nevada Avenue and Tejon Street, arterial streets that border this park on its east and west sides. I-25 is farther away from the park, across Monument Creek.

TABLE 3-15
Results of Noise Mitigation Analyses for Residential Neighborhoods

Neighborhood	1990 Noise Level (dBA)[1]	2025 Noise Level (dBA)[2]	Noise Barrier Feasible?[3]	Dimensions of Noise Wall Analyzed (Length by Height in Feet)	Cost Using $30 Per Sq. Ft. ($)	Front-Row Noise Reduction (dBA)[4]	Number of Benefited Receptors[5]	Cost Per Benefited Receptor Per dB of Noise Reduction	Wall to be Included in Project[6]?
Stratmoor Valley – S. of Academy (south area)	60	67	Yes	1540 x 19	$877,800	4.4	41	$4,866[7]	Yes
Stratmoor Valley – S. of Academy (north area)	60	67	Yes	790 x 12	$284,400	4.8	40	$1,481	Yes
Stratmoor Valley – North of Academy	66	69	Yes	2070 x 12	$745,200	5.4	62	$2,226	Yes
Stratton Meadows	70	69	Yes	3830 x 20	$2,298,000	4.3	80	$6,680	No[8]
Glen Avenue Residences	60	66	Yes	600 x 20	$360,000	5.5	8	$8,181	No[8]
San Miguel	62	66	Yes	740 x 21	$466,200	4.5	9	$11,511	No[8]
Mesa Springs	62	68	No	N/A	N/A	N/A	N/A	N/A	No[9]
Holiday Village	58	63	Yes	860 x 8	$206,400	4.6	13	$3,451	Yes
Park Terrace Apartments	65	70	Yes	540 x 20	$324,000	5.2	14	$4,450	No[8]
Holland Park	65	70	Yes	2820 x 16	$1,353,600	5.7	70	$3,392	Yes
Garden Terrace Apartments	69	74	Yes	1010 x 20	$606,000	4.1	18	$8,211	No[8]
Pulpit Rock	66	70	Yes	1885 x 15	$848,250	5.6	38	$3,986	Yes

1 Predicted noise level at representative front-row residence for 1990 traffic and roadway conditions

2 Predicted noise level at representative front-row residence for 2025 traffic and roadway conditions

3 Per CDOT Noise Guidelines, a wall is feasible if it is physically possible to construct a continuous barrier, the barrier is predicted to achieve a noise reduction of at least 5 dBA at one or more front-row receptors, and has no associated "fatal flaw" safety or maintenance concerns

4 Average predicted noise reduction at "benefited" receptors (see Note 5)

5 "Benefited" receptors are those where 3 dBA or more of noise reduction is predicted to be achieved by the noise barrier

6 From the CDOT Guidelines, the "Impacted Persons Desires" and "Development Existence" Reasonableness factors are "Extremely Reasonable" for all areas

7 Was considered "marginally reasonable" as there is a possibility of reduced cost if berm can be implemented

8 Not recommended based on review of all "reasonableness" factors from CDOT Noise Guidelines

9 Not recommended based on review of all "feasibility" factors from CDOT Noise Guidelines

TABLE 3-16
Noise Impacts to Parks and Trails

Resource	Area(s) Affected
Monument Valley Park	Trail access point along Recreation Way
	Parking lot near the Horticultural Demonstration Gardens
	Open area north of the park's existing noise wall
	Edge of park west of the volleyball court
	Open area adjacent to the Bijou Street bridge
Confluence Park (under construction)	Western side of the park, where no noise-sensitive uses are planned
Dorchester Park	Southern, unimproved portion of the park, including a trail
Trails and sidewalks that cross or closely parallel I-25	Sidewalks, bike lanes, and portions of the trail system within approximately 500 feet of the freeway

In the case of Confluence Park (under construction, not yet open for use) the City was not in favor of a noise barrier along I-25 because it wants the park to be visible from the highway.

However, the City urged the use of solid guardrail barriers instead of standard, open guardrails in this vicinity. This type of barrier is available as a design treatment, but would not be considered noise mitigation.

In the case of Monument Valley Park, CDOT presented a number of mitigation alternatives to the City staff, and these were subsequently considered by the Colorado Springs Parks and Recreation Advisory Board. The mitigation actions that were accepted by the Parks Board include constructing a berm on existing I-25 right-of-way in the northeast quadrant of the Bijou Interchange and constructing a wall along I-25 where it passes the Demonstration Gardens and the ponds south of Uintah Street. Also accepted was a proposal for planting trees south of the existing Pavilion wall as a visual screen. See Figure 3-11 for photo simulations of proposed mitigation for Monument Valley Park.

Trails

Portions of bicycle and pedestrian facilities that cross or parallel I-25 currently experience noise levels in excess of CDOT noise abatement criteria. By 2025, even larger portions of these facilities will experience noise exceeding the criteria. However, no bicycle or pedestrian facility will experience noise levels so severe that the facility would become unusable for its intended use.

Due to the linear nature of these trails, the construction of noise barriers would be very expensive for the benefit derived, and would have other impacts such as the loss of view, drainage, and safety of the trail user.

Hotels

A total of 17 hotels were considered impacted by noise (refer to Table 3-14). Each hotel was visited to determine if the facility had any outdoor facilities facing the highway, such as pools, patios, and balconies. A number of the hotels did have some form of outdoor use facing I-25. However, in each case, it was found that mitigation was either not feasible or not reasonable.

Commercial Properties

An inspection of the commercial areas inside the 71 dB(A) noise level contours concluded that there is no active outdoor use occurring at ground level. That is, patrons and employees of these facilities generally park their cars and walk inside. Furthermore, there are no outdoor seating areas or other outdoor uses that would benefit from noise mitigation. Therefore, no noise mitigation is recommended for any commercial properties, as it would not serve its intended purpose under CDOT guidelines, which is to provide noise reduction for regularly used outdoor areas.

Construction Noise

During construction, the Proposed Action would generate noise from diesel-powered earth moving equipment such as dump trucks and bulldozers, back-up alarms on certain equipment, compressors, and pile drivers (near bridge abutments and retaining walls, if necessary). Construction noise at off-site receptor locations will usually be dependent on the loudest one or two pieces of equipment operating at the moment. Noise levels from diesel-powered equipment range from 80 to 95 dB(A) at a distance of 50 feet. Impact equipment such as rock drills and pile drivers can generate louder noise levels.

Mitigation

Mitigation was found to be both feasible and reasonable at a total of eight locations, which are listed in Table 3-17. The proposed mitigation includes one earthen berm and seven new noise barriers ranging from 8 feet to 20 feet in height. The noise barriers range from 625 feet (about one-eighth of a mile) to 2,820 feet (more than half a mile) in length. Collectively, they will protect 270 residences plus several features of Monument Valley Park. The average noise reduction predicted for these properties is approximately 5 dB(A).The locations of proposed mitigation are depicted in Figure 3-15, together with the location of other existing or committed noise barriers in the corridor.

In the figure, locations of proposed noise mitigation are indicated with a letter P (for Proposed) and a number. These correspond to the site numbers shown in Table 3-17. For example, location P-1 on the map is the site listed as P-1 in the table, the Pulpit Rock neighborhood site. Figure 3-15 also identifies existing noise barriers, with the letter E denoting an existing site. Location C-1 is the committed site protecting the Pine Creek Estates area.

The above discussion of proposed mitigation is based on studies completed to date, and not on final project design.

A final decision on the installation of abatement measures will be made upon completion of project design and the public involvement process. During final design, CDOT will take into account the desires of the affected property owners and obtain their further input.

To the extent feasible, construction noise impacts, while temporary, will be mitigated by limiting work to daylight hours and requiring the contractor to use well-maintained equipment (particularly with respect to mufflers).

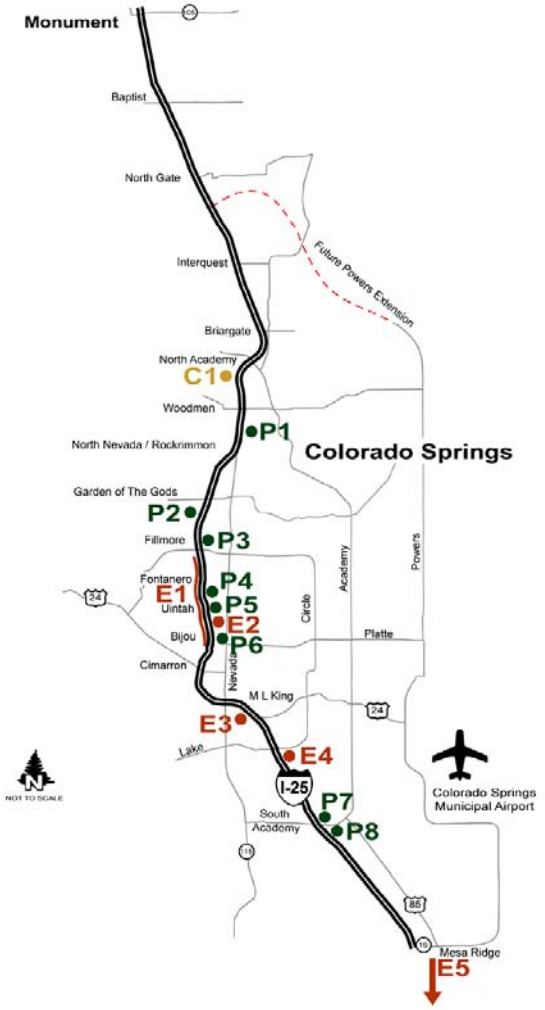


FIGURE 3-15
Existing, Committed, and Proposed Noise Barriers Along I-25

TABLE 3-17
Proposed Noise Barriers Along I-25

	Location	Approx. Height	Approx. Length	Cost in 1,000s	Average Noise Reduction	Properties Protected
P-1	Pulpit Rock neighborhood East of I-25, south of Dublin Boulevard	15 ft.	1,885 ft.	$848	6 dB(A)	37 residences
P-2	Holland Park neighborhood (N. Chestnut St. West of I-25, north of Ellston Street	16 ft.	2,820 ft.	$1,354	6 dB(A)	70 residences
P-3	Holiday Village East of I-25, north of Fillmore Street	8 ft.	860 ft.	$206	5 dB(A)	13 residences
P-4	Monument Valley Park East of I-25, south of Uintah Street	20 ft.	1,060 ft.	$636	5 dB(A)	8 residences and duck pond area
P-5	East of I-25, near Mesa Road	20 ft.	625 ft.	$375	5 dB(A)	Demonstration Gardens
P-6	East of I-25, north of Bijou Street	berm	890 ft.	$297*	5 dB(A)	Baseball field and trail
P-7	Stratmoor Valley - north portion East of I-25, north of S. Academy Boulevard	12 ft.	2,070 ft.	$745	5 dB(A)	62 residences
P-8	Stratmoor Valley – south portion (two barriers) East of I-25, south of S. Academy Boulevard	12 ft. and 19 ft.	790 ft. and 2,400 ft.	$1,162	4 to 5 dB(A)	80 residences

* berm

Water Resources and Issues

Grouped under the category “Water Resources and Issues” are the following subsections:

- Watersheds
- Floodplains
- Water Quality
- Wetlands

Watersheds

To understand the impacts a project would have on floodplains, wetlands, and water quality, it is helpful to first discuss the overall watershed that forms the context for the stream systems to be evaluated.

The I-25 Improvements Project is located entirely within the Fountain Creek Watershed (see Figure 3-16). This watershed is made up of several smaller, or sub-, watersheds including Monument Creek to the northwest, Fountain Creek headwaters to the west, and the Colorado Springs Composite to the south. Fountain Creek drains 927 square miles of widely varying terrain and life zones, including foothills and mountainous terrain to the west and rolling plains to the east. A wide variety of land uses exist within the watershed, including open space and federal forests to the west, agriculture and undeveloped lands to the north and east, and urban and suburban areas throughout, including the communities of Monument, Fountain, Colorado Springs, Manitou Springs, Woodland Park, Green Mountain Falls, and Pueblo.

Watershed Characteristics

Watershed characteristics arise from a combination of topography, geology, and climate.

Topography and climate influence the character of local streams through the amount and timing of runoff. The climate within the watershed is semiarid. The average annual precipitation in Colorado Springs is 16.4 inches, most of which (65 percent) falls during May through August. Annual stream flows vary widely, typically with peak flows during spring runoff (May-June), For example, average daily flows in Monument Creek range from 21 cubic feet per second (cfs) near the Air Force Academy to 182 cfs near the City of Fountain.

Geology also affects streams and influences watershed characteristics because of the soils and formations that arise from the natural decomposition of the underlying bedrock. Dominant soil types within the watershed include shallow, gravelly soils derived from igneous rock and sandstones (foothills), moderately deep, coarse sands derived from weathered sandstone (Colorado Springs and east), and clays derived from shales in valleys below the confluence of Monument and Fountain creeks. Geology and climate combine to limit plant cover as well as the depth of soil development. In the Pikes Peak region, these conditions lead to soils and underlying materials that are moderately to highly erodible, especially if disturbed or if subjected to greater-than-normal runoff.

Prior to human development, area streams and floodplains adjusted their form to accommodate change in the natural, seasonal flows. Stream width, depth, and flow pattern respond to the amount and timing of water (and sediments) they carry. The extent and character of the adjacent floodplains respond to these forces too. In turn, vegetation responds to the resulting water and soil conditions. Vegetation also influences site conditions by intercepting rainfall, anchoring stream banks and floodplain soils with their roots, and by laying down and covering the soil surface during floods. Local wildlife, both in-stream and along floodplains, are affected by the interdependence that exists between streamflows, soils, and vegetation.

Current Conditions

Current watershed problems in the Pikes Peak region include excessive erosion and sedimentation in area streams, streambed down-cutting, and flooding. Land development and changes in land use cause or exacerbate these problems by increasing the amount of soil disturbance, increasing the amount of impervious surfaces, and encroaching on natural floodplains.

The rapid growth occurring in El Paso County follows trends that are expected to continue and result in the conversion of agricultural, and other undeveloped land, to other uses. Construction of housing, commercial facilities, and related parking and roads requires soil disturbance. Without proper precautions, these activities can increase erosion and the amount of sediments reaching local streams. The increase in the amount of impervious surfaces that comes with development leads to increased stormwater runoff that increases flows in area streams.

Development also increases the amount of water in local streams because water must be imported from other watersheds to meet the demand created by

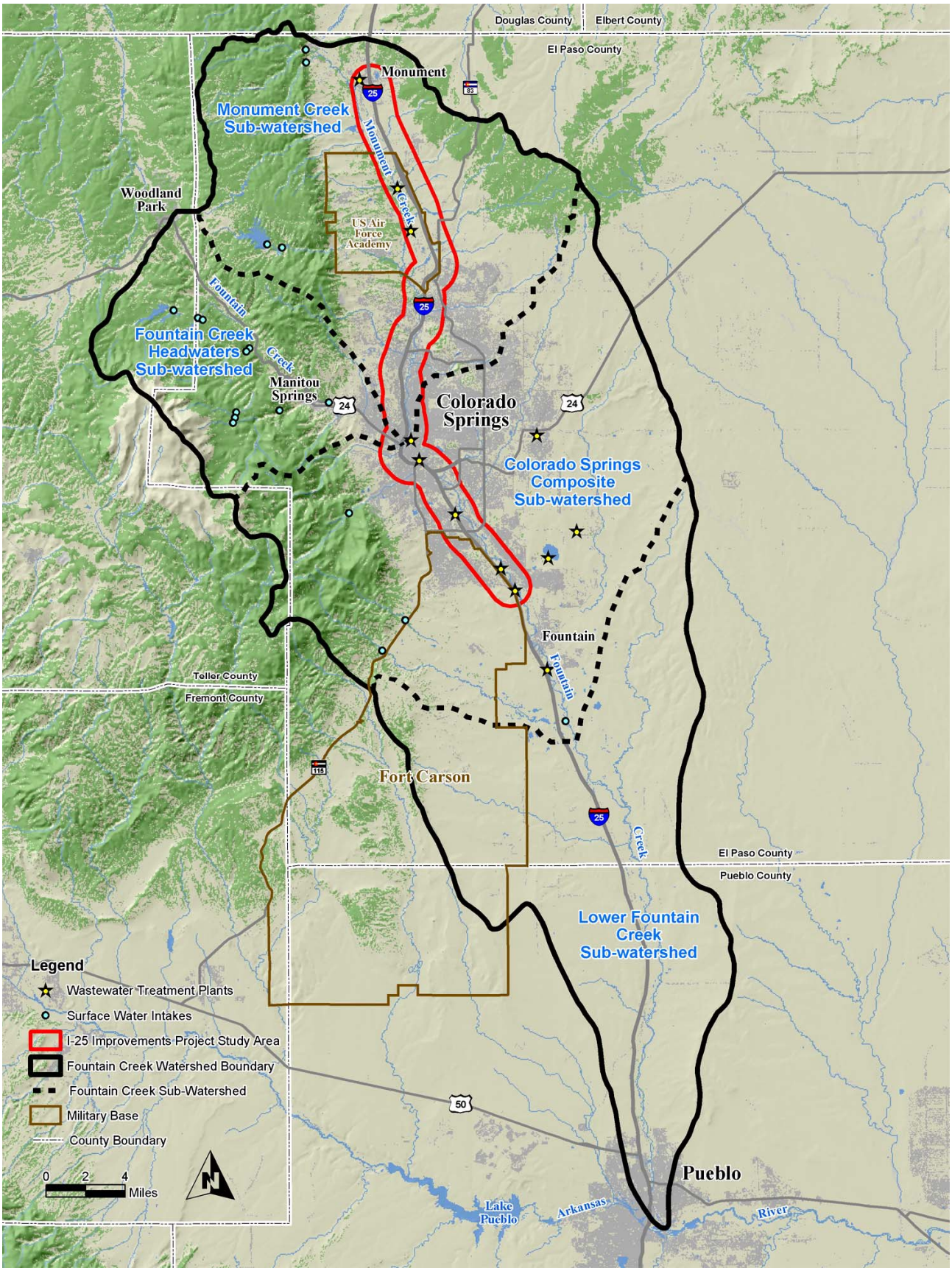


FIGURE 3-16
Fountain Creek Watershed Map

development. The return flows from municipal uses such as lawn watering and wastewater treatment end up in Fountain and Monument creeks. For instance, 85 percent of municipal water in the Colorado Springs area is imported from basins west of the Continental Divide, and there are fourteen permitted wastewater treatment plants that discharge into Fountain Creek and its tributaries.

Land development within a watershed also affects floodplains because it commonly encroaches upon, and narrows existing stream channels and tends to concentrate stream flows and may increase flow velocities. This causes erosion and instability in the stream banks and channel bed. Failing stream banks cause loss of property, increased amounts of debris carried in the flood flows, decreased water quality, and impacts to downstream properties.

Erosion along Fountain Creek downstream of the I-25 project area is evidence of increased stormwater runoff in the Colorado Springs urbanized area.

Physically, the greater force and quantity of flows erode streambeds and banks, and riparian and wetland vegetation along the streams is carried downstream. Stream banks steepen as the stream cuts deeper into the earth. What remains streamside is usually a narrow band of vegetation with limited value. Measures to protect property usually transfer the energy of existing flows downstream to the next unprotected section. When these fast-moving flows enter wider areas downstream, eroded materials are deposited, burying existing in-stream and streamside habitats. Together, these processes remove both in-stream and riparian habitats critical for many creatures and important for overall aquatic ecosystem health. Streams continue this process of erosion and deposition until a new shape and pattern adjusts to the new flow regime.

As the stream channel narrows and steepens and as other areas are filled with eroded materials, flooding becomes more common and more destructive. The resulting increase in the frequency and intensity of disturbance provides opportunities for exotic and native invasive species to invade and dominate remaining habitats.

In addition to water quantity, development also affects water quality. As rain and snow melt flows off roads and parking lots, it carries with it accumulated dirt, road salt and sand, trash, rubber worn from tires, metals worn from brake pads, and oil and other fluids dripped from vehicles. High levels of nitrogen and phosphorus in treated wastewater also negatively impact water quality. Because streamside wetlands and riparian areas perform important water quality functions, their removal further limits the ability of the streams to address poor-quality runoff.

Biologically, the physical changes in the streams, coupled with lower water quality, cause the diversity and health of the entire stream system to decline to a point where only those species most tolerant of degraded conditions can survive.

Watershed Approach

Because critical portions of Monument Creek and its tributaries are located in close proximity to the interstate, the Proposed Action will have varying impacts on aquatic and riparian resources. Mitigation strategies to address possible impacts to floodplains, water quality, and wetlands and riparian resources must be coordinated with other watershed management strategies that are either presently being implemented or are being developed by local, state, and federal agencies.

The following subsections will present the effects the Proposed Action will likely have on floodplains, water quality, and wetlands within the project area. Understanding the watershed context of these resources allows opportunities to address the interrelated impacts of the Proposed Action. Examples of these opportunities are:

- Construction at various locations within the project area would increase the width of existing channel areas. These can be designed to encourage the development of new riparian vegetation and wetlands.

Stream instability at various points threatens the existing roadway. In-channel structures to stabilize the streambed and banks can be positioned to maximize development of streamside habitat. Alternatives to structural solutions such as natural boulders, and vegetative stabilization can be designed to consolidate stream flows, improve fish passage, and improve stream aesthetics.

- Existing bridges and culverts will be replaced as part of the Proposed Action because of age or inadequate flood capacity. Each proposed replacement provides opportunities to improve conditions such as wildlife passage, wetland and riparian habitat creation, and stream channel restoration.
- Certain areas within the project corridor would be suitable for restoration, such as areas in the Monument Creek floodplain downstream of its confluence with Fountain Creek.
- Creation or restoration of streamside riparian and wetland areas can offset direct project impacts to such areas while also improving overall stream system health.
- Consideration of the issues affecting the watershed during project planning and design can allow space for permanent storm water storage and treatment facilities. Such features can limit the amount of sediment and stormwater entering local streams. They can also limit direct impacts to streams and other sensitive habitats. Proper application and implementation of other water quality Best Management Practices (BMPs) can reduce and eliminate many potentially negative project impacts.

Many of these opportunities require coordination with local, state, and federal agencies that are presently working on Fountain Creek Watershed issues. For example, the Pikes Peak Area Council of Governments has developed comprehensive plans for the watershed and water quality improvements, and the U.S. Army Corps of Engineers is presently conducting a multi-agency sponsored study to evaluate flooding and stream degradation issues in the watershed. Ongoing communication with the many agencies involved in the Fountain Creek Watershed is critical to successful implementation of the Proposed Action. CDOT will pursue the appropriate opportunities with the Federal, State, and local agencies involved in Fountain Creek watershed issues.

Floodplains

Protection of floodplains and floodways is required by Executive Order 11988, Floodplain Management; U.S. DOT Order 5650.2, Flood Management and Protection; and 23 CFR 650, Subpart A. CDOT endeavors to not build in floodplains any structures that would be put at risk during flood events, and also to ensure that any physical improvements made in a floodplain are designed to not cause adverse floodplain effects downstream or upstream of such improvements.

Definitions:

Floodplain - A broad and relatively flat area of a river valley, within a watershed, to either side of the main river.

Floodway - The boundary beyond which any additional development in the floodplain will cause an increase in the water surface elevation of more than one foot.

The major floodplains within the project study areas are located along Fountain Creek, Monument Creek and their tributaries. Before discussing existing conditions and impacts from the No-Action and Proposed Action Alternatives, it is necessary to discuss some of the background information related to floodplain management and the regulations that govern activities in, and around, floodplains.

The City of Colorado Springs and El Paso County participate in the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA). In conjunction with this program, the City of Colorado Springs and El Paso County regulate development and construction activities within floodplains. The Pikes Peak Regional Building Department Floodplain Administrator coordinates these programs and enforcement of the regulations.

The *Flood Insurance Study, El Paso County, Colorado, and Incorporated Areas*, revised August 23, 1999 was prepared by FEMA and includes the drainageways within El Paso County that have regulated floodplains. The existing FEMA regulated floodplains are illustrated on the current *Flood Insurance Rate Maps (FIRMs), El Paso County, Colorado, and Incorporated Areas*, revised August 23, 1999.

Common Floodplain Acronyms:

FEMA – Federal Emergency Management Agency
FIS – Flood Insurance Study
FIRM – Flood Insurance Rate Maps
BFE – Base Flood Elevations
CLOMR – Conditional Letter of Map Revision
LOMR – Letter of Map Revision
CFS – Cubic Feet per Second (a measure of flow rate)

FEMA regulated floodplains are delineated based on the flows from a 100-year return period storm event. That event is defined as a storm that has a one percent chance of occurring in any given year.

There are two general types of FEMA 100-year floodplains within the project area. The first type consists of 100-year floodplains that were studied with approximate methods, and have no baseline water surface elevations identified (termed base flood elevations) because detailed hydrologic and hydraulic analyses were not performed.

The second type includes 100-year floodplains that were studied with detailed hydrologic and hydraulic analyses, and have base flood elevations determined. The floodplain maps (FIRMs) also include the 500-year floodplain boundaries to indicate additional areas of flood risk for streams that were studied using detailed methods.

In addition to the identification of the limits of the 100-year floodplains as discussed above, FEMA developed the concept of a floodway. A floodway is defined as the main channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment due to development so that the 100-year flood can be safely passed without causing an increase in flood elevations of more than 1.0 foot. By delineating a floodway, a community divides the 100-year floodplain along a stream into two distinct zones as follows:

- Floodway
- Floodway fringe

The floodway fringe is the area within a floodplain in which development may be allowed to occur. However, by definition, no development may be allowed to occur within the floodway itself because that development would result in an increase in the flood elevations of more than one foot, thereby invalidating the reason for having a floodway.

Floodways have been established for all the floodplains in the study area that were delineated with detailed methods.

FEMA requires revision of the FIRM for any construction or development within the floodplain that results in an increase in regulatory base flood elevations (BFEs), or in an increase in floodplain boundaries. When this is anticipated by a proposed project, a Conditional Letter of Map Revision (CLOMR) must be obtained from FEMA before construction is initiated. After the project is completed, a Letter of Map Revision (LOMR) must be obtained from FEMA to finish the revision of the FIRM. An LOMR is also required when there is a decrease in BFEs or floodplain boundaries.

In order to participate in the National Flood Insurance Program and thereby allow citizens to acquire Federal flood insurance, the City of Colorado Springs and El Paso County have adopted these same floodplain management requirements as part of their floodplain ordinances. The local ordinances also require delineation of floodplains and floodways for those streams that do not have delineated FEMA floodplains.

In addition, the Colorado Water Conservation Board has jurisdiction over all floodplains within the State of Colorado and must designate new floodplains delineated for unstudied streams, before the floodplains can be regulated by local agencies. The Floodplain Administrator must issue a floodplain development permit for any construction within the floodplain.

Existing Conditions

Because floodplains occur within their respective sub-watersheds, the existing conditions of each of the major floodplains within the project study area will be discussed by sub-watershed as previously discussed in the "Watershed" subsection.

Monument Creek Sub-watershed

Monument Creek is one of the main streams in the study area, and the single largest tributary to Fountain Creek. It begins as a mountain stream west of Palmer Lake, flows southeasterly in steep narrow canyons and through transitional foothills toward the Town of Monument, then turns south and generally parallels I-25 to its confluence with Fountain Creek at Cimarron Street in Colorado Springs.

Melting snow pack and springs are the primary source of water in Monument Creek under non-flood conditions. The primary source of major flooding events is high intensity rainfall events that occur over large areas within the watershed in the spring and summer.

Within Colorado Springs there has been substantial urban development of the tributary sub-watersheds and along the stream banks. In particular, the area north of Colorado Springs is rapidly developing. The development causes an increase in impervious areas associated with pavement and buildings which contributes more runoff from these areas than in pre-development conditions.

I-25 crosses Monument Creek between the north Nevada Avenue and Rockrimmon Boulevard interchanges. A portion of Bijou Street that will be reconstructed as part of the proposed Bijou Street Interchange also crosses Monument Creek. Table 3-18 lists the major sub-watershed characteristics of Monument Creek.

TABLE 3-18
Monument Creek Sub-watershed Characteristics

Total sub-watershed Area	238 square miles
100-year discharge	32,000 cubic feet per second
Average floodplain width	200 to 300 feet

Several smaller tributary streams within the Monument Creek Watershed that cross I-25 also have regulated floodplains. These streams include:

- Crystal Creek
- Dirty Woman Creek
- Teachout Creek
- Jackson Creek
- Black Forest Creek
- Black Forest Creek-Middle Tributary
- Smith Creek

- Black Squirrel Creek
- Kettle Creek
- Pine Creek
- Cottonwood Creek
- Rockrimmon Basin
- Douglas Creek North
- Douglas Creek South
- Mesa Basin

There are also a few other streams that cross I-25 within the Monument Creek sub-watershed that have floodplains that are not currently regulated. These tributary streams have sub-watershed areas that vary in size, with the largest about 16 square miles with 100-year peak discharges up to about 10,000 cubic feet per second.

Several major flooding events have been recorded in the past. The largest in recent history is the flood of 1965, which caused major damage to many of the communities in the Fountain Creek watershed. More recently, the flood of 1999 caused serious erosion problems in the area of Monument Lake. The most prominent erosion problems after the 1999 flood were bank and sewer line erosion, damage at the wastewater treatment plant, and spillway damage at Monument Lake. Flooding damage also occurred in the Town of Palmer Lake.

Encroaching development may create problems in the future and limit available floodplain capacity. The floodplain has already been encroached upon at numerous locations by development. One major tributary to Monument Creek, Cottonwood Creek, has several stream reaches that have experienced frequent erosion problems. For example, storms during the summer of 2001 severely eroded the banks of Cottonwood Creek several hundred feet upstream of Union Boulevard, which is about two miles upstream of I-25.

Fountain Creek Headwaters Sub-watershed

The Fountain Creek headwaters are generally located northwest of Woodland Park. This perennial mountain stream flows southeasterly in a steep bedrock channel through narrow canyons with steep walls. Runoff from melting snow pack and springs feed the headwaters from the area around Pikes Peak. The stream meanders through Manitou Springs where the floodplain has been severely encroached by development, and continues into Colorado Springs along the US 24 corridor. At the confluence with Monument Creek, just east of the I-25/US 24 (Cimarron Street) Interchange, the channel turns to the south and generally parallels I-25 to its confluence with the Arkansas River in Pueblo.

Substantial urban development has occurred immediately adjacent to the stream within Manitou Springs and Colorado Springs. Table 3-19 contains watershed characteristics of the Fountain Creek Headwaters.

TABLE 3-19
Fountain Creek Headwaters Sub-watershed Characteristics

Total sub-watershed area	120 square miles
100-year discharge	20,500 cubic feet per second
Average floodplain width	200 to 300 feet, maximum of 2,700 feet upstream of confluence

Within this sub-watershed, erosion and sedimentation are major factors affecting the floodplains. The Williams Canyon area contributes a high amount of sediment to Fountain Creek. Fine-grained, erodible soils in the area generate sediment from roadsides and other unprotected areas, causing sediment deposition in the channel and within bridge and culvert structures, thereby reducing available capacity for flood flows. The photo below clearly shows the transported sediment within Fountain Creek as it makes its confluence with Monument Creek.

During 1999 flooding, Fountain Creek (center of picture) carried a heavy load of sediments to its confluence with Monument Creek (right of picture), near the I-25/Cimarron Interchange. Note high flows.

Colorado Springs Composite Sub-watershed

The Colorado Springs Composite sub-watershed is the portion of the overall Fountain Creek watershed between the confluence of Fountain Creek and Monument Creek and a point just south of the City of Fountain (see Figure 3-16). West of the main channel, the sub-watershed consists of steep mountainous areas and foothills. Much of the foothills and high plains portion of the sub-watershed is completely developed.

I-25 is immediately adjacent to Fountain Creek in this sub-watershed from Cimarron Street to the Martin Luther King, Jr. Bypass, however the highway does not cross the drainageway. Table 3-20 contains watershed characteristics of the Colorado Springs Composite sub-watershed.

TABLE 3-20
Colorado Springs Composite Sub-watershed Characteristics

Total sub-watershed area	358 square miles
100-year discharge	42,200 cubic feet per second
Average floodplain width	300 to 500 feet

Several smaller tributary streams within this sub-watershed that cross I-25 also have regulated floodplains. These streams include:

- Bear Creek
- Cheyenne Creek
- Spring Run
- Fishers Canyon

These tributary streams have basin areas that vary in size up to about 25 square miles, with 100-year peak discharges up to about 13,000 cubic feet per second.

Stream bank erosion and channel degradation are affecting the floodplains within this sub-watershed. In many areas the stream channel has been modified through construction of channel stabilization structures and erosion protection. New development in the watershed has created similar problems as those issues discussed in the upper sub-watersheds.

Methodology

A location hydraulic study was done for the proposed project, as required by federal regulations for encroachments on floodplains (23 CFR 650.111). The hydrologic and hydraulic analyses were based on the proposed concept design. Existing FEMA floodplain information has been reviewed, and updated information including hydraulic reports and data from other projects, were considered in this hydraulic study. Tributary basins were also verified using U.S. Geological Survey (USGS) mapping. Field reviews were conducted for all streams with existing floodplains, and for the other drainage basins in the study corridor. Potential impacts and general mitigation measures for the floodplains have been identified based on these reviews. As individual construction projects within the I-25 corridor are designed in the future, final hydrologic and hydraulic analyses that comply with federal floodplain regulations (23 CFR 650.117) will be done at that time to identify specific impacts and mitigation measures. This approach is consistent with the regulations.

Impacts of No-Action Alternative

The No-Action Alternative would not result in construction of roadway improvements that would impact any of the existing floodplains. However, the no action alternative would result in impacts to the existing floodplains as a result of maintenance actions to address increased damage due to erosion and sedimentation. Also, existing undersized and aging drainage structures would remain in their existing conditions without adequate capacity to safely convey flood flows.

Impacts of Proposed Action

Direct impacts to floodplains would occur from the Proposed Action due to construction of widened roadway embankments; new and replacement bridges; extended, enlarged, or replaced culverts; and channel stabilization improvements. Where the highway is currently within a floodplain, the improvements would be designed to remove the roadway from the floodplain. The potential direct impacts could include changes in the base flood elevations, floodplain boundaries, and flow velocities. Floodplain encroachments and associated BFE and floodplain boundary increases would be limited as allowed by FEMA floodplain management regulations. At some locations, BFEs and associated floodplain boundaries would likely be decreased because the planned drainage improvements would have greater hydraulic capacity than the existing structures. Most floodplain encroachments would be at highway crossings of streams. There would also be a few longitudinal floodplain encroachments and

impacts where the highway is parallel to and directly adjacent to streams. The planned improvements would not support incompatible floodplain development.

The Proposed Action would have a total of approximately 52 acres of direct impacts to existing floodplain areas. These direct impact areas are the floodplain areas that would be disturbed by construction. The direct impacts areas for the individual streams are listed in Table 3-21.

TABLE 3-21
Direct Impact Areas for Individual Streams

Stream	Number of Acres Impacted
Monument Creek	9 acres
Fountain Creek	16 acres
Crystal Creek	0 acres
Dirty Woman Creek	0 acres
Teachout Creek	2 acres
Jackson Creek	4 acres
Black Forest Creek	1 acre
Black Forest Creek-Middle Tributary	2 acres
Smith Creek	5 acres
Black Squirrel Creek	3 acres
Kettle Creek	0 acres
Pine Creek	0 acres
Cottonwood Creek	0 acres
Rockrimmon Basin	1 acre
Douglas Creek North	1 acre
Douglas Creek South	1 acre
Mesa Basin	0 acres
Bear Creek	2 acres
Cheyenne Creek	0 acres
Spring Run	0 acres
Fishers Canyon	5 acres

Construction of the highway improvements included in the Proposed Action within floodplain areas would also have indirect impacts. The proposed action will increase runoff generated from the highway right-of-way. This increase will have only small impacts to the peak runoff discharges of the overall drainage basins, considering the right-of-way and impervious areas of the highway are small relative to those of the overall drainage basins.

Some existing stream crossings of I-25 have small unintended detention areas upstream caused by existing culverts and bridges that do not contain or pass the 100-year discharge. When these drainage structures are enlarged, the detention areas would be reduced in volume, resulting in small increases in the peak discharges downstream. However, the existing detention volumes are small relative to the peak discharges of the overall drainage basins of the floodplains, and the discharge increases would also be small. There are also some locations where increases in base flood elevations and floodplain boundaries at the highway could have impacts that extend upstream, and outside of the highway corridor.

Many floodplain areas are also wetlands and riparian areas. Construction activities in the floodplain areas could temporarily and permanently impact these wetlands and riparian areas. These impacts are discussed later in the "Wetlands" subsection.

Some of the floodplain areas are also habitat for the threatened Preble's meadow jumping mouse. Construction activities in the floodplain areas could temporarily and permanently impact these habitat areas. These impacts are discussed later in the subsection on "Threatened and Endangered Species."

Water quality could be impacted during construction in floodplain areas if adequate measures to control erosion and sedimentation are not implemented. Impacts to water quality will be discussed later in the "Water Quality" subsection.

Mitigation

Design of the improvements will be based on avoidance and minimization of impacts to the floodplains.

Bridge, culvert, and other roadway and drainage improvements constructed in floodplain areas will be designed to result in maintained or increased capacities of the drainageways. The design of corridor improvements will comply with federal floodplain regulations (e.g., 23 CFR 650.115**).** The designs will also comply with FEMA regulations and City and County floodplain ordinances. This design approach will mitigate direct and indirect impacts.

All construction projects within floodplain areas will be coordinated through the City/County Floodplain Administrator for issuance of a Floodplain Development Permit. If construction is proposed in the floodway portion of the floodplain, and base flood elevations or floodplain limits are increased, a CLOMR and LOMR will be processed through the Floodplain Administrator for approval by FEMA to revise the appropriate regulatory floodplain and/or floodway. If the proposed construction decreases base flood elevations, a LOMR will be obtained following construction, to revise the Flood Insurance Rate Maps. FEMA coordination will follow the procedures included in the agreement between the Federal Highway Administration and FEMA regarding highway improvement and construction in floodplains.

Detention basins, where feasible, will be constructed in open areas of interchanges and other large open areas to reduce peak discharges and limit runoff discharges from the highway. During final design of drainage structures to be enlarged that have small unintended detention basins upstream, the impact of reducing the volumes of these unintended detention areas will be verified. Final design of all project improvements would assure that floodplain BFE and boundary increases do not extend outside the highway right-of-way, by increasing the hydraulic capacity of the crossing structures as needed.

Disturbed wetland, riparian, and habitat areas in floodplains will be re-vegetated, and temporary erosion and sedimentation control and channel stabilization improvements during construction will be included at all locations. Permanent erosion control and floodplain stabilization improvements, and water quality best management practices (BMPs) will also be implemented. These measures will mitigate indirect impacts.

Consideration of overall watershed conditions during floodplain decisions will offer approaches that address many of this area’s watershed needs. Coordination through the Floodplain Administrator will assure that all proposed improvements are coordinated with other ongoing studies and planned improvements within the Fountain Creek watershed.

Water Quality

In order to understand possible impacts on water quality from the Proposed Action, it is useful to briefly discuss the applicable regulations and standards that govern water quality. The following provides a brief explanation of the applicable regulations and regulatory agencies that have jurisdiction within the project area.

Regulations

The primary federal regulations that govern the current stormwater quality program are the Phase I and Phase II Stormwater Regulations under the Clean Water Act. These regulations, among other requirements, require municipalities and other regulated entities such as CDOT to acquire a National Pollutant Discharge Elimination System (NPDES) Permit for their stormwater discharges. The U.S. Environmental Protection Agency's stormwater NPDES regulations specify that entities that are required to have municipal permits must comply with the requirement to control the discharge of pollutants to the maximum extent practicable.

Within the State of Colorado, the NPDES regulations are implemented through the Colorado Discharge Permit System (CDPS) administered by the Colorado Department of Public Health and Environment (CDPHE). CDOT has two types of permits under the CDPS as follows:

- CDOT MS4 Discharge Permit
- CDPS General Permit for stormwater discharges associated with construction activities

CDOT obtained a CDPS Permit for Municipal Separate Storm Sewer Systems (MS4), Permit No. COS-000005 on January 15, 2001, as required under NPDES Phase I regulations. CDOT's permit covers "state and interstate highways and their right-of-ways 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 Permit (Part I.B.1.b), 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."

Stormwater management programs that have already been implemented by CDOT in compliance with the Phase I regulations include:

- New development and redevelopment planning
- Construction sites
- Public street maintenance
- Maintenance of structural controls

Portions of the study area within the corporate limits of the City of Colorado Springs are covered under the NPDES Phase I permit. In addition, portions of the study area within El Paso County fall under requirements of the NPDES Stormwater Phase II Municipal Permit and must also include implementation of the Stormwater Management Programs developed under the Phase I permit. In summary, the entire project study area falls within areas subject to Phase I and II regulations. Therefore, the proposed action must include implementation of both temporary and permanent best management practices (BMPs).

CDOT also obtained a CDPS General Permit for stormwater discharges for construction activities. This permit is a general statewide permit that requires each CDOT construction project to obtain a certificate of compliance from CDPHE prior to initiating construction activities. As required under this permit, CDOT projects must complete a Stormwater Management Plan that shows the locations and types of both temporary and permanent BMPs that will be implemented for the project.

Both Upper Fountain Creek and Monument Creek, within the Fountain Creek Watershed, have high water quality classifications and there are threatened and endangered species habitat(s) adjacent to the streams. Because of these factors, proposed improvements will be required to provide features that maintain, and where practicable, improve the water quality of runoff from the Proposed Action areas and of receiving waters.

Presently, Colorado Springs Utilities has two surface water diversions for drinking water supply that are located in the vicinity of I-25 through the project area. These are:

- Stubbs-Miller Diversion located on the Pinello Ranch property on the west side of Fountain Creek south of the Academy Boulevard bridge over Fountain Creek
- Owen and Hall Diversion located at Clear Spring Ranch

Although the Proposed Action will not affect these facilities, coordination with Colorado Springs Utilities is required during design to ensure that temporary BMPs are implemented to completely avoid the potential for increased pollutant loads due to construction activities.

Under the CDPHE, Water Quality Control Commission (WQCC) Regulation No. 32, the classification and numeric standards for the Arkansas River Basin, which includes both Fountain and Monument Creeks, have been established. Figure 3-17 shows the location of stream segments along Fountain and Monument Creeks as defined in the standards. Segment 1 of Fountain Creek is defined as the mainstem from the source to the point immediately above the confluence with Monument Creek. Segment 2a includes the mainstem of Fountain Creek from a point immediately above the confluence point with Monument Creek to immediately above the confluence with Steele Hollow Creek below the City of Fountain, and is downstream from Segment 1. Segment 6 is the mainstem of Monument Creek, from the boundary of National Forest lands to the confluence with Fountain Creek.

CDPHE has established water quality standards that are suitable for maintaining water quality to preserve the beneficial uses or improve the water quality of the stream. Table 3-22 lists the established water quality standards for the stream segments in the project area, as well as the referenced State Use Classification definitions.

Currently, Segments 1, 2a, and 6 are not on the September 10, 2002 Colorado 303(d) List of Impaired Waters that identifies water bodies and parameters for which the Water Quality Control Division has determined that one or more assigned uses or standards are not currently attained.

However, Segment 1 is on the Monitoring and Evaluation List for sediment because, although a definitive determination has not been possible, occurrences of elevated sediment levels in this segment have been observed.

FIGURE 3-17
Stream Segments Defined in
CDPHE WQCC Regulation No. 32

Current Conditions

Monument Creek and Fountain Creek

Both Monument and Fountain Creeks receive runoff from roadways and urban development areas, especially within the City of Colorado Springs.

U.S. Geological Survey (USGS) water quality monitoring data were collected and evaluated. The data show that the median values of instantaneous annual stream flow were larger downstream of the confluence of Fountain Creek and Monument Creek due to the combined flows of upper Fountain Creek and Monument Creek.

TABLE 3-22
Stream Classifications and Water Quality Standards

Segments For Fountain Creek Basin	Designation	State Use Classification (see definitions below)
1	Reviewable	Aq Life Cold 1 Recreation 2 Water Supply Agriculture
2a	Use Protected	Aq Life Warm 2 Recreation 2 Water Supply Agriculture
6	Use Protected	Aq Life Warm 2 Recreation 2 Water Supply Agriculture

Notes:

State Use Classification	Abbreviated Definition
Class 1 Cold Water Aquatic Life	Waters currently capable of sustaining cold water biota including sensitive species
Class 2 Warm Water Aquatic Life	Waters not capable of sustaining a wide variety of cold or warm water biota
Recreation Class 2	Surface waters not suitable or intended for primary contact recreational uses
Domestic Water Supply	Surface waters suitable or intended for potable water supplies
Agriculture	Surface waters suitable or intended to become suitable for irrigation of crops and not hazardous as livestock drinking water

One of the primary pollutants of interest in assessing water quality in a stream is total suspended solids. Total suspended solids are from natural sources such as erosion of natural stream beds, or from unnatural sources such as from sand and grit washed from roadway surfaces.

The USGS data showed high suspended solids concentrations. The largest existing concentrations observed for total suspended solids are shown in Table 3-23.

TABLE 3-23
USGS Total Suspended Solids Data

Location/USGS Gauge ID	Total Suspended Solids
Fountain Creek east of Manitou Springs (07103700)	854 mg/L*
Woodmen Road and I-25 (07103970)	1,280 mg/L
South of the Monument Creek/Fountain Creek Confluence (07105500)	1,243 mg/L

*mg/L – milligrams per liter

Debris flows occur in the steep areas of the watershed east of Manitou Springs and would contribute large amounts of sediment in short periods of time. The USGS station (07105500) at the confluence confirms that there is a high sediment load contribution upstream from both Fountain and Monument Creeks. Larger concentrations for suspended solids are expected to occur downstream on Fountain Creek because of the inflow from Monument Creek. Existing suspended solids concentrations are smaller, 198 mg/L, at station 07105530, Fountain Creek below the Colorado Springs Waste Water Treatment Plant.

Currently, CDOT performs mechanical sweeping of sand, dirt, and debris from paved surfaces, shoulders, curbs and gutters, and median barriers to maintain roadway pavement drainage, maintain the environmental and aesthetic quality of the roadway, and for air pollution concerns. The collection of these materials helps to reduce the amounts that are washed into receiving waters, thereby helping to maintain water quality in receiving waters.

In addition to total suspended solids, other pollutants that affect water quality in streams include:

- Nutrients (nitrate, nitrite, and total phosphorous)
- Heavy metals (dissolved lead, zinc, and copper)
- Oil and grease
- Deicing salts
- Debris and litter

Evaluation of the water quality within Monument and Fountain Creeks was performed using a pollutant loading model developed by FHWA (sometimes referred to as the Driscoll method).* This model was used to determine annual mass loadings for pollutants along I-25 within the project study area. Table 3-24 includes a summary of the annual pollutant mass loadings along I-25.

* The model developed by FHWA was described in the following documents: 1) E. Driscoll, P.W. Shelley, and E.W. Strecker, 1990. Pollutant Loadings and Impacts from Highway Stormwater Runoff, Volumes I-IV, FHWA/RD-99-006-9, Federal Highway Administration, Woodward-Clyde Consultants, Oakland CA and 2) FHWA, 1996. Evaluation and Management of Highway Runoff Water Quality. FHWA-PD-96-032. Federal Highway Administration. Washington, D.C.

TABLE 3-24
Summary of Annual Pollutant Mass Loadings along I-25

Pollutant	Existing Annual Mass Loading (kg/yr)	Proposed Annual Mass Loading (kg/yr)	Percent Increase of Annual Load
Total Suspended Solids	26,056	46,038	57
Nitrate +Nitrite	140	246	57
Phosphorous (as PO4)	73	130	57
Total Copper	10	17.5	57
Total Lead	73	130	57
Total Zinc	60	107	57

The annual mass loading values were measured against the acute and chronic criteria for the protection of freshwater aquatic life as documented in CDPHE Water Quality Control Commission Regulation No. 32, the Classification and Numeric Standards for the Arkansas River Basin.

Nutrient water quality trends were also observed in the existing USGS water quality data for both Monument and Fountain Creeks. The data showed that the existing concentrations of dissolved nitrite plus nitrate consistently increased from upstream to downstream. In addition, total phosphorous concentrations ranged from 0.23 to 1.70 mg/L, with the highest concentration observed near Bijou and I-25.

Water quality trends for heavy metals were also observed from the USGS data and showed generally higher levels of zinc and dissolved copper downstream of the confluence of Monument and Fountain Creeks. One likely source of the increased levels of metals is the Gold Hill Mesa tailing pile along Segment 1 of Upper Fountain Creek.

Impacts of No-Action Alternative

The No-Action Alternative would likely result in negative impacts to water quality. These include impacts due to increased contaminant concentrations in highway runoff that result from increased traffic congestion and growth in traffic volumes. As the traffic congestion increases, speeds are reduced and pollutant concentrations increase on the roadway surface. These pollutants are washed from the roadway surface during rainstorms and enter receiving waters in Fountain Creek, Monument Creek and their tributaries.

The No-Action Alternative would also include impacts to water quality due to lack of improved water quality treatment facilities for existing roadways. The existing infrastructure is aging and facilities for water quality treatment and permanent best management practices generally are not present.

With or without I-25 capacity improvements, continued development within the watersheds would likely lead to additional water quality degradation both during construction of new developments and in the long term. Further water quality degradation would be anticipated in both Monument Creek and Fountain Creek as the wetlands adjacent to these streams are overloaded by increased pollutant concentrations from increased impervious areas and the runoff from these areas.

Impacts of Proposed Action

Runoff from impervious surfaces can affect both the water quality and water quantity of surface drainages. It is estimated that the Proposed Action will increase the amount of I-25 paved surface area in the study area by 128 acres, from 235 acres today to 363 acres, an increase of slightly more than 50 percent. This amount of total impervious roadway surface is the equivalent to approximately 0.6 square miles. For comparison, there are about 170 square miles of impervious surface in the combined Fountain Creek and Monument Creek drainage basin (collectively called the Fountain Creek watershed). The amount of additional I-25 paved surface is therefore negligible (about one half of one percent) compared to the amount of impervious surface area in the region today. Furthermore, the amount of impervious surface area in the region generally can be expected to increase over the next several decades in proportion to the 40 percent projected population increase, resulting in an even smaller percentage contribution from I-25.

The amount of impervious surface is one of the important factors used in the FHWA water quality model to calculate the effects of roadway runoff. The results of the FHWA model analysis show that pollutant loadings under the Proposed Action could cause the acute and chronic standards to be

exceeded for lead, copper, and zinc. As shown in Table 3-24, the projected percent increase in annual mass loading for pollutants from the highway is 57 percent.

There is also the potential for water quality impacts to receiving waters from roadway deicing activities.

It is anticipated that with the increased traffic volumes due to future growth and the increased highway surface area resulting from the Proposed Action, an increase in the application of deicing materials will occur on the I-25 corridor. Use of liquid deicers, such as magnesium chloride, is expected to increase in the future. It is also anticipated that the suspended solids loading from use of sand will also increase in the receiving waters in Monument and Fountain Creek.

If adequate temporary and permanent stormwater quality treatment facilities and best management practices are not provided during the construction of the Proposed Action, water quality in Fountain Creek and Monument Creek would be negatively impacted from increases in the amount of runoff and the associated increased levels of transported sediments. In addition, other pollutants such as nutrients, petroleum products, and heavy metals washed from the increased areas of impervious surfaces would result in negative impacts to water quality.

Mitigation

Mitigation for the impacts identified above will be accomplished through design of drainage facilities that maintain, and where practicable, enhance water quality. Temporary erosion control and sediment collection facilities will be included to provide interception of transported sediments from construction areas. Project specifications will direct the procedures and frequency for the maintenance of temporary sediment collection facilities.

In addition, where practical, permanent channel stabilization and sediment collection facilities will be included in the designs to assure that sediments are not transported into receiving waters, especially during the period of vegetation establishment after construction is completed.

Other elements of the Proposed Action that will reduce or prevent impacts to water quality include:

- Adhering to the requirements of CDOT's CDPS Stormwater Permit and MS4 Discharge Permit
- Conforming with CDOT Standard Specifications for Road and Bridge Construction (Section 107.25) and the CDOT Erosion Control and Stormwater Quality Guide (2002)
- Developing and complying with a project-specific Stormwater Management Plan (SWMP) to address temporary construction impacts
- Using and maintaining temporary and permanent BMPs, such as controlled construction accesses, controlled concrete washout areas, silt fences, check dams, and sedimentation ponds
- Designing and constructing permanent BMPs such as roadside detention basins and vegetated ditches, channel grade stabilization structures, and stream bank protection
- Improving existing stream side wetlands and riparian habitats
- Using non-structural Best Management Practices such as street sweeping and public awareness programs

Storm drainage systems for the proposed improvements will be designed in accordance with applicable criteria and where practicable will alleviate existing drainage problems throughout the project area. These facilities will be designed to prevent sediment and pollutants from being carried into the adjacent wetlands and directly into Monument and Fountain Creeks and their tributaries.

Wetlands

Introduction and Background

"Wetlands" are areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted for life in saturated soils. These areas are characterized by growth of wetland vegetation such as bulrush, cattails, rushes, sedges and willows. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands are an important natural resource and serve important functions relating to fish and wildlife; food chain production; habitat; nesting; spawning; rearing and resting sites for aquatic and land species; protection of other areas from wave action and erosion; storage areas for storm and flood waters; natural recharge areas where ground and surface water are interconnected; and natural water filtration and purification functions.

Section 404 of the Clean Water Act established a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry.

CDOT's wetlands policy follows FHWA policy and guidance that is based on Executive Order 11990, Protection of Wetlands. This order specifies no net loss of wetland acres for any Federally sponsored or supported transportation projects. Jurisdictional wetlands are defined as those that fall under the authority of the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. Non-jurisdictional wetlands are those that occur in areas not considered waters of the United States. These include isolated wet meadows, stormwater culverts across roadways, ephemeral streams, and roadside ditches.

CDOT's wetland policy emphasizes avoidance of wetland impacts where practicable, minimizing potential impacts to wetlands, and providing mitigation for any remaining, unavoidable impacts through activities that restore or create high quality wetlands, whether the wetlands are jurisdictional or not.

Current Conditions

The total acreage of wetlands within the project area is 96 acres contained within a total of 106 wetland areas. Of these 106 wetland areas, 51 areas are jurisdictional wetlands that are found within natural drainageways and ditches, wet meadows, and isolated wetlands in close proximity to Monument Creek and Fountain Creek and their tributaries. The majority of the wetlands within the project area are found along ditches or drainageways near culverts under the highway.

The remaining 55 areas exhibit wetland characteristics but are classified as non-jurisdictional because they are either isolated wetlands with no connection or proximity to waters of the United States, man-made stormwater conduits (some of which are concrete-lined channels), or roadside ditches. Table 3-25 contains a summary listing of the area of wetlands within the project area by sub-watershed.

A detailed wetland finding has been prepared and is included in Section 7 of this document. The wetland finding contains detailed descriptions of the specific wetland areas identified within the study area.

The Wetlands Technical Memorandum dated February 2003 and updated in December 2003 contains a detailed listing of wetland impacts. A summary of the wetlands impacts from the Proposed Action within the project area are shown in Table 3-25.

Impacts of No-Action Alternative

The No-Action Alternative would result in no new direct impacts to wetlands. However, runoff from the existing highway would carry additional pollutant loadings (such as sand, deicing salts, and contaminants from vehicles) as traffic continues to increase. These pollutants have the potential to degrade the quality of nearby wetlands over time.

Under the No-Action Alternative, wetland and riparian areas would experience additional loss and fragmentation of valuable habitat as a result of continued urban growth, erosion, and deposition.

These processes, as described in the "Water Quality" subsection, are exacerbated by increasing amounts of runoff resulting from development and the associated increases in impervious areas. In addition, the increasing pollutant concentrations in runoff from development areas, as described in the 'Water Quality' subsection, stress the vegetation in existing low quality wetlands and limit their effectiveness as a water quality enhancing feature.

Impacts of Proposed Action

Wetland impacts associated with the Proposed Action total 10.22 acres, consisting of 6.79 acres of jurisdictional wetlands and 3.43 acres of non-jurisdictional wetlands. Table 3-25 summarizes wetland impacts by sub-watershed.

TABLE 3-25
Wetland Impacts in the Project Area

Sub-watersheds	Total Wetland Areas in Study Area (Acres)	Impacted Juris-dictional Wetlands (Acres)	Impacted Non-Juris-dictional Wetlands (Acres)	Total Impacted Wetlands (Acres)
Monument Creek (North of Interquest Parkway Interchange)	49.65	4.25	2.14	6.39
Monument (South of Interquest Parkway Interchange)	22.72	1.27	0.66	1.93
Colorado Springs Composite	18.64	0.65	0.63	1.28
Fountain Creek	5.02	0.62	0.00	0.62
Total*	96.03	6.79	3.43	10.22
*Total acreage shown includes wetland areas within Air Force Academy property as follows:				
U.S Air Force Academy Property	24.69	1.86	1.76	3.62

The greatest wetland impacts occur at the north end of the project area along an approximate 12-mile stretch of I-25 between the Monument Interchange and North Academy Boulevard. Six wetland areas out of the total 106 wetland areas will have impacts greater than one-half acre. The remaining 100 wetland areas average less than one-tenth acre in impacts. Most of these impacts are associated with the reconstruction of the interchanges and associated infrastructure. Highway widening and shoulder improvements will account for a smaller portion of the proposed wetland impacts.

Mitigation

Avoidance and minimization of impacts were addressed during development of conceptual alternatives. Unavoidable impacts to wetlands resulting from the Proposed Action will be mitigated on a one-for-one basis in accordance with CDOT policy, resulting in no net loss of wetlands.

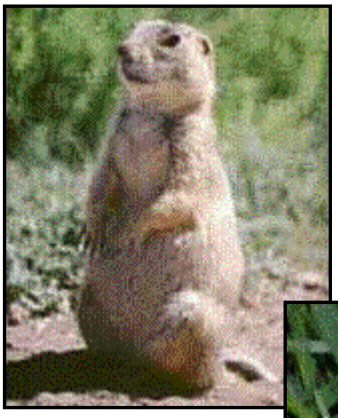
The proposed mitigation for the identified impacts consists primarily of in-kind replacement at the locations of the impacts. In addition, banked wetlands credits from CDOT's Limon Wetland Bank can be applied to compensate for some of the impacts, where appropriate. A detailed discussion of the proposed mitigation is included in Section 7 of this document, "Wetland Finding."

No fill material may be placed in wetlands and waters of the United States without first obtaining a permit from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. CDOT will obtain 404 permits prior to construction. CDOT will also obtain Certification from the Colorado Division of Wildlife (CDOW) as required by Senate Bill 40 (Colorado Revised Statutes 33-5-101, Protection of Fish, Wildlife and Fishing Waters of Colorado). Any credits to be withdrawn from the Limon Wetland Bank must be approved by the Corps of Engineers after consultation with the EPA, U.S. Fish and Wildlife Service, and CDOW.

Biological Resources and Issues

Grouped under the category “Biological Resources and Issues” are the following subsections:

- Wildlife
- Threatened/Endangered Species and Species of Concern
- Vegetation
- Noxious Weeds



Wildlife

For the purposes of this EA, the term wildlife is used to refer to animals that are not considered threatened or endangered species. Threatened/ Endangered Species, including the Preble's meadow jumping mouse and species that have been designated as Candidates for such listing, are discussed separately in a subsection that follows.

CDOT and the Colorado Division of Wildlife (CDOW) have a entered into a Memorandum of Agreement addressing the requirements of Colorado Revised Statutes 33-5-101, Protection of Fish, Wildlife, and Fishing Waters of Colorado. As established by Colorado Senate Bill 40 in 1969, interagency coordination is required in cases where a transportation project has impacts on riparian areas. These areas provide water, habitat, and movement corridors that are critical to biodiversity. Federally mandated protection is also afforded to migratory birds, in accordance with the Migratory Bird Treaty Act.

When analyzing the impacts of improvements to the highway, it must be determined whether actual wildlife habitat will need to be taken for the project and whether the project creates any additional wildlife problems, such as forcing a change in migration patterns or fragmenting populations.

Current Conditions

For this I-25 EA, existing conditions of wildlife communities were assessed and documented through a combination of direct field surveys, aerial photo interpretation, review of existing literature, and personal communication with leading experts. Extensive field surveys were conducted during September to November 2000, and follow-up surveys were conducted during the summer of 2002. The literature review included obtaining from the Colorado Natural Heritage Program the latest list of rare and/or imperiled species known from the I-25 Corridor study area.

Wildlife within the study area is highly influenced by the existing interstate and regional urban development of the Colorado Springs area. I-25 currently creates an east-west movement barrier to most wildlife.

Wildlife is prevalent throughout the study area. Many different species of wildlife are known to utilize the forest, grassland, shrubland, wetland, and riparian habitats adjacent to the highway. Wildlife use these specific habitats as areas of permanent inhabitance, seasonal inhabitance, migratory routes, temporary shelter, or for foraging.

The study area contains 14 creeks, shown in Figure 3-18, and numerous drainages. Dirty Woman Creek, Teachout Creek, Jackson Creek, Smith Creek, Monument Branch, Black Squirrel Creek, Kettle Creek, Pine Creek, Cottonwood Creek, Monument Creek, Douglas Creek, Fountain Creek, Bear Creek, and Cheyenne Creek are well-defined riparian corridors that are crossed by I-25.

Due to their consistent source of water and structural habitat diversity, these riparian corridors are used by a wide variety of wildlife. These riparian corridors allow the passage of water and wildlife under I-25 via culverts and bridge structures, and thus serve as important wildlife movement corridors across I-25. At-grade crossings of the roadway are sometimes successful, but often result in animal mortality (roadkill).

Species of Special Concern

Prior to a species becoming officially listed as threatened or endangered, it may be recognized by wildlife officials that the species is in decline or in need of conservation actions to prevent decline. These species are not afforded Endangered Species Act protection but are the focus of conservation efforts. In Colorado, they are designated as Species of Special Concern.

The Colorado Natural Heritage Program list of rare and/or imperiled species known from the I-25 study area includes five species that have been identified by CDOW as State Species of Special Concern. These species are the American peregrine falcon, ferruginous hawk, mountain plover, Swift fox and the Northern leopard frog. These animals are discussed individually below.

FIGURE 3-18
Riparian Corridors That Cross I-25

- The American peregrine falcon (*Falco peregrinus anatum)* is known in the region. This falcon resides in the mountains during summer, typically found on cliffs that tend to dominate the surrounding landscape. Although no falcons were observed in the study area, the open grasslands, wetlands, and riparian corridors throughout the study area may provide potential feeding habitat for the species.

- The ferruginous hawk (*Buteo regalis)* is known to occur and hunt in the general vicinity of the I-25 study area. This large raptor use semi-arid grasslands as their main habitat, relying on rodents and prairie dogs as key food sources.

- The mountain plover (*Charadrius montana*) is a migratory bird which nests primarily in Colorado's eastern plains. The plover prefers short, overgrazed grass prairies where cacti and prairie dog towns are present. There was no evidence of plover nesting within the I-25 study area during the EA investigation,

- The Swift fox (*Vulpes velox*) makes its home in shortgrass, mixed grass, and sand hill prairies that are relatively flat, gentle rolling topography. Dens were not evident during the site visit within the study area.

- The Northern leopard frog *(Rana pipiens)* is known to inhabit drainages in the I-25 study area. This frog lives primarily in riparian areas, and feeds primarily on insects.

Other Wildlife Species

Species of mammals, birds, amphibians, reptiles and fish found in the I-25 study area are listed below to provide a general overview of the types of animal communities potentially affected.

Mammals

Many species of mammals inhabit the general vicinity of the study area, utilizing all habitat types present. Mammals present in the region include:

- elk
- mule deer
- white-tailed deer
- black bear
- pronghorn
- mountain lion
- coyote
- red fox
- bobcat
- raccoon
- skunk
- prairie dogs
- rabbit
- squirrel
- mice
- voles

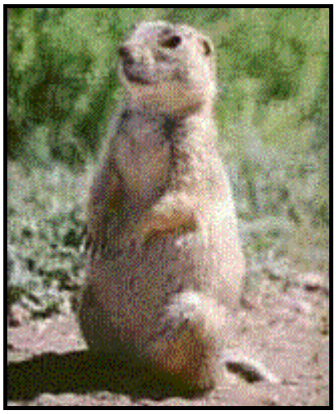
Review of the CDOW databases indicates a mule deer concentration located primarily on the west side of I-25, approximately 2,000 feet south of Exit 147 (Rockrimmon Boulevard). The area also extends on the east side of I-25 along Monument Creek, but access is limited by a small (3-foot by 3-foot) box culvert.

Large populations of deer and elk also inhabit the sprawling grounds of the U.S. Air Force Academy.

Two colonies of Gunnison's prairie dog (*Cynomys gunnisoni*) are found along I-25 in northern El Paso County. These are the easternmost known occurrences of Gunnison's prairie dog.

The first colony is located on the west side of I-25 near Teachout Creek, approximately 8,800 feet (1.7 miles) south of the I-25/State Highway 105

Interchange. This colony is bisected by Teachout Creek and is approximately 500 feet by 500 feet (6 acres) on the north side of the Creek and 600 feet by 150 feet (2 acres) on the south side of the Creek.



Gunnison's prairie dog (Cynomys gunnisoni)

The second colony is located on the west side of I-25 at the North Gate Boulevard Interchange, adjacent to the I-25 southbound off-ramp. This colony of Gunnison's prairie dogs extends approximately 600 feet by 200 feet (i.e., about three acres), and is situated on Air Force Academy property.

Birds

A wide array of bird species is found in all habitat types throughout the study area. Both migratory and resident bird species inhabit or utilize riparian drainages, wetlands, shrublands, grasslands, and weedy ditches within the study area. Riparian areas dominated by cottonwoods and willows tend to be most utilized. Birds found in the area include the following:

- Audubon's yellow rumped warbler
- Wilson's warbler
- MacGillivray's warbler
- western tanager
- golden crowned kinglet
- ruby crowned kinglet
- white crowned sparrow
- cliff swallow
- great blue heron
- snowy egret
- Canada goose
- wood duck
- shovler
- gadwall
- merganser
- loggerhead shrike
- northern harrier
- Cooper's hawk
- red-tailed hawk
- swifts
- flycatchers
- magpies
- crows
- wrens
- finches
- sparrows
- pintail
- mallard

An estimated 50 to 60 pairs of great blue herons formerly nested near the Fountain Creek Nature Center (along I-25 south of Exit 132) until about the year 2001. They appear to have moved their rookery northward to trees along Fountain Creek in the vicinity of the Martin Luther King Bypass (I-25 Exit 138).

Amphibians

Amphibians are closely associated with wetlands, wet meadows, the shallows of ponds, lakes and reservoirs, and seasonal riparian areas. Amphibians in the region include:

- tiger salamander
- plains spadefoot toad
- Great Plains toad
- Woodshouse's toad
- western chorus frog
- plains leopard frog
- bullfrog

Reptiles

Reptiles found in the eastern plains of Colorado are typically associated with a wide variety of habitats found within the study area ranging from permanent ponds and pools to the dry sandy or rocky plains.

- snapping turtle
- painted turtle
- ornate box turtle
- lesser earless lizard
- short-horned lizard
- prairie lizard
- six-lined racerunner
- many-lined skink
- bull snake
- racer snake
- western hognose snake
- western terrestrial garter snake
- western rattlesnake

Fish

Fish collected by CDOW from the Monument and Fountain Creeks in the I-25 Study Area include those listed below:

- bluegill
- brook trout
- channel catfish
- creek chub
- fathead minnow
- green sunfish
- longnose dace
- longnose sucker
- sand shiner
- stoneroller
- white sucker

Impacts of No-Action Alternative

The No-Action Alternative would have no new direct impacts on wildlife. Interstate noise and activity would continue to displace wildlife from the area. The existing interstate would also continue to be a migration barrier that fragments habitat in the east-west direction.

Impacts of Proposed Action

The Proposed Action would result in direct impacts to approximately 5 acres of a mule deer concentration area. In addition, the direct loss of non-developed land and associated vegetation communities (approximately 280 acres) would result in further displacement of wildlife and potential decline in species diversity and quantity in the general vicinity of the highway. The Proposed Action would also disturb undeveloped grassland and riparian crossings on Air Force Academy property.

Additionally, the Proposed Action would affect the three-acre colony of Gunnison's prairie dogs located in the northwest quadrant of the existing I-25/North Gate Interchange. This colony would be impacted by the proposed realignment of the I-25 southbound off-ramp to North Gate Boulevard. It is anticipated that the animals may be moved to other suitable habitat somewhere nearby on Air Force Academy property.

Under the Proposed Action, the length of culverts would increase due to road widening and other improvements; therefore, wildlife movement corridors would be permanently affected and temporarily disrupted during construction, and mature vegetation would be lost.

Excluding wetland communities and direct impacts from interchange construction, approximately 13 acres of riparian corridor would be directly impacted by the Proposed Action. These few crossings are critical to maintaining available wildlife habitat and biodiversity in such a highly urbanized area. The direct loss of these habitats would result in the permanent displacement of current wildlife species.

The Proposed Action would result in drainage changes, including required wetland replacement and water detention features. These have the potential to create new open water that could attract large waterfowl to the vicinity of Air Force Academy flight paths.

Indirect impacts to wildlife associated with the Proposed Action generally would include a displacement of wildlife from the immediate area due to habitat alterations and fragmentation, as well as an increase in human/wildlife conflicts. Connection of Powers Boulevard to I-25 would add a north-south barrier for wildlife east of the interstate.

Although no migratory bird nesting sites were identified at the time of field surveys, the Proposed Action has the potential to affect future nesting sites.

Mitigation

Mitigation efforts focus on avoiding and minimizing construction disturbances to vegetation communities and wildlife habitats, reestablishing lost habitats in-place, and the creation and restoration of habitat.

The following actions have been identified to mitigate the effects of the Proposed Action on the wildlife within the study area and the local region:

- Implement a noxious weed management plan that incorporates appropriate methods (i.e., herbicides, mechanical removal, and, potentially, biological controls) developed for this project for areas of ground disturbance. In sensitive areas such as wetlands, and riparian and habitat corridors, careful selection of appropriate control methods will be required.
- Re-vegetate the project area to replicate or enhance impacted wildlife habitats, using care, however, to avoid using plants that would attract wildlife to the road.
- Minimize construction disturbance to the greatest extent feasible by implementing site-specific construction best management practices.
- Design hydraulic structures (e.g., culverts, box structures, and bridges) to improve corridor east/west movement. To the extent feasible, new or reconstructed stream crossings under I-25 will incorporate a soft, natural bottom and will be vegetated.
- Where feasible, use native grass, shrub, and tree species to create sight and sound buffer zones from I-25.

- Select plants for re-vegetation to avoid enticing wildlife to encroach into the highway area and to not establish hiding places for wildlife adjacent to the roadway, for the mutual safety of the animals and motorists alike.

Prior to construction, in places where large trees will be removed, field surveys will be conducted to look for birds, particularly migratory birds, that are protected by the Migratory Bird Treaty Act and other federal laws. Federal permits are required to take, possess, transport, and dispose of migratory birds, bird parts, feathers, nests, or eggs. If applicable, permits will be obtained from the U.S. Fish and Wildlife Service Migratory Bird Permit Office.

Air Force Academy Wildlife Coordination

Many of the above wildlife-oriented mitigation efforts apply especially on the grounds of the U.S. Air Force Academy. Through the design and construction processes, coordination with Air Force Academy personnel will be maintained to ensure that I-25 re-vegetation plans are consistent with the Academy's wildlife management objectives.

Prior to construction, Air Force Academy officials will be consulted to identify if appropriate habitat can be developed on Air Force Academy property for relocation of the Gunnison's prairie dogs at the North Gate interchange colony. CDOT will cooperate with Air Force Academy to comply with any specific Air Force requirements applicable to prairie dogs on military property. Ordinarily, on civilian property, the animals would be captured and relocated if possible in accordance with the CDOT prairie dog policy and in coordination with the CDOW.

Relocation of prairie dogs away from I-25 could have an indirect benefit of reducing the potential for collisions between motor vehicles and the predators (e.g., hawks) that depend on prairie dogs as a food source.

As requested by the Air Force Academy, improvements will be designed to avoid creation of any new areas of open water in proximity to the Academy to minimize potential Bird/Aircraft Strike Hazard for flight operations. The Academy's main airfield and auxiliary airfield are both very close to I-25. Potential damage from collisions between aircraft and birds is a safety concern, particularly in the case of larger birds such as the migratory Canada goose.

Riparian Habitat Enhancement

In addition to the mitigation measures discussed above, specific conservation strategies have been developed to enhance, preserve, and restore habitat for the Preble's meadow jumping mouse, which will also benefit other wildlife species. A key focus of these strategies is to re-establish habitat linkages across (under) the I-25 facility.

CDOT is in the process of obtaining habitat easements and is purchasing land to preserve 50 acres of habitat for the Preble's mouse. These corridors will also serve other species and provide open space buffers.

Threatened/Endangered Species

In the Endangered Species Act of 1973, Congress declared that "the United States has pledged itself…to conserve to the extent practicable the various species of fish or wildlife and plants facing extinction." Under the Act, threatened and endangered species are defined as follows:

- A threatened species is: "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."
- An endangered species is: "any species which is in danger of extinction throughout all or a significant portion of its range."

A species may be listed as threatened or endangered by the Federal government, a State government, or both. Additionally, a candidate species is one for which the U.S. Fish and Wildlife Service has sufficient information to propose a listing of threatened or endangered, but for which "development of a listing regulation is precluded by other, higher-priority listing activities."

Current Conditions

In consultation with the U.S. Fish and Wildlife Service and the CDOW, it was determined that four animal and two plant threatened/endangered species and two candidate species could potentially be present in the I-25 study area. These species are listed in Table 3-26, along with the results of subsequent focused research to determine whether or not these species were actually present. This research included a combination of direct field surveys, aerial photo interpretation, review of existing literature, and consultation with leading experts. It was determined that two of the species are actually found in the I-25 corridor: the Preble's meadow jumping mouse (threatened) and the black-tailed prairie dog (candidate).

Preble's Meadow Jumping Mouse

Populations and habitat of the Preble's mouse are known to exist within the study area. Figure 3-19 shows the drainages near I-25 that are considered to be Preble's mouse habitat. Between SH 105 (Monument) and the Woodmen Road Interchange, I-25 crosses nine streams that have Preble's mouse populations. Many of these drainages are on U.S. Air Force Academy property. The Air Force Academy has an approved conservation agreement with the U.S. Fish and Wildlife Service (USFWS) to ensure that Air Force Academy maintenance activities are conducted in a manner that will not jeopardize this species.

TABLE 3-26
Threatened or Endangered Species and Species of Special Concern that may be Present in the General Vicinity of the Study Area

Common name	Status	Conclusions Regarding Presence in the I-25 Corridor
BIRDS		
Bald eagle	Threatened	Could exist in area; I-25 corridor habitat not well suited
Mexican spotted owl	Threatened	Could exist in area; not known in I-25 corridor
FISH		
Arkansas darter	Candidate (Federal) Threatened (State)	Not found in study area; known in tributary to Fountain Creek about seven miles south of the Proposed Action
MAMMALS		
Black-footed ferret	Endangered	No populations known in the vicinity of the study area
Black-tailed prairie dog	Candidate (Warranted but Precluded)	Known to be present in the I-25 corridor
Preble's meadow jumping mouse	Threatened	Known to be present in the I-25 corridor
PLANTS		
Colorado butterfly plant	Threatened	No populations known in the vicinity of the study area
Ute ladies' tresses orchid	Threatened	No populations known; I-25 corridor habitat not well suited due to degraded riparian conditions

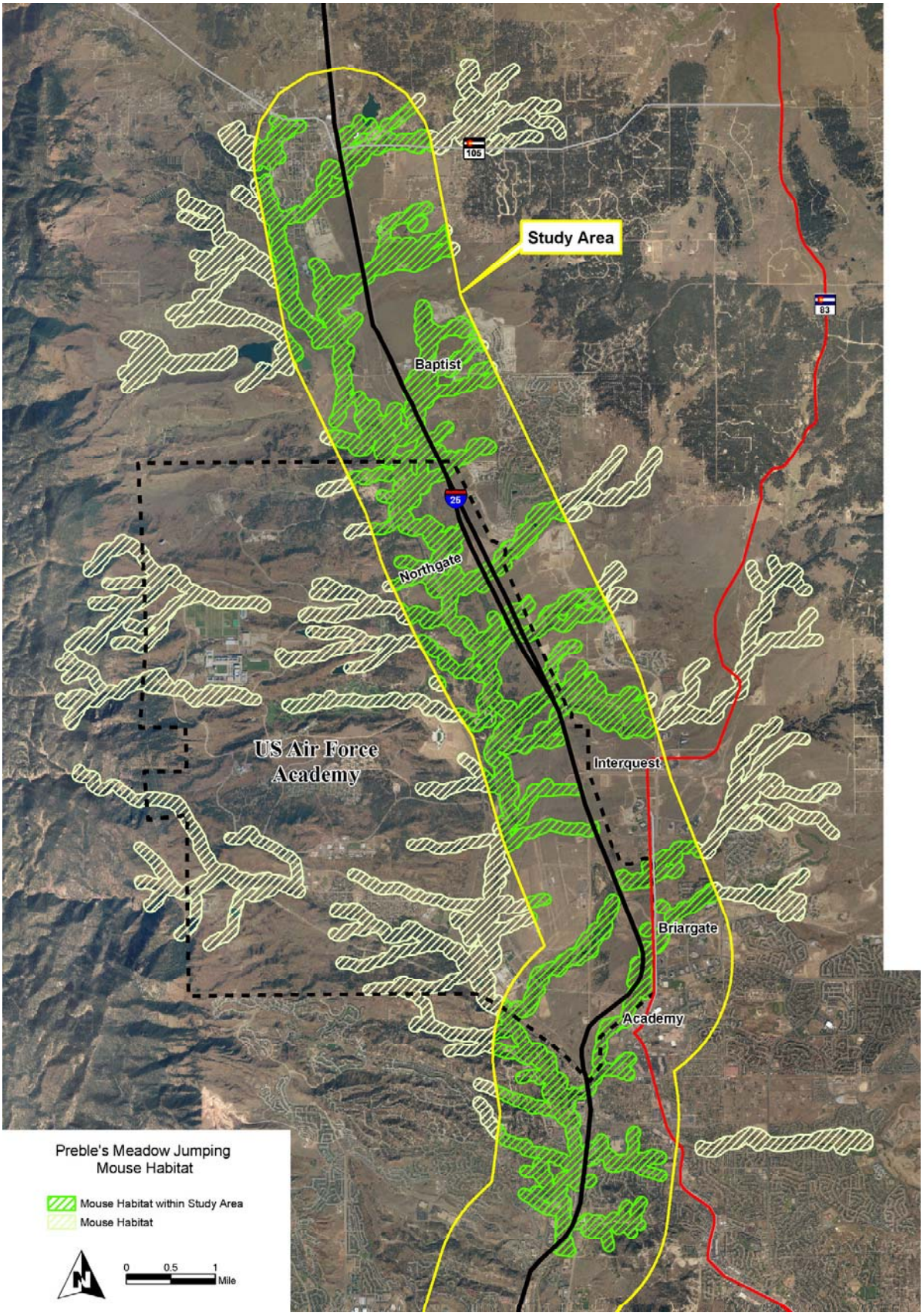


FIGURE 3-19
Preble's Meadow Jumping Mouse Habitat Area

Preble's meadow jumping mouse (Zapus hudsonius preblei)

Presence/absence surveys conducted south of Woodmen Road, through central Colorado Springs, have not found any Preble's mice for several years. These areas are considered an exclusion zone by USFWS, meaning that they are not considered to be Preble's mouse habitat. Exclusions of this type are not permanent, and are subject to future reconsideration.

El Paso County, the southernmost of seven Colorado counties that have the Preble's mouse, is in the process of preparing a Habitat Conservation Plan to guide efforts for recovery of this species in the area.

Black-tailed Prairie Dog

One colony of black-tailed prairie dogs has been identified within the study area. This colony is located near the I-25 Interchange at Exit 132 (State Highway 16), several miles outside the southernmost extent of the Proposed Action. This colony is located on the east side of I-25, extending from the SH 16 Interchange north approximately 3,000 feet by 1,000 feet wide (70 acres). Portions of this colony have been directly impacted by private development that began in late 2002.

The black-tailed prairie dog is not officially listed as threatened or endangered, but is recognized as a candidate for listing. Additionally, the State of Colorado lists the black-tailed prairie dog as a Species of Special Concern, and is implementing a major initiative to protect the animal and its associated shortgrass prairie habitat.

In addition to the known presence of the two species described above, the I-25 study area contains habitat appropriate for the threatened Mexican Spotted Owl (*Strix occidentalis lucida*). Habitat evaluated from the southern half of the Air Force Academy extending south until Garden of the Gods Road contains plant species characteristic to Mexican spotted owl habitat (USFWS, 1995). However, the owl is not known to be present in the corridor. The potential habitat within the I-25 study area lacks the dense canopy and complexity that Mexican spotted owls inhabit. In addition, the noise pollution caused by I-25 traffic deters regular Mexican spotted owl visits.

Impacts of No-Action Alternative

The No-Action Alternative would have no new direct impacts on threatened or endangered species, or on candidate species. Degradation of habitat from existing highway use and interstate maintenance operations would continue to limit the potential for use or establishment of such species within the study area.

Impacts of Proposed Action

The Proposed Action would affect Preble's mouse populations and habitat along a 9.2-mile stretch of the study area beginning at the northern project limits. CDOT conducted two workshops with environmental and design engineer staff to identify areas where impacts could be avoided or minimized. Following avoidance and minimization steps, there would be a total of 21.1 acres of permanent impact and 26 acres of temporary impact on Preble's mouse habitat and populations. It is anticipated that these impacts are worst-case scenarios and that there would be opportunities to further reduce impacts during the final design phase. Impacts would take place in both riparian and adjacent upland habitat areas, with most impact areas in close proximity to the existing highway.

Habitat connectivity and Preble's mouse mobility will improve at some project sites as a result of improved culvert and bridge crossing designs. Most impacts would occur within habitat that supports low-density Preble's mouse populations, and the nature of the impacts and subsequent restoration actions would allow post-construction recovery of mouse populations in impacted areas.

Mitigation

For several years, CDOT has cooperated with local authorities to develop a conservation strategy to support Preble's mouse recovery in the Monument Creek watershed. In the draft Preble's

Recovery Plan, the U.S. Fish and Wildlife Service indicated that a single large Preble's mouse population (more than 2,500 animals or 50 connected stream miles) in the Monument Creek watershed was needed.

As part of this effort, a panel of Preble's mouse experts was convened by CDOT in 1999 to identify the most important regional issues for the Preble's mouse and potential conservation measures to address these issues. Some of the recommendations of the expert panel were further refined in a habitat modeling exercise conducted in 2001-2002. The panel identified isolation of small Preble's mouse populations as the greatest threat to long-term persistence in the Monument Creek watershed. There are at least six separate Preble's mouse populations in the watershed, and restoring habitat linkages among these populations was identified as the most important action to achieve recovery.

During 2002-2003, a Programmatic Biological Assessment was prepared to identify impacts from three State highway projects (I-25, Powers Boulevard, and the Shoup Road/SH83 intersection) and various conservation measures that will be taken to offset project impacts. This work was conducted in close consultation with the U.S. Fish and Wildlife Service.

The Programmatic Biological Assessment contains details on project activities that affect the Preble's mouse, biological consequences of these actions, cumulative effects, effects on proposed habitat, and an amendment process. The Programmatic Biological Assessment proposed onsite and offsite actions that would allow affected Preble's mouse populations to recover to pre-disturbance levels and would promote persistence of a large Preble's mouse population in El Paso County.

The U.S. Fish and Wildlife Service issued a Biological Opinion on August 4, 2003, finding that the Proposed Actions (I-25, Powers, Shoup Road/SH83) together with the proposed mitigation will not cause jeopardy to the Preble's meadow jumping mouse. The Biological Opinion is included in Section 8 of this EA.

Mitigation for the Proposed Action will be implemented in accordance with the Biological Opinion, which includes the following four elements:

1. Onsite actions will include restoration, enhancement, and creation of Preble's mouse habitat that is within or near project disturbance areas. Best management practices will be implemented as appropriate.

2. Offsite actions will include restoring habitat linkages in at least two areas and permanently protecting an additional 50 acres of habitat. Additional habitat restoration and enhancement will be conducted as needed.

3. Monitoring will be conducted to assure that disturbance areas do not exceed permitted amounts and to gauge the success of restoration efforts. Special monitoring programs will be conducted at habitat linkage areas to determine the success of restoring connectivity among populations.

4. CDOT will sponsor a research project to determine the effectiveness of small mammal ledges in culverts. Successful treatments will be incorporated into future culvert design and construction.

Vegetation

Vegetation impacts from a highway improvement project have ecological and aesthetic implications. Several vegetation-related issues are the focus of specific Federal and State of Colorado legislation, including noxious weeds, wetlands, and wildlife habitat. There is also a Federal program to monitor inventories of prime and unique farmlands (7 CFR Part 658), of which there are none in the I-25 study area. In addition, re-vegetation of disturbed surfaces is an important erosion-control measure for water quality purposes. This subsection focuses on vegetation impacts of the Proposed Action.

Current Conditions

Vegetation communities within the I-25 corridor study area are highly influenced by the existing interstate and regional urban development of the Colorado Springs area. Vegetation communities in the study area include forests, shrublands, grasslands, and wetlands.

The northern portion of the study area from Monument to approximately North Academy Boulevard is relatively undisturbed, due in part to the fact that more than half of this segment is located on Air Force Academy property.

The central portion of the study area from North Academy Boulevard south to South Academy Boulevard is highly influenced by the dense urban development of the City of Colorado Springs. Here, the Fountain and Monument Creek riparian areas and tributary drainages provide some natural relief to the otherwise highly urbanized corridor.

Vegetation immediately adjacent to I-25 largely consists of marginal grasslands, adapted to the semi-arid climate. These areas receive no watering other than natural precipitation. There are few trees in close proximity to the roadway because a clear zone is maintained by CDOT for driver recovery in the event a vehicle veers off the roadway and shoulder.

Grassy areas along the highway are mowed by CDOT maintenance crews, typically twice per year, for general safety reasons and weed control. Wintertime use of sanding and other deicing agents also affects roadside vegetation, as do oils, metals, and other pollutants associated with the high volume of vehicles traveling on the road. Noxious weeds and litter are also found along the roadside throughout the corridor.

Impacts of No-Action Alternative

The No-Action Alternative would result in no new direct impacts on vegetation communities. Degradation due to high traffic volumes and roadway maintenance operations would continue to limit vegetation health and diversity. Ongoing CDOT noxious weed control efforts would attempt to limit the development and spread of noxious weeds.

Impacts of Proposed Action

Direct impacts to existing vegetation communities would occur under the Proposed Action as a result of clearing and grading associated with the construction activities. Project components that would result in direct impacts include road-widening within the right-of-way, road improvements, crossings of creeks and drainages, and interchange construction. These activities would result in removal and permanent loss of existing vegetation. Much of the proposed road-widening improvements would occur in the existing right-of-way, resulting in loss or disturbance of previously disturbed roadside grassland communities. The number of acres effected by vegetation community type are detailed in Table 3-27.

TABLE 3-27
Vegetation Types Affected by Proposed Action

Vegetation Community	Number of Acres
Disturbed grassland	922
Shortgrass prairie	27
Riparian deciduous	25
Wetlands	10.2
Forested – ponderosa pine	4.9
Shrubland – gamble oak	1.5

Numerous single and small clusters of trees would be directly impacted from the road-widening activity (see Table 3-28). Based on field surveys, it is estimated that between 700 and 900 trees will be removed over the length of the 26-mile corridor. Trees that would be removed include native as well as non-native species (such as plains

cottonwood, peach leaf willow, Siberian elm, Russian olive, crack willow, black locust, and tamarisk). Removal of undesirable non-native species will be a beneficial impact.

TABLE 3-28
Tree Removal with Proposed Action

Project Component	Number of Trees
Widening – corridorwide	300 to 400
Riparian crossings	200 to 300
Baptist Interchange	6
North Gate Interchange	80
Nevada/Rockrimmon Interchange	105
Cimarron Interchange	35
Total	700 to 900

A weed management plan, as described in the following subsection, will be prepared to address both short-term and long-term control of noxious weeds.

Mitigation

The following mitigation measures have been identified to minimize the effects of the Proposed Action on vegetation in the corridor:

- Re-vegetating impacted areas to replicate or enhance native vegetative communities. Vegetation planted along shoulders and in medians will be selected to not provide food or habitat for animals, so as not to attract them to the highway.
- Plant native trees where feasible in proximity to locations where trees are removed due to the Proposed Action. On Air Force Academy land, CDOT will work with the Air Force to replace mature trees, especially in the vicinity of the North Gate Interchange.
- Minimizing construction disturbances to the greatest extent feasible by implementing construction best management practices.
- Enhancing and restoring the existing condition of the local vegetation communities, especially at bridge crossings over riparian corridors.

Best management practices include minimizing the construction disturbance area and length of time that the disturbed soils are exposed. All unavoidable disturbance areas will be quickly re-vegetated following construction activities using site-specific seed mixes and certified weed-free mulch or straw.

(For more information on noxious weeds, see the following subsection.)

Noxious Weeds

Noxious weeds are undesirable, non-native plant species that have negative impacts upon crops, native plant communities, livestock, and the management of natural or agricultural systems. Federal and State of Colorado regulations address the noxious weed problem. In particular, the Colorado Noxious Weed Act (Colorado Revised Statutes, Title 35, Article 5.5) states that, "noxious weeds have become a threat to the natural resources of Colorado, as thousands of acres of crop, rangeland, and natural habitat are being destroyed by noxious weeds each year."

The Act also notes that, "the spread of noxious weeds can largely be attributed to the movement of seed and plant parts on motor vehicles." Noxious weeds are easily spread through ground disturbance, and long linear highway projects can contribute greatly to the spread of noxious weeds along the disturbed shoulders or medians. Vehicles also carry and spread seeds along transportation corridors.

Weed Management Plans

To slow or reverse the proliferation of noxious weeds in the state, Colorado's Governor issued Executive Order D006-99 requiring various agencies to develop weed management plans applicable to their departmental projects and activities. The Colorado Department of Transportation is one of the agencies specifically tasked with responsibilities for noxious weed management.

To assist in weed management efforts, the State maintains a Noxious Weed List and has identified a "top ten" list of noxious weed species that are acknowledged to be the most widespread and to cause the greatest economic impact in the State of Colorado.

Tamarisk Eradication

In 2003, the Governor issued Executive Order D002-03, directing State agencies to eradicate the tamarisk plant (also known as saltcedar) on public lands within ten years. The tamarisk is a heavy consumer of water and is inedible to most animals. As a result, native plant species suffer because they have less water available and are overly browsed. Tamarisk is found in riparian areas, including stream crossings within the I-25 right-of-way.

Tamarisk—singled out for eradication by Executive Order of the Governor of Colorado

Current Conditions

For the I-25 EA, biologists surveyed the I-25 study area, and found a number of species that are on Colorado's State Noxious Weed list, including five species that are listed among the top ten priority list. The species of noxious weeds found in the I-25 Study Area are listed in Table 3-29.

TABLE 3-29
Noxious Weeds Found in the I-25 Study Area

Weed common name	Comment
tamarisk	Priority for eradication
diffuse knapweed	State top-ten priority
Russian knapweed	State top-ten priority
common burdock	State top-ten priority
field bindweed	State top-ten priority
Canada thistle	State top-ten priority
musk thistle	State-listed noxious weed
yellow toadflax	State-listed noxious weed
kochia	State-listed noxious weed
chicory	State-listed noxious weed
common mullein	State-listed noxious weed
common teasel	State-listed noxious weed
poison hemlock	State-listed noxious weed
spotted knapweed	State-listed noxious weed
Russian olive	State-listed noxious weed

Diffuse Knapweed—a top priority for noxious weed control in the I-25 study area

Diffuse knapweed, Canada thistle, and musk thistle are currently the most widespread weed species present within the study area. These weeds are primarily located along the edge of the existing I-25 pavement and are found in moderate densities throughout the study area.

Impacts of No-Action Alternative

The No-Action Alternative would have no new direct impacts on the number or distribution of noxious weeds. Traffic on the existing interstate would continue to promote exotic and noxious species establishment. CDOT weed management activities would attempt to control their spread. Without strong controls, existing weeds within the study area would continue to spread and develop.

Impacts of Proposed Action

The Proposed Action has the potential to promote the spread and development of noxious weeds. In general, noxious weeds grow quickly in disturbed areas and out-compete native species. The large-scale earth disturbance associated with the Proposed Action would create an ideal condition for the spread of existing noxious weeds as well as the infestation of new weed species.

Mitigation

CDOT has developed a standard protocol for weed management associated with highway projects. This protocol will be implemented prior to any earth disturbance. The protocol includes:

- mapping of all weed species within a project area
- long-term maintenance to control weed propagation
- re-establishment of native vegetation
- weed eradication methods

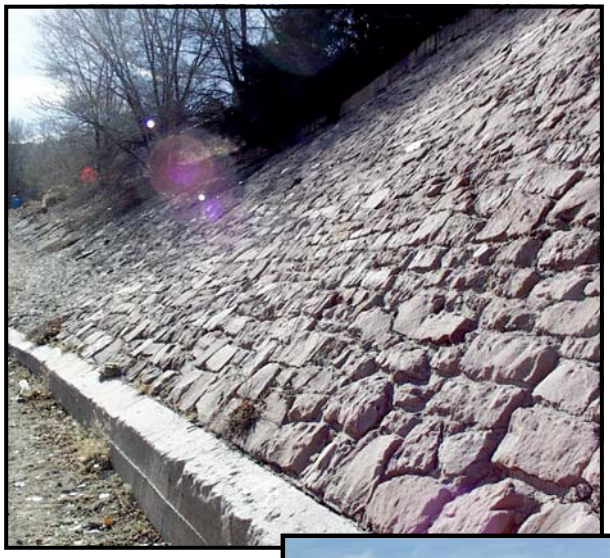
Proper implementation of a weed management plan that incorporates appropriate methods (i.e., herbicides, mechanical removal, and potential biological controls) would mitigate the potential adverse affects of earth disturbance and the establishment of noxious weeds. In sensitive areas such as wetlands, and riparian and habitat corridors, careful selection of appropriate control methods will be required.

CDOT will also undertake eradication of tamarisk and Russian olive trees in conjunction with mitigation efforts to provide wetland replacement and habitat for the Preble's mouse.

Cultural Resources and Issues

Grouped under the category “Cultural Resources and Issues” are the following subsections:

- Historic Resources
- Archaeology
- Native American Consultation
- Paleontology



Historic Resources

In the face of "ever-increasing extensions of urban centers, highways, and residential, commercial, and industrial developments," the U.S. Congress recognized in 1966 that "historic properties significant to the Nation's heritage are being lost or substantially altered, often inadvertently, with increasing frequency." In response, Congress passed the National Historic Preservation Act. Section 106 of the Act requires that Federal agencies, before undertaking a Federal action, "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register."

To be nominated for inclusion in the National Register of Historic Places (NRHP), a site or property is typically, but not always, over 50 years of age, with its original historic character well-preserved and the integrity of its setting and materials intact. Nevertheless, a site less than 50 years old may be eligible if it is "of exceptional importance." In addition to age, there are other specific criteria used to determine whether or not the nominated property has special historic significance. These are detailed in the box below.

NATIONAL REGISTER ELIGIBILITY CRITERIA

Eligibility for listing to the National Register of Historic Places (36 CFR 63) means:

the quality of significance in American history, architecture, archeology, culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

***(a)** That are associated with events that have made a significant contribution to the broad patterns of our history; or*

***(b)** That are associated with the lives of persons significant in our past; or*

***(c)** That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*

***(d)** That have yielded or may be likely to yield, information important in prehistory or history.*

Under the Colorado State Register of Historic Places Act (Title 24, Article 80.1 of the Colorado Revised Statutes) resources listed on the NRHP are automatically included on the Colorado Register, but it is possible to list additional sites on the Colorado Register that are not recognized at the national level.

USDOT Section 4(f) Documentation

The applicability of historic preservation requirements for federal transportation projects was further reinforced by Section 4(f) of the U.S. Department of Transportation Act of 1966. Section 4(f) requires that all possible planning must occur to show that there are no feasible or prudent alternatives that avoid impacting publicly or privately owned historic resources, or publicly owned parks, recreation areas, and waterfowl/ wildlife refuges. Documentation addressing the 4(f) requirements applicable to the Proposed Action is provided in Section 6 of this I-25 EA.

Technical Approach

To address the historic resource requirements for the I-25 Proposed Action, the approach followed the requirements of 36 CFR 800 and included these actions:

- identification of an Area of Potential Effect in which to search for historic sites, and obtained SHPO concurrence with this spatial scope
- research of public records and a field survey to identify eligible historic properties within that area of potential effect
- assessment of the effects of the undertakings to historic properties
- identification of strategies to resolve adverse effects to historic properties
- meetings with various local and state historic resource authorities and with several neighborhood groups to discuss the ongoing survey and the findings

The work was coordinated with Colorado's State Historic Preservation Office (SHPO). The results of these efforts are fully documented in the Historic Resources Survey Technical Memorandum, and are summarized below.

Current Conditions

Colorado Springs was founded as the Fountain Colony by General William Jackson Palmer in 1871, so the region has had continuous settlement for more than 130 years. Currently, more than 60 sites in Colorado Springs are listed on the NHRP. Sites that are well over 100 years old tend to be located in the compact original city area in or near today's downtown business district. The region also has historic resources of more recent eras, as the 50-year eligibility consideration currently includes sites dating back to the early 1950s.

Historic properties over 45 years of age that would likely be affected by the Proposed Action were surveyed in 2002. Three hundred forty-five properties meeting this consideration within the Area of Potential Effects were surveyed and photographed. Based on further research conducted at the El Paso County Tax Assessor's Office, the list was reduced to 228 historic properties over 45 years of age. Of these 228 properties, 32 were determined to be either officially eligible or already listed in the State Register of Historic Places and/or the National Register of Historic Places. The SHPO provided concurrence with these eligibility determinations in a February, 2004 letter. The SHPO indicated that additional investigation would be needed to assess eligibility for two of the sites, Colorado College and the Stratton Meadows neighborhood.

Thirty-two sites in the I-25 study area are listed or are eligible to be listed on the National Register of Historic Places.

There were no officially designated National Historic Landmarks located in the survey area. However, the properties determined eligible for the State or National registers may also qualify for local landmark designation.

Information on each eligible and listed historic property is provided in the Historic Resources Survey Technical Memorandum.

Impacts of the No-Action Alternative

The No-Action Alternative would not require any new right-of-way acquisition and would not add any new structures with potential visual effects. The historic properties in the corridor existed prior to the opening of I-25, and therefore are accessed not directly from I-25 but from nearby city streets. Under the No-Action Alternative, local streets near I-25 will experience increased cut-through traffic due to extreme congestion on the freeway. For example, Nevada Avenue through the Historic Old North End Neighborhood would be among the streets that would experience increased traffic volume, together with increased noise, air pollution emissions, and diminished safety under this alternative.

Impacts of Proposed Action

The 32 identified historic resources in the study area were assessed regarding whether each resource would be affected by the Proposed Action. In consultation with the SHPO, the resulting determinations of effect are summarized in Table 3-30 and are discussed below. The SHPO provided concurrence with these determinations of effect in a February 10, 2004 letter (included in Section 12).

TABLE 3-30
Determination of Effects on Historic Resources

Impact of Proposed Action	Number of Historic Properties (Total of 32)
Adverse Effect – U.S. Air Force Academy – Monument Valley Park – Monument Valley Park Bijou Street Entrance Gate – WPA Floodwall	4
No Adverse Effect – Reynolds Ranch – San Miguel Historic District – St. Mary's Cathedral – St. Mary's School – Cast stone house – Al Kaly Shrine Mule Team Barn	6
No Effect – These sites are listed later in this subsection on Historic Resources	22

The Proposed Action will result in adverse impacts to four sites, no adverse effects to six sites, and will have no effect on the remaining 22 sites in the study area.

Sites That Will Experience an Adverse Effect

Of the 32 eligible or listed properties included in the survey, only four sites would experience an adverse effect due to the Proposed Action. These sites are:

- the United States Air Force Academy
- Monument Valley Park

- the Bijou Street Entrance Gate to Monument Valley Park
- the Works Progress Administration (WPA) Flood Wall along Monument Creek

U.S. Air Force Academy (5EP595)

For approximately seven miles, from north of the North Gate Interchange to south of North Academy Boulevard Interchange, Interstate 25 is situated on an easement that is part of the 18,455-acre U.S. Air Force Academy (Air Force Academy). This easement was granted to the Colorado Department of Transportation by the U.S. Air Force. Also included on this easement, near Air Force Academy's eastern boundary, are the interchanges mentioned above, as well as the existing Briargate and Interquest Interchanges. (See Figure 3-20).

Construction of the Air Force Academy began in 1955 and was completed in 1962. The Air Force Academy is considered eligible for listing on the NRHP, and is also being evaluated by the Air Force Academy and the National Park Service for designation as a National Landmark.

I-25 was located on an easement to control access and development along the highway. An Air Force Academy buffer area was created between the highway and the boundary so there would be further control of land immediately adjacent to the highway. This was done in order to prohibit billboards and other intrusive elements that would distract from the natural setting of the Air Force Academy.

The Air Force Academy meets NRHP Criteria (a) and (c) for its national significance and association with U.S. military history, and for association with the local history of earlier ranching and the rural residential uses of the land. Additionally, the Air Force Academy is considered eligible under Criterion (c) as a historic cultural landscape, reflecting the careful site planning that was intended to make the installation look open and natural. NRHP Consideration (g) allows consideration of a property that has gained significance within the past 50 years.

The outstanding site planning and the International (Modernist) Style buildings at the Academic and Cadet areas, including the nationally renowned Cadet Chapel, meet Criterion (c) for exceptional national significance of the Modernist buildings, designed by the prominent architectural firm of Skidmore Owings & Merrill.

The Proposed Action would have an adverse affect on the historic cultural landscape of the Air Force Academy. It would alter the original appearance of the eastern boundary of the Air Force Academy by converting open land to additional freeway lanes, reconfiguring the North Gate Interchange, and adding new ramps for the connection with Powers Boulevard.

The Proposed Action also includes relocation of the Ackerman Overlook, an existing roadside parking area where motorists can view portions of the Air Force Academy and observe flight training operations. The memorial marker that honors Jasper D. Ackerman ("Soldier, Rancher, Banker, Great Supporter of the Air Force Academy") was placed there after his death in 1988, and is not eligible for historic designation.

While there are no contributing Air Force Academy buildings in the immediate vicinity of I-25, the freeway corridor itself contributes to this Historic Cultural Landscape by demonstrating the outstanding site planning and the efforts of the Air Force Academy to preserve the natural beauty of its property with specific landscape design strategies and by prohibiting development on the Air Force Academy's eastern fringe. The Proposed Action will result in an adverse effect because it will change the appearance of the historic landscape near the Air Force Academy's eastern boundary that contributes to the property's historic character.

In addition to the proposed widening of I-25, the original rural character of the Air Force Academy's setting is being changed by surrounding development on private land. Urbanization has occurred to the north, east and south of the Air Force Academy. Intense development is planned east of I-25 in the vicinity of the Powers Boulevard connection. The existing buffer space between I-25 and the Air Force Academy eastern boundary will continue to screen some of this urban development, but urban uses are expected to increase along much of the northern, eastern and southern boundaries in the future.

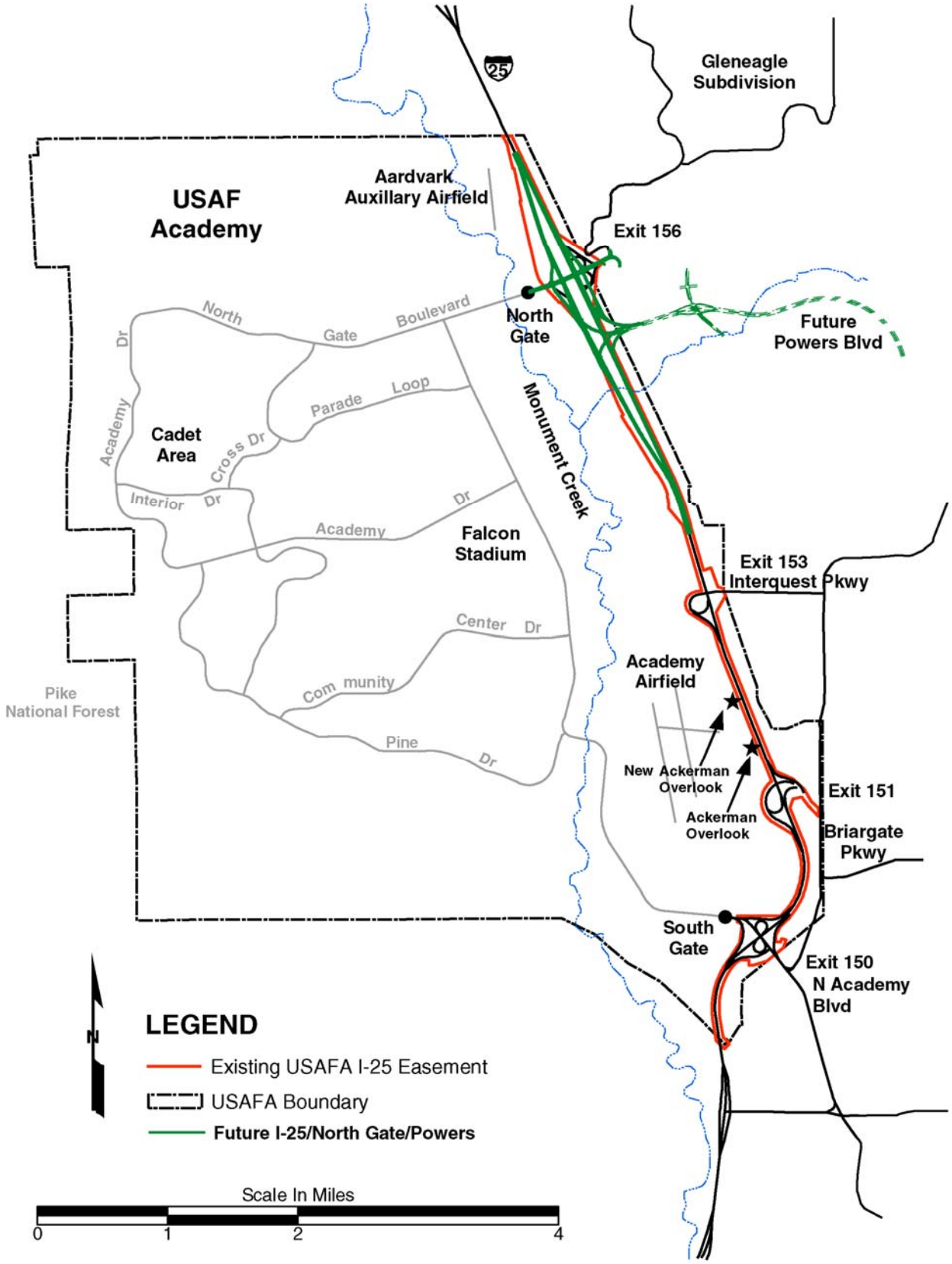


FIGURE 3-20
Location of I-25 Easement at Eastern Edge of the United States Air Force Academy

Monument Valley Park (5EP613)

In 1985, the State Historic Preservation Office determined that Monument Valley Park was not eligible as an historic site because it had lost much of its 1904 integrity due to a 1935 flood, but that original buildings in the park might be individually eligible. At that time, the reconstruction and rockwork by the Works Progress Administration (WPA) was not recognized as being historically significant.

Since 1985, however, features associated with the establishment of the park and later WPA improvements have gained historical and architectural significance.

At this time, Monument Valley Park is eligible for NRHP nomination under NRHP Criterion (a) as an important resource in the history of Colorado Springs for its association with General William Jackson Palmer, founder of Colorado Springs and of the Denver & Rio Grande Railroad. The park is also eligible under Criterion (c) for the significance of the remaining original elements of landscape design from the Palmer period (1904 to 1935) and the WPA period (1935 to 1952).

Since the construction of Interstate 25 in the late 1950s, there have been gradual changes to the original environmental setting and feeling of the park, including increased traffic and visual impacts such as adding acceleration and deceleration lanes and adding a sound wall on the west side of I-25 opposite from the park. The past action occurred in the 1990s, when the park was considered not eligible to the National Register of Historic Places.

In addition, the park itself has experienced some minor changes over time. The numbers of vehicles using the roads within the park has increased. The Parks and Recreation Department has updated features of the park for recreation, including new playground equipment, tennis courts, volleyball courts, and soccer fields, updated swimming pool, and new parking lot near the pavilion. CDOT constructed a noise wall east of I-25 to protect the park pavilion from freeway noise.

The changes in the original setting and feeling of the park, and the changes to the park over time, including the addition of non-contributing features, have not compromised the park's integrity as an historic resource.

The Proposed Action will not jeopardize the eligibility of Monument Valley Park to the National Register of Historic Places. It will, however, have a small but negative effect on a portion of the park—the rock Entrance Gate (5EP613.13) near the east end of the Bijou Street bridge and the area immediately around it.

The Proposed Action includes raising the elevation of Bijou Street adjacent to Monument Valley Park and the rock Entrance Gate. The change in elevation will begin at the intersection of Westview Place and will gradually increase to about four feet over the railroad tracks west of the park. At the Entrance Gate the increase in elevation will be 18 inches. This change to Bijou Street will result in the addition of a short retaining wall, steps and a handrail. Pedestrians will still be able to pass through the gate, but one approach will require the use of the steps. The gate will remain accessible to those with disabilities, however.

The Bijou Street Entrance Gate is one element that contributes to the historic status of the park and is discussed in more detail below.

The changes at the Bijou Street Entrance Gate will slightly alter pedestrian access and the visual character and setting at this park entrance. For these reasons, the State Historic Preservation Officer has indicated that the effect on the Entrance Gate is adverse. Since the gate is a contributing element to the historic status of the park, the adverse effect to the entrance gate also results in a finding of an adverse effect to the park, although this effect is "relatively minor" according to the SHPO.

The Proposed Action also includes noise mitigation features and a visual screen, as indicated in Figure 3-21. The figure depicts an earthen berm and sound barriers, all on existing I-25 right-of-way. A location is also pointed out where additional trees will be planted on park property to create an enhanced visual screen (without noise mitigation benefits). All noise mitigation features will be built outside of the park boundaries. The berm and barriers will be visible from the park, but will not require any taking of park property and will result in no adverse effect.

PHOTO SIMULATIONS OF PROPOSED MITIGATION

Noise barrier:
About 20’ high x approximately 1060’ long sound barrier, two segments (in gore area and east edge of CDOT right-of way)

Noise barrier:
About 20’ high x 625’ long sound barrier (east edge of CDOT right of way)

Visual barrier:
Additional trees planted between existing large cottonwood trees

Earth berm:
Approximately 5’ – 25’ high in CDOT right of way

Blue line in photo denotes
66 decibel sound contours in 2025
with proposed mitigation in place

Noise Barrier Protecting Willow Haven Lake

Noise Barrier Protecting Demonstration Garden

Enhanced Visual Screen for Volleyball Courts

Earth Berm Protecting Baseball Field

FIGURE 3-21
Monument Valley Park
Mitigation Features

Apart from the Bijou Street Entrance Gate that is discussed further below, the Proposed Action would have no other direct impacts to the park because of the distance and barriers of the railroad, creek, and buildings between I-25 and the park. Under the Proposed Action, the increase in through lanes within the median of the existing highway template will not appreciably change the present setting of the park.

Noise projections for the Proposed Action indicated that in 2025, portions of the park would experience worst-case noise conditions in excess of 66 decibels, the CDOT threshold for considering noise abatement. In Figure 3-21, the blue line represents the 66-decibel noise contour, with proposed noise mitigation in place. Predicted worst-hour noise levels would be higher than 66 decibels to the west of this contour line (i.e., closer to the highway), and lower than 66 decibels to the east (farther away from the highway).

Various mitigation options were considered to protect portions of the park where people normally congregate. As noted above, three portions of the park will receive noise mitigation in the form of noise walls and a landscaped berm. In these locations, park users will see these noise mitigation features instead of being able to see traffic on the highway. The noise mitigation features will impact the visual setting of the park, but these visual impacts are not considered adverse.

Bijou Street Entrance Gate to Monument Valley Park (5EP613.13)

This Bijou Street Entrance Gate to Monument Valley Park is located just east of the I-25/Bijou interchange (Exit 142), at the western edge of downtown Colorado Springs. The gate consists of two rough-cut stone columns spanned above by a metal arch with open metal letters spelling out "Monument Valley Park." The history of this entrance is not known, but from its construction it is believed to have been an original feature of the park, possibly dating to the 1904 to 1908 timeframe.

The entrance gate is eligible for NRHP listing under Criterion (c) for its distinctive characteristics of type, period, and construction. The entrance gate is considered a contributing element to Monument Valley Park, which is considered for NRHP listing.

Bijou Street Entrance Gate to Monument Valley Park

Under the Proposed Action, the Bijou Street bridges built over I-25, Monument Creek, and the railroad will have a higher vertical clearance for flood control measures and to meet the standard vertical clearance needed by the railroad. At the rock entrance arch to Monument Valley Park, this increase in elevation is 18 inches.

To compensate for this small change in elevation, two sets of steps will be built to allow pedestrians to continue to use the sidewalk on Bijou and access the park. One set of about three steps would be located near the Bijou Street Entrance Gate to accommodate the vertical change from the street sidewalk to the park sidewalk. The other set of about five steps would be located farther to the west. Plans also include the construction of a retaining wall, ranging in height from zero at the east end to four feet at the bridge, along the park's edge. Attached to the top of the retaining wall will be a handrail 42 inches in height. These modifications will slightly alter the pedestrian access and the visual character of this park entrance.

A vibration analysis demonstrates that the arch can withstand activities such as drilling for the Bijou Street Bridge, careful removal by hand of the sidewalk next to the arch, and construction of stairs to allow for pedestrian access to the park from Bijou Street. A structural analysis was also conducted for the gate feature. The structural

analysis was conducted in April 2003 by A-E Design Associates. They found the structural integrity to be good and not susceptible to structural damage to the point where its integrity would be at risk during construction.

The landscaping for the entrance area of the arch will match the current landscaping, including the location of the beds and the types of vegetation.

The raising of Bijou Street, the introduction of a retaining wall, and the addition of a safety railing atop the wall would change the feeling, function, and design of this portion of the park. The wall and railing would create a visual and physical barrier where none existed before (and where none was planned to exist). The resulting determination of effect is that the Proposed Action would result in an adverse effect to this resource.

WPA Flood Wall, Monument Creek (5EP3856)

A major flood occurred in Colorado Springs in 1935, during America's economic Great Depression. The flooding caused four deaths and destroyed five of the city's six bridges across Monument Creek, and also caused property damage in Monument Valley Park. Subsequently, flood walls were built along both sides of the creek, as a public works project under the Roosevelt Administration's Works Progress Administration (WPA).

The WPA Flood Wall on Monument Creek, eligible under Criteria (a) and (c) for association with the Works Progress Administration and for craftsmanship, is found on the east and west sides of the creek from north of Uintah Street to south of Colorado Avenue. Over the years, segments of the WPA wall have been determined eligible for the NRHP.

The wall system is not entirely intact as originally constructed, due to prior infrastructure projects including the reconstruction of the City's Colorado Avenue bridge.

The Proposed Action minimizes impacts to the WPA wall, but nevertheless would impact one WPA wall segment. The Proposed Action includes constructing a five-foot cantilevered roadway slab and retaining wall above the WPA wall to minimize the amount of wall that would be impacted with a traditional retaining wall design.

WPA Flood Wall Along Monument Creek

Project impacts would total 5,910 square feet, all occurring on the west side of the creek between Cimarron and Bijou. Impacts would result due to physical alteration of the retaining wall, a storm sewer outfall pipe, and the Bijou Street bridge abutment (see Figure 3-22).

The total impact of 5,910 square feet amounts to slightly over one percent of the entire WPA wall system. However, the portion south of Bijou Street (both sides of the creek) comprises approximately 83,000 square feet. The 5,910 square foot impact represents about 7 percent of this portion.

The resulting determination of effect is adverse for the WPA Flood Wall on the west side of the creek. There are no impacts to the wall on the east side of the creek.

Sites That Will Experience No Adverse Effect

Six additional NRHP-eligible properties will be affected by the Proposed Action in a manner or to an extent so limited that the historic impact determination is concluded to be no adverse effect.

These sites are in close proximity to Interstate 25 and thus the Proposed Action will affect the setting of these properties, primarily in respect to noise and/or visual aspects. These sites are listed in Table 3-31, and are discussed individually below.

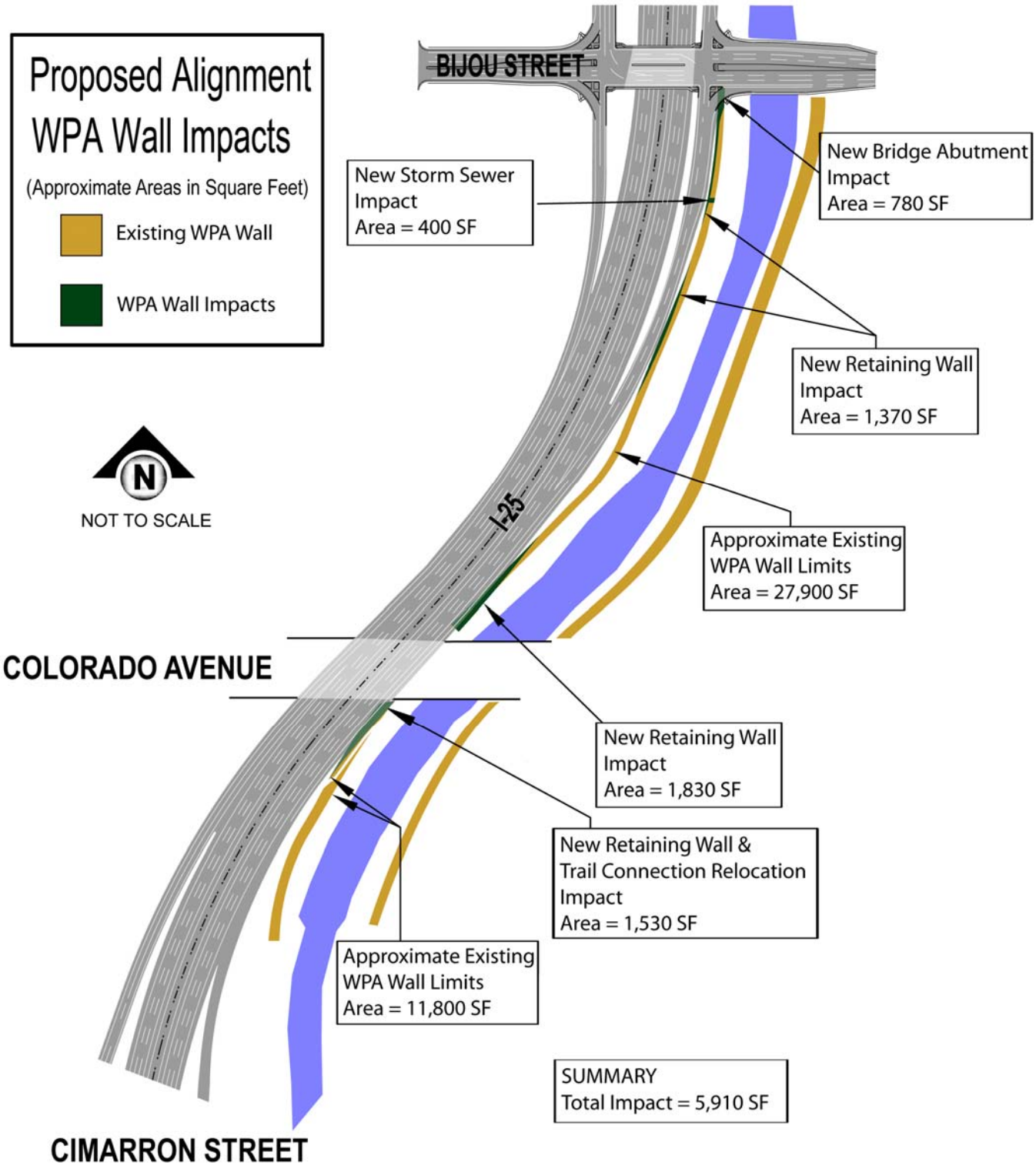


FIGURE 3-22
Impacts to WPA Flood Wall

TABLE 3-31
Historic Sites with Impacts that are Determined to have No Adverse Effect

Historic Site	Type of Impact
Reynolds Ranch, 225 North Gate Road (adjacent to southeast quadrant of I-25/North Gate)	visual
San Miguel Historic District (adjacent to northwest quadrant of I-25/Uintah)	noise
St. Mary's Cathedral, 26 West Kiowa Street (near I-25/Bijou)	right-of-way
St. Mary's School, 29 West Kiowa Street (near I-25/Bijou)	proximity
Cast stone house, 533 E. Brookside (near I-25/South Nevada)	noise
Al Kaly Shrine Mule Team Barn (near I-25/South Academy)	noise

Reynolds Ranch (5EP2223)

The Reynolds Ranch property is situated in the southeast quadrant adjacent to the I-25/North Gate interchange. A mining museum (not itself historic) has been established on the property. The ranch house built in 1894 is approximately 700 feet from I-25. The ranch was listed in the State Register in 1997 and is considered eligible under NRHP Criterion (c) as an excellent example of 19th century ranch building design and construction methods.

The Proposed Action will result in loss of cottonwood trees along Smith Creek, making the roadway easier to see and hear from the ranch house. This will not affect the use of the property or the characteristics that make the property historic.

San Miguel Historic District (5EP4200)

The San Miguel Historic District is a small neighborhood located in the northeast quadrant of the I-25/Uintah interchange, immediately south of the Colorado Springs Parks and Recreation offices, and just north and west of Colorado College. These 24 modest homes on Glen Avenue and San Miguel Street, were built mostly between 1898 and 1918, in a variety of styles. The neighborhood is considered eligible for historic designation under Criterion (c), embodying distinctive characteristics of a type, period, and method of construction.

The San Miguel Historic District will experience a two-decibel noise increase to 66 dBA by 2025 as the result of the Proposed Action. Analysis of mitigation options was conducted, and noise mitigation was found to be not feasible or reasonable. The increased noise will not diminish the architectural significance of this district.

St. Mary's Church/Cathedral (5EP208)

St. Mary's Cathedral is located east of the I-25/ Bijou Interchange (Exit 142), just across the street from the Monument Valley Park Entrance Gate. St. Mary's Church was completed in 1898 and listed on the National Register of Historic Places in 1982 under Criterion (c) for its neo-Gothic design and very important architectural presence in downtown Colorado Springs. With the establishment of the Colorado Springs Catholic Diocese in 1984, the building was subsequently renamed as St. Mary's Cathedral.

Under the Proposed Action, a small portion of the St. Mary's property will be acquired due to minor realignment of Bijou Street and its sidewalk. Bijou and Kiowa streets will be slightly realigned in front of the church. The property to be acquired by CDOT is part of the church parking lot that was reconstructed in 2003. The needed land formerly had approximately 20 parking spaces, and now has none.

The St. Mary's Cathedral parking lot was reconstructed by the Diocese in 2003. Land needed for Proposed Action is circled in red. (Kiowa Street is shown in foreground.)

The Colorado Springs Diocese was aware of the Proposed Action and took the concept design into account when it developed plans for the site's renovations in 2003. Thus, through consultation between CDOT and this landowner, potential adverse effects were minimized.

The Proposed Action will not negatively impact the historic significance of the church and the determination of effect is no adverse effect.

St. Mary's School (5EP3854)

St. Mary's School is an L-shaped brick building of International-style design constructed in 1949. It is located at 29 West Kiowa Street, across the street from St. Mary's Cathedral. Funding to build the school was provided by Mrs. Spencer Penrose of the Penrose Family important to Colorado Springs history. It is considered eligible for inclusion on the National Register under Criterion (c) for its distinctive architectural design. Although the school is still owned by the Diocese, it is no longer used as a school.

Under the Proposed Action, minor realignment of Bijou Street will occur, ending approximately 50 feet from the school. There will be no direct impact to St. Mary's School, including vibration from construction according to a CDOT vibration study. Although the new construction on Bijou will slightly modify the setting of this historic property from the new pavement, curb, and gutter about 50 feet to the west, there will be no adverse effect to St. Mary's School.

Cast Stone House, 533 E. Brookside (5EP4199)

This ornamental cast stone residence, built in 1899, is located south of the I-25/South Nevada Avenue interchange (Exit 140). It is eligible for National Register listing under Criterion (c) for its distinctive characteristics of type, period, and construction.

Under the Proposed Action, this residence will experience a slight noise increase of one to two decibels by the year 2025. The noise increase will not diminish the architectural significance of this building. The resulting impact determination is no adverse effect.

Al Kaly Shrine Mule Team Barn (5EP4209)

This familiar area landmark is located just east of I-25 and north of the South Academy Boulevard interchange (Exit 135). This barn was built in 1928 as part of the Sinton Dairy, a prominent local business for decades. Today, the barn is used as a mule shelter by the Al Kaly Shrine organization. The barn is eligible for NRHP listing under Criterion (a) for its association with the Sinton Dairy operation that was important in the history of Colorado Springs.

Under the Proposed Action, a two-decibel noise increase is predicted by the year 2025. The noise increase will not diminish the historic significance of this historic property. The resulting impact determination is no adverse effect.

Sites That Will Not Be Affected by the Proposed Action

Out of the 32 historic properties (listed or eligible) in the I-25 study area, it was determined that 22 properties will experience no effect resulting from implementation of the Proposed Action. These sites are listed in Table 3-32.

In addition, the State Historic Preservation Office has indicated that Colorado College (5EP611) and the Stratton Meadows neighborhood (5EP4224) may be eligible for the Register. While the eligibility of these two resources has not been finally determined, the SHPO has indicated that these sites would experience no effect due to the Proposed Action.

Mitigation

Mitigation will be undertaken for four historic resources that would incur adverse effects from the Proposed Action: the U.S. Air Force Academy, Monument Valley Park and its Bijou Street Entrance Gate, and the WPA Flood Wall. CDOT and FHWA will enter into a Memorandum of Agreement with the SHPO to stipulate specific mitigation requirements for the three adversely affected resources.

In accordance with the regulations, the Advisory Council on Historic Preservation reviewed the documentation regarding adverse effects, and determined that further consultation was not necessary (see the March 12, 2004 letter in Section 12 of this EA). The proposed mitigation strategies are detailed below.

U.S. Air Force Academy (5EP595)

In March 2002, CDOT and the Federal Highway Administration hosted a design charette for both the Academy and their original architects, Skidmore Owings & Merrill (SOM). After a public meeting and week of examining issues and the effects of various designs for the North Gate Interchange, staff from the Air Force Academy, SOM, FHWA, and CDOT developed a design concept for the I-25/North Gate/Powers

TABLE 3-32
Historic Sites Experiencing No Effect from the Proposed Action

Site Number	Site Name	Location	NRHP Eligibility
5EP1003.9	Santa Fe Railroad Grade	Baptist – N. Academy	Contributing, officially eligible
5EP1003.1	Santa Fe Railroad	Baptist – N. Academy	Contributing, officially eligible
5EP972	Cottonwood Creek Bridge	Vincent Drive	Officially eligible (determination in 2000) Listed, National Register
5EP2179.1	Colorado Springs & Interurban Car 59	2233 Steel Drive	Listed, State Register
5EP2181.11	Denver & Rio Grande Railroad	Fillmore to Colorado	Contributing, eligible
5EP333	Old North End Historic District	Uintah to Monroe, west side of Wood	Listed, National Register
5EP4138	International Style House	205 W. Fontanero	Eligible
5EP4139	Phillip Loomis House	1414 Culebra Avenue	Eligible
5EP4140	Willis Armstrong House	1432 Culebra Avenue	Eligible
5EP4146	Jess Lewis House	1722 Culebra Place	Eligible
5EP614	Van Briggle Tile & Pottery Co.	1125 Glen Avenue	Officially Eligible
	Zuyder Zee Historic District	Mesa Road at Monument Valley Park	Eligible
5EP612.9		615 Zuyder Zee	
5EP4201		611 Zuyder Zee	
5EP4202		609 Zuyder Zee	
5EP622	Colorado Springs Fine Arts Center	30 W. Dale Street	Listed, National Register
5EP321	Emmanuel Presbyterian Church	N. Cascade and Boulder	Listed, National Register
5EP1063	Boulder Crescent Place Historic District	West View Place	Officially Eligible
5EP4208	Queen Anne House	422 W. Bijou	Eligible
5EP634	Knights of Columbus	25 W. Kiowa	Eligible
5EP646	Colorado Springs Public Library/ Carnegie Building	21 W. Kiowa	Listed, National Register
5EP618	Denver & Rio Grande Railroad Depot	10 S. Sierra Madre	Eligible
5EP643	Chadbourn Spanish Gospel Mission	302 S. Conejos Street	Eligible

interchange that minimizes impacts, including impacts to the visitor entry experience, on the Air Force Academy property. The charette conclusions were based on a balance of the original intent of the Academy design and the realities of the landscape today with the visual intrusion of urban development along the eastern boundary of the installation. CDOT will carry out the design as agreed to with the Air Force Academy at the design charette.

Strategies to mitigate adverse effects on this site include keeping the North Gate/Powers Interchange at or below the existing centerline grade to lessen the possibility of seeing it from high vantage points within the Air Force Academy, including the Cadet and Academic areas. The North Gate/Powers Interchange will be built at or below grade to minimize the intrusion of the interchange structures in this sensitive natural environment. New slopes needed for the interchange will be designed by a landscape designer to avoid a harshly engineered appearance. Vegetation removed for the construction of frontage roads and ramps, including scrub oak, trees, and riparian species, will be replaced with similar species after construction.

Air Force Academy representatives will be included in the design process to ensure that the project design is compatible with Air Force Academy aesthetic expectations. Final designs will be developed as part of the plans prior to construction. When final drawings of the interchanges and plans for the surrounding landscape are prepared, they will be forwarded to the SHPO and Air Force Academy for comment.

In addition, a detailed narrative history on the Air Force Academy and archival photographs of the present appearance of the seven miles of I-25 through Air Force Academy property will be provided to the SHPO in the form of Level II documentation. CDOT and FHWA will ensure

that this is done. It is noted that a National Register of Historic Places Nomination currently is being prepared by the National Park Service to recognize the Air Force Academy as a National Register Historic Landmark. If possible, that information package will be used to satisfy the requirements of Level II Documentation for a detailed narrative history of the Air Force Academy.

Monument Valley Park (5EP613) and Bijou Street Entrance Gate (5EP613.13)

Based on vibration, structural, and engineering analyses, it was determined that measures are required to protect the Monument Valley Park rock Entrance Gate from possible damage due to nearby construction activity. CDOT will include specifications in the project construction plans to require the following:

- Restrict the type of heavy equipment and allowable distance (of its use) from the gate
- Require hand removal of pavement directly next to the arch
- Provide fencing and cones to limit the proximity of construction equipment to the allowable distances
- Require contractor attendance at a pre-construction briefing prior to commencement of work adjacent to the entrance gate

Additionally, as historic mitigation, pre-construction and post-construction (Level I) photo documentation will be prepared, and landscaping plans will be prepared that are compatible with existing landscaping. Plans for the retaining wall, steps, and handrail will be submitted to the SHPO for review and comment prior to final design and construction.

WPA Flood Wall, Monument Creek (5EP3856)

Approximately 5,910 square feet of the WPA floodwall system will be impacted by the Proposed Action. The majority of the area impacted due to the construction of the cantilevered portion of the roadway and retaining wall will be restored after the roadway has been constructed. There will be 3,200 square feet of potential impact to the WPA wall in these areas. In the remaining 2,710 square feet of impact, the wall will be permanently removed with the reconstruction of a trail connection with Colorado Avenue, a new storm sewer outfall, and the new Bijou Bridge abutment.

Before construction begins, photographs will be taken in all areas where the wall is to be removed. Wherever reconstruction is feasible, qualified stonemasons will reconstruct the impacted portions of the wall using the same stones that are removed prior to construction of the cantilevered structure. Detailed plans and photographs will be prepared to show the present condition of the wall so that stonemasons can rebuild the wall to match its present appearance. Any stones that are not used in rebuilding the wall will be stockpiled for future repair projects, or used to replace the riprap underneath the Colorado Avenue Bridge.

In addition, in the segment of the WPA wall impacted by the Proposed Action, the scrub vegetation growing between the stones along the west side of the creek will be removed and the mortar repaired and stabilized. This vegetation is weakening the mortar and stones and causing the wall to deteriorate.

The retaining wall for the cantilevered portion of I-25 will be designed to be compatible with the WPA wall. Input from stakeholders will be sought before the final design is prepared. The final design of the retaining wall will also be submitted to SHPO for review and comment to ensure it is compatible with the WPA Flood Wall. Level II documentation will be prepared as another form of historic mitigation, including archival photographs and a narrative history of the WPA wall.

Archaeology

Congress declared that the intent of its Archaeological Resources Protection Act of 1979 was "to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands." The Act defined an archaeological resource to be, "any material remains of past human life or activities which are of archaeological interest."

Federal and State archaeological requirements are applicable in the case of transportation projects. In accordance with Section 106 of the National Historic Preservation Act, it is required that potentially affected archeological resources be identified and evaluated, and that the archaeological process be coordinated with the Colorado State Historical Preservation Officer and potentially affected tribes. For the I-25 EA, this was accomplished through a literature review of known sites and records, an examination of previous project surveys, and new field work on locations within the project area to look for archeological resources. Results of these efforts are documented in Appendix 7, Cultural Resources.

In addition, the CDOT conducted a Native American consultation process with federally recognized tribes having an interest in El Paso County, to determine whether these groups had any concerns about cultural resources in the I-25 project area. This process is detailed in a following subsection called "Native American Consultation."

Information on the specific locations of archaeological sites is not available to the general public in order to protect these resources. Individuals interested in information about these sites must contact the CDOT Staff Archaeologist at (303) 757-9525; however, the location and certain information about the sites may not be disclosed.

Current Conditions

Twenty-nine previously recorded prehistoric and historic sites were revisited during the current survey of the I-25 survey area (Slessman, et al., 2003). Three new sites and two isolated finds were discovered during the field survey of the project area in 2002, bringing the total number of identified sites and isolated finds to 34. A site is defined as an area where five or more artifacts are found, while an isolated find is an area containing one to four artifacts.

Twenty-one of the 34 sites consist of historic trash dumps, cement foundations, wells, cisterns, and tree alignments (places where trees are found in a neat, orderly row are indicators of the existence of a homestead, since the trees would have been deliberately planted). All of these 21 sites are believed to have functioned as homes, farms, or commercial areas associated with I-25 or State Highway 85/87. One of the 21 sites is a portion of abandoned State Highway 85/87.

Eleven sites, including the two isolated finds, are prehistoric lithic scatters, consisting of stone tools and by-products of stone tool manufacture.

The two remaining sites have both historic and prehistoric components. The historic components of these sites include trash dumps and foundations, and the prehistoric components consist of small lithic scatters.

Impacts of No-Action Alternative

Under the No-Action Alternative, no new areas would be disturbed. Therefore, no disturbances of surficial or subsurface archeological artifacts would occur.

Impacts of Proposed Action

The only known archeological site that would be impacted by the Proposed Action is a prehistoric campsite. This site has been assessed as eligible for the National Register of Historic Places. Approximately 65 percent of the site would be impacted by construction of the combined I-25/ Nevada/Rockrimmon Interchange.

Archaeological test excavation of the site was conducted in December 2002. Subsurface cultural features including hearths, stone tools, and debris associated with the manufacture of stone tools were encountered during testing.

The Proposed Action has the potential to impact other archaeological resources that have not yet been discovered.

Mitigation

Prior to any highway construction in the vicinity of the site at the I-25/Nevada/Rockrimmon Interchange, this site will be excavated by qualified archaeologists in accordance with a formal treatment plan coordinated with the State Historic Preservation Officer, Advisory Council on Historic Preservation and consulting Native American tribes.

If any currently undiscovered archeological resources are found anywhere within the I-25 corridor during construction, the CDOT staff archaeologist will be notified immediately to assess their significance and make further recommendations.

Native American Consultation

Section 106 of the National Historic Preservation Act (as amended) and the Advisory Council on Historic Preservation regulations (36 CFR 800) mandate that Federal agencies must involve interested Native American tribes in the planning process for federal undertakings. Consultation with a Native American tribe recognizes the government-to-government relationship between the United States government and sovereign tribal groups. Federal agencies must be sensitive to the fact that 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 resources and comment on how the project might affect them. If it is found that the project will impact cultural resources that are eligible for inclusion on the National Register of Historic Places and are of religious or cultural significance to one or more consulting tribes, their role in the consultation process may also include participation in determining eligibility and effects, and 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 important to American Indian people.

In May 2003, eleven federally recognized tribes with an established interest in El Paso County, Colorado, were invited via letter to participate as consulting parties:

- Ute Mountain Ute Tribe (Colorado)
- Southern Ute Indian Tribe (Colorado)
- Ute Tribe of the Uintah and Ouray Agency ("Northern" Ute) (Utah)
- White Mesa Ute Tribe (Utah)
- Apache Tribe of Oklahoma
- Cheyenne and Arapaho Tribes of Oklahoma (two distinct tribes administered by a unified tribal government)
- Pawnee Nation of Oklahoma
- Comanche Tribe of Oklahoma
- Kiowa Tribe of Oklahoma
- Northern Arapaho Tribe (Wyoming)
- Northern Cheyenne Tribe (Montana)

Five tribes expressed in writing the desire to be consulting parties for the project: the Southern Ute Indian Tribe, Cheyenne and Arapaho Tribes of Oklahoma, Pawnee Nation of Oklahoma, Kiowa Tribe of Oklahoma, and Northern Cheyenne Tribe (see Section 12).

In August 2003, four of the consulting tribes accepted an invitation to meet with FHWA and CDOT in Colorado Springs the following month (the Southern Ute Indian Tribe did not respond).

On September 9, 2003, representatives from the Pawnee Nation of Oklahoma and the Kiowa Tribe of Oklahoma met with CDOT and FHWA project staff. Due to last-minute personal commitments and other unexpected issues, representatives from the Cheyenne and Arapaho Tribes of Oklahoma and the Northern Cheyenne Tribe were unable to attend. However, the results of the meeting were provided in writing to the consulting tribes not in attendance.

The visiting Pawnee and Kiowa tribal members were provided a narrative overview of the project detailing the nature and scope of the undertaking, as well as a driving tour of the entire I-25 corridor, which included stops at several places of known or potential interest to the tribes. The primary concern expressed by the two tribes was the potential discovery of human remains. Both tribes concurred in the need to prepare a Programmatic Agreement to address this issue.

The meeting resulted in the mutually acceptable decision to prepare a Section 106 Programmatic Agreement addressing all issues in the corridor pertinent to both the agencies and tribes. A draft Programmatic Agreement was developed and is included in this EA as Section 9. When all parties to the agreement concur with the stipulations outlined therein, the document will be transmitted to the agencies and tribes for official signatures, at which time the Programmatic Agreement will become binding for the duration of transportation improvement projects within the I-25 corridor as defined in the EA and resulting Decision Document.

The draft Programmatic Agreement included in Section 9 of this EA will be superceded by the final, signed Programmatic Agreement document when it becomes available. Tribal consultation is a dynamic, long-term process that will continue throughout the project; the Programmatic Agreement ensures a consistent approach to Section 106 compliance and coordination with the consulting tribes for all future undertakings proposed for the corridor.

The consulting tribes have received, and will continue to receive, information pertinent to the NEPA documentation process for the project. By initiating, encouraging and facilitating Native American consultation, FHWA and CDOT have fulfilled their legal obligations in this regard as stipulated in the Section 106 and Advisory Council regulations.

Paleontology

Paleontology is the science dealing with the life of past geological periods as known from fossil remains. Pursuant to Colorado's Historical, Prehistorical, and Archeological Resources Act, it is the intent of CDOT throughout project development to identify and protect paleontological resources from loss or destruction caused by transportation construction projects or maintenance activities.

The technical approach used in the paleontological assessment for this I-25 EA consisted of a literature review of known sites and a field review to look for obvious signs of paleontological remains. These efforts, undertaken by CDOT staff, were coordinated with Colorado's State Historic Preservation Office. Results of these efforts are documented in EA Appendix 7, Cultural Resources.

Information on the specific locations of paleontological sites is not available to the general public in order to protect these resources. Individuals interested in information about these sites must contact the CDOT Staff Paleontologist at (303) 757-9632; however, the location and certain information about the sites may not be disclosed.

Current Conditions

The I-25 study area contains eight mapped geologic units. Surficial deposits include artificial fill, eolian sand, colluvium, terrace alluvium and pediment gravel. All of these geologic units have low paleontologic potential. Bedrock geologic units include the Pierre Shale, Laramie Formation, and Dawson Formation, from oldest to youngest. Locations where the roadway is in closest proximity to bedrock geologic units are listed in Table 3-33.

The results of the literature review regarding known fossil localities are as follows. The Denver Museum of Nature and Science has four previously documented fossil localities within the project area, two more which are very close to it, and an additional seven within the search radius for this study. The University of Colorado Museum has no previously documented fossil localities within the search area or project area.

TABLE 3-33
Bedrock Geologic Units in Close Proximity to I-25

Bedrock Geologic Unit	Approximate Location in I-25 Corridor
Pierre Shale	Between I-25 mileposts 131.8 and 135.8 (from near the State Highway 16 Interchange to the South Academy Boulevard Interchange).
Dawson	Between I-25 mileposts 149.4 and 149.6 (south of North Academy Boulevard Interchange); also mileposts 155-155.2, 156.7 to 156.9, 157.7 to 157.8 (these are from south of the North Gate Interchange to approximately the Baptist Road Interchange).
Laramie Formation	Between I-25 mileposts 146.5 and 147 (immediately south of the existing Rockrimmon Interchange).

During the field survey of the I-25 study area, two previously undocumented fossils localities were found. These new finds consisted of one invertebrate fossil (a baculite fragment) and one plant fossil. However, no fossils were collected due to poor preservation of the specimens. No vertebrate fossils were found during the field survey.

Impacts of No-Action Alternative

Under the No-Action Alternative, no new areas would be disturbed. Therefore, no disturbances of subsurface paleontological resources would occur.

Impacts of Proposed Action

Based on review of the conceptual design for the Proposed Action, the project would not impact any known paleontological resources. However, there is always the potential for discovery of currently unknown resources during a construction project. Construction excavation may produce new exposures of the potentially fossiliferous Pierre Shale, Denver Formation, and Dawson Arkose.

The Proposed Action would not have impacts to any known paleontological resources.

Mitigation

Once project design plans are finalized, a qualified paleontologist will examine them to estimate the scope/magnitude of any needed construction monitoring work. If final design plans indicate the likelihood of affecting outcrops of the above-identified geologic units, CDOT will require that a paleontologist monitor construction in these areas.

Although unlikely, it is possible that fossils could be present in Pleistocene-aged deposits within the construction corridor, and that these could be impacted during ground-disturbing activities. Because Pleistocene-aged bones may be only partially mineralized and are often superficially similar to modern bones, they can be difficult to distinguish. If any sub-surface bones or other possible fossils are found anywhere within the survey corridor during construction, the CDOT staff paleontologist will be notified immediately to assess their significance and make further recommendations.

U.S. Air Force Academy Resources

This separate subsection summarizes the effects of the Proposed Action on the United States Air Force Academy. These effects are noted elsewhere in the EA with respect to individual environmental resources, but are discussed here because the Air Force Academy itself is an important resource.

U.S. Air Force Academy Resources

This separate subsection of the I-25 Environmental Assessment has been developed to summarize the effects of the Proposed Action on the United States Air Force Academy (Air Force Academy). These effects are noted elsewhere in the EA with respect to individual environmental resources, but are also discussed here because the Air Force Academy itself is an important resource of military, cultural, economic, environmental and historic significance.

As made possible by an easement from Air Force Academy to CDOT, approximately seven miles of Interstate 25 are situated on Air Force Academy property, from north of the North Gate Interchange (Exit 156) to south of the North Academy Boulevard Interchange (Exit 150). These seven miles constitute 27 percent of the I-25 corridor in which capacity improvements are proposed. In addition to serving as the primary transportation corridor along Colorado's Front Range, Interstate 25 is also of major importance to the Air Force Academy. Regional vehicular access to the Academy is provided only by the I-25 interchanges at North Gate Boulevard and North Academy Boulevard. Maintaining mobility on I-25 is important to the ability of Air Force Academy employees to commute to their jobs, as well as for 1.4 million annual visitors to the Academy, including attendees of special events such as graduation and Air Force Falcons collegiate football games.

Approximately seven miles of I-25 and four freeway interchanges are located on U.S. Air Force Academy property. This segment represents 27% of the I-25 miles proposed to be widened.

Also, as an agency of the Federal government, the Air Force Academy has environmental responsibilities for the stewardship of its 18,455 acres of Federal land. Portions of the Academy are habitat for animals protected under the Endangered Species Act, and the entire installation is eligible for listing on the National Register of Historic Places.

Cooperating Agency Status

At the request of the Federal Highway Administration, the Air Force Academy has participated as a Cooperating Agency in the development of this I-25 Environmental Assessment. The Federal Highway Administration and CDOT have worked closely with the Air Force Academy. This interagency cooperation will continue beyond the environmental process. At such time as the environmental process is completed, the Air Force Academy's close cooperation will be needed in the design and construction phases for any improvements on Air Force Academy property.

A highlight of the ongoing interagency coordination process was a weeklong design charette conducted in March 2002, which afforded all parties involved the opportunity to discuss their issues and concerns regarding I-25 on the Air Force Academy. Charette participants included representatives of the Federal Highway Administration, CDOT and the Air Force Academy as well as the Academy's original architects (the firm of Skidmore, Owings & Merrill).

A planned configuration for the I-25 Interchange with North Gate and Powers Boulevard had been developed in 1997 as part of the Environmental Assessment for the northern extension of Powers Boulevard, but Air Force Academy officials requested that the North Gate/Powers Interchange concept be revisited as part of the I-25 EA. A major focus of the March 2002 charette was to consider alternative concepts for the North Gate/Powers Interchange. The resulting concept is reflected as part of the I-25 Proposed Action.

Current Conditions

The Air Force Academy is a military installation located about 8 miles north of downtown Colorado Springs. The installation covers an area that is approximately 5 miles wide by 7 miles long. When it was created in the 1950s, the boundaries

were developed based on the need for airspace use and military training, and to minimize the effect of the surrounding community's development on cadet culture and discipline.

I-25 Mainline

Four lanes of Interstate 25 (two lanes northbound and two lanes southbound) carried fewer than 10,000 vehicles per day in 1960 and today the same lanes carry more than 65,000 vehicles per day. Travel demand in this corridor is projected to double by the year 2025. The capacity of the existing roadway is not adequate to meet the projected future demand.

Interstate 25 traverses the Air Force Academy property in a north/south direction on the eastern border, as depicted in Figure 3-23. The Academy also owns the adjacent land on the east side of I-25, as decided during the original planning of the installation to protect it from too much adjacent development. The planners in the 1950s intended for motorists using I-25 to have a feeling of rural openness, uncluttered by billboards and neon signs, as they passed by the installation.

On Air Force Academy property, the North Gate Interchange (Exit 156) and the south "gate" (North Academy Boulevard – Exit 150) are the only two locations providing access into and out of the installation. Two newer interchanges on Air Force Academy property provide access only to and from the east. The Briargate Interchange (Exit 151) was completed in 1987, and the Interquest Parkway Interchange (Exit 153) was completed in the year 2000.

In the foreground, I-25 passes over North Gate Road. The Cadet Chapel and other key campus buildings are visible in the background like a citadel on a hill.

North Gate Interchange

The North Gate Interchange is the main entrance for Air Force Academy visitors, via North Gate Boulevard. To the east, this roadway is called North Gate Road.

The existing North Gate Interchange is a cloverleaf configuration, all below the grade of the I-25 mainline. Little of the interchange is visible from the highway. The I-25 mainline bridges over North Gate are not wide enough to accommodate additional through-lanes. The interchange's loop ramps do not meet modern design standards and the weave length provided by the existing on-ramps to I-25 is inadequate.

To the west of the interchange, North Gate Boulevard is officially the main visitor entrance to the Air Force Academy. Motorists stop at the main "gate" (a security checkpoint) to gain access to the installation. To the east along North Gate Road is the Gleneagle subdivision and other privately held lands currently being developed and anticipated to undergo major development within the next decade.

North Academy Boulevard Interchange

The partial cloverleaf-style interchange at North Academy Boulevard was reconstructed under a safety project that was completed in 1997. The original configuration as built in 1958 had insufficient weaving distances for modern traffic needs, and numerous fatalities occurred here. The reconstructed interchange allows enough width under the Academy Boulevard bridge to accommodate additional through-lanes on the I-25 mainline beneath.

Northwest of the interchange is the Academy's south gate. Southeast of the interchange is a heavily developed commercial area surrounding the Chapel Hills Mall, a major regional shopping center.

Briargate and Interquest Interchanges

Two trumpet-style interchanges connect I-25 with Briargate Parkway and Interquest Parkway, providing access to State Highway 83 and the nearby Briargate and Interquest developments to the east of Air Force Academy. These two interchanges were constructed within the last decade, and are wide enough to accommodate the addition of lanes on the Interstate 25 mainline.

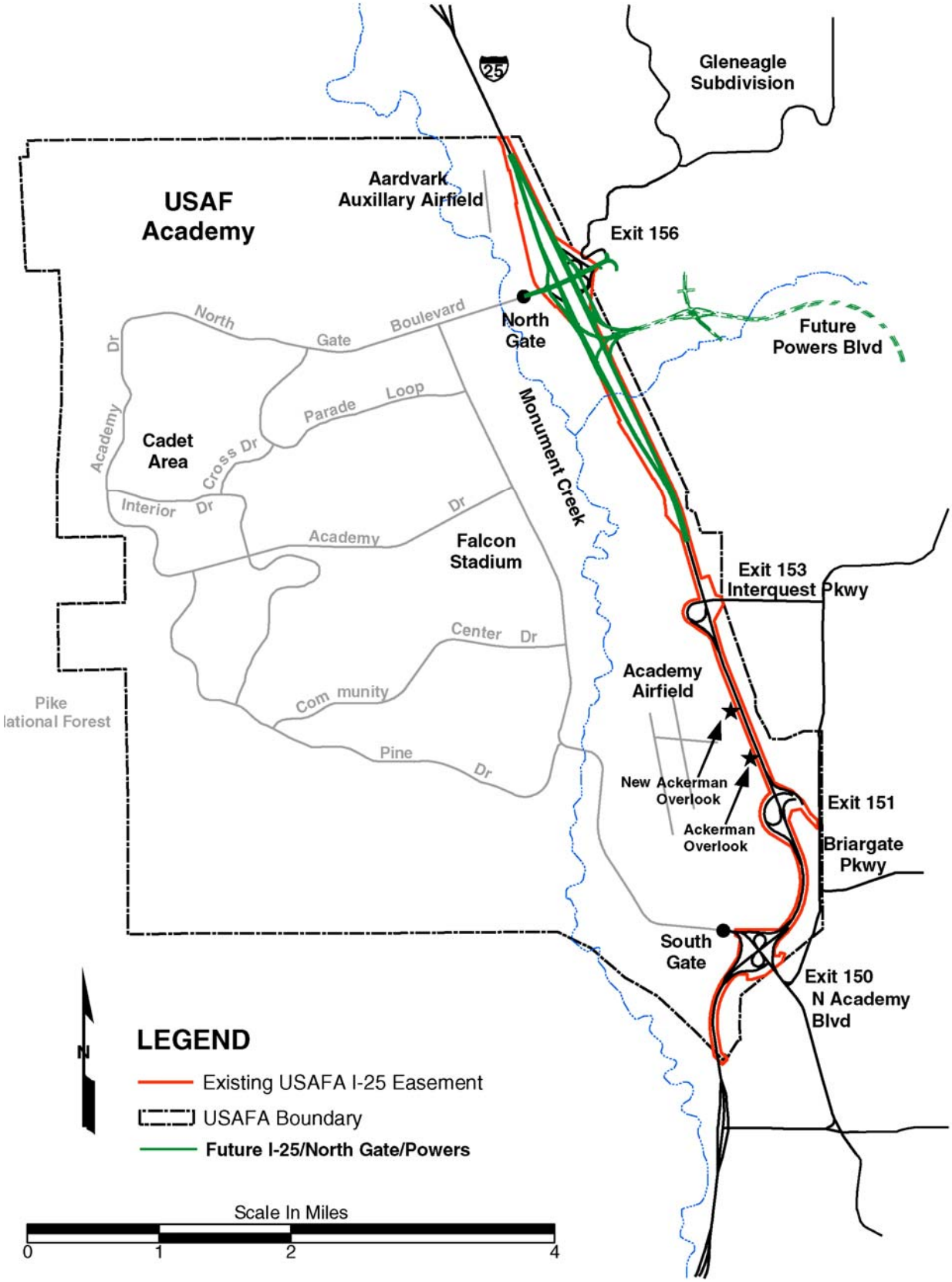


FIGURE 3-23
Vicinity Map of Interstate 25 and the United States Air Force Academy

East of the Briargate Interchange, constructed in 1987, is the sprawling Briargate residential development, suburban office buildings, and a new retail complex. Development has been slower in the vicinity of Interquest Parkway, which opened in the year 2000. The interchange serving Interquest Parkway (formerly Stout Allen Road) was paid for by the private sector to improve access to nearby office building properties. Most of the lands along the east side of I-25 opposite the Air Force Academy are zoned for commercial and industrial uses. East of these lands, extensive residential development is planned.

Airspace Concerns

Introductory flight training operations occur at the Air Force Academy. As depicted in Figure 3-23, Air Force Academy's primary and auxiliary airfields are both very close to Interstate 25. The Air Force Academy has Air Force and Federal Aviation Authority (FAA) designated "clear zones" and airspace surfaces in which it is critical to minimize structures that increase the risk to public and pilot safety.

Another important safety concern pertaining to Air Force Academy airspace is the Bird-Aircraft Strike Hazard, meaning the potential for Air Force Academy's light aircraft to collide with birds, especially larger birds such as the Canada goose. Air Force Academy staff requested that the Proposed Action avoid creation of open water that could attract birds to Air Force Academy airspace.

Security Concerns

Since the historic terrorist attacks against the United States on September 11, 2001, security has been elevated at all U.S. military installations, including the Air Force Academy. Entrance through Air Force Academy's north and south gates has become a more time-consuming process. This results in vehicle queues that can extend back as far as the North Gate and North Academy Interchanges, especially during special events at the Academy. The Air Force Academy is in the process of building more efficient vehicle inspection facilities for both gates.

Historic Resources

Construction of the Academy began in 1955 and was completed in 1962. The installation is considered eligible for listing on the National Register of Historic Places, and is also being evaluated by the National Park Service for possible designation as a National Historic Landmark. While the Cadet Chapel and Cadet Area are notable contributing features, the entire Air Force Academy installation was planned in a carefully integrated manner, including the location and design of Interstate 25 at the Academy's eastern edge.

Although the Air Force Academy is not yet listed on the National Register of Historic Places, the State Historic Preservation Office has determined that the installation meets the eligibility criteria. It meets Criterion (a) (associated with events that have made a significant contribution to the broad patterns of our history) due to its importance to U.S. military history, and also for its association with earlier ranching and residential uses since the early settlement of the region. Additionally, the outstanding site planning and International Style buildings at the Cadet and Academic areas meet Criterion (c) due to their "distinctive characteristics of a type, period or method of construction." The site planning aspect also includes the overall facility landscape, including vistas to and from the installation. Taken together, these elements contribute to the unique character of the Air Force Academy as a Cultural Landscape.

I-25 was located on an easement to control access and development along the highway. An Air Force Academy buffer area was created between the highway and the boundary so there would be further control of land immediately adjacent to the highway. The unique wide median separating I-25's northbound and southbound lanes was designed intentionally to provide a "rural feel" for motorists driving through the Air Force Academy.

The Proposed Action would alter the original appearance of the eastern boundary of the Air Force Academy. While there are no contributing buildings in this part of the property (e.g., the Cadet Area is approximately 2 miles away from I-25), this eastern edge of the area contributes to the historic cultural landscape by preserving the natural beauty of this property and an element of the original Academy plan and landscape design. The widening of I-25 and the reconfigured North Gate interchange with the Powers Boulevard connection would change the rural feel of the Academy. It would also affect vistas to and from the installation.

Ackerman Overlook

The existing Ackerman Overlook is located just north of the Briargate Interchange, on the west side of I-25. The overlook offers motorists an opportunity to pull off of I-25 and observe the overall view of the Air Force Academy property, as well as the air operations underway during the day.

The overlook also features a memorial marker in honor of Jasper D. Ackerman ("Soldier, Rancher, Banker, Great Supporter of the Air Force Academy"). This marker was placed there after his death in 1988.

The current location of the Ackerman Overlook is not ideal, for both traffic and airspace reasons. The facility is located close to the southbound I-25 exit ramp for Briargate Parkway, inducing some motorists to use the overlook to get around congested mainline traffic and exit to Briargate. Additionally, the facility is located in the Air Force Academy's crosswind runway clear zone. The Air Force Academy and the Federal Highway Administration agreed that the overlook should be relocated.

Visual Issues

The overall Air Force Academy view shed appears mountainous with a natural rural setting. On the western edge of the view shed, the Academy is a scenic resource for the Pikes Peak Region. The natural appearance of the site, punctuated by carefully sited landmarks, such as the Cadet area and the stadium, provide a scenic approach to the City of Colorado Springs for travelers on I-25.

The natural scenery of the Air Force Academy property provides the foreground and middle ground component of the unbroken vista of Rampart Range to the west. The effect is a visual break in the urban fabric to the south, which is rapidly spreading to the east and north of the Academy. The quality of the scenic resource was an important factor in selecting the site for the Air Force Academy more than 40 years ago, and it has been an important factor in planning the use and development of the site throughout its history. Protection of scenic values continues today as a major goal for management of the Academy resources.

Rapid residential development has occurred on private lands to the north, south and east of the Academy. To date, development immediately north of the Academy's property line has been kept a couple miles away, principally north of Baptist Road. The Academy is protected from development to the west by the adjacent Pike National Forest.

To the east of I-25, rapid development is occurring on private land adjacent to the Air Force Academy.

In its 1999 *Master Plan for the Tri-Lakes Planning Area* that addresses lands north of the Air Force Academy to the Douglas County Line, El Paso County included the specific goal to "preserve the natural character of the I-25 corridor." This "2000 Tri-Lakes" Comprehensive Plan encourages cooperative planning among the public and private sectors, including the Air Force Academy, to coordinate planning and development of the I-25 Corridor. The plan encourages "well-organized and thoughtful development that complements the natural landscape and preserves open spaces and "view sheds" to the Front Range and eastern plains."

According to the Tri-Lakes Comprehensive Plan, one aspect of the compatible development design needed to preserve the natural character of the I-25 corridor is lighting. The Plan includes an objective to promote the use of low-level lighting, down lights and photovoltaic (solar-powered) lighting. Similarly, reduction of light pollution is a strategy identified in the *City of Colorado Springs 2001 Comprehensive Plan*. Excessive or improperly designed lighting wastes energy, and contributes to "light pollution" of the nighttime sky, also adversely affecting nocturnal wildlife. At night, the Air Force Academy is a relatively dark, natural place that is increasingly surrounded by the lights of urban development.

Safety Concerns

The Air Force Academy is the emergency services provider responsible for first response to traffic accidents and other emergencies for the approximately seven miles of Interstate 25 on Air Force Academy property. Therefore, it is important that any proposed I-25 modifications incorporate modern design standards to improve the safety of the 40 year-old highway.

Specific concerns about the existing highway configuration include highway shoulders, inadequate acceleration/deceleration length for the North Gate interchange ramps, and weaving issues related to the location of the Ackerman Overlook. Also, the Air Force Academy has expressed concern that the current speed limit of 75 miles per hour on I-25 north of Briargate is too high, and has recommended that FHWA and CDOT evaluate a lower speed for all of I-25 on Academy property.

I-25 on the Academy offers good sight distance for motorists and has relatively few interchanges to introduce merging. Based on these design criteria and the results of past travel speed studies, the existing freeway has a posted speed limit of 75 miles per hour north of the Briargate Parkway. The limit is 60 miles per hour on the southern portion of Academy property before dropping to 55 miles per hour in urbanized Colorado Springs. Speed limit determinations on highways including I-25 are re-evaluated from time to time in response to changes in local conditions.

Within the past several years, CDOT installed guardrail in narrow sections of median, in response to a number of median-crossing head-on collisions that occurred on I-25 in northern El Paso County.

Additionally, variable message signs exist along I-25 north and south of the North Gate interchange. These are useful for warning motorists of traffic delays and for providing information about Air Force Academy special events or base access restrictions.

Approaching the North Gate Interchange from both the north and the south, I-25 has a wide, natural median. Both to the north and to the south of the interchange, there are road links for authorized vehicles to get from the northbound lanes to the southbound lanes (or vice versa) for emergency response. The Academy does not desire more crossovers, but needs to maintain the capability to cross.

Wildlife and Vegetation

The 18,455-acre Air Force Academy is known for its natural resources and wildlife habitat, in part due to its diversity of vegetation zones. Closest to I-25, the predominant biological communities are the grasslands and riparian communities.

Interstate 25 is close to Monument Creek and crosses a number of streams that feed into Monument Creek. Monument Creek and its tributaries from Monument to North Academy Boulevard comprise a Potential Conservation Area (PCA) identified by the Colorado Natural Heritage Program (CNHP), in its December *2001 Survey of Critical Biological Resources for El Paso County, Colorado*. Much of this area is on Air Force Academy property.

CNHP notes that within the Academy, the riparian communities and associated uplands are some of the healthiest along the Front Range. CNHP characterized this PCA as being of very high significance for biodiversity, and high urgency for protection.

According to the *USAFA Integrated Natural Resources Management Plan* (September 2003), Monument Creek and its tributaries are important riparian habitats for white-tailed deer, Preble's meadow jumping mouse, raptors and neotropical migratory birds. Other animals found in these areas include gray fox, beaver, raccoon, chorus frog and the northern leopard frog. The report lists five species of native nongame fish occurring in Monument Creek: white sucker, longnose sucker, longnose dace, creek chub and fathead minnow.

According to the same report, the grasslands occurring on the eastern portion of the Academy are dominated by short-grass prairie vegetation, but tallgrass and mixed grass prairie communities are noted between Monument Creek and I-25. A colony of Gunnison's prairie dogs can be found adjacent to the southbound I-25 off-ramp to the North Gate Interchange.

The Air Force Academy Integrated Natural Resources Management Plan identifies the Smith Creek, Monument Branch and Black Squirrel Creek crossings of Interstate 25 as "minor" wildlife movement corridors. Rapid development

east of I-25 is making wildlife movement to those lands less desirable for both the wildlife and their new human neighbors.

CNHP identified encroaching urban development and exotic, invasive plant species as two threats to the area. Air Force Academy has documented numerous types of invasive, noxious plant species on its property (including the I-25 highway corridor).

Numerous species of noxious weeds have been documented on Air Force Academy property. In a 2002 survey of over 3,600 observations, the top five species found on the base were toad flax, Canada thistle, musk thistle, diffuse knapweed, and Russian olive.

Threatened and Endangered Species

Two species listed as threatened under the Endangered Species Act reside on Air Force Academy lands—the Preble's meadow jumping mouse and the greenback cutthroat trout (a cold-water fish not found on the Academy's eastern side).

Other threatened or endangered species use the Academy on a migratory basis or have the potential to occur on the Academy, but none of these were found in the I-25 study area.

The Preble's meadow jumping mouse (*Zapus hudsonius preblei*) is a federally designated threatened species found throughout the riparian areas (Monument Creek and its tributaries) of the Air Force Academy. Preble's mouse habitat on Air Force Academy property has become increasingly important in the face of development pressures on surrounding private lands. The CNHP characterizes the Preble's mouse population on the Academy as one of the healthiest known populations of the species.

Allowable Air Force Academy maintenance activities in mouse habitat areas are limited under the terms of a programmatic agreement between the Academy and the U.S. Fish and Wildlife Service. The Air Force Academy's programmatic agreement does not cover any activities or impacts that would occur under the Proposed Action. Impacts of the I-25 Proposed Action are separately addressed in the June 2003 Programmatic Biological Opinion for Interstate 25 and nearby CDOT highway improvements.

Greenback cutthroat trout were introduced by the Air Force Academy into non-potable reservoirs #2, #3, and #4 as experimental populations for the purpose of evaluating their compatibility with a catch-and-release fishing program. The Air Force Academy and the U.S. Fish and Wildlife Service are currently not stocking this species on the base.

Water Resources

The predominant surface water feature on the Air Force Academy is Monument Creek, which flows from north to south along the east side of the Academy, not far from Interstate 25. Water from the Interstate 25 corridor flows generally westward down to Monument Creek. Monument Creek flows into Fountain Creek in central Colorado Springs, then flows south to join the Arkansas River in Pueblo.

The *Fountain Creek Watershed Plan* developed by the Pikes Peak Area Council of Governments (PPACG) indicates that above Woodmen Road (i.e., through the Air Force Academy), the Monument Creek channel "is relatively undisturbed," and "meanders in a well-formed floodplain." The Colorado Natural Heritage Program notes that, "Monument Creek meanders broadly through some stretches, particularly on the Academy, where periodic flooding events have created substantial deposits of silt and debris." The Fountain Creek Watershed Plan indicates that through the Air Force Academy, watershed issues may be ranked in the following order: (1) erosion, (2) sedimentation and (3) flooding.

The *Integrated Natural Resources Management Plan for the Air Force Academy* (September 2003) noted that "Tributary streams that flow into Monument Creek from the east have been impacted by urban development, and sedimentation has been severe, especially in Kettle and Pine Creeks."

Indeed, development on private lands upstream of the Air Force Academy is increasing the amount of impervious surface and therefore causing increased stormwater runoff into the tributaries of Monument Creek. The same phenomenon has increased erosion and sedimentation, which adversely affect water quality and the riparian habitat on Academy property. This is an environmental issue of major concern to the Academy, as identified in the Design Charette.

The Academy's Integrated Natural Resources Management Plan indicates that the National Wetlands Inventory identified a total of 387 acres of wetlands on the base. Delineation of wetlands for the I-25 Environmental Assessment identified 24.69 acres of wetlands on Air Force Academy property within the I-25 study area. This represents about six percent of the total wetland acreage on the base.

Multi-Use Trails

West of the North Gate interchange and north of the Air Force Academy's security gate is a small parking lot and official trailhead for the New Santa Fe Trail (part of the region's main north-south trail). Trail users cross over North Gate Boulevard on a historic railroad bridge that is no longer used by trains. The Air Force Academy has previously granted easements to El Paso County to accommodate the north-south New Santa Fe Trail and the east-west LaForet Trail. The LaForet Trail crosses under I-25 through the drainage culvert that carries the north fork of Black Squirrel Creek.

El Paso County's land use plans for the area call for a Smith Creek Trail from the east to cross I-25 and connect to the New Santa Fe Trail, perhaps using the creek's culvert to cross under I-25. However, according to the Air Force Academy General Plan, additional public use access points are not expected, as there is an issue of security and public use of the installation. The Santa Fe Trail on Air Force Academy property twice has been closed temporarily during nationwide security alerts related to terrorist threats.

Impacts of No-Action Alternative

Under the No-Action Alternative, increased traffic congestion on Interstate 25 would lengthen travel times and seriously restrict mobility for all users of the State's primary north-south roadway. Peak-period congestion that is experienced in the region today for four hours daily over 16 miles would last ten hours daily and affect all 26 miles of I-25 from Monument to South Academy Boulevard, including all 7 miles of I-25 on Air Force Academy land.

This adverse mobility impact would particularly affect the Air Force Academy because the base is highly dependent on I-25 as its transportation link to the civilian community. Commuters to the base, tourists, suppliers, and participants and spectators of Air Force athletic and cultural events would all be adversely affected by the worsened traffic level of service.

Increased congestion on I-25 would result in increased travel time, stop-and-go conditions, and increased pollutants from motor vehicles. Although the region has experienced no violation of the national air quality standard carbon monoxide since 1989, the most recent air quality conformity analysis prepared by the Pikes Peak Area Council of Governments, the regional planning agency, indicated that emissions will increase by 2025 to levels that strain the allowable carbon monoxide emissions budget.

Additionally, the region has experienced increasing ozone concentrations within the past decade, and trend analysis strongly suggests the likelihood of an ozone violation before 2010. Stop-and-go traffic results in substantially higher emissions of ozone precursor pollutants (hydrocarbons and oxides of nitrogen) than traffic at moderate, free-flow speeds.

The No-Action Alternative does not provide for the specific configuration of the I-25 connection with Powers Boulevard that was identified through the I-25 EA process. Therefore, completion of that important regional transportation linkage would be stalled because the proposed interchange at I-25 would have to undergo a separate environmental process. This would lead to continued use of arterial streets such as Research Parkway and State Highway 83, and additional traffic using the Interquest and Briargate Interchanges. This traffic includes regional trips that could be served more efficiently by a direct connection between Powers Boulevard and Interstate 25.

The No-Action Alternative would also leave in place the outdated North Gate interchange as well as other interchanges and I-25 mainline sections that were constructed 40 years ago, not designed to modern standards. Recent safety projects have addressed the highest priority roadway deficiencies (including the now reconstructed I-25 interchange at North Academy Boulevard), but otherwise did little to modernize the highway on Air Force Academy land.

Impacts of Proposed Action

First and foremost, the Proposed Action would widen Interstate 25 from its current two through-lanes in each direction to three through-lanes in

each direction north of Briargate and four lanes including a peak-period high-occupancy vehicle lane south of Briargate. These capacity improvements would benefit motorists on Colorado's primary north-south roadway. Improved mobility on I-25 would be of direct benefit to the Air Force Academy, including its commuter population, suppliers, and visitors.

Second, the Proposed Action would modernize the North Gate Interchange, also providing direct freeway-to-freeway connections between I-25 and Powers Boulevard as part of the North Gate Interchange complex. The connection of Powers Boulevard to I-25 would also improve mobility between the Air Force Academy and the greater Colorado Springs community.

Implementing the Proposed Action would require the use of additional Air Force Academy land for added highway lanes and for the extensive new ramp system planned for the North Gate/Powers Interchange. The existing I-25 easement comprises approximately 658 acres for the entire seven miles of I-25 on Air Force Academy lands. This easement would need to be expanded to include an additional 48.4 acres for the North Gate/Powers Interchange. This needed expansion is depicted in Figure 3-24.

The Proposed Action would require an additional 5.2 acres of expanded easement to replace the existing Ackerman Overlook with an improved overlook about 2,300 feet to the north of the existing facility. Figure 3-24 illustrates the existing and proposed sites of the Ackerman Overlook.

Apart from these two modifications (for the North Gate Interchange and the new Ackerman Overlook), no other easement modifications will be needed.

Airspace Issues

In discussions with Air Force Academy representatives, it has been determined that the selected alternative for the North Gate/Powers Interchange would not encroach on clear zones for the Academy's airfields. The Proposed Action does not create new structures or ramps above the elevation of the existing interchange.

Security Concerns

In discussions with Air Force Academy representatives, it has been determined that the Proposed Action would not cause adverse effects with respect to Air Force Academy security. An important factor contributing to lack of impact is the fact that the Proposed Action minimizes any westward encroachment into the Academy at Air Force Academy's north and south gates. Maintaining distance between the base entrances and key base activity areas provides important reaction time for security forces in the unlikely event of an unauthorized vehicle at either gate.

Historic Resources

The Proposed Action would alter the original appearance of the eastern boundary of the Air Force Academy. While there are no historic buildings in this part of the property (e.g., the Cadet Area is approximately two miles away from I-25), this eastern edge of the area contributes to the Historic Cultural Landscape by preserving the natural beauty of this property and an element of the original Academy plan and landscape design. The widening of I-25 and the reconfigured North Gate Interchange with the Powers Boulevard connection would change the rural feel of the Academy. It would also change the vista to and from the installation.

The Proposed Action would continue an ongoing trend of change to the appearance of the historic landscape at the Academy boundary. In addition to the Proposed Action, the Briargate and Interquest interchanges that were built on Academy property (in 1987 and 2000, respectively) also transformed the eastern edge of the property with their urban designs. There have also been cumulative effects from the clusters of development that occurred before and after the construction of these interchanges.

Although the Proposed Action would adversely affect one of the features (i.e., the historic cultural landscape) that contributes to the Air Force Academy as an historic resource, it would not affect the overall eligibility of the Air Force Academy for listing on the National Register of Historic Places nor its proposed status as a National Landmark.

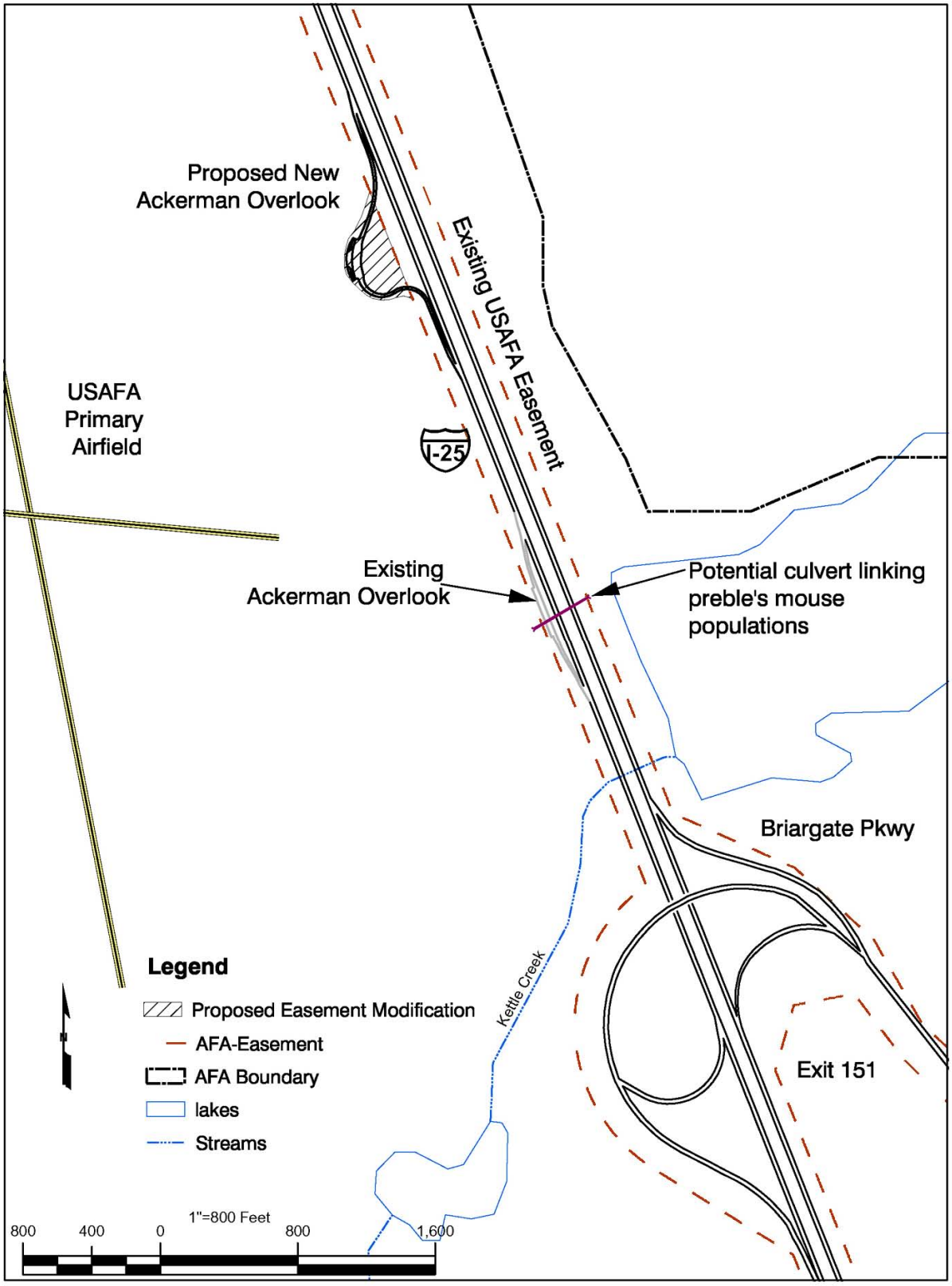


FIGURE 3-24
United States Air Force Academy Easement Modification Area at North Gate/Powers Interchange

Threatened and Endangered Species

The Proposed Action will have adverse impacts to habitat of the Preble's meadow jumping mouse (*Zapus hudsonius preblei*), which is the only threatened or endangered species that will be adversely affected by the Proposed Action. The amount of Preble's mouse habitat impacted by the Proposed Action on U.S. Air Force Academy property includes 12.3 acres of permanent loss and 20.0 acres of temporary disturbance in seven drainages, as detailed below in Table 3-34.

TABLE 3-34
Preble's Meadow Jumping Mouse Habitat Impacts on United States Air Force Academy Property

Name of Drainage	Permanent Impact (acres)	Temporary Impact (acres)
Black Forest	0.3	1.0
Smith Creek (North Gate)	6.2	4.0
Monument Branch	3.5	6.1
Black Squirrel N.	1.0	3.1
Black Squirrel S.	1.2	2.1
Kettle Creek	0.1	0.4
Pine Creek	0.0	3.3
Totals	12.3	20.0

The numbers in Table 3-34 are considered worst-case impacts, since efforts to avoid and minimize impacts would continue in the project design and construction phases of the project. Most of the permanent impacts would occur in the Smith Creek and Monument Branch drainages, which are both within the area affected by the North Gate/Powers Interchange. These impacts were evaluated by CDOT and FHWA in a Programmatic Biological Assessment, together with all other impacts to the Preble's mouse from the Proposed Action. The Proposed Action would disturb undeveloped grassland and riparian crossings on Air Force Academy property.

The U.S. Fish and Wildlife Service issued a Programmatic Biological Opinion on August 4, 2003. The USFWS found that the Proposed Action will not cause jeopardy to the Preble's mouse. The Programmatic Biological Opinion issued for this project will have no effect on the separate Programmatic Biological Opinion previously issued to the Air Force Academy.

Wildlife and Vegetation

A 3-acre colony of Gunnison's prairie dogs (*Cynomys gunnisoni*) is located in the northeast quadrant of the existing I-25/North Gate Interchange. This colony would be impacted by the proposed realignment of the I-25 southbound off-ramp to North Gate Boulevard.

To a large degree, the 12.3 acres of Preble's mouse habitat disturbance (detailed above) corresponds with riparian habitat and associated upland habitat that is important to other, more common wildlife species. Grassland species will be impacted by the permanent loss of upland grasslands on Air Force Academy property.

Under the Proposed Action, construction activities will cause temporary disturbance of roadside vegetation and wildlife habitat, as well as the loss of Ponderosa pine and other mature trees. In particular, construction of the North Gate/Powers Interchange would directly affect 35 acres of already disturbed roadside grassland, 17 acres of shortgrass prairie, 2 acres of riparian deciduous forest, and about one acre of Ponderosa pine forest. The interchange would result in the loss of about 80 existing mature trees, including some cottonwoods in the southeast quadrant of the North Gate Interchange (associated with a visual impact to the Reynolds Ranch property).

Construction of the new Ackerman Overlook will result in the permanent loss of 5.2 acres of grassland.

Safety Concerns

The Proposed Action will replace the North Gate interchange cloverleaf ramps with a diamond configuration providing longer on-ramps for merging into the flow of I-25 mainline traffic. Additionally, the shoulders of I-25 will be widened, existing median crossovers will be maintained, and weaving issues near the Ackerman Overlook will be addressed by relocating the overlook (see below).

The Proposed Action will maintain the existing Variable Message Signs that are located north and south of the North Gate Interchange. No additional signs of this type are proposed on Air Force Academy property.

Ackerman Overlook

As part of the I-25 Proposed Action, a new Ackerman Overlook would be built approximately 2,300 feet north of the current site. Due to its increased distance from the Briargate Parkway off-ramp (Exit 153) and from the Academy Airfield, the new site will offer improved traffic safety and reduced risks regarding aircraft accident potential.

The existing Ackerman Overlook location will be dismantled and restored to match the adjacent roadside landscape.

The new Ackerman Overlook will not itself cause an adverse visual effect on the Academy. Motorists on I-25 or at the Cadet Area, Falcon Stadium, or elsewhere on the Air Force Academy property will not be able to see much of the overlook area because it will be below the existing grade of the highway.

The design uses existing topography and provides a safe pedestrian overlook in a shallow depression, which lessens the negative impact of the overlook to the landscape.

View from the current Ackerman Overlook, including a monument to Jasper D. Ackerman

Visual Impacts

Widening the freeway mainline from two lanes in each direction to three lanes in each direction will give Interstate 25 a more urban look than the existing 40 year-old highway. This will occur on all seven miles of I-25 on Air Force Academy land.

The North Gate/Powers Boulevard Interchange will create more ramps, structures and engineered slopes within a natural setting, impacting views from the trail on the Santa Fe Railroad Grade. This portion of the corridor will become more urban in appearance due to the additional ramps and bridges.

Additionally, loss of indigenous vegetation, including stands of Ponderosa Pine, Cottonwoods and other riparian vegetation, will change the views from the trail on the Santa Fe Railroad Grade.

However, context-sensitive design will ensure that the improved interchange is visually appealing, both to the Air Force Academy and to motorists on I-25.

Through the design charette process, CDOT and FHWA worked with Air Force Academy representatives to avoid and minimize visual impacts to the Academy. The selected interchange alternative for the new North Gate/Powers Interchange keeps the roadway elevations at, or below, the current centerline elevations of I-25. The Proposed Action will be more screened by the current rolling terrain to minimize impacts to the Air Force Academy view shed.

Under the Proposed Action, additional lighting may be needed in the vicinity of the North Gate interchange, with the introduction of connecting ramps for Powers Boulevard. In general, however, the interchange will remain largely unlit as it is today.

Multi-Use Trails

The Proposed Action includes provision of a new multi-use trail that would cross Interstate 25 along the north side of North Gate Boulevard. This connection will enable users of El Paso County's Smith Creek Trail (east of I-25) to get to the trailhead of the New Santa Fe Trail that is west of I-25 next to Air Force Academy's North Gate security checkpoint. This connection avoids impacts that would result if the trail instead were to follow Smith Creek onto Academy property, i.e., security issues and impacts to habitat of the Preble's meadow jumping mouse.

The box culvert that carries the LaForet Trail under I-25 to access the New Santa Fe Trail will be extended for drainage reasons, and its entrance/exit points will be improved.

Noise

The Proposed Action would accommodate increased traffic on Interstate 25, resulting in increased future levels of highway noise. In the year 2025, under the Proposed Action the area likely to be impacted by noise levels greater than 66 decibels (a State criterion for considering possible noise mitigation) will not extend more than 500 feet from the highway's centerline.

Most Air Force Academy facilities are located west of Monument Creek, far from Interstate 25, and thus would not be impacted by the increased noise. For example, the eastern end of runway 26 at Academy Airfield (east of Monument Creek) is located approximately 1,500 feet away from the Ackerman Overlook. The Cadet Area is approximately 2 miles distant from the highway.

The outdoor use closest to Interstate 25 is the New Santa Fe Trail, which utilizes a historic railroad grade. This trail is located within the freeway's modeled 66-decibel noise contour for the year 2025. Similarly, portions of the existing LaForet Trail and proposed Smith Creek Trail will be within this contour.

Water Resources

The construction of new pavement for additional lanes on I-25 and the expanded North Gate/Powers Interchange will result in an increase of stormwater runoff from the highway. This increase will be 50 percent or more, since the number of through-lanes on the highway will increase by roughly 50 percent, and there will also be the addition of ramps for the North Gate/Powers Interchange. However, this increase is considered small since the highway runoff is only a small portion of the runoff for the overall tributary drainage basins.

A total of 3.62 acres of wetlands (including 1.86 acres considered to be "jurisdictional") on Air Force Academy property would be impacted by the Proposed Action. These wetlands would be either permanently taken or temporarily impacted by construction activities. These are associated primarily with the North Gate/Powers Interchange, along Smith Creek.

Concrete box culverts of various sizes are the predominant drainage structures allowing water to flow westward under I-25 to reach Monument Creek. These structures will be lengthened to allow more I-25 lanes to cross over them.

Direct impacts to floodplains would occur from the Proposed Action due to construction of widened roadway embankments; new and replacement bridges; extended, enlarged, or replaced culverts; and channel stabilization improvements. The potential direct impacts could include changes in the base flood elevations, floodplain boundaries, and flow velocities. Floodplain encroachments and associated floodplain BFE and boundary increases would be limited as allowed by FEMA floodplain management regulations.

The Proposed Action would also have indirect impacts. Smith Creek is among the existing stream crossings of I-25 that have small unintended detention areas upstream caused by existing culverts and bridges that do not contain or pass the 100-year discharge. When these drainage structures are enlarged, the detention areas would be reduced in volume, resulting in small increases in the peak discharges downstream. However, the existing detention volumes are small relative to the peak discharges, and the discharge increases would also be small.

The Proposed Action would result in drainage changes, including required wetland replacement and water detention features. These have the potential to create new open water that could attract large waterfowl to the vicinity of Air Force Academy flight paths.

Construction Impacts

The Proposed Action involves roadway construction activities that normally result in traffic delays. Air Force Academy representatives indicated that maintenance of traffic flow is an issue of great importance to them, particularly with respect to Air Force Academy's many special events (especially Air Force Falcon football games and Cadet Graduation). Some of these events represent an important source of revenue for Air Force Academy programs.

Mitigation

Many potential adverse impacts to the Air Force Academy were avoided through the selection of the North Gate/Powers Interchange configuration that is included as part of the Proposed Action. Adverse impacts have been avoided and minimized to the extent possible through the concept design process, and remaining impacts will be addressed through mitigation.

Preble's Meadow Jumping Mouse

Mitigation strategies for impacts to Preble's mouse habitat were proposed by CDOT to the U.S. Fish and Wildlife Service and are reflected in the Programmatic Biological Opinion approved by USFWS in August 2003.

To address temporary impacts from construction, including the 20 acres of temporary impacts on Air Force Academy property, CDOT has committed to the successful restoration of all temporarily altered habitat or replacement with habitat of equivalent or better quality.

To address permanent impacts to Preble's mouse habitat (25.6 acres corridor-wide, including 12.3 acres on Air Force Academy property), CDOT committed to a number of additional strategies, including:

- Purchase of conservation easements or fee title on 50 additional acres of Preble's mouse habitat in the Monument Creek Watershed (on privately held lands that are not on Air Force Academy property).
- Active cooperation with Air Force Academy and El Paso County on Preble's mouse recovery efforts.
- Monitoring to assure disturbance areas are not exceeded and to gauge restoration efforts
- Sponsoring a research project to determine the effectiveness of small mammal ledges in culverts
- Create habitat linkages to connect populations of Preble's mice that are currently isolated from one another.

Regarding the creation of habitat linkages, five potential linkages were identified, and CDOT has committed to complete two of them (CDOT's linkage choices to be determined later). One of the potential linkages on this menu would involve construction on Air Force Academy property. This linkage would be a culvert under I-25 to enable movement of the mouse from the Kettle Creek Dam area to the west side of I-25. The culvert would not affect the dam in any way or carry any water, but would instead be designed solely as a "critter crossing" for the mouse. CDOT and Air Force Academy representatives have had preliminary discussions about this concept, but there is no specific agreement or commitment that this linkage option will ultimately be implemented.

Also, it is recognized that the North Gate/Powers Interchange construction will disturb four Preble's-mouse inhabited streams that are in close proximity to one another: Smith Creek, Monument Branch, and North and South Black Squirrel Creeks. For protection of the mouse, at no time will all four of these creeks be disturbed simultaneously.

Wildlife and Vegetation

Prior to construction, Air Force Academy officials will be consulted to identify if appropriate habitat can be developed on Air Force Academy property for relocation of the Gunnison's prairie dogs at the North Gate interchange colony. CDOT will cooperate with Air Force Academy to comply with any specific Air Force requirements applicable to prairie dogs on military property. Ordinarily, on civilian property, the animals would be captured and relocated if possible in accordance with the CDOT prairie dog policy and in coordination with CDOW.

Roadside areas disturbed during construction will be re-vegetated using native plant species to restore natural conditions and to reduce the potential for establishment of invasive, noxious species. Re-vegetation will include replacement of the mature trees displaced due to the project, especially in the vicinity of the North Gate Interchange. The I-25 corridor on Air Force Academy property will be re-vegetated in a manner that is consistent with the Academy's wildlife management objectives.

CDOT will monitor and control noxious weeds throughout the I-25 easement on a continuing basis, in accordance with the Colorado Noxious

Weed Act. CDOT, in cooperation with Air Force Academy, will coordinate the eradication of Russian olive trees on the I-25 easement. CDOT will also coordinate with Air Force Academy to eradicate any tamarisk trees that may be found in the project area at the time of construction.

Construction disturbances will be limited using Best Management Practices. Disturbed areas will be re-vegetated to replicate or enhance habitats, using care, however, to avoid using plants that would attract wildlife to the road. Re-vegetation will occur immediately following construction activities using site-specific seed mixes and certified weed-free mulch or straw.

Safety Concerns

The Proposed Action will improve safety by providing standard-width shoulders, and by replacing the substandard loops and short weaving sections at the North Gate Interchange.

CDOT will continue to monitor traffic conditions to determine if the current posted speeds remain appropriate or should be changed.

Historic Resources

To mitigate adverse effects on the visual character of the Air Force Academy historic cultural landscape, the Proposed Action will keep the interstate and its ramps at or below the existing centerline grade to lessen the possibility of seeing it from high vantage points within the Academy property, including the Cadet and Academic areas.

Most of the impacts and most of the mitigation will occur in the vicinity of the North Gate Interchange. The redesigned interchange will be built at or below existing grade to minimize the intrusion of the interchange structures in this sensitive natural environment. The cut and fill slopes of the interchange complex will be designed by a landscape designer to avoid a harshly engineered appearance. Vegetation removed for the construction of frontage roads and ramps, including scrub oak, trees, and riparian species, be replaced with similar species after construction.

A detailed narrative history of the Air Force Academy and archival photographs of the present appearance of the seven miles of I-25 through Air Force Academy property will be provided to the State Historic Preservation Office in the form of Level II documentation. It is recommended that the National Register of Historic Places Nomination currently being prepared by the National Park Service to recognize the Academy as a National Register Historic Landmark will satisfy the requirements of Level II documentation for a detailed narrative history of the Air Force Academy.

Visual Impacts

Techniques will be used that alter the typical engineered slope and grade and make a more natural transition from the roadway to the existing grade. Revegetation of all disrupted areas is to be integrated with environmental conditions created by the construction. The colors and textures of the structure will blend with the surroundings.

The interchange's conceptual design, developed in cooperation with the Academy, keeps all roadways and ramps at or below the grade of the existing highway. Roadway slopes will be designed to blend harmoniously with the surrounding area.

Visual impacts to the major drainages in this view shed will be mitigated first by minimizing encroachment into the drainages, and second, by the use of bridges instead of box culverts to open up the drainages visually where possible. The use of variable slopes and minimization of constant cut and fill slope angles, which typically look very linear in the landscape, will help in making the slopes look more natural with better transition.

Air Force Academy representatives will be included in the design process to ensure that the project design is compatible with Air Force Academy aesthetic expectations.

Any new lights installed as part of the Proposed Action will be designed in compliance with Colorado's "Dark Skies" requirements (Colorado Revised Statutes 24-82-901) enacted by the General Assembly in 2001. This law requires CDOT to avoid installing new outdoor lighting, if possible, through the use of reflective road markers, lines, warning or informational signs, or other effective methods that do not require the use of artificial light. In cases where installation of new outdoor lighting cannot be avoided, it should be installed so as to shield the outdoor lighting fixtures from direct view and to minimize upward lighting and light pollution.

Water Resources

CDOT will mitigate stormwater runoff impacts on Air Force Academy property through the use of Best Management Practices, in accordance with its statewide water quality permit. Implementation of both construction related and permanent water quality best management practices will limit impacts of increased erosion and sedimentation affecting downstream wetlands and Preble's habitat, and of increased physical and chemical pollutants affecting Monument Creek. Detention basins will also be constructed to reduce peak discharges where feasible, in open areas of interchanges or other large open areas. In designing any water detention features, CDOT will abide by Air Force Academy's direction to avoid creating sites with open water that would attract large waterfowl and thereby increase Air Force Academy's Bird-Aircraft Strike Hazard.

CDOT will replace wetlands lost on Air Force Academy property with on-site wetland creation where possible, and has already identified wetland mitigation opportunities in the I-25 corridor amounting to more than twice the total wetlands to be impacted. Any mitigation on Air Force Academy property will be designed in consultation with Air Force Academy staff.

Most of the FEMA regulated floodplains do not extend into Air Force Academy property. However, design of the project improvements that encroach on any floodplains within the Air Force Academy (FEMA regulated or not) will comply with FEMA, City of Colorado Springs and El Paso County floodplain management requirements. During design of the structures that carry water across I-25 on Air Force Academy property, CDOT will also coordinate with Air Force Academy to determine the appropriate measures to minimize impacts to floodplains and the wetland and riparian vegetation associated with them.

Ackerman Overlook

CDOT will replace and relocate the Ackerman Overlook with a more context-sensitive facility in a safer location. A diagram of this location is provided in Figure 3-24. The views to the Academy from the relocated overlook will provide improved views of the Academy air operations as well as the Cadet area and mountain backdrop.

The westward view from the proposed new location of the Ackerman Overlook is shown in Figure 3-25.

In consultation with Air Force Academy representatives, a new Ackerman Overlook has been designed that does not itself create an adverse visual impact either from the viewpoint of I-25 or from the Academy. In fact, both from the I-25 mainline as well as from Academy viewpoints, the new overlook will have reduced visual impacts compared to the existing facility.

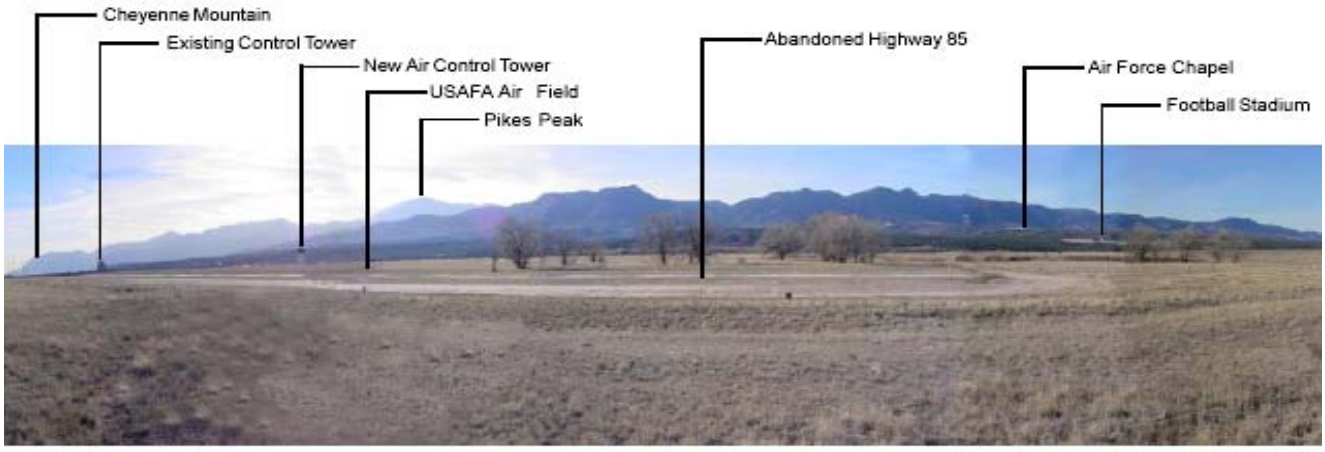


FIGURE 3-25
View Westward from the New Location for the Ackerman Overlook

Multi-Use Trails

The Proposed Action will not adversely affect any existing trails, and will benefit the regional trails system by connecting the Smith Creek Trail (east of I-25) with the New Santa Fe Trail (west of I-25) by adding a new multi-use trail under I-25 on the northern side of North Gate Road.

Construction Impacts

CDOT routinely employs a wide variety of mitigation techniques to minimize traffic disruption, as detailed on page 3-10 of this EA. For example, the number of existing lanes is maintained during construction. Any unavoidable temporary closures of lanes normally take place at night, aided by advance publicity and pre-planned detours. Also, lane closures are avoided at times when there are special events within the region (including not only Air Force Academy events, but other events that would draw visitors via I-25). An ongoing process for advance planning and mutual coordination will be undertaken with Air Force Academy representatives to ensure that construction activities do not adversely affect Air Force Academy special events.

Other Resources and Issues

Grouped under the category “Other Resources and Issues” are the following subsections:

- Hazardous Waste Sites
- Indirect Effects

Hazardous Waste Sites

As part of this I-25 EA, areas within the corridor that are contaminated or are potentially contaminated with hazardous materials have been considered. The term hazardous waste in this report is an all-inclusive term used for waste materials, which require specific handling, worker health and safety, and disposal procedures because of their contaminated nature. The term includes materials regulated as solid waste, hazardous waste, and other wastes contaminated with hazardous materials, radioactive materials, petroleum fuels, toxic substances, pollutants, and others as defined and regulated by various state and federal laws. If the type of the hazardous waste can be specifically defined (such as petroleum products), it is specified as such in this report.

Highway corridors, such as I-25 through Colorado Springs, often comprise areas where the land use is currently or formerly industrial, or where there are commercial operations with underground fuel tanks, such as service stations and truck stops. Hazardous substances, hazardous waste, or petroleum products may have been spilled or otherwise released in these areas, thus contaminating the soil and/or underlying groundwater. Lead paint and asbestos may also be present in buildings. Sites with these conditions are collectively referred to in this EA as ”areas of potential environmental concern.”

Areas of potential environmental concern 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. In addition, it is important to protect CDOT from liability for existing or future contamination as a result of this project.

Areas of potential environmental concern within the corridor are important because contaminants in soil or groundwater could potentially impact CDOT property or could be present on property that CDOT acquires as part of this project.

Technical Approach

To identify the locations of permitted and non-regulated hazardous waste sites within the project area, a modified Phase I Environmental Site Assessment was conducted in accordance with the requirements of CDOT and the American Society of Testing and Materials. The Modified Phase I Environmental Site Assessment involved a review of public records and field inspection.

Specifically, the Modified Phase I Environmental Site Assessment report identified areas where public records indicate the presence of currently or historically active hazardous waste sites or petroleum releases that are either within or immediately adjacent to the proposed I-25 improvements.

In addition to identifying areas of potential environmental concern, the Modified Phase I Environmental Site Assessment report documented the results of chemical analyses of paint samples from highway bridge structures in the project area. For the purpose of determining proper disposal of bridge materials, analyses were conducted to determine the concentration of metals, particularly lead, in the paint.

Current Conditions

Most of the areas of environmental concern identified in the Modified Phase I Environmental Site Assessment are related to leaking underground storage tanks and associated subsurface piping. The principal contaminants associated with these areas are petroleum hydrocarbons (e.g., gasoline and diesel fuels, waste motor oils, and other petroleum-based lubricating oils).

Public records were also reviewed for the presence of Superfund or Resource Conservation and Recovery Act sites. None were identified that would impact the project area.

An important consideration in the identification of relevant areas of potential environmental concern is the location of these areas, both horizontally and vertically, relative to the project area.

Surface drainage from areas located uphill of the project area could carry contaminants toward CDOT property. In addition, shallow groundwater tends to flow locally in the same general direction as surface drainage. Areas with groundwater contamination that are in close proximity and uphill of the project area, therefore, need to be identified as part of the planning process for this project.

Areas of Potential Environmental Concern

The following nine sites are within or immediately adjacent to the project area and are shown on Figure 3-26. These sites were identified in the Modified Phase I Environmental Site Assessment report as being areas of potential environmental concern.

1. **Diamond Shamrock Service Station, 1310 West Baptist Road**. This is a currently active leaking underground storage tank site located 0.06 miles west of the project area. This site has both groundwater and soil contamination that are currently under remediation. Groundwater flow is not considered to be toward the project area, however, this site could impact the project area because of its close proximity.

2. **Total Service Station, 3115 Sinton Road**. There is currently an active leaking underground storage tank at this site, which is located within the project area. The planned current Sinton Road alignment at the I-25/ Fillmore Street Interchange will require a total acquisition of this property.

3. **Conoco Service Station, 3006 North Chestnut Street**. This site is located within the project area. The Chestnut Street alternatives and the proposed widening of Fillmore Street would involve a total acquisition of this property. Although this site is currently considered inactive, soil and groundwater have been contaminated with gasoline and diesel oil.

4. **Texaco Service Station, 2930 North Chestnut Street**. This site is located within the project area. The Chestnut Street alternatives and the proposed widening of Fillmore Street would involve a total acquisition of this property. Although the leaking underground storage tank at this site is currently considered inactive, the Modified Phase I Environmental Site Assessment concluded that soil and groundwater contamination may still be present.

5. **Western Convenience Store, 302 West Bijou Street.** This currently active leaking underground storage tank is located adjacent to Bijou Street overpass. Currently, contaminated groundwater is under remediation at the site. The contaminated groundwater is migrating southeast toward additional areas of the project.

The Western Convenience Store at 302 West Bijou Street

6. **So-Cal, 221 South Chestnut Street**. This site is an auto-restoration facility located within the project area. The proposed southbound off-ramp from I-25 onto Cimarron Street would involve at least a partial acquisition of this property. Although the leaking underground storage tank at this site is currently considered inactive, the Modified Phase I Environmental Site Assessment report concluded that soil and groundwater contamination may still be present, particularly given the nature of the surrounding land use (salvage yards).

7. **1353 South 8th Street**. Located approximately 0.3 miles southwest and uphill of the project area, this site is a possible former landfill site or public dumping area, based on a review of historic photographs, current land use and county records. Although no soil or groundwater contamination is currently known to exist, the Modified Phase I Environmental Site Assessment concluded that contamination may be present given the potential past uses of the site.

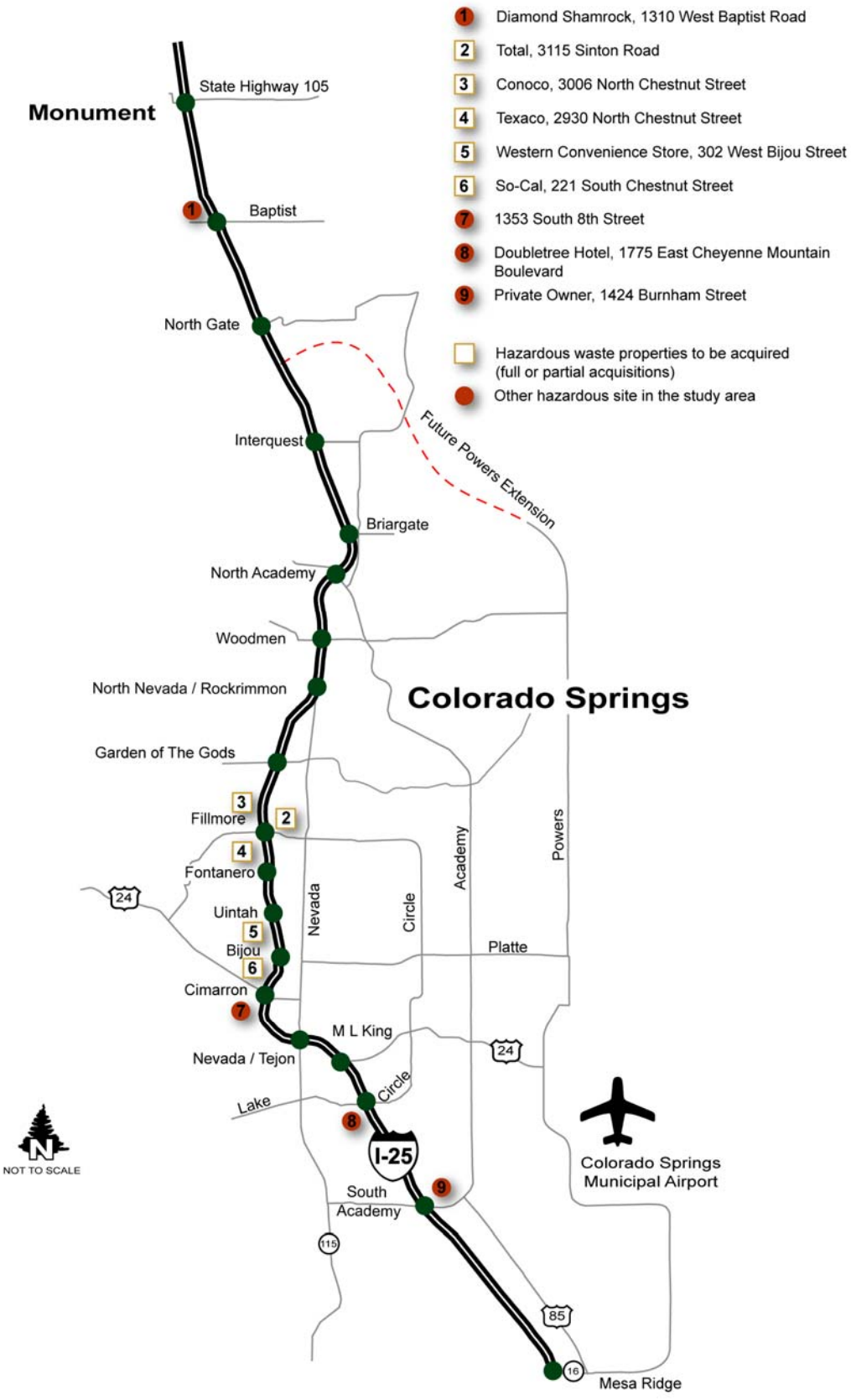


FIGURE 3-26
Hazardous Material Areas of Potential Environmental Concern

8. **The Doubletree Hotel, 1775 East Cheyenne Mountain Boulevard**. This currently active leaking underground storage tank is located 0.03 miles west and uphill of the project area, specifically at the I-25/Circle/Lake Interchange. A release from a leaking underground storage tank was reported in 1996. Remediation of the site has not occurred, therefore, soil and/or groundwater contamination may be present.

9. **Private Owner, 1424 Burnham Street**. This is a currently active leaking underground storage tank site located 0.15 miles east and uphill of the project area. Although the leaking underground storage tank at this site is currently considered inactive, the Modified Phase I Environmental Site Assessment report concluded that soil and groundwater contamination could be present.

In addition to the nine known sites listed above, several areas of potential environmental concern were identified in the Modified Phase I Environmental Site Assessment report primarily based on land use and/or type of business, or based on records of emergency response actions. Because there are no significant public records on these sites, they are not considered to be of environmental concern at this time.

Hazardous Materials in Bridge Paint

The results of a paint survey on specific bridges in the project corridor were presented in the Modified Phase I Environmental Site Assessment. A total of 31 paint samples were collected from ten bridges. The results indicate that lead was detected in paint samples from two bridges, and detectable concentrations of other regulated metals (arsenic, barium, cadmium, chromium, selenium and silver) were also found in some of the paint samples from these bridges.

The following bridges that cross I-25 in the project area had detectable metals concentrations in their paint:

- Railroad bridge, at milepost 136
- US 85/87 overpass, at milepost 136

Impacts of No-Action Alternative

Under the No-Action Alternative, the various areas of potential environmental concern would be addressed through the appropriate regulatory process by the owner(s) of these areas. In the absence of the highway improvements, there would be no further change to the existing environmental conditions with respect to hazardous waste, petroleum releases, or lead paint on bridges. This currently poses a potential hazard to CDOT maintenance and utility workers who are likely unaware of the existing environmental conditions.

Impacts of Proposed Action

Areas of Potential Environmental Concern

Areas of potential environmental concern pose a possible risk for human health and safety and for the contamination of other property nearby. Under the Proposed Action, property that is owned or may be acquired by CDOT will be remediated, if necessary, in accordance with appropriate regulatory processes.

Therefore, the Proposed Action alternative would lower the future health and safety risk for the public as well as for maintenance and utility workers.

Five areas of potential environmental concern would be acquired under the Proposed Action. These areas are the Total Station at 3115 Sinton Road, the Conoco at 3006 North Chestnut Street, the Texaco at 2930 North Chestnut Street, the Western convenience store at 302 West Bijou, and portions of So-Cal at 221 South Chestnut Street. With the exception of the Western convenience store on Bijou Street, the current presence of hazardous waste and/or a release of petroleum products is unknown at all of these areas. Prior to acquisition, further investigations will be required. If hazardous waste or a petroleum release is present, the nature and extent of any soil and groundwater contamination will be quantified to determine if remediation is required. Remediation may increase the cost of right-of-way acquisitions, but would benefit the public by reducing potential health and safety risks.

The Proposed Action will require the acquisition of five houses and several commercial buildings and structures. Given their age, there is a possibility that they may contain asbestos materials, lead paint, and other hazardous wastes. Further investigations will be necessary to determine whether any hazardous materials or wastes are present in these buildings. If so, they

must be removed and disposed of in accordance with appropriate regulatory processes.

Four additional areas of potential environmental concern that will not be acquired—the Diamond Shamrock at 1310 West Baptist Road, the property at 1353 South 8th Street, the Doubletree Hotel at 1775 East Cheyenne Mountain Boulevard, and the property at 1424 Burnham Street—are near the project area and may be sources of petroleum-based groundwater contamination that potentially could flow into the project area. Other properties adjacent to the Proposed Action may, because of their past land use history, have caused soil and groundwater contamination. In all of these areas, further investigation is necessary to reduce the uncertainty concerning the level of risk to human health and the environment under the Proposed Action.

This photo depicts one of the properties that will be acquired for the Proposed Action. Testing will be needed to determine whether hazardous materials will be an issue at this site.

Removal of Bridges with Metal-based Paint

Under the Proposed Action, two existing steel bridges along the project corridor would be removed as part of the proposed improvements. Those bridges that have elevated lead concentrations in their paint—the Railroad Bridge and the US 85/87 overpass, both at milepost 136—would be re-tested using an appropriate analytical procedure to determine the appropriate disposal requirements for the lead paint debris. (There is a public and worker health risk due to exposure to high metal–based paint from improper removal techniques.) The tests will also indicate the practicality for salvage and recycling of the steel girders.

There are also several bridges in the corridor that will not be modified or replaced under the Proposed Action. At those locations, no further testing or mitigation is proposed.

Mitigation

Areas of Potential Environmental Concern

Site-specific investigations will be performed on the sites listed as having potential environmental concerns to determine the presence and, if necessary, the extent of soil and/or groundwater contamination.

Mitigation will be required if the results of site-specific investigations at the areas of potential environmental concern determine that remediation will be necessary to protect human health and the environment during either construction or operation and maintenance of the Proposed Action. Management plans addressing the environmental and health and safety concerns for the workers and nearby public will be prepared and enforced during the project.

The level of remediation will be determined in accordance with applicable federal and Colorado law, based on the final project alignment, right-of-way requirements, and degree of subsurface disturbances during construction.

Hazardous Materials in Bridge Paint

CDOT will undertake further testing as needed to determine proper disposal methods and procedures for the lead paint debris. This work will be conducted in accordance with Section 250, Environmental Health and Safety Management, of CDOT's standard specifications for road and bridge construction.

CDOT will manage the disposal of the demolition debris in compliance with the Occupational Safety and Health Administration (29 Code of Federal Regulations), the U.S. Environmental Protection Agency (40 Code of Federal Regulations), and Colorado Department of Public Health and Environment (Colorado Code of Regulations - Air Quality Control Commission [1001] and Hazardous Materials and Waste Management Division [1007]).

Indirect Effects

Environmental regulations implementing the National Environmental Policy Act (NEPA) require for Federal projects that the agency consider direct, indirect, and cumulative effects. Direct effects have been discussed earlier in this EA, and cumulative effects are further discussed in Section 4. Indirect effects, also called secondary effects, are discussed below.

According to Federal environmental regulations (Title 40, CFR, Section 1508.8), indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Impacts of No-Action Alternative

The No-Action Alternative would allow I-25 congestion to increase in terms of both the number of miles congested and the number of hours of congested traffic during the day. This would place additional traffic demands on the region's arterial roadway system, bringing unwanted cut-through traffic, noise and air pollution into residential areas.

Projected carbon monoxide emissions for the year 2025 for the PPACG regional transportation plan are just 1.5 percent below the adopted emission budget (266 tons per day projected, compared to 270 tons allowed). The approved, conforming transportation plan includes I-25 capacity improvements. Under the No-Action Alternative, traffic would travel at lower speeds throughout the regional roadway system, thus increasing carbon monoxide emission rates. Increased traffic congestion could easily jeopardize the region's transportation/air quality conformity status.

Under the No-Action Alternative, increased congestion on I- 25 would result in increased travel delays for local residents, as well as for visitors and interstate trucking. These effects would be potentially detrimental to the health of the local economy.

Impacts of the Proposed Action

The Proposed Action would improve I-25 traffic flow and thus avoid the adverse impacts of the No-Action Alternative discussed immediately above.

Relatively minimal secondary effects would result from the Proposed Action since the improvements are proposed in a long-established freeway corridor. I-25 through Colorado Springs was opened in 1960, and has influenced the development that surrounds it. Given that El Paso County's population increased from approximately 144,000 in 1960 to 517,000 in 2000, more than 70 percent of the current population arrived after the freeway was in place.

Community Resources

The Proposed Action would provide the beneficial effect of improving mobility on I-25. This will improve access to community resources along the corridor. These resources include major employment areas as well as downtown governmental services and cultural facilities.

Through most of the corridor, the proposed improvements are planned on existing interstate right-of-way. The number of residences needed for I-25 right-of-way purposes would not impact the residential real estate market or the student population for nearby schools.

Similarly, the number of businesses that would be relocated is small, and these businesses are small firms, both in terms of their floorspace requirements and their number of employees. The number of businesses that would be relocated will not have a major impact on the community.

The area in the I-25 corridor between interchanges at North Academy Boulevard (Exit 150) and the South Academy Boulevard (Exit 135) is generally well developed. It is unlikely that land use in this portion of the corridor will be influenced by the Proposed Action.

North of Exit 150, for about seven miles, I-25 is situated on Air Force Academy property. In this portion of the corridor, rapid development is occurring to the east of I-25. Major development

of vacant land is planned east of I-25 in the vicinity of the Powers-North Gate Interchange (Exit 156). The kind of development and the rate at which it occurs are dependent on other factors such as local and national economic conditions, availability of other infrastructure, and local land use and zoning decisions.

Parks and Trails

The Proposed Action would not necessitate the taking of park or trail land, but will indirectly affect both types of resources with increased traffic noise, due to the volume of traffic using the additional lanes on I-25.

In the case of Monument Valley Park, east of I-25 from Bijou Street to north of the Fontanero exit, some park areas will receive noise and visual mitigation. Generally, the background noise level in the park will increase, however.

Noise levels will also increase in Dorchester Park (existing) and Confluence Park (now undergoing initial construction), as well as for nearby trails.

When the north-south trail system adjacent to I-25 was planned and constructed in the 1990s, I-25 had already been there for 30 years, and regional transportation plans since 1975 had identified the need for freeway expansion. The 1994 *Master Plan* for the Pikes Peak Greenway noted that the trail would be impacted visually and audibly by the freeway, and should be designed to try to minimize such impacts. Generally, the proposed I-25 capacity improvements would be constructed toward the existing, open freeway median, rather than to the outside (toward parallel trails). This will be advantageous in locations where the trail is below the grade of the highway, for in such cases the additional lanes would not be seen, and the noise source would be farther from the trail.

Noise

Under the Proposed Action, noise levels will increase along much of the I-25 corridor. This will affect not only the adjacent properties that were the subject of the formal noise analysis in this I-25 Environmental Assessment, but also properties beyond the projected 66 dB(A) contour. Although their noise levels would not meet the noise abatement criterion, their level of background noise would still increase. However, the change in noise levels is likely to be minimal (1 to 2 dB).

Air Quality

Secondary or indirect impacts are accounted for in the development and implementation of the State Implementation Plan, which combines these impacts with the transportation-related impacts to ensure compliance with the National Ambient Air Quality Standards.

Water Quality

The Proposed Action would result in an area with increased impervious surfaces. The proximity of the additional highway segments and construction activities are expected to have slight long-term impacts on the water quality of the receiving waters (Monument and Fountain Creeks) due to the increased pollutant loadings. Indirect impacts from a slight degradation of water quality could adversely affect the health of roadside and wetland vegetation. However, temporary and permanent Best Management Practices for stormwater runoff will be used. Since these were not required when the roadway was built in the 1950s, they have the potential to mitigate not only for new lanes but also the existing lanes. This could represent a net improvement over existing conditions.

Floodplains

Construction of the highway improvements included in the Proposed Action within floodplain areas will have some potential indirect impacts. Some existing stream crossings of I-25 have small, unintended detention areas upstream, caused by existing culverts and bridges that do not contain or pass the 100-year discharge. When these crossings are enlarged, the detention areas will be reduced in volume, resulting in small increases in the peak discharges downstream. However, the existing detention volumes are small relative to the peak discharges of the overall drainage basins of the floodplains, and the discharge increases will also be small. During final design of these drainage structures, the impact of reducing the volumes of these detention areas will be verified.

The Proposed Action will increase runoff generated from the highway. This increase will have only small impacts to the peak runoff discharges of the overall drainage basins, considering the right-of-way and impervious areas of the highway are small relative to those of the overall drainage basins.

Final design of all project improvements will assure that floodplain BFE and boundary increases do not extend outside the highway right-of-way, by increasing the hydraulic capacity of the crossing structures as needed.

Wetlands

Potentially, the Proposed Action could indirectly reduce the health of the vegetation or the species that use the nearby wetland areas. For example, the types of vehicle-related water pollutants identified in the "Water Quality" subsection of this Environmental Assessment could reach wetland areas. These potential secondary effects largely can be avoided or minimized during the construction process through the use of Best Management Practices, proper construction scheduling, and proper land use planning. Consequently, indirect effects on wetlands would be very minor.

Wildlife and Vegetation

Indirect impacts would potentially occur to vegetation communities and wildlife as a result of the Proposed Action. Direct impacts of the Proposed Action identified in this study relate to the direct loss of specific vegetation communities or wildlife habitat. Indirect impacts of the Proposed Action may be related more to potential alterations or adaptations of existing vegetation communities, wildlife habitats or wildlife utilization.

Vegetation composition typically tends to adapt or alter in response to changes of the general surrounding environment. Modification of local hydrological patterns, volumes, frequencies or water quality can result in adaptation and/or alteration of vegetation communities. The removal of mature tree canopies that provide ground shading can result in alteration of vegetation species composition to those species more adapted to direct sun. The introduction of non-native or noxious plant species from earth disturbance can also alter species composition within a vegetation community by out-competing existing species.

Indirect impacts to wildlife associated with the Proposed Action generally would include the displacement of wildlife from the immediate area due to habitat alterations and fragmentation as well as an increase in human/wildlife conflicts. The connection of Powers Boulevard to I-25 would add a north-south barrier for wildlife east of the interstate.

In some cases, wildlife displacement may reduce the potential for motor vehicle collisions with wildlife. For example, the relocation of prairie dogs away from I-25 could have an indirect benefit of reducing the potential for collisions between motor vehicles and the predators (e.g., hawks) that depend on prairie dogs for a food source.

Construction Materials

Construction of additional miles of paved roadway under the Proposed Action would require the use of raw materials primarily consisting of rock products and would generate construction debris and waste materials, such as reinforcing steel from demolished bridges and wood from old signs or guard rail posts. The removal of buildings and the clearing of property to accommodate the proposed action would also generate a large amount of waste building materials and debris. Rock products that would be used in construction must be mined somewhere, and the debris generated must be deposited in some landfill. These activities, then, will indirectly effect two very important local resources: rock quarries and landfills.

Mining operations always have environmental impacts, such as habitat loss, visual impacts, water pollution, air pollution, and noise. Recent research by the El Paso County Planning Department (July 2003 *Updated Master Plan for the Extraction of Commercial Mineral Deposits*) provides important insights regarding this topic, as summarized below.

Limestone aggregate, a key rock product used in roadway construction, has for years been mined in El Paso County primarily at three major quarries: Queens Canyon, Pikeview, and Snyder. The first two of these are located in the foothill ridges west of Colorado Springs, readily visible as mountain scars. The third site, Snider Quarry, is located north of Manitou Springs and is not readily visible from I-25.

Quarry operations in the foothills of the Pikes Peak region have created visual scars that will take decades to heal.

Operations have ceased at the Queens Canyon Quarry, and reclamation is now being completed. This property has been converted into a wildlife refuge for bighorn sheep.

Workings at the Pikeview Quarry, located just south of the U.S. Air Force Academy, were initiated in the early 1900s, but intensified greatly in the 1950s when much of the material from this quarry was used for Air Force Academy construction. At that time, this operation was known as the Lennox Breed Quarry.

Currently, El Paso County estimates that local aggregate demand amounts to nearly 4 million tons per year, or the equivalent of 8.6 tons per person per year. For illustrative purposes, this equates to mining about 1.8 square miles of land one foot deep per year. It is estimated that constructing a typical new home requires about 150 tons of aggregate (excluding off-site infrastructure), and that a two-lane paved section of roadway requires 10,000 tons per mile, plus an additional 2,000 tons for curb, gutter and sidewalk.

The County's research indicates that currently permitted quarry operations have the capacity to meet local demand for roughly the next 12 years to 20 years. Once that supply is exhausted, additional sources will need to be found. New sources in the local area are limited due to development as well as social and environmental constraints.

Prices for aggregate materials are relatively low for the product itself, but are highly sensitive to transportation costs. El Paso County's research suggests that the price per ton for delivered aggregate may be about 50% higher for a 100-mile haul distance, as compared with a ten-mile haul distance. This fact will drive the market to seek new aggregate reserves that are relatively closer to Colorado Springs than farther away.

Out of the estimated 4 million tons of aggregate consumed annually in the region, El Paso County indicated that the State of Colorado directly purchases about 10,000 tons per year, primarily for transportation improvement projects, and additional quantities are purchased by private contractors who then use the materials on CDOT construction projects.

The pace of CDOT roadway improvements accelerated in the late 1990s, and likely is not reflected in the El Paso County report, which largely reports trends noted in the 1993 to 1995 timeframe. Thus the 12-year to 20-year supply of aggregate estimated by the County could be consumed more quickly under the Proposed Action.

The Proposed Action also has the potential to generate a large volume of construction waste and demolition debris. If these materials are deposited in local landfills, it will accelerate their filling. Although the amount of this solid waste would be small in comparison to all other solid wastes generated in the region, it would, nevertheless, accelerate the need in the future for new local landfills.

The overall indirect impacts concluded here are that rapid growth in El Paso County will likely lead to the need for new quarry operations and landfills in the region within the next few decades, with or without I-25 capacity improvements. However, the Proposed Action has the potential to accelerate consumption of aggregates and of landfill space and thus hastening the arrival of the need for new mining and landfill sites.

To the extent practicable, construction debris will be recycled as fill material. The quantities of newly mined rock products consumed by the project are relatively minor in the context of all of the other consumption associated with the addition of more than 200,000 new residents by the year 2025.

Lighting

Additional roadway lighting would be needed, especially in the vicinity of the I-25/North Gate/Powers connection, contributing to light pollution in a natural setting. Any new lights will be designed in compliance with Colorado's "Dark Skies" legislation, and installed so as to shield the fixtures from direct view and to minimize upward lighting and light pollution.

Summary of Impacts and Mitigation

Resource	No-Action	Proposed Action	Mitigation
Transportation Issues	Increased congestion would increase travel times from today's 35-minute peak commute to 56 minutes in 2025. Level of Service E or F would last for 10 hours per day in 2025 as compared to today's 4 hours of poor service. Today, 16 of the 26 miles of I-25 in the study area have peak period congestion. In 2025, this would increase to 26 miles. Increased congestion on I-25 would result in increased traffic volumes on nearby alternative routes.	The extent and duration of congested conditions on I-25 would be reduced. There would be only isolated segments of Level of Service E and no segments of Level of Service F over the 26-mile I-25 highway.	No mitigation necessary.
	Buses and carpools would continue to operate in mixed, congested traffic. Use of alternatives to single-occupant commuting could increase in response to increased congestion.	Buses and carpools using the Bus/High Occupancy Vehicle lane would experience a speed advantage and travel time savings of up to one minute per mile traveled in the special lanes.	No mitigation necessary.
		Roadway construction activities would necessitate periodic shifting of traffic lanes and ramps, affect traffic and access, and would cause temporary traffic disruption at varying times and locations throughout the project.	The existing number of lanes will be maintained during construction. Construction phasing will be done to minimize the number of times that traffic must be diverted to other lanes. CDOT will provide the public with advance notice of any detours or closures. When lane closures are unavoidable, they will occur only at night or during off-peak hours, and not during planned special events.
		Existing bus route #18 (Holland Park) may be impacted during construction at the Bijou and Fillmore interchanges.	CDOT will coordinate construction planning with the Transit Services staff with the City of Colorado Springs to ensure that bus service near construction sites is maintained.
		Existing transit stop amenities would be replaced and/or moved due to the new configurations of the Bijou and Fillmore interchanges.	Transit stop amenities will be replaced and/or moved to a safer location when needed after consultation with the Transit Services staff with the City of Colorado Springs.
		Construction activities in or near local businesses have the potential to result in loss of revenue for affected businesses due to potential access difficulties.	Construction activities and effects will be minimized and mitigated using Best Management Practices. CDOT will maintain business access during construction and provide an extensive communications program with affected businesses to keep them informed of construction schedules.
Socioeconomics	Congestion and delays currently experienced would increase further and for longer periods. Tourism visits to the region could decline causing a reduction in tourist revenues.	Project construction would have positive, short-term impacts on the local economy but not long-term impacts on regional income levels. Reducing congestion on I-25 could improve the movement of goods and services through the community.	No mitigation necessary.

Resource	No-Action	Proposed Action	Mitigation
Environmental Justice	Congestion on I-25 could result in increased cut-through traffic through minority and/or low-income neighborhoods. This could cause an increase in safety, noise and air quality issues.	The 26-mile project would require relocation of five households (one minority-owned) and 16 businesses (including three businesses owned or operated by minorities).	Since there would be no disproportionate impacts to minority and low-income populations, special mitigation actions focused toward these populations are not needed.
		Proposed Action may require temporary detours and relocation of bus routes and bus stops during construction. This could affect low-income transit users.	Transit service will be maintained and bus stops will be modified as needed. Any temporary alterations will be signed in advance.
Right-of-Way	No right-of-way would be required and no business or residential properties would be acquired.	In total, the Proposed Action would require the purchase of approximately 46 acres of land for right-of-way. Five houses and 11 commercial properties would be acquired, requiring relocation of five households and 16 businesses. Additionally, partial acquisitions from approximately 40 properties would be needed.	All property acquisitions will occur in compliance with the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended. Business relocations will be planned with as much lead time as possible to keep business downtime to a minimum.
		An expansion of the existing 658-acre Air Force Academy easement would be necessary. An additional 48.4 acres are needed for the North Gate/Powers connection, and 5.2 acres are needed for the new Ackerman Overlook.	Through a design charette process and ongoing coordination with the Air Force Academy, the need for use of Air Force Academy land has been minimized. Close coordination with the Air Force Academy will continue throughout project design and construction.
Neighborhoods	Increased congestion on I-25 could result in more neighborhood cut-through traffic. Additional traffic on neighborhood streets could negatively impact public safety, increase street noise, and degrade air quality. Insufficient capacity on I-25 could result in longer morning and afternoon rush hours. Longer rush hour periods would expose neighborhoods to longer periods of highway noise which could have an adverse effect on quality of life issues.	Improvements in bike and pedestrian facilities would improve access from one side of I-25 to the other.	No mitigation is necessary.
		Elimination of the Corporate Center exit would reroute access to businesses located southwest of the I-25/Woodmen Road Interchange.	Access to businesses on Corporate Drive will be provided by a new bridge connecting Corporate Drive to the reconfigured I-25 Nevada/Rockrimmon Interchange.
		Some neighborhoods would be impacted by increased noise. Proposed noise mitigation would also have either beneficial or adverse visual impacts. Specifically, noise walls would create visual impacts for the Pulpit Rock, Holland Park, Holiday Village, Mesa Springs and Stratmoor Valley neighborhoods.	Proposed noise mitigation at a total of 8 locations collectively will protect 270 residences, plus several features of Monument Valley Park. Aesthetic elements for noise walls and landscaping for one proposed berm will be developed using context-sensitive design. For example, noise walls will be designed with an architectural treatment on both sides.

Resource	No-Action	Proposed Action	Mitigation
Neighborhoods (concluded)		Five residences and four commercial businesses would be acquired from the northeastern edge of the Mesa Springs neighborhood. In the Westside neighborhood, six commercial properties would be acquired.	No mitigation is necessary, since none of these properties provide a focal point, gathering place, or essential services for either neighborhood.
		Although no permanent neighborhood access or travel patterns would change, temporary access changes during construction would occur.	CDOT will coordinate with the City or County in advance of any temporary closures or detours affecting local streets.
Parks and Recreation	Additional I-25 traffic generally would increase noise by about one to two decibels for parks and recreation facilities within 500 feet of I-25.	Three parks would be affected by increased traffic noise: Monument Valley Park, Confluence Park, and Dorchester Park. Noise mitigation is included in the Proposed Action, and the noise-sensitive uses of these parks would not be substantially impaired.	Two noise walls and one earthen berm will be constructed to protect various portions of Monument Valley Park. Mitigation measures for Confluence Park and Dorchester Park were considered and found to be infeasible.
		Visual impacts to Monument Valley Park would occur.	Trees will be planted to create an enhanced visual screen near the baseball field at the south end of the park.
		Visual and accessibility impacts to the Bijou Street Entrance Gate to Monument Valley Park would occur as the result of raising the elevation of Bijou Street.	In consultation with the State Historic Preservation Officer, design and materials for the new steps, handrail and retaining wall will be selected for best possible compatibility with the existing park features.
		Bicycle and pedestrian facilities would be maintained or improved and improve multi-modal travel.	Continued coordination with City and County staff will occur during final design of bicycle and pedestrian facilities.
		There would be temporary detours or closures affecting bicycle or pedestrian facilities. In particular, these may include the Pikes Peak Greenway crossing under I-25 near the Nevada/Rockrimmon interchange and the Greenway near the WPA flood wall south of Colorado Avenue.	Temporary construction impacts to bike and pedestrian facilities will be mitigated using signs, fencing, and barricades for safe detours, in compliance with City guidelines. Detours will be announced in advance to City and County offices, the Trails and Open Space Coalition, and to the news media. All detours and temporary closures will be coordinated with appropriate City and County offices.
Land Use	PPACG's *Destination 2025 Regional Long Range Transportation Plan* and the *City of Colorado Springs Comprehensive Plan* assume capacity improvements on I-25 through Colorado Springs. Not making these improvements would be inconsistent with regional and local plans, which were developed with extensive public involvement.	The Proposed Action would be compatible with existing and planned land uses The Proposed Action would be consistent with the *Destination 2025 Regional Long Range Transportation Plan* and local land use plans.	No mitigation is necessary.
Visual Resources	Increased traffic congestion on I-25 would make I-25 more visually apparent than it is today. This visual impact would occur in all view sheds.	The freeway would become more visually apparent than it is today, due to roadway widening, increased traffic volumes, and the reconfiguration of interchanges.	Design guidelines have been developed to ensure overall consistency of roadway features. Aesthetic elements will be developed to be appropriate for the local surroundings.

Resource	No-Action	Proposed Action	Mitigation
Visual Resources (concluded)		The natural setting around the Powers Boulevard connection and the North Gate Interchange would become more urban in appearance.	The design for this connection keeps all ramps at or below the existing freeway grade. Views to the Air Force Academy Cadet Area will be maintained. Drainages will be kept open and natural looking, and disturbed areas will be replanted with natural vegetation. Air Force Academy representatives will be included in the design process to ensure that the improvements meet their aesthetic expectations.
		Noise walls proposed to protect adjacent neighborhoods and Monument Valley Park would create visual impacts for the protected noise receptors.	The noise walls will be designed with an architectural treatment on both sides, in consultation with the affected parties.
		The Nevada/Rockrimmon Interchange will be raised, making I-25 more apparent. Retaining walls would also add to the visual impacts.	New highway structures will be designed to be visually appealing
		The existing noise wall between Bijou and Fillmore has created a monochromatic backdrop to the traffic on I-25, which will make increased future traffic more visible.	Additional trees will be planted in Monument Valley Park, between existing large cottonwoods, to provide an enhanced visual screen for the volleyball courts in Monument Valley Park. A proposed noise berm along I-25 just noise of the Bijou Bridge will also shield the park from the highway view.
		Loss of trees and shrubs throughout the corridor would impact views in various ways.	Lost native trees and shrubs will be replanted.
Air Quality	The region would not meet air quality conformity because congestion would reduce travel speeds and increase emissions per mile traveled. The region's carbon monoxide emissions budget could be exceeded. An analysis of localized carbon monoxide concentrations indicates that there would not be carbon monoxide violations at intersections in the project area.	An analysis of localized carbon monoxide concentrations indicates that there would not be any new or worsened carbon monoxide violations at intersections in the project area.	No mitigation is required.
		The majority of air emissions during construction would be fugitive dust (including PM_{10}) from the excavation of soil and backfill.	Implementation of dust control practices will be followed during construction in accordance with Colorado Air Quality Control Commission Regulation No. 1 regarding fugitive emissions. All contractors will be required to obtain a construction permit and to develop a control plan for particulate emissions.

Resource	No-Action	Proposed Action	Mitigation
Noise	Noise is expected to increase along the corridor by 3 decibels or less due to existing and predicted traffic congestion.	Properties that would approach, equal, or exceed FHWA noise abatement criteria include 10 residential areas, 3 parks, and 17 hotels along the I-25 corridor.	Mitigation was found to be both feasible and reasonable at a total of 8 locations. Collectively, they will protect 270 residences, plus several features of Monument Valley Park with construction of one earthen berm and seven new noise barriers ranging from 8 feet to 20 feet high and approximately 1/8- to 1/2-mile in length.
		During construction, the Proposed Action would generate noise from diesel-powered earth moving equipment such as dump trucks and bulldozers, back-up alarms on certain equipment, compressors, and pile drivers (near bridge abutments and retaining walls, if necessary).	To the extent feasible, construction noise impacts, while temporary, will be mitigated by limiting work to daylight hours and requiring the contractor to use well-maintained equipment (particularly with respect to mufflers).
Floodplains	There would not be any impacts to the existing floodplain due to construction of roadway improvements. There would be impacts to the existing floodplains as a result of maintenance actions to address erosion and sedimentation issues. Existing undersized and aging drainage structures would remain without adequate capacity to safely convey flood flows. No improvements such as improved drainageway capacities, stream channel and drainageway stability would occur.	Construction activities will cause disturbance to floodplain area in 13 drainages, totaling approximately 52 acres of floodplains disturbed, including areas upstream and downstream of I-25 drainage crossings. The Proposed Action would result in changes to floodplain boundaries, base flood elevations, and flow velocities. Increased impervious surface in the I-25 right-of-way will increase highway runoff, although this increase is negligible compared to overall flows in the receiving streams.	The design of corridor improvements will comply with federal floodplain regulations (e.g., 23 CFR 650.115). The designs will also comply with FEMA regulations and City and County floodplain ordinances. Disturbed wetland, riparian, and habitat areas in floodplains will be re-vegetated, and temporary erosion and sedimentation control and channel stabilization improvements during construction will be included at all locations. Permanent erosion control and floodplain stabilization improvements, and water quality best management practices (BMPs) will also be implemented. Construction will be coordinated through the City/County Floodplain Administrator for issuance of a Floodplain Development Permit, and to ensure that improvements are coordinated with other ongoing studies and planned improvements within the Fountain Creek watershed. If construction occurs in a portion of the floodplain and base flood elevations or floodplain limits are altered, a CLOMR and LOMR will be processed through the Floodplain Administrator for approval by FEMA.

Resource	No-Action	Proposed Action	Mitigation
Water Quality	Water quality would be negatively impacted because of increased contaminant concentrations in highway runoff that result from increased traffic congestion and growth in traffic volumes. Continued development within the watersheds would lead to additional water quality degradation both during construction of new developments and in the long term. Increased impervious areas would degrade wetlands adjacent to I-25 due to increased runoff.	An increase in roadway surface area would provide greater pollutant loads to be transported into adjacent streams. Lead, copper, and zinc pollutant loadings could increase because of increased impervious surfaces. Increased traffic on I-25 would increase the potential for waters to be impacted from deicing activities. An increase in the use of sand on I-25 would also impact water quality.	Adhering to CDOT's CDPS Stormwater Permit, MS4 Discharge Permit, and CDOT Standard Specifications for Road and Bridge Construction, CDOT will implement temporary and permanent water quality best management practices. Permanent channel stabilization and sediment collection facilities will be part of the project. Other preventive strategies include: • Developing a stormwater management plan • Designing storm drainage systems to prevent sediment and pollutants form being carried into wetlands, Monument and Fountain Creeks, and their tributaries. • Improving existing stream-side wetlands and riparian habitats • Using non-structural Best Management Practices such as street sweeping and public awareness programs.
		During construction, there would be the potential for an increase of pollutants in runoff due to erosion and sediments.	Temporary sediment collection facilities will be established during construction activities.
Wetlands	Continued development within watersheds would lead to water quality degradation because increased impervious areas would pass more pollutants to wetlands and waterways. Improvements to deteriorating drainageways would not be made to address the continuing degradation. Wetland and riparian areas would experience additional loss and fragmentation of valuable habitat as a result of continued urban growth, erosion, and deposition.	A total of 10.22 acres of wetlands will be impacted, including jurisdictional and non-jurisdictional impacts.	Impacted wetlands will be mitigated on a one-for-one basis primarily through in-kind replacement at the locations of impacts and using banked wetland credits from CDOT's Limon Wetland Bank where appropriate. Necessary permits from the U.S. Army Corps of Engineers and CDOW will be obtained for impacted wetlands. The U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service and CDOW will be consulted regarding use of credits to be withdrawn from the Limon Wetland Bank.
Wildlife	With increased traffic on the existing roadway, I-25 noise would continue to displace wildlife and I-25 would become a stronger barrier to the east/west movement of wildlife.	With increased traffic and a widened roadway, I-25 noise would continue to displace wildlife and I-25 would become a stronger barrier to the east/west movement of wildlife. The length of culverts would increase. Wildlife movement corridors would be temporarily disrupted during construction, and mature vegetation would be lost.	CDOT will design hydraulic structures to improve corridor east/west movement, and will re-vegetate disturbed areas to replicate or enhance habitats.

Resource	No-Action	Proposed Action	Mitigation
Wildlife (concluded)		Approximately 280 acres of existing undeveloped land would be lost to highway use. This could result in further displacement of wildlife in the vicinity of the highway, including a known 5-acre mule deer concentration area.	Mitigation strategies include: • Minimize construction disturbance using Best Management Practices • Re-vegetate to replicate or enhance habitats, using care however to avoid using plants that would attract wildlife to the road • Create sight and sound buffer zones with native grass, shrubs, and tree species • Implement the noxious weed management plan
		The Proposed Action would result in drainage changes, including required wetland replacement and water detention features. These have the potential to create new open water that could attract large waterfowl to the vicinity of Air Force Academy flight paths.	Creation of open water near the Air Force Academy will be avoided to minimize potential bird/aircraft strike hazards for flight operations.
		The Proposed Action would disturb undeveloped grassland and riparian crossings on Air Force Academy property.	Re-vegetate the I-25 corridor on Air Force Academy property in a manner that is consistent with the Academy's wildlife management objectives.
		Although no migratory bird nesting sites were identified at the time of field surveys, the Proposed Action has the potential to affect future nesting sites.	Conduct field surveys to look for migratory birds that are protected by the Migratory Bird Treaty Act before removing large trees. Obtain necessary permits if required.
		Approximately 13 acres of riparian corridor would be directly impacted. This would result in the permanent displacement of wildlife species.	CDOT will obtain habitat easements and/or purchase land in riparian areas and adjacent uplands to preserve 50 acres of habitat for the Preble's meadow jumping mouse. These efforts will also benefit other wildlife that use riparian areas.
		The 3-acre colony of Gunnison's prairie dogs located near I-25 and the North Gate interchange would be impacted. This colony is located on Air Force Academy property.	Prior to construction, Air Force Academy officials will be consulted to determine if Gunnison's prairie dog should be relocated to Air Force Academy property. Any specific Air Force requirements for prairie dogs will be adhered to.
Threatened/ Endangered Species		Disturbance of Preble's meadow jumping mouse habitat will be include 21.20 acres of permanent habitat loss and 26 acres of temporary impact. Preble's mouse habitat connectivity and mobility will improve at some project sites as a result of improved culvert and bridge crossings.	The mitigation package described in the Biological Opinion issued by the U.S. Fish and Wildlife Service will be followed. Strategies include: • Restoration, enhancement, and creation of Preble's mouse habitat, including protection of 50 additional acres of habitat • Restoration of habitat linkages • Monitoring to assure disturbance areas are not exceeded and to gauge restoration efforts • Sponsoring a research project to determine the effectiveness of small mammal ledges in culverts

Resource	No-Action	Proposed Action	Mitigation
Vegetation	Degradation from high traffic volumes and roadway operations would continue to limit vegetation health and diversity.	Vegetation types to be affected include: • Disturbed grassland, 922 acres • Shortgrass prairie, 27 acres • Riparian deciduous, 25 acres • Wetlands, 10.2 acres • Forested-ponderosa pine, 4.9 acres • Shrubland-gamble oak, 1.5 acres	Construction disturbances will be limited using Best Management Practices. Disturbed areas will be re-vegetated to replicate or enhance habitats, using care however to avoid using plants that would attract wildlife to the road. Re-vegetation will occur immediately following construction activities using site-specific seed mixes and certified weed-free mulch or straw.
		It is estimated that 700 to 900 trees will be removed over the length of the 26-mile corridor. Removal of undesirable non-native species will be beneficial.	Trees will be planted in proximity to where trees are removed.
Noxious Weeds	As per existing trends, noxious weeds would continue to spread along side I-25.	Existing and new species of noxious weeds would have the potential to spread in newly disturbed areas and out-compete native species.	Using CDOT's standard protocol for weed management, develop a weed management plan to mitigate the potential adverse effects of earth disturbance. The plan will include eradication of tamarisk on CDOT right-of-way within the project area. This plan will incorporate appropriate methods such as herbicides, mechanical removal, and (potentially) biological controls. Appropriate control methods will be selected carefully, especially in sensitive areas such as wetlands, riparian and habitat corridors.
Historic Resources	No new right-of-way would be acquired and no potential visual effects would occur.	"Adverse impacts" would occur on the sites listed below. The historic cultural landscape of the U.S. Air Force Academy would be disturbed by the widening of I-25 and the construction of new ramps for the North Gate/Powers connection.	Level II documentation will be prepared to record the present appearance of the 7 miles of I-25 on U.S. Air Force Academy property. Air Force Academy representatives will be included in the design process to ensure that the project design is compatible with Air Force Academy aesthetic expectations.
		Approximately 5,910 square feet of the Depression-era Works Progress Administration floodwall along Monument Creek would be physically altered. This represents about seven percent of the WPA walls existing south of Bijou Street, and about one percent of the overall existing WPA wall system.	Level II documentation will be prepared to record the present appearance of the WPA wall along Monument Creek in central Colorado Springs. Wherever reconstruction is feasible, qualified stonemasons will reconstruct the impacted portions of the wall using the same stones that are removed. Any stones that are not used in rebuilding the wall will be stockpiled for future repair projects, or used to replace the riprap under the Colorado Avenue Bridge.
		Visual and accessibility impacts to the Bijou Street Entrance Gate and adjacent Monument Valley Park land would occur as the result of raising the elevation of Bijou Street. New steps, handrail and a retaining wall would be constructed to address this elevation change.	Level I documentation will be prepared to record the present appearance of the Entrance Gate and the adjacent park land. In consultation with the State Historic Preservation Officer, design and materials for the new steps, handrail and retaining wall will be selected for best possible compatibility with the existing park features.

Resource	No-Action	Proposed Action	Mitigation
Historic Resources (concluded)		Other historic resources in the I-25 study area would experience “no effect” or “no adverse effect” upon the qualities that make them eligible.	No mitigation is needed for these sites.
Archaeology		A known archeological site will be impacted near the I-25/Rockrimmon Interchange. The site is a prehistoric campsite that has been assessed as being eligible for the National Register of Historic Places.	Prior to construction near the site, CDOT will have this site excavated by qualified archaeologists, in accordance with a formal treatment plan coordinated with the State Historic Preservation Office, Advisory Council on Historic Preservation, and consulting Native American tribes.
		The Proposed Action has the potential to impact other archeological resources that have not yet been discovered.	If any currently undiscovered archeological resources are found anywhere within the I-25 corridor during construction, the CDOT staff archaeologist will be notified immediately to assess their significance and make further recommendations.
Native American Cultural Resources		Based on consultation conducted to date, no impacts to Native American cultural resources are foreseen. However, the Proposed Action has the potential to impact Native American resources that have not yet been discovered.	Pursuant to the Historic Resource Preservation Act, a Section 106 Programmatic Agreement has been prepared, addressing all issues in the corridor pertinent to agencies and tribes.
Paleontology		Based on the current Concept Design, there will not be any known impacts to paleontological resources.	Once project design plans are finalized, CDOT will have a qualified paleontologist examine them to determine if monitoring during construction is necessary.
		The Proposed Action has the potential to impact paleontological resources that have not yet been discovered.	If any subsurface bones or other possible fossils are found anywhere within the survey corridor during construction, the CDOT staff paleontologist will be notified immediately to assess their significance and make further recommendations.
Air Force Academy Issues	Increased traffic congestion on I-25 would lengthen travel times and seriously restrict mobility for the U.S. Air Force Academy. Completion of Powers Blvd. would be stalled because the proposed interchange at I-25 would have to undergo a separate environmental process. This would lead to continued use of arterial streets by vehicles that would benefit from a direct connection between Powers Boulevard and I-25.	The Proposed Action will improve I-25 traffic flow on Air Force Academy property, for the benefit of the Academy’s commuters, visitors and vendors, as well as the public that is simply passing through.	No mitigation is needed for the beneficial traffic flow aspects of the project.
		As a resource eligible for listing on the National Register of Historic Places, the U.S. Air Force Academy would be adversely affected because its cultural landscape would be disturbed by the widening of I-25 and the construction of new ramps for the North Gate/Powers connection. The existing I-25 easement on Air Force Academy property would need to be expanded by approximately 48.4 acres for the North Gate/Powers Interchange, and by an additional 5.2 acres for the new Ackerman Overlook.	Level II documentation will be prepared to record the present appearance of the 7 miles of I-25 on U.S. Air Force Academy property. Air Force Academy representatives will be included in the design process to ensure that the project design is compatible with Air Force Academy aesthetic expectations.

Resource	No-Action	Proposed Action	Mitigation
Air Force Academy Issues (continued)		Approximately 12.3 acres of Preble's meadow jumping mouse habitat on Air Force Academy property would be permanently taken; an additional 20 acres will be temporarily impacted by construction activities.	The mitigation package described in the Biological Opinion issued by the U.S. Fish and Wildlife Service will be followed. Strategies include: • Restoration, enhancement, and creation of Preble's mouse habitat • Restoration of habitat linkages • Monitoring to assure disturbance areas are not exceeded and to gauge restoration efforts • Sponsoring a research project to determine the effectiveness of small mammal ledges in culverts
		A 3-acre colony of Gunnison's prairie dogs near the I-25/North Gate interchange would be displaced by the new I-25 southbound off-ramp.	Prior to construction, Air Force Academy officials will be consulted to determine if Gunnison's prairie dog should be relocated to Air Force Academy property. Any specific Air Force requirements for prairie dogs will be adhered to.
		Vegetation and trees adjacent to I-25 would be lost due to the conversion of vacant land to roadway use. The North Gate/Powers interchange would require 25 acres of already disturbed grassland, 17 acres of shortgrass prairie, 2 acres of riparian deciduous forest, and about one acre of Ponderosa pine forest. As many as 80 mature trees could be lost in this vicinity.	Construction disturbances will be limited using Best Management Practices. Disturbed areas will be re-vegetated to replicate or enhance habitats, using care however to avoid using plants that would attract wildlife to the road. Re-vegetation will occur immediately following construction activities using site-specific seed mixes and certified weed-free mulch or straw.
		The Proposed Action would result in drainage changes, including required wetland replacement and water detention features. These have the potential to create new open water that could attract large waterfowl to the vicinity of Air Force Academy flight paths.	Creation of open water near the Air Force Academy will be avoided to minimize potential bird/aircraft strike hazards for flight operations.
		The Proposed Action would disturb undeveloped grassland and riparian crossings on Air Force Academy property.	Re-vegetate the I-25 corridor on Air Force Academy property in a manner that is consistent with the Academy's wildlife management objectives.
		The Proposed Action will make the natural-looking eastern edge of the Air Force Academy more urban in appearance, especially in the vicinity of the North Gate/Powers Boulevard Interchange.	The interchange's conceptual design, developed in cooperation with the Academy, keeps all roadways and ramps at or below the grade of the existing highway. Roadway slopes will be designed to blend harmoniously with the surrounding area. Air Force Academy representatives will be included in the final design process to ensure that the project design is compatible with their aesthetic expectations.

Resource	No-Action	Proposed Action	Mitigation
Air Force Academy Issues (concluded)		The Proposed Action would increase stormwater runoff from I-25 by at least 50 percent, due to the addition of new highway through-lanes and interchange ramps.	CDOT will mitigate stormwater runoff impacts on Air Force Academy property through the use of Best Management Practices, in accordance with its statewide water quality permit. Implementation of both construction related and permanent water quality best management practices will limit impacts of potential increased erosion and sedimentation, as well as potential increased physical and chemical pollutants affecting Monument Creek. Detention basins will be constructed to reduce peak discharges where feasible, in open areas of interchanges or other large open areas.
		I-25 construction has the potential to disrupt traffic during Air Force Academy special events.	In addition to implementing standard techniques for mitigation of traffic disruption, CDOT will actively avoid lane closures that would affect Air Force Academy events, and will maintain an active process for advance planning and mutual coordination with the Air Force Academy.
		New roadway lighting will be necessary in the vicinity of the I-25/ Powers Boulevard ramp connections.	Any new lights installed will be designed in compliance with Colorado's "Dark Skies" legislation, installed so as to shield the fixtures from direct view and to minimize upward lighting and light pollution.
		3.62 acres of wetlands (including 1.86 acres considered to be "jurisdictional") on Air Force Academy property will be either permanently taken or temporarily impacted by construction activities.	Impacted wetlands will be mitigated on a one-for-one basis primarily through in-kind replacement at the locations of impacts and using banked wetland credits from CDOT's Limon Wetland Bank where appropriate. Necessary permits from the U.S. Army Corps of Engineers and CDOW will be obtained for impacted wetlands. The U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service and CDOW will be consulted regarding use of credits to be withdrawn from the Limon Wetland Bank.
Indirect Effects	Increased congestion on I-25 would place additional traffic demands on the region's arterial roadway system and increase cut-through traffic, noise, and air pollution into residential areas. Increased traffic congestion could jeopardize the region's transportation/air quality conformity status. Increased travel delays for local residents, visitors and interstate trucking activities would have a detrimental impact on the local economy.	By improving traffic flow on I-25, the Proposed Action will avoid the adverse consequences of traffic congestion on the region's most heavily traveled roadway.	No mitigation measures are necessary.
		Displacement of wildlife would occur because of widening would strengthen the barrier effect of I-25.	Needed improvements to existing drainage crossings will be designed to maintain or enhance wildlife movement.

Resource	No-Action	Proposed Action	Mitigation
Indirect Effects (concluded)		Alterations of hydrologic patterns, volumes, frequencies of water can affect vegetation communities. Also, contaminants in stormwater runoff from the widened highway could degrade the health of nearby wetlands.	Temporary and permanent Best Management Practices for stormwater runoff will be used. Since these were not required when the roadway was built in the 1950s, they have the potential to mitigate not only for new lanes but also the existing lanes. This could represent a net improvement over existing conditions.
		The Proposed Action would require rock products and generate debris and waste materials. The action would accelerate depletion of local rock quarries and landfill capacities.	To the extent practicable, construction debris will be recycled as fill material. The quantities of newly mined rock products consumed by the project are relatively minor in the context of all of the other consumption associated with the addition of more than 200,000 new residents by the year 2025.
		Additional roadway lighting would be needed, especially in the vicinity of the I-25 North Gate/Powers connection, contributing to light pollution in a natural setting.	Any new lights installed will be designed in compliance with Colorado's "Dark Skies" legislation, installed so as to shield the fixtures from direct view and to minimize upward lighting and light pollution.
Hazardous Waste Sites	In the absence of improvements to I-25, there would be no further change to the existing environmental conditions with respect to hazardous waste, petroleum releases, or lead paint on bridges.	Property that is owned by CDOT or that is acquired by CDOT will be remediated. This would lower the health and safety risk for the public and maintenance and utility workers. Five areas of potential environmental concern (i.e. sites with potential soil contamination) would be acquired. With the exception of one site, the current presence of hazardous waste and/or release of petroleum products is unknown.	Site-specific investigations will be performed at the areas of potential environmental concern to determine what remediation will be necessary to project human health and the environment during either construction or operation and maintenance of the improvements. Management plans for health and safety will be prepared and enforced.
		There are two steel bridges with lead-based paint in the corridor that will be removed.	For bridges with lead-based paint, CDOT will undertake further testing to determine disposal methods. CDOT will manage the disposal of debris in compliance with Section 250, Environmental Health and Safety Management of CDOT's standard specifications for road and bridge construction and in compliance with the Occupational Safety and Health Administration, the U.S. Environmental Protection Agency, and the Colorado Department of Public Health and Environment.