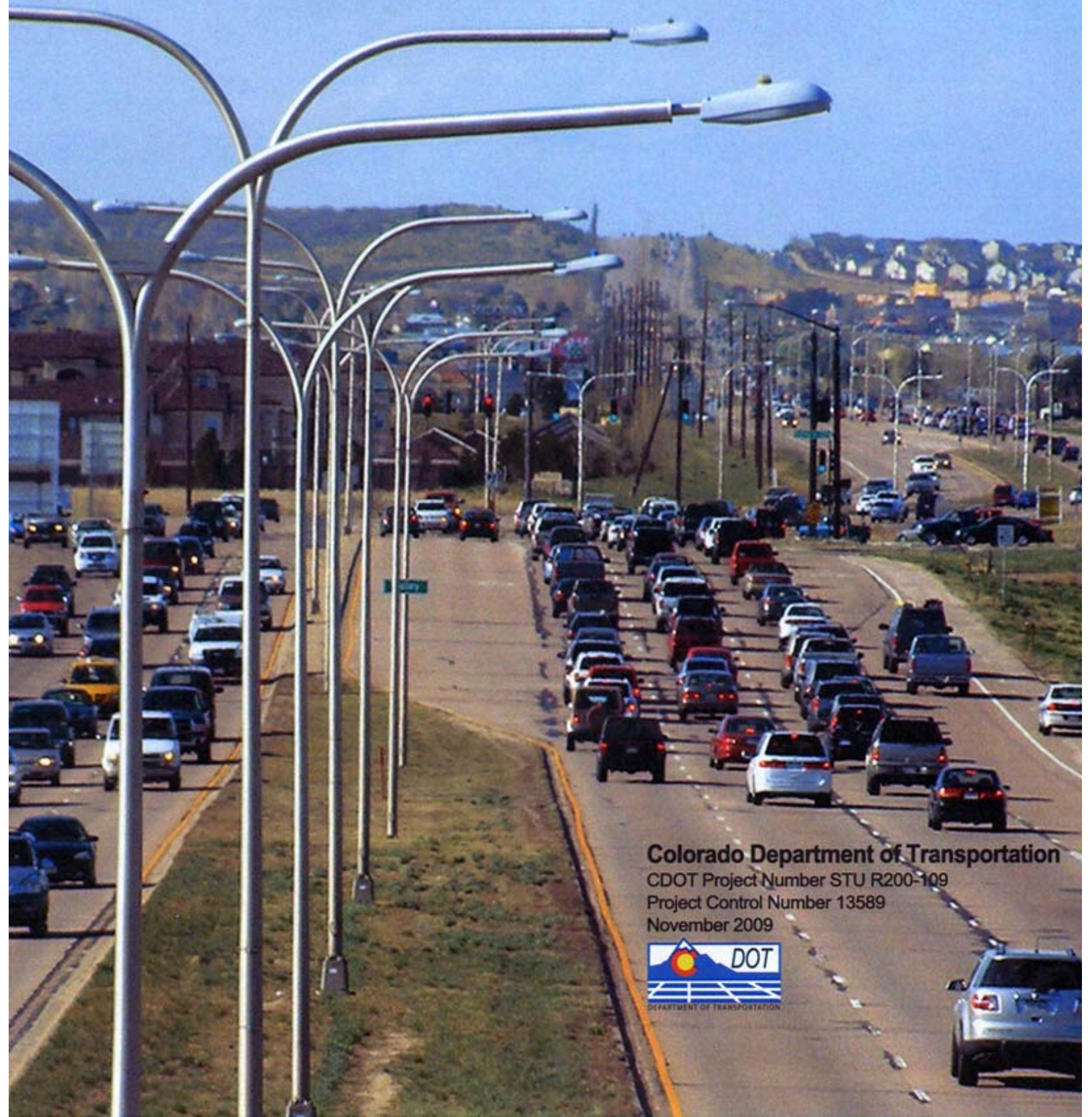


Environmental Assessment for Powers Boulevard (SH21)



between Woodmen Road and SH16 in Colorado Springs, Colorado



Colorado Department of Transportation
CDOT Project Number STU R200-109
Project Control Number 13589
November 2009



STU R200-109
Project Control No. 13589

POWERS BOULEVARD (SH21)
BETWEEN WOODMEN ROAD AND STATE HIGHWAY 16
IN COLORADO SPRINGS, COLORADO

ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to:
42 USC 4332 (2)(C)

By the

US Department of Transportation
Federal Highway Administration
and the
Colorado Department of Transportation

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- Appendix B Traffic Analysis Report
- Appendix C Mode Feasibility Study
- Appendix D Alternatives Screening Report
- Appendix E Context Sensitive Solutions Report
- Appendix F Environmental Justice Technical Report
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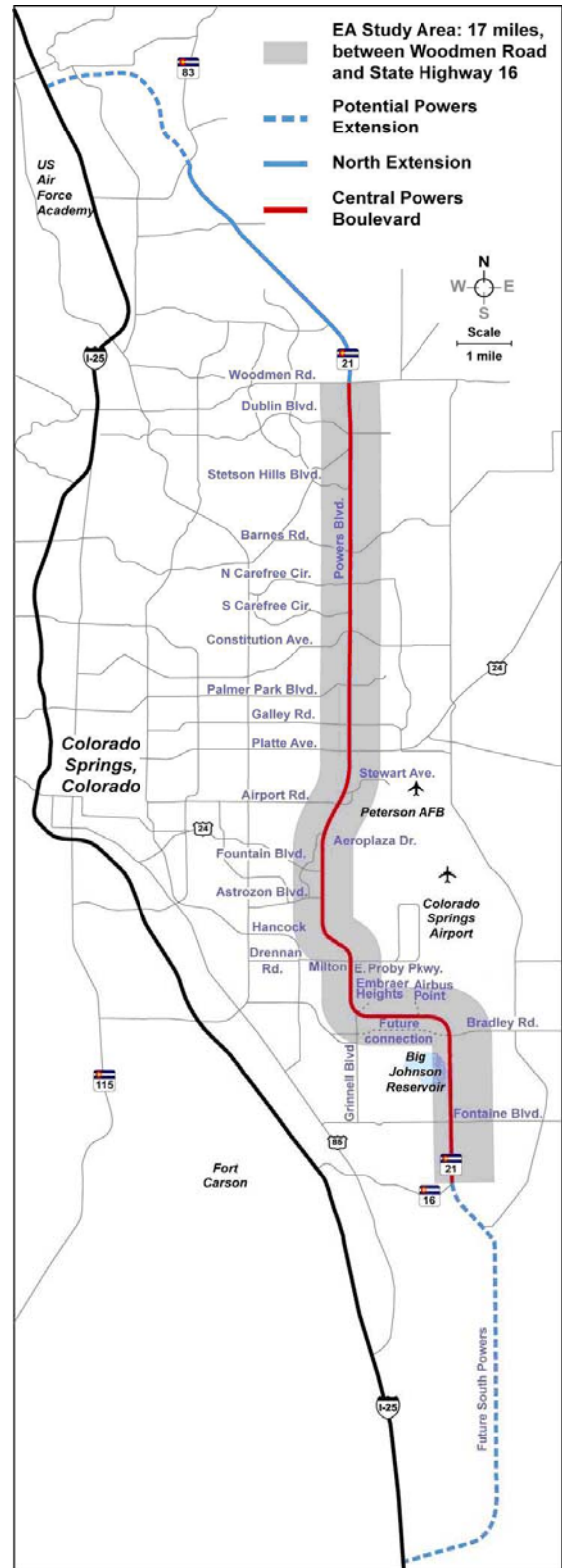
2 **CHAPTER 1 – INTRODUCTION &**
 4 **PROJECT PURPOSE AND NEED**

The purpose of this project is to reduce current and future traffic congestion on the Powers Boulevard expressway (State Highway 21) between Woodmen Road and State Highway 16.



20

Exhibit 1-1. Study Area



22 **1.1 INTRODUCTION**

24 This Environmental Assessment (EA) was
 26 prepared by the Federal Highway
 28 Administration and the Colorado Department
 30 of Transportation to address the problem of
 32 current and future traffic congestion on
 34 Powers Boulevard, the second busiest north-
 36 south roadway in the State's second largest
 38 metropolitan area. This existing expressway
 40 serves rapidly growing eastern Colorado
 42 Springs and unincorporated El Paso County.

44 In 2007 it was added to the State Highway
 46 System as State Highway 21 (SH 21).
 48 Powers Boulevard is also part of the National
 50 Highway System and is locally designated as
 52 a truck route.

54 The focus of this EA is the "central" portion of
 56 Powers Boulevard, between Woodmen Road
 58 on the north and State Highway 16 (SH 16)
 60 on the south, a distance of approximately 17
 62 miles. In the future, Powers Boulevard is
 64 planned to be about 33 miles long,
 66 connecting to Interstate 25 (I-25) north and
 68 south of Colorado Springs, as shown in
 70 Exhibit 1-1.



1 About seven miles of Powers Boulevard are congested today. By the year 2035, extremely
2 congested conditions are predicted on the 11 miles between Woodmen Road and Milton E.
3 Proby Parkway. The portion of Powers Boulevard between Milton E. Proby Parkway and SH
4 16, which will not be congested by 2035, was included in the study area in order to identify
5 potential future improvements, as well as to examine alternative modes and routes at an
6 appropriate scale.

7 This central portion of the Powers Boulevard expressway varies from four to six through-lanes.
8 North of Woodmen Road, Powers Boulevard continues as SH 21 and is a four-lane expressway.
9 To the south, where Powers Boulevard meets SH 16, the four-lane expressway continues
10 westward as SH 16 to connect with I-25. These connections are discussed below.

11
12 Powers Boulevard currently extends northward from Woodmen Road to SH 83, and is planned
13 to extend westward to meet I-25 south of the existing North Gate interchange. An EA was
14 completed in 1997 for the entire “North Powers” extension from Woodmen Road to I-25. The
15 Pikes Peak Area Council of Governments (PPACG) *Moving Forward: 2035 Regional*
16 *Transportation Plan* adopted in 2008 indicates that Powers Boulevard will be connected
17 between SH 83 and I-25 as an expressway, or possibly a tollway, in the 2010-2015 timeframe.

18 At the southern end of existing Powers Boulevard, the expressway continues westward as SH
19 16, also known as Mesa Ridge Parkway, and connects to I-25 near the Fort Carson military
20 base. The westernmost mile of SH 16 has long been a congested traffic bottleneck at a key
21 entrance into Fort Carson, the region’s largest employer. In 2007, CDOT and FHWA completed
22 an EA that examined the potential impacts of widening SH 16 to four lanes. The widening of SH
23 16 began in early 2008 and will continue through at least 2010.

24
25 PPACG’s *Moving Forward* identifies the need for a “South Powers” extension from SH 16
26 approximately nine miles to I-25 in the long-term future, but funding for this extension is not
27 included in the plan. When warranted, this extension may be the subject of a future environmental
28 study. For the foreseeable future, however, SH 16 will serve as the southern connection between
29 Powers Boulevard and I-25.

30
31 *Moving Forward* uses 2005 socioeconomic and traffic data as a baseline and 2035 as the future
32 planning horizon year. To be consistent with the regional planning effort documented in *Moving*
33 *Forward*, this EA reflects the baseline and future conditions used in that plan. It should be
34 recognized, however, that the 2005 baseline traffic is likely to be less throughout most of the
35 region than what exists today due to continued regional growth and development. Powers
36 Boulevard is a good example of one major road which has experienced recent growth in traffic.

37
38 As studies for this EA progressed, the regional transportation planning process by PPACG was
39 continuously being updated. As new plans were adopted, the data used in this EA was
40 evaluated and PPACG concurred that it was consistent with the latest transportation planning
41 data and assumptions. Additional information about relevant plan updates and the processes
42 used to assure consistency with them can be found in Appendix B, Traffic Analysis Report.

43
44
45

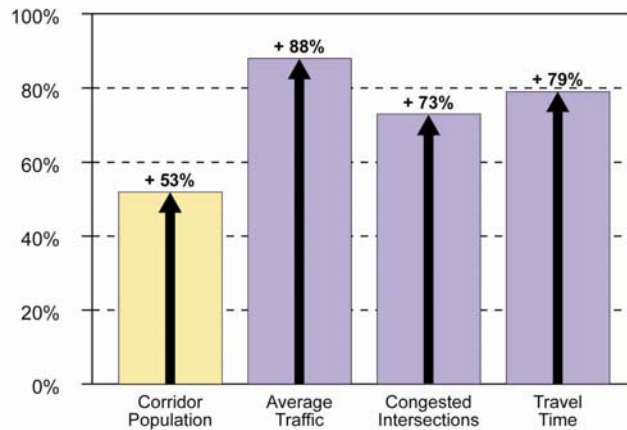
1 **1.2 PROJECT PURPOSE**

2 The purpose of this project is to reduce current and future traffic congestion on Powers
 3 Boulevard between Woodmen Road and SH 16, while accommodating the amount of travel
 4 demand that is foreseen through 2035 in *Moving Forward*, the adopted regional transportation
 5 plan.
 6

7 **1.3 NEED FOR ACTION**

8
 9 Today, Powers Boulevard is congested for about seven miles, between Barnes Road and
 10 Airport Road. With continued development along the corridor, 11 miles of Powers Boulevard
 11 will be extremely congested, between Woodmen Road and Milton E. Proby Parkway. The
 12 paragraphs below provide a better understanding of why this will occur and what it will mean,
 13 based on the four projected corridor changes illustrated in Exhibit 1-2.

15 **Exhibit 1-2. Projected Changes Associated**
 16 **with Powers Boulevard Congestion, Baseline**
 17 **and 2035 Conditions**



29 **Corridor Population**

30 Rapid urban development has occurred, is continuing to occur, and will likely continue in
 31 eastern Colorado Springs and El Paso County. Powers Boulevard is the primary north-south
 32 roadway serving the growth that has occurred near it. The Colorado Springs metropolitan area
 33 since 1960 has grown by approximately 100,000 residents each decade, a rate that is now
 34 projected to increase between the years 2005 and 2035. The 2000 Census recorded a
 35 population of approximately 517,000 for El Paso County, and the Colorado State
 36 Demographer's Office estimates that this increased to 565,000 by 2005. PPACG, the region's
 37 metropolitan planning organization, predicts that by 2035, the county's population will be
 38 approximately 936,000, reflecting a 30-year increase of about 370,000 new residents.
 39

40 Due to growth constraints to the west of Colorado Springs, including Pikes Peak, the Pikes
 41 Peak National Forest, and military bases (e.g., Fort Carson and the U.S. Air Force Academy),
 42 the city has been growing eastward. Residential development surrounded Powers Boulevard
 43 between 1985 and 2005, and intense retail development has occurred since the late 1990s.

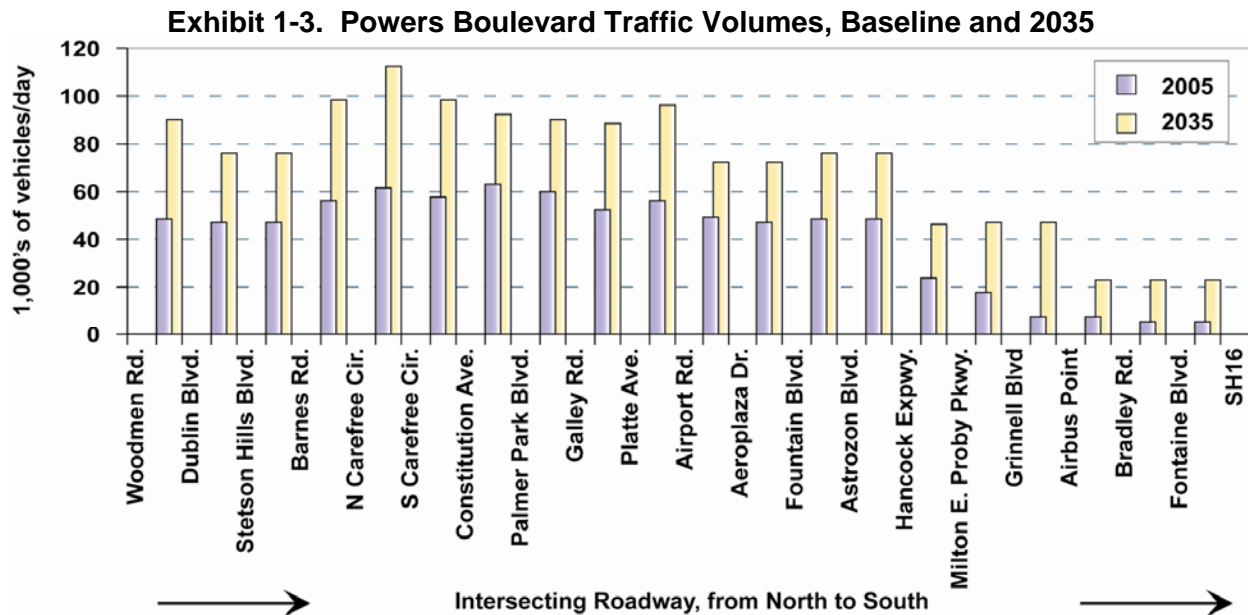


1 New businesses are under construction and remaining parcels have all been zoned and/or
 2 platted for development.

3 The population along central Powers Boulevard (i.e., between Academy Boulevard and
 4 Marksheffel Road, from Woodmen Road to SH 16) was approximately 172,000 in 2005, and is
 5 projected by PPACG to grow by 90,000 residents to 263,000 by 2035, an increase of 53%.
 6

7 **Increased Traffic Volume**

8 In the baseline conditions (traffic counts taken in 2004-2005) volumes on Powers Boulevard
 9 ranged from less than 10,000 vehicles per day at the south end of the corridor, between
 10 Fontaine Boulevard and Mesa Ridge Parkway, to more than 60,000 vehicles per day in the
 11 north central portion of the corridor between Constitution Avenue and Palmer Park Boulevard.
 12 Exhibit 1-3 indicates average weekday traffic volumes for the baseline conditions and year 2035
 13 between major cross-streets for each section of the corridor.



14 Future traffic volumes were projected using the PPACG Regional Travel Model, with the
 15 assumption that no capacity improvements would be made on Powers Boulevard. Traffic growth
 16 will vary by location, increasing everywhere by a minimum of 40% and more than doubling near
 17 the northern and southern ends of the corridor. As a corridor-wide average, traffic volumes are
 18 expected to increase approximately 88% by 2035. In the most heavily used portions of the
 19 corridor, volumes will increase by about 50,000 vehicles per day.
 20

21
 22 The highest projected volume, 107,000 vehicles per day, would occur between North Carefree
 23 Circle and South Carefree Circle. This volume is comparable to the amount of traffic on
 24 Interstate 25 in the vicinity of downtown Colorado Springs.
 25
 26
 27

1 **Congested Intersections**

2 As an expressway -- with existing at-grade signalized intersections spaced typically one mile
 3 apart and in some cases more closely -- Powers Boulevard does not have the capacity to
 4 handle the projected year 2035 volumes that are identified above. Some portions of Powers are
 5 already nearing or over capacity during peak commuter periods. Increased traffic demand by
 6 2035 will cause major deterioration in the traffic level of service during peak periods, and likely
 7 through additional hours of the average weekday.

8
 9 Delays for mainline traffic on an expressway occur due to signalized intersections, where
 10 through-traffic sits idle as left-turns are made or when cross-street traffic has the green light.

12 Traffic engineers use the amount of
 14 delay at intersections to categorize the
 16 level of service that motorists receive,
 18 using a grading system from Level of
 20 Service A (least congested) to Level of
 22 Service F (most congested). For
 24 simplicity, the six Levels of Service
 26 can be grouped into three categories
 28 as shown in the text box at right.
 30 Exhibit 1-4 below illustrates the
 32 various Levels of Service for a
 34 signalized intersection.

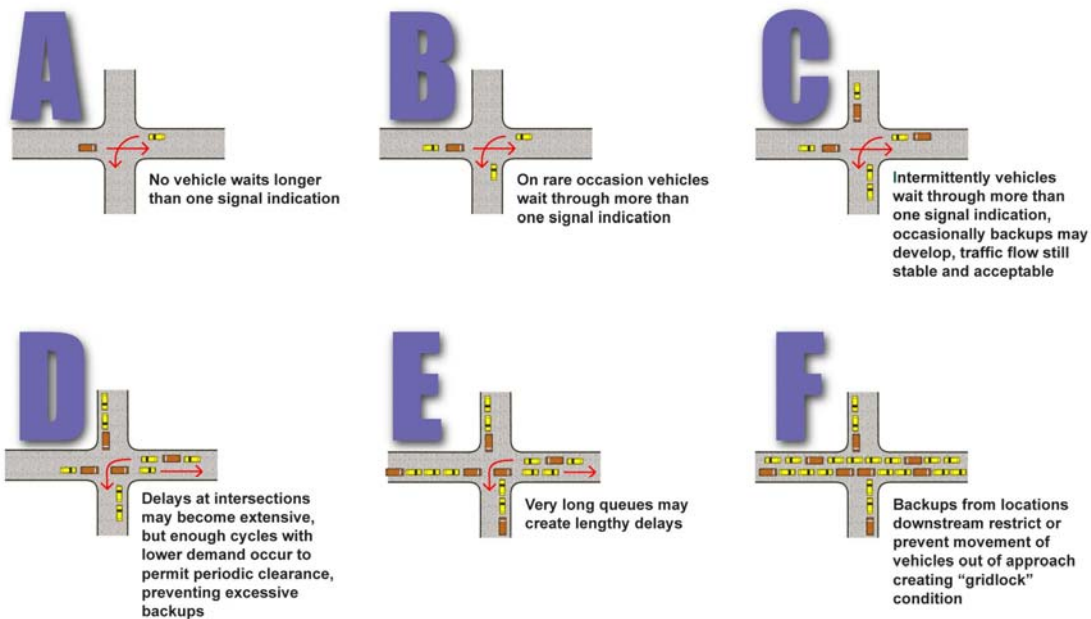
LEVELS OF INTERSECTION CONGESTION

NOT CONGESTED – Includes Level of Service A (less than 10 seconds delay per traffic signal cycle), Level of Service B (10 to 20 seconds delay), and Level of Service C (20 to 35 seconds delay)

ALMOST CONGESTED – Level of Service D (35 to 55 seconds of delay per traffic signal cycle)

CONGESTED – Includes Level of Service E (55 to 80 seconds delay per traffic signal cycle) and Level of Service F (more than 80 seconds delay)

38 **Exhibit 1-4. Traffic Levels of**
 40 **Service at a Signalized Intersection**

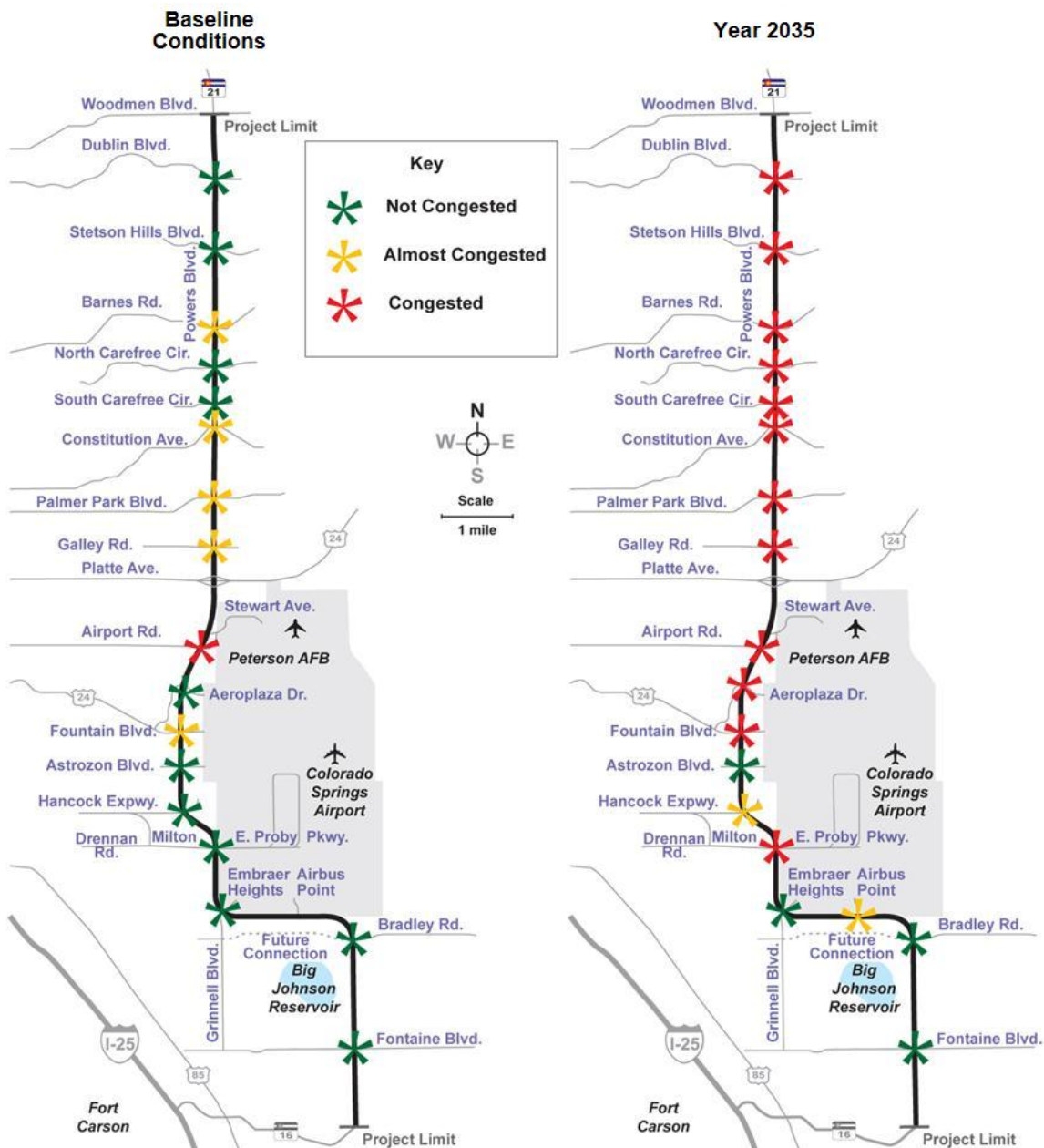


41 Source: CDOT. Woodmen Road Environmental Assessment.

42

1 Exhibit 1-5 illustrates the baseline and future severity of congestion by intersection. Out of 15
 2 existing signalized intersections, one was congested (Airport Road – entrance to Peterson Air
 3 Force Base) in the baseline year. Of the existing 15 signalized intersections, 12 will be
 4 congested by 2035. Thus, the percentage of these intersections that are congested will have
 5 increased from 7% to 80%, a difference of 73%. Additionally, three currently unsignalized
 6 intersections south of Milton E. Proby Parkway are likely to be signalized in the future but would
 7 not be congested.

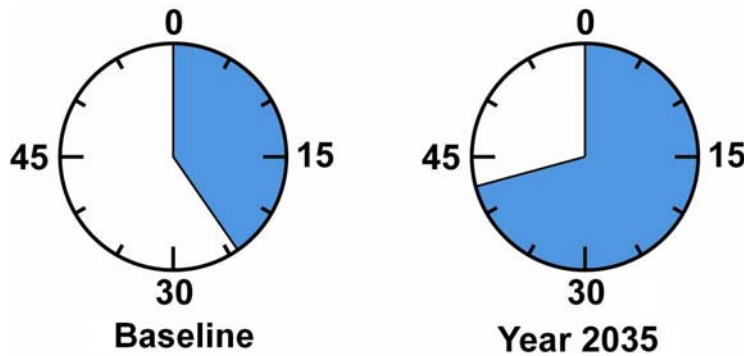
Exhibit 1-5. Congestion Severity by Intersection



1 **Increased Travel Time**

2 Delays at intersections due to congestion increase travel times. With no delays, driving the
 3 17-mile central Powers Boulevard corridor at 50 miles per hour would take just over 20 minutes.
 4 Instead, the trip takes about 24 minutes, because there are delays at traffic signals. By 2035,
 5 assuming no capacity improvements are made on Powers Boulevard, the same trip will take at
 6 least 43 minutes, or about 19 minutes longer, an increase of 79%. Exhibit 1-6 depicts these
 7 travel times.

**Exhibit 1-6. Travel Time Needed to Drive the Powers Boulevard Corridor
 During Peak Period, in Minutes**



8
 9
 10 Additional traffic demand due to future regional growth will greatly increase the amount of travel
 11 delay routinely experienced on Powers Boulevard.

12
 13 **1.4 ADDRESSING THIS NEED**

14 Today, portions of Powers Boulevard are nearing their traffic-carrying capacity during peak
 15 hours. In the future, if nothing is done to accommodate the near doubling of traffic, congestion
 16 will be worse and more widespread. Alleviating this congestion could be achieved by shifting
 17 about half of the total future traffic to another corridor or mode of transportation, or by providing
 18 additional capacity to carry the increased traffic on Powers Boulevard. In any case, a
 19 transportation solution would need to accommodate not only current traffic but also the 50,000
 20 additional vehicles per day expected on Powers Boulevard by 2035.

21
 22 In the chapters that follow, information is presented regarding potential transportation solutions
 23 to meet this purpose and need, a proposed solution, and its impacts on the environment. The
 24 next chapter describes the setting for Powers Boulevard, including its development history,
 25 surrounding land uses and existing conditions. Chapter 3 then examines potential solutions for
 26 existing and future congestion within this context. Chapter 4 describes the impacts of the
 27 Proposed Action and identifies mitigation actions associated with it. Chapter 5 documents the
 28 public and agency involvement that contributed to the identification of the Proposed Action, its
 29 associated mitigation, and the determination of the resulting environmental effects. Chapter 6
 30 documents consultation with Native American tribes. Finally, Chapter 7 provides additional
 31 documentation regarding impacts to two public recreation resources and one historic site,
 32 pursuant to Section 4(f) of the U.S. Department of Transportation Act.

1 CHAPTER 2 – CORRIDOR CONTEXT

2 This chapter of the EA describes the Powers Boulevard corridor to provide the reader with a
3 context for understanding the impacts of the alternatives that are described in Chapter 3.

4 2.1 INTRODUCTION

6 In just the past 20 years, Powers Boulevard has
8 evolved from a rural, two-lane county road into the
10 region’s hottest commercial corridor, a busy six-lane
12 expressway that is planned to connect directly to I-25
14 both north and south of Colorado Springs.

16 Today, the central portion of Powers Boulevard is lined
18 on both sides with urban development, including
20 extensive retail land uses, making this corridor very
22 important to the region’s economy. As a result of this
24 intense development, traffic volumes on Powers
26 Boulevard have increased dramatically in recent years,
28 and traffic demand is nearing the road’s vehicle carrying
29 capacity.

30 The relatively recent increases in urban development and traffic volumes along Powers
31 Boulevard were not unexpected but instead have been planned for years, as reflected in the
32 land use and transportation plans at the local and regional level. The need for capacity
33 improvements in this corridor has long been foreseen and has now arrived.

34 2.2 HISTORICAL DEVELOPMENT OF THE CORRIDOR

35 Not long after General William Palmer built a railroad to the region and founded Colorado
36 Springs in 1871, the land six miles east of the town had been deeded to private ownership and
37 was used for ranching. Horses and horse-drawn wagons were used to make the trip into town.
38

39 Early in the twentieth century, the advent of the automobile brought about the need for roads.
40 Advocates of a transcontinental highway system pushed for a proposed Pikes Peak Ocean-to-
41 Ocean Highway, part of which is today’s US Highway 24 (US24) through Colorado Springs.
42 Today’s Powers Boulevard began as a pair of unpaved north-south roads connecting to this
43 highway.

44 Exhibit 2-1 depicts roads and property ownership in 1939, when the City’s incorporated
45 boundary was Union Boulevard. Four miles out into the country, a road (shown in red) led
46 northward from US 24 along the Babcock property then led northeasterly to the present Powers
47 Boulevard alignment, where it continued northward along the eastern side of the 720-acre
48 William Norton ranch (shown in blue) and ended at what is now Barnes Road. Another road
49 (also shown in red) led southward from US 24 and went to the Colorado Springs Airport
50 (established in 1927).

Why Consider Context?

“...To develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility.”

- Federal Highway Administration
ContextSensitiveSolutions.org

2 In 1944, the Norton ranch
 4 was sold to Guy and Cora
 6 Powers, who established a
 8 dairy there. That same year,
 10 Guy was killed by a lightning
 12 strike, so the task of running
 14 the dairy was left to his
 16 widow and 15 year-old son,
 18 Ray.

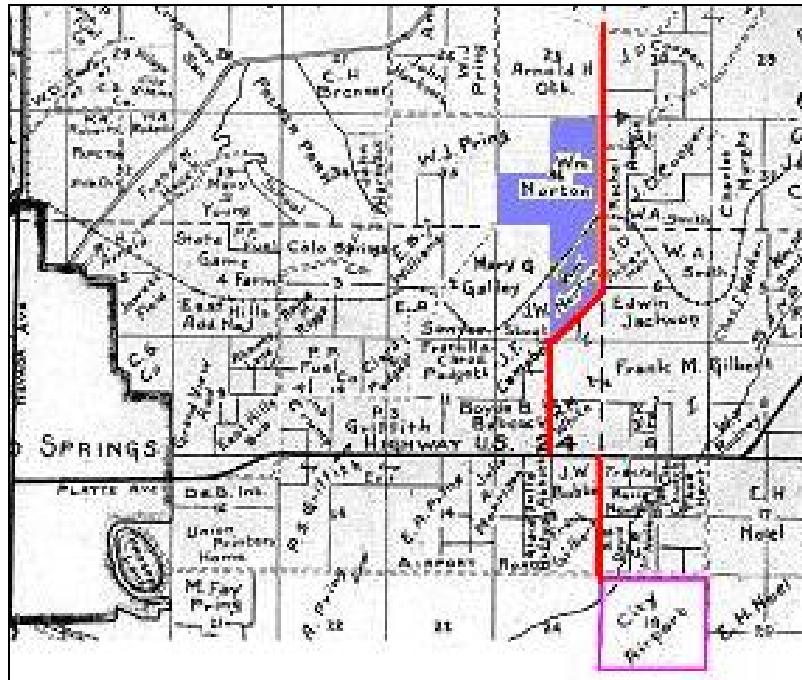
20 The Powers Dairy operated
 22 in this location for 23 years
 24 before being sold for
 26 residential development in
 28 1967. Reportedly, when the
 30 developer wanted to borrow
 32 a piece of equipment from
 34 the dairyman and offered to
 36 name a street after him,
 38 Powers replied, "I don't want
 40 any street named after me –
 42 I want a boulevard named
 44 after me." (*Gazette*, Sept.
 46 24, 2008). As a result, the
 47 road became known as Powers Boulevard. Ray Powers was elected to the Colorado General
 48 Assembly in 1978 and served for 22 years before stepping down as Senate President in 2000.
 49 He died eight years later.

50 By 1964, with the opening of I-25, the United States Air Force Academy and other military
 51 installations, Colorado Springs had begun a period of rapid growth, pushing suburban
 52 development eastward to Academy Boulevard, two miles west of Powers Boulevard. That year,
 53 Powers Boulevard was included as a major route on El Paso County's Major Thoroughfares
 54 Map. Planners envisioned Powers Boulevard as an eastern bypass route that would someday
 55 connect to I-25 both north and south of Colorado Springs.

56 When developers sought to build along two-lane Powers Boulevard in the 1980s, the City of
 57 Colorado Springs required that they improve the road. In 1986, the developers formed METEX,
 58 a metropolitan (tax) district, for the purpose of expanding Powers Boulevard between Woodmen
 59 Road and Platte Avenue. METEX sold \$13 million in bonds to construct the road, and recouped
 60 the cost through property taxes levied on property owners up to one mile west of Powers
 61 Boulevard and eastward for two miles to Marksheffel Road. The pace of development along the
 62 corridor went slowly for nearly a decade, finally taking off in the late 1990s. Ultimately METEX
 63 was able to pay off its bond obligations, on time, in December 2007.

65 Another major boost to the importance of Powers Boulevard was its inclusion as part of the US
 66 24 Bypass constructed in the early 1990s. The portion of Powers Boulevard between Fountain
 67 Boulevard and Platte Avenue is part of US 24.

Exhibit 2-1. Map of Ranch Ownership and Roads East of Colorado Springs, 1939.



2 When Colorado Springs expanded its municipal
 4 airport in 1994, the old terminal on Fountain
 6 Boulevard was replaced with a larger terminal
 8 accessed from Drennan Road (now called Milton
 10 E. Proby Parkway). Accordingly, the City
 12 extended Powers Boulevard southward to serve
 14 the new terminal. Soon afterwards, Powers
 16 Boulevard was extended southward from
 18 Drennan Road to Fontaine Boulevard.

20 Exhibit 2-2 summarizes the major steps in the
 22 historical development of the central portion of
 24 Powers Boulevard.

26 Planning efforts in the late 1990s were very
 28 important to the future of Powers Boulevard:

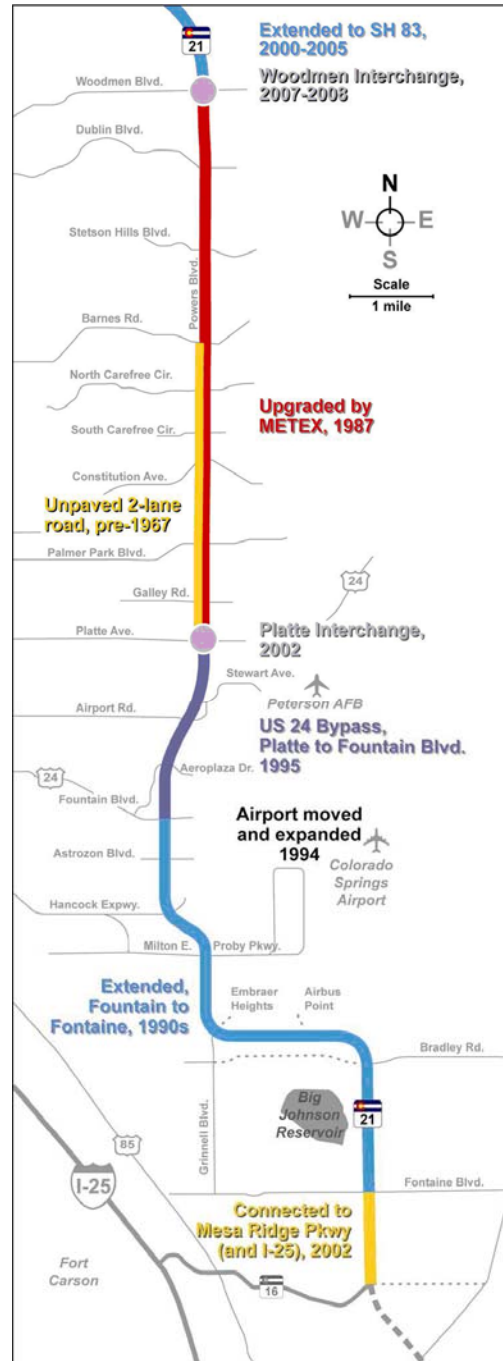
- 30 • The City of Colorado Springs completed an
 32 EA for a northern extension of Powers
 34 Boulevard to I-25 near the Air Force
 36 Academy.
- 38 • PPACG prepared a feasibility study to
 40 identify a southern route for extension of
 42 Powers Boulevard to I-25.
- 44 • The Colorado General Assembly in 1998
 46 identified Powers Boulevard as one of 28
 48 State Strategic Corridors that have high
 50 priority to receive State transportation funds.

52 Since 2000, grade-separated interchanges have
 54 been built at US 24 (Platte Avenue) and
 56 Woodmen Road, and Powers Boulevard has
 58 been extended northward to SH 83 and
 60 southward to SH 16. In 2007, Powers
 62 Boulevard was added to the State Highway
 64 System as SH 21.

66 **2.3 CURRENT AND FUTURE**
 68 **DEVELOPMENT PATTERNS**
 70

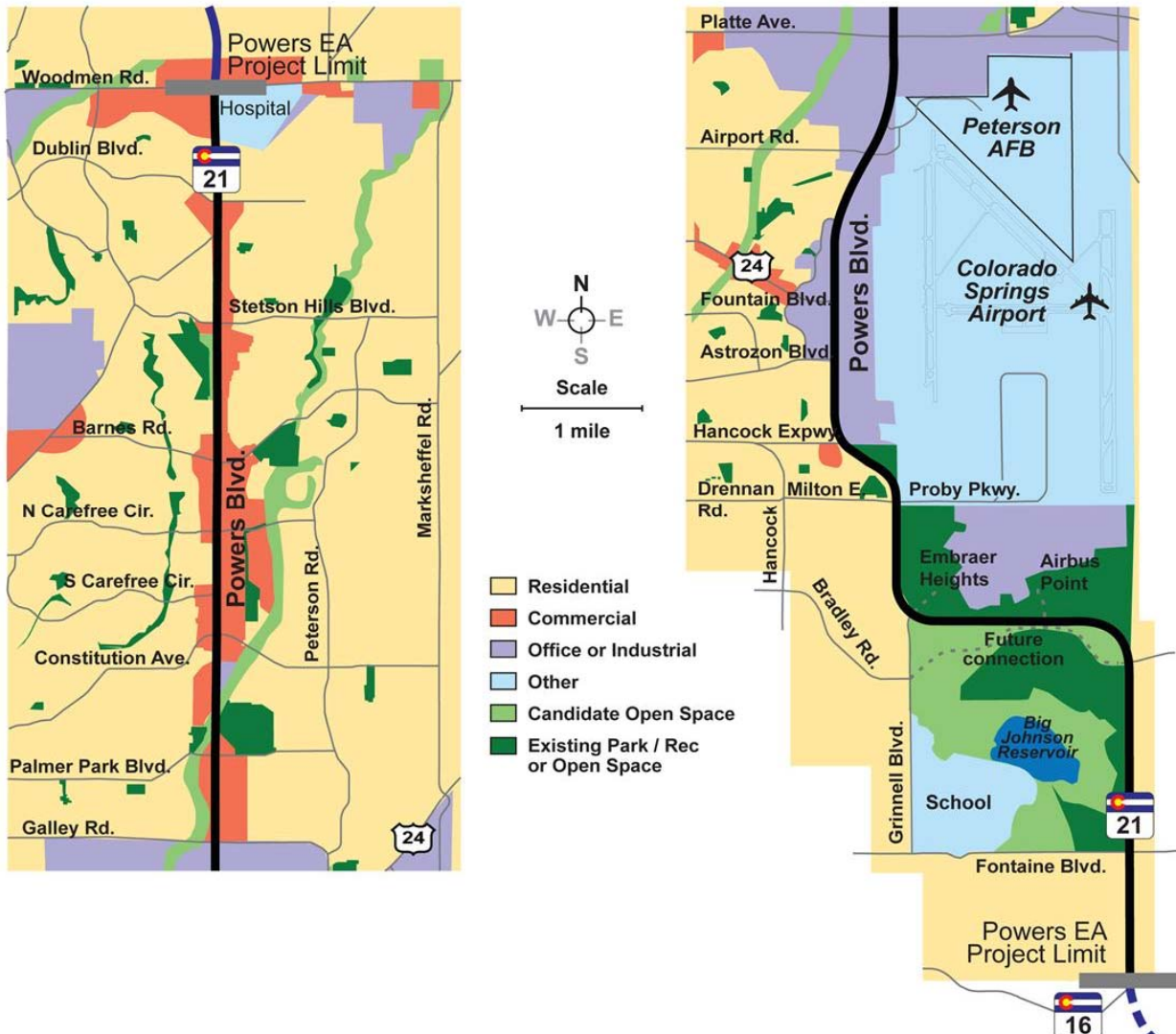
72 Exhibit 2-3, on the following page, provides a
 74 highly generalized summary of land uses
 76 adjacent to Powers Boulevard. This information
 77 was compiled from the adopted City of Colorado Springs Comprehensive Plan and El Paso
 78 County Zoning Maps as of mid-2008.

Exhibit 2-2. Historical Expansion and Improvement of Powers Boulevard



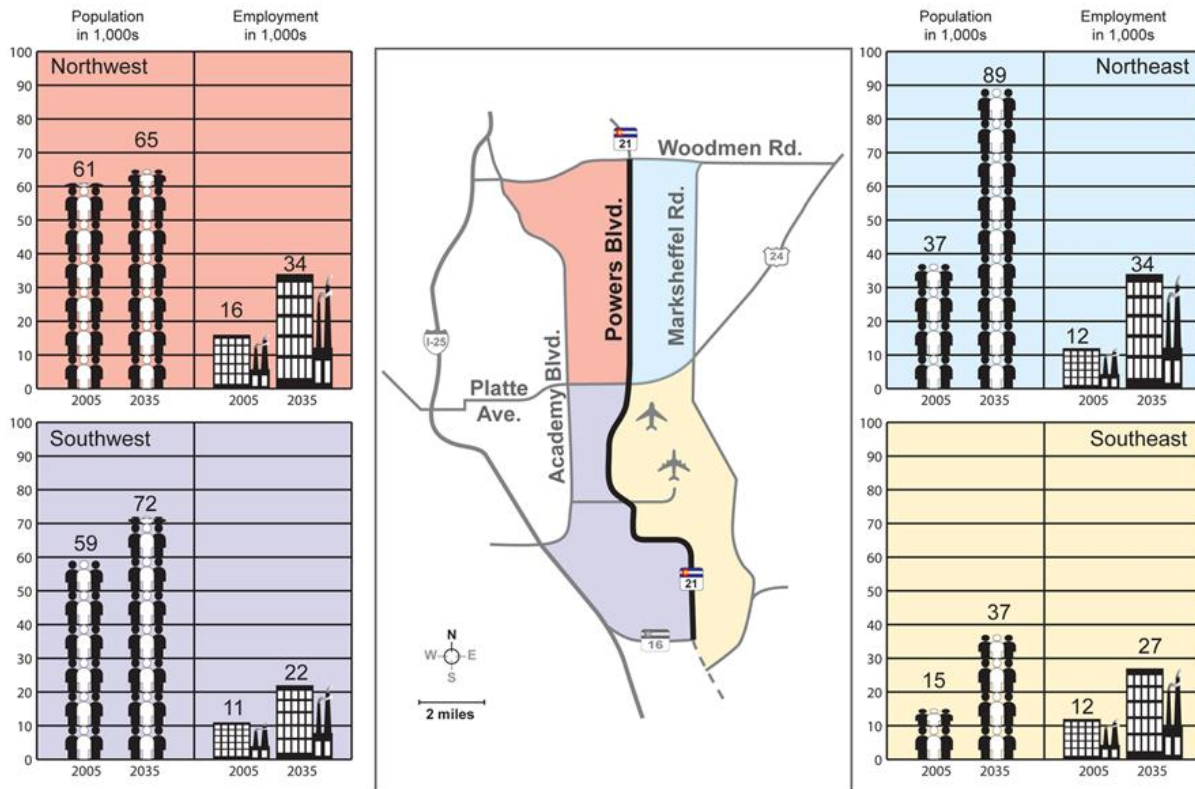
- 1 The left half of the exhibit shows the seven northernmost miles of the study area, north of Platte Avenue, and the right half shows the ten southernmost miles. There is a distinct difference in
- 2 Avenue, and the right half shows the ten southernmost miles. There is a distinct difference in
- 3 the character of land uses north and south of Platte Avenue.
- 4 • North of Platte Avenue, land adjacent to Powers Boulevard is zoned and developed for
- 5 commercial use, while the surrounding area is residential.
- 6 • South of Platte Avenue, in the vicinity of the Colorado Springs Airport, land in the
- 7 corridor is zoned primarily for light industrial, and residential uses, with some open
- 8 space.

Exhibit 2-3. Summary of Land Uses along the Powers Boulevard Corridor



1 Population and employment projections adopted by PPACG, and used in their regional
 2 transportation plan, indicate that population in the Powers Boulevard corridor will increase from
 3 172,000 in 2005 to 263,000 in 2035. This is an increase of 90,000 additional residents, or 53%.
 4 The majority of this population growth will occur in the northeast – i.e., east of Powers
 5 Boulevard, between Woodmen Road and Platte Avenue. This growth is depicted in Exhibit 2-4.

Exhibit 2-4. Baseline and Projected Population and Employment by Corridor Subarea



6 The imbalance between where people will live and where they will work will result in additional
 7 commuting on and across Powers Boulevard. For example, new residents in the northeastern
 8 subarea may use Powers Boulevard to access jobs in the other subareas.
 9

10 2.4 CURRENT ROLE OF POWERS BOULEVARD

11 Powers Boulevard is the transportation backbone for fast-growing, eastern Colorado Springs.
 12 It is a six-lane expressway between Woodmen Road and Airport Road, and a four-lane
 13 expressway from Airport Road to SH 16. The City of Colorado Springs Major Thoroughfare Plan
 14 designates Powers Boulevard as a future freeway. Today, Powers Boulevard is:
 15

- 16 • A State Highway (SH 21)
- 17 • A route on the National Highway System
- 18 • A State Strategic Corridor
- 19 • An established truck route
- 20

1 A number of key facilities important to the regional economy rely heavily on Powers Boulevard
 2 as a main transportation route. These facilities include the Colorado Springs Airport, military
 3 bases, hospitals, and a significant commercial corridor, as discussed below.

4 Colorado Springs Airport

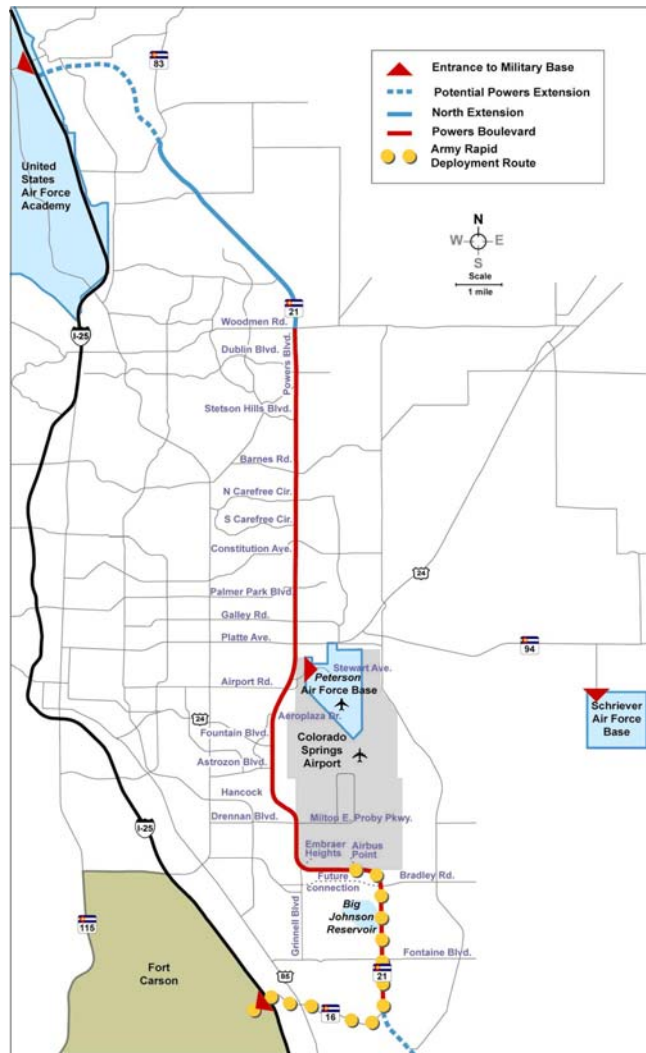
5 Powers Boulevard is the predominant route carrying traffic to Milton E. Proby Parkway, which is
 6 the entrance to the Colorado Springs Airport. The airport has more than one million boardings
 7 annually, averaging about 3,000 passengers per day. The attractiveness of Powers Boulevard
 8 as a route between the airport and the northern portion of the metro area will increase when the
 9 northern connection between SH83 and I-25 is constructed, within the next several years.

11 Military Bases

13 Powers Boulevard links military bases
 15 that are major employers and traffic
 17 destinations in the Colorado Springs
 19 metro area. As shown in Exhibit 2-5,
 21 these are:

- 23 • Fort Carson, the region's largest
 25 employer (12,600 troops,
 27 increasing to 28,900 by 2013), is
 29 located at the western terminus
 31 of SH 16, which connects to
 33 Powers Boulevard.
- 35 • Peterson Air Force Base (6,100
 37 military personnel) has its main
 39 entrance at the western gate on
 41 Stewart Road, which connects
 43 with Airport Road at Powers
 45 Boulevard.
- 47 • Schriever Air Force Base, home
 49 of the 50th Space Wing, is
 51 located on SH 94, ten miles east
 53 of Powers Boulevard. Powers
 55 Boulevard is a primary north-
 57 south route used to reach SH94
 59 for access to this base.
- 61 • The United States Air Force
 63 Academy (USAFA) is located at
 65 the northern end of the Powers
 67 Boulevard corridor. In the future,
 69 Powers Boulevard will be
 71 extended northward to connect
 73 to I-25 near the existing North
 75 Gate interchange, which is
 77 USAFA's main entrance.

Exhibit 2-5. Military Base Access from Powers Boulevard



1 In addition to serving routine daily use by military personnel and their dependents, Powers
 2 Boulevard will soon become Fort Carson's designated route for transporting its Rapid
 3 Deployment Force. Periodically, troops and heavy equipment will be convoyed on Powers
 4 Boulevard between Fort Carson and their deployment facility located at the Colorado Springs
 6 Airport.

8
 10 Hospitals

12 To serve the fast-growing population in northeastern Colorado
 14 Springs, the region's competing health-care systems opened two new
 16 hospitals along the Powers Boulevard corridor in 2007 and 2008, as
 18 pictured in Exhibit 2-6:

- 20 • The 98-bed Memorial Hospital North (top) is just west of
 22 Powers Boulevard on Briargate Boulevard (one mile north of
 24 the project limit for this EA).
- 26 • The 156-bed St. Francis Hospital (bottom) is just east of the
 28 Powers Boulevard/Woodmen Road interchange (northern
 30 terminus for this EA).

32 These new hospitals, together with physicians' offices and other
 34 medical support services, will increase future traffic demand on
 36 Powers Boulevard.
 38

40 Powers Boulevard Commercial Corridor

42 The Powers Boulevard commercial
 44 corridor shown earlier in Exhibit 2-3
 46 (orange-shaded area) is very
 48 important to the economy of the
 50 Colorado Springs metropolitan
 52 area. In 2002, an estimated total
 54 of 669 stores, restaurants, hotels
 56 and other businesses were located
 58 within the zip code areas that
 60 contain Powers Boulevard. This
 62 represented 20 percent of all
 64 businesses in the metro area.
 66 Since that time, additional
 68 shopping areas with "big box"
 70 stores have opened adjacent to
 72 Powers Boulevard. Exhibit 2-7
 74 depicts the intense development at
 76 just one corner of the corridor's
 78 many intersections surrounded by
 80 retail centers.
 82

84 Most of the traffic generated by this
 86 extensive commercial corridor uses
 88 Powers Boulevard, since the

Exhibit 2-6. Two New Hospitals along Powers Boulevard



Photo courtesy of Memorial Health System



Photo courtesy of Penrose-St. Francis Health Services

Exhibit 2-7. Intense Retail Development Adjacent to a Powers Boulevard Intersection





1 nearest parallel major arterial streets (Academy Boulevard to the west and Marksheffel Road to
 2 the east) are two miles away.
 3

“[Powers Boulevard’s] retail sector is filling so rapidly it is hard to keep track of the storefronts. Powers Boulevard is certainly the hot address.” - Colorado Springs *Gazette*, June 5, 2006

8
 9 The airport, military bases, hospitals and commercial areas described above are important
 10 regional activity centers that depend on Powers Boulevard as the major transportation link to the
 11 populations they serve. Efficient travel on Powers Boulevard is critical to the operation of these
 12 important regional facilities.
 13

14 **2.5 MIX OF LOCAL AND REGIONAL TRIPS**

- 15 The nature of trips carried by Powers Boulevard has changed over time, and this will continue.
- 16 • The road initially carried predominantly local trips because its length was short and there
 17 were few trips generated by adjacent land uses.
 - 18 • As the road was extended both to the north and the south, it began to carry an
 19 increasing number of longer distance, regional commuting trips. It became an alternate
 20 route for avoiding congestion on Academy Boulevard.
 - 21 • After the past decade of rapid commercial development, the expressway now carries a
 22 large number of local shopping trips. Some motorists have begun to use parallel routes
 23 to avoid congestion on Powers Boulevard.
 - 24 • In the future, with an improved northern connection to I-25, Powers Boulevard will likely
 25 see an increase in longer, regional trips.

27 In 1964, planners envisioned Powers Boulevard as an
 29 eastern bypass around the City. However, now that urban
 31 growth has engulfed the corridor, the potential for it to serve
 33 as a “bypass” is gone. In recent years, therefore, a new
 35 bypass concept has emerged. A private sector consortium is
 37 actively pursuing the goal of creating a high-speed toll road
 39 called the Prairie Falcon Parkway Express, proposed to be
 41 located 8 to 12 miles east of Powers Boulevard. This route
 43 would be 100 miles long or more, from Pueblo in the south
 45 to the Fort Collins area in the north, as well as Colorado
 47 Springs, Castle Rock and Denver.
 49

NOT A “BYPASS”

Powers Boulevard was once envisioned as a bypass around Colorado Springs. Today, because the city grew eastward, Powers Boulevard does not bypass the city but instead runs through it.

50 **2.6 ENVIRONMENTAL CONTEXT**

51 Understanding the interaction of the road with its surrounding natural, cultural and community
 52 setting provides direction for developing potential solutions that would meet transportation
 53 needs within the corridor. This section briefly summarizes key issues and resources with the
 54 potential to affect the transportation decision to be made for Powers Boulevard.

55
 56

1 Natural Resources

2 The environmental character of Powers Boulevard has changed dramatically since urban
3 growth transformed the former ranchlands beginning in the late 1960s. Today, the corridor is a
4 built, urban environment, with some small, isolated remnants of grassland awaiting infill.

5 Throughout most of the corridor, previous wetlands, wildlife habitat and historical resources
6 have been lost to development. Any changes to the roadway today would be more likely to
7 affect urban resources such as businesses, neighborhoods, and possibly recreation areas.
8 These resources could be affected by right-of-way acquisition, access changes, highway noise
9 and visual impacts.

10 A notable exception is a dedicated open space south of the airport, between Milton E. Proby
11 Parkway and Fontaine Boulevard. South of the airport and both south and west of Powers
12 Boulevard is the privately-owned Big Johnson Reservoir, partially surrounded by the publicly-
13 owned Bluestem Prairie Open Space. The newly developing Airport Business Park, between
14 Milton E. Proby Parkway and Powers Boulevard, will have additional dedicated open space, as
15 well as a golf course. These undeveloped grassland areas still attract wildlife such as
16 pronghorn because they have been on the edge of urban development, accessible from the
17 prairie ranchlands to the east. However, future development at the eastern edge of the metro
18 area will largely cut off these areas from the grasslands.

19 Due to their increasing isolation, the remaining undeveloped and open areas in the Powers
20 Boulevard corridor will become less able to attract or sustain wildlife. With urban development,
21 plants and animals of the prairie ecosystem have been displaced. Grass lawns and non-native
22 trees have been planted. Wildlife needing wide open spaces is gone, replaced by opportunistic
23 species (e.g., squirrels and foxes) that are better able to survive in an urban environment.

24 Similarly, the few stream channels that cross Powers Boulevard – notably Sand Creek and its
25 tributaries – have negligible ecological value. These channels are normally dry, as shown in
26 Exhibit 2-8 (left side), and they do not support aquatic life. After a rain (right side), they carry a
27 flow of stormwater runoff from the thousands of acres of recently developed urban development
28 and its impervious surfaces such as rooftops, parking lots and roads. Additionally, the natural
29 flow of these waterways has been modified and constrained into this channel due to adjacent
30 development.

Exhibit 2-8. Sand Creek, Dry and Running, Downstream from Powers Boulevard



1 Erosion and sediment transport are problems in these creeks. Powers Boulevard was
 2 constructed and many nearby properties were developed prior to the establishment of the
 3 stormwater runoff management requirements that apply today. Therefore, stormwater runoff
 4 from the roadway is not detained and mitigated with “Best Management Practices.” Instead,
 5 sediments and vehicle-related contaminants typically flow untreated from the roadway to
 6 eventually reach receiving waters. Stormwater runoff from some adjacent properties actually
 7 flows towards the expressway, due to local development decisions made prior to Powers
 8 Boulevard becoming a State Highway.

10
 12 Cultural Resources

14 The Powers Boulevard corridor has almost no
 16 remaining historic or archeological resources.
 18 Traces of a century of ranching have been
 20 also obliterated, and a century-old railroad
 22 has been rapidly disappearing. Powers
 24 Boulevard crosses the former Rock Island
 26 Railroad grade just south of Constitution
 28 Avenue. The railroad was built in 1888 and
 30 ceased operations in 1978. Since then, the
 32 railroad tracks and grade have been sold to
 34 various owners and largely obliterated by
 36 urban development (see Exhibit 2-9). The rail
 38 corridor is gradually being converted into the
 40 region’s primary east-west trail.

42
 44 Parks, Trails and Recreational Areas

46 A number of parks, trails and recreational
 48 areas exist along Powers Boulevard, and
 50 more are planned. From north to south, these
 52 existing resources include:

- 54 • High Chaparral Open Space (54 acres),
 56 located west of Powers, south of Stetson
 58 Hills Boulevard
- 60 • Rock Island Trail, west of Powers
 62 Boulevard, south of Constitution Avenue
- 63 • Skyview Sports Complex (softball fields), east of Powers, south of Hancock Expressway
- 64 • Southeast Community Park, west of Powers, north of Milton E. Proby Parkway
- 65 • Bluestem Prairie Open Space (647 acres), south and west of Powers, between Grinnell
 66 Boulevard and Fontaine Boulevard

67
 68 In the future, a new open space and a golf course will be provided as part of the Colorado
 69 Springs Airport Business Park. Elsewhere in the Powers Boulevard corridor, planned trail
 70 projects include:

- ~~71~~ 72 • Rock Island Trail – will cross Powers Boulevard and extend eastward
- ~~73~~ 74 • Sand Creek Trail – will cross under Powers Boulevard along Sand Creek

Exhibit 2-9. View of Former Rock Island Railroad Location at Powers Boulevard, South of Constitution Avenue



- 1 • Powers Boulevard Trail – north-south trail is proposed along or near Powers Boulevard
2 between Airport Road and Bradley Road

3 All of these parks, trails and open spaces were established or are planned to be adjacent to an
4 expressway, with the knowledge that it would carry more traffic in the future. The setting for
5 these resources is a largely urban environment that includes traffic noise from Powers
6 Boulevard and other streets. Additionally, the Powers Boulevard corridor is in the flight path for
7 aircraft using Peterson Field Air Force Base and the Colorado Springs Airport.

8
9 Visual Character

10 Visually, Powers Boulevard is a very urban corridor except for a rural stretch between Milton E.
11 Proby Parkway and Fontaine Boulevard. It has minimal landscaping on its median islands and
12 roadsides. The most prominent landscaping is found at Milton E. Proby Parkway, where each
13 corner of the intersection has a short row of trees planted as a gateway feature to the Colorado
14 Springs Airport. In the vicinity of the First & Main shopping area, banners are hung from median
15 streetlights to promote the nearby shopping, restaurants and Sky Sox AAA baseball team.

16
17 The expressway has no publicly provided noise barriers, and the privacy fences behind adjacent
18 subdivisions are not consistent in design. The roadway is at grade except where it crosses over
19 Woodmen Road at the northern project limit. Apart from the design of the bridge where Platte
20 Avenue crosses over Powers Boulevard, the roadway itself does not have any aesthetic
21 elements or theme.

22
23 North of Galley Road, ridgelines east and west of Powers Boulevard restrict longer views to the
24 mountains or the prairies. Foreground views of urban development dominate this visual
25 landscape. These views are often cluttered with numerous temporary signs advertising nearby
26 housing developments, home businesses and political campaigns (seasonally). The Sand Creek
27 channel is visible from Powers Boulevard but is not scenic. Motorists southbound at Barnes
28 Road drive downhill with a long view of urban development, including the Colorado Springs
29 Airport.

30
31 In the southern portion of the corridor, longer views are available to the west. South of the
32 airport, this includes views to Pikes Peak and to the Big Johnson Reservoir over the Bluestem
33 Prairie Open Space. The last large undeveloped tracts of land along the corridor, such as the
34 Airport Business Park, will lose some of their rural character as development continues.

35
36 **2.7 SHAPING TRANSPORTATION SOLUTIONS BASED ON THIS CONTEXT**

37 The context information presented in this chapter was known and taken into account in the
38 development of potential transportation solutions to meet the project's Purpose and Need. The
39 development of context-sensitive transportation solutions is described in Chapter 3,
40 Alternatives.

1 **CHAPTER 3 – ALTERNATIVES**

2
3 **3.1 INTRODUCTION**

The Proposed Action would change the existing Powers Boulevard from an expressway to a freeway.

5 To meet the purpose and need described earlier in this EA,
7 a range of potential transportation actions was developed and
9 evaluated, leading to the selection of a single Proposed Action
11 to evaluate in comparison to a No-Action Alternative. This
13 chapter summarizes what transportation actions were
15 considered, which were eliminated, which were carried forward
17 for detailed environmental study, and why. Additional detail
19 supporting this summary, including concepts for different
21 roadway configurations, is provided in appendices on the
22 compact disc (CD) attached to this EA. Included are reports on traffic analysis (Appendix B),
23 mode feasibility analysis (Appendix C), alternatives screening (Appendix D) and Context
24 Sensitive Solutions (Appendix E).

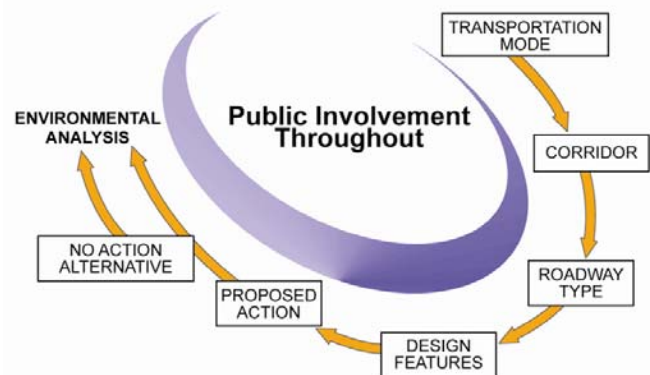
25 **3.2 HOW THE PROPOSED ACTION WAS DEVELOPED**

26 The Proposed Action was developed by CDOT and FHWA through a process that identified,
27 evaluated, refined, and eliminated potential transportation actions, with continuous input from
28 Powers Boulevard users as well as local, regional, state and federal agencies. This process is
29 illustrated in Exhibit 3-1. The first four steps in this process led to the development of the
30 Proposed Action. The Proposed Action and the No-Action Alternative were then carried forward
31 for environmental examination as documented in Chapter 4.

32 In the development of the Proposed Action, consideration was given to how the use of Powers
33 Boulevard and the travel demand placed upon it would potentially affect the surrounding built
34 and natural environment, regional transportation network, planned land use, and community
36 character. This approach, called Context Sensitive Solutions (CSS), involved:

- 38 • a collaborative, interdisciplinary
- 40 approach in which representatives from
- 42 FHWA, CDOT, PPACG, the City of
- 44 Colorado Springs, El Paso County,
- 46 Colorado Springs Airport, and Peterson
- 48 Air Force Base were part of the planning
- 50 and design team;
- 52 • integration of residents and business
- 54 owners along the corridor with the
- 56 decision-making process that
- 58 developed, evaluated, refined, and
- 60 finally recommended a Proposed Action
- 62 that met the purpose and need; and
- 64 • collection of public comment early and
- 66 throughout the process through open
- 67 house and small group meetings.

Exhibit 3-1. Key Steps in the Alternatives Development Process



2 CSS is more than simply an approach that considers the
4 context within which a transportation project will exist. It
6 fully integrates environmental studies and community
8 concerns with design solutions that are responsive to local
10 needs. CSS allows each project to be customized to the
12 study area rather than meeting a pre-determined set of
14 standards, as long as basic safety requirements are met.

16 A CSS approach begins with a thorough understanding of
18 the purpose and need of the transportation project. It then
20 considers mobility together with social, economic, and
22 environmental factors within the context of the community,
24 including the values expressed by the public. To identify
26 community values and concerns, extensive public
28 outreach efforts were undertaken, including numerous
30 public open house events, small group meetings, and one-
32 on-one meetings with residents and commercial property
34 owners.

35 The public asked a large number of questions and offered numerous suggestions throughout
36 these meetings. Some of the most commonly asked questions are those shown in the box
37 below. These questions were helpful in developing criteria used for the evaluation of
38 alternatives.

39 As the number of transportation actions under consideration gradually decreased during the
40 development of alternatives, the public asked more detailed questions, resulting in development
42 of more refined concepts at some locations. For
44 example, numerous solutions were evaluated to
46 address questions such as how access might
48 be provided to specific business properties
50 along the corridor. This effort is documented in
52 Appendix E, Context Sensitive Solutions
54 Report, on the CD attached to the back of the
56 EA.

58 The alternatives development process that was
60 illustrated in Exhibit 3-1 addressed the common
62 questions that were raised by the public. Each
64 step in the process and each of these questions
66 is addressed below, beginning with
68 consideration of the transportation mode.



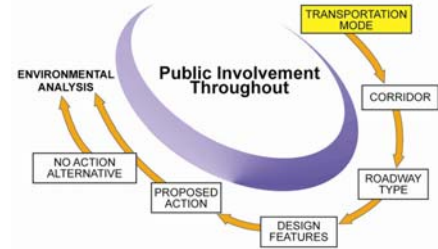
Public involvement was an important aspect of the Context Sensitive Solutions approach used to develop alternatives.

Questions from the Public That Helped Evaluate Alternatives

- Why not consider other types of transportation, like the light rail system they have in Denver?
- Instead of modifying Powers, why not improve Marksheffel Road or some other less-developed corridor farther to the east?
- Can future travel demand be handled by widening Powers, instead of upgrading it to a freeway?
- What design features could be used to minimize impacts to businesses, neighborhoods and the environment?

1 What type of transportation mode(s) could accommodate the projected Powers Boulevard traffic
 3 demand?

5 One of the questions commonly heard from the public during
 7 the alternatives development process was, “Why not
 9 consider other types of transportation, like the light rail
 11 system they have in Denver?” As part of this EA, the
 13 potential effectiveness of light rail and a number of other
 15 transportation types or “modes” was considered.



17 Various modes were evaluated based on the characteristics
 18 of the Powers Corridor. The mode feasibility study began with a list of 20 types of transportation
 19 technologies, including rail, bus and bus rapid transit, and carpool lane alternatives, as well as
 20 highway actions. This evaluation is contained in a study called the *Powers Boulevard Mode*
 21 *Feasibility Study/Corridor Assessment* (Appendix C included on the CD attached to this EA).
 22

23 Exhibit 3-2 depicts the vision for bus and rapid transit service in eastern Colorado Springs that is
 25 reflected in PPACG’s 2035 RTP. This vision includes local bus
 27 routes crossing Powers Boulevard and regional express bus
 29 service using Powers Boulevard. No bus service is
 31 anticipated on Powers Boulevard south of Airport Road by
 33 2035.
 35

Exhibit 3-2. Planned Future Transit Service in Eastern Colorado Springs

37 Rapid transit is planned along Austin Bluffs Parkway by 2035
 39 and along other routes (including Academy Boulevard) beyond
 41 the year 2035. This plan indicates that future service such as
 43 bus rapid transit will be focused on the Academy Boulevard
 45 corridor, not Powers Boulevard.
 47

49 Thirteen transit options were considered in the Powers
 51 Boulevard mode feasibility study. Any of these transit options
 53 would reduce future traffic on Powers Boulevard by only 2 to 5
 55 percent. None of these would reduce congestion sufficiently to
 57 meet the project’s purpose and need.

59 Congestion management strategies are also included in
 61 PPACG’s 2035 RTP, and Powers Boulevard was identified as
 63 a corridor where such strategies should be considered. These
 65 strategies, such as ramp metering, carpool programs, Park
 67 and Ride lots and bicycle and pedestrian facilities, are
 69 intended to maximize the efficiency of the existing
 71 transportation system at a lower cost than major roadway
 73 construction. The Powers Boulevard mode feasibility study
 75 examined various congestion management strategies and
 77 determined that they would reduce traffic on Powers
 79 Boulevard by 2 to 5 percent.







1 Traffic reductions due to individual transit and congestion management strategies cannot be
 2 added together mathematically because they largely capture the same trips. For example, a
 3 motorist who drives alone might switch to carpooling, or take the bus, or use light rail. However,
 4 no matter how many choices are offered to the motorist, taking one of them would eliminate only
 5 one car from the road.

6 To eliminate future congestion on Powers Boulevard by reducing traffic, approximately a 50
 7 percent traffic reduction in future traffic volume would be needed, as noted in Chapter 1 of this
 8 EA. In comparison, transit technologies and congestion management strategies offer
 9 reductions of only about 5 percent. Since transit technologies and congestion management
 10 strategies would not sufficiently alleviate future congested conditions on Powers Boulevard, they
 11 would not meet the project's purpose and need. Therefore, roadway capacity improvements
 12 were evaluated to determine if this strategy would effectively reduce future congestion.

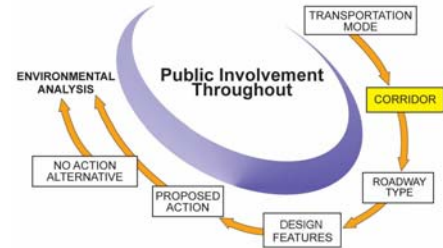
13 As shown in Exhibit 3-3, the mode feasibility analysis determined that only roadway
 14 improvements could provide sufficient capacity in the corridor. Even if all of the transit and
 15 congestion management strategies were implemented, future congestion on Powers Boulevard
 16 would still necessitate roadway improvements.
 17

18 **Exhibit 3-3. Results of Transportation Mode Analysis**

Transportation Mode Considered	Result of Analysis
<u>Rail Transit Technologies</u> Light Rail Personal Rapid Transit Heavy Rail Monorail Commuter Rail Subway Diesel Multiple Units Magnetic Levitation Electric Trolley (Streetcar)	 ELIMINATED because: - it would reduce future traffic on Powers Boulevard by only 2 to 5 percent; this would not take enough traffic off of Powers Boulevard to alleviate future congestion. This would not meet the project's purpose and need.
<u>Rubber-Tire Transit Technologies</u> Bus Rapid Transit Express Bus on High-Occupancy Vehicle Lanes Express Bus Service Local Bus Service	 ELIMINATED because: - it would reduce future traffic on Powers Boulevard by only 2 to 5 percent; this would not take enough traffic off of Powers Boulevard to alleviate future congestion. This would not meet the project's purpose and need.
<u>Congestion Management Strategies</u> Ramp metering Carpool programs Park and Ride Lots Bicycle/Pedestrian Facilities/Programs	 ELIMINATED because: - it would reduce future traffic on Powers Boulevard by no more than 5 percent; this would not take enough traffic off of Powers Boulevard to alleviate future congestion. This would not meet the project's purpose and need.
<u>Roadway Improvements</u> Additional general purpose lanes Additional turn lanes Signal improvements Interchanges/overpasses	 CARRIED FORWARD FOR FURTHER ANALYSIS because: - it would accommodate projected corridor travel demand This would meet the project's purpose and need.

1 The next step in the alternatives development process was to determine where such roadway
 2 improvements should be made.

4
 6 Would roadway improvements on another corridor reduce
 8 Powers Boulevard congestion to acceptable levels?



10 From the outset of the EA, the most frequently asked
 12 question from the public was: “Instead of modifying Powers
 14 Boulevard, why not improve Marksheffel Road or some
 16 other, less-developed corridor farther to the east?” This
 18 issue was examined thoroughly in the *Powers Boulevard*
 19 *Mode Feasibility Study/Corridor Assessment*.

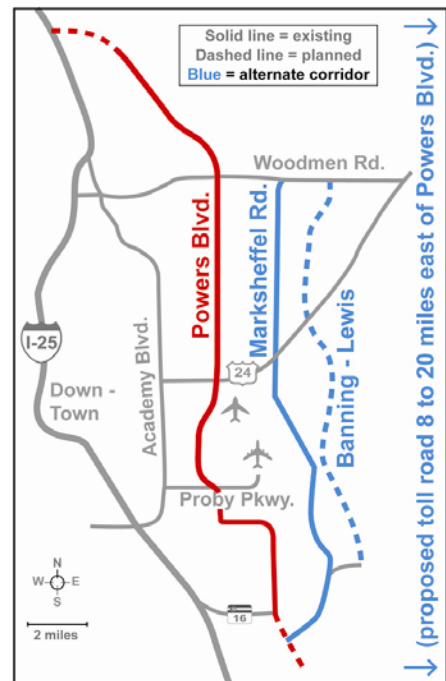
20
 21 Because 90 percent of Powers Boulevard trips have origins or destinations within the corridor,
 22 improvements to other corridors would reduce projected future traffic on Powers Boulevard by
 23 only 5 to 15 percent. Using other corridors would require motorists to divert two miles or more
 24 out of their way and would increase traffic on connecting east-west arterials.

25 In addition to Powers Boulevard, three eastern corridors considered in this EA were Marksheffel
 26 Road, Banning-Lewis Parkway, and the proposed Prairie Falcon Parkway Express toll road.
 27 Their locations are illustrated in Figure 3-4.

28 Marksheffel Road is an existing north-south arterial located generally two miles east of Powers
 30 Boulevard.

32 The next major north-south corridor to the east is the
 34 planned Banning-Lewis Parkway that will be constructed to
 36 serve trips in the 20,000-acre Banning-Lewis Ranch
 38 development. At least 13 miles in length, this parkway will
 40 be located typically 3 to 4 miles east of Powers Boulevard.

Exhibit 3-4. Major North-South Roads Existing or Planned in Eastern Colorado Springs



42 The addition of roadway capacity to both of these corridors
 44 is included in PPACG’s 2035 RTP. Additional capacity is
 46 needed in all of these corridors to serve development on
 48 the east side of the city. Even with the widening of
 50 Marksheffel Road and construction of the Banning-Lewis
 52 Parkway, the regional traffic model indicates that Powers
 54 Boulevard intersections would be congested in the future.





56 East of Colorado Springs, a private consortium hopes to
 58 build a 210-mile north-south toll road called the Prairie
 60 Falcon Parkway Express about 8 to 20 miles east of
 62 Powers Boulevard. This high-speed bypass would serve
 64 long-distance truckers and other motorists who wish to
 66 avoid traffic congestion on I-25 through Colorado’s Front
 68 Range metropolitan areas including Pueblo, Colorado
 70 Springs and Denver.

72 Because it would serve only long-distance trips, which are
 74 completely different from the regional and local trips

1 served by Powers Boulevard, the proposed Prairie Falcon Parkway Express toll road would
 2 divert virtually no traffic off of Powers Boulevard. Since Powers Boulevard would still be
 3 congested, the Prairie Falcon Parkway Express does not represent a meaningful corridor
 4 location for this EA and was dismissed from further analysis.

5 Exhibit 3-5 presents the results of the transportation corridor analysis, indicating what was
 6 considered and what was eliminated, and why. None of the alternative corridors would attract
 7 more than 15 percent of this traffic, either singly or in combination. In summary, the *Powers*
 8 *Boulevard Mode Feasibility Study/Corridor Assessment* determined that increasing roadway
 9 capacity on Powers Boulevard would be the only way to provide meaningful relief for future
 10 congestion.

11 **Exhibit 3-5. Results of Corridor Analysis**
 12

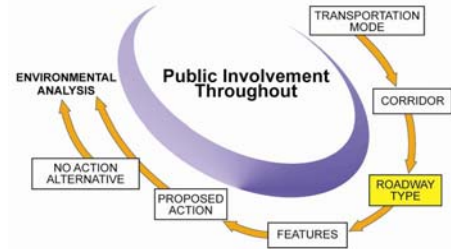
Corridor Considered	Result of Analysis
<u>Marksheffel Road</u> Upgrade existing arterial to a freeway, two miles east of Powers Boulevard	 ELIMINATED because: - it would reduce projected traffic on Powers Boulevard by only 5 to 15 percent; this would not take enough traffic off of Powers Boulevard to alleviate congestion. This would not meet the project's purpose and need.
<u>Banning-Lewis Parkway</u> Build planned new roadway as a freeway, three to four miles east of Powers Boulevard	 ELIMINATED because: - it would reduce projected traffic on Powers Boulevard by only 5 to 15 percent; this would not take enough traffic off of Powers Boulevard to alleviate future congestion. This would not meet the project's purpose and need
<u>Prairie Falcon Parkway Express Toll Road</u> Build new high-speed 200-mile toll road roughly from Pueblo to Fort Collins, about 8 to 20 miles east of Powers Boulevard	 ELIMINATED because: - it would reduce projected traffic on Powers Boulevard by less than 5 percent; this would not take enough traffic off of Powers Boulevard to alleviate future congestion. This would not meet the project's purpose and need
<u>Powers Boulevard</u> Increase roadway capacity	 CARRIED FORWARD FOR FURTHER ANALYSIS because: - it would accommodate future travel demand while improving peak-period travel speeds and travel times This would meet the project's purpose and need

13
 14 The next step in the alternatives development process was to determine what type of roadway
 15 would best provide this capacity.

1 What type of roadway (freeway or expressway) would best relieve congestion?

2 During the development of this EA, the public frequently asked, “Can future travel demand be
4 handled by widening Powers, instead of upgrading it to a
6 freeway?”

8 Different types of roadways are provided in an urban
10 setting depending upon how much traffic they are intended
12 to carry and how much access they are intended to
14 provide. Basic urban types for higher volumes are
16 explained in the text box below.



20 For Powers Boulevard, the issue of an expressway versus
21 a freeway was examined extensively.

23 Powers Boulevard is largely a limited-access expressway,
24 with the following physical characteristics:

- 26 • 4 to 6 through lanes (2 to 3 each direction)
- 27 • Turn lanes include double left turns and one right turn
- 28 before the cross-street, and one acceleration lane to
- 29 receive right turns after the cross-street
- 30 • Interchanges at only Woodmen Road and Platte Avenue
- 31 • 14 signalized intersections exist today, between
- 32 Woodmen Road and Milton E. Proby Parkway (some
- 33 have less than one-mile spacing)
- 34 • Several unsignalized access points, including some
- 35 temporary access points
- 36 • Posted speed limit of 55 miles per hour (mph)

38 The capacity of the existing Powers Boulevard expressway
39 could be enhanced by adding travel lanes and grade-separated
40 interchanges to replace some at-grade intersections. This
41 **enhanced expressway** concept would have the following
42 characteristics:

- 44 • 4 to 8 through lanes (2 to 4 each direction)
- 45 • Turn lanes include triple left turn lanes and one or two
- 46 right turn lanes before the cross-street, plus an
- 47 acceleration lane to receive right turns after the cross-
- 48 street
- 49 • Interchanges would be added at 8 of the cross-streets with highest traffic volumes
- 50 between Dublin Boulevard and Airport Road
- 51 • 6 signalized intersections would remain on the Powers Boulevard mainline
- 52 • Posted speed limit of 55 mph

54 Powers Boulevard is already as many as ten lanes wide at some intersections, counting six
55 through-lanes, dual left turn lanes, a right-turn lane and an acceleration lane. These ten lanes
56 marginally meet current traffic demand and cannot accommodate future needs. To meet future
57 traffic demand at these locations, additional lanes were explored and it was found that 13 lanes

ROADWAY TYPES

Arterial (example: Academy Boulevard) – Allows direct access to connecting streets and adjacent properties, typically spaced a half-mile apart or less, Posted speed limits are 35 to 40 mph.

Expressway (example: Powers Boulevard) – Access is typically spaced one mile apart, for signalized, at-grade intersections. Posted speed limits are 40 to 55 mph.

Freeway (example: I-25) - Access is provided only at grade-separated interchanges, typically spaced at least one mile apart. Posted speed limits are 55 to 75 mph.

1 were needed: eight through-lanes, triple left turn lanes, one right turn lane and an acceleration
2 lane. However, traffic modeling indicates that even with this number of lanes, traffic queues at
3 these intersections would be long, resulting in excessive delays both on Powers Boulevard and
4 the east-west cross-streets, causing the intersections to be congested. The discussion of traffic
5 operations found in Chapter 4 more fully explains these levels of service.

6
7 Furthermore, there is intensive development at each of these busy intersections. Traffic queues
8 on cross-streets at Powers Boulevard intersections would block access into adjacent
9 businesses, making it difficult for people to enter and exit at these locations. The provision of
10 more turning lanes on Powers Boulevard would require widening of the cross streets to receive
11 these turns. This would also affect access to adjacent businesses and in some cases would
12 require their acquisition.

13 After a thorough consideration of traffic operations and other associated effects, it was
14 determined that the enhanced expressway would not meet the project's purpose and need.

15 The **freeway** concept would replace at-grade intersections with grade-separated interchanges,
16 meaning that Powers Boulevard would cross over or under all major cross-streets.

17 Characteristics of the Powers Boulevard freeway would include:

- 18 • 6 through lanes (3 each direction) plus acceleration lanes
- 19 • Turns are made at ramp/cross-street intersections, not hampering mainline through
20 traffic
- 21 • Interchanges with access at all major cross-streets; overpasses with no direct access
22 elsewhere
- 23 • No signalized intersections would remain on the Powers Boulevard freeway mainline
24 between Woodmen Road and Milton E. Proby Parkway
- 25 • Posted speeds would range from 55 to 65 mph

26
27 At a few locations, there would be no connection to Powers Boulevard but access would be
28 available from nearby major roadways. Interchanges have a higher capacity than intersections,
29 and are needed to efficiently handle large volumes of turn movements.

30 Because interchanges remove traffic signals from the mainline, vehicle-carrying capacity of a
31 freeway lane is about 50 percent higher than that of an expressway lane. Therefore, fewer
32 through-lanes are required on a freeway to carry the same amount of traffic as an expressway.



33 This freeway concept was evaluated using traffic simulation and regional traffic models to
34 determine its effectiveness for Powers Boulevard. The results indicated that good traffic
35 operations and minimal delays would be expected for the year 2035. The intersections would
36 be less congested because the through traffic on Powers Boulevard would pass over the cross-
37 streets.

38 The reduced traffic queues on cross streets would allow better access to adjacent properties
39 than the expressway concept. In some locations, however, adjacent businesses would need to
40 be acquired for the interchange, frontage roads and other freeway features.

41 With the freeway concept, the roadway system would operate better than it does today, while
42 accommodating much higher traffic volumes. This would meet the project's purpose and need,

1 and therefore this roadway type was carried forward for further analysis, as indicated in Exhibit
 2 3-6.

3 **Exhibit 3-6. Results of Roadway Type Analysis**

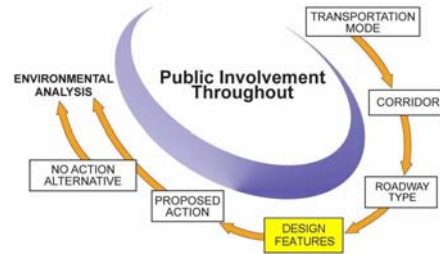
Roadway Type Considered	Result of Analysis
<u>Enhanced Expressway</u> Provide: - more through-lanes; - grade-separated interchanges at high-priority locations; - additional turn lanes at remaining signalized intersections.	 ELIMINATED because: - it would leave remaining at-grade intersections extremely congested, due to heavy left-turn movements - traffic queues at cross-streets would impair access to adjacent businesses - the total width needed for through-lanes, left-turn lanes, and right-turn lanes at intersections would result in more right-of-way impacts to adjacent properties in the vicinity of intersections This would not meet the project's purpose and need
<u>Freeway</u> Convert the existing expressway to a freeway, allowing access only at grade-separated interchanges.	 CARRIED FORWARD FOR FURTHER ANALYSIS because: - it could accommodate future Powers Boulevard year 2035 travel demand while improving peak-period travel speeds and travel times in comparison with current conditions. This would meet the project's purpose and need

4
 5 Conversion of Powers Boulevard from the existing expressway to a freeway would be a gradual
 6 process. Due to budget constraints, it is unlikely that grade-separated interchanges could be
 7 provided throughout the corridor all at one time; instead, these improvements would need to be
 8 prioritized. Based on current population and traffic forecasts, the area of lowest priority appears
 9 to be the southernmost six-mile portion of the corridor, between Milton E. Proby Parkway and
 10 SH 16. In this stretch, at-grade intersections could provide acceptable levels of service through
 11 2035, but future build-out in the area will eventually result in the need for grade-separation.
 12 Potential conflicts with future development could be avoided by preserving right-of-way in areas
 13 where freeway improvements are deferred beyond 2035.

14
 15 The next step in the alternatives development process was to determine how best to fit a
 16 freeway into the Powers Boulevard corridor. Using the CSS approach, various roadway
 17 features were explored to meet the unique local needs found at different locations along the
 18 corridor.
 19

1 What facility features would best fit the improvements into the corridor?

3 After it was determined that Powers Boulevard should
 5 become a freeway, the public wanted to know, “What
 7 design features could be used to minimize impacts to
 9 businesses, neighborhoods and the environment?”

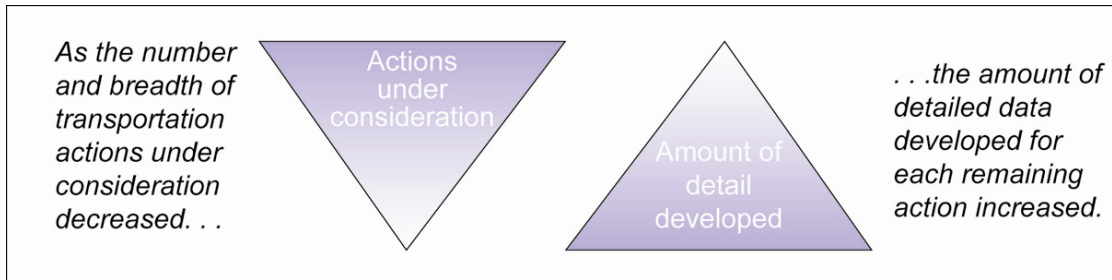


11 Converting Powers Boulevard to a freeway would result
 13 in modifications to existing accesses. This would affect
 15 traffic patterns for businesses and neighborhoods. To
 17 identify facility design features that would best fit the
 19 corridor, the following questions were examined:

- 20 • Where would direct access to Powers Boulevard be provided, and what
 21 modifications would be made (e.g., frontage roads) to provide or replace access
 22 disrupted by the freeway?
- 23 • What type of interchange would best fit at each location?
- 24 • What could be done to minimize the amount of additional right-of-way needed from
 25 adjacent properties?

26 These questions were addressed in a site-specific and context-sensitive manner, with input from
 27 the community. Numerous conceptual design ideas were developed for each potential
 28 interchange and for each roadway section between interchanges for the entire length of the
 29 study area. As concepts were carried through the screening process, they were refined with
 30 more detail, as indicated in Exhibit 3-7.

Exhibit 3-7. Relationship of Number of Actions to Amount of Detail



31 **Access Modifications**

32
 33 Where it could be accommodated safely, direct access would be provided at all major cross-
 34 streets. Various ramp designs were considered at each location to determine whether or not
 35 direct access could safely be provided. Direct access cannot be accommodated when cross-
 36 streets are spaced too closely together to allow safe weaving distances on Powers Boulevard.
 37 Where direct access could not be provided, frontage roads and other local street modifications
 38 were considered. It was determined that there are seven locations with existing direct access
 39 that would not be compatible with a freeway. Each would be provided with access via frontage
 40 roads or other local street connections as needed to reach the nearest freeway interchange.

41
 42 Property access along cross-streets was another important consideration. To avoid disrupting
 43 access to adjacent properties from cross-streets, the Powers Boulevard freeway would be
 44 elevated over the majority of the intersecting arterials. In a few cases, however, cross-streets
 45 would go over the freeway due to topography or other local constraints.

1 **Interchange Types**

2 Various interchange types were considered at each location where a signalized intersection
3 would be replaced with a grade-separated interchange. For each location, important
4 considerations were providing good traffic flow, minimizing right-of-way needs, and providing
5 reasonable access to adjacent properties. Due to the high degree of development along the
6 corridor, diamond interchange concepts fit best in most locations. Diamond interchanges are
7 the most common type found along I-25 in the Colorado Springs metro area.
8

9 **Minimizing Needed Right-of-Way**

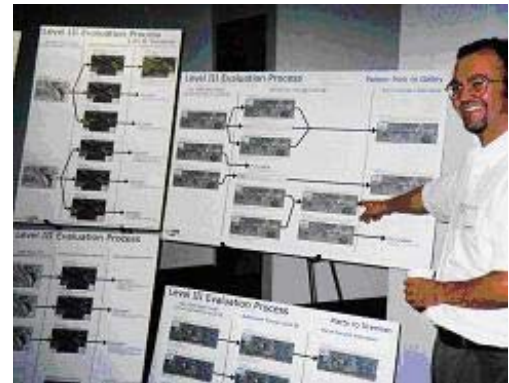
10 Facility design options also were examined to minimize the additional right-of-way width that
11 would be needed for a freeway, including its ramps and frontage roads. A center median barrier
12 was used to reduce overall roadway width, and retaining walls were evaluated to minimize the
13 need for roadway side slopes. Where additional right-of-way was needed, consideration was
14 given to shifting the roadway slightly to the east or west to avoid having to expand the right-of-
15 way on both sides. Also considered were ways to minimize right-of-way impacts when
16 relocating utility lines in the Powers Boulevard corridor and providing needed areas for capturing
17 stormwater runoff from the roadway.
18

19 Numerous design concepts were developed to fit a freeway within the corridor and minimize
21 right-of-way impacts. The design concepts and
22 evaluation results from this process were presented at
23 open house meetings to allow for public review and
25 comments.
27

29
31 The selection of facility features concluded the
33 alternatives development process and resulted in the
35 Proposed Action that is described below in Section 3.3.

37 The alternatives development process identified
39 conceptual solutions that would meet the current needs
41 of the corridor, but continuing development along the
43 corridor may alter those needs. For example, after a
45 workable local access concept was identified for the
47 eastern side of the Galley Road interchange, a new
49 commercial building was constructed that necessitated
51 revisions to that concept. Additionally, there is an
52 ongoing dialog between CDOT and a major developer regarding access on the eastern side of
53 Powers Boulevard between Barnes Road and Constitution Avenue. The developer is interested
54 in further exploring the feasibility of a northbound off-ramp to South Carefree Circle. Some
55 decisions regarding specific access accommodations would need to be made in final design,
56 possibly a number of years in the future. Thus the CSS approach does not end with the
57 Proposed Action but continues through project design and construction.
58

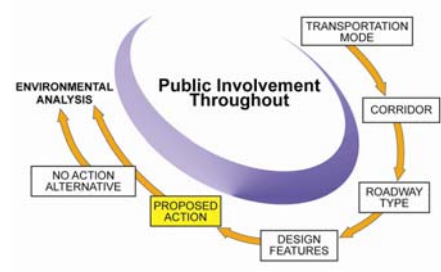
59 For a detailed description of the alternatives development process and the screening results,
60 please refer to the Alternatives Screening Report that is included as Appendix D on the CD
61 attached to the back of this EA.



Many design concepts were developed and discussed with the public.

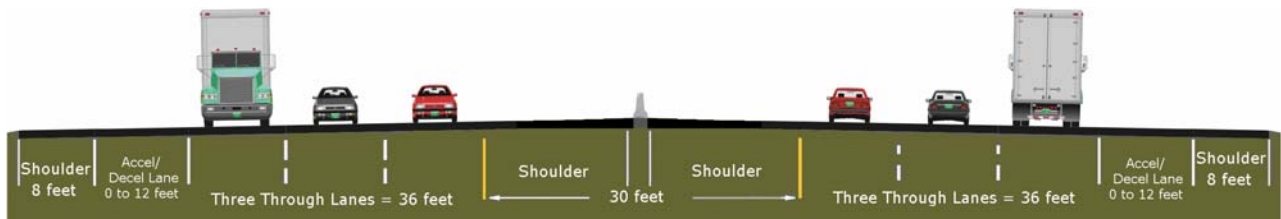
2 **3.3 DESCRIPTION OF THE PROPOSED ACTION**

4 The Proposed Action would modify Powers Boulevard as
6 follows:



- 8 • Reconstruct the existing expressway as a 6-lane
10 freeway for 11 miles between Woodmen Road and
12 Milton E. Proby Parkway (entrance to Colorado
14 Springs Airport), as shown in Exhibit 3-8;
- 15 • Build 11 new grade-separated interchanges between Woodmen Road and Milton E.
16 Proby Parkway; and
- 17 • Obtain right-of-way to accommodate future interchanges for a 4-lane freeway on the
18 existing 5.8-mile stretch of Powers Boulevard between Milton E. Proby Parkway and SH
19 16 (see Exhibit 3-9).

**Exhibit 3-8. Lane Configuration for 6-Lane Freeway
North of Milton E. Proby Parkway**



20

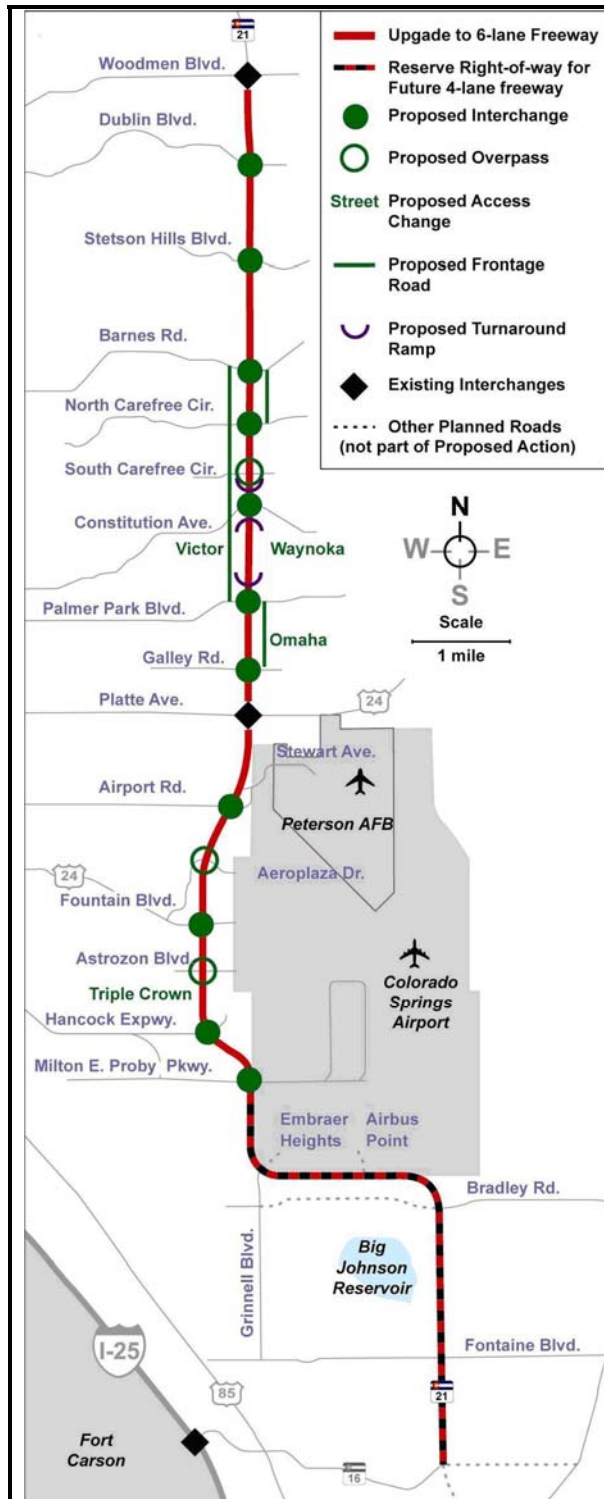
**Exhibit 3-9. Lane Configuration for 4-Lane Freeway
South of Milton E. Proby Parkway**



21
22 The Proposed Action has been described above in general terms. More details are provided in
23 Exhibit 3-10. Proposed interchange configurations and number of lanes are depicted in Exhibit
24 3-11.

25
26 Exhibit 3-11 indicates that a relatively simple diamond interchange is proposed at Milton E.
27 Proby Parkway (entrance to the Colorado Springs Airport). In consultation with airport officials,
28 this configuration was designed to be compatible with a future loop configuration if needed to
29 accommodate growth at the airport and its adjacent business park. The Proposed Action would
30 not preclude the potential future upgrade at this location.

1 Exhibit 3-10. Summary of the Proposed Action and the No-Action Alternative



Powers roadway mainline

Proposed Action

- Upgrade to 6-lane freeway with acceleration lanes, Woodmen Road to Milton E. Proby Parkway
- Obtain right-of-way for future interchanges for a 4-lane freeway from Milton E. Proby Parkway to SH 16

No-Action Alternative

No modifications to the existing road, which is:

- 6-lane expressway, Woodmen Road to Airport Road
- 4-lane expressway, Airport Road to SH 16

Connection with cross-streets

Proposed Action

Build grade-separated interchanges at the 11 arterial crossings denoted with a solid dot in the figure at left; build overpasses at three cross-streets denoted with an open dot (South Carefree Circle, Aeroplaza Drive, and Astrozon Boulevard), allowing traffic to cross under Powers Boulevard with no direct access; direct access also would no longer be available at four side-streets streets—Victor Place, Waynoka Road, Omaha Boulevard, and Triple Crown Way. Generally, ramp and local street changes would be made to mitigate loss of direct access.

No-Action Alternative

No modifications to the existing connections, which are: interchanges at Platte Avenue and Woodmen Road; 15 at-grade, signalized intersections; unsignalized access at other existing cross-streets.

Ramp and frontage road features

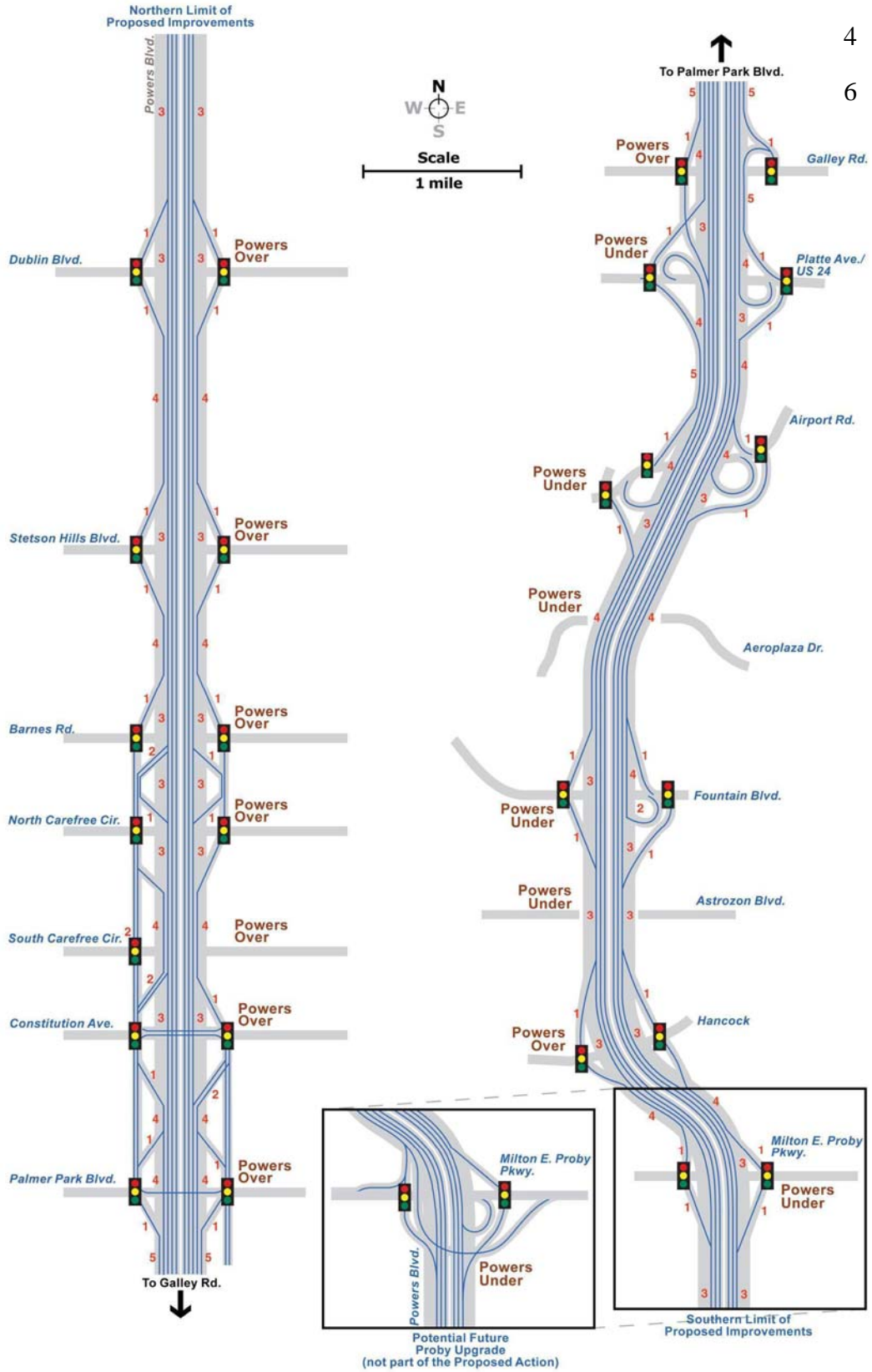
Proposed Action

- Build a southbound frontage road on the western side of Powers Boulevard from Barnes Road to Palmer Park Boulevard.
- Build a northbound frontage road on the eastern side of Powers Boulevard from Galley Road to Palmer Park Boulevard, and another from North Carefree Circle to Barnes Road.
- Build “Texas turnaround” ramps on Powers Boulevard at three locations near Constitution Avenue and Palmer Park Boulevard, enabling traffic to access either direction of Powers Boulevard without going through a signalized intersection.

No-Action Alternative

No new ramps or frontage roads are anticipated.

2 Exhibit 3-11. Number of Lanes and Interchange Configurations for Proposed Action



1 As part of the Proposed Action, all arterial streets that cross Powers Boulevard would be
 2 reconstructed as needed to accommodate on and off ramps and frontage roads, where
 3 provided.

4 Several cross-streets that currently have direct access from Powers Boulevard would no longer
 5 have direct access under the Proposed Action. These locations can be found in Exhibit 3-10,
 6 presented earlier. They include, from north to south:

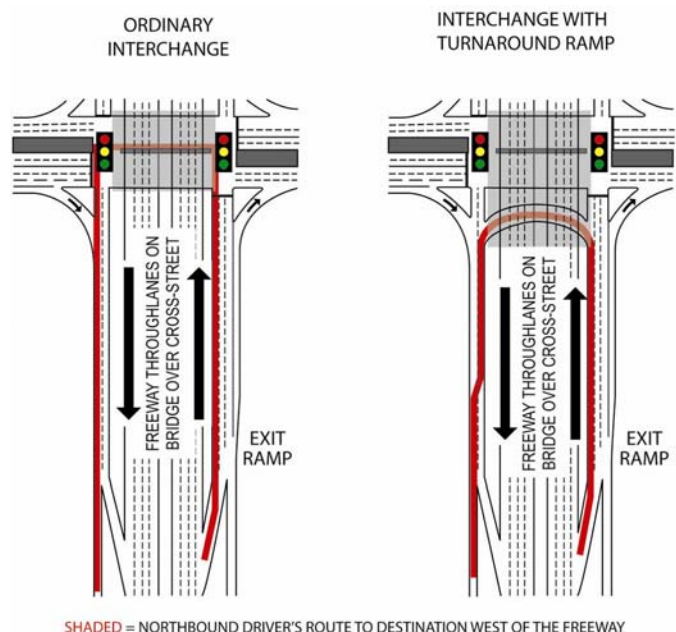
- 7 • South Carefree Circle (between North Carefree Circle and Constitution Avenue)
- 8 • Waynoka Road (south of Constitution Avenue, on the east side of Powers Boulevard)
- 9 • Victor Place (south of Constitution Avenue, on the west side of Powers Boulevard)
- 10 • Omaha Boulevard (south of Palmer Park Boulevard, on the east side of Powers
- 11 Boulevard)
- 12 • Aeroplaza Drive (between Airport Road and Fountain Boulevard)
- 13 • Astrozon Boulevard (between Fountain Boulevard and Hancock Expressway)
- 14 • Triple Crown Way (north of Hancock Expressway, on the west side of Powers
- 15 Boulevard)

16 As is indicated in Exhibit 3-10, it would still be possible to cross Powers Boulevard at South
 17 Carefree Circle, Aeroplaza Drive, and Astrozon Boulevard. For the other affected accesses,
 18 motorists would need to use frontage roads or other local streets to get to or from the nearest
 19 major cross-street with a Powers Boulevard interchange. Local access to frontage roads is
 20 proposed at various locations (e.g., Safeway shopping center north of Constitution Avenue,
 21 Victor Place businesses), and may be considered at other locations in final design if CDOT
 22 determines that it is feasible and prudent to do so.

24
 26 At three locations along the corridor,
 28 special free-flow “Texas turnaround”
 30 ramps would be provided. This type of
 32 ramp allows freeway motorists traveling in
 34 one direction to access a destination on
 36 the other side without having to make two
 38 left turns at the cross-street intersections,
 40 thus improving traffic flow at the
 42 interchange (see Exhibit 3-12). The
 44 turnaround ramps would be at-grade,
 46 beneath the freeway lanes that would
 48 cross over the intersection.

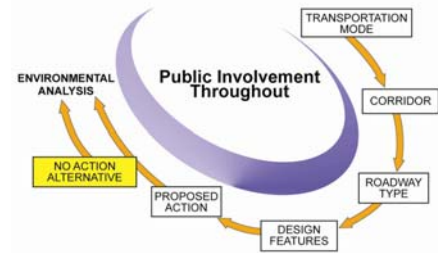
50
 52 Turnaround ramps would be provided in
 54 the few locations where there is sufficient
 56 demand for this movement. All three
 58 proposed turnaround ramps along Powers
 60 Boulevard would be between South
 62 Carefree Circle and Palmer Park
 64 Boulevard, in an area of dense retail and
 66 light industrial land use.

Exhibit 3-12. Ordinary Interchange and Interchange with Texas Turnaround Ramp

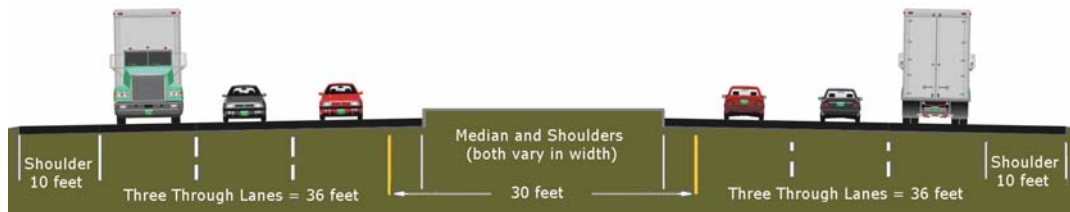


1 **3.4 DESCRIPTION OF THE NO-ACTION ALTERNATIVE**

3 In the No-Action Alternative, no capacity improvements
 5 would be made to address the purpose and need of this EA.
 7 Routine maintenance would occur to keep the existing lanes
 9 in operable condition. Exhibit 3-13 shows the lane
 11 configuration and right-of-way that exists today and that
 13 would remain under the No-Action Alternative for a six-lane
 15 section of the expressway. The No-Action Alternative
 17 provides a benchmark for comparison with the Proposed
 19 Action.



20 **Exhibit 3-13. Typical Cross Section of Powers Boulevard Existing 6-Lane Expressway**



21
22
23 **3.5 OTHER PLANNED PROJECTS IN THE AREA**

24 The PPACG 2035 RTP indicates that many of the roads that cross Powers Boulevard will be
 25 widened in the future. These include (from north to south):

- 26 • Dublin Boulevard – east of Powers Boulevard
- 27 • Stetson Hills Boulevard – east and west of Powers Boulevard
- 28 • Barnes Road - east and west of Powers Boulevard
- 29 • North Carefree Circle - east of Powers Boulevard
- 30 • Constitution Avenue – east of Powers Boulevard
- 31 • Platte Avenue (US 24) - east of Powers Boulevard

32
33 These widening projects may result in the need for some modifications at Powers Boulevard
 34 signalized intersections. These widening projects, with the exception of Constitution Avenue
 35 and US 24, are expected to be privately funded, and will occur when they are needed to serve
 36 the newly developing Banning-Lewis Ranch area. These modifications are not specifically
 37 considered to be part of the No-Action Alternative; instead, they are separate projects that will
 38 be undertaken whether or not Powers Boulevard capacity improvements are made.
 39
40
41
42
43

2 **3.6 BUILDING THE PROJECT**

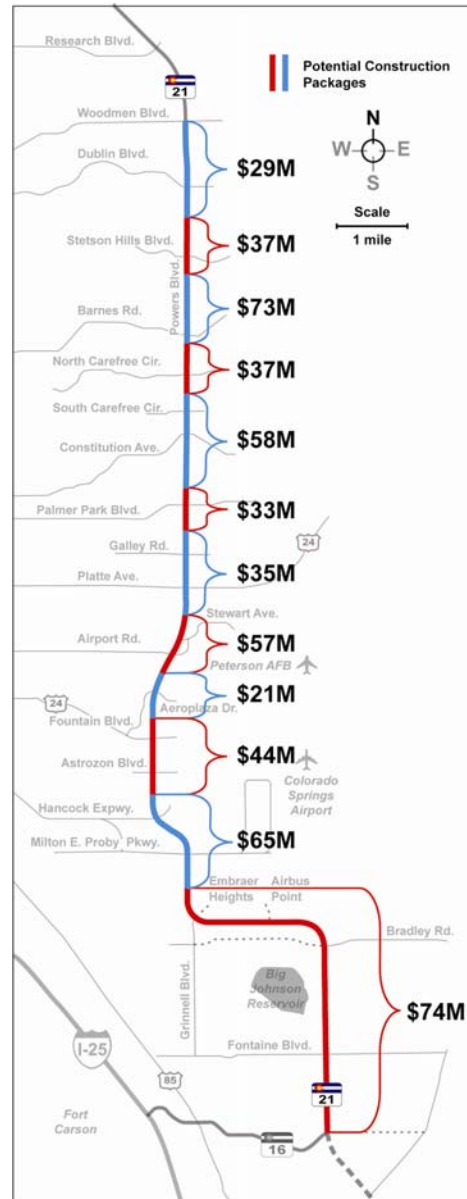
4 The estimated cost of the Proposed Action,
 6 including design, right-of-way and
 8 construction, is \$816 million in 2007 dollars,
 10 as determined in a detailed cost review
 12 session with FHWA in September 2008. This
 14 is a newer estimate than was available at the
 16 time that PPACG prepared the current, fiscally
 18 constrained 2035 RTP. PPACG programmed
 20 \$772 million for the corridor which was the
 22 cost estimate at time of plan adoption.

24
 26 The actual costs expended for the project in
 28 future dollars will depend greatly on the
 30 construction cost inflation rate as well as the
 32 timing of construction. For example, if the
 34 project is constructed between 2012 and
 36 2025, the sum of future costs in actual year of
 38 expenditure is estimated to be \$1.46 billion.
 40 Assuming a four percent inflation cost, each
 42 year of delay could increase total project
 44 expenditures by \$59 million.

46
 48 It is unlikely that the Proposed Action would
 50 be funded and constructed all as one action.
 52 Instead, funding would be received over many
 54 years, and therefore the project would be
 56 implemented in logical, constructible pieces.
 58 Based on drainage systems, vertical grades
 60 and other engineering considerations, the
 62 overall corridor was broken down into 12
 64 segments that could be implemented
 66 individually or in groups. The limits and
 68 estimated “most likely” cost of these segments
 70 are indicated in Exhibit 3-14. The segments
 72 are shaded in alternating colors only for the
 74 purpose of showing where one ends and
 76 another begins. Generally, each segment
 78 could be built within the time span of about
 80 three years or less.

82 Future funding availability will play a major role in determining when the overall project begins,
 83 as well as the priority and schedule under which the segments can be implemented. However,
 84 it is anticipated that a high-priority segment would be an interchange serving Airport Road. On
 85 the eastern side of this interchange, the road is called Stewart Avenue and is the newly
 86 improved, main entrance into Peterson Air Force Base, one of the region’s largest employers. A
 87 Powers Boulevard interchange at Airport Road/Stewart Avenue would alleviate congested
 88 commuter traffic to and from this base.

Exhibit 3-14. Potential Construction Segments and Costs for the Proposed Action



1 **CHAPTER 4 – AFFECTED ENVIRONMENT, IMPACTS, AND**
 2 **MITIGATION**

3
 4 **4.1 INTRODUCTION**

5
 6 The Proposed Action addresses projected future traffic congestion problems on Powers
 7 Boulevard as identified in Chapter 3. Chapter 4 describes the social, economic and
 8 environmental setting in which the Proposed Action would occur, and indicates how the
 9 Proposed Action would affect that setting. It also compares the effects of the Proposed Action
 10 with those of the No-Action Alternative. Exhibit 4-1 lists the topics addressed in this chapter,
 11 summarizes project impacts, and indicates the page numbers where the topics are presented.
 12 A more detailed table listing project impacts and mitigation is provided at the end of this chapter,
 13 in Section 4.11, which begins on page 4-86.

14
 15 Adverse effects to natural, community and cultural resources have been avoided and minimized
 16 through the Context Sensitive Solutions process described in Chapter 3 that was used to
 17 develop the Proposed Action. Measures that will be used to mitigate remaining adverse
 18 impacts have been identified and are discussed in this chapter.

19
 20 Currently, the project design has been developed only to a conceptual level intended to provide
 21 enough detail to assess likely project impacts. In the final design of each piece of the overall
 22 Proposed Action, CDOT will look for ways to further minimize adverse impacts.

23
 24
 25 **Exhibit 4-1. Topics Addressed and Summarized Impacts of the Proposed Action**

Section and Topic	Page	Summarized Impacts of the Proposed Action
4.2 Traffic Congestion and Access - Traffic Congestion - Direct access to/from Powers Boulevard - Access to/from corridor cross-streets	4-3	Traffic congestion would be greatly reduced. Grade-separated interchanges would be constructed at 11 major cross-streets. Direct access to Powers Boulevard from three cross-streets and four side-streets would be rerouted to other streets and, in some cases, frontage roads.
4.3 Social, Economic and Land Use - Neighborhoods - Businesses - Minority/low-income populations	4-9	Right-of-way impacts include displacement of 17 businesses and 47 residences, including one minority-owned business and five Hispanic households. No disproportional impacts to minority or low-income populations are foreseen.
4.4 Community Quality of Life - Traffic Noise - Air quality - Trails, parks, recreation, open space - Visual character	4-15	Traffic noise would increase for adjacent residential areas. Seven noise walls are proposed. No air quality concerns are anticipated. Negligible impacts to trails, parks, recreation. The freeway would be more visible than today's expressway due to elevation over cross-streets.

1 **Exhibit 4-1. Topics Addressed and Summarized Impacts of the Proposed Action**
 2 **(continued)**

Section and Topic	Page	Summarized Impacts of the Proposed Action
4.5 Construction Impacts - Traffic delays - Construction noise - Construction dust and emissions - Sediment and other water pollutants - Consumption of resources - Temporary effects to trails	4-32	Congestion would increase in construction zones, resulting in traffic delays. Construction of each grade-separated interchange could last for two years. Traffic flow and access to businesses would be maintained during construction. Construction noise and dust likely would be noticeable at nearby homes and businesses. Materials and fuels would be consumed by construction and wastes would be generated. Temporary detours or closure of trails may be required.
4.6 Water Resources - Water quality - Floodplains	4-38	Stormwater runoff volume would increase, but mitigation measures would likely improve water quality. Floodplains would be minimally affected, not diminishing their beneficial values.
4.7 Ecological Resources - Wetlands and grasslands - Wildlife and vegetation - Threatened/endangered species	4-45	260 acres of grassland would be converted to highway use. Total wetland impacts would be 0.12 acre. No effects to threatened, endangered or sensitive species are anticipated. Freeway would be more difficult for wildlife to cross.
4.8 Cultural Resources - Historic resources - Archaeological resources - Native American consultation	4-54	Only one historic resource (Rock Island Railroad) would be affected. Use of land from this site would result in no adverse effect to the resource. No effects to archaeological resources. Native Americans have not identified any concerns related to their interests.
4.9 Other Resources and Issues - Hazardous materials - Paleontological (fossil) resources - Energy	4-58	Three gas stations with underground storage tanks would be eliminated. Public safety would be protected during removal and disposal of contaminated materials. Construction near known fossil sites (e.g., clams) would be monitored. Improved traffic flow would reduce energy use.
4.10 Cumulative Effects - Landscape patterns - Water Quality - Air Quality - Transportation Patterns - Noise - Visual Character - Global Climate Change	4-66	The project would contribute to increased impervious surface in the watershed. It would contribute to ongoing loss of grassland habitat in the region. These effects would not diminish resource sustainability. The project would help to implement PPACG's adopted 2035 RTP. The project would have minimal effects to other aspects of regional sustainability, or to global climate change.

4.2 TRAFFIC CONGESTION AND ACCESS

Improved traffic flow along Powers Boulevard is the desired outcome of the Proposed Action and is the primary beneficial impact expected from project implementation. Powers Boulevard is not an isolated roadway but instead functions as part of a larger roadway network. Therefore modifying or reconstructing the existing expressway would also affect the use of connecting roadways.

The following discussion addresses not only traffic congestion but also changes to access. Additional detail on these matters is provided in Appendix B, the Traffic Analysis Report included on the compact disc that accompanies this EA.

Existing Conditions

Existing traffic conditions were described earlier in Chapter 1, including average weekday traffic volumes on Powers Boulevard, congestion levels at intersections, and corridor peak-period travel time. Exhibit 1-5 indicates that the Airport Road intersection is currently congested. Airport Road serves as an important western entrance to Peterson Air Force Base, and on the base it becomes Stewart Avenue, an important base thoroughfare.

Exhibit 1-5 also indicates that most intersections between Barnes Road and Galley Road were on the verge of becoming congested several years ago. This six-lane portion of Powers Boulevard carries the highest traffic volumes of the entire corridor, and has experienced rapid development since the time that the current conditions were analyzed. Thus Exhibit 1-5 may understate today's level of congestion for these intersections.

There is a lack of parallel, north-south streets in the vicinity of Powers Boulevard. However, north of Constitution Avenue, Powers Boulevard is flanked by Rio Vista Drive to the west and by Tutt Boulevard to the east. Rio Vista Drive goes through residential neighborhoods, while Tutt Boulevard serves commercial areas to the east. Both streets receive spillover, "cut-through" traffic from Powers Boulevard when the expressway is congested, but this is particularly a concern along the residential street, Rio Vista Drive.

Access to Powers Boulevard is limited to intersecting streets only. There are no driveways on Powers Boulevard. All cross-streets have signalized intersections, but the following side-streets have unsignalized access:

- Waynoka Road intersects Powers Boulevard from the east only, providing "right-in, right-out" access to an industrial area south of Constitution Avenue.
- Victor Place intersects Powers Boulevard from the west only, providing "right-in, right-out" access to an industrial and commercial area south of Constitution Avenue; this area has no other outlets to the city street system.
- Omaha Boulevard intersects Powers Boulevard from the east only, providing access to an industrial and commercial area south of Palmer Park Boulevard; although left turns to and from southbound Powers Boulevard are permitted at Omaha Boulevard, the lack of a traffic signal at this location makes these maneuvers challenging and risky.
- Triple Crown Way intersects Powers Boulevard from the west only, providing "right-in, right out" access to the Canterbury Park community.

- 1 • South of the Colorado Springs Airport, unsignalized intersections at Grinnell Boulevard,
2 Airbus Point, and Bradley Road are expected to have traffic signals in the future, when
3 warranted, and are envisioned to become grade-separated interchanges in the long term.
- 4 • South of Fontaine Boulevard, Roanfield Lane intersects Powers Boulevard from the east
5 only, providing access to a small neighborhood.
- 6 • East Mesa Ridge Parkway intersects Powers Boulevard from the east only; currently
7 unsignalized, this location will have a traffic signal in the future and may become a grade-
8 separated connection to a future extension of Powers Boulevard south of State Highway
9 16.

10
11 Impacts of the No-Action Alternative

12 With the No-Action Alternative, Powers Boulevard would receive routine maintenance but no
13 increased capacity. Chapter 1 indicated that as a corridor-wide average, traffic volumes are
14 projected to increase 88% by 2035. This would result in congested peak period congestion at
15 all Powers Boulevard signalized intersections from Dublin Boulevard to Fountain Boulevard,
16 inclusive, and at Milton E. Proby Parkway. South of Milton E. Proby Parkway, traffic volumes
17 would not increase enough to result in congested conditions. Overall corridor travel time would
18 nearly double, increasing from 24 minutes to 43 minutes for the 17-mile trip.

19
20 Increased traffic congestion on Powers Boulevard in the area between North Carefree Circle
21 and Constitution Avenue would likely worsen cut-through traffic on Rio Vista Drive. This would
22 adversely affect mobility and safety for residents of that street and its adjacent neighbor-hoods.
23 Increased traffic volumes on Powers Boulevard also would make it more difficult to get onto
24 Powers Boulevard from intersecting streets, and especially from those that do not have
25 signalized intersections.

26
27 Impacts of the Proposed Action

28 As explained in Chapter 3, Alternatives, the Proposed Action meets the project's purpose and
29 need. It would accommodate year 2035 travel volumes while improving peak-period travel times
30 and travel speeds in comparison with current conditions. It would not only reduce congestion
31 compared with future No-Action conditions, but also in comparison with current conditions.

32
33 Exhibit 4-2 compares current and projected 2035 traffic volumes for each segment of the
34 corridor, in thousands of vehicles per day. The highest, darkest bars in the graph represent
35 volumes for the Proposed Action, which average 20% more than for the No-Action Alternative.
36 The highest average weekday traffic, 124,000 vehicles per day, would occur south of North
37 Carefree Circle near the First and Main commercial
38 center. This is just over double the current amount
39 of traffic for the same location. Traffic volumes
40 would be lowest where they are lowest today, at the
41 southern end of the corridor near State Highway 16.

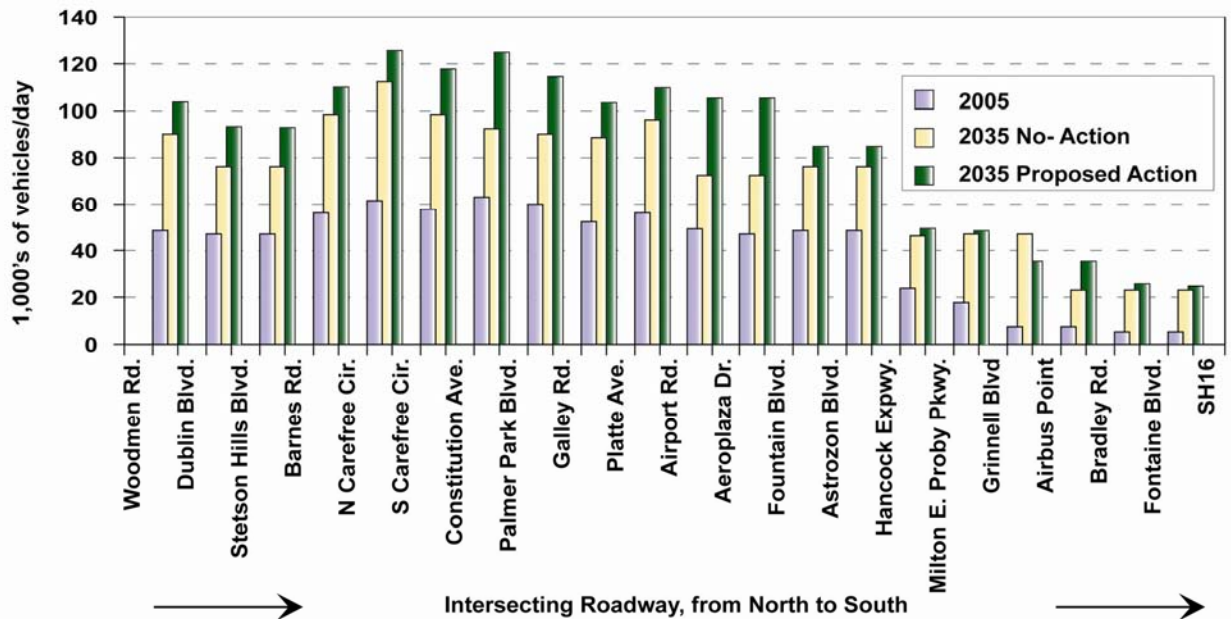
42
43
44
45
46
47
48
49 Although the Proposed Action would result in more
50 traffic on Powers Boulevard than the No-Action
51 Alternative, upgrading the existing expressway to a
52 freeway would reduce congestion at the cross-
53 streets along the corridor. At the various grade-

MORE TRAFFIC BUT BETTER TRAFFIC FLOW

With the Proposed Action, the Powers Boulevard freeway would carry more traffic than the No-Action expressway alternative, but would do so with much better traffic flow and minimal congestion delay.

1 separated interchanges, east-west traffic would no longer have to wait for the large volume of
 2 north-south traffic to get through signalized intersections.

3
 4 **Exhibit 4-2. Baseline and Projected Traffic Volumes on Powers Boulevard**
 5



6
 7
 8 Exhibit 4-3, on the following page, compares congestion levels for the current conditions, No-
 9 Action Alternative and the Proposed Action. The congestion levels illustrated in the exhibit were
 10 explained earlier, on page 1-5 of this EA. All 12 intersections that would be congested under
 11 the No-Action Alternative would become uncongested under the Proposed Action.

12
 13 The only portion of the corridor where traffic flow would not improve is the southern portion, from
 14 Milton E. Proby Parkway to State Highway 16, where no capacity improvement is included in the
 15 Proposed Action.

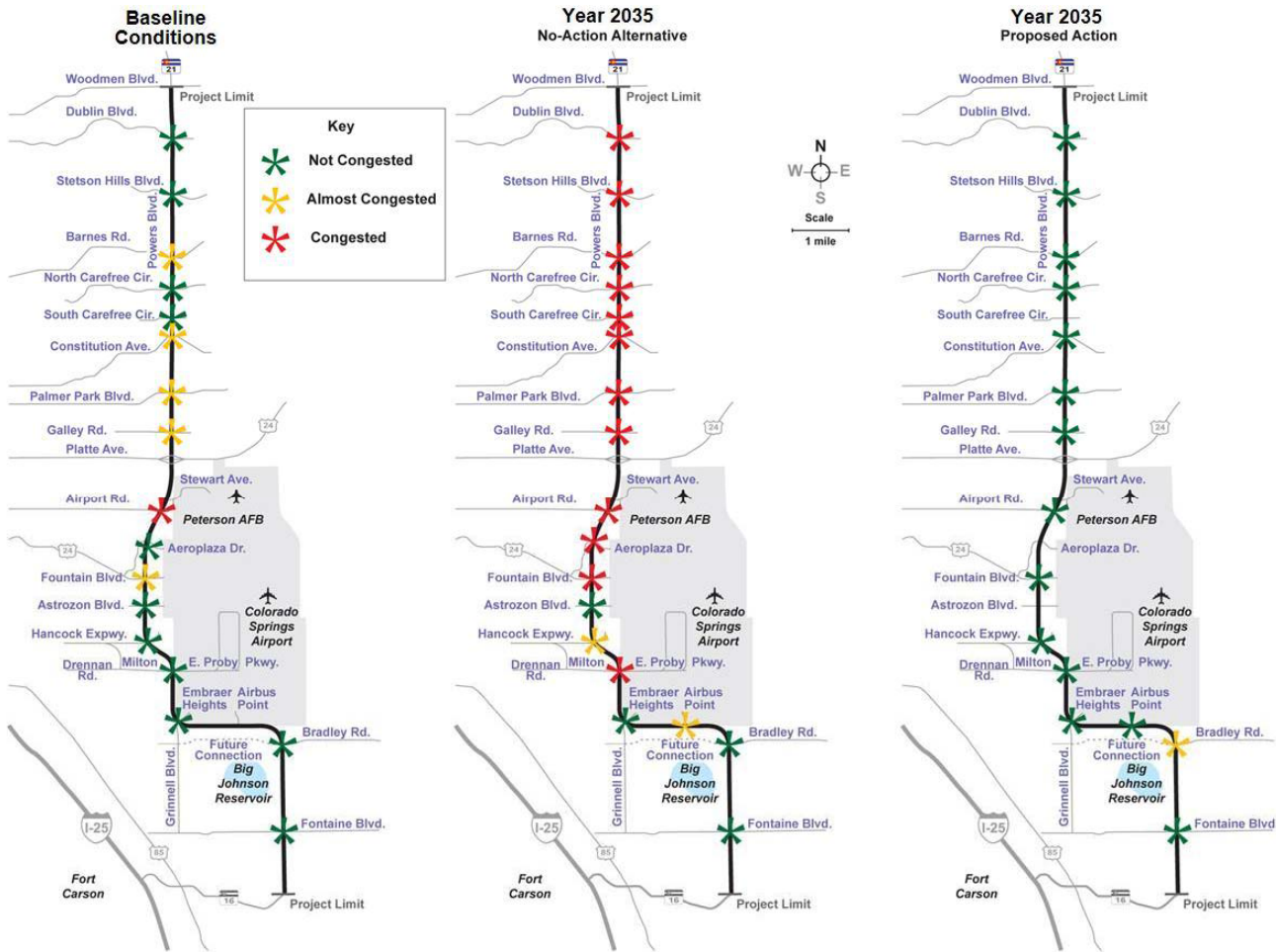
16
 17 The Proposed Action would improve traffic flow for Powers Boulevard users, not only in
 18 comparison to the No-Action Alternative, but also compared with current conditions. Exhibit 4-3
 19 shows that the travel time needed to traverse the 17-mile corridor from Woodmen Road to State
 20 Highway 16 would be 17 minutes with the Proposed Action, which equates to an average travel
 21 speed of 60 miles per hour.

22
 23 The Proposed Action would decrease congestion at the intersections that presently generate
 24 cut-through traffic on Rio Vista Drive. This would reduce the incentive to make cut-through trips
 25 on Rio Vista Drive. Additionally, the planned southbound frontage road along Powers
 26 Boulevard would provide a new, more appropriate route for some of this traffic.

27
 28 The Proposed Action would result in access modifications affecting five roads that currently
 29 have unsignalized access to Powers Boulevard and three cross-streets that have signalized

1 access. It would also modify access from various cross-streets to nearby commercial
 2 properties.

3
 4 **Exhibit 4-3. Baseline and Future Congestion Severity by Intersection, and Corridor
 5 Travel Time in Minutes**
 6



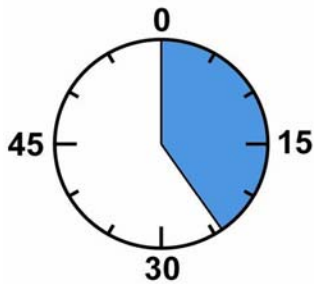
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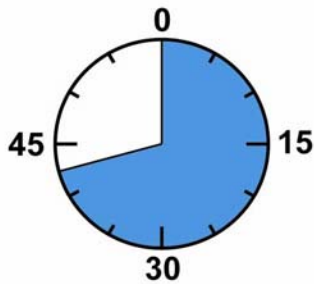
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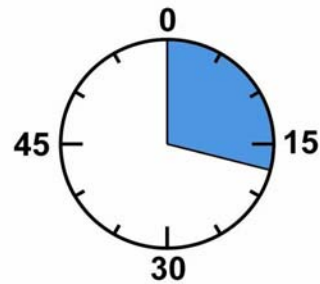
17



Baseline



**Year 2035
 No-Action**



**Year 2035
 Proposed Action**

1 Exhibit 4-4 lists the proposed modifications to streets that currently have direct access to
 2 Powers Boulevard.

3
 4 **Exhibit 4-4. Proposed Changes Affecting Direct Access to Powers Boulevard**

Location	West of Powers Boulevard	East of Powers Boulevard
South Carefree Circle (cross-street)	There would no longer be direct access from South Carefree Circle to Powers Boulevard. A southbound frontage road would be constructed to carry traffic between the Powers Boulevard interchanges at North Carefree Circle and Constitution Avenue.	There would no longer be direct access from South Carefree Circle to Powers Boulevard. Existing circulation roads in the First and Main shopping area and Tutt Boulevard would carry traffic to North Carefree Circle and to Constitution Avenue, where interchanges would provide access to the freeway. However, the potential for a northbound off-ramp may be further explored in final design.
Victor Place and Waynoka Road (side-streets)	Victor Place would no longer connect directly to Powers Boulevard but instead to a southbound frontage road with access to the freeway from the Palmer Park Boulevard interchange. A southbound “Texas turnaround” ramp at Palmer Park Boulevard would enable traffic from Victor Place to cross the freeway without having to go through the Palmer Park Boulevard interchange.	Waynoka Road would no longer connect directly to Powers Boulevard but instead to a northbound frontage road. A northbound “Texas turnaround” ramp at Constitution Avenue would enable traffic from Waynoka Road to cross the freeway without having to go through the Constitution Avenue interchange.
Omaha Boulevard (side-street)	No direct access to Powers Boulevard is available today and none would be provided between the freeway interchanges at Palmer Park Boulevard and Galley Road.	Omaha Boulevard would no longer connect directly to Powers Boulevard, but instead to a northbound frontage road providing access via the Palmer Park Boulevard interchange.
Aeroplaza Drive (cross-street)	There would no longer be direct access at Aeroplaza Drive. Instead, access to Powers Boulevard would be available at the proposed Fountain Boulevard interchange.	There would no longer be direct access at Aeroplaza Drive. Instead, Powers Boulevard would be reached by an Aviation Way extension to the Airport Road interchange, or by using the Fountain Boulevard interchange.
Triple Crown Way (side-street)	The existing, temporary access at Triple Crown Way would be eliminated. All traffic into or out of the Canterbury Park community would be via the main entrance, Silver Hawk Avenue. Access to Powers Boulevard would be available at the Hancock Expressway interchange.	No direct access to Powers Boulevard exists today and none would be provided between the freeway interchanges at Hancock/Zeppelin and Fountain Boulevard.

1 Exhibit 4-5 lists side-street access modifications that do not involve existing direct access to
 2 Powers Boulevard. Most of these changes are proposed in order to provide a safe separation
 3 distance between interchange ramps and the first north-south cross-street.
 4

5 **Exhibit 4-5. Proposed Access Modifications Affecting Nearby Streets**

Location	West of Powers Boulevard	East of Powers Boulevard
North of Palmer Park Boulevard	No changes west of the freeway	Waynoka Road adjacent to the golf course would be relocated slightly to the west to match up with a new Waynoka Road extension across Palmer Park Boulevard to the south, discussed immediately below.
South of Palmer Park Boulevard	No changes west of the freeway	Access to the K-Mart and associated shopping center would be re-routed to the eastern side of the property, behind the stores, onto a new southern extension of Waynoka Drive that would connect Palmer Park Boulevard and Omaha Boulevard.
North of Galley Road	No changes west of the freeway	Paonia Street would be extended northward from the Post Office for about 0.25 mile to connect with Paonia Street that currently dead-ends south of Omaha Boulevard.
South of Galley Road	No changes west of the freeway	Conrad Street, which provides access to Powers Frontage Road businesses, would be converted to right-in, right-out only. A new east-west road is proposed from Paonia Street, just south of the Post Office, to replace access for these businesses. A new north-south road from Galley Road to the new east-west road was originally proposed as well, but the Fed-Ex facility built on Conrad Street in 2006 now sits where that new road would have been built.
South of Airport Road	No changes west of the freeway	Access to Aviation Way would be relocated to Industrial Drive, slightly to the east. The existing intersection at Aviation/Industrial would become a small roundabout and a new extension of Aviation Way southward across East Fork Sand Creek would create a continuous roadway connection to Aeroplaza Drive and beyond.

6
 7 The result of these access changes is that, for some properties along the corridor, a different
 8 route would be needed to get onto Powers Boulevard. For other properties, a slightly modified
 9 route would be used in order to reach the nearest east-west arterial street that intersects with
 10 Powers Boulevard. No property would be deprived of reasonable access to the transportation
 11 network.
 12

1 Since each interchange with access to Powers Boulevard generally would be located about one
2 mile apart from the next, a property halfway between interchanges (i.e., worst case) would be
3 no more than a half mile north or south of the nearest access to the freeway.
4

5 Mitigation for Impacts to the Roadway

6 Frontage roads and “Texas turnaround” ramps that are described above as part of the Proposed
7 Action would provide indirect access to Powers Boulevard as mitigation for loss of direct access
8 to a cross-street or side-street in some locations. In consultation with affected property owners,
9 this mitigation was determined to be feasible and appropriate for the busiest portions of the
10 corridor, generally between Palmer Park Boulevard and North Carefree Circle.
11

12 **4.3 SOCIAL, ECONOMIC AND LAND USE CONSIDERATIONS**

14
16 The Powers Boulevard corridor is highly developed
18 for the 11 miles between Woodmen Road and Milton
20 E. Proby Parkway, where the Proposed Action calls
22 for changes to the existing expressway. The corridor
24 is largely undeveloped for the six southernmost miles
26 of the corridor from Milton E. Proby Parkway to State
28 Highway 16, where right-of-way preservation is
30 proposed. Thus the Proposed Action would generally
32 have greater effects on the built environment, rather
34 than on the natural environment. This section
36 focuses on social, economic and land use effects on
38 the built environment, including acquisition of private
40 property.
42

URBAN CORRIDOR, URBAN IMPACTS

Since the Powers Boulevard corridor is already highly developed, the Proposed Action will affect primarily the built environment, rather than the natural environment. Land acquisition, access changes, traffic delays during construction, traffic noise, and water quality are key considerations.

43 Existing Conditions

44 Exhibits presented in Chapter 2 illustrate the types of land uses along the Powers Boulevard
45 corridor and indicate existing and projected amounts of population and employment found
46 between Powers Boulevard and the next major north-south thoroughfares, Academy Boulevard
47 to the west and Marksheffel Road to the east. The population along this corridor is projected by
48 PPACG to grow from 172,000 in 2005 to 263,000 in 2035, an increase of approximately 90,000
49 residents. About two-thirds of this growth will occur in the northeastern subarea, i.e., north of
50 US Highway 24 and east of Powers Boulevard.
51

52 North of US 24, much of the land adjacent to the Powers Boulevard expressway is developed or
53 zoned commercial but there are a few limited areas where the adjacent land is residential. No
54 adjacent land has direct access to Powers Boulevard, but instead all access to these properties
55 is provided by the local street system.
56

57 As is allowed under Federal law, some purchases of adjacent land needed for highway right-of-
58 way have already occurred. CDOT has cooperated with the City of Colorado Springs and the
59 Pikes Peak Regional Transportation Authority to acquire about 36 acres of land on a total of 13
60 parcels. One of these acquisitions was a residential parcel, resulting in relocation of a
61 household.
62

1 The following existing conditions were identified that could require special consideration:

- 2 • Two cellular phone towers are located on private land west of Powers Boulevard,
3 between Dublin Boulevard and Stetson Hills Boulevard.
- 4 • A Federal Aviation Administration wind shear tower is located just north of Powers
5 Boulevard in the vicinity of the planned Airbus Point interchange.
- 6 • Two parcels of land adjacent to Powers Boulevard are owned by the Colorado State
7 Land Board, which introduces the need for interagency consultation if this property is
8 needed for the highway project.
- 9 • Some property boundary issues remain unresolved from past property transactions
10 between CDOT and the City of Colorado Springs, especially in the area south of Platte
11 Avenue near the Colorado Springs Airport.

12
13 Social and Economic Impacts with the No-Action Alternative

14 The City of Colorado Springs Comprehensive Plan, consistent with the PPACG 2035 RTP,
15 reflects Powers Boulevard as a freeway. In the development of these regional plans, other
16 transportation and land use scenarios were considered. Taking a wide variety of community
17 values and infrastructure tradeoffs into account, elected officials approved the transportation
18 network and associated land use patterns that were judged to be in the best interest of the
19 community as a whole. The No-Action Alternative would be inconsistent with these approved
20 plans.

21
22 With the No-Action Alternative, regional accessibility to and from this corridor would be
23 constrained by the expressway's existing capacity. As discussed in Chapter 1, increased
24 congestion would make this corridor less accessible than it is today, giving motorists a travel
25 time incentive to live, work, or shop elsewhere. This would have the effect of shrinking the
26 existing geographic area, or "travel-shed", from which potential customers would be able to
27 travel conveniently to the commercial areas along Powers Boulevard.

28
29 Increased traffic congestion would also make Powers Boulevard a less convenient route than it
30 is today and less reliable for travelers accessing the Colorado Springs Airport, its associated
31 business park, and other employment centers such as Peterson Air Force Base. Since most air
32 travelers and morning commuters usually try to minimize their risk of missing a flight or being
33 late to work, some might choose another route to avoid heavy congestion and uncertain delays,
34 even if their alternative route is longer or more circuitous. These drivers would likely divert to
35 neighborhood streets or other routes spreading congestion to those areas and increasing
36 vehicle miles of travel within the corridor.

37
38 In contrast with the Proposed Action, discussed below, the No-Action Alternative would not
39 require acquisition of any adjacent land for highway right-of-way, and would also not require
40 relocation of any homes or businesses. It also would not alter access to any connecting
41 roadways and would not alter visibility to adjacent land uses from the expressway.

42
43 Social and Economic Impacts with the Proposed Action

44 In contrast with the No-Action Alternative, the Proposed Action would be consistent with
45 adopted regional transportation and land use plans. Therefore the Proposed Action would not
46 alter planned land use.

1 the parcel so much that the property would become unusable, and the entire property would
 2 have to be acquired. In such cases, Federal and State law allow for not only the purchase of
 3 the property but also payment of reasonable household or business relocation expenses.

4
 5 In total, the Proposed Action would require the relocation of 47 households and the
 6 displacement of 17 businesses. The location and types of these affected land uses are
 7 summarized in Exhibit 4-7. The affected properties are listed in order from north to south. The
 8 total number of relocations needed is fairly small, considering that the Proposed Action is
 9 approximately 17 miles long, with potential impacts on each side, and also considering the need
 10 for modifications of intersecting east-west streets.

11 **Exhibit 4-7. Residential and Business Relocations Needed for Right-of-Way Acquisition**

Location	Type of Resource Affected
North of Barnes Road, West of Powers Boulevard	One car wash
North of Barnes Road, east of Powers Boulevard	One mattress store One telephone service store One packing/shipping/copying store One barbecue restaurant
North of North Carefree Circle, West of Powers Boulevard	One gasoline station/convenience store
South of North Carefree Circle, West of Powers Boulevard	23 residential duplex structures (46 households)
North of Palmer Park Boulevard, east of Powers Boulevard	One buffet-style restaurant One fast-food hamburger restaurant
South of Palmer Park Boulevard, east of Powers Boulevard	One pizza restaurant One Mexican food restaurant Two gasoline station/convenience stores One muffler/brake repair shop One auto parts shop One tire store One used automobile dealership One auto/recreational vehicle dealership
North of Hancock Expressway, west of Powers Boulevard	One mobile home in the Canterbury Mobile Home Community

12
 13 Based on personal interviews conducted with 11 of these businesses, it is estimated that the 17
 14 affected businesses employ a total of approximately 375 workers. The businesses, one minority
 15 owned, serve a broad-based clientele and are not geared toward any specific minority customer
 16 base (as might an Asian market for example). Nearby residents and businesses do not appear
 17 to depend on these businesses as key suppliers. For example, gasoline stations and

1 restaurants would be displaced, but there are other gasoline stations and restaurants in the area
2 that offer similar goods and services.

4
6 The businesses listed in Exhibit 4-7 do not provide
8 unusual products or services that would make it
10 difficult from them to relocate. Many would likely get
12 reestablished somewhere in the Powers Boulevard
14 corridor. Given that there is existing demand that
16 these businesses serve, and the fact that an
18 additional 90,000 residents are expected to move to
20 the area by 2035, the reestablishment of these
22 businesses in other nearby locations would likely
24 result in minimal effects to the local economy. After
26 relocation, sales tax and property tax revenues
28 associated with these businesses likely would
30 continue to be collected by either the City of
32 Colorado Springs or El Paso County, possibly with
34 some shifting in revenue between the two.

**MINIMAL DIRECT OR INDIRECT
SOCIAL EFFECTS ANTICIPATED**

The relocation of 47 residences and displacement of 17 businesses is a relatively small direct impact for a project of this size (11 miles of freeway with 11 new grade-separated interchanges). These displacements would result in minimal indirect effects on neighborhood cohesion, school enrollment, local tax districts, and housing availability, and would not disproportionately affect minority or low-income populations.

35
36 Twelve of the affected businesses on the east side of Powers Boulevard are located within the
37 Cimarron Hills Fire District. Collectively, their assessed value in 2009 is nearly \$2.5 million,
38 representing 1.9 percent of the district's total assessed value of \$132 million. Loss of some or
39 all of these businesses from the District would require shifting of some property tax burden to
40 other properties within the District. These businesses, as well as the other five located on the
41 west of Powers Boulevard, are also within other, much larger tax districts, such as Falcon
42 School District 49. The majority of these businesses are likely to remain within these districts.
43 For those that do not, the loss of tax revenue to these districts likely would be extremely small in
44 comparison to the total tax revenues they receive.

45 The Proposed Action would also need to acquire 23 duplexes (46 households) in the 5800 to
46 6200 blocks of Gunshot Pass Drive. These duplexes are all within Colorado Springs School
47 District 11, a large district that includes much of the central portion of Colorado Springs. The
48 property taxes contributed to this district by these duplexes are very small when compared to
49 the total property tax base of District 11. No homes would be acquired from Falcon School
50 District 49, which encompasses the area east of Powers Boulevard.

51
52 Regarding the potential loss of students to any one school in District 11, the Proposed Action
53 would have a minimal effect. The duplexes on Gunshot Pass Drive are small units that are not
54 designed to accommodate large families. Based on personal interviews conducted with owners
55 and tenants on Gunshot Pass Drive, not many (e.g., 20 or fewer) school-age children live in
56 these 11 one-bedroom and 35 two-bedroom units.

57
58 The schools serving this subdivision are Anna M. Rudy Elementary School, Sabin Middle
59 School, and Mitchell High School, which have utilization rates of 93%, 77% and 54%,
60 respectively. Although attendance at these public schools could decline slightly as a result of
61 these residential relocations, the loss of a total of about 20 students, divided up among these
62 three schools, is not likely to affect their overall utilization rates, including Mitchell High School
63 which had 1,084 students enrolled in 2008.

1 Although the duplex units on Gunshot Pass Drive are relatively small (see Exhibit 4-8), the area
2 is not considered low-income. There is no government-subsidized Section 8 housing in the
4 neighborhood.

6
8 Also, the affected Census block group that includes Gunshot Pass Drive does
10 that includes Gunshot Pass Drive does not have a minority population that
12 not have a minority population that differs from surrounding Census
14 differs from surrounding Census blocks. Five of the affected
16 blocks. Five of the affected households, or about 11%, are known
18 households, or about 11%, are known to be minority-owned. In personal
20 to be minority-owned. In personal interviews conducted with residents on
22 interviews conducted with residents on this street, no resident indicated being
24 this street, no resident indicated being dependent on any specific nearby
26 dependent on any specific nearby community services. Based on review
28 community services. Based on review of Census data and interviews with
30 of Census data and interviews with households and businesses that would
32 households and businesses that would be displaced, there would be no
34 be displaced, there would be no disproportionate impact to minority or
36 disproportionate impact to minority or low-income populations. Additional
38 low-income populations. Additional information regarding minority and low-income populations in the corridor is provided in
39 information regarding minority and low-income populations in the corridor is provided in
40 Appendix F, Environmental Justice Technical Report.

Exhibit 4-8. Example of Duplex Residence on Gunshot Pass Drive



41
42 As of mid-2009 a sufficient amount of comparably sized and priced housing is available to
43 accommodate any households displaced by the Proposed Action. However, implementation of
44 the Proposed Action may be a number of years away. Since market conditions change over
45 time, current conditions may not reflect future housing availability.

46
47 Implementing the Proposed Action would generate jobs for highway construction workers. The
48 direct and indirect effects of this would be the equivalent of 600 additional jobs in the region for
49 ten years, based on the expected influx of State and Federal highway funds for the project.

50
51 In addition to vacant land acquisition, relocation of households and displacement of businesses,
52 the Proposed Action would have the following right-of-way impacts that require special
53 consideration:

- 54 • Two cellular telephone towers would need to be relocated; they are on the west side of
55 Powers Boulevard between Dublin Boulevard and Stetson Hills Boulevard.
- 56 • A Federal Aviation Administration wind shear tower south of the Colorado Springs Airport
57 would need to be replaced on a new site.
- 58 • Land owned by the Colorado State Land Board would be needed for right-of-way in two
59 locations: south of Constitution Avenue, adjacent to the former Rock Island Railroad; and
60 along the eastern side of Powers Boulevard from Bradley Road to Fontaine Boulevard.
- 61 • Property boundary issues from previous land transactions need to be resolved between
62 CDOT and the City of Colorado Springs.

63
64 Further detail regarding land acquisition needed for the Proposed Action is provided in Appendix
65 G, Right-of-Way Technical Report.

1 Mitigation of Social and Economic Impacts

2 In compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies
3 Act of 1970 (as amended), fair compensation will be made to property owners for all property
4 that needs to be acquired in total or in part. In accordance with the same act, any eligible owner
5 or tenant will be provided assistance in relocating their home or business at the time of
6 displacement. Benefits under the Uniform Act, to which each eligible owner or tenant would be
7 entitled (including early or hardship acquisition), will be determined on an individual basis and
8 explained to the affected persons in detail. If any affected owner or tenant is not proficient in
9 English, a qualified translator will be brought in to ensure the details are understood. This is
10 likely to be necessary in very few instances.

11
12 To minimize effects to local businesses, CDOT will maintain traffic on the existing number of
13 through lanes through the project area, and will also keep access to local businesses open
14 during construction.

15
16 CDOT will also undertake the following measures to address right-of-way impacts that require
17 special consideration:

- 18 • Conduct early investigation of property rights issue regarding the needed relocation of
19 two cell phone towers located between Dublin Boulevard and Stetson Hills Boulevard,
20 since this is expected to time to find alternative sites.
- 21 • Conduct early investigation of engineering and real estate issues pertaining to the FAA
22 wind shear tower that will need to be replaced on a new site.
- 23 • Maintain communication with the Colorado State Land Board to ensure the future
24 availability of easements that will be needed south of Constitution Avenue, and between
25 Bradley Road and Fontaine Boulevard.
- 26 • Resolve property boundary issues remaining from previous land transactions between
27 CDOT and the City of Colorado Springs with regard to Powers Boulevard right-of-way.

28
29 **4.4 COMMUNITY QUALITY OF LIFE**

30
31 This section discusses the following factors that affect the quality of life in an urban setting:
32 traffic noise; air quality; parks, trails, recreation and open space; and visual character.

33
34 **TRAFFIC NOISE**

35
36 Introduction

37 Traffic noise is typically a concern for residents living adjacent to a high-speed, heavily traveled
38 roadway. It is a concern today along the more heavily traveled portions of Powers Boulevard,
39 where typical weekday traffic volumes are about 60,000 vehicles per day. In the future, as
40 Powers Boulevard traffic volumes increase, traffic noise will increase as well. Traffic noise
41 along the corridor is an issue today and will worsen in the future.

2 FHWA and CDOT procedures determine under
4 what circumstances traffic noise may warrant
6 mitigation such as a noise wall (see example,
8 Exhibit 4-9) or a berm. Appendix H, Noise
10 Technical Report, provides a detailed explanation
12 of the procedures and analysis used for this
14 Powers Boulevard EA.

16
18 As part of the analysis, noise measurements were
20 taken at 17 locations along the corridor by acoustic
22 engineers. Based on these measurements, the
24 FHWA Traffic Noise Model was used to predict
26 existing and future noise levels along the entire
28 corridor for both the No-Action Alternative and the
30 Proposed Action.

32
34 State noise guidelines measure these noise levels
36 in units referred to as decibels and have set limits
38 for determining what noise levels are considered
40 excessive. According to the guidelines, a level of
42 66 decibels or more interferes with activity at
43 outdoor areas such as parks, schools and residences. Protecting outdoor use of property is the
44 focus of the State noise guidelines. As a general rule, two people six feet apart should be able
45 to hold an outdoor conversation in a normal voice, not having to shout to be heard.

46
47 Based on modeling of future conditions, if future noise levels are predicted to exceed 66
48 decibels, or if future noise levels would increase by 10 or more decibels compared with current
49 noise levels, the change is substantial enough for CDOT to explore mitigation such as noise
50 walls or berms.

51
52 Traffic noise tends to be loudest when there is a large amount of traffic flowing at a high speed.
53 This is normally not during the heaviest, rush-hour traffic, when congestion reduces travel
54 speed. It is also not at the hour of highest speed, which is typically in the middle of the night
55 when traffic volumes are lowest. Loudest traffic noise can generally be expected just before
56 and after rush hour, when volumes are still heavy but speed is not diminished.

57
58 Noise levels adjacent to Powers Boulevard are affected not only by traffic on the expressway,
59 but also from other noise sources in this heavily developed urban setting. For example, other
60 sources include traffic on neighborhood streets, lawnmowers and leaf blowers, barking dogs,
61 and aircraft operations at Peterson Air Force Base and the Colorado Springs Airport. Because
62 background sources are intermittent and highly variable, they cannot be predicted.

63 Existing Noise Levels

64
65 Based on field measurements, existing traffic noise levels were modeled at 100 potentially
66 noise-sensitive locations adjacent to the expressway. No traffic noise concerns were identified
67 affecting commercial areas or parks and recreation areas. However, existing noise levels of 66
68 decibels or more were identified for the homes closest to Powers Boulevard in the following
69 residential areas, listed in geographical order from north to south: Jennifer Lane; Gunshot Pass

Exhibit 4-9. Example of CDOT Noise Wall in Colorado Springs



1 Drive; Lantana Drive; and The Meadows Community and Canterbury Park Community. Exhibit
 2 4-11, which appears later in this section, depicts these locations as sites #4, 6, 7, and 13. At a
 3 few other locations along the corridor, traffic noise levels were approaching, but had not yet
 4 reached, noise levels that would interfere with outdoor use of property.

5
 6 Noise Impacts with the No-Action Alternative

7 With the No-Action Alternative, traffic volumes on Powers Boulevard would nearly double by
 8 2035. This would extend the duration of weekday rush hours, causing the noisiest traffic hours
 9 (before and after the peak) to become earlier, later, and possibly longer than they are today.
 10 At nine residential locations, plus one privately-owned football field and one planned recreation
 11 area, traffic noise would reach the level that would hinder outdoor use. These locations are
 12 listed in Exhibit 4-10.

13
 14 **Exhibit 4-10. Locations that Would Experience Noise Impacts with the No-Action Alternative**

Name	Location	Type of Resource Affected
Sundown Villas and Summerfield area on Templeton Gap Road	West side of Powers, south of Dublin Boulevard	Numerous townhomes and single-family residences
Appaloosa Drive	West side of Powers, north of Stetson Hills	2 single-family residences
Jennifer Lane residences*	West of Powers, north side of Barnes Road	Numerous single-family residences
Gunshot Pass Drive*	West side of Powers, south of North Carefree Drive	Numerous duplex residences
Lantana Drive*	West side of Powers, south of Constitution Avenue	5 single-family residences
Troy Hill Road	West side of Powers, north of Airport Road	One single-family residence
WCM Industries	East side of Powers Boulevard, north of Palmer Park Boulevard	Privately-owned football field
The Meadows Community*	West side of Powers, south of Astrozon Boulevard	Numerous mobile homes
Canterbury Park Community*	West side of Powers, north of Hancock Expressway	Numerous mobile homes
Southeast Community Park (edge, not interior)	West of Powers, north of Milton E. Proby Parkway	Land designated for future park (not yet designed or constructed)
Glen at Widefield, on Coral Ridge Drive	East side of Powers, north of Mesa Ridge Parkway	Numerous single-family residences

15 * Denotes location already impacted by traffic noise today.

1 All of these locations would also be affected under the Proposed Action, so their locations are
2 depicted in Exhibit 4-11 as well.

3
4 Noise Impacts with the Proposed Action

5 Converting Powers Boulevard to a freeway would increase traffic noise all along the corridor, for
6 a combination of the following reasons:

- 7
- 8 • Traffic volumes would be higher with the Proposed Action than with the No-Action Alternative
 - 9 because the increased capacity would enable the road to carry more traffic.
 - 10 • Reducing congestion would increase travel speeds.
 - 11 • The freeway is likely to have a higher posted speed limit of 55 miles per hour in areas where
 - 12 it is 50 mph today.
 - 13 • Ramps and frontage roads would put traffic closer to adjacent land uses.
 - 14 • Elevating Powers Boulevard over cross-streets would put the noise source higher above the
 - 15 ground, where the noise can travel farther and is more difficult to block.
 - 16 • Powers Boulevard, already a designated truck route, may become more attractive for truck
 - 17 trips. Trucks typically generate more noise than automobiles.
- 18

19 All of the above factors were taken into account in the modeling of future noise levels for the
20 Proposed Action. Noise impacts were identified for three types of land use: commercial;
21 residential and schools; and parks. State noise abatement guidelines allow for higher noise
22 levels in commercial areas. Business owners often prefer visibility with noisy conditions to
23 quieter conditions with less visibility to nearby roads. Residences and parks are grouped within
24 the same “activity category” for noise purposes, and in each case, potential mitigation is
25 considered only for areas of active outdoor use.

26
27 Prediction of future highway noise levels for the Proposed Action was conducted using FHWA-
28 approved computer model. The model identified 21 locations where adjacent land uses would
29 experience noise impacts. These locations are indicated in Exhibit 4-11. Subsequent analysis
30 of the feasibility and reasonableness of potential mitigation indicated that seven of these
31 locations are suitable candidates for mitigation and 14 others are not.

32
33 For seven locations where mitigation is recommended, the analysis determined that it would be
34 feasible to provide a barrier that would reduce noise to a meaningful degree and that the cost of
35 doing so when averaged over the number of resources receiving this benefit would meet current
36 state guidelines for cost effectiveness.

37
38 At the other 14 locations indicated in the exhibit, the Proposed Action would result in noise
39 impacts, but mitigation is not recommended because the feasibility and reasonableness criteria
40 would not be met. Four of these sites are commercial properties (restaurants or landscaping
41 businesses).

Exhibit 4-11. Locations where Noise Mitigation Was Considered

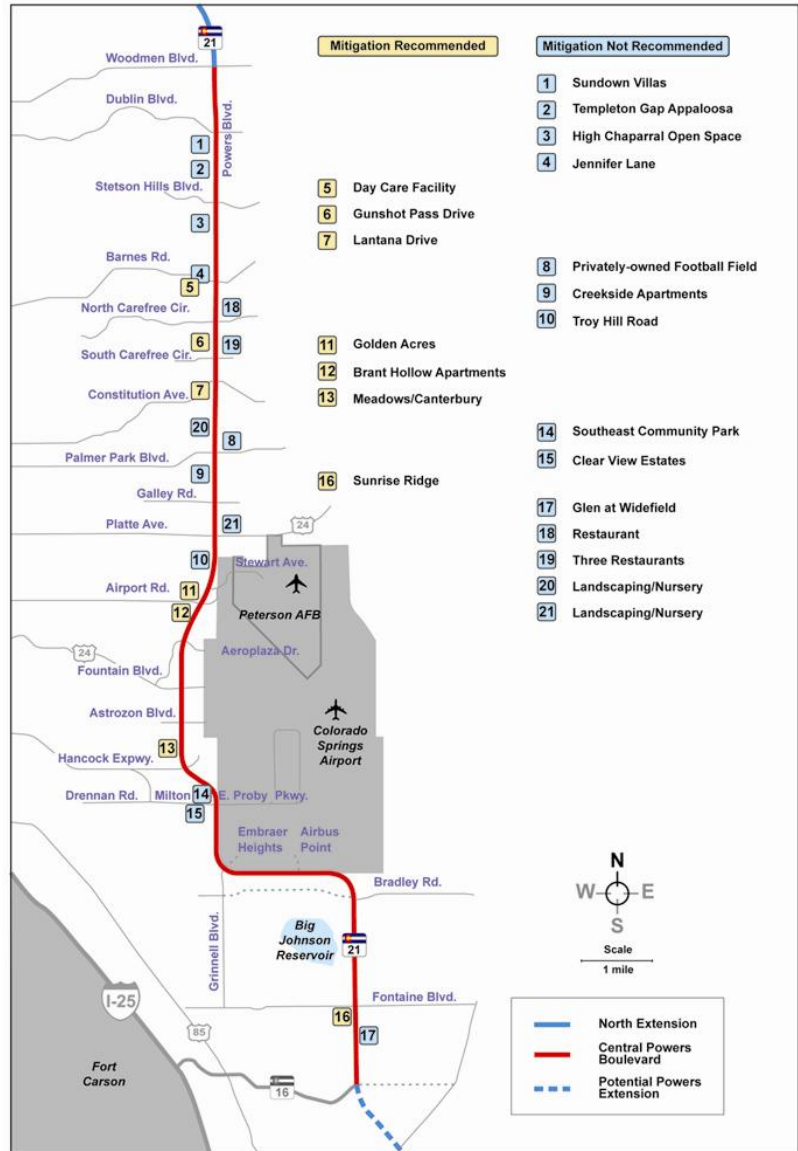
2 The Noise Technical Report
 4 (Appendix H) for this EA
 6 describes traffic and
 8 construction noise impacts from
 10 the Proposed Action and
 12 recommends appropriate
 14 mitigation. For each location
 16 affected, it specifies the
 18 reasons why each location was
 20 recommended or not
 22 recommended for mitigation
 24 under the 2002 *CDOT Noise
 Analysis and Abatement
 Guidelines*.

32 During construction of the
 34 freeway, noise from equipment
 36 would likely be noticeable for
 38 nearby residents and
 40 businesses. Noise sources
 42 would include diesel-powered
 44 earth-moving equipment such
 46 as dump trucks and bulldozers,
 48 backup alarms on certain
 50 equipment, compressors, and
 52 pile drivers (near bridge
 54 abutments and retaining walls).
 56 Construction noise tends to be
 58 dependent on the loudest one
 60 or two pieces of equipment
 62 operating at a given time and
 64 can be most annoying to
 66 nearby residents at night.
 68 Although most construction
 70 would occur during daytime
 72 hours, some nighttime
 74 construction would likely be
 76 necessary.

78 Construction at any one location would take many months to complete, and at interchange
 79 locations, it could last 18 to 24 months. Different types of construction activity generating
 80 different types of noise would occur over that timeframe.

82 Mitigation of Noise Impacts

83 Since the No-Action Alternative would only maintain the existing expressway, noise mitigation
 84 would not be provided anywhere along the corridor, including the residential areas that currently
 85 experience traffic noise impacts. However, with the Proposed Action, the construction of noise
 86 barriers is proposed at seven locations as specified in Exhibit 4-12.



1 **Exhibit 4-12. Recommended Noise Wall Locations and Approximate Dimensions**

Location	Location on Exhibit 4-11	Type of use Protected	Wall Length (feet)	Height (feet)
La Petite Academy Daycare	Site #5	1 playground	267	10
Gunshot Pass Drive	Site #6	54 residences	2,074	15
Lantana Drive	Site #7	6 residences	781	12
Golden Acres	Site #11	20 residences	1,636	8
Brant Hollow Townhomes	Site #12	36 residences	1,675	15
The Meadows, and Canterbury Park Community	Site #13	70 residences	3,307	12
Sunrise Ridge	Site #16	60 residences	5,429	12

2
3 All sites of recommended mitigation are on the western side of Powers Boulevard. Together,
4 they amount to more than 14,000 linear feet (almost three miles) of noise walls intended to
5 protect 246 residences and one daycare playground. They include some locations that are
6 already affected by noise today, some that will be impacted in the future due to increased traffic
7 whether or not Powers Boulevard is improved, and other locations that would only be impacted
8 if the existing expressway is converted to a freeway.

9
10 Along Gunshot Pass Drive, the row of duplexes immediately adjacent to Powers Boulevard
11 would be acquired for right-of-way. The recommended noise wall for this location would benefit
12 other residences that are currently shielded from noise by the homes that would be removed.

13
14 To achieve meaningful noise reduction, walls in
15 these locations would range in height from 8 feet to
16 15 feet and must be continuous without gaps. The
17 height of the wall depends on the distance between
18 the road and the affected resource, as well as local
19 topography.

20
21 Aesthetic designs for the walls have not been
22 determined, but would be developed with input from
23 the community. A consistent, artistic theme for wall
24 appearance would be developed for corridor-wide
25 use. Although graffiti-resistant designs and materials will be used, noise walls often do get
26 “tagged” and require graffiti removal from time to time. This is a maintenance issue applicable
27 to many aspects of highway infrastructure and not just noise walls. A noise wall would not be
28 provided if there were any case where the affected neighborhood opposed it.

THREE MILES OF NOISE WALLS
 Nearly three miles of noise walls are proposed as mitigation with the Proposed Action. By 2035, the Powers Boulevard freeway would carry traffic volumes that are comparable to today’s traffic on I-25 through Colorado Springs.

29
30 To the extent feasible, construction noise impacts, while temporary, will be minimized by
31 scheduling the loudest construction activities to occur during daylight hours, by minimizing
32 nighttime construction work near residential areas, and by requiring the contractor to use well-

1 maintained equipment (particularly with respect to mufflers). Additionally, the contractor will be
 2 required to use noise blankets or other muffling devices and quiet-use generators.

3
 4 If feasible, in locations where a wall is proposed as mitigation for traffic noise, the wall will be
 5 constructed in the first phase of work, so that it can shield adjacent land uses from construction
 6 noise.

7
 8 **AIR QUALITY**

9
 11 Motor vehicle use is a major contributor to air
 13 pollution in many metropolitan areas. It is a major
 15 emissions source in the Colorado Springs area as
 17 well, since there are relatively few other pollution
 19 sources, such as heavy industry. Major
 21 improvements in motor vehicle technology have
 23 been able to reduce emissions in the region over
 25 the past several decades, even as the amount of
 27 vehicle use has increased. This is reflected in the
 29 fact that violations of national air quality standards
 31 in the Colorado Springs area were common in the
 33 1980s, but there have been no violations for the
 35 past twenty years.

NO VIOLATIONS FOR DECADES

The most recent violations of national air quality standards in Colorado Springs were for carbon monoxide in 1989 and ozone in 1982, according to PPACG.

No violations of existing standards are anticipated over the next 25 years.

37
 38 With older cars and trucks gradually dropping out of use over time, the trend toward cleaner
 39 vehicular exhausts will continue for years to come. PPACG, which is the region's designated
 40 transportation and air quality planning agency, forecasts that although the total number of
 41 average weekday vehicle miles of travel (VMT) in the region will nearly double from 2005 to
 42 2035, the amount of carbon monoxide emitted by motor vehicles will not increase but will
 43 decrease by more than 17% during this 30-year timeframe.

44
 45 The scope of air quality analysis for this EA was determined through interagency consultation
 46 involving staff from CDOT, PPACG, and the Air Pollution Control Division of the Colorado
 47 Department of Public Health and Environment (CDPHE). A brief summary of air quality
 48 concerns and how they are addressed in this EA is provided in Exhibit 4-13.

49
 50 **Exhibit 4-13. Air Quality Issues Addressed in this EA**

Issue	Status	How Addressed in This EA
Carbon monoxide (CO)	An EPA-approved 1999 CO Plan (revised in 2004) remains in effect, although no violation has been recorded since 1989. A revised CO plan is under development in 2009.	As required by federal regulations, a carbon monoxide modeling analysis was conducted.

51
 52
 53

1 **Exhibit 4-13. Air Quality Issues Addressed in this EA (continued)**

Issue	Status	How Addressed in This EA
Ozone (O ₃)	No plan is in effect. The region is narrowly in compliance with a new, tighter standard created in 2008.	Qualitative discussion.
Fine Particulate Matter, smaller than 2.5 microns (PM _{2.5}); and Coarse Particulate Matter, smaller than 10 microns (PM ₁₀)	No plan is in effect. Monitored readings in the region are about 50% of allowable levels with no upward trend.	Qualitative discussion.
Lead (Pb); Sulfur Dioxide (SO ₂) Nitrogen Dioxide (NO ₂)	No plans are in effect. Monitored readings have been very low and stable for years. Monitoring of SO ₂ and NO ₂ was discontinued in 2008.	No further discussion, except in the Air Quality Technical Memorandum.*
Mobile Source Air Toxics	Future traffic volumes with the Proposed Action will remain well below the threshold that warrants quantitative analysis.	See separate discussion in the Air Quality Technical Memorandum.*
Regional haze and visibility	Not a problem in this region. No protected wilderness areas are nearby.	No further discussion, except in the Air Quality Technical Memorandum.*
Greenhouse gases and climate change	These are global issues difficult to quantify at the project level.	See Cumulative Effects section of this EA.

2 * Included as Appendix I on the compact disc attached to the back of this EA.

3
4 Existing Conditions

5 The Air Quality Technical Memorandum in Appendix I includes a discussion of climatic factors
6 that affect air quality concentrations in the region. In brief, the metropolitan area is nestled up
7 against the Front Range of the Rocky Mountains, creating a slight “bowl” effect. During cold
8 winter months, the use of wood burning increases for residential heat or ambiance, contributing
9 to a variety of pollutants including carbon monoxide. Carbon monoxide is a colorless, odorless,
10 poisonous gas resulting from incomplete combustion of carbon-based fuels, such as gasoline.
11 Carbon monoxide and other emissions can be trapped in this airshed, especially during winter
12 months, by a weather phenomenon called a thermal inversion.

13
14 In the summer, warm temperatures combine with the region’s abundant sunshine to create
15 conditions ripe for the formation of ozone in the atmosphere. Often called smog, ozone is
16 formed by photochemical reactions involving volatile organic compounds and oxides of nitrogen,
17 both of which come from motor vehicle exhausts as well as other sources.

18
19 Although the region is relatively windy, airborne dust and particulate matter is rarely a concern,
20 in part due to the stability of local soils.

21

1 PPACG estimates that average weekday driving in the region totaled 11.8 million vehicle miles
2 of travel (VMT) in 2005, a number that is expected to steadily increase to reach 22.1 million
3 VMT by 2035. Other pollution sources in the region include aircraft operations and municipal
4 power plants. Additionally, common household and industrial chemicals are sources that
5 contribute to ozone formation.

6
7 A network of four air quality monitoring stations in the region is operated by the El Paso County
8 Department of Health and Environment and CDPHE. None of these monitors is in or near the
9 Powers Boulevard corridor. The monitoring station closest to Powers Boulevard is located in
10 downtown Colorado Springs, about six miles west of the expressway. That site is close to
11 Interstate 25, so it is influenced by a high-speed, high-volume roadway that is even busier than
12 Powers Boulevard.

13 14 Technical Approach for Carbon Monoxide Modeling

15 In accordance with established procedures approved by CDOT and CDPHE, intersection-level
16 carbon monoxide concentrations are predicted for future years for the Proposed Action and the
17 No-Action Alternative. This is done for one or more of the intersections that would be most
18 heavily congested in the future even if the Proposed Action were implemented. Signalized
19 intersections projected to operate at Level of Service D, E, or F are considered as candidates.

20
21 For the Powers Boulevard corridor, the ramp intersections at Constitution Avenue were
22 determined to be the location with the greatest potential to approach or surpass the national CO
23 health standard of 9.0 parts per million as an 8-hour average. Traffic forecasts used for
24 modeling CO concentrations were based on and consistent with the latest regional planning
25 assumptions as reflected in the PPACG 2035 RTP. Future air quality concentrations were
26 modeled for the years 2025 and 2035.

27
28 The Air Pollution Control Division of CDPHE reviewed and concurred with the results of the air
29 quality analysis and and conclusions regarding conformity of the Proposed Action which are
30 summarized below and detailed in Appendix I on the CD attached to this EA. The CDPHE letter
31 is contained in Appendix A, Agency Correspondence.

32 33 Air Quality Impacts with the No-Action Alternative

34 It was noted in Chapter 1 that traffic on the existing expressway is expected to increase by an
35 average of 88% corridor-wide by the year 2035 under the No-Action Alternative. Between
36 Woodmen Road and SH16, this would amount to a total of 1.06 million VMT on an average
37 weekday. The resulting congestion would increase corridor travel time by 79%.

38
39 With the No-Action Alternative, all but two of the existing signalized intersections on the
40 expressway between Woodmen Road and Milton E. Proby Parkway would operate at Level of
41 Service F, indicating extremely congested conditions. East-west traffic on twelve busy cross-
42 streets would be delayed at these intersections as well. Heavy stop-and-go traffic of this type
43 reflects inefficient travel that results in excessive idling emissions.

44
45 At the Powers Boulevard intersection with Constitution Avenue, modeled carbon monoxide
46 concentrations for the No-Action Alternative would be 5.7 parts per million in 2025 and 5.8 ppm
47 in 2035. These projected 8-hour average concentrations would not exceed the national health
48 standard of 9 parts per million.

1 Heavy stop-and-go traffic with slow speeds and excessive idling would also result in excess
2 emissions of other vehicle-generated pollutants, including volatile organic compounds and
3 oxides of nitrogen which are ozone precursors.

4
5 Furthermore, congestion on Powers Boulevard would cause some frustrated motorists to use
6 other north-south routes, increasing emissions on neighborhood streets that are not designed to
7 carry large volumes of traffic.

8
9 Air Quality Impacts with the Proposed Action

10 With implementation of the Proposed Action, Powers Boulevard would carry a total of 1.27
11 million VMT per day (i.e., about 20% more than the No-Action Alternative), but it would do so at
12 higher travel speeds and with less delay than is experienced today. Traffic on cross-streets
13 would improve as well, and there would be little incentive for motorists to leave Powers
15 Boulevard to cut through neighborhoods to seek a
17 faster route.

19
21 At the Powers Boulevard intersection with
23 Constitution Avenue, the modeled carbon monoxide
25 concentrations for the Proposed Action would be 5.6
27 parts per million in 2025 and 6.0 ppm in 2035. These
29 projected 8-hour average concentrations would not
31 exceed the national health standard of 9 parts per
33 million.

35
37 This site was picked to represent the busiest, most
39 congested intersection along the corridor.

40 It is clear that concentrations at less-congested intersections, such as the high-priority Airport
41 Road interchange, would have lower CO concentrations. On the basis of this analysis, it is
42 concluded that the Proposed Action would not cause or contribute to any future violation of the
43 CO standard.

44
45 Compared with the No-Action Alternative, the Proposed Action would have lower emission rates
46 per mile, and less idling emissions, but more total traffic volumes than the No-Action Alternative.
47 The predicted CO concentrations for the two alternatives are comparable.

48
49 The Powers Boulevard Proposed Action is included in PPACG's 2035 RTP, for which regional
50 CO emissions analysis was performed by PPACG. Compared to an EPA-approved regional CO
51 "emissions budget" of 531 tons per day, future regional CO emissions with RTP implementation
52 are projected to be 281 tons in 2025 and 316.7 tons in 2035, both very far below the allowable
53 amount. Again, CO emissions in 2035 are projected to be about 17% less than they are today,
54 even as total regional VMT nearly doubles.

55
56 Both the intersection-scale and regional scale analysis using EPA-approved models and
57 assumptions indicate that the Proposed Action would meet applicable requirements for CO.

58
59 It was noted earlier that there are no PPACG air quality plans for ozone, particulate matter and
60 three other EPA-regulated pollutants, because the health standards for these pollutants have
61 not been violated. Except for ozone, monitored concentrations of these pollutants have been

**MODEL RESULTS INDICATE NO
CARBON MONOXIDE PROBLEMS**

Future carbon monoxide concentrations predicted for the Powers Boulevard corridor through 2035 would remain at least 33% under (i.e., better than) the level allowed by national air quality standards,

1 well below the health standards for many years, even as regional VMT has increased. The
2 major traffic flow improvement under the Proposed Action, together with ongoing emission rate
3 reductions due to improved vehicle technology, promise to keep concentrations of these other
4 pollutants within acceptable levels for the foreseeable future.

5
6 With regard to ozone, however, the new tighter 8-
7 hour standard established in 2008 is just slightly
8 higher than the ozone levels recorded in the Pikes
9 Peak Region for the past several years. Recorded
10 ozone concentrations were trending upwards since
11 1998 but stabilized in 2003 and have not exceeded
12 the new standard of 0.075 parts per million.
13 Preliminary data indicate that the region's ozone
14 concentrations were well below 0.070 ppm in the
15 summer of 2009. If verified, the 2009 data would
16 help to reduce the likelihood of a violation in the
17 region over the next several years.

**OZONE IS THE REGION'S
TOP AIR QUALITY CONCERN**

When a tighter national ozone standard was established in 2008, the Pikes Peak Region was barely in attainment. Lower concentrations measured in 2009 may be the start of an expected trend of improvement. The Powers Boulevard Proposed Action would not be built soon enough to affect this situation.

18
19 The new 8-hour ozone standard in 2008 resulted in
20 nonattainment status for the Denver region, about 60 miles north of Colorado Springs. The
21 Denver metro area has a much larger population and greater daily VMT than Colorado Springs,
22 and also has non-mobile source emissions from the natural gas and oil industries contributing to
23 their ozone violations. The Denver Region is exploring and implementing a large number of
24 ozone reduction strategies, many of which do or will provide spillover benefits for the Colorado
25 Springs area. These strategies may assist Colorado Springs in continuing to meet the new
26 ozone standard in the short run while continued vehicle technology improvements offer long-
27 term relief.

28
29 The PPACG 2035 RTP indicates that minimal funding for the Powers Boulevard Proposed
30 Action is expected to be available before the year 2020. Until that time, traffic on the existing
31 expressway will continue to worsen, resulting in excess idling emissions. In the years prior to
32 project implementation, the Proposed Action would neither help nor hinder the region in meeting
33 the new ozone standard.

34
35 Construction of the Proposed Action would result in temporary emission of particulate matter
36 from construction sites, resulting from soil disturbance and handling, use of diesel equipment,
37 and the production and use of paving materials. These effects would occur at various locations
38 throughout the corridor over a construction period of ten years or more, depending on funding
39 availability.

40
41 Mitigation of Air Quality Impacts

42
43 CDOT will mitigate construction impacts associated with the Proposed Action, in compliance
44 with any applicable permit requirements, at a minimum. Dust control practices will be required
45 during construction in accordance with Colorado Air Quality Control Commission Regulation
46 Number 1. CDOT will comply with ongoing State initiatives to use greener, sustainable methods
47 of operation and to reduce greenhouse gases where possible. Additional construction-related
48 mitigation measures are outlined in Section 4.5, Construction Impacts.

1 PARKS AND RECREATION FACILITIES

2
3 A number of existing and planned parks, trails, open spaces and recreation facilities are located
4 within the Powers Boulevard corridor. These amenities represent an important investment of
5 public resources to improve urban quality of life. Highway improvements have the potential to
6 affect these resources directly through the acquisition of land or altering of access, or indirectly
8 through noise or visual
10 effects. However, in this
12 recently developed corridor,
14 most of the parks and
16 recreation facilities have
18 been planned or recently
20 established with full
22 knowledge that there would
24 be no reasonable
26 expectation to avoid seeing
28 or hearing the busy,
30 adjacent expressway.

34 Existing Conditions

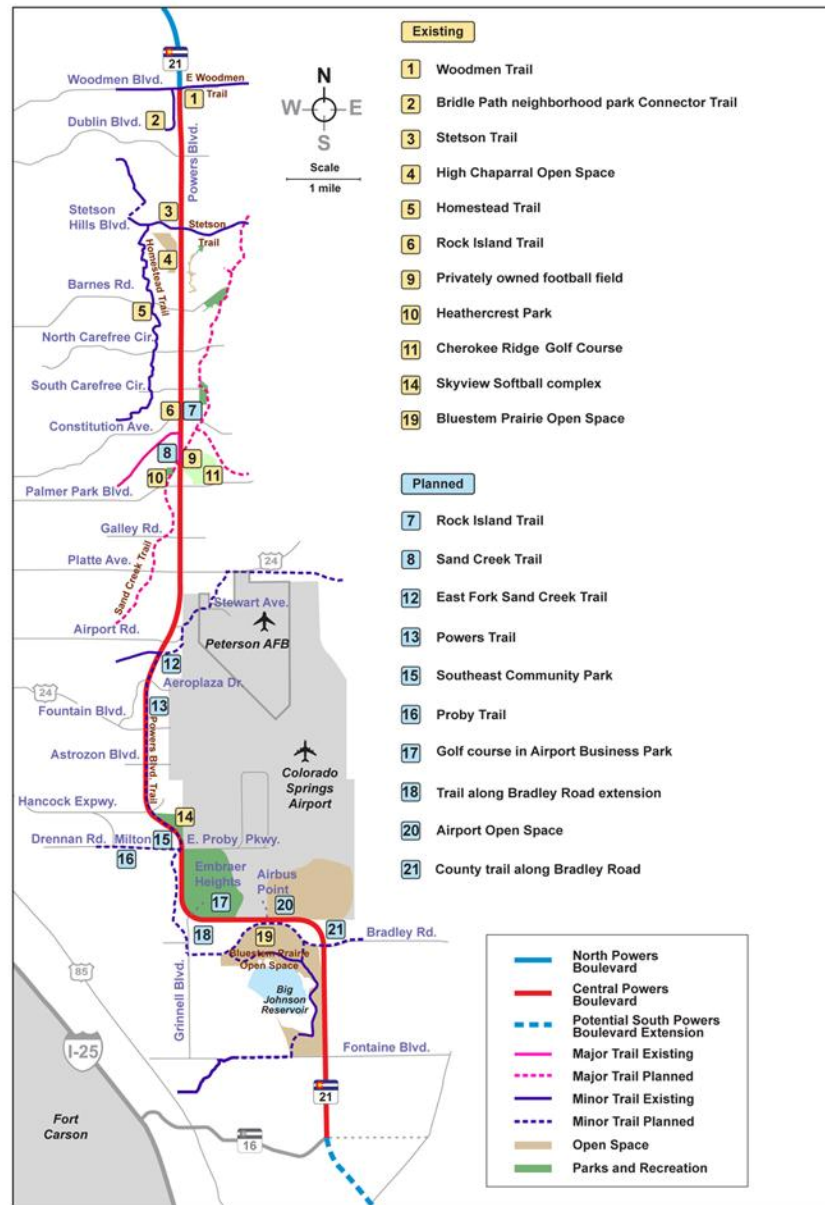
36 Exhibit 4-14 indicates the
38 location of existing and
40 planned park and
42 recreation facilities that are
44 closest to Powers
46 Boulevard. The existing
48 facilities are:

- 50 • A park (#10)
- 52 • Softball fields (#14)
- 54 • Two open spaces (#4,
56 19) that both have
58 internal trails
- 60 • A public golf course
62 (#11)
- 64 • Five trails (#1, 2, 3, 5
66 and 6)
- 68 • A privately-owned
70 football field (#9)

74 The planned facilities are:

- 76 • A park (#15)
- 78 • An open space (#20)
80 that will have internal trails
- 82 • A golf course (#17)
- 84 • Seven trails (#7, 8, 12,
86 13, 16, 18 and 21)

Exhibit 4-14. Existing and Planned Parks, Trails and Recreation Facilities



1 Parks and Recreation Impacts with the No-Action Alternative

2 The No-Action Alternative would not directly affect any of the existing or planned parks and
3 recreation resources. All of them would be affected indirectly by increased congestion on
4 Powers Boulevard, which could make the facilities more difficult to access.

5
6 Additionally, all parks and recreation resources along the corridor would experience increased
7 traffic noise, including three facilities that would experience traffic noise of at least 66 decibels, a
8 threshold above which outdoor use may be impaired. These three are the High Chaparral Open
9 Space (location #4 on Exhibit 4-14), a privately-owned football field (#11), and the planned
10 Southeast Community Park (#15).

11
12 The High Chaparral Open Space is a 54-acre property south of Stetson Hills Boulevard and
13 west of Powers Boulevard, established next to the expressway in 2001. To prevent ecological
14 damage and erosion, active use is restricted to trail areas, highlighted by the north-south
15 through trail along a ridge line at the western side of the property. In addition, there is an
16 internal trail, called the Prairie Loop that starts at the ridge line and extends downhill toward
17 Powers Boulevard before climbing back up the hill. This unpaved trail, 18 inches wide, is used
18 for mountain biking, jogging and walking dogs. Approximately the lowest 1,100 feet of this trail
19 are within 200 feet of the expressway and experience traffic noise levels about 64 decibels
20 today. A projected traffic increase of about 40,000 vehicles per day with the No-Action
21 Alternative can be expected to increase this noise level to about 66 decibels, the threshold
22 where outdoor use is considered impaired. There are no amenities or designated stopping
23 places along this noisiest portion of the trail.

24
25 A small privately-owned football field and track are located along Waynoka Road north of
26 Palmer Park Boulevard. Owned by WCM Industries, this is the home field for six-man football
27 games played by the nearby Hilltop Baptist Church School. The field is used for practices and
28 for several games each fall. Traffic noise levels at this location are estimated at 65 decibels.
29 A projected traffic increase of about 40,000 vehicles per day with the No-Action Alternative can
30 be expected to increase this noise level to about 66 decibels, the threshold where outdoor use
31 is consider impaired. However, it is not likely that traffic noise would affect play on the field or
32 interfere with practice instruction.

33
34 The planned Southeast Community Park will be built along the western side of Powers
35 Boulevard and the northern side of Milton E. Proby Parkway, which the City of Colorado Springs
36 will upgrade to a high-speed expressway beginning in 2010. No master plan has been
37 developed to identify what amenities (e.g. playground equipment) may be provided or where it
38 may be located on the 20-acre park property. Traffic noise levels near the eastern edge of the
39 property are 64 decibels today. With the No-Action Alternative, traffic volume on Powers
40 Boulevard would approximately double, increasing by more than 20,000 vehicles per day. As a
41 result, the eastern side of the park land would likely experience a noise level of 66 decibels, the
42 threshold where outdoor use is considered impaired.

43
44 Parks and Recreation Impacts with the Proposed Action

45 Two existing trails would be affected by the Proposed Action, as follows:

- 46 • The Stetson Hills Trail would experience temporary detours or closure during construction of
47 a grade-separated Powers Boulevard interchange at Stetson Hills Boulevard.

- 1 • The Homestead Trail crossing of Barnes Road, featuring a pedestrian-actuated traffic signal,
2 may experience temporary closure during construction of Barnes Road improvements west
3 of the proposed interchange.

4
5 Additionally, small pieces of land would need to be acquired from an existing golf course and an
6 existing regional softball complex, as discussed further below, but this would result in no
7 permanent or temporary impairment of recreational activity at either facility.
8

9 In developing a conceptual design for the Proposed Action, CDOT made extensive efforts to
10 avoid and minimize the need to acquire land from any park, trail, open space, or other
11 recreation facility. As design concepts were developed, potential effects to these resources
12 were discussed with their owners, as well as with advocates and special interest groups that
14 support particular recreation facilities or interests.

16 This cooperative effort involved the City of
18 Colorado Springs Department of Parks,
20 Recreation and Cultural Services (responsible for
22 the Skyview Sports Complex and most trails), the
24 Cherokee Metropolitan District (owner of the
26 Cherokee Ridge Golf Course), and the Trails and
28 Open Space Coalition of the Pikes Peak Region (a
30 non-profit organization that advocates for the
32 preservation of open space and rural lands, as
34 well as the creation of a system of trails, bikeways,
36 and greenways).

38
40 Despite the efforts to avoid impacts to recreation
41 facilities, the Proposed Action would require approximately 0.02 acre from the 13.5-acre from
42 the Cherokee Ridge nine-hole golf course and two pieces of land totaling about 1.2 acres from
43 the 41-acre Skyview Sports Complex. None of the needed land is actively used for recreation.
44 The owners of these facilities evaluated the potential impacts and concurred that the Proposed
45 Action would not adversely affect the activities, features, and attributes of the recreation
46 facilities. A detailed discussion of these two resources is included in Chapter 7, Section 4(f) De
47 Minimis Impact Documentation.
48

49 With the Proposed Action, all parks and recreation facilities along the corridor would experience
50 more traffic noise than current levels, and more traffic noise than with the No-Action Alternative.
51 The High Chaparral Open Space, privately-owned football field and planned Southeast
52 Community Park, all affected by traffic noise of about 66 decibels with the No-Action Alternative,
53 would experience higher levels of traffic noise. Traffic noise is predicted to be 74 decibels for
54 the Prairie Loop Trail in the open space, and an additional 200 feet of trail going up the hill could
55 fall within the 66 decibel contour. Traffic noise is also predicted to be 74 decibels at the football
56 field, and 69 decibels near the eastern edge of the planned park. Despite the increased traffic
57 noise, all three facilities would remain usable for their intended recreational uses.
58

59 Noise mitigation was considered for these three recreation resources, but was found to be not
60 reasonable and feasible. Noise mitigation for the narrow trail in the open space would be very
61 costly and provide minimal benefit. Additionally, it would obstruct views to and from the open

IMPACTS TO PARKS AND TRAILS

The Proposed Action would result in temporary trail closures and increased traffic noise at parks and open spaces adjacent to the existing expressway. The Proposed Action includes construction of a new trail overpass and two new underpasses. Non-recreational land is needed from a golf course and a softball complex.

1 space, making it less open. In the case of the football field, mitigation would be very costly for a
2 private facility that is little used throughout the year. The planned Southeast Community Park
3 has no existing outdoor use areas. When the City begins to plan park amenities, active use
4 areas can be located on the park's western side, close to adjacent neighborhoods, away from
5 the Powers Boulevard freeway and the Milton E. Proby Parkway interchange. Traffic noise
6 impacts are addressed in the Traffic Noise section of this Chapter and in Appendix H on the CD
7 attached to the back of this EA.

8 9 Mitigation of Parks and Recreation Impacts

10 CDOT will coordinate with the City of Colorado Springs Department of Parks, Recreation and
11 Cultural Services as well as the Trails and Open Space Coalition of the Pikes Peak Region
12 regarding all construction that would affect existing trails (e.g., Stetson Hills Trail and
13 Homestead Trail). Timely advance notice will be provided to trail users prior to any activity that
14 could result in a temporary detour or closure of a trail. Additionally, CDOT will restore or
15 reconstruct any existing trail crossing that is affected by roadway construction.

16
17 CDOT will construct grade-separated crossings of Powers Boulevard for three planned trails:
18 a bicycle and pedestrian overpass for the Rock Island Trail, a Sand Creek Trail underpass that
19 would accommodate equestrians, and a bicycle and pedestrian underpass at East Fork Sand
20 Creek.

21
22 Additionally, CDOT will coordinate with the City of Colorado Springs Department of Parks,
23 Recreation and Cultural Services to ensure that a new East Fork Sand Creek bridge on Aviation
24 Way and the Powers Boulevard interchange for Hancock Expressway and Zeppelin Road are
25 designed to accommodate a proposed Powers Trail.

26 27 **VISUAL CHARACTER**

28
29 The visual character of a community is an important element in the quality of life of that
30 community. The intrusion of a road into the viewscape, as well as views to and from the road,
31 can affect the quality of the visual environment. Therefore, evaluation of the visual impacts of
32 the Proposed Action and the aesthetic characteristics of the design of the road are important
33 considerations. This section summarizes the visual character and context of the Powers
34 Boulevard corridor and the likely effects on it. A detailed report on visual resources is provided
35 in Appendix J on the CD attached to the back of this EA.

36 37 Existing Conditions

38 For much of Colorado Springs, the dominant visual feature is Pikes Peak (elevation 14,115 feet)
39 to the west, together with other mountains of the Rocky Mountain Front Range. However, this
40 view can be seen only from certain viewpoints in the southern half of the Powers Boulevard
41 corridor, and it is entirely blocked by ridgelines for much of the corridor north of Palmer Park
42 Boulevard.

43
44 Views to the east of Powers Boulevard formerly consisted of wide open grassland, such as the
45 High Chaparral Open Space, but now are dominated by rooftops or urban development, as
46 seen in Exhibit 4-15. Most of the existing expressway corridor north of Milton E. Proby Parkway
47 is now highly developed and has a very urban character, not unlike many other urban areas.

Exhibit 4-15. Views to and from the High Chaparral Open Space, across Powers Boulevard



1 Exhibit 4-16, below, shows the central portion of the corridor as seen from its northern highpoint
 2 at a hill near Barnes Road (first photo), and looking back up to that hill from atop the Platte
 3 Avenue overpass (second photo). These photos are representative of the viewscape
 4 throughout most of the northern half of the corridor.
 5

6 In the first photo (taken from the hilltop that is visible at the upper left horizon in the second
 7 photo), the grassland seen at right, south of the Barnes Road intersection, has a “for sale” sign
 9 and is intended for
 11 development. The
 13 vacant land across
 15 the expressway to
 17 the left is
 19 undergoing
 21 development now
 23 (October 2009).
 25 Visual features in
 27 the second photo
 29 include a variety of
 31 urban land uses, a
 33 grass median strip,
 35 median street
 37 lighting and a
 39 nearby billboard.

Exhibit 4-16. Views Southward from Barnes Road and Northward from Platte Avenue



41 Although the
 43 southern half of the
 45 corridor includes
 47 background views
 49 to grasslands at the
 51 Bluestem and
 53 Airport Business
 55

1 Park Open Spaces, a large part of this area (e.g., Platte Avenue to Milton E. Proby Parkway) is
 2 also characterized by foreground and mid-ground views of industrial and residential uses.
 3 There is not yet much commercial development, although some is proposed.

4
 5 Powers Boulevard is a part of a landscape characterized by the largely urban environment that
 6 surrounds it. Views to natural features and scenic vistas, including the mountain backdrop to
 7 the west, are extremely limited in the Powers Boulevard corridor. This may be the reason that
 8 the public and businesses have expressed more interest in views to and from the road. Nearby
 9 residents expressed interest in how the road will look, while businesses were concerned about
 10 how the Proposed Action would affect motorists' ability to see their buildings and signs.

11
 12 Visual Impacts with the No-Action Alternative

13 With the No-Action Alternative, the existing expressway would become increasingly congested
 14 and the resulting traffic would become more visually apparent. Also, continued rapid
 15 development will soon fill up remaining vacant grasslands along much of the corridor, except for
 16 three designated open spaces and airport land that must remain clear of crash hazards.

17
 18 Visual Impacts with the Proposed Action

19 With the Proposed Action, the same development of vacant lands noted above would occur, but
 20 the most notable effect would be the elevation of Powers Boulevard to pass over existing cross-
 21 streets. As noted previously, elevating Powers Boulevard is proposed for the purpose of
 22 minimizing access impacts and acquisition of private property.

23
 24 Elevating Powers Boulevard over cross-streets would provide motorists on the freeway with
 25 increased viewing distances to mid-ground and background views, but in some cases would
 26 reduce visibility to properties in the immediate vicinity of the interchanges. Thus some nearby
 27 businesses would have increased visibility and others would have reduced visibility. Appendix
 28 J, Visual Resources Technical Report, includes a map identifying these areas of increased and
 29 decreased visibility from the roadway.

30
 31
 32
 33 Another impact of the Proposed
 34 Action would be the reduction of
 35 visibility across Powers
 36 Boulevard along cross-streets.
 37
 38
 39 Bridges carrying the freeway
 40 over the cross-streets would
 41 replace the open views at the
 42 existing at-grade intersections.
 43
 44
 45 Exhibit 4-17 provides an example
 46 of this effect, showing the
 47 existing view and simulated
 48 future view at the site of one of
 49 the proposed interchanges.
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59

60
 61 Photosimulations for various
 62 elements of the Proposed Action
 63 were prepared for this EA and
 64 are included in Appendix J.
 65
 66
 67

Exhibit 4-17. View Eastward across Powers Boulevard at Constitution Avenue for Existing Conditions and the Proposed Action



1 These include a photosimulation for one of the seven walls that are proposed to protect
2 adjacent neighborhoods from increased traffic noise. Noise walls, bridges and other elements
3 of freeway design offer opportunities to develop a consistent, corridor-wide aesthetic design.
4

5 North of Milton E. Proby Parkway, the Proposed Action would replace the existing expressway
6 median with a median barrier and paved inside shoulders. Due to the urban nature of the
7 freeway corridor and its limited right-of-way, minimal landscaping is envisioned for the freeway.
8 Sustainability principles discussed in Section 4.10 (Cumulative Effects) suggest that
9 landscaping should be low-maintenance, requiring minimal ongoing watering, and should
10 maximize use of native vegetation.
11

12 Mitigation of Impacts to Visual Resources

13 CDOT has developed and will follow a uniform set of design guidelines to produce consistent
14 aesthetic standards for interchanges, noise walls, streetlights, and other freeway features.
15 Appropriate signage will be developed to ensure that motorists are aware of how to access
16 upcoming developments that may be difficult to see in advance of an exit.
17

18 CDOT will prepare lighting plans that provide for safety and aesthetics while also considering
19 the need for energy conservation, minimization of light pollution, and compatibility with aviation-
20 related concerns of the adjacent Peterson Air Force Base and Colorado Springs Airport.
21

22 **4.5 CONSTRUCTION IMPACTS**

23
24 As discussed in Section 3.6, Building the Project, the Proposed Action would likely be
25 constructed as a sequence of projects for 11 miles from Woodmen Road to Milton E. Proby
26 Parkway. The Proposed Action also includes right-of-way preservation for a 5.8-mile stretch
27 south of Milton E. Proby Parkway. Depending on funding, one or more of the construction
28 projects could be underway in any future year. If multiple projects were to be constructed at the
29 same time, they might or might not be contiguous.
30

31 Exhibit 4-18 shows the general concept for the construction projects that would range from
32 under a mile to nearly two miles in length. Each project would typically construct one
33 interchange and modify Powers Boulevard north and south of that interchange, also adding on-
34 ramps, off-ramps, and acceleration or deceleration lanes as appropriate. Associated with each
35 interchange would be minor modifications to the affected cross-street, including potential access
36 changes. Some projects would also provide frontage roads and “Texas turnaround” ramps.
37

38 Project details such as traffic control, access management and construction phasing for each
39 project will be developed during preparation of final plans and may be modified during
40 construction.
41

42 It is anticipated that the duration of construction for individual projects would be between 18 and
43 24 months.

2 Construction Impacts with the No-Action
 4 Alternative

6 The No-Action Alternative requires routine
 8 maintenance to keep the existing lanes of
 10 Powers Boulevard in operable condition, but
 12 no new construction is foreseen.
 14 Maintenance activities might include one-lane
 16 closures typically during off-peak hours for
 18 resurfacing, and traffic signal modifications or
 20 upgrades. These could last for several weeks
 22 at a given location, but typically not longer.
 24 The No-Action Alternative would have minor
 26 effects due to traffic congestion, temporary
 28 detours and construction noise.

32 Construction Impacts with the Proposed
 34 Action

36 The Proposed Action would result in a variety
 38 of construction impacts, including the
 40 following:

- 44 • Traffic detours, interruptions, delays
and access restrictions
- 46 • Construction noise
- 48 • Construction dust and emissions
- 50 • Sediment and other water pollutants
- 52 • Consumption of resources
- 54 • Temporary effects to recreational trails

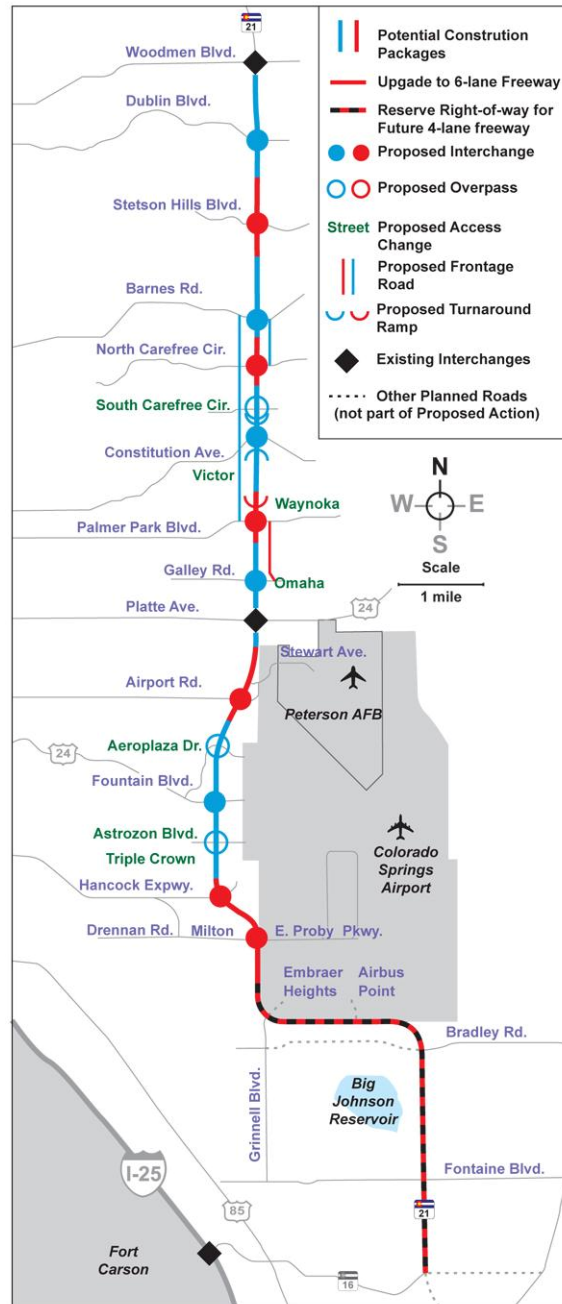
58 Construction impacts to recreational trails are
 60 discussed in more detail in Section 4.4,
 62 Community Quality of Life. Additional
 64 information about construction-related water
 66 quality impacts is provided in Section 4.6,
 68 Water Resources.

72 Traffic and Access Issues

74 Construction on Powers Boulevard would
 76 result in traffic delays, traffic congestion, and
 78 changes in traffic circulation. The length and
 80 severity of these disruptions would vary by
 82 location, type of work, and duration of activity.
 84 Construction delays are generally anticipated
 86 to be short term and may cause motorists to use alternative routes.
 87

88
 89 Construction activities would occur primarily during daylight hours during the weekdays, but
 90 nighttime and weekend construction activities may be required. Nighttime and weekend

Exhibit 4-18. Potential Construction Segments



1 activities could include utility relocation, paving and construction of bridges. Traffic congestion
2 may increase “cut-through” traffic on nearby streets including Rio Vista Drive and Tutt
3 Boulevard. This would result in more traffic, and some motorists diverted from the expressway
4 are likely to exceed posted speed limits on these local streets.

5
6 The Proposed Action would modify some existing nearby business driveways along cross-
7 streets. Access to businesses would be shifted or temporarily restricted during certain
8 construction activities. Construction activities near local businesses may result in temporary
9 loss of some customers due to traffic congestion and perceived access difficulties.

10
11 Emergency service providers could experience response time delays due to detours and access
12 changes as a result of construction. Providers likely to be affected include:

- 13
- 14 • American Medical Response (AMR), the firm that provides ambulance service under
15 contract to the City of Colorado Springs. The firm’s dispatch facility is currently located
16 on Victor Place immediately west of Powers Boulevard and south of Constitution Avenue.
 - 17 • Colorado Springs Police Department, Stetson Hills Division, located on Tutt Boulevard
18 east of Powers Boulevard between North Carefree Circle and Barnes Road.
 - 19 • Cimarron Hills Fire Department located on Tuskegee Place east of Powers Boulevard
20 and north of Palmer Park Boulevard.

21
22 AMR leases space on Victor Place, but for planning purposes, CDOT assumes that the service
23 provider will still be at this location. By contrast, the publicly-owned fire station and newly built
24 police station are more likely to remain in their current locations.

25
26 As of April 2009, one express bus route (#92, Schriever AFB North) uses Powers Boulevard but
27 does not stop along it, and one route (#24 Peterson AFB) crosses it. Additional routes using or
28 crossing Powers Boulevard were recently eliminated due to budget shortfalls associated with
29 the 2008-2009 recession. In the future, by the time construction of the Proposed Action begins,
30 additional routes may again use or cross Powers Boulevard. Any bus stops along side-streets
31 that would be affected by construction would be temporarily relocated as necessary for the
32 safety of bus patrons.

33 34 Construction Noise

35 Construction would generate temporary noise impacts from diesel-powered earth moving
36 equipment, such as dump trucks and bulldozers, back-up alarms on certain equipment, and
37 compressors. Construction noise would be dependent on the loudest pieces of equipment
38 operating at the same time and location. Although most construction would occur during
39 daytime hours, some nighttime construction would be necessary. Nighttime construction noise
40 can be highly annoying to nearby residents.

41
42 As noted earlier, construction at interchange locations could last 18 to 24 months. Different
43 types of construction activity generating different types of noise would occur over that
44 timeframe.

45 46 Construction Dust and Exhaust Emissions

47 The most noticeable effect of construction on air quality would be generation of dust due to
48 demolition activities and the hauling, filling and grading work that involves earth movement. For

1 example, it is estimated that 50 to 100 pounds of fine particulate matter (PM₁₀) per day may be
2 generated for each mile of roadway that is under construction.

3
4 Additionally, construction vehicles and equipment burn gasoline or diesel fuel, resulting in
5 emissions of carbon monoxide, hydrocarbons, oxides of nitrogen, fine particulate matter and
6 other pollutants.

7
8 Traffic delays and congestion would increase vehicle emissions due to lower traffic speeds and
9 increased idling.

10
11 All of these air quality impacts are considered to be short-term. For all pollutants, ambient air
12 quality levels are expected to remain well below allowable limits.

13
15 Soil Erosion and Water Quality

17 Construction activities typically involve disturbance of
18 soils and exposure of soils to wind and precipitation,
19 resulting in the potential for sediment runoff and erosion.
21 Fuel spills and other construction-related pollutants can
22 occur as well. While Best Management Practices would
23 be used to avoid, minimize and mitigate water
24 contamination, nevertheless some sediment could
25 potentially reach Sand Creek and the other drainages
26 along the Powers Boulevard corridor.

**WATER QUALITY
PROTECTION IS
A KEY FOCUS**

Contractor compliance with requirements for water quality protection is an important issue for CDOT. Strict compliance will be a key focus for this Proposed Action.

27
29
31
33
35
37 Consumption of Resources

38 Constructing the Proposed Action would consume energy, materials, and other natural
39 resources. Energy issues are discussed in a separate section of this EA. Rock, sand and
40 gravel needed for construction generally are provided from nearby sources since the cost of
41 these materials depends greatly on the cost of transporting them. Construction materials such
42 as rock products, lumber, cement, fuels and asphalt result in impacts both at their place of
43 production and in the process of being transported to this region.

44
45 Additionally, construction activities produce solid wastes, such as scrap lumber and other bulky
46 building debris, broken concrete, and used asphalt. Many of these wastes must be trucked to
47 landfills for disposal. Since there are few permitted landfills in the Pikes Peak Region, the
48 depletion of landfill space could result in the need to construct and permit new landfills at
49 greater distances from populated areas.

50
51 Temporary Effects to Recreational Trails

52 Crossing Powers Boulevard today is not easy for bicyclists and pedestrians because the
53 expressway is wide and is busy with vehicles turning at intersections. During construction,
54 temporary construction signs, traffic control and construction activity would complicate crossing
55 the roadway. Most existing crossings for bicycles and pedestrians connect standard pedestrian
56 sidewalks. The only existing trail crossing of Powers Boulevard that would be affected by the
57 Proposed Action is the Stetson Hills Trail, which is an extra-wide sidewalk along the south side
58 of Stetson Hills Boulevard. This trail has been constructed to the west of Powers Boulevard, but
59 has only been partially constructed (with gaps) to the east of the expressway. This trail as well
60 as all sidewalks crossing Powers Boulevard would be subject to temporary detours and closure

1 during construction. Construction in the vicinity of sidewalks and trails is expected to last for 18
2 to 24 months. The north-south Homestead Trail crossing of Barnes Road, west of Powers
3 Boulevard, may also be temporarily affected by due to construction activity.

4
5 Mitigation of Construction Impacts

6 Construction of the Proposed Action will comply with all applicable Federal, State and local
7 regulations pertaining to air, noise, water, and other resources. Best management practices
8 and standard operating procedures that will be used to minimize construction impacts are
9 detailed below.

10
11 Transportation Issues

12 A Traffic Management Plan would be developed for each Powers Boulevard construction project
13 to maintain safe traffic flow and access throughout construction. The traffic management plan
14 will include the following:

- 15
- 16 • Traffic flow will be maintained during peak travel times by minimizing lane closures where
17 possible. The existing number of lanes will be kept open to traffic whenever possible.
- 18 • Traffic flow plans will take into consideration the access needs of property owners during
19 construction and will be designed to minimize construction-related delays.
- 20 • Measures such as signage and media releases will be used to announce and advertise
21 road closures, detours, and the construction schedule.
- 22 • Alternate travel routes and continued access to properties will be coordinated with
23 emergency service providers to minimize delays and ensure efficient service.
- 24 • CDOT will request that the City of Colorado Springs Police Department and the Colorado
25 State Patrol increase speed limit enforcement through construction zones and on nearby
26 streets potentially affected by cut-through traffic during construction.
- 27 • Accommodations for pedestrian and bicyclists to cross Powers Boulevard will be made
28 within the construction areas, along with vehicle traffic, as such crossings typically are at
29 least a mile apart and there are no alternative crossings nearby.
- 30

31 A Public Notification Plan will be developed to inform residents, businesses and roadway users
32 of construction activities that will affect traffic flow. Public information efforts will begin prior to
33 construction and continue throughout the construction phase. The public will be notified of
34 closure of traffic lanes and the complete closure of roadways, and will be provided appropriate
35 detours. Also, the public will be notified when high-impact
36 construction activities, such as pile driving, are to occur.

37

38

39

40

41

42 Access to businesses will be maintained during business
43 hours. This may require some circuitous travel or use of
44 different access points, but businesses will be notified prior to
45 major changes if access is to be rerouted or detoured.
46 Access issues will be coordinated with affected businesses
47 before and throughout the construction phase. Emergency
48 service providers will be notified of closures, temporary
49 detours and access changes to ensure that emergency
50 services are maintained.
51

**MAINTAINING TRAFFIC
LANES AND BUSINESS
ACCESS**

To the greatest degree practicable, CDOT will keep the existing number of lanes open to traffic, and will maintain access for affected businesses during construction.

1 CDOT will coordinate with the transit staff of the City of Colorado Springs to coordinate any
2 changes needed to bus stops located on cross-streets that will be affected by construction of
3 the Proposed Action.
4

5 Construction Noise

6 Local noise ordinances will be obeyed to the greatest extent possible during construction.
7 Mitigation efforts will adhere to City Code and applicable ordinances which address maximum
8 allowable noise levels and noise level limits for night work in residential areas. Where
9 appropriate, sound walls planned as permanent mitigation will be constructed as part of the first
10 phase of work, thus shielding receptors from temporary construction noise as well. Noise
11 blankets, temporary noise barriers around stationary equipment, and muffling devices on heavy
12 equipment will be used when necessary to comply with City Code.
13

14 Air Quality

15 A Fugitive Particulate Emissions Control Plan will be developed and implemented and a Dust
16 Abatement Permit will be obtained at the time of construction in accordance with Colorado Air
17 Quality Control Regulation Number 1. The Fugitive Particulate Emissions Control Plan will
18 require the following:
19

- 20 • Contractors will be required to use dust suppression techniques (such as wetting or
21 application of dust palliative compounds) to control fugitive emissions within permitted
22 levels.
- 23 • Trucks carrying fill material will be either wetted down or covered with tarps to prevent the
24 blowing of dirt and dust from the trucks.
- 25 • The disturbed area for any haul roads will be minimized, and hauls roads will be wetted to
26 suppress dust.
- 27 • Fills, cuts, slopes and other exposed areas will be re-vegetated and mulched within a
28 reasonable time after disturbance.
- 29 • Off-site tracking of mud and debris will be minimized by using appropriate vehicle
30 tracking pads.
31

32 Dust suppression practices will be used as mandated by Federal, State and local agencies.
33 These practices are reasonably effective under normal weather conditions but cannot
34 completely control dust on very windy days.
35

36 CDOT will require contractors to maintain their construction equipment in good operating
37 condition in order to minimize exhaust emissions from diesel vehicles, compressors, and other
38 heavy machinery.
39

40 Water Quality

41 Section 4.6 of this Chapter describes the temporary Best Management Practices (BMPs) that
42 will be used to avoid, minimize and mitigate water quality impacts during construction.
43 Permanent BMPs will be built as early as possible during project construction for use in
44 mitigating temporary water quality impacts.
45
46

1 Consumption of Resources

2 Conservation of natural resources and recycling of locally available materials will be
3 implemented to the degree that is practical. Recycling will not only reduce the amount of new
4 material used in construction, but will also reduce the amount of waste materials hauled to a
5 landfill. Waste materials that are generated on-site during construction may be appropriate for
6 recycling, and their reuse will be encouraged.
7

8 Temporary Detours or Closures of Trails

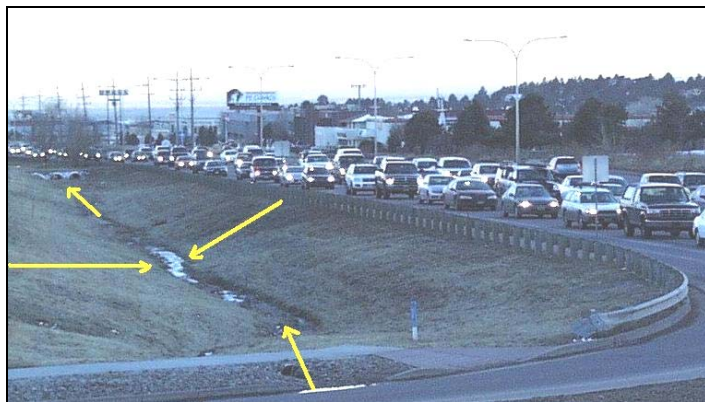
9 CDOT will coordinate with the City of Colorado Springs and the Trails and Open Space
10 Coalition of the Pikes Peak Region to finalize the details of any temporary trail detours, and will
11 provide advance notice to trail owners and users regarding temporary detours and closures.
12

13 **4.6 WATER RESOURCES**

14
15 Rain that falls onto any traveled roadway runs off the pavement into nearby drainages, carrying
16 along with it pollutants related to oil, grease, gasoline, brake wear, tire wear and vehicle
17 exhausts. Water pollutants also result from highway maintenance activities, including sand and
18 chemicals used for roadway deicing. In addition, runoff may include herbicides that are
19 sometimes used for control of noxious weeds.
20

21 Along portions of Powers Boulevard, stormwater runoff from the expressway gets mixed with
22 runoff from other land uses. For
23 example, in the illustration
24 shown in Exhibit 4-19, runoff
25 from the expressway (right side
26 of photo) combines with runoff
27 from an east-west cross-street
28 (foreground) as well as runoff
29 from commercial development
30 (from the left) in a roadside
31 detention area. If enough
32 volume accumulates, the water
33 flows downstream through the
34 culverts visible in the distance
35 and eventually enters a stream
36 such as Sand Creek.
37

Exhibit 4-19. Example of a Roadside Drainage Ditch along Powers Boulevard



(Arrows indicate direction of runoff flow)

38 In addition to transporting
39 chemical pollutants, the
40 hydraulic force of stormwater runoff can cause streambed erosion which may carry sediments
41 downstream. Hard surfaces such as roads, parking lots, driveways, sidewalks and buildings do
42 not allow water to soak into the ground to recharge underground water resources. Instead,
43 these impervious surfaces increase the amount of surface flows. For the past two decades,
44 rapid urban development in the Colorado Springs metropolitan area, and particularly in the
45 Powers Boulevard corridor, has resulted in a large increase in the amount of impervious surface
46 area, contributing to increased runoff and erosion.
47

2 All runoff from Powers Boulevard eventually
 4 flows to the west, southwest, or south through
 6 various creeks to reach Fountain Creek, which
 8 then flows southward about 45 miles to join the
 10 Arkansas River in the City of Pueblo. The
 12 Fountain Creek Watershed drains an area of
 14 927 square miles, including almost all of the
 16 Colorado Springs Metropolitan area. Because
 18 Fountain Creek has been severely degraded
 20 over the past few decades, it is the focus of
 22 major ongoing studies and intergovernmental
 24 efforts to improve its water quality.

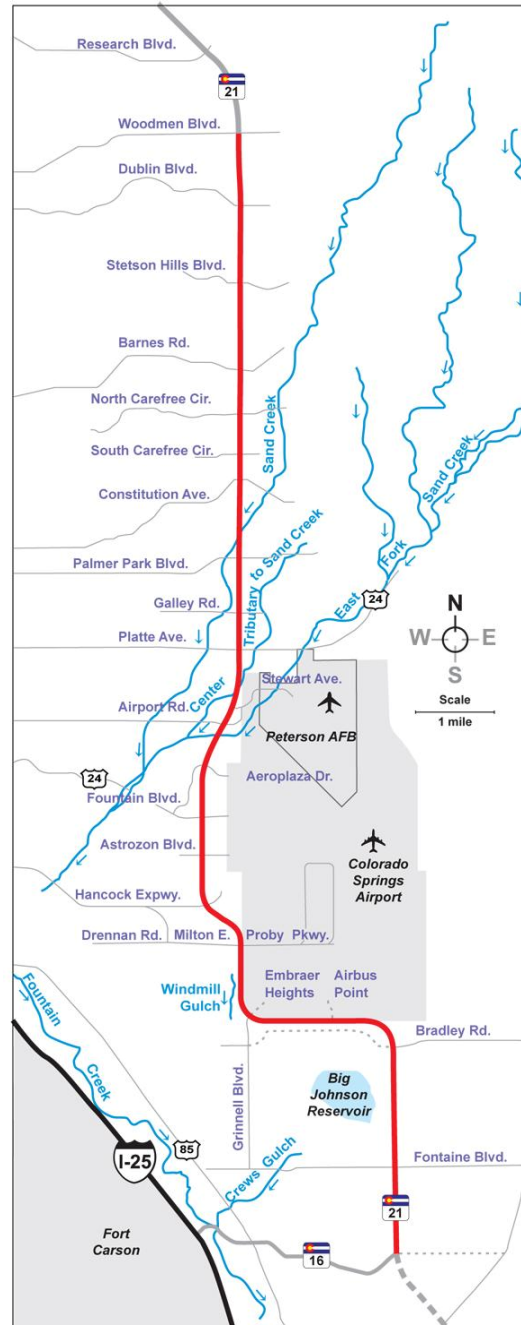
28 PPACG, the region's designated water quality
 30 planning agency, reports that stormwater
 32 pollutants of concern in the Fountain Creek
 34 Watershed are:

- 36 • Nutrients (Total phosphorous, nitrite,
38 nitrate, ammonia)
- 40 • Solids (Total Suspended Solids, Total
42 Dissolved Solids and Settleable
44 Solids)
- 46 • Metals (Copper, iron, lead, zinc,
48 selenium, iron, magnesium)
- 50 • Sediment
- 52 • Bacteria (*E. Coli* and fecal coliform)

56 Although five subwatersheds carry drainage
 58 from Powers Boulevard to Fountain Creek,
 60 most of the road's drainage is carried through
 62 just one of these. Sand Creek drains ten of the
 64 eleven miles where the Proposed Action calls
 66 for roadway improvements. As shown in Exhibit
 68 4-20, Sand Creek and two of its tributaries
 70 cross Powers Boulevard. The main branch
 72 crosses just south of Constitution Avenue. The
 74 Center Tributary crosses north of Airport Road.
 76 The East Fork crosses south of Airport Road. A
 78 small number of minor drainages cross Powers
 80 Boulevard and are not depicted.

82 Powers Boulevard encounters floodplains associated the each of the three creek crossings
 83 shown in Exhibit 4-20, and a fourth floodplain associated with Peterson AFB drainage, just north
 84 of the Hancock Expressway.

Exhibit 4-20. Drainages in the Powers Boulevard Corridor



1 South of Milton E. Proby Parkway, where future Powers Boulevard improvements are
2 envisioned but are not included in the Proposed Action, Powers Boulevard produces runoff that
3 flows either into the privately-owned Big Johnson Reservoir or eastward into Jimmy Camp
4 Creek. The Big Johnson Reservoir stores irrigation water used for farming and ranching in the
5 Fountain Valley area south of Colorado Springs, while Jimmy Camp Creek is a major tributary to
6 Fountain Creek.

7 Existing Water Quality

8 In accordance with Section 303(d) of the federal Clean Water Act, the Colorado Water Quality
9 Control Commission periodically assesses the water quality of the State's water bodies and
10 indicates what pollutants, if any, are impairing the use of the water. The current 303(d) list was
11 approved by the Commission in March 2008.
12

13
14 For Fountain Creek, downstream from Powers Boulevard, the latest 303(d) list indicates that the
15 water is impaired by *Escherichia coli* (commonly called E. coli), a bacterium associated with
16 fecal matter from people and animals. A 2009 study by the U.S. Geological Survey suggests
17 that in this case, pigeons may be largely the source of the bacterium. The presence of E. coli
18 impairs the use of the water for recreation that involves human exposure to the water (e.g.,
19 fishing or rafting).

20
21 Fountain Creek is also on a list for further evaluation and monitoring with respect to selenium.
22 Recent sampling to determine whether or not the water is impaired by selenium has provided
23 inconsistent results, sometimes suggesting impairment and sometimes not. Selenium is a
24 naturally occurring element found in shale rock formations, which can erode due to stormwater
25 runoff. Excessive concentrations of selenium can adversely effect fish populations and other
26 aquatic life. Fountain Creek is not impaired by the types of water pollutants attributable directly
27 to motor vehicle use, such as copper, zinc, or oil and grease.
28

29 In its 2005 *Fountain Creek Watershed Impervious Surface Area and Watershed Health*
30 *Analysis*, PPACG reported the following outlook for the 59 square-mile Sand Creek watershed,
31 where Powers Boulevard improvements are proposed:
32

- 33 • The streams in the Sand Creek subwatershed are non-supporting of aquatic life.
- 34 • Projected population and housing growth are expected to make existing erosion and
35 flooding problems much worse, putting bridges and utility crossings at risk.
- 36 • Rapid growth will result in increased impervious surface area, likely causing flows that
37 are currently intermittent to become perennial.
38

39 Water Quality Modeling Results

40 Water quality in the Powers Boulevard corridor is influenced by vehicle-related pollutants but
41 even more so by adjacent land uses. Therefore a regional land use approach was used to
42 evaluate water quality impacts from the Proposed Action. An analytic model called L-THIA
43 (Long-Term Hydrologic Impact Assessment) was used since it provides estimates of changes in
44 annual runoff and annual pollutant loads resulting from past or proposed land use changes.
45 Details about the analysis are provided in Appendix N, Water Quality Technical Report. Exhibit
46 4-21 presents the L-THIA model projections of annual runoff for baseline conditions.
47

1 **Exhibit 4-21. Baseline Runoff and Pollutant Loads from Powers Boulevard and Adjacent**
 2 **Land Uses**

Modeled Characteristic	Powers Boulevard Contribution	Total Corridor Load Including Powers Boulevard and Adjacent Land Uses
Average Annual Runoff (acre-feet)	160	367
Suspended Solids (lbs/year)	62,843	185,521
Total Phosphorous (lbs/year)	176	418
Total Nitrogen (lbs/year)	442	1,150
Total Copper (lbs/year)	23	42
Total Zinc (lbs/year)	145	319
Oil and Grease (lbs/year)	5,619	12,537
Biological Oxygen Demand (lbs/year)	2,654	10,883
Fecal Coliform (millions)	19,870	218,880

3
 4 The modeling results indicate that Powers Boulevard generally contributes 40% to 45% of the
 5 runoff and most water pollutants along the corridor, with a slightly larger percentage being
 6 contributed from adjacent land uses.

7
 8 Water Quality Impacts with the No-Action Alternative

9 With the No-Action Alternative, no new impervious surface would be added to Powers
 10 Boulevard, but adjacent land will continue to be developed and cause an increase in impervious
 11 surface and runoff volume for the Powers drainage basins. Also, traffic on Powers Boulevard
 12 would increase by a corridor-wide average of 88% by 2035, generating more contaminants in
 13 the same amount of stormwater runoff. As a result, water quality in local drainages would
 14 decline. The resulting future production of runoff and water pollutants is indicated in Exhibit
 15 4-22. Compared to baseline conditions, runoff would increase 26% and most water pollutants
 16 would increase by similar percentages.

17
 18 **Exhibit 4-22. Runoff and Pollutant Loads, Baseline and No-Action Alternative**

Modeled Characteristic	Current Corridor Total	2035 Corridor Total (No-Action)	Change
Average Annual Runoff (acre-feet)	367	461	26%
Suspended Solids (lbs/year)	185,521	271,713	32%
Total Phosphorous (lbs/year)	418	537	29%
Total Nitrogen (lbs/year)	1,150	1,474	28%
Total Copper (lbs/year)	42	49	17%
Total Zinc (lbs/year)	319	407	28%
Oil and Grease (lbs/year)	12,537	17,843	42%
Biological Oxygen Demand (lbs/year)	10,883	13,093	20%
Fecal Coliform (millions)	218,880	270,252	24%
Range of Future Increase in the Modeled Corridor Characteristics			17% to 42%

19

1 The No-Action Alternative would not change roadway drainage systems or floodplains, and
 2 would not include any measures to improve water quality.

3
 4 Water Quality Impacts of the Proposed Action

5 The Proposed Action would increase the amount of paved roadway area associated with
 6 Powers Boulevard by about 50 percent, and would also accommodate more traffic than the No-
 7 Action Alternative. Therefore it would produce increased runoff and increased water
 8 contaminants. These effects would be in addition to the increases caused by development of
 9 adjacent land in the corridor, discussed above with respect to the No-Action Alternative.

10
 11 The effects of the highway and the adjacent land use are being discussed together because the
 12 highway’s drainage system receives runoff from adjacent properties. Therefore, mitigation
 13 strategies for the proposed roadway improvements should consider what constituents are in the
 14 drainage, and not focus strictly on what came from the roadway. The results of the L–THIA
 15 modeling for the Proposed Action are presented in Exhibit 4-23.

16
 17 **Exhibit 4-23. Runoff and Pollutant Loads, Baseline and Proposed Action**

Modeled Characteristic	Current Corridor Total	2035 Corridor Total (Proposed Action)	Change
Average Annual Runoff (acre-feet)	367	539	47%
Suspended Solids (lbs/year)	185,521	271,713	47%
Total Phosphorous (lbs/year)	418	617	48%
Total Nitrogen (lbs/year)	1,150	1,678	46%
Total Copper (lbs/year)	42	63	51%
Total Zinc (lbs/year)	319	474	49%
Oil and Grease (lbs/year)	12,537	20,329	62%
Biological Oxygen Demand (lbs/year)	10,883	13,672	26%
Fecal Coliform (millions)	218,880	272,375	24%
Range of Future Increase in the Modeled Corridor Characteristics			24% to 62%

18
 19 The projections reported above assume no new water quality controls in the corridor, but in
 20 actuality, Federal and State laws will require effective mitigation. The Proposed Action includes
 21 numerous water quality strategies and devices referred to as Best Management Practices
 22 (BMPs) that will contain sediment and associated pollutants both from the roadway and from
 23 adjacent lands.

24
 25 Although this alternative involves increased pavement, increased impervious surface, and an
 26 associated increase of sediment load, proposed BMPs such as sediment basins and detention
 27 ponds are expected to reduce the overall sediment load into area streams – resulting in an
 28 overall reduction of about 50% in sediment load from existing and No-Action Alternative
 29 conditions. This overall improvement is based on studies of the effectiveness of BMPs from the
 30 Denver Urban Drainage District. For example, assuming a 50% reduction in suspended solids
 31 due to BMPs, future loading in the Powers Boulevard corridor would be approximately 135,500
 32 pounds per year, a 27% reduction from current conditions.

1 Proposed BMPs and the right-of-way needed to accommodate them have been included in the
 2 Proposed Action. Identification of suitable land parcels for this use was part of the Context-
 3 Sensitive Solutions approach used to develop the Proposed Action. This land acquisition is
 4 recognized as a right-of-way impact and included in the proposed cost of the Proposed Action
 5 as reflected elsewhere in this EA.

7
 9 Construction activities typically involve
 11 disturbance of soils and exposure of soils to
 13 wind and precipitation, resulting in the
 15 potential for sediment runoff and erosion.
 17 Fuel spills and other construction-related
 19 pollutants can occur as well. While Best
 21 Management Practices will be used to avoid,
 23 minimize and mitigate water contamination,
 25 nevertheless some sediment could potentially
 27 reach Sand Creek and the other drainages
 29 along the Powers Boulevard corridor.

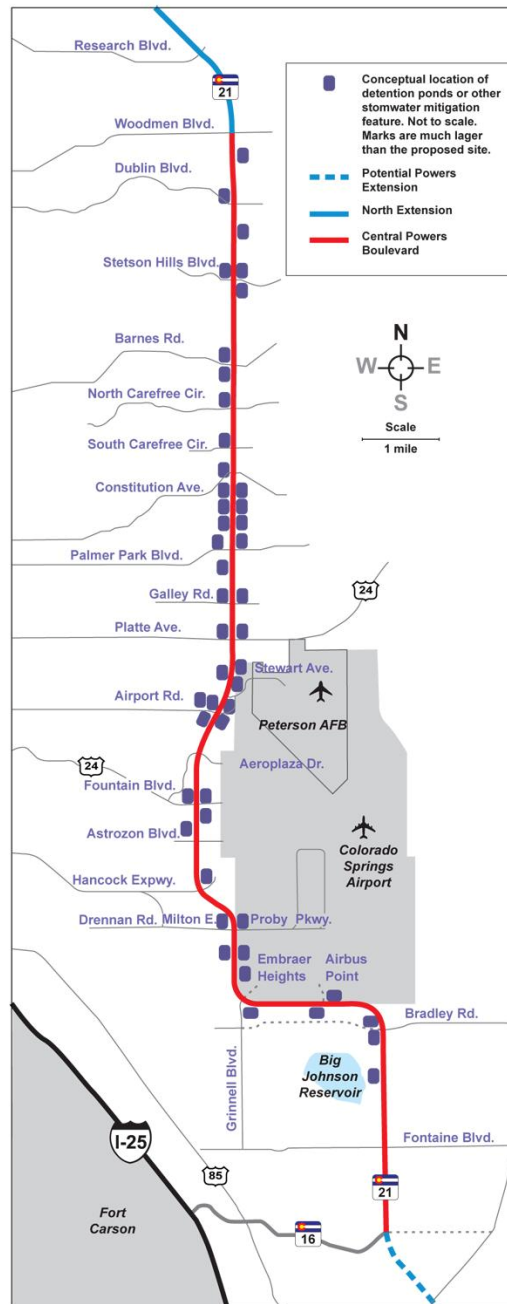
31
 33 An analysis of floodplain impacts was
 35 conducted in accordance with methods
 37 approved by the Federal Emergency
 39 Management Agency. This analysis is
 41 documented in Appendix M that is found on
 43 the compact disc attached to the back of this
 45 EA. Widening the roadway at drainage
 47 crossings would reduce the amount of
 49 floodplain acreage in three drainages,
 51 affecting a total of 13.9 acres. The modified
 53 structures at Sand Creek's main channel,
 55 East Fork and Center Tributary would be
 57 designed to ensure no increase in the base
 59 floodplain elevations. The Proposed Action
 61 would not impair the natural and beneficial
 63 values of any affected floodplain.

65
 67 Mitigation of Water Quality Impacts

69 Mitigation for the Proposed Action will include
 71 both permanent BMPs, for long-term water
 73 quality improvement, and temporary BMPs
 75 that address conditions during the
 77 construction process.

79
 81 Permanent BMPs for stormwater quality
 83 control will be implemented throughout the
 85 project to protect the water quality of Fountain
 87 Creek, which is classified by the Colorado
 89 Department of Health as a Tier I receiving
 91 water. Due to this Tier I designation, the

Exhibit 4-24. Conceptual Locations for Water Quality Detention Features



1 BMPs need to provide for either a 100% water capture volume or remove at least 80% of the
2 average annual loading of total suspended solids from average storm events. At least two types
3 of permanent BMPs will be constructed along the corridor: extended dry detention basins and
4 grass swales.

5
6 Extended dry detention basins are sedimentation basins designed to allow sediment to settle
7 out in the sediment basin. A water quality capture volume is used to provide adequate storage
8 volume for sediment to settle. The capture volume includes the “first flush” of runoff, which
9 often contains the main water quality degrading constituents such as sediments and floating and
10 dissolved contaminants. Nine basins ranging in size from 1,300 square feet to 10,000 square
11 feet are proposed within the Powers Boulevard right-of-way.

12
13 Grass-lined swales are vegetated swales or ditches having gentle slopes. These swales are
14 recommended in locations where the tributary drainage area is relatively small. The goal is to
15 filter the sediment-laden runoff and allow it to settle before reaching the receiving stream. Two
16 grass-lined swales are proposed along the study area right-of-way.

17
18 Conceptual locations for the water quality basins and swales are shown in Exhibit 4-24.
19 Between Woodmen Road and Milton E. Proby Parkway, about 40 sites totaling 1,360 acres
20 could be used for water quality mitigation. These sites range in size from 2.8 to 118 acres, and
21 average about 33 acres. Much of this land is within the current Powers Boulevard right-of-way,
22 but some of the land would need to be purchased. These sites comprise a workable conceptual
23 approach, not a specific mitigation commitment. Some of the conceptual sites may not be
24 available in the future due to development.

25
26 During the final design phase of the project, it could become apparent that BMPs other than a
27 grass lined swale or extended dry detention basin would be more appropriate for mitigation. For
28 example, a sediment treatment structure such as a vault can be used to meet the 80% removal
29 requirement of total suspended solids. If the BMPs are refined during design and construction,
30 the overall commitment to protect water quality and minimize water quality impacts will be
31 maintained, in accordance with regulatory requirements.

32
33 Since the Proposed Action includes approximately 11 miles of construction and six additional
34 miles of right-of-way preservation, it has the potential to use large-scale mitigation approaches
35 not well suited for typical, smaller road projects. For example, instead of focusing on small-
36 scale roadside ditches, CDOT has worked together with the City of Colorado Springs to use
37 regional-scale water detention facilities for Powers Boulevard. This cooperative approach is
38 especially appropriate because, as noted earlier, Powers Boulevard itself generates only about
39 30% of the corridor runoff that CDOT needs to mitigate. The other 70% of corridor runoff comes
40 from adjacent properties.

41
42 CDOT will continue to work closely with City and County officials in the design and
43 implementation of drainage systems and water quality BMPs during project phasing. The
44 conceptual drainage design will be revised and finalized as project phases are built.
45 Stormwater management plans will be prepared by CDOT and reviewed by the City for
46 consistency with established drainage criteria and guidance.

1 Temporary BMPs will be used to minimize and avoid water quality impacts during and after
 2 construction in accordance with CDOT's *Erosion Control and Stormwater Quality Guide* (2002)
 3 and the City of Colorado Springs *Drainage Criteria Manual* (2002). The BMPs include measures
 4 for the control of erosion and sedimentation, and the treatment of stormwater runoff.

7 Preparation of a stormwater management plan
 9 prior to construction is required by CDOT and
 11 the City. A key objective of a stormwater plan
 13 is to prevent sediment from reaching receiving
 15 waters. The stormwater management plan will
 17 include provisions to minimize the amount of
 19 disturbance, limit the amount of time that areas
 21 can be disturbed, and control the use, storage
 23 and disposal of construction-related chemicals
 25 and materials.

29 Specific BMPs that are likely to be used
 31 include: seeding and mulching; silt fencing;
 33 culvert riprap outlet protection; erosion control
 35 blankets; and check dams and sediment traps.

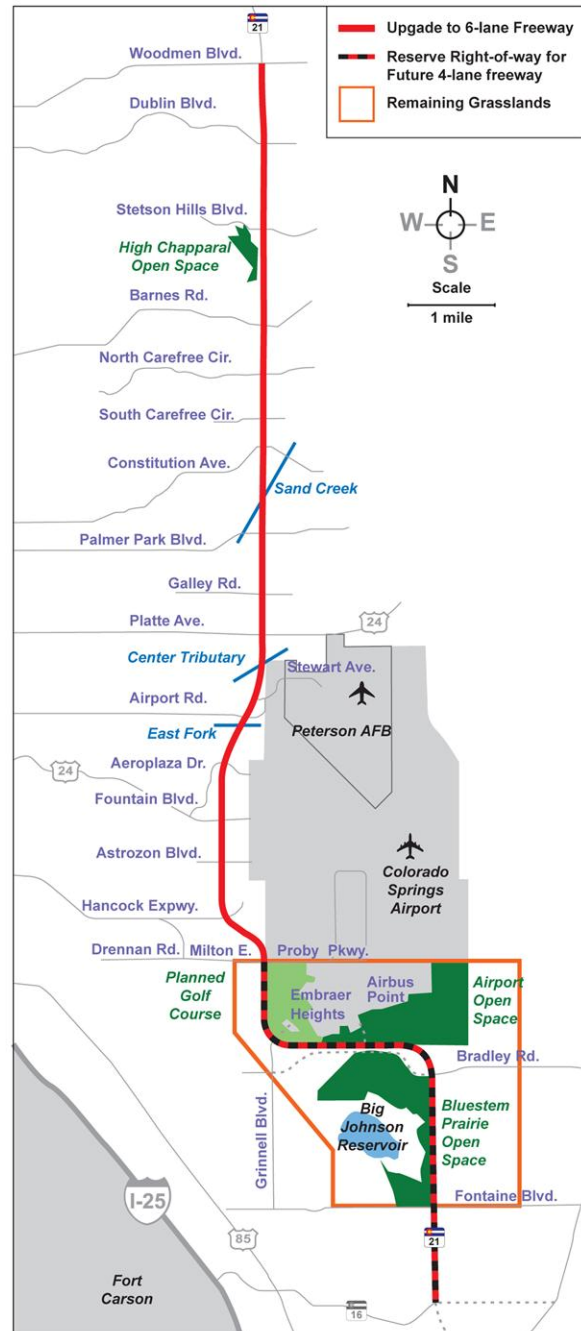
39 4.7 ECOLOGICAL RESOURCES

43 The Endangered Species Act of 1973,
 45 Migratory Bird Treaty Act of 1918, and a
 47 number of other Federal and State regulations
 49 and Executive Orders provide legal protection
 51 for various plants and animals and their habitat.

55 As part of the Powers Boulevard EA, wildlife
 57 biologists examined the corridor and consulted
 59 with the Colorado Division of Wildlife to
 61 determine what types of species and habitat
 63 are present. The Ecological Resources
 65 Technical Report, found in Appendix K on the
 67 compact disc attached to the back of this EA,
 69 provides the complete findings of the ecological
 71 investigations. Existing resources, project
 73 impacts, and mitigation strategies are
 75 summarized below.

79 Ecological resources in the Powers Boulevard
 81 corridor are indicated in Exhibit 4-25. The key
 83 resources in the corridor are found in the area
 85 identified as "remaining grasslands."

Exhibit 4-25. Ecological Resources in the Powers Boulevard Corridor



1 Existing Conditions North of Milton E. Proby Parkway

2 The 11 northernmost miles of the corridor, from Woodmen Road to Milton E. Proby Parkway,
3 have been transformed over the past four decades from prairie grassland to urban
4 development. There is minimal native vegetation or wildlife remaining in this portion of the
5 corridor where the Proposed Action would convert the existing expressway to a freeway.
6

7 This northern portion of the corridor includes an isolated 54-acre open space area as well as
8 three stream channels that cross Powers Boulevard – Sand Creek, its Center Tributary, and its
9 East Fork. These drainages are often dry and do not support aquatic life. The High Chaparral
10 Open Space has minimal wildlife and no known threatened or endangered species.
11

12 As an example of conversion to urban land use, Exhibit 4-26 illustrates the extent of change that
13 has occurred around the Powers intersection with Constitution Avenue, near the former Powers
14 Dairy (upper left quadrant of the 1967 photo). Comparing the aerial photos of 1967 and 2007,
15 all of the grassland has been converted to urban use, and the wide, meandering Sand Creek
16 (light-colored diagonal area from top right to bottom center, in 1967) has been confined to an
17 engineered channel.
18

19 **Exhibit 4-26. Aerial Photos, 1967 and 2007, of the Site of the Former Powers Dairy**



21 Intense urban development deprives native wildlife of the natural vegetation that is needed for
22 protective cover, feeding sources and breeding areas. Most native animal species are no longer
23 present in the developed areas, giving way to other opportunistic species that can adapt to
24 urban conditions. Birds and animals better adapted to urban conditions have replaced the native
25 species that depended on open prairie. Mammal species that have adapted to an urban
26 landscape include the fox squirrel, desert cottontail rabbit, red fox, and raccoon. Since 2005,
27 coyotes have also become prevalent in the area depicted above. Parks, trails, open spaces and
28 drainages such as Sand Creek provide connectivity that is important for the survival of wildlife in
29 an urban environment.
30

31 Each of the three creeks that cross through culverts under Powers Boulevard has associated
32 riparian areas and wetlands, although they are not plentiful or robust. Sand Creek and its
33 Center Tributary are ephemeral, having only occasional and short-lived flows of water, usually
34 after a storm. The East Fork of Sand Creek is wet more often, with periodic flows. To reduce

1 sedimentation problems associated with stormwater runoff, the streamcourses have been
2 engineered, banks have been stabilized and drop structures have been built in Sand Creek and
3 its East Fork. Due to all of these factors, the quality of the wetland and riparian areas along
4 these streams is relatively poor. Nevertheless, the streams that cross under Powers Boulevard
5 do have some notable ecological features:

- 6
7 • Plains ragweed (*Ambrosia linearis*), also called streaked ragweed or plains ambrosia, is a
8 plant that was found along the East Fork of Sand Creek, in sandy soils of the
9 embankment and adjacent to Powers Boulevard, both upstream and downstream from
10 the bridge. This plant is not threatened or endangered, but is found only in central
11 eastern Colorado, and seems to thrive in intermittent streams and in roadside ditches,
12 according to the Colorado Natural Heritage Program (CNHP). CNHP is an organization
13 at Colorado State University that tracks and ranks Colorado's rare and imperiled species
14 and habitats.
- 15 • The same Powers Boulevard bridge over the East Fork of Sand Creek is used for nesting
16 by cliff swallows, one of the many species that are protected under the Migratory Bird
17 Treaty Act. There may also be nests of other migratory birds on the ground or in trees
18 elsewhere within the project area.

19
20 The northern portion of the corridor also has a few, small, isolated wetlands that were created
21 accidentally from the drainage of new commercial and residential development. Appendix L on
22 the CD attached to this EA provides detailed information about these wetlands.

23 24 Existing Conditions South of Milton E. Proby Parkway

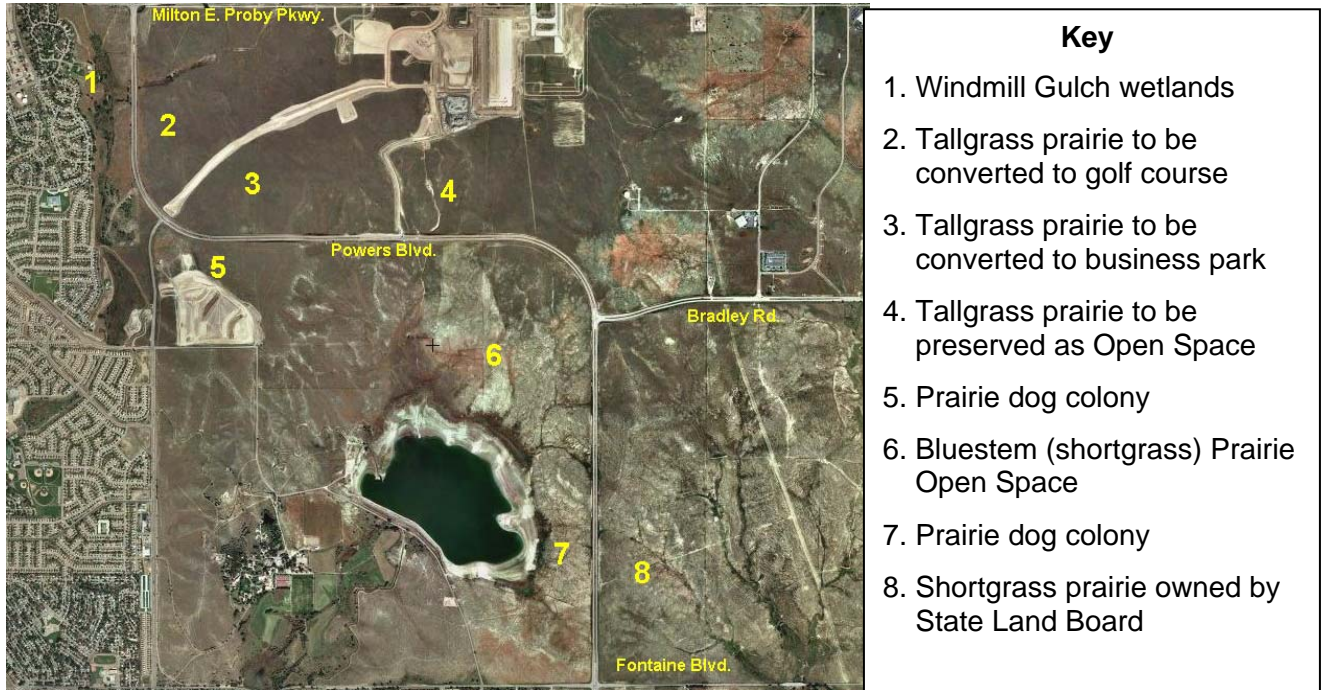
25 South of Milton E. Proby Parkway to Fontaine Boulevard, for a distance of 4.7 miles, Powers
26 Boulevard passes through prairie grasslands. The Proposed Action does not call for any
27 construction in this portion of the corridor, but would preserve right-of-way to convert the
28 existing expressway to a freeway in the future. Within the area labeled "remaining grasslands"
29 on Exhibit 4-25, there are two large publicly-owned dedicated open space areas: Bluestem
30 Prairie Open Space partially surrounding the privately owned Big Johnson Reservoir; and a
31 tallgrass prairie remnant area within the Colorado Springs Airport. It can be anticipated that
32 most all other land within the labeled grassland area will be converted to urban land use in the
33 foreseeable future. This area is shown in more detail in Exhibit 4-27.

34
35 The area shown in Exhibit 4-27 was identified as being a Potential Conservation Area (PCA) in
36 2001 by the CNHP. Designation as a PCA does not bestow any special protection to land but
37 merely advises local officials that the land has important biological resources. The land
38 immediately north of Powers Boulevard, comprising the Airport Business Park, contains what is
39 reportedly the largest remaining expanse of the big bluestem-prairie-sandreed tallgrass
40 community still remaining in Colorado. This patch of almost two square miles in size is partially
41 within the planned Colorado Springs Airport Business Park, which is now undergoing early
42 stages of development.

43
44 South of Powers Boulevard, the area includes known suitable nesting and hunting areas for
45 raptors (including bald eagles) on the western shore of Big Johnson Reservoir, as well as
46 nearby to the east along Jimmy Camp Creek and to the west along Fountain Creek, both less

1 than two miles distant. Pronghorn antelope are often found in the area, but are not the focus of
 2 the CNHP conservation recommendations.

3
 4 **Exhibit 4-27. Ecological Resources South of Milton E. Proby Parkway**



5
 6 There are two colonies of black-tailed prairie dogs within the Bluestem Prairie Open Space.
 7 The black-tailed prairie dog is not listed as a threatened or endangered species but is
 8 considered a Colorado Species of Special Concern. The two prairie dog colonies offer suitable
 9 habitat for the burrowing owl (a Colorado Threatened species) and suitable prey for the swift fox
 10 (a Colorado Species of Special Concern), but field observations did not detect the presence of
 11 these species in the corridor. The bald eagle also preys on prairie dogs.

12
 13 Exhibit 4-28 provides a brief summary of findings regarding the potential presence of threatened
 14 or endangered species and other sensitive species within the corridor. Species that are not
 15 likely to occur in the Powers Boulevard corridor, including the Preble's meadow jumping mouse,
 16 are discussed in the Ecological Resources Technical Report (see Appendix K on the compact
 17 disc attached to this EA).

18
 19 Out of 1,008 acres of land that CNHP recommended for conservation around Big Johnson
 20 Reservoir, the City of Colorado Springs purchased 647 acres which have become the Bluestem
 21 Prairie Open Space. The remaining 358 acres are unlikely to receive any protection from
 22 development. Out of the 1,100 acres of tallgrass prairie just south of the airport, one contiguous
 23 patch of 383 acres of tallgrass prairie is being preserved as open space in the Airport Business
 24 Park, along with several much smaller patches.

25
 26

1 **Exhibit 4-28. Sensitive Species Potentially Present in the Powers Boulevard Corridor**

Species Common Name (and Scientific Name)	Potential for Occurrence in Project Area	Status	Basis for Occurrence Determination
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Likely to occur , based on nearby sightings	State Threatened	Bald eagles have been known to winter near the Big Johnson Reservoir, as well as Jimmy Camp Creek to the east and Fountain Creek to the west.
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	Known to occur , based on recent observation	State Species of Special Concern	Two colonies in Bluestem Prairie Open Space at Fontaine Boulevard and Powers Boulevard interchange; others colonies exist nearby, east of the Powers Boulevard corridor.
Burrowing owl (<i>Athene cunicularia</i>)	Possibly occurs , due to presence of suitable habitat	State Species of Special Concern	Suitable habitat (prairie dog colony) is present around Bluestem Prairie Open Space, but surveys have not detected the burrowing owl in this location.
Swift fox (<i>Vulpes velox</i>)	Possibly occurs , due to presence of suitable habitat	State Species of Special Concern	Suitable habitat is present around Bluestem Prairie Open Space, but surveys have not detected the swift fox in this location.

2
3 A wetland area called Windmill Gulch is located southwest of the Powers Boulevard intersection
4 with Milton E. Proby Parkway. A wide variety of birds use this area and various raptor nests
5 have been observed there, approximately a half-mile from the intersection. This privately
6 owned land currently is undeveloped, but there is no guarantee how the land may be used in
7 the future. Moisture for the Windmill Gulch wetlands comes partly from the east of Powers
8 Boulevard, through a drainage culvert under the expressway just south of Milton E. Proby
9 Parkway. These wetlands and those located north of Milton E. Proby Parkway are discussed in
10 more detail in the Technical Memorandum, Wetland Finding Technical Report, found in
11 Appendix L on the compact disc attached to this EA.

12
13 The area surrounding the Big Johnson Reservoir is shortgrass prairie. There is additional
14 shortgrass prairie across Powers Boulevard to the east, owned by the State Land Board, City of
15 Colorado Springs, El Paso County and various private parties. This land is likely to be converted
16 to urban development, as is nearby property to the east (the City's Banning-Lewis Ranch
17 development area). Over time, such development would reduce or sever habitat continuity and
18 isolate the Bluestem Prairie Open Space.

19
20 South of Fontaine Boulevard, to State Highway 16, the land on both sides of Powers Boulevard
21 has been or is being developed into residential areas, so there are few remaining native
22 ecological resources along this southernmost mile of the corridor.

23
24 Existing Conditions Corridor-wide: Noxious Weeds
25 Throughout all 17 miles of the Powers Boulevard central corridor, various species of noxious
26 weeds were observed in a field survey. The species that were observed are listed in Exhibit

1 4-29. Noxious weeds displace native species, which reduces the ecological value of land. They
 2 also threaten the stability of the ecosystem by consuming scarce water and nutrient resources,
 3 and by reducing species diversity and wildlife habitat. Road corridors often serve as conduits for
 4 seeds, thereby aiding the spread of noxious weeds.

5
 6 The State of Colorado and El Paso County both maintain noxious weed lists that identify
 7 species that are their highest priority for control. Seven of the 13 species listed in Exhibit 4-29
 8 are on one or both of these lists. One of the priority species, tamarisk, was singled out as a
 9 target for eradication by the Governor of Colorado through Executive Order D002-03, in 2003.
 10 Along the Powers Boulevard corridor, this species was found in the East Fork of Sand Creek.

11
 12 **Exhibit 4-29. Noxious Weeds Present in the Powers Corridor**

Weed Species	Ecosystem	Presence within Corridor
Canada thistle (S,C)	Wetland, riparian	East Fork Sand Creek, Windmill Gulch
Musk thistle (S,C)	Shortgrass prairie	Disturbed areas in the corridor
Diffuse knapweed (S,C)	Riparian, shortgrass prairie	Sand Creek
Tamarisk (S)	Wetland	East Fork Sand Creek
Russian olive (S)	Riparian	Sand Creek
Common teasel (S)	Riparian, shortgrass prairie	Windmill Gulch
Common mullein (S)	Shortgrass prairie	Disturbed areas in the corridor
Field bindweed	Shortgrass prairie	Disturbed areas in the corridor
Pale smartweed	Wetland	East Fork Sand Creek
Curly dock	Wetland	East Fork Sand Creek, Sand Creek
Yellow sweetclover	Riparian	Sand Creek
Siberian elm	Riparian	Sand Creek
Morning glory	Riparian	Sand Creek

13 (S) = One of the State's top priority weeds. (C) = One of El Paso County's top priority weeds.

14
 15 Ecological Impacts with the No-Action Alternative

16 Land development has already changed most of the riparian, shortgrass, and tallgrass prairie
 17 ecosystems in the corridor to an urban environment. The current land use zoning and approved
 18 developments indicate most vacant and undeveloped land that can be built upon will be
 19 converted to urban use within the next five to ten years. The incremental loss of riparian and
 20 shortgrass prairie due to development, coupled with increased noise and human presence, will
 21 result in the disappearance of those species that are unable to adapt to an urban environment.

1 Increased traffic on Powers Boulevard will make the existing expressway an even greater
2 barrier to animal crossings than it is today. In particular, increased Powers Boulevard traffic
3 between Milton E. Proby Parkway and Fontaine Boulevard will more than double, from 10,000
4 to 15,000 vehicles per day (CDOT, 2007) to 24,000 to 44,000 in 2035. This will make it more
5 difficult for pronghorn antelope and other terrestrial animals to move between habitats on the
6 west and east side of the existing expressway. Development of the land east of the Bluestem
7 Prairie Open Space will likely isolate the area to the point where pronghorn cannot viably
8 remain.

9
10 The spread of noxious weeds is likely to occur due to continued urban development in the
11 project area.

12 13 Ecological Impacts with the Proposed Action

14 As with the No Action Alternative, most of the adverse effects on riparian and wetland
15 ecosystems have already occurred, and would continue to occur due to planned land
16 development. The Proposed Action would have the specific effects that are listed below. Several
17 of these effects occur at the Powers Boulevard crossing of East Fork Sand Creek. This creek is
18 pictured in Exhibit 4-30, on the following page.

- 19
- 20 • Approximately 260 acres of shortgrass prairie would be needed for right-of-way.
- 21 • Up to 1.33 acres of riparian vegetation would be lost along East Fork Sand Creek for
22 ramps and associated road connections at the Airport Road interchange.
- 23 • Up to 0.12 acre of wetlands, including up to 0.1 acre of “jurisdictional” wetlands, would be
24 directly impacted. This would occur in three locations: north of Dublin Boulevard; East
25 Fork of Sand Creek; and the airport drainage to Windmill Gulch. (Impacts to wetlands
26 are discussed further in Appendix L on the CD attached to this EA.)
- 27 • Swallow nests under the Powers Boulevard bridge at East Fork Sand Creek would be
28 removed when the nests are inactive, prior to the widening of that structure.
- 29 • Individual plains ragweed plants in the construction area of the East Fork Sand Creek
30 crossing may be lost during the widening of the bridge there.
- 31 • Soil disturbance in construction areas would have the potential to spread noxious weeds.
- 32 • Already a barrier to wildlife movement for pronghorn and other species, Powers
33 Boulevard would become more difficult for wildlife to cross as traffic more than doubles
34 from 10,000 to 15,000 vehicles per day (CDOT, 2007) to 24,000 to 45,000 vehicles per
35 day by 2035 between Milton E. Proby Parkway and Fontaine Boulevard.
- 36 • Construction of a Powers Boulevard grade-separated interchange at Milton E. Proby
37 Parkway would be close to the Windmill Gulch wetlands area and could be disruptive to
38 raptors that nest there.

39 As noted above, the Proposed Action would result in an incremental loss of approximately 260
40 acres of shortgrass prairie. The effect on wildlife habitat from the Proposed Action would be low
41 compared to the effect from ongoing urban development. The area of permanent vegetation
42 loss would be within long narrow blocks next to the highway where the quality of the habitat is

- 1 low because of introduced plant species, weeds and its close proximity to human activity and
- 2 traffic noise.

Exhibit 4-30. East Fork Sand Creek



27
28 There are no anticipated direct effects to federally or state listed threatened and endangered
29 species, or to State Species of Special Concern. The sensitive species that are known or likely
30 to occur along the corridor are all found in the Bluestem Prairie Open Space. In the six
31 southernmost miles of Powers Boulevard, where this open space is located, the Proposed
32 Action includes right-of-way preservation but no construction. Nests possibly used by bald
33 eagles are at least one mile away from any construction included in the Proposed Action (i.e.,
34 construction of a grade-separated interchange at Milton E. Proby interchange).

35
36 Mitigation of Ecological Impacts

37 If the Proposed Action is undertaken, CDOT will provide all mitigation that is required under
38 Federal and State regulations. Each impact from the Proposed Action is listed below, together
39 with implementation commitments that are applicable.

- 40 • Loss of shortgrass prairie –Replacement is not required within the Powers Boulevard corridor
41 and will not be undertaken in the project area. To mitigate losses of shortgrass prairie
42 statewide, CDOT, FHWA, the U.S. Fish and Wildlife Service, the Colorado Division of
43 Wildlife, and The Nature Conservancy in 2001 signed a partnership agreement that allows
44 CDOT to preserve thousands of acres of shortgrass prairie in eastern Colorado. The purpose
45 of this Shortgrass Prairie Initiative is to offset the loss associated with CDOT's routine
46 maintenance activities, bridge replacement and other activities on existing highways in
47 Colorado's shortgrass prairie over the next 20 years.

- 1 • Loss of riparian habitat - CDOT will work with the Colorado Division of Wildlife to develop an
2 appropriate mitigation plan in accordance with Senate Bill 40 (CRS 33-5-101). CDOT and the
3 Colorado Division of Wildlife in January 2003 developed guidelines for obtaining Senate Bill
4 40 certification for CDOT projects. In accordance with these guidelines, CDOT will minimize
5 adverse effects to riparian areas in both the design and construction of the Proposed Action.
6
- 7 • Loss of wetlands – Efforts will be made in project design to further minimize any impacts to
8 wetlands. In accordance with State policy, CDOT will replace any lost wetland area to
9 ensure no net loss of wetlands. An existing wetland bank will be used to offset the loss of
10 0.1 acre of jurisdictional and 0.02 acre of non-jurisdictional wetlands. Based on current
11 regulations under the Clean Water Act, dredge and fill of up to 0.1 acre of jurisdictional
12 wetland can be authorized by the U.S. Army Corps of Engineers under their nationwide
13 permit program. The Proposed Action offers the opportunity to indirectly improve wetlands.
14 The sediment basins that are part of the road construction plan would increase the
15 sediment/toxicant retention and stabilization function of the drainages where the more
16 important wetlands are located.
17
- 18 • Disturbance to bird nests — A survey will be conducted for nesting birds in the short grass
19 prairie, riparian, and wetland habitat, including bridge structures during the nesting period
20 which is normally from April 1 through August 15. The survey will be conducted by a qualified
21 biologist to determine which species are nesting and the proximity of their nests to the project
22 area. The Migratory Bird Treaty Act (MBTA) states it is illegal to take, possess, import,
23 export, transport, sell, purchase, barter, any migratory bird, or the parts, nests, or eggs of
24 such bird except under the terms of a valid permit. The MBTA does not prohibit the
25 destruction of nests, provided that this occurs outside the nesting season or that period
26 leading up to nesting where migratory birds would be put in peril by the destruction of nests.
27 The prevention of nesting during the construction period will help avoid any unnecessary
28 take of migratory birds.
29
- 30 • Disturbance to plains ragweed plants near East Fork Sand Creek – Populations of plains
31 ragweed will be delineated prior to construction and temporary fencing will be erected to
32 prevent unnecessary disturbance to these plants. Riparian habitat at this location will be
33 restored after construction, including control of noxious weeds. This is likely to provide an
34 opportunity for the plains ragweed to reestablish at this site.
35
- 36 • Potential spread of noxious weeds – CDOT will develop a Weed Management Plan that
37 follows Best Management Practices. Appropriate control strategies will be implemented
38 before, during and after construction. CDOT will re-vegetate disturbed areas with native
39 species of vegetation. Additionally, CDOT will remove all tamarisk and Russian olive trees
40 found within its right-of-way at the time of construction.
41
- 42 • Increased barrier to wildlife movement - In project design, CDOT will consider opportunities
43 to provide bridges and culverts in the drainage ways that would be suitable for under-the-
44 highway crossings for small mammals. In particular, a bench above normal high water level
45 will be included in the bridge design over the tributaries of Sand Creek to provide small
46 mammal crossings under the highway.
47

- Temporary indirect disturbance to Windmill Gulch raptor nests during construction of the interchange at Milton E. Proby Parkway - Due to the presence of an active red-tailed hawk nest occurs approximately ¼ mile west of Powers Boulevard in Windmill Gulch, construction activities around Windmill Gulch should be limited within 1/3-mile of this site during the breeding period from March 1 to July 15. A survey of this and other nests will be conducted prior to construction during the breeding period. The survey will also investigate woodland areas that may be used by raptors from February 1 through July 15. If evidence of the red-tailed hawk or other raptors is observed, construction activities will be monitored to determine if there is any stress to the birds. Construction activities may need to be limited to daytime working hours only or stopped until such time the activities no longer disturb the normal activities of the birds.

4.8 CULTURAL RESOURCES

Cultural resources, meaning resources of historical or archaeological importance, are protected by Federal and State law (e.g., the 1966 National Historic Preservation Act and the Archaeological Resources Protection Act of 1979). Historic resources are those listed on or eligible for listing on the National Register of Historic Places. The criteria for eligibility include having historical significance, and the resource also must be at least 50 years old in most cases. Archaeological resources are the historic and prehistoric remains, artifacts, and other material evidence of human activity. These resources include such things as isolated stone tools, as well as entire sites where evidence of past human activity is preserved.

Qualified experts reviewed available literature and made field investigations to identify any cultural resources within 300 feet of the roadway for 16.8 miles along the Powers Boulevard corridor, between Woodmen Road and State Highway 16. This was the area within which potential effects from transportation improvements might reasonably be expected. The focus of this survey was on land that has not been recently converted to urban development. Modern development typically destroys historic and prehistoric resources as well as their context.

Five resources of historical interest and four resources of archaeological interest were documented in this review. Complete details regarding the evaluation are contained in Appendix O, Cultural Resources Technical Report, on the compact disc that accompanies this EA.

Of the four documented archaeological resources, two had been documented in 1976 and have since been destroyed by development. The other two, discovered during 2003-2004, were a stone biface (two-sided tool) and a projectile point (e.g., an arrowhead). Both were isolated finds without a context that would likely provide additional information at those locations.

Five potential historic sites were identified and evaluated. These sites are:

- Segment of Chicago Rock Island and Pacific Railway south of Constitution Avenue

EFFECTS ON CULTURAL RESOURCES

The Proposed Action would not impact any known archaeological resources. It would use land from a former railroad but would have no adverse effect to this historic resource.

- 1 • Babcock Ranch structures, on land platted for development at the Galley Road
- 2 intersection
- 3 • Farmstead structures east of Powers Boulevard and north of Airport Road
- 4 • Segment of feeder ditch of Fountain Mutual Irrigation Company at SH16
- 5 • Fragments of a porcelain plate and glass bottle (undisclosed location)

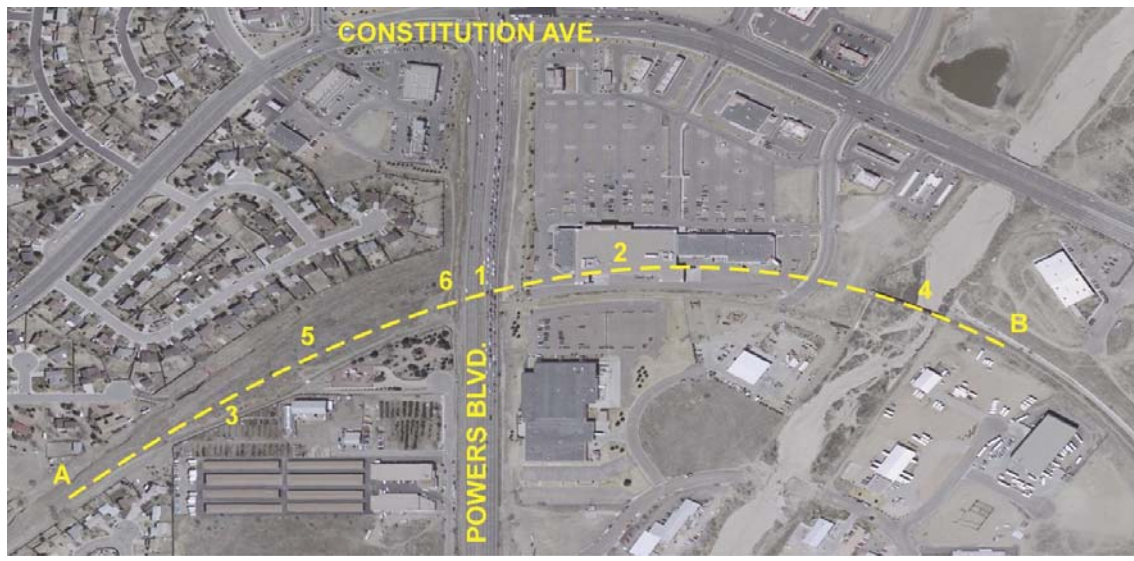
6
 7 Information regarding these resources was provided by CDOT to the State Historic Preservation
 8 Officer to obtain concurrence with CDOT's determination that they are not eligible for listing on
 9 the National Register of Historic Places. The Babcock Ranch structures, farmstead near Airport
 10 Road, and location of the fragments did not have sufficient historical integrity to warrant
 11 eligibility. The Fountain Mutual Irrigation Company ditch would not be affected by the Proposed
 12 Action. However, the segment of the Chicago, Rock Island and Pacific Railway was determined
 13 to be eligible for listing on the National Register, and the State Historic Preservation Officer
 14 concurred.

15
 16 Chicago, Rock Island and Pacific Railway

17 After serving as an important rail connection to Colorado Springs from 1888 to 1978, the
 18 Chicago, Rock Island and Pacific Railway was officially abandoned from use and was sold to a
 19 succession of private owners. The historical integrity of the railroad property has become
 20 greatly degraded, especially over the past five to ten years, by various actions including removal
 21 of the rails and ties for salvage in 2007. Thus while a CDOT historic resource survey in 2004
 22 suggested that the railroad segment immediately west of Powers Boulevard was eligible for
 23 listing on the National Register, a resurvey in 2008 could no longer support the same finding.

24
 25 Exhibit 4-31 shows the vicinity where the railroad crossed today's Powers Boulevard corridor,
 26 about 1,200 feet south of Constitution Avenue. The railroad connected the points labeled "A"
 27 (bottom left) and "B" (lower right edge of photo) in an arc, as shown by the dashed line.
 28 Numbers on the photo indicate where degradation has occurred, as detailed below.

Exhibit 4-31. Location of the Former Rock Island Railroad



1 Degradation to the railroad has occurred due to the following actions:

- 2 (1) construction of the Powers Boulevard expressway across the railroad grade;
- 3 (2) commercial development east of Powers Boulevard;
- 4 (3) construction of the Rock Island Trail west of Powers Boulevard by the City of
- 5 Colorado Springs;
- 6 (4) collapse of a railroad trestle across Sand Creek in 2004; and
- 7 (5) removal of railroad tracks and ties for salvage by a private owner in 2007.

8
9 With the Proposed Action, further effects on former railroad grade would occur at the location
10 labeled as number 6.

11
12 Although this particular segment of the railroad retains minimal integrity as an historic resource,
13 there are other segments that still do contribute to the overall eligibility of the railroad line which
14 was a transportation link important to the history of Colorado Springs.

15 16 Potential Need for Additional Survey Work

17 At three locations along the Powers Boulevard corridor, the private owners of undeveloped land
18 declined to allow the historians to enter their property to look for historic resources, as is their
19 right. These locations are as follows:

- 20
21 • A 0.54 acre parcel west of Powers Boulevard and immediately south of Sand Creek,
22 zoned commercial
- 23 • A 21.9 acre parcel in the southwest corner of Barnes Road and Powers Boulevard,
24 where the land was disturbed by a former landfill
- 25 • A 39.62 acre parcel west of Powers Boulevard at its intersection with Grinnell Boulevard,
26 including a natural drainage area (This is in the right-of-way preservation portion of the
27 corridor, south of any roadway construction included in the Proposed Action)

28
29 There is no reason to expect that cultural resources will be found on these parcels, but the
30 possibility cannot be ruled out. Additional survey work will be needed if any portions of these
31 lands are purchased for right-of-way.

32 33 Cultural Resource Impacts with the No-Action Alternative

34 With the No-Action Alternative, no impacts to known cultural resources are anticipated. Any
35 undiscovered cultural resources that may exist on privately-owned land are likely to be lost to
36 continuing urban development.

37 38 Cultural Resource Impacts with the Proposed Action

39 As discussed above, the only known cultural resource eligible for listing in the National Register
40 and affected by the Proposed Action is the Rock Island Railroad. The segment of the railroad
41 adjacent to Powers Boulevard has been impaired by a number of development actions.
42 Although no longer retaining its original integrity, the segment still contributes to the historic
43 significance of the larger, overall railway. The Proposed Action would require acquisition of 113
44 linear feet of the abandoned rail grade east of Powers Boulevard. This would accommodate a
45 frontage road along the western side of Powers Boulevard and a pedestrian overpass that
46 would span the freeway to continue the eastward development of the Rock Island Trail.



1 CDOT has determined and the State Historic Preservation Officer has concurred that this action
2 would have no adverse effect to the entire railroad. The overall railroad extends far beyond the
3 project area and will still convey the feeling and association of the historic feature.
4

5 There is the possibility that other unidentified cultural resources may be discovered during
6 construction of the Proposed Action. Resources discovered during construction are often
7 unearthed by heavy construction equipment.
8

9 Mitigation of Cultural Resource Impacts

10 By agreement with the State Historic Preservation Officer, the portion of the Rock Island
11 Railroad grade that is affected by the Proposed Action will be photo-documented prior to
12 commencement of construction at this site. Photo-documentation will be done in accordance
13 with the latest guidelines established by the Office of Archaeological & Historic Preservation of
14 the Colorado Historical Society. Disturbance to the railroad grade shall be kept within the
15 specific area that has been agreed upon by CDOT and the State Historic Preservation Officer
16 as documented in Appendix O.
17

18 If any currently unknown archaeological resources are discovered within the Powers Boulevard
19 corridor during construction, the CDOT staff archaeologist will be notified immediately to assess
20 their significance and make further recommendations.
21

22 On any property acquired for highway right-of-way from the three parcels where project
23 historians have not been allowed to enter, qualified historians will conduct a field survey to
24 determine whether or not any cultural resources are present, If any are found, CDOT will make
25 a determination of their eligibility and the effects the project may have on them. CDOT would
26 provide these findings to the SHPO for concurrence, and appropriate mitigation will be
27 identified.

RELATED TOPICS IN THIS EA

Under the National Historic Preservation Act, together with other related laws and regulations, Federal agencies must involve Native American tribes in the planning process for federal undertakings. Please see Chapter 6, Native American Consultation, in this EA.

Historic resources, publicly owned parks and recreation resources, and wildlife refuges together have additional Federal protection under Section 4(f) of the U.S. Department of Transportation Act of 1966. Please see Chapter 7, Section 4(f) *De Minimis* Impact Documentation, in this EA for additional discussion of the railroad impacts noted above.

4.9 OTHER RESOURCES AND ISSUES

This section addresses project effects that are not logically grouped together with the resources discussed in preceding sections of this chapter. The following topics are covered:

- Hazardous Materials
- Paleontological Resources

HAZARDOUS MATERIALS

Before acquiring any property for use as roadway right-of-way, CDOT undertakes due diligence to determine whether or not the property is contaminated with hazardous materials or petroleum products in the soil and groundwater. Encountering such materials during the construction of Powers Boulevard could affect the health and safety of the public, the workers, and the environment.

Four types of contamination often found along an urban highway are:

- Soil and groundwater pollution due to a leaking of fuel from an underground storage tank
- Soil and groundwater contamination due to landfills, material spills, or industrial operations
- Asbestos found in nearby structures that are acquired for highway right-of-way and in soil where building debris has been buried
- Lead paint found on highway bridge structures or in buildings acquired for right-of-way

Accordingly, a study called a Modified Phase 1 Environmental Site Assessment was conducted in 2008 to determine any sites with potential contamination. This study was based on a public records search, site observations, and review of historic photographs, but no actual laboratory testing of soil or water samples. The study contains a considerable amount of raw data, is extremely lengthy, and becomes dated very quickly; therefore it has not been included in an appendix. However, anyone wanting to review the study may contact the CDOT office in Colorado Springs at telephone (719) 634-2323.

The findings of the study are summarized here. Prior to 1960, the corridor was an area historically utilized for farming and ranching activities and the only industrial activity was the Colorado Springs Municipal Airport and Peterson Field. Since the mid 1970s, the area has been built up with residential and commercial development. An evaluation was made for hazardous materials that may have been associated with former landfills and spills and leaks of petroleum products from automobile service stations, fuel storage, and aircraft operations.

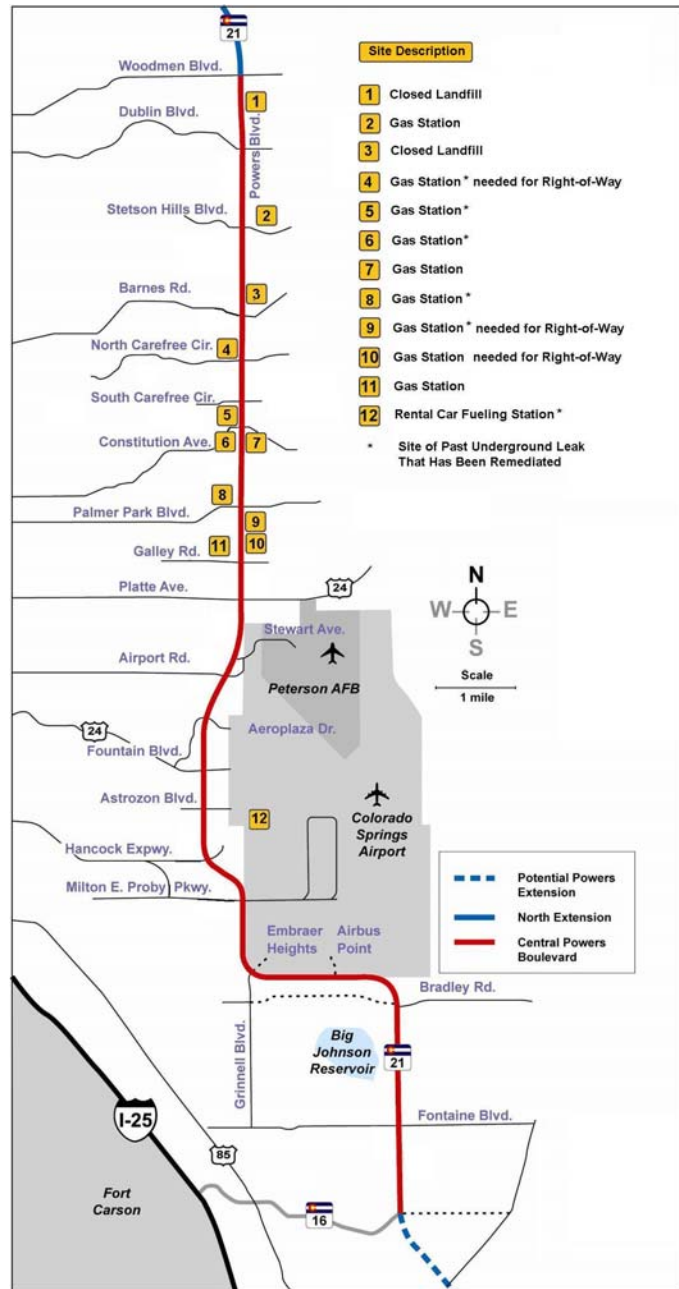
The Powers Boulevard corridor contains two former landfills and ten active or former gasoline stations with underground storage tanks. Of these ten gas stations, six had leaking underground storage tanks in the past, and the resulting soil contamination was cleaned up to the satisfaction of state inspectors. The locations of all landfills and gasoline stations in the corridor are indicated in Exhibit 4-32. The landfills are discussed briefly below.

2 The 43-acre Templeton Gap landfill
 4 (site #1 in the exhibit), in the
 6 southeastern quadrant of Powers
 8 Boulevard and Woodmen Road,
 10 operated from 1957 to June 1988.
 12 There have been numerous studies
 14 completed throughout the years
 16 regarding groundwater quality
 18 downgradient from the landfill. A
 20 vinyl chloride plume had been
 22 delineated as trending to the
 24 southwest beneath the Powers
 26 Boulevard corridor and methane
 28 levels above the 95 percent lower
 30 than explosive level have been
 32 detected on the west side of Powers
 34 Boulevard. The site has been
 36 mitigated with a variety of
 38 treatments, including vents to
 40 release the methane into the
 42 atmosphere. The site has been
 44 delisted from the national
 46 Comprehensive Environmental
 48 Response, Compensation and
 50 Liability Information System
 52 database, and no further remedial
 54 action is planned.

58 The Stetson Hills landfill (site #3 on
 60 the exhibit) operated at the
 62 northeast corner of Barnes Road
 64 and Powers Boulevard until 1983. It
 66 was then excavated and the material
 68 moved to the Templeton Gap
 70 landfill. The relocated material
 72 consisted of paper, metal, glass, and
 74 debris. No known records of soil or
 76 groundwater investigations have
 78 been identified in conjunction with
 80 the landfill. Due to its proximity to
 82 Powers Boulevard, the site may
 84 have had impacts on the subsurface
 85 land and water. However, because the source has been removed, it is anticipated that
 86 concentrations, if any, would have become diluted over time.

88 One short segment of Powers Boulevard is a State-designated route for the transport of
 89 hazardous materials. This segment, from Fountain Boulevard to Platte Avenue, is part of the
 90 US 24 hazardous material route connecting Colorado Springs with Interstate 70 at Limon. Only

Exhibit 4-32. Sites with Known or Potential Contamination by Hazardous Materials



2 two reported spills of petroleum products related to
4 traffic accidents occurred in the corridor since 1990.
6 The fuel and impacted soils around the spill were
8 cleaned up and there was no impact to surface or
10 groundwater.

12
14 Hazardous Materials Impacts with the No-Action
16 Alternative

18 Powers Boulevard is a major transportation route and
20 a designated truck route in an area with many
22 commercial businesses, including a major airport and
24 a military base. Part of the corridor is also a
26 designated route for transport of hazardous materials
28 as explained above. Therefore the potential exists for
29 accidental release of hazardous substances to the environment. Regulations and standard
30 procedures are in place to minimize the risk of spills and to ensure their safe remediation. All of
31 these characteristics are also applicable to the Proposed Action.

32
33 With the No Action Alternative, hazardous materials and petroleum products are not likely to be
34 encountered during routine maintenance, resurfacing operations, and minor construction
35 activities.

36
37 Hazardous Materials Impacts with the Proposed Action

38 Three gasoline stations along Powers Boulevard would be acquired for right-of-way: the
39 Diamond Shamrock station at the northwest corner of North Carefree Circle; the 7-Eleven at the
40 southeast corner of Palmer Park Boulevard; and the Conoco station at the northeast corner of
41 Omaha Boulevard. All three service stations have registered active underground storage tanks.
42 Previous leaks have occurred and have been cleaned up at two of these stations, and no tanks
43 at these sites are known to be actively leaking as of March 2009.

44
45 In addition to the three gasoline stations listed above, another 14 businesses and an estimated
46 47 residential units (23 duplexes and a mobile home) would need to be acquired and moved or
47 demolished to provide the necessary right-of-way. The businesses include two vehicle sales
48 lots, three auto parts or repair businesses, a carwash, five restaurants and three retail stores.
49 The buildings that house these businesses are relatively modern, and are unlikely to have
50 asbestos or lead-based paint, but the residential units are generally of 1980s vintage and will
51 need to be checked for these hazardous materials.

52
53 Mitigation of Hazardous Material Impacts

54 The underground storage tanks at all three gas stations needed for highway right-of-way would
55 be removed in accordance with state regulations and with the latest applicable guidance of the
56 Colorado Department of Labor and Employment, Division of Oil and Public Safety. The
57 regulations address the closure of the underground storage tanks and are designed to evaluate
58 whether the subsoil in the areas of the tanks has been impacted by petroleum hydrocarbons.
59 Appropriate documentation is required in order to obtain permanent tank closure.

60

HAZARDOUS MATERIALS

CDOT encounters hazardous materials on roadway projects throughout the State. The types of known or potential hazardous materials identified within the Powers Boulevard corridor are not unusual and will likely have minimal effects on project design and construction.

1 Before construction begins, CDOT will inspect and test for asbestos, lead-based paint, and
2 hazardous material on any bridges, buildings, and other structures that would be disturbed or
3 demolished. Appropriate remediation will take place if any hazardous materials are identified.
4

5 **PALEONTOLOGICAL RESOURCES**

6
7 Paleontology is the science dealing with the life of past geological periods as known from fossil
8 remains. This field does not include the study of human remains, which is the domain of
9 archaeology. Colorado's Historical, Prehistorical, and Archeological Resources Act (Colorado
10 Revised Statute 24-80-401 et al.) protects all fossils on state-owned lands and lands controlled
11 by any subdivision of state government. Pursuant to this act, it is the intent of CDOT throughout
12 project development to identify and protect paleontological resources from loss or destruction
13 caused by transportation construction projects or maintenance activities.
14

15 The technical approach used in the paleontological assessment for this Powers Boulevard EA
16 consisted of a literature review of known sites and a late 2003 field review to look for obvious
17 signs of paleontological remains. The field review extended to 300 feet on each side of Powers
18 Boulevard. These efforts, undertaken by CDOT's Staff Paleontologist, were coordinated with
19 Colorado's State Historic Preservation Office. Results of these efforts are documented in
20 Appendix P, Paleontological Assessment Technical Report, on the CD attached to this EA.
21

22 Information on the specific locations of paleontological sites is not available to the general public
23 in order to protect these resources. Individuals interested in information about these sites must
24 contact the CDOT Staff Paleontologist at (303) 757-9632; however, the location and certain
25 information about the sites may not be disclosed.
26

27 Existing Conditions

28 The Powers Boulevard study area contains 18 mapped geologic units, which are volumes of
29 rock with distinctive features that identify their origin and age range. Surficial deposits include
30 artificial fill, wind-blown sand, and alluvium, which were assessed to have low paleontological
31 potential. Bedrock geologic units include the Pierre Shale, Fox Hills Sandstone, and Dawson
32 Formation, from oldest to youngest. Of these, the Dawson Formation appears to offer the best
33 potential for discovery of intact fossils.
34

35 According to the literature review, fossilized leaves have been found previously along Woodmen
36 Road to the east of Powers Boulevard, near the former intersection with Templeton Gap Road.
37 A baculite (extinct mollusk with a straight, pointed shell) was found in 1992 along Airport Road
38 just east of Powers Boulevard, at a site that has since been largely destroyed by roadway
39 construction, and another was found along Fontaine Boulevard, also east of Powers Boulevard.
40 Fossilized shark teeth have been found elsewhere in the Colorado Springs area.
41

42 During the field survey of the Powers Boulevard corridor, four previously undocumented fossil
43 localities were found. Specific locations for these sites are not disclosed in an EA to avoid
44 resource fossil damage or removal by private collectors. Under Colorado law, fossils on CDOT
45 right-of-way belong to the state and cannot be removed without a permit.
46

2 The four new finds include clams as well as coiled and
4 uncoiled ammonites (extinct mollusk related to the
6 squid). Exhibit 4-33 shows an ammonite that was
8 previously collected along the Powers Boulevard
10 corridor. These marine fossils are typical of the late
12 Cretaceous period, more than 65 million years ago,
14 when much of modern-day Colorado was submerged by
16 a vast inland seaway.

18
20 Although unlikely, it is possible that fossils could also be
22 present in the very recent, Pleistocene-aged alluvial
24 deposits within the corridor. These are sand or mud
26 layers deposited by flowing water within the past two
28 million years.

29
30 Paleontological Impacts with the No-Action Alternative

31 With the No-Action Alternative, no new areas would be disturbed. Therefore, no disturbances of
32 subsurface paleontological resources would occur. Routine maintenance activities occur
33 primarily at surface level and have minimal potential to affect fossils.

34
35 Paleontological Impacts with the Proposed Action

36 The Proposed Action would take the freeway over existing at-grade arterials, so most of the
37 project work would be at or above grade. Some below-grade work would occur, including utility
38 relocations, preparation of bridge piers, and slope cuts. Based on the paleontological finds
39 made in the field review, there is clearly potential to encounter fossils during construction of the
40 Proposed Action, especially during excavation activities in the Dawson Formation.

41
42 This potential for encountering fossils is relatively low between Woodmen Road and Platte
43 Avenue, where intense urban development has disturbed or covered most rock outcrops. The
44 potential is higher between Platte Avenue and Milton E. Proby Parkway, especially in the vicinity
45 of Airport Road. South of Milton E. Proby Parkway, where there has been the least adjacent
46 development, the Proposed Action includes only right-of-way preservation, so no impacts would
47 occur.

48
49 Mitigation of Paleontological Impacts

50 Mitigation for the Proposed Action will include pre-construction efforts at known fossil localities
51 and ongoing monitoring efforts in additional areas during construction. Prior to construction,
52 CDOT will undertake collection of a statistically valid, representative sample of the contained
53 invertebrate fossils at four fossil localities which the University of Colorado Museum has
54 recorded as site numbers 2003071, 2003072, 2003073, and 2003081.

55
56 Once project design plans are finalized, the CDOT Staff Paleontologist will examine them to
57 estimate the scope/magnitude of any needed construction monitoring. If this review indicates
58 that there will be significant impacts to Dawson Formation outcrop, the CDOT Staff
59 Paleontologist will write a revision to CDOT's Standard Specifications identifying the areas
60 where monitoring will be required. These requirements will be included as part of construction
61 plans and specifications for any project(s) in the affected areas.

Exhibit 4-33. Ammonite Fossil Found along the Powers Boulevard Corridor



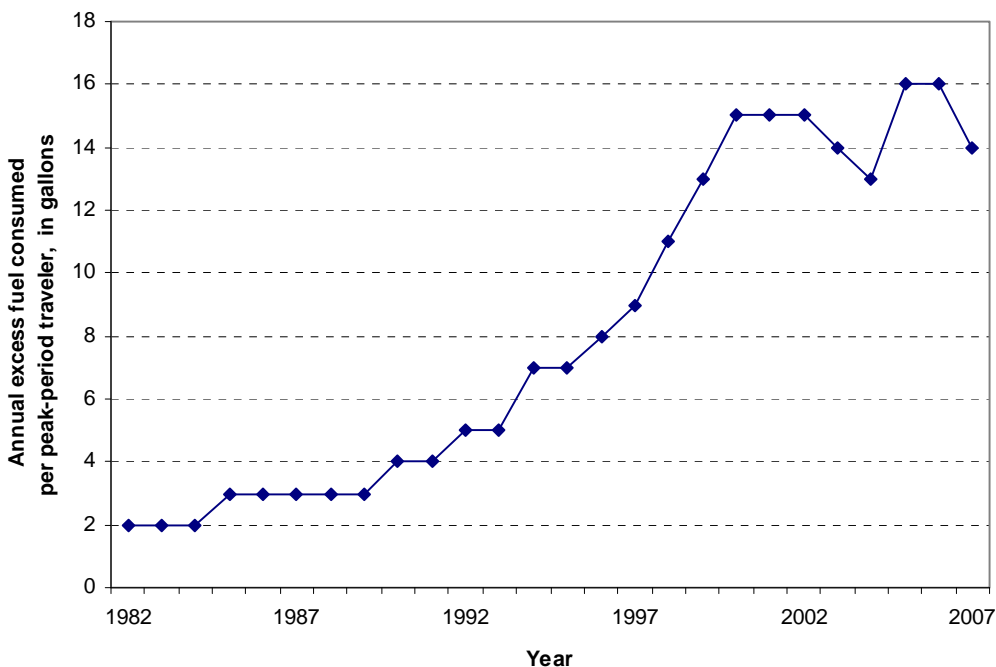
1 During construction, the CDOT Staff Paleontologist will conduct monitoring wherever final
 2 design plans indicate there will be significant impacts to Dawson Formation outcrop.
 3 Additionally, if any sub-surface bones or other possible fossils are found within the corridor
 4 during construction, the CDOT Staff Paleontologist will be notified immediately to assess their
 5 significance and make further recommendations.

6
 7 **ENERGY USE**

8
 9 Improving energy efficiency and reducing energy consumption is an important national and state
 10 goal, and for many Americans, a personal goal as well. In the United States, almost 40% of all
 11 energy use comes from petroleum, and the majority of that -- about 70% -- is used for
 12 transportation, according to the Energy Information Administration of the U.S. Department of
 13 Energy. Energy use is also associated with the production of greenhouse gases, and motor
 14 vehicles are a large contributor to greenhouse gas pollutants. This issue is discussed
 15 separately, however, in Section 4.10, Cumulative Effects.

16
 17 As congestion on roadways increases, energy efficiency decreases. Gasoline wasted due to
 18 congestion has been estimated for the Colorado Springs area for the past two decades in the
 19 annual *Urban Mobility Report* produced by the Texas Transportation Institute. Exhibit 34 shows
 20 TTI's assessment of the Colorado Springs area for 1987 to 2007. Excess fuel consumption
 21 tripled from 1992 to 2002 and seems to have leveled off at about 15 gallons of fuel annually per
 22 peak- period traveler. For comparison, excess fuel use in the Denver metro area is reported to
 23 be twice this amount.

24
 25 **Exhibit 4-34. Excess Commuter Fuel Consumption Due to Traffic Congestion in**
 26 **Colorado Springs, 1987 to 2007**



1 The TTI report attributes reduced fuel consumption in 2007 to high gasoline prices, adding that,
 2 “The recession that took hold soon after [2007] could prolong that effect, but experts warn that
 3 the slowdown in congestion growth will be temporary. When the economy rebounds, expect
 4 traffic problems to do the same.”

5
 6 In its 2035 RTP, PPACG predicts major increases in traffic congestion throughout the metro
 7 area, because funding for transportation facilities and services will not keep pace with regional
 8 population growth and travel demand. Thus the region’s upward trend in excess fuel
 9 consumption due to traffic congestion can be expected to continue in the future, but should
 10 remain well below Denver’s current level of 30 gallons annually per peak-period traveler for the
 11 foreseeable future.

12
 13 Energy Impacts with the No-Action Alternative

14 Exhibit 4-35 presents the results of fuel use calculations based on projected traffic volumes and
 15 travel speeds for the six heaviest travel hours during an average weekday. These hours reflect
 16 the typical morning and evening commuter “rush hours”. The analysis was conducted for an
 17 area larger than just Powers Boulevard, because increased congestion on the expressway
 18 would result in traffic spilling over to alternative routes and increasing congestion there as well.
 19 While traffic on Powers Boulevard would increase by 88% with the No-Action Alternative, as
 20 reported earlier in this EA, traffic in the broader analysis area would increase by 96%. Due to
 21 the increased congestion, the fuel consumed in this area during the six busiest traffic hours of
 22 the day would increase by even more —117%.

Exhibit 4-35. No-Action Travel and Fuel Use for Study Area on a Typical Weekday

Scenario	All-Day Vehicle Miles of Travel in Study Area (million miles)	Fuel Consumed During Congested Travel Hours (gallons of gasoline)
Year 2005	1.841	45,400
2035 No-Action Alternative	3.601	98,700
Percent increase	96%	117%

23
 24 The calculations above assume a peak period average travel speed of 24 miles per hour for
 25 roadways in the area bounded by Woodmen Road (north), Marksheffel Road (east), Fontaine
 26 Boulevard (south) and Academy Boulevard (west). In comparison to today, the increase in
 27 traffic by 2035, together with reduced travel speed and increased congestion, is predicted to
 28 result in an increase in fuel consumption by about 53,000 gallons of gasoline per day.
 29

30 In addition to fuel consumed by motorists, energy would be expended continuously for other
 31 highway infrastructure such as electricity for street lighting, traffic signals, and video surveillance
 32 equipment. Routine roadway maintenance activities (resurfacing, repairs, striping and mowing)
 33 also would result in periodic energy expenditures. This energy use is minimal in comparison
 34 with the fuel used for daily travel.
 35

36 Energy Impacts with the Proposed Action

37 Exhibit 4-36 (on the following page) indicates that compared with the No-Action Alternative, the
 38 Proposed Action would result in more total vehicle-miles of travel within the study area.

1 **Exhibit 4-36. Proposed Action Travel and Fuel Use for Study Area on a Typical Weekday**

Scenario	All-Day Vehicle Miles of Travel in Study Area (million miles)	Fuel Consumed During Congested Travel Hours (gallons of gasoline)
Year 2005	1.841	45,400
2035 No-Action Alternative	3.601	98,700
2035 Proposed Action	3.795	93,600
2035 Daily Savings Due to Proposed Action	N/A	5,100
Percent Increase over Current Conditions	106%	106%

2
3 However, due to improved travel speeds and reduced congestion, the amount of resulting fuel
4 consumption would be nearly 6 percent less, on the order of approximately 5,000 gallons saved
5 per day.

6
7 Like the No-Action Alternative, the Proposed Action would also require energy consumption for
8 continuous operations and periodic maintenance of highway infrastructure. However, the
9 Proposed Action would offer the opportunity to replace some existing infrastructure, especially
10 street lighting, with more modern technology. For example, roadway lighting at ramp junctions
11 could use light-emitting diodes (LEDs) which require 85 percent less energy and last about five
12 times as long as conventional bulbs. When these potential energy savings are added to the
13 likely fuel savings to motorists, it is expected that the Proposed Action would conserve energy in
14 comparison to the No-Action Alternative.

15
16 Another energy consideration for the Proposed Action is the amount of energy expended during
17 construction of the project. Energy is consumed during construction to move earth to its final
18 location, to produce construction materials, and to place these materials. A common factor used
19 to estimate construction energy needs is the equivalent of about 75,000 gallons of gasoline
20 used per each million dollars in construction cost. Construction equipment may use diesel fuel
21 or electricity, but the equivalent amount of energy is given in gallons of gasoline for comparison.

22
23 The estimated \$816 million cost (in 2007 dollars) of the Proposed Action includes right-of-way
24 and other non-construction expenses. Assuming that \$560 million is for construction, the
25 equivalent of about 42 million gallons of gasoline is anticipated to be consumed to complete the
26 project over an estimated ten years of construction. This energy use for construction would
27 likely be offset by future fuel and energy savings over an approximate 20-year period, resulting
28 in a net savings in energy usage over the long term.

29
30 Mitigation of Energy Impacts

31 In accordance with CDOT's commitment to environmental stewardship as documented in its
32 Environmental Stewardship Guide, CDOT will work with designers, contractors, and suppliers to
33 implement appropriate environmental sustainability practices, including measures that promote
34 energy efficiency and conservation. Where appropriate, energy conservation measures
35 including energy efficient electrical systems and lighting will be implemented.

1 Since much of the construction for the Proposed Action would occur after the year 2020, it is
2 difficult to predict what new energy conservation requirements may apply or what new energy-
3 efficient construction methods the industry may have developed by that time. Currently,
4 techniques to reduce energy consumption during construction include:

- 5 ▪ Locating staging areas as close as possible to actual work zones
- 6 ▪ Limiting construction to off-peak travel hours
- 7 ▪ Minimizing motorist delays and vehicle idling through effective traffic management
- 8 ▪ Using recycled materials, such as fly ash additives to concrete or cold in-place recycling
9 of reclaimed asphalt pavement, which is less energy-intensive than extracting and
10 refining raw materials
- 11 ▪ Using newer asphalt paving methods, such as “warm mix” asphalt, rather than
12 conventional hot mix
- 13 ▪ Providing courtesy patrols and incident management to remove disabled vehicles and
14 keep traffic flowing

15 Current techniques to produce operational energy savings include:

- 16 ▪ Freeway Management Systems such as video monitoring and providing traveler
17 information on variable message signs and other media. The Powers Boulevard corridor
18 has a variable message sign located south of the Woodmen Road interchange.
- 19 ▪ Using energy-efficient lighting (e.g., new studies are showing how lighting can be
20 adapted to provide only the illumination needed by drivers, which also reduces light
21 pollution.) CDOT is required to minimize the use of artificial lighting under Colorado’s
22 2001 “Dark Skies” legislation (CRS 24-82-901).

24 4.10 CUMULATIVE EFFECTS

26
28 The preceding sections of this chapter have discussed
30 direct and indirect effects of the Proposed Action and the
32 No-Action Alternative. National environmental regulations
34 also require consideration of cumulative effects.

36 Cumulative effects can result from individually minor but
38 collectively significant actions taking place over time.

40
42 Cumulative effects analysis focuses on specific resources
44 that are directly or indirectly affected by the Proposed
46 Action. If an individual project has no direct or indirect
48 effect on a resource, then it would not contribute to
50 cumulative effects upon that
52 resource. According to federal guidance, cumulative effects
53 analysis should focus on resources and effects that are important (“Count what counts”).
54
55
56
57

CUMULATIVE EFFECTS

Cumulative effects result from the incremental impact of an action when added to other past, present, and reasonably foreseeable actions, regardless of what agency or entity undertakes such actions.

1 **Cumulative Effects Analysis in the Pikes Peak Region**

2
3 In order to determine what counts in the Pikes Peak Region, CDOT prepared a regional
4 cumulative effects analysis in 2003. This effort, conducted in cooperation with various
5 agencies, community groups, and citizens, resulted in a report entitled, *Sustaining Nature and*
6 *Community in the Pikes Peak Region: A Sourcebook for Analyzing Regional Cumulative Effects*.
7 The study was known informally as the Regional Cumulative Effects Analysis, or RCEA.

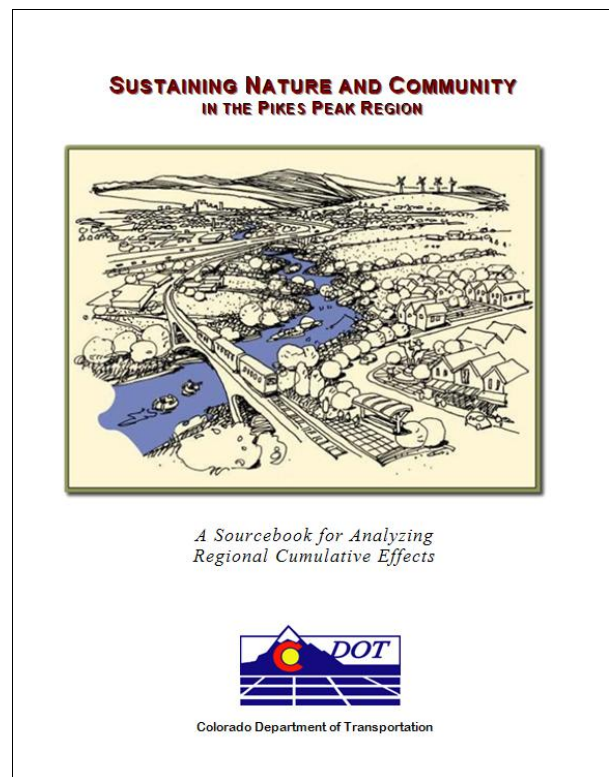
8
10 The RCEA examined “big-picture”
12 environmental trends in the region based on
14 adopted land use and transportation plans,
16 input from an expert panel convened for the
18 RCEA analysis, and data supplied by local,
20 regional, and state agencies, such as the City
22 of Colorado Springs, El Paso County,
24 PPACG, and the Colorado Division of
26 Wildlife. Trends were examined going back
28 in time to 1955 and forward to 2025, the
30 future long-range planning horizon that was
32 in use when the RCEA was prepared. Also,
34 six major topics were identified by the expert
36 panel and confirmed by the public as
38 indicators of the quality of life for the human
40 and natural environment. There topics were:
42 Landscape Patterns; Water Quality and
44 Quantity; Air Quality; Transportation Patterns;
46 Noise; and Visual Resources.

48
50 The RCEA also identified a number of
52 suggested policy-level strategies and project-
54 level strategies for improving the
56 sustainability of the natural and built
58 community. Implementation of these
60 strategies is included in the analysis below.
62 The above topics are addressed below,
64 followed by a discussion of Greenhouse
65 Gases, a topic that was not addressed in the RCEA.

67 **Landscape Patterns**

68
69 The RCEA indicated that the human and natural communities are affected by landscape
70 patterns. The term “landscape patterns” means the type, size, and arrangement of land cover
71 and land use, which are important for such purposes as wildlife habitat and human needs.
72 Blocks of land and their connections within a landscape are critical to wildlife for their food,
73 shelter, movement and reproduction. For people, appropriate landscape patterns provide
74 livable neighborhoods and efficient infrastructure. Exhibit 4-37 provides information about past,
75 present and future actions affecting landscape patterns both within the Powers Boulevard
76 Corridor (34 square miles) and within the much larger expanse of the Pikes Peak Region.

CDOT prepared the “RCEA” in 2003,
in conjunction with the I-25 EA



1 **Exhibit 4-37. Past, Present and Future Actions Affecting Landscape Patterns**

Condition or Action	Powers Boulevard Corridor	Pikes Peak Region
<p>PAST:</p> <p>Condition of landscape, mid-1950s, before major growth</p>	<p>An unpaved County road connected US 24 to the Powers Dairy, and continued north to terminate at Barnes Road. Surrounding lands were ranch holdings, providing large patches of habitat for grassland species.</p> <p>After intermittent operations following WWII, Peterson Field was reactivated by the Air Force in 1951 at the Colorado Springs Airport.</p>	<p>The City of Colorado Springs was compact in size, and had a population of approximately 60,000 residents, and El Paso County had about 110,000.</p> <p>The Army's Camp Carson during WWII became Fort Carson in 1954.</p> <p>Interstate 25 and the U.S. Air Force Academy were under construction.</p>
<p>PAST:</p> <p>Actions, 1950s to circa 2005</p>	<p>Urban development reached the corridor, necessitating paving and expansion of the road. Powers Boulevard was expanded to a 4 to 6 lane expressway, with an interchange at Platte Avenue. Powers Boulevard from Platte Avenue to Fountain Boulevard was improved as part of the "US 24 Bypass".</p>	<p>Ranches were sold off for urban development, to accommodate a six-fold population growth.</p> <p>Banning-Lewis Ranch (20,000 acres) east of Powers was annexed in 1980's for future City growth.</p>
<p>PAST:</p> <p>Actions, 1950s to circa 2005 (continued)</p>	<p>Expansion of Peterson Air Force Base; Municipal airport expansion and relocation of terminal.</p> <p>Bluestem Prairie Open Space (647 acres) and Airport Open Space (1,200 acres) established.</p>	<p>New City "TOPS" tax provides funds for parks, trails and open space acquisition.</p>
<p>PRESENT:</p> <p>Condition of landscape, 2005</p>	<p>Powers Boulevard is intensively developed, with minimal native vegetation or wildlife, except south of Milton E. Proby Parkway, around Bluestem Prairie Open Space.</p>	<p>The City's population is 385,000; County population, 568,000. City encompasses 194 square miles. TOPS inventory includes 4,000 acres of public open space.</p>
<p>PRESENT:</p> <p>Actions</p>	<p>Powers/Woodmen interchange constructed, adjacent to new regional hospital. Peterson AFB main entrance shifted to Powers at Airport/Stewart.</p>	<p>Expanded missions and personnel approved for Peterson AFB and Fort Carson.</p> <p>Regional land use and transportation plans facilitate continued growth of 100,000 population per decade.</p>
<p>FUTURE:</p> <p>Actions</p>	<p>Airport Business Park and other development will largely surround Bluestem Prairie Open Space. Roadways eastward from Powers Boulevard will be widened, bringing more traffic to the corridor.</p>	<p>The Southern Delivery System pipeline will provide water supply to allow continued metropolitan growth, largely eastward.</p>

1 Landscape Pattern Impacts with the No-Action Alternative

2 Even with no capacity improvements to Powers Boulevard, urban development to the east will
3 continue, generating more traffic on the existing Powers Boulevard expressway. The natural
4 landscape has been converted to urban use. The only remaining pockets of grassland along
5 the Powers Boulevard corridor will be the 647-acre Bluestem Prairie Open Space and the
6 1,200-acre Airport Open Space. Increased traffic on Powers Boulevard and planned adjacent
7 development (along Bradley Road) will intensify the effect of Powers Boulevard as a barrier
8 separating these two pockets of grassland.

9
10 Native species will be found primarily to the east, where grasslands have been disturbed but not
11 yet eliminated by metropolitan development. By failing to meet increased traffic demand within
12 the Powers Boulevard corridor, the No-Action Alternative would increase the demand and
13 urgency for planned new north-south roadway capacity improvements to the east, including the
14 widening of Marksheffel Road and the construction of a planned Banning-Lewis Parkway.

15
16 Landscape Pattern Impacts of the Proposed Action

17 Above and beyond the effects from growth reported above for the No-Action Alternative, the
18 primary additional effect of the Proposed Action on landscape patterns would be the direct
19 consumption of an estimated 260 acres of already disturbed grassland. This is about 1.5% of
20 the estimated 20,000 acres of grassland expected to be lost in the Pikes Peak Region in the
21 foreseeable future. This additional loss is so small that it is likely to be negligible when
22 compared to the total loss of grasslands in the region. Grassland is by far the predominant land
23 cover type in the Pikes Peak Region, comprising some 514,000 acres, or about 55% of the area
24 studied in the RCEA.

25
26 Grassland will continue to exist as an ecological resource and major constituent of landscape
27 patterns in the region, although not in the urbanized area, and will continue to be degraded by
28 pressure from urban growth along Colorado's Front Range.

29
30 Mitigation of Landscape Pattern Impacts

31 CDOT will minimize the ecological effects of the Proposed Action using the following **project-**
32 **level strategies:**

- 33
34
- 35 • Use of native and locally adopted plants for re-vegetation and landscaping, to minimize
36 water use.
 - 37 • Reduce sedimentation by following best management practices for erosion control and
38 stormwater management.
 - 39 • Protect and restore riparian areas, minimize adverse effects to wetlands, and mitigate
40 wetland impacts to ensure no net loss of wetlands.
 - 41 • Manage noxious weeds.

42 The RCEA also suggested creating large, contiguous-area, wetland mitigation sites to mitigate
43 the loss or degradation of smaller, isolated wetlands. CDOT has developed a wetland bank
44 near Limon, northeast of Colorado Springs, and expects to use that facility to mitigate the
45 minimal wetland impacts (0.12 acre) of the Powers Boulevard Proposed Action.

1 The RCEA’s **policy-level strategies** for sustainable landscape patterns focus on avoiding
 2 sprawl by encouraging mixed-use development and activity centers, and ensuring that
 3 components of the transportation system are compatible with adjacent land uses. The Colorado
 4 Springs Comprehensive Plan and the El Paso County Policy Plan include specific policies
 5 embracing these strategies (e.g., Comprehensive Plan policies LU 301 and 302, and County
 6 Policy 9.1.3). The City’s Comprehensive Plan identifies Powers Boulevard as a major activity
 7 corridor, intending that Powers Boulevard and other corridor infrastructure would serve mixed-
 8 use development and activity centers as suggested in the RCEA.

9
 10 **Water Quality and Quantity**

11 The Colorado Springs area has a semi-arid climate and has had to purchase and import water
 12 from the Rocky Mountains to meet the ever-increasing water demands of its residents. Colorado
 13 Springs Utilities provided more than 22 billion gallons of water to its customers in 2003. With the
 14 region’s population now at an all-time high and continuing to grow, water importation and
 15 subsequent discharges are continually hitting new record levels. The quality of the water
 16 brought into the region is very good. The quality of the water after use, flowing southerly to the
 17 Arkansas River, depends greatly on how the region deals with effluent and drainage issues.

18
 19 Exhibit 4-38 provides information about past, present and future actions affecting water quality
 20 and quantity both within the Powers Boulevard Corridor and the Pikes Peak Region.

21
 22 **Exhibit 4-38. Present and Future Actions Affecting Water Quality and Quantity**

Conditions and Actions	Powers Boulevard Corridor	Pikes Peak Region
PAST: Condition of landscape, mid-1950s, before major growth	Ranch lands along Powers Boulevard corridor generated minimal water demand, met by wells, and had minimal impervious surface to cause stormwater runoff.	City of Colorado Springs was compact in size, and had a population of approximately 60,000 residents, and El Paso County had about 110,000.
PAST: Actions, 1950s to circa 2005	Construction, extension and expansion of Powers Boulevard created impervious surface. Some adjacent land development was allowed to drain to Powers Boulevard. Extensive urban development in the corridor, including thousands of homes, plus big-box stores with huge parking lots, accounts for far more impervious surface than the Powers Boulevard expressway alone.	The Federal government’s Fryingpan-Arkansas water projects in the 1960s brought water to the region from the Rocky Mountains. Rapid population increases (100,000 new residents each decade), resulted in increasing water demand, impervious surface, effluent discharge, and surface runoff. Since 2002, local governments and CDOT have been subject to more stringent stormwater control requirements. Colorado Springs enacted a Streamside Overlay Ordinance.

1 **Exhibit 4-38. Present and Future Actions Affecting Water Quality and Quantity**
 2 **(continued)**

Conditions and Actions	Powers Boulevard Corridor	Pikes Peak Region
PRESENT: Condition of landscape, 2005	CDOT accepted Powers Boulevard onto the State Highway System in 2007, inheriting a roadway that does not meet modern stormwater control guidelines.	City population of 385,000; County population 568,000. City encompasses 194 square miles.
PRESENT: Actions	Drainage improvements, including some addressing Sand Creek, have been funded since 2007 by a regional stormwater fee.	Regional land use and transportation plans facilitate continued growth of 100,000 population per decade. November 2009 election results appear to call for phasing out the stormwater fee mentioned at left.
FUTURE: Actions	Due to continued urban development, impervious surface will cover 43% of Sand Creek Watershed, up from 27% in 2005, according to PPACG.	The planned Southern Delivery System pipeline will provide additional water supply, enabling continued metropolitan growth, largely eastward.

3
 4 Water Quality and Quantity Impacts with the No-Action Alternative
 5 The amount of water imported into the Sand Creek watershed will continue to increase, and will
 6 discharge used water. The impervious surface area will continue to increase, causing more
 7 stormwater runoff. The amount of water pollutants generated in the watershed will continue to
 8 increase, from all land use types including roads (Powers Boulevard and numerous others).
 9 Stormwater control requirements and drainage fees will help to address water quality problems,
 10 but will not completely mitigate the impacts of continued urbanization.

11
 12 Water Quality and Quantity Impacts with the Proposed Action
 13 With the Proposed Action, impervious surface area on Powers Boulevard would increase by an
 14 estimated 180 acres, from 317 acres today to a total of 497 acres. However, stormwater
 15 management required in conjunction with the Proposed Action will detain and treat runoff from
 16 the entire roadway (not just the added pavement) as well as runoff that currently flows to
 17 Powers Boulevard from adjacent properties. At the same time, the overall increase of
 18 impervious surface area in the 59 square-mile Sand Creek Watershed would increase from 27%
 19 today to 43%. Since there are 640 acres in a square mile, the watershed consists of roughly
 20 37,760 acres, and the amount of increased impervious surface area in the watershed would be
 21 6,040 acres. The additional contribution of Powers Boulevard, at 180 acres, is less than 3% of
 22 this change, and given the proposed runoff detention and treatment, it is unlikely to have any
 23 appreciable effect on the health of the overall watershed or its more local sub-basins.

24
 25 Mitigation of Water Quality and Quantity Impacts
 26 The RCEA identified both project-level and policy-level strategies with potential for sustaining
 27 water quality. The following **project-level strategies** were listed:

- 28 • Ensure BMPs are appropriately applied;

- 1 • Enforce [comply with] existing local water quality regulations;
- 2 • Ensure contractors properly apply erosion control measures; Apply BMPs to target runoff
- 3 associated with roads, highways, and bridges;
- 4 • Minimize impervious surfaces associated with parking lots, buildings, roads;
- 5 • Minimize the amount of vegetation and soil removal;
- 6 • Avoid impacts to wetlands, floodplains, and riparian corridors.

7
8 CDOT's water quality mitigation measures for the Proposed Action are detailed in Section 4.6 of
9 this EA, and are consistent with the strategies listed above. During the development of
10 conceptual design, the Proposed Action's "footprint" was designed to avoid and minimize
11 impacts to vegetation, wetlands, floodplains, and riparian areas wherever possible.

12
13 The RCEA also identified **policy-level strategies** for consideration not by CDOT but by another
14 agency with appropriate jurisdiction, recognizing that CDOT would have no ability to require
15 their implementation. These strategies include:

- 16 • controlling the creation of new impervious surface;
- 17 • enhancing public knowledge of the importance of vegetative cover;
- 18 • developing policies such as streamside setbacks that control development such as
- 19 parking lots and roadways adjacent to streams; and
- 20 • instituting local policy requiring no net loss of wetland for project involving impacts to
- 21 wetland habitat (even if not regulated by the Clean Water Act).

22
23
24 Significant progress is being made along these lines. In 2002, the City of Colorado Springs
25 adopted a Streamside Overlay Ordinance that establishes jurisdictional limits, application
26 processes, physical standards, suitable land uses, and qualitative review criteria for
27 development in the vicinity of streams within the City. In 2007, the City Council imposed a new
28 drainage fee that is assessed based on the proportion of impervious area on each private parcel
29 of land. This gives landowners and developers an economic incentive to reduce their impervious
30 surface area. Revenues from the "Stormwater Enterprise" fee will pay for high-priority drainage
31 improvements within the City of Colorado Springs. Public outreach efforts explaining the fee
32 also are explaining the adverse effects of impervious surface area. However in November
33 2009, the city's residents voted to phase out enterprises such as this over the upcoming eight
34 years. Thus there is considerable uncertainty about the future of this program.

35
36 Future development, carried out in compliance with Municipal Separate Storm Sewer System
37 (MS4) requirements applicable to El Paso County and the City of Colorado Springs, should
38 have substantially less of an adverse effect on water quality than did development over the
39 previous decades without these requirements.

40 The City's Comprehensive Plan and the El Paso County Policy Plan both include policies that
41 are supportive of and consistent with these suggested policy-level strategies. These include the
42 City's Natural Environment Strategy NE 202a, "Natural Ecosystems Protection," and El Paso
43 County Policy 2.2.5: "Encourage mitigation of all adverse impacts to wetlands and riparian
44 habitat."

1 **Air Quality**

2

3 The economy of the Pikes Peak Region – comprised notably of military-related employment,
 4 high-tech firms, service industries and tourism -- includes relatively minimal heavy industry and
 5 therefore produces relatively minimal pollution from industrial point sources, although coal-
 6 burning power plants operate within the airshed. Not surprisingly, motor vehicle emissions are a
 7 major source of air pollution in the region. Wood burning and re-entrained dust are the region's
 8 predominant sources of fine particulate matter (PM₁₀).

9 At the time that the RCEA was prepared, air quality emissions were estimated using then-
 10 applicable fifth-generation MOBILE emission factors, yielding a regional carbon monoxide daily
 11 emission budget of 270 tons. Since that time, the U.S. Environmental Protection Agency
 12 released improved (sixth-generation) MOBILE emission factors and now the region has an
 13 approved emissions budget of 531 tons. The implication of these numbers is not that on-road
 14 CO emissions have jumped dramatically, but instead that they were previously underestimated.
 15 There has been no recorded violation of the carbon monoxide standard since 1989, and no
 16 violations are expected in the foreseeable future.

17

18 Exhibit 4-39 discusses actions relevant to cumulative actions that have or will affect air quality in
 19 the Pikes Peak Region.

20

21 **Exhibit 4-39. Past, Present and Future Actions Affecting Air Quality**

Conditions and Actions	Powers Boulevard Corridor	Pikes Peak Region
PAST: Condition of airshed, mid-1950s, before major growth	Ranch lands along Powers Boulevard corridor generated negligible emissions of vehicle-related air pollutants.	City of Colorado Springs was compact in size and had a population of approximately 60,000 residents, and El Paso County had about 110,000 residents.
PAST: Actions, 1950s to circa 2005	Rapid urban growth has occurred in the Powers Boulevard corridor, while the roadway has been lengthened and expanded.	Regional population growth has been rapid (100,000 new residents each decade), and growth in vehicle-miles of travel (VMT) has been even more rapid. Federal air pollution control programs were so successful that air quality improved despite increased VMT. Violations of the carbon monoxide standard occurred until 1989 but not afterward.
PRESENT: Conditions in 2005	Powers Boulevard is experiencing traffic congestion. Use of alternative transportation modes in the corridor is minimal. Powers Boulevard total VMT is 565,000 per day, 4.7% of regional total.	Monitored pollutant concentrations in the region meet all national air quality standards. Recent transit expansion funded by a regional sales tax has been scaled back due to City budget crisis. PPACG's air quality conformity analysis for the 2035 RTP indicates that the region has 11.8 million VMT per day.

1 **Exhibit 4-39. Past, Present and Future Actions Affecting Air Quality (continued)**

Conditions and Actions	Powers Boulevard Corridor	Pikes Peak Region
PRESENT: Actions	Traffic and congestion will increase due to regional and local population growth.	Regional land use and transportation plans facilitate continued growth of 100,000 population per decade.
FUTURE: Actions	The Proposed Action would alleviate congestion, while the No-Action Alternative would not. VMT would increase to 1.06 million (No-Action) or 1.27 million (Proposed Action).	Conformity analysis of PPACG's 2035 RTP predicts continued compliance with national standard for carbon monoxide. Federal programs also will reduce emission rates of other pollutants. Regional daily VMT is projected to be 22.1 million by 2035.

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Effects of Other Actions on Air Quality

In the future, as in the past, the region faces population growth of approximately 100,000 new residents per decade. Associated with each new resident is some production of pollutant emissions per capita, which includes motor vehicle emissions, fireplace use, regional power plant demand, and the use of industrial and household chemicals that contribute to air pollution. Population growth of roughly 60 percent in the next thirty years will result in additional driving and other activities causing emissions. Fortunately, emissions per VMT are not fixed, but will continue to decline as the result of technological improvements to motor vehicles and fuels.

Impacts on Air Quality with the No-Action Alternative

With the No-Action Alternative, traffic volumes on Powers Boulevard would increase beyond the expressway's capacity, resulting in greatly increased congestion and therefore in excess emissions due to idling. Corridor weekday VMT would increase 88% from 2005. Most signalized intersections along the corridor would experience unacceptable levels of service (LOS "E" or "F"). However, it is projected that there would be no violations of the national ambient air quality standard for carbon monoxide.

Impacts on Air Quality with the Proposed Action

Compared to the No-Action Alternative, the Proposed Action would accommodate higher traffic volumes with less congestion. Based on microscale modeling, localized carbon monoxide concentrations would be well below the national ambient air quality standard. Also, total daily emissions of carbon monoxide in the region would be about 40% below the region's carbon monoxide emission budget.

Mitigation of Air Quality Impacts

The RCEA identified project-level and policy-level strategies for ensuring air quality sustainability. The **project-level strategies** included:

- Incorporate ozone-reducing strategies in project planning.
- Improve street-sanding techniques to produce less fine particulate pollution (PM₁₀).
- Switch to cleaner burning fuels, such as electricity, natural gas and propane.

1 CDOT will provide the RCEA's list of ozone-reducing strategies (or a future, updated version) for
2 consideration by the designers and contractors who are selected to undertake project design
3 and construction.

4
5 CDOT has newly acquired jurisdiction over Power Boulevard and assumed maintenance
6 responsibilities from the City of Colorado Springs and El Paso County. For the past decade,
7 CDOT has made extensive use of deicing agents such as magnesium chloride, instead of sand.

8
9 CDOT's use of cleaner burning fuels in its fleet vehicles will be guided by Executive Orders #
10 D0011 07 and 08, Greening of State Government, issued by Colorado's Governor in April 2007.

11
12 The RCEA's **policy-level strategies** for air quality included encouragement of higher density
13 development and mixed land use to reduce vehicle miles traveled, and support for intermodal
14 transportation systems and voluntary carpool programs. All of these initiatives are clearly
15 supported in the adopted City of Colorado Springs Comprehensive Plan and the El Paso County
16 Policy Plan. A new sales tax for transportation, approved by the region's voters in 2004, has
17 provided the first big boost for transit operations in many years. It has provided funds to update
18 the regional transit system to a multi-hub operation, to replace the undersized downtown transit
19 center, and to develop several new park-and-ride lots.

20
21 In addition to the strategies identified in the RCEA, the PPACG and its collaborators developed
22 the Air Quality Strategy Improvement Report in October 2005. The report provides strategies
23 for local entities to implement to reduce ozone-forming pollutants and to mitigate hydrocarbon
24 releases. The strategies include, but are not limited to:

- 25 • Coordinated public outreach and education
- 26 • Implement local policies that minimize vehicle idling
- 27 • Track EPA's model idling ordinance and encourage local businesses and governments
28 to adopt them
- 29 • Encourage lower gasoline volatility outside of areas where such fuels are mandated
- 30 • Enact ordinances with penalty fees prohibiting visible smoke from vehicle exhaust
- 31 • Develop methods of offering greater incentives for owners to repair high-emitting
32 vehicles
- 33 • Increase enforcement and tracking of potential violators of Stage 1 Recovery Systems
34 (applies to vehicle fueling stations)
- 35 • Develop and implement an On-board Diagnostic (ODB-11) pilot program in Colorado

36
37
38 Colorado Springs Utilities has taken steps to reduce pollutant emissions from its power plants.
39 From 1997 to 2001, CSU's total power plant emissions of sulfur dioxide and nitrogen oxides
40 decreased 6.4 percent and 40.4 percent, respectively, despite a corresponding 10.2 percent
41 increase in the amount of power generated. Low-sulfur coal is burned and low-nitrogen oxide
42 burners are used at the plants.

43 44 **Transportation Patterns**

45
46 Urban mobility is an important facet of modern quality of life. Time spent behind the wheel in
47 traffic congestion is time that could otherwise be spent productively in many other ways. In

1 addition to having an efficient roadway system, the availability of other transportation modes is
 2 very important, so that each person can decide what works best for any given trip. Exhibit 4-40
 3 describes past, present and future actions affecting regional transportation patterns. An exhibit
 4 illustrating the gradual development of Powers Boulevard over time was presented in Chapter 2
 5 of this EA.

6
 7 **Exhibit 4-40. Past, Present and Future Actions Affecting Transportation Patterns**

Conditions and Actions	Powers Boulevard Corridor	Pikes Peak Region
PAST: Condition of transportation system, mid-1950s, before major growth	Adjacent ranch lands generated minimal vehicle traffic on the unpaved County road to the Powers Dairy.	City of Colorado Springs was compact in size and had a population of approximately 60,000 residents, and El Paso County had about 110,000 residents.
PAST: Actions, 1950s to circa 2005	Powers Boulevard was lengthened and expanded to a 4 to 6 lane expressway, with an interchange at Platte. Powers Boulevard from Platte Avenue to Fountain Boulevard was improved as part of the "US 24 Bypass".	Regional population growth has been rapid (100,000 new residents each decade), and growth in vehicle-miles of travel (VMT) has been even more rapid.
PRESENT: Conditions in 2005	Powers Boulevard total VMT is 565,000 per day, 4.7% of regional total. Powers Boulevard is experiencing traffic congestion. Use of alternative transportation modes in the corridor is minimal.	PPACG's air quality conformity analysis for the 2035 RTP indicates that the region has 11.8 million VMT per day. A recently approved local tax is funding the Pikes Peak Regional Transportation Authority. The PPRTA has made various local street improvements and increased funding for transit.
FUTURE: Actions	The Proposed Action would alleviate congestion, while the No-Action Alternative would not.	The PPACG 2035 RTP predicts that much of the regional roadway system will be congested by 2035. Total regional VMT is predicted to be 22.1 million. Bus rapid transit is planned in several corridors (e.g., Academy Boulevard) but not along Powers Boulevard.

8
 9 Effects of Other Actions on Transportation Patterns
 10 Colorado Springs has experienced most of its population growth since the 1950s, in the age of
 11 the automobile. The older central part of the city original had a trolley system and then bus
 12 transit. Automobiles have been the predominant transportation mode available in and around
 13 the Powers Boulevard corridor, with minimal transit service available and only a few trails in the
 14 vicinity. Development in the corridor has predominantly not been mixed-use or high density.

15

1 Powers Boulevard was identified as a major transportation corridor as long ago as the 1960s.
2 Long-range transportation and land use plans have reinforced this role for the corridor. With
3 connection of Powers Boulevard to I-25 south at Fort Carson and the planned northern
4 extension of Powers to I-25 north at the U.S. Air Force Academy, only Interstate 25 offers
5 comparable high-speed connectivity in the Pikes Peak Region.

6 Effects of the No-Action Alternative on Transportation Patterns

7 Regional transportation and land use plans are based on Powers Boulevard providing a high
8 level of regional mobility, which the existing expressway could not provide under the No-Action
9 Alternative. The resulting congestion on Powers Boulevard would have ripple effects including
10 diversion of trips to parallel north-south roads not designed to handle high volumes. Congested
11 at-grade intersections along Powers Boulevard would also create excessive delays for all east-
12 west cross-streets.

13 Effects of the Proposed Action Alternative on Transportation Patterns

14 The East-West Mobility Plan prepared by the City of Colorado Springs identified the importance
15 of Powers Boulevard for interceding and distributing trips to and from eastern growth areas on
16 Powers Boulevard so these trips would not continue through older, established portions of the
17 city to access Interstate 25. The City identified a system of four main roadways intended to
18 carry regional trips: I-25 on the west, Woodmen Road on the north, Powers Boulevard on the
19 east, and Milton E. Proby Parkway on the south. Thus mobility on Powers Boulevard does have
20 important implications for mobility throughout the region.

21 The Proposed Action would be consistent with regional long-range transportation plans. It would
22 not preclude future transit alternatives and would accommodate proposed trail development
23 along and across Powers Boulevard.

24 Mitigation of Effects Regarding Transportation Patterns

25 Four key **project-level strategies** listed in the RCEA have particular relevance with respect to
26 Powers Boulevard:

- 27 • Provide all transportation facilities and services within a reasonable timeframe of
28 development to thereby improve concurrency between transportation facility supply and
29 demand.
- 30 • Achieve right-of-way reservation and dedication for transportation through the land-
31 development process.
- 32 • Coordinate with appropriate local agencies to identify future alternate mode needs and
33 ensure that transportation project designs don't preclude future options.
- 34 • Design all projects in full compliance with applicable environmental regulations, as well
35 as ensure designs that recognize the character of the facility's natural and community
36 setting.

37 The RCEA's **policy-level strategies** focus on land use and site development planning, impacts
38 fees, increased transit funding, and monitoring of indicator data.

39 This EA has determined that continued regional growth will greatly increase travel demand on
40 Powers Boulevard. Identifying an appropriate Proposed Action at this time can help all affected
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1 agencies and stakeholders to take coordinated actions to balance transportation demand and
 2 supply to the extent that funding will allow.

3
 4 The City of Colorado Springs and El Paso County have been working with local landowners and
 5 their plans for new development to minimize potential conflicts with the Proposed Action. In
 6 addition, funding from the Pikes Peak Rural Transportation Authority has been used recently for
 7 advance right-of-way acquisition, consistent with federal regulations.

8
 9 Regarding long-range transit development, the City of Colorado Springs conducted a study to
 10 determine priority corridors for future transit options such as bus rapid transit. Powers
 11 Boulevard was one of the corridors considered, but Academy Boulevard (two miles to the east)
 12 was selected instead. Although transit facilities on Powers Boulevard are not envisioned as
 13 being reasonably foreseeable at this time, the Proposed Action has been developed so as to not
 14 preclude future options.

15
 16 **Noise**

17
 18 Human activity in an urban area generates many types of noise. Planes, trains, automobiles,
 19 trucks and motorcycles are transportation-related sources of noise. Boom boxes, yard
 20 maintenance tools and construction activities are also part of the urban ensemble. As the
 21 Colorado Springs metropolitan area grows, the peace and quiet of the rural countryside is giving
 22 way to noisier suburban development. Exhibit 4-41 describes past, present and future actions
 23 cumulatively affecting noise in the Powers Boulevard corridor and the Pikes Peak Region.

24
 25 **Exhibit 4-41. Past, Present and Future Actions Affecting Noise**

Conditions and Actions	Powers Boulevard Corridor	Pikes Peak Region
PAST: Condition of transportation system, mid-1950s, before major growth	The dairy and ranching countryside received noise from trains on the Rock Island railroad, occasional civilian or military flights, and traffic on US Highway 24.	City of Colorado Springs was compact in size and had a population of approximately 60,000 residents, and El Paso County had about 110,000 residents.
PAST: Actions, 1950s to circa 2005	Powers Boulevard was lengthened and expanded to a 4 to 6 lane expressway, with an interchange at Platte Avenue. No roadway noise walls were built. Powers Boulevard from Platte Avenue to Fountain Boulevard was improved as part of the "US 24 Bypass". Military and civilian aircraft operations increased significantly. The railroad was abandoned.	Regional population growth has been rapid (100,000 new residents each decade), and growth in vehicle-miles of travel (VMT) has been even more rapid. Various noisy lawn tools are widely used including mowers and trimmers. A large amount of development has occurred close to roadways, without appropriate setbacks, causing traffic noise to become a concern for many areas.

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1 **Exhibit 4-41. Past, Present and Future Actions Affecting Noise (continued)**

Conditions and Actions	Powers Boulevard Corridor	Pikes Peak Region
PAST: Condition of transportation system, mid-1950s, before major growth	The dairy and ranching countryside received noise from trains on the Rock Island railroad, occasional civilian or military flights, and traffic on US Highway 24.	City of Colorado Springs was compact in size and had a population of approximately 60,000 residents, and El Paso County had about 110,000 residents.
PAST: Actions, 1950s to circa 2005	Powers Boulevard was lengthened and expanded to a 4 to 6 lane expressway, with an interchange at Platte Avenue. No roadway noise walls were built. Powers Boulevard from Platte Avenue to Fountain Boulevard was improved as part of the "US 24 Bypass". Military and civilian aircraft operations increased significantly. The railroad was abandoned.	Regional population growth has been rapid (100,000 new residents each decade), and growth in vehicle-miles of travel (VMT) has been even more rapid. Various noisy lawn tools are widely used including mowers and trimmers. A large amount of development has occurred close to roadways, without appropriate setbacks, causing traffic noise to become a concern for many areas.
PRESENT: Conditions in 2005	Powers Boulevard is a busy expressway and a designated truck route. Several locations along the route experience traffic noise that hinders outdoor conversation.	Roadway noise barriers can be found along several of the region's busiest roadways. Background urban noise (primarily traffic) can be heard at all hours of the day and night.
PRESENT: Actions	Powers Boulevard became SH 21 in 2007, making the corridor subject to State noise abatement policy when improvements are made.	The City of Colorado Springs has been exploring the possibility of enacting a roadway noise ordinance. The City is in a financial crisis and faces numerous other priorities.
FUTURE: Actions	Traffic volumes and noise along Powers Boulevard would increase with the No-Action Alternative. No mitigation is anticipated. Traffic noise would increase more with the Proposed Action. Noise walls are proposed in seven locations.	Due to continued growth east of Powers Boulevard, east-west roadways will get much busier and need to be widened. This will increase the amount of noise from east-west roadways both in the Powers Boulevard Corridor and elsewhere throughout the city.

2
3 Effects of Other Actions on Noise

4 The cumulative effect of other actions has changed quiet, undeveloped ranch land in 1980 into
5 a busy expressway corridor. Many of the homes located closest to Powers Boulevard currently
6 experience noise levels that are just below federal and state noise abatement criteria. Powers
7 Boulevard is a designated truck route and has several steep hills where trucks gear down or use
8 loud braking systems, contributing extra noise that would not occur on a level roadway.
9 The Powers Boulevard corridor also experiences substantial noise from civilian and military
10 aircraft ascending from or descending to the Colorado Springs Airport and Peterson Air Force

1 Base. The military traffic includes numerous daily flights by large cargo planes and occasional
2 visits by high-performance fighter planes. Aircraft noise affects residents of the corridor but is
3 not incorporated into highway-based mitigation decisions.
4

5 Effects of the No-Action Alternative on Noise

6 Noise levels from traffic sources depend on volume, speed, and the type of vehicle. Generally
7 an increase in volume, speed, or vehicle size increases traffic noise levels. However, under the
8 No-Action Alternative, increased congestion would reduce attainable travel speeds, offsetting
9 the increase traffic volume to some degree. The highest traffic noise levels would not occur
10 during peak travel hours, when congestion reduces travel speeds, but instead before and after
11 the peaks, when relatively high traffic volumes are operating at higher speeds.
12

13 Effects of the Proposed Action Alternative on Noise

14 The Proposed Action would accommodate higher traffic volumes, at higher traffic speeds,
15 compared to current conditions. It would also elevate portions of Powers Boulevard (over cross-
16 streets at grade-separated interchanges) and would add on-ramps and off-ramps that are closer
17 to adjacent properties than the existing expressway is today. As a result of these effects,
18 highway noise would increase from current levels. In 21 locations, traffic noise levels would
19 meet the federal and state thresholds triggering consideration of noise abatement such as noise
20 walls or berms. Noise walls are proposed for seven of these locations, where State noise
21 abatement criteria would be met.
22

23 Mitigation of Effects Regarding Noise

24 The RCEA's **project-level strategies** for noise mitigation are as follows:

- 25 • Separate development from major roadways by at least 500 feet.
- 26 • Install earthen berms where possible, and use features within a development such as
27 garages and commercial buildings as shields from roadways.
- 28 • When possible, delay major noise-producing actions until atmospheric conditions are less
29 conducive to the spread of sound toward residences. Also, advise nearby residents of
30 the time and duration of such activities to reduce the "startle" factor.

31 The Powers Boulevard corridor is already intensely developed, and the suggested 500 foot
32 setback approach was not followed when the road was built more than a decade prior to the
33 RCEA's publication in 2003. Since traffic noise impacts cannot be easily avoided, the focus for
34 this corridor is instead on mitigation. The feasibility and reasonableness of providing noise
35 barriers has been evaluated, including the potential for earthen berms or noise walls. Berms
36 typically require much more width than a noise wall, so that the slopes of the berms are gentle
37 enough to permit vegetation and safe maintenance. Due to tight right-of-way limitations in most
38 areas, the noise barriers proposed at seven locations along Powers Boulevard would be walls
39 rather than berms. This is appropriate in an urban environment.
40

41 The scheduling of Powers Boulevard construction activities would call for loudest construction
42 activities to occur during daytime, to avoid the evening and night hours when nearby most
43 residents would be home from school and work.
44

1 The RCEA’s **policy-level strategies** regarding noise address the additional topics of tire and
 2 pavement research, use of electric lawn equipment, avoidance of freight rail corridors and use
 3 of zoning to separate residential areas from noise-producing industry. CDOT has been involved
 4 with pavement research on an ongoing basis. Pavement specifications for the Proposed Action
 5 have not been determined, but will depend on numerous factors including predicted truck traffic,
 6 climatic conditions, and predicted life-cycle construction and maintenance costs.

7
 8 **Visual Resources**

9
 10 The discussion of visual resources in the RCEA focuses on preserving views to attractive visual
 11 features, such as lakes, streams, mountain views and other scenic vistas. As discussed in
 12 Chapter 2 and Section 4.4, the Powers Boulevard corridor is largely devoid of such visual
 13 character. There are two prominent water features, Sand Creek (normally with no water) and
 14 the Big Johnson Reservoir (surrounded by the Bluestem Prairie Open Space). Past, present
 15 and foreseeable future actions cumulatively affecting the visual character of the corridor are
 16 indicated in Exhibit 4-42.

17
 18 **Exhibit 4-42. Past, Present and Future Actions Affecting Visual Resources**

Conditions and Actions	Powers Boulevard Corridor	Pikes Peak Region
PAST: Condition of transportation system, mid-1950s, before major growth	The dairy and ranching countryside east of Colorado Springs was largely undeveloped grassland. These ranches were privately owned and there were few residents in the region who ventured east to see this landscape.	City of Colorado Springs was compact in size and had a population of approximately 60,000 residents, and El Paso County had about 110,000 residents. Pikes Peak and the Garden of the Gods, both west of the city, were the area’s main scenic attractions.
PAST: Actions, 1950s to circa 2005	Powers Boulevard was lengthened and expanded to a 4 to 6 lane expressway, with an interchange at Platte Avenue. Rapid urban development occurred since the early 1990s. Grasslands gave way to a sea of rooftops and, more recently, “big box” retail centers and their parking lots.	Growth of 100,000 residents per decade has led to urban expansion. Development has occurred on many ridges and elevated areas visible throughout the area.
PRESENT: Conditions in 2005	The busy Powers Boulevard is lined with urban development. The Sand Creek crossing of Powers Boulevard is highly channelized and not aesthetically appealing. Three existing open spaces are adjacent to the expressway.	Since the 1990s, the Pikes Peak region has assembled a large inventory of parks, trails and open spaces funded by a local tax. These resources provide a visual respite from the otherwise continuous urban development.

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1 **Exhibit 4-42. Past, Present and Future Actions Affecting Visual Resources (continued)**

Conditions and Actions	Powers Boulevard Corridor	Pikes Peak Region
PRESENT: Actions	Land development is occurring on most of the remaining privately-owned grasslands adjacent to Powers Boulevard.	Erosion control improvements funded by a citywide stormwater fee are being undertaken in creek beds and drainages throughout the region. These improvements are primarily functional rather than aesthetic.
FUTURE: Actions	The city's Airport Business Park Master Plan calls for construction of a business park and golf course that will replace undeveloped grassland southeast of the Powers Boulevard intersection at Milton E. Proby Parkway.	Rapid growth in eastern Colorado Springs will continue to replace grasslands with urban development.

2
3 Effects of Other Actions on Visual Resources

4 Grasslands along the Powers Boulevard Corridor have largely been replaced with urban
5 development, including numerous “big box” retailers and their signs and parking lots. The large
6 remaining grassland block southeast of the Powers Boulevard/Milton E. Proby Parkway
7 intersection will be developed as the Airport Business Park, which will include a golf course
8 adjacent to Powers Boulevard.

9
10 South of the Airport Business Park, there is a narrow strip of land between Powers Boulevard
11 and a planned Bradley Road extension. Development here will block views of the Bluestem
12 Prairie Open Space from the north. The Open Space will remain visible from Powers Boulevard
13 between Bradley Road and Fontaine Boulevard.

14
15 Effects of the No-Action Alternative on Visual Resources

16 Apart from the ongoing changes due to other actions, the No-Action Alternative would not affect
17 visual resources in the Powers Boulevard Corridor.

18
19 Effects of the Proposed Action Alternative on Visual Resources

20 The Powers Boulevard Proposed Action and other transportation projects in the Colorado
21 Springs metro area will result in the roads becoming more of a prominent feature in the urban
22 landscape pattern. The Proposed Action would not be incompatible with the visual character of
23 the surrounding corridor. Views would change both from the road and to the road, especially in
24 the vicinity of grade-separated interchanges, where usually the freeway would be elevated to go
25 over the cross-streets.

26
27 Mitigation of Effects Regarding Visual Resources

28 The RCEA includes 12 project-level strategies regarding visual resources. They are:

- 29 • Provide and maintain visual access to important community features.
- 30 • Provide significant xeriscape corridor planting in public view.
- 31 • Provide well-designed and detailed bridges and other structures.

- 1 • Buffer transportation corridor improvements from culturally and historically significant
2 areas.
- 3 • Reveal views to streams and other natural areas, through the sides of bridges.
- 4 • Plant medians, when possible, with native and locally adapted plants.
- 5 • Add public art to appropriate corridor and community locations.
- 6 • Provide entryway features in road corridors approaching cultural districts.
- 7 • Keep highway improvements from blocking public vistas.
- 8 • Trees should be planted in ways and places that don't restrict all-important mountain
9 views.
- 10 • By adding significant numbers of trees, transportation arterials can become boulevards
11 and expressways can become parkways. Such transportation corridors increase in value
12 to the community as the trees mature.
- 13 • Use appropriate lighting design that shields roadway light fixtures from direct view and
14 minimizes upward lighting.

15 Due to the highly developed urban nature of the Powers Boulevard corridor, there are few
16 natural features to be viewed from the existing roadway. Therefore the focus for mitigation in
17 this corridor is to ensure reasonable roadway aesthetics. CDOT has developed and will follow a
18 uniform set of design guidelines to produce consistent aesthetic standards for interchanges,
19 noise walls, streetlights, and other freeway features. Appropriate signage will be developed to
20 ensure that motorists are aware of how to access upcoming developments that may be difficult
21 to see in advance of an exit.

22
23 Detailed lighting plans have not been finalized, but CDOT will consider lighting schemes that
24 minimize energy consumption and light pollution while also being compatible with any special
25 lighting requirements pertaining to the proximity of the adjacent municipal airport and Peterson
26 Air Force Base.

27
28 The corridor has medians of varying width with simple landscaping, that is predominantly grass
29 but has occasional sections of shrubs and short trees. North of Milton E. Proby Parkway, the
30 median would be replaced with a center barrier and paved inside shoulders with the Proposed
31 Action.

32
33 More prominent that the expressway's median landscaping are the several rows and clusters of
34 trees at the Milton E. Proby Parkway intersection, providing a landscaped gateway effect at the
35 entrance to the Colorado Springs Airport. This entrance, at the intersection of Powers
36 Boulevard and Milton E. Proby Parkway, would be the site of a proposed grade-separated
37 interchange with the Proposed Action. Also, the City of Colorado Springs plans to construct a
38 new Milton E. Proby expressway to the south of the narrow existing parkway that was formerly
39 called Drennan Road. Any landscaping plans developed by CDOT for this interchange will need
40 to be created in coordination with the city's landscaping plans for the new parkway, but are likely
41 to emphasize the use of native vegetation and to minimize the need for watering and
42 maintenance.

43

1 The RCEA includes **two policy-level strategies** regarding visual resources:

- 2 • Protect significant viewsheds and view corridors.
- 3 • Minimize the use of artificial lighting to preserve “dark skies.”

4
5 Any new lights installed as part of the Proposed Action will be designed in compliance with
6 “Dark Skies” requirements (CRS 24-82-901) enacted by the Colorado General Assembly in
7 2001. The law requires CDOT to avoid installing outdoor lighting, if possible, through the use of
8 reflective road markers, lines, warning or informational signs, or other effective techniques that
9 do not require use of artificial light. In cases where installation of new outdoor lighting cannot be
10 avoided, it is to be installed so as to shield the outdoor lighting fixtures from direct view and to
11 minimize upward lighting and “light pollution”.
12

13 **Global Climate Change**

14
15 The issue of global climate change is an important national and global concern that is being
16 addressed in several ways by the Federal government and by various states including
17 Colorado. The transportation sector is the second largest source of total greenhouse gases
18 (GHGs) in the U.S., and the greatest source of carbon dioxide (CO₂) emissions - the
19 predominant GHG. In 2004, the transportation sector was responsible for 31 percent of all U.S.
20 CO₂ emissions. The principal anthropogenic (human-made) source of carbon emissions is the
21 combustion of fossil fuels, which account for approximately 80 percent of anthropogenic
22 emissions of carbon worldwide. Almost all (98 percent) of transportation-sector emissions result
23 from the consumption of petroleum products such as gasoline, diesel fuel and aviation fuel.
24

25 Recognizing this concern, FHWA is working nationally with other modal administrations through
26 the DOT Center for Climate Change and Environmental Forecasting to develop strategies to
27 reduce transportation’s contribution to greenhouse gases – particularly CO₂ emissions – and to
28 assess the risks to transportation systems and services from climate changes.
30

32 At the state level, there are also several programs underway
34 in Colorado to address transportation GHGs. The Governor’s
36 Climate Change Action Plan, adopted in November 2007,
38 includes measures to adopt vehicle CO₂ emission standards
40 and to reduce vehicle travel through transit, flex time,
42 telecommuting, ridesharing and broadband communications.
44

46 CDOT issued a Policy Directive on Air Quality in May 2009.
48 This Policy Directive 1901 was developed with input from a
50 number of agencies, including the State of Colorado’s
52 Department of Public Health and Environment (CDPHE), the
54 U.S. Environmental Protection Agency (EPA), the Federal
56 Highway Administration, the Federal Transit Administration
58 (FTA), the Denver Regional Transportation District (RTD), and
59 the Denver Regional Air Quality Council (RAQC). This Policy Directive addresses unregulated
60 mobile source air toxics (MSAT) and GHGs produced from Colorado’s state highways,
61 interstates, and construction activities.
62

COLORADO ADDRESSES CLIMATE CHANGE

A 2009 CDOT Policy Directive on Air Quality describes the agency’s efforts to address Mobile Source Air Toxics and Greenhouse Gases, consistent with the Governor’s Climate Change Action Plan.



- 1 As part of CDOT's continuing commitment to addressing MSATs and GHGs, some of CDOT's
2 program-wide activities include:
- 3 1. Developing truck routes with the goal of limiting truck traffic in proximity to facilities,
4 including schools, with sensitive receptor populations.
 - 5 2. Continue researching pavement durability opportunities with the goal of reducing the
6 frequency or resurfacing and/or reconstruction projects.
 - 7 3. Developing air quality educational materials, specific to transportation issues, for
8 citizens, elected officials, and schools.
 - 9 4. Offering outreach to communities to integrate land use and transportation decisions to
10 reduce growth in vehicle miles traveled (VMT), such as smart growth technologies,
11 buffer zones, transit-oriented development, walkable communities, access management
12 plans, etc.
 - 13 5. Committing to research additional concrete additives that would reduce the demand for
14 cement.
 - 15 6. Expanding Transportation Demand Management (TDM) efforts statewide to better utilize
16 the existing transportation mobility network.
 - 17 7. Continuing to diversify the CDOT fleet by retrofitting vehicles, specifying the types of
18 vehicles and equipment contractors may use, purchasing low-emission vehicles, such as
19 hybrids, and purchasing cleaner burning fuels through bidding incentives where feasible.
20 Incentivizing is the approach likely to be used for this.
 - 21 8. Exploring congestion and/or right-lane only restrictions for motor carriers.
 - 22 9. Funding truck parking electrification (note: mostly via external grant opportunities)
 - 23 10. Researching additional ways to improve freight movement and efficiency statewide.
 - 24 11. Committing to incorporating ultra-low sulfur diesel (ULSD) for non-road equipment
25 statewide before June 2010 – likely using incentives during bidding.
 - 26 12. Developing a low-VOC emitting tree landscaping specification.

27
28 With regard to the first measure listed above, it should be noted that Powers Boulevard is a
29 designated truck route. Channeling truck traffic onto this route keeps it off of other routes which
30 pass closer to neighborhoods, schools, and other sensitive receptors.

31
32 With regard to the pavement durability item, an interesting condition exists on Powers Boulevard
33 north of Woodmen Road (i.e., just outside the study area of this EA). The so-called North
34 Powers segment from Woodmen Road to State Highway 83 was constructed as a divided
35 highway with the lanes in one direction paved with concrete and the lanes in the other direction
36 paved in asphalt. This will provide CDOT a side-by-side comparison for a long-term study of the
37 durability and life cycle costs of the two surface types under identical conditions including
38 weather, soils and traffic volumes.

39
40 Because climate change is a global issue, and the emission changes due to project alternatives
41 are very small compared to global totals, the GHG emissions associated with the alternatives
42 were not calculated. Because GHGs are directly related to energy use, the changes in GHG

emissions would be similar to the changes in energy consumption presented in Section 4.9 of the Powers Boulevard EA. The relationship of current and projected Colorado highway emissions to total global emissions of carbon dioxide is presented below in Exhibit 4-43. Colorado highway emissions are expected to increase by 4.7% between 2005 and 2035. The benefits of the fuel economy and renewable fuels programs in the Energy Independence and Security Act of 2007 are offset by growth in VMT. Colorado's 2035 statewide transportation plan predicts that VMT will double between 2000 and 2035. This exhibit also indicates the amount of travel in the project corridor relative to total Colorado motorized travel.

Exhibit 4-43. Comparison of Annual Global, Colorado and Project-Level CO₂ Emissions

Global CO ₂ emissions, 2005, in million metric tons (MMT) ¹	Colorado highway CO ₂ emissions, 2005, in MMT ²	Projected Colorado 2035 highway CO ₂ emissions, 2035, in MMT ²	Colorado highway CO ₂ emissions, % of global total, 2005 ²	Powers Boulevard project corridor VMT, % of statewide VMT, 2005
27,700	29.9	31.3	0.108%	0.75%

¹EIA, International Energy Outlook, 2007

²Calculated by FHWA Resource Center

4.11 SUMMARY OF IMPACTS AND MITIGATION

This section summarizes the impacts and mitigation that are contained in all preceding sections of Chapter 4. The table, Exhibit 4-44, provides a side-by-side comparison of the impacts of the No-Action Alternative and the Proposed Action, together with corresponding mitigation commitments.

Exhibit 4-44. Summary of Impacts and Mitigation

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
4.2 Traffic Mobility and Access	Due to continued urban growth, traffic on Powers Boulevard would increase by about 40,000 vehicles per day (an 88% increase) and would be much more congested than it is today. The time needed to travel the corridor would increase by 19 minutes, from 24 minutes today to 43 minutes in 2035.	Traffic on Powers Boulevard would increase by up about 60,000 vehicles per day (a 126% increase), but would be less congested than it is today. The time needed to travel the corridor would be 7 minutes less than it is today.	Improved traffic flow and reduced travel times are beneficial effects. No mitigation is necessary.

1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
<p>4.2 Traffic Mobility and Access (continued)</p>	<p>South of Milton E. Proby Parkway, traffic volume would approximately triple, increasing by up to 30,000 vehicles per day, but traffic Levels of Service would remain acceptable.</p> <p>No change in access is anticipated.</p> <p>No change to business access on cross-streets is anticipated.</p>	<p>South of Milton E. Proby Parkway, where no improvements would be made, traffic volume would approximately triple, increasing by up to 30,000 vehicles per day, but traffic Levels of Service would remain acceptable.</p> <p>Grade-separated interchanges would be constructed at 11 major cross-streets. Direct access to Powers Boulevard would be no longer be available at three cross-streets and four side-streets:</p> <ul style="list-style-type: none"> • South Carefree Circle • Victor Place • Waynoka Road • Omaha Boulevard • Aeroplaza Drive • Astrozon Boulevard • Triple Crown Way <p>For safety reasons, continued use of some existing business access points on cross-streets would not be possible.</p>	<p>The Proposed Action includes right-of-way preservation to accommodate improvements south of Milton E. Proby Parkway in the future, when needed.</p> <p>Alternative access will be available via other streets. In some locations, the Proposed Action includes frontage roads to carry local traffic to the nearest grade-separated interchange. Three "Texas turnaround" ramps will be built to help motorists cross and access the freeway.</p> <p>The Proposed Action includes modification of cross-street business access points to provide reasonable access to all affected properties.</p>

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1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
<p>4.3 Social, Economic and Land Use Considerations</p> <p>- Neighborhoods</p>	<p>No households or businesses would be displaced.</p>	<p>23 duplexes (46 households) would be displaced from Gunshot Pass Drive. With over 160 other homes in the neighborhood, a substantial residential area would remain. Additionally, one household in Canterbury Mobile Home Park would be displaced. In total, 47 households would be affected.</p>	<p>In accordance with Federal law, land owners will be fairly compensated for their property, and displaced households will receive relocation assistance.</p>
<p>- Businesses</p>	<p>No businesses would be displaced.</p> <p>Existing roadway capacity would limit the amount of traffic that can reach Powers Boulevard commercial areas.</p> <p>Visibility to local businesses from the roadway would not be affected.</p>	<p>17 businesses, 8 of them vehicle-related, would be displaced. Nearby businesses and neighborhoods are not dependent on these businesses.</p> <p>Improved mobility would increase the geographic area from which customers can conveniently travel to Powers Boulevard commercial areas.</p> <p>Visibility from the roadway would be reduced for some businesses and enhanced for some others.</p>	<p>In accordance with Federal law, land owners will be fairly compensated for their property, and displaced businesses will receive relocation assistance.</p> <p>Improved mobility to commercial areas is a beneficial effect. No mitigation is necessary.</p> <p>Visibility from the roadway is not a protected resource. No mitigation is necessary.</p>

2

1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
<p>4.3 Social, Economic and Land Use Considerations (continued)</p> <p>- Minority/low-income populations</p>	<p>No minority or low-income businesses or households would be displaced.</p>	<p>In total, the project would displace 17 businesses and 47 households. Of these, one business is Hispanic-owned and four households are Hispanic. No disproportional impacts to minority or low-income populations are foreseen.</p>	<p>A Spanish-speaking relocation counselor will assist in moving the Hispanic-owned business, because there is a known language issue, and will also be available for the Hispanic households if needed.</p>
<p>- Land acquisition</p>	<p>No land would need to be acquired for right-of-way.</p>	<p>Approximately 381 acres of land would be purchased from an estimated 336 parcels of land.</p>	<p>Land owners will be fairly compensated for their property.</p>
<p>- Land use</p>	<p>No changes in land use would result from the No-Action Alternative.</p>	<p>The Proposed Action is compatible with adopted regional transportation and land use plans. It would not induce growth or change planned land use.</p>	<p>No mitigation is necessary.</p>
<p>4.4 Community Quality of Life</p> <p>- Traffic noise (Also discussed below for Section 4.5, Construction Impacts)</p>	<p>Due to increasing traffic, the number of areas experiencing traffic noise impacts would increase from five areas affected today to 11 areas affected in the future.</p>	<p>Noise would increase due to: increased traffic; new lanes closer to adjacent properties; and elevation of Powers Boulevard over cross streets. The number of areas experiencing traffic noise impacts would increase from five today to 21 affected in the future.</p>	<p>Noise walls are proposed at seven locations to protect 246 residences and one playground. For 14 other locations, it was determined that mitigation would not be reasonable and feasible.</p>

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1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
<p>- Air quality</p> <p>(Also discussed below for Section 4.5, Construction Impacts)</p>	<p>Congested, bumper-to-bumper traffic will produce excessive idling emissions. Cleaner vehicle emissions will largely offset growth in vehicle miles traveled. The region is expected to easily meet existing national air quality standards.</p>	<p>The freeway would accommodate more vehicles, but they would operate at higher, more efficient speeds. Projected worst-case micro-scale concentrations of carbon monoxide would be comparable to No-Action conditions and would meet national air quality standards.</p>	<p>Reduction of congestion-caused vehicle idling is a beneficial effect. No mitigation is necessary.</p>
<p>4.4 Community Quality of Life (continued)</p> <p>- Trails, parks, recreation & open space</p> <p>(Also discussed below for Section 4.5, Construction Impacts)</p>	<p>Increased traffic on the Powers Boulevard expressway would strengthen the effect of the roadway as a barrier to non-motorized travel (bicyclists, pedestrians, equestrians). No new trail crossings would be provided by CDOT.</p> <p>No land would be acquired from any park, trail or open space.</p>	<p>Converting Powers Boulevard to a freeway would further strengthen the effect of the road as a barrier to non-motorized travel.</p> <p>Land totaling 1.2 acres would be acquired from the Skyview Sports Complex and 0.02 acre from the Cherokee Ridge par-3 golf course. However, this land is not used for recreation.</p>	<p>The Proposed Action includes construction of an overpass for the Rock Island Trail and underpasses for the Sand Creek Trail and East Fork Sand Creek Trail. Interchanges would accommodate at-grade crossing for the Stetson Hills Trail and for arterial street sidewalk users. CDOT will work with the City of Colorado Springs to accommodate a Powers Trail along Aviation Way.</p> <p>No mitigation is necessary as there would be no impact to a recreational use.</p>

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1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
<p>4.4 Community Quality of Life</p> <p>- Trails, parks, recreation & open space (continued)</p>	<p>Three recreation facilities would experience traffic noise levels at or above 66 decibels: the High Chaparral Open Space, a privately-owned football field, and a planned community park.</p>	<p>The three facilities listed at left would experience higher noise levels with the Proposed Action, due to the higher traffic volumes that would pass by. However, traffic noise would not impair the intended recreational uses of the facilities.</p>	<p>Noise mitigation for all three sites was considered but was determined to be not reasonable and feasible. The two existing facilities have very limited active use in noise areas, and the planned park can be designed to locate noise-sensitive uses away from the freeway.</p>
<p>- Visual character</p>	<p>Urban development will continue to consume vacant grassland, giving the corridor a more urban visual character.</p>	<p>Adding pavement for ramps and frontage roads will make Powers Boulevard more visually apparent. Grade-separated interchanges would block views across the freeway.</p>	<p>CDOT has developed and will follow a uniform set of design guidelines to produce consistent aesthetic standards for interchanges, noise walls, streetlights, and other freeway features.</p>
<p>4.5 Construction Impacts</p> <p>- Traffic and access issues</p>	<p>Routine maintenance would occur on the existing expressway, causing short-term lane restrictions and temporarily increased congestion.</p> <p>Routine maintenance activities would cause minimal diversion of expressway traffic onto local streets.</p>	<p>Construction of each grade-separated interchange would result in lane restrictions and increased congestion for an extended period. Each project could last 18 to 24 months.</p> <p>Some cut-through traffic on local streets (e.g., Rio Vista Drive, Tutt Boulevard) may result in response to congestion in construction areas.</p>	<p>CDOT will require the existing number of through lanes to be maintained open to traffic using carefully planned construction phasing. The public will get advance notice of any restrictions. This will be addressed in CDOT specifications for any construction project(s).</p> <p>CDOT will request that the Colorado Springs Police Department and Colorado State Patrol provide extra speed limit enforcement on streets likely to experience cut-through traffic.</p>

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1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
<p>4.5 Construction Impacts - Soil erosion and water quality</p>	<p>Substantial exposure of soils to erosion is not anticipated.</p> <p>Construction-related fuel spills and other water pollution would be minimal.</p>	<p>Soil disturbance, material stockpiles, and other aspects of construction would result in sedimentation.</p> <p>Construction-related fuel spills and other pollutant could occur over the course of 18-24 months of construction at any given location.</p>	<p>Best management practices will be used to avoid, minimize and mitigate erosion.</p> <p>Best management practices will be used to prevent, minimize and clean up any spills or other water pollution.</p>
<p>- Consumption of resources</p>	<p>Maintenance consumes minimal resources in comparison with new construction.</p> <p>Minimal waste material would be generated.</p>	<p>Rock products, lumber, fuels and asphalt would be used for construction. Production of these resources typically results in environmental effects outside the project area (e.g., quarries).</p> <p>Waste material would be generated from demolition of structures and old pavement. These wastes would hasten the consumption of capacity at area landfills.</p>	<p>Offsite production processes are governed by environmental regulations. Contractors have a financial incentive to minimize use of materials.</p> <p>The recycling or reuse of waste materials by the construction contractor will be encouraged.</p>
<p>- Trails</p>	<p>No disruption to trail crossings of Powers Boulevard is anticipated.</p> <p>No disruption to other nearby trails is anticipated.</p>	<p>Construction activities would disrupt use of the Stetson Hills Trail that crosses Powers Boulevard, as well as numerous Powers Boulevard crosswalks for bicyclists and pedestrians at arterial cross-streets.</p> <p>The north-south Homestead Trail, at the edge of anticipated construction for the Barnes Road interchange, may experience temporary restrictions or detour.</p>	<p>Traffic management plans for each construction project will include accommodation of bicyclists and pedestrians.</p> <p>The City of Colorado Springs and the Trails and Open Space Coalition will be given advance notice of any activity that could temporarily impair the use of any trail.</p>

1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
<p>4.6 Water Resources - Water Quality (also addressed above for Section 4.5, Construction Impacts)</p>	<p>The No-Action Alternative would not affect the amount of paved surface on Powers Boulevard, so the amount of stormwater runoff would not change. The roadway does not have stormwater management BMPs now and none are proposed.</p> <p>Increased traffic on Powers Boulevard would result in a modeled 17% to 42% increase of various water pollutants such as sediment and heavy metals.</p>	<p>The Proposed Action would construct 180 acres of additional impervious surface area, increasing the amount of stormwater runoff by an estimated 47%.</p> <p>The increased traffic volumes with the proposed freeway are expected to increase the various water pollutants from the roadway runoff by 24% to 62%.</p>	<p>Stormwater detention and other best management practices (BMPs) will be incorporated into the project and will capture runoff not only from the roadway but also from adjacent properties. Stormwater management plans and BMPs will be prepared in accordance with CDOT's MS4 permit and will be coordinated with local governments.</p> <p>Stormwater detention and other best management practices will be incorporated into the project design. They will treat runoff not only from the roadway but also from adjacent properties. The net result is an estimated 27% reduction in sediment loading in comparison to the current conditions.</p>
<p>- Floodplains</p>	<p>Maintenance of Powers Boulevard would not affect floodplains.</p>	<p>Widening the roadway at drainage crossings would reduce the amount of floodplain acreage in three drainages, affecting a total of 13.9 acres. The modified structures at Sand Creek's main channel, East Fork and Center Tributary would be designed to ensure no increase in the base floodplain elevations. The Proposed Action would not impair the natural and beneficial values of any affected floodplain.</p>	<p>No mitigation is necessary.</p>

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1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
<p>4.7 Ecological Resources - Grasslands</p>	<p>The No-Action Alternative would not change existing ecological conditions along the corridor, which are poor and declining due to continuing, intense urban development.</p>	<p>260 acres of grassland that abut the existing right-of-way would be converted to highway use. Much of this grassland is already highly disturbed.</p>	<p>No mitigation is necessary.</p>
<p>- Wetlands</p>	<p>The No-Action Alternative would not consume any wetlands.</p>	<p>Wetlands totaling 0.12 acre (0.10 jurisdictional) would be lost at three locations.</p>	<p>Compensation for this impact will be made with credits from CDOT's wetland bank in Limon.</p>
<p>- Riparian habitat</p>	<p>The No-Action Alternative would not consume any riparian habitat.</p>	<p>1.33 acres of riparian habitat would be lost along East Fork Sand Creek.</p>	<p>In accordance with Colorado law, CDOT will avoid and minimize riparian impacts in consultation with the Colorado Division of Wildlife.</p>
<p>- Migratory birds</p>	<p>The No-Action Alternative would not disturb any birds' nests.</p>	<p>Widening of the Powers Boulevard bridge over East Fork Sand Creek would disturb swallow nests. A raptor nest and other bird nests in the Windmill Gulch also would be within range of possible noise disturbance due to construction activity.</p>	<p>A survey will be conducted for nesting birds in the short grass prairie, riparian, and wetland habitat, including bridge structures during the nesting period which is normally from April 1 through August 15. If occupied nests are identified, no construction work would take place within a buffer area recommended by the Colorado Division of Wildlife until the young have fledged.</p>
<p>- Vegetation</p>	<p>The No-Action Alternative would have minimal effects to roadside vegetation.</p>	<p>Adjacent to the Powers Boulevard bridge over East Fork Sand Creek, plains ragweed plants (rare but not endangered) would be harmed by construction activity.</p>	<p>Prior to construction, rare plants will be delineated and protected with temporary fencing to minimize disturbance. The area affected by construction will be restored to provide an opportunity for the plants to reestablish themselves there.</p>

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1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
4.7 Ecological Resources (continued) - Noxious weeds	Routine weed control would be practiced.	Soil disturbance during construction would provide an opportunity for the spread of noxious weeds.	Disturbed areas will be re-vegetated with native species. A weed control plan will be prepared and implemented. Any tamarisk found on CDOT right-of-way will be eradicated.
4.8 Cultural Resources - Historic resources	No historic resources would be affected.	113 feet of the Chicago, Rock Island and Pacific Railroad grade would be used for highway-right-of-way including construction of a trail overpass across Powers Boulevard.	There would be “no adverse effect” to this historic resource. Photo-documentation will be prepared in accordance with OAHF guidelines.
- Archaeological resources	No archaeological resources would be affected.	The project would not affect any known resources of archaeological significance.	If any resources are discovered during construction, the CDOT archaeologist will be consulted and appropriate actions taken.
- Native American resources	No cultural resources of interest to Native Americans would be affected.	The project would not affect any known cultural resources of interest to Native Americans.	If any Native American resources are discovered during construction, consultation with the affected tribes will occur and appropriate actions taken.
4.9 Other Resources and Issues - Hazardous materials	No disturbance of hazardous materials would occur.	Seven vehicle-related businesses, including three gas stations with underground fuel tanks, would be acquired for right-of-way. During construction, contaminated soils, groundwater, or other materials may be encountered.	CDOT will remove and properly dispose of contaminated materials using appropriate safety procedures, for the protection of the construction workers, the public, and the environment.

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1 **Exhibit 4-44. Summary of Impacts and Mitigation (continued)**

Resource	Impacts of No-Action Alternative	Impacts of Proposed Action	Mitigation
<p>4.9 Other Resources and Issues</p> <p>- Hazardous materials (continued)</p>	<p>No structures would be demolished.</p>	<p>47 homes and 14 commercial buildings (17 businesses) will be demolished. When clearing structures, there is always the possibility that asbestos, lead paint or other hazardous materials may be encountered.</p>	<p>CDOT's construction specifications will ensure that any hazardous materials encountered during construction are identified, handled and disposed of properly. These specifications will provide for the protection of the construction workers, the public, and the environment.</p>
<p>- Paleontological (fossil) resources</p>	<p>Routine maintenance activities would not affect fossils in the project area.</p>	<p>During construction activities, especially excavation work, fossils may be encountered.</p>	<p>Once construction plans are finalized, a qualified paleontologist will review them to determine the scope of any needed construction monitoring. If any sub-surface fossils are encountered during construction, the CDOT staff paleontologist will be notified immediately to assess their significance and make further recommendations.</p>
<p>- Energy</p>	<p>Increased traffic congestion would result in wasteful energy (fuel) use. Fuel consumption during the six busiest traffic hours would increase 117% between 2005 and 2035.</p>	<p>Due to improved traffic flow, fuel consumption during the six busiest traffic hours would increase by 106% between 2005 and 2035, Compared with the No-Action Alternative, the Proposed Action would save 5,000 gallons of gasoline per day.</p> <p>Construction activity to implement the Proposed Action would result in energy use equivalent to 42 million gallons of gasoline.</p>	<p>CDOT will abide by any applicable energy conservation mandates, and will work with its contractors to encourage energy-saving construction methods and materials (e.g., modern, more efficient highway lighting).</p>

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CHAPTER 5 – PUBLIC AND AGENCY INVOLVEMENT

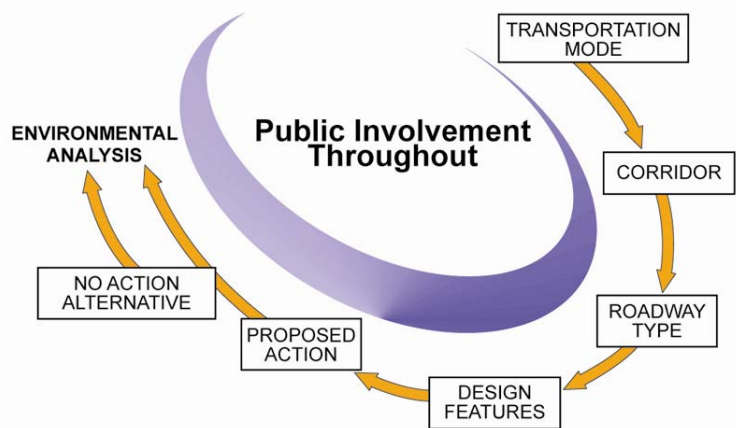
Public and agency involvement provided important direction for transportation decision-making throughout the preparation of this Environmental Assessment, and will continue to do so in any future steps leading to design and construction of the Proposed Action. The central role that public involvement played at each step in the EA is illustrated in Exhibit 5-1.

At the very beginning of the project, CDOT's team recognized that successful solutions to meeting the purpose and need would require a thorough understanding, not only of the characteristics of the highway and the causes for congestion, but also of the relationship between the highway and the surrounding business and residential community.

To gain this understanding, the team needed frequent and open communications with many individuals and agency partners, including residents of nearby neighborhoods and the local business community; representatives of local, state and federal agencies; and planners, engineers and other technical experts. All of these partners over many months provided information, identified issues and concerns, and contributed ideas and suggestions to address current and future capacity and safety problems on Powers Boulevard. This approach helped to clarify the business and residential context of Powers Boulevard and helped develop solutions that could potentially resolve congestion and safety problems while minimizing negative effects to the community and the environment.

This chapter summarizes the efforts that were made by CDOT and describes how the resulting input influenced project decision making. Appendix A, Agency Correspondence, describes the public and agency involvement process in more detail. It identifies the meetings and tools that were used, describes many of the issues and concerns that were expressed by the public, and documents the results of this effort. Appendix E, Context Sensitive Solutions Report, shows how many of these issues and concerns were addressed during the development of the Proposed Action. Appendix Q, Public Involvement Report, provides more detail about the public outreach efforts for this EA. All of these appendices are included in the compact disc attached to this EA.

Exhibit 5-1. Continuous Public Involvement Was a Central Focus throughout EA Development



5.1 OVERVIEW

Many different outreach tools and methods were used to engage the public during the development of this EA, from meetings and workshops to newsletters and a project website. Examples of some of these that were used are listed in Exhibit 5-2.

To encourage public participation early in the process, a project office was established adjacent to Powers Boulevard, at the southeast corner of the Galley Road intersection. Regular office hours were maintained several days a week and the office was open other times by appointment. This office became the focal point for obtaining information about the project, particularly for businesses and residents during the development of the Proposed Action. Current project information, maps and displays were made available, and project staff listened to issues and concerns and answered questions. Using the project hotline, individuals could make appointments for times that were convenient for them.

Direct contact with individuals by project staff was important in receiving candid and sometimes confidential information. This approach was preferred by many businesses and property developers as well as some homeowners. Information and exhibits were provided to individuals and small groups, often in their home or place of business. This was a very useful approach for capturing issues and concerns that were particularly sensitive to individuals. For example, some businesses had investment plans that they did not want publicized, or had issues regarding a neighboring business. Individual meetings with businesses and residents were also used in an outreach to minority and low-income individuals. This is discussed in the Specialized Outreach section below.

Open house public meetings were used at key project milestones as a way to inform the public about the EA process, to solicit comments, issues, and concerns, and to record ideas that might avoid or minimize potential effects to their property.

Seven sets of open house meetings were held over the course of EA development. All were informal as reflected in Exhibit 5-3, enabling citizens to arrive at a time convenient for them and to discuss project details one-on-one with a

Exhibit 5-2. Public Outreach Tools

- Media Releases and Interviews
- Newsletters
- Public Meetings, Workshops, Individual & Small Group Meetings
- Project Office & Telephone Hot Line
- Paid Advertisements and Public Announcements
- Project Website:
www.thepowerslink.com

Exhibit 5-3. Citizens Ask Questions at a Public Open House Meeting



1 number of technical experts. A variety of displays including maps and visual simulations were
2 available for review.

3
4 In addition, briefings were provided to local elected officials and their staff, gathering comments
5 from their constituents as well as their technical experts. Typically, briefings to elected bodies
6 were broadcast on local cable television channels operated by those jurisdictions.

7 8 **5.2 KEY ISSUES AND ACTIONS TAKEN**

9
10 Although many hundreds of questions and comments were raised during the development of
11 this EA, there were several recurring issues and themes that were heard throughout the
12 process. The business community was predominantly concerned about potential changes in
13 access and visibility, while the public was more concerned by possible changes in traffic
14 patterns that might affect their neighborhood either directly or indirectly. Some concerns, such
15 as increased traffic noise, could be addressed through appropriate mitigation measures.
16 Others, however, required engineers, planners and technical experts to evaluate multiple
17 options and opportunities to arrive at a solution that would minimize potential impacts. The
18 following discussion focuses on key issues that were heard from businesses, the public, and
19 local agencies that influenced the design of the Proposed Action.

20
21 Key issues that were raised by the public and agency staff included:

- 22 • Access and visibility to nearby business establishments
- 23 • Accommodation of future growth at the Colorado Springs Airport
- 24 • Potential for increased cut-through traffic on Rio Vista Drive
- 25 • Accommodation of crossings for bicyclists, pedestrians and equestrians
- 26 • Accommodation of a planned north-south trail between Airport Road and Bradley Road
- 27 • Potential to reduce habitat connectivity near the Bluestem Prairie Open Space
- 28 • Need for interagency coordination on design of stormwater management systems

29
30
31 The following describes these issues in more detail and identifies the actions that were taken to
32 address them.

33
34 **ISSUE:** The business community along Powers Boulevard was concerned that making Powers
35 Boulevard into a freeway would significantly change the way customers access their
36 businesses. They commented many times that any change in access and local traffic patterns
37 could affect the viability of their business.

38
39 **ACTION:** The project team heard this concern from the very beginning of the EA and
40 throughout the process. To address this issue, the team met multiple times with individual
41 businesses and with groups of businesses in a specific area, for example, those located near a
42 proposed interchange. Dozens of these meetings were held, maps and drawings were rolled out
43 on the table, and business owners and managers were encouraged to discuss their access
44 needs. Most of these needs were related to the ability of customers to easily access their
45 businesses, but in some cases, the concern was for access by their suppliers (e.g., for trucks to
46 access loading docks). This information was then used by the project engineering team to
47 develop access alternatives that would work within the freeway concept. When possible,

2 multiple options were developed
 4 and were taken back for the
 6 businesses to critique. This
 8 iterative process was continued
 10 until an option was found that was
 12 acceptable to a majority of the
 14 businesses, and these were then
 16 carried forward for incorporation
 18 into the Proposed Action.

22 **ISSUE:** Staff from the Colorado
 24 Springs Airport explained to the
 26 project team that it expects a large
 28 amount of growth in the future from
 30 airport operations as well as its
 32 associated Business Park. For
 34 example, if a large national low-cost
 35 carrier would locate at the Airport, it would substantially increase the number of passengers.
 36 Therefore the Powers Boulevard interchange at Milton E. Proby Parkway, the main entrance to
 37 the airport, should provide the flexibility to accommodate increased demand in the future, and
 38 preferably should provide a free-flow movement into the airport.

40 **ACTION:** The project’s engineering team evaluated several interchange options, including
 41 some that were proposed by the airport, which would provide the desired flexibility in the future
 42 to accommodate potential growth in airport traffic. This evaluation determined that a diamond
 43 interchange would be adequate to meet projected traffic demand through the year 2035, based
 44 on the PPACG regional traffic model. However, in the future as traffic warrants, a free-flow
 45 ramp could be added by others from southbound Powers Boulevard to eastbound Milton E.
 46 Proby Parkway, bypassing the signalized ramp intersections.

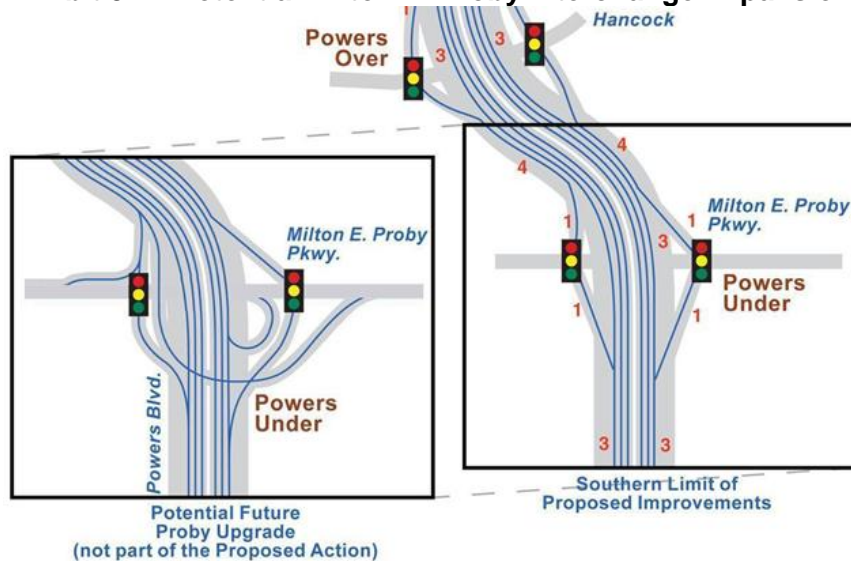
50 Exhibit 5-4, an excerpt
 52 from the diagram of the
 54 Proposed Action in
 56 Chapter 3, indicates the
 58 proposed diamond
 60 configuration and the
 62 potential future upgrade
 64 that is not part of the
 66 Proposed Action. This
 68 concept satisfied the
 70 Airport’s need for
 72 flexibility in the future
 74 and was acceptable to
 76 the Airport. The impacts
 78 of the expansion option
 80 were evaluated in the
 82 EA, including the extra

ADDRESSING ACCESS NEEDS

In addition to providing frontage roads in some locations and three “Texas turnaround” ramps, CDOT will build four extensions of local streets to improve continuity for local access:

- Waynoka Street, connecting Palmer Park Boulevard and Omaha Boulevard
- Paonia Street connection between Omaha Boulevard and Galley Road
- New east-west connection from Paonia Street to Conrad Street, south of Galley Road
- Aviation Way extension across Sand Creek to Industrial Drive

Exhibit 5-4. Potential Milton E. Proby Interchange Expansion



land that would be needed from the Airport to accommodate a future upgrade of the proposed diamond interchange.

ISSUE: The neighborhood near Rio Vista Drive was concerned that non-residential traffic on Rio Vista Drive, already a problem, could increase because of the proposed freeway. Rio Vista Drive is the first north-south roadway west of Powers Boulevard, between Barnes Road and Constitution Avenue. The western side of this street is residential, and between North Circle Drive and South Circle Drive the eastern side of Rio Vista Drive is residential as well. Speed limits range from 25 to 35 miles per hour, and these limits are violated by many drivers who use this mostly residential street for cut-through trips around the back of several commercial centers. The portion south of South Carefree Circle is shown in Exhibit 5-5.

ACTION: Cut-through traffic on Rio Vista Drive was an important consideration as the project team explored ways to accommodate traffic between Barnes Road and Constitution Avenue. Although many concepts were evaluated, CDOT's traffic engineers determined that a southbound Powers Boulevard frontage road in this stretch would reduce the potential for cut-through traffic. It would serve this north-south local circulation need for both businesses and residents in the area and is included in the Proposed Action. This frontage road would improve traffic flow both on Powers Boulevard and at its cross-streets and would reduce the need for motorists to use Rio Vista Drive as a shortcut around traffic congestion. This concept was explained to concerned residents at open house public meetings, and was generally considered favorably.

In addition, the project team recognized that construction activities may increase cut-through traffic on Rio Vista Drive. Therefore, CDOT will request increased speed limit enforcement on Rio Vista Drive by the City of Colorado Springs Police Department and the Colorado State Patrol. These efforts would help to minimize cut-through traffic, but due to the street's location and the design of the surrounding street network, the reality is that there will always be some cut-through traffic on Rio Vista Drive.

Exhibit 5-5. Aerial View of Rio Vista Drive between South Carefree Circle and Constitution Avenue



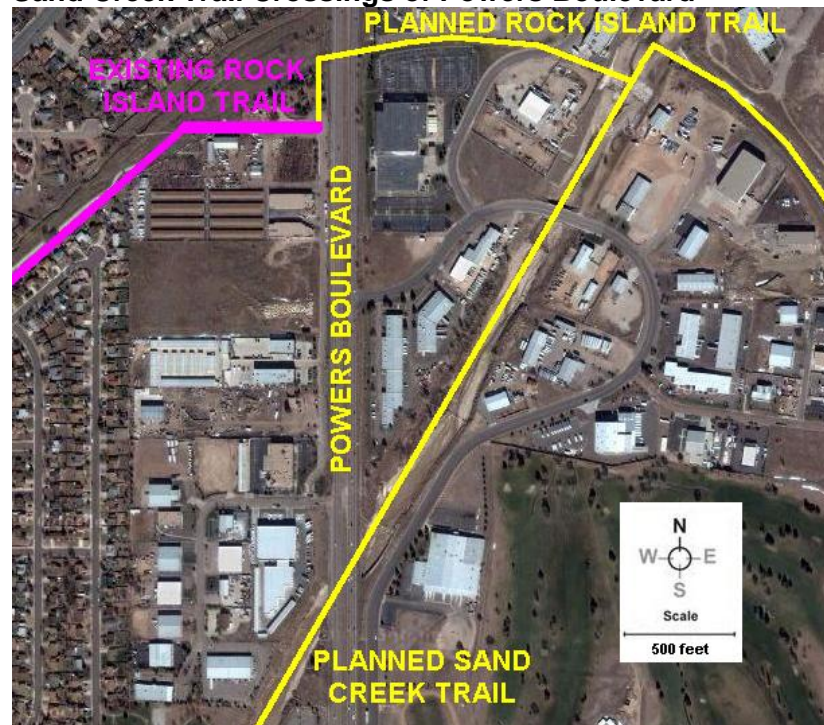
1 **ISSUE:** An evaluation of the existing trail system by the project team indicated that Powers
 2 Boulevard, as an expressway, is already a substantial barrier for pedestrians and bicyclists.
 3 Crossing the expressway at signalized intersections today is not easy due to the width of the
 4 road and the busy turn movements. The only existing trail overpass or underpass of Powers
 5 Boulevard is a pair of tunnels constructed as part of the new Woodmen Road interchange. A
 6 Powers Boulevard freeway would have the potential to increase the current barrier effect.

7
 8 **ACTION:** During the development of the Proposed Action, the project team recognized the
 9 importance of providing connectivity of sidewalks and trails across Powers Boulevard. At key
 10 points throughout the process, the team met with staff from the City of Colorado Springs Parks,
 11 Recreation and Cultural Services Department to plan appropriate sidewalk and trail connections
 12 consistent with city plans. As a result of these discussions, the Proposed Action includes
 13 appropriate extensions of sidewalks at major cross-streets and three overpasses or
 14 underpasses for planned multi-use trails.

15
 16 At most interchanges, this plan would allow bicyclists and pedestrians to cross the freeway
 17 ramps using striped, handicap-accessible crosswalks with pedestrian-actuated traffic signals.
 18 Where possible, these crossings would include “refuge islands” (a raised median area with a
 19 sidewalk) where bicyclists and pedestrians could safely wait before crossing the remaining
 20 lanes. These crosswalks would have fewer lanes to cross than the ones that cross Powers
 21 Boulevard today, and most users would find it less intimidating.

22
 23
 25 At several locations,
 27 important multi-use trails
 29 are planned to cross
 31 Powers Boulevard. These
 33 include two major regional
 35 trails, which are planned to
 37 accommodate equestrians,
 39 and three other pedestrian
 41 and bicycle trails that
 43 connect to them. The
 45 project team worked with
 47 City staff to explore options
 49 for how to convey these
 51 planned trails over or under
 53 the proposed freeway. Of
 55 these crossings, the most
 57 complex to resolve were
 59 the Rock Island and Sand
 61 Creek regional trails, which
 63 are planned to cross
 65 Powers Boulevard about a
 67 half mile apart from each
 69 other, as shown in Exhibit
 71 5-6.
 73

Exhibit 5-6. Location of Proposed Rock Island Trail and Sand Creek Trail Crossings of Powers Boulevard



1 The first question that the team and the City needed to address was whether or not two trail
2 crossings were necessary since the crossings envisioned on regional trail plans are so close to
3 each other. The two trails are planned to intersect just to the east of Powers Boulevard. If they
4 connected to the west of Powers Boulevard, they could share a single crossing. The second
5 question was how best to accommodate equestrians. A neighborhood less than one mile west
6 of Powers Boulevard has 205 lots of one to two acres in size, where horses are allowed and
7 where 20 to 30 horses are currently kept. The Rock Island Trail in this vicinity includes not only
8 a hard-surface trail for bicyclists and pedestrians, but also a soft-surface trail beside it for
9 equestrians.

10
11 As the result of discussions with two neighborhood representatives and a regional riding group,
12 it was determined that crossing under the freeway was the preferred way to accommodate
13 equestrians. Therefore, the team included in the Proposed Action an extra “cell” in the large box
14 culvert that carries Sand Creek under Powers Boulevard. The interior height and width of the
15 cell is large enough for use by horses. For the Rock Island Trail, an underpass could not be so
16 readily accommodated, and an overpass is proposed. Although the project team considered
17 design concepts to accommodate horses on an overpass, these concepts were rejected.
18 Horses need sure footing, lateral clearance with other trail users (e.g., oncoming bicyclists), and
19 visual shielding of the traffic and other distractions below. The result of these considerations
20 was that an overpass for the Rock Island Trail should be designed to accommodate only
21 bicycles and pedestrians.

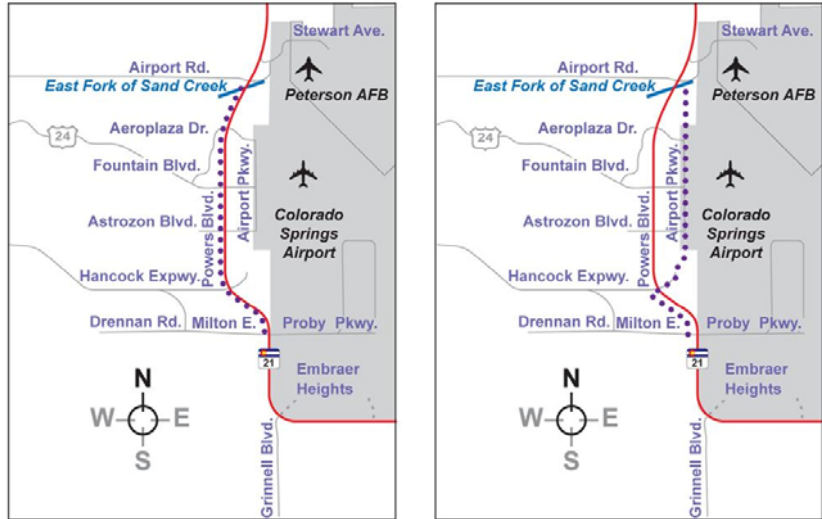
22
23 Of the two trails, the Rock Island Trail is part of the region’s major east-west spine trail, the
24 America the Beautiful Trail which was honored by the White House as Colorado’s Millennium
25 Legacy Trail. Logically, this trail across the region should cross Powers Boulevard as directly
26 as possible, without a half-mile diversion south and back again. Since a direct overpass
27 crossing for the Rock Island Trail would not accommodate equestrians, but the Sand Creek Trail
28 underpass could, the Proposed Action includes both crossings.

29
30 ISSUE: The City’s Trails and Open Space Master Plan proposes a north-south Powers Trail
31 that would connect the East Fork of Sand Creek to trails south of Milton E. Proby Parkway. The
32 Proposed Action should not preclude a trail connection serving this purpose.

33
34 ACTION: The project team met with the staff of the City’s Parks, Recreation and Cultural
35 Services Department to explore options for accommodating a new trail. The City originally
36 envisioned that a future trail would follow along Powers Boulevard, either on the eastern side,
37 near airport-related industrial buildings, or on the western side, near mobile home parks.
38 Highway right-of-way in the area would be extremely limited, due to the need to accommodate
39 the freeway, water quality detention facilities (due to Clean Water Act requirements) and noise
40 walls. If a trail could be squeezed into the corridor, which is questionable, the trail experience
41 would be dominated by the sight, sound and exhaust of adjacent freeway traffic.

2 The project team and the
 4 City developed the
 6 alternative trail alignment
 8 shown in Exhibit 5-7. This
 10 would follow Aviation Way
 12 south from Sand Creek to
 14 Zeppelin Drive, with access
 16 to the Skyview Sports
 18 Center. Trail users could
 20 cross under Powers
 22 Boulevard to the planned
 24 Southeast Community Park
 26 before crossing under Milton
 28 E. Proby Parkway to reach
 30 planned connecting trails.
 32 The Proposed Action would
 34 not build this trail but would
 36 accommodate this trail
 38 alignment.

Exhibit 5-7. Original Concept and Alternative Alignment for the Proposed Powers Trail



41 **ISSUE:** Pronghorn antelope are found on both sides of Powers Boulevard in the vicinity of the
 42 Bluestem Prairie Open Space (see Exhibit 5-8). The existing four-lane Powers Boulevard
 43 expressway already fragments the grassland in this area. The project biologists pointed out to
 44 the engineering team that the highway will continue to be a barrier, and when combined with
 45 changes in land use patterns, it would further reduce habitat continuity in the area.

47 **ACTION:** Project biologists explored options for wildlife crossings to maintain connectivity
 48 between the open space west of Powers Boulevard, and the undeveloped land east of Powers
 49 that is owned by the State Land Board. However, the State Land Board’s mission is to
 50 maximize income for the benefit of Colorado’s schools. Consistent with this mission, the best
 52 and highest use of the land is
 54 likely to be urban development,
 56 not wildlife conservation.
 58 Additionally, grassland located
 60 north of the open space (on the
 62 northern side of Powers
 64 Boulevard) is owned by the
 66 Colorado Springs Airport Business
 68 Park, which has begun to develop
 70 that land. Thus it appears that the
 72 Bluestem Prairie Open Space will
 74 ultimately become surrounded and
 76 isolated by urban development. It
 78 does not appear feasible to
 80 maintain an adequate grassland
 82 connection to suitable pronghorn
 84 habitat farther to the east.

Exhibit 5-8. Pronghorn Antelope at the Bluestem Prairie Open Space



1 This issue arises in the six-mile southern portion of the corridor where the Proposed Action
2 includes no construction but instead preserves right-of-way for a future freeway. Regional
3 development patterns for years have been gradually displacing local pronghorn herds farther
4 and farther to the east, to less developed grassland areas. If regional development plans
5 change in a manner that would not isolate the Big Bluestem Prairie Open Space, CDOT can
6 revisit this issue in the future. The pronghorn is not listed as a threatened or endangered
7 species at the Federal or State level, so its habitat does not receive protection. Grassland
8 habitat may be protected for the benefit of other, listed species, but protected habitat has not
9 been identified in the vicinity of Powers Boulevard.

10
11 **ISSUE:** Watersheds in the Colorado Springs area have had serious problems with drainage,
12 erosion and flooding. It is important not just locally, but also for communities downstream, that
13 stormwater in the Powers Boulevard corridor be managed effectively.

14
16 **ACTION:** To comply with the Clean Water Act,
18 the City, El Paso County, and CDOT have
20 Municipal, Separate, Storm Sewer System
22 (MS4) permits from the Colorado Department of
24 Public Health and Environment. These permits
26 require permanent Best Management Practices
28 to treat runoff from roadways and new
30 development. Therefore the Proposed Action
32 includes water detention areas and other Best
34 Management Practices for stormwater
36 management. Land that would be acquired for
38 the Proposed Action includes not only the width
40 needed for roadway improvements but also for
41 capturing stormwater.

WATER QUALITY COORDINATION

The Powers Boulevard Proposed Action is a large-scale project involving extensive stormwater management planning. This planning has been and will be coordinated with the City of Colorado Springs and El Paso County, for the purpose of developing mutually beneficial drainage solutions.

42
43 Extensive drainage system concepts for Powers Boulevard have been planned in cooperation
44 with the City of Colorado Springs and El Paso County. These systems were devised not only to
45 meet permit requirements but also to provide an efficient and effective system to minimize the
46 potential for pollutants to enter local streams and waterways.

5.3 SPECIALIZED OUTREACH TO MINORITY AND LOW-INCOME PERSONS

47
48
49 Beyond the outreach to the general public using tools described earlier in this chapter,
51 specialized outreach efforts were undertaken to ensure opportunities for participation in EA
52 decision-making by minority and low-income populations. Approximately 12% of residents in
53 the Powers Boulevard corridor reported themselves to be Hispanic in the 2000 Census, which is
54 consistent with the percentage for the entire city. About 4.7% of households in the corridor are
55 considered low-income, compared to 7.8% citywide. About 6% of the city's population speaks
56 Spanish at home, which is more than all other non English-speaking households combined.
57 Based on these U.S. Census data, the Powers Boulevard corridor is not considered to have
58 higher than average concentrations of minority or low-income persons than the rest of Colorado
59 Springs. However, statistics at the corridor or Census block level have the potential to miss
60 minority or low-income enclaves in small areas, such as adjacent to a highway.

1 Specialized outreach efforts were focused primarily toward those who would be most directly
2 affected by the Proposed Action, and not because they were thought to be minority or low-
3 income individuals. Representatives from the project team conducted one-on-one interviews
4 and small group meetings with residents, neighborhood groups and businesses where a home
5 or business was expected to be acquired by CDOT, as follows:

- 6 • Personal interviews were conducted in the affected homes (or conducted by phone) with
7 residents and non-resident owners of duplexes on Gunshot Pass Drive
- 8 • Community meetings were held in the clubhouses of the Canterbury and Meadows
9 Mobile Home Parks
- 10 • Meetings were held with owners and managers of businesses that were considered likely
11 to be acquired

12 The primary purpose of these meetings was to explain the EA process, the Proposed Action,
13 and the right-of-way acquisition and relocation process to these potentially affected parties. A
14 secondary purpose was to assess potential socio-economic effects.

15
17 The two meetings held at the mobile home parks
19 were scheduled in advance with the managers of
21 these communities. Meeting information was
23 posted in both English and Spanish on each
25 community's bulletin board. The mobile home
27 communities could be affected by access
29 changes and increased traffic noise, but only one
31 household would be displaced. Most meeting
33 attendees were primarily interested in when the
35 project might be built. When they learned that
37 construction was likely at least a decade away,
39 many attendees commented that they did not
41 expect to still be in the area by then.

HOUSEHOLD INTERVIEWS

A personal invitation to meet and discuss the Powers Boulevard EA was extended to the owner of every residential property where a household would be displaced by the Proposed Action. Interview results were consistent with Census data in suggesting that the project would not disproportionately affect minority or low-income households.

43
44 Direct contacts were attempted with all owners of residential properties where a household
45 might be displaced by the Proposed Action. These included one mobile home unit and 46
46 Gunshot Pass Drive households in 23 duplex units. Direct mail, telephone calls and even door-
47 hanger information bags were used in multiple attempts to schedule meetings with property
48 owners and tenants. The project team offered to make meeting appointments with these
49 residents at their convenience, day, night or weekend.

50
51 Ultimately, 25 owners and two tenants participated in interviews. Four other owners and one
52 tenant responded to say they did not want to be interviewed. No response was received from
53 the remaining owners, some of whom may have been military personnel deployed overseas.
54 There is no reason to believe that any language barrier was responsible for the non-responses,
55 based on a review of the surnames of these residents. Additionally, the surnames of affected
56 property owners did not appear to be indicative of any localized ethnic concentration.
57

2 At meetings with potentially affected business
4 owners or managers, the interviews included
6 questions not only about the ownership and the
8 nature of the business, but also about their
10 employees. The number of interviews
12 conducted (23) exceeded the number of
14 businesses that would be displaced by the
16 Proposed Action (17) for two reasons. First, in
18 cases where both the business tenant and the
20 property owner were interviewed, there multiple
22 interviews for a single property. Second, some
24 interviews were conducted with businesses that
26 are no longer expected to be acquired as a
28 result of the Proposed Action.

BUSINESS INTERVIEWS

Interviews were conducted in 2005 with property owners or tenants at every business that might be displaced by the Proposed Action. Displacing these businesses would not disproportionately affect minority or low-income business owners, employees or customers. More recently established businesses that would be displaced appear to have similar characteristics.

30 Interview Results

31 One Hispanic-owned business was identified, as well as five Hispanic households. While the 23
32 duplexes (46 households to be displaced) and mobile homes (one household to be displaced)
33 are of lower market value than the median home price for the area, there was no indication that
34 any of the residents there met the threshold for “low income” used in this EA. That threshold
35 was a household income at or below \$22,540 (year 2000 dollars).

37 The attempt to contact all parties that might be displaced by the Proposed Action was like a
38 “snapshot” in time. The Powers Boulevard corridor is a dynamic place with frequent residential
39 and business turnover. Thus some of the residents and business people who were interviewed
40 are no longer present and there are clearly other new businesses and residents now present
41 who were not interviewed. The one-time attempt to contact all affected parties cannot provide
42 any guarantee of future socio-economic characteristics in the corridor.

44 Bilingual Outreach

45 Additional outreach to the region’s largest minority was made by sending press releases to and
46 publishing paid advertisements in *Hispania News*. This is a Colorado Springs-based bilingual
47 newspaper whose primary target market is the Hispanic community. Ads publicizing all public
48 open house meetings for the Powers Boulevard EA were published in this newspaper, as well
49 as the region’s principal newspaper, the *Gazette*. Additionally, news releases were provided to
50 all of the region’s television and radio stations, which are all broadcast in English.

52 Meeting Locations

53 Powers Boulevard public open house meetings were held at locations along the corridor for the
54 convenience of potentially affected parties. The meetings were usually held at multiple
55 locations, presenting identical information on several different weeknights. The meeting location
56 closest to Gunshot Pass Drive was less than one mile away from that neighborhood, and the
57 meeting location closest to the mobile home parks was less than two miles away from those
58 communities.

59
60
61

1 **5.4 FUTURE PUBLIC AND AGENCY INVOLVEMENT**

2
3 After reviewing all the information in this Environmental Assessment, and after considering all
4 public and agency comments made regarding it, CDOT and the Federal Highway Administration
5 will make decisions about whether or not the Proposed Action can be approved for
6 implementation. If it is decided to proceed with the Proposed Action, public and agency
7 involvement for the Proposed Action would be an ongoing effort for a number of years, since the
8 project is not expected to be fully funded and constructed within the next decade. CDOT would
9 maintain lines of communication to provide information about the project and to answer
10 questions that arise. Continuing land development pressure would necessitate monitoring of
11 proposed developments to ensure that they are compatible with the Proposed Action.

12
13 If funding becomes available, CDOT would solicit further public input during project design.
14 Extensive dialog with affected parties would take place when the time comes for utility
15 relocation, final right-of-way acquisition and design decisions regarding noise barriers. Of
16 course, extensive public involvement and agency coordination would also be needed before and
17 during any construction projects, so that the public is aware in advance of any detours, access
18 changes and expected traffic delays due to construction. Media alerts and website postings
19 would be key tools for disseminating these details in a timely manner.
20

1 CHAPTER 6 – NATIVE AMERICAN CONSULTATION

2
3 Section 106 of the National Historic Preservation Act (as amended) and the Advisory Council on
4 Historic Preservation regulations (36 CFR 800.2(c)(2)(ii)) mandate that federal agencies must
5 involve interested Native American tribes in the planning process for federal undertakings.
6 Consultation with a Native American tribe recognizes the government-to-government
7 relationship between the United States government and the sovereign tribal groups, and federal
8 agencies must be sensitive to the fact that historic properties of religious and cultural
9 significance to one or more tribes may be located on ancestral, aboriginal, or ceded lands
10 beyond modern reservation boundaries.

11
12 Consulting tribes are offered the opportunity to identify concerns about cultural resources and
13 comment on how the project might affect them. If it is found that the project will impact cultural
14 resources that are eligible for inclusion on the National Register of Historic Places and are of
15 religious or cultural significance to one or more of the consulting tribes, their role in the
16 consultation process may also include participation in resolving how best to avoid, minimize, or
17 mitigate those impacts. By describing the proposed undertaking and the nature of known
18 cultural sites, and consulting with the interested Native American community, FHWA and CDOT
19 strive to effectively protect areas important to American Indian people.

20
21 In March 2004, eleven federally recognized tribes with an established interest in El Paso County
22 were invited via letter to participate as consulting parties:

- 23
24
- 25 • Ute Mountain Ute Tribe (Colorado)
 - 26 • Southern Ute Indian Tribe (Colorado)
 - 27 • Ute Tribe of the Uintah and Ouray Agency (“Northern” Ute) (Utah)
 - 28 • White Mesa Ute Tribe (Utah)
 - 29 • Apache Tribe of Oklahoma
 - 30 • Cheyenne and Arapaho Tribes of Oklahoma (two tribes administered by a unified tribal
31 government)
 - 32 • Pawnee Nation of Oklahoma
 - 33 • Comanche Nation of Oklahoma
 - 34 • Kiowa Tribe of Oklahoma
 - 35 • Northern Arapaho Tribe (Wyoming)
 - 36 • Northern Cheyenne Tribe (Montana)

37 Three tribes indicated in writing their desire to be consulting parties for the project: the Northern
38 Cheyenne Tribe, Cheyenne and Arapaho Tribes of Oklahoma, and Southern Ute Indian Tribe.
39 None of these tribes raised specific project issues, other than requesting to be notified if
40 discoveries of human remains and/or other material attributable to Native Americans occur
41 during construction. Documentation of the consultation with the tribes is included in Appendix
42 A, Agency Coordination, on the compact disc attached to the back of this EA.

43
44 Each consulting tribe will continue to receive information about the project as it becomes
45 available, and every opportunity will be taken to involve them in the planning and project



- 1 development process for the Powers Boulevard corridor. In so doing, FHWA and CDOT have
- 2 fulfilled their legal obligations for tribal consultation under federal law.

CHAPTER 7 – SECTION 4(f) *DE MINIMIS* IMPACT DOCUMENTATION

Since 1966, a legal provision that applies only to Federal transportation actions has afforded strong protection to publicly owned land in public parks, recreation areas, and wildlife and waterfowl refuges. It also protects publicly or privately owned land from historic sites. Because this provision was contained in Section 4(f) of the U.S. Department of Transportation Act of 1966, the regulations that implement this provision are often referred to as Section 4(f) requirements. In brief, Section 4(f) prohibits Federal transportation agencies from using land from the protected resources listed above unless there is no feasible and prudent alternative to the use, and the action includes all possible planning to minimize harm to the property resulting from the use.

The Powers Boulevard Proposed Action is expected to affect three Section 4(f) resources:

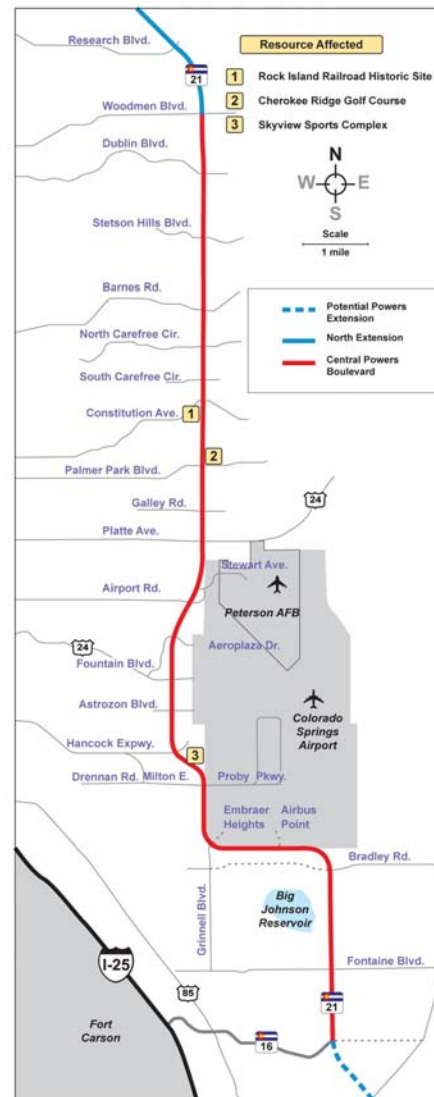
- An historic site, the railroad grade of the former Chicago and Rock Island & Pacific Railroad
- The Cherokee Hills Golf Course property, a public facility owned and operated by the Cherokee Metropolitan District
- The Skyview Sports Complex, operated by the Parks, Recreation and Cultural Services Department of the City of Colorado Springs.

The locations of these resources are shown in Exhibit 7-1.

Recognizing that these were Section 4(f) resources, CDOT made extensive efforts to avoid and minimize impacts to them when developing a conceptual design in the alternatives development process. However, it was concluded that the need to acquire small parcels of land from the railroad grade, golf course and the sports complex for highway right-of-way would be unavoidable.

When the likelihood of impacts was identified, CDOT consulted with the agencies having jurisdiction to determine how the resources would be affected by the Proposed Action. Through these efforts, it has been determined that the use of the land needed for highway right-of-way will have no adverse affect on the historic resource and will not impair the recreational use of the golf course or the sports complex.

Exhibit 7-1. Location of Section 4(f) Resources Affected by the Proposed Action



1 **De Minimis Impacts**

2 A 2005 change to the Section 4(f) requirements allows transportation uses of protected land if
 3 the resulting impact to the resource would be negligible, or “*de minimis*.” When this is the case,
 4 FHWA can make a *de minimis* impact determination, which does not require an analysis of
 5 avoidance alternatives or a least harm analysis (23 CFR 774.17[5]).

6
 7 The *de minimis* criteria and associated determination are different for historic sites than for
 8 parks, recreation areas, and wildlife and waterfowl refuges. The primary differences are:

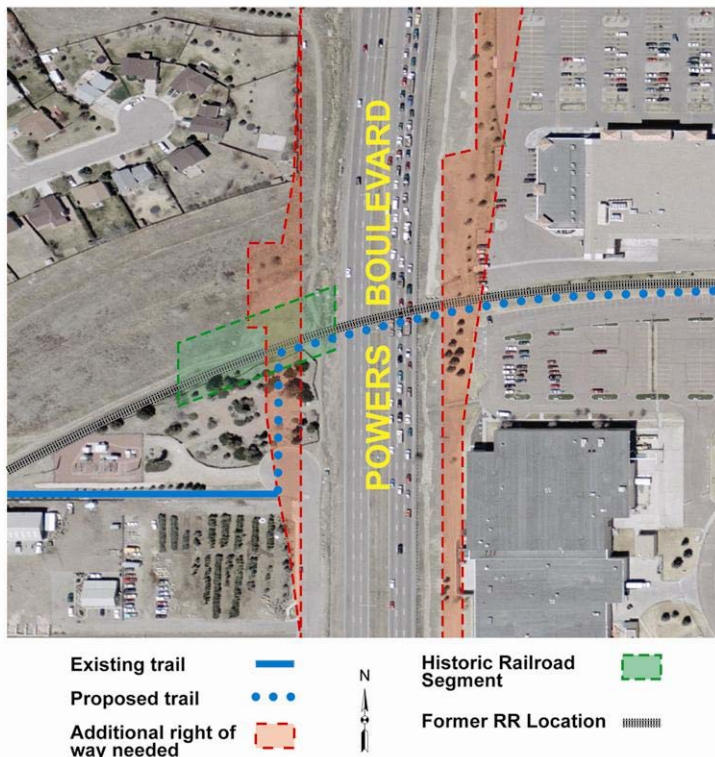
- 9
 10 • For historic sites, *de minimis* impacts are based on the determination that no historic
 11 property is affected by the project or that the project will have no adverse effect on the
 12 historic property in accordance with Section 106 of the National Historic Preservation Act.
 13 The finding must be developed after consultation with the parties involved in the Section
 14 106 determination, and the State Historic Preservation Officer must concur in the *de*
 15 *minimis* finding.
 16
 17 • For publicly owned parks, recreation areas, and wildlife and waterfowl refuges, *de*
 18 *minimis* impacts are defined as those that do not “adversely affect the activities, features
 19 and attributes” of the Section 4(f) resource. The public must be afforded an opportunity
 20 to review and comment on the findings.
 21

22 **7.1 PROJECT EFFECTS**

23
 24
 25
 26
 27 As noted above, the
 28 Proposed Action would use
 29 land from three Section 4(f)
 30 resources. The effects of the
 31 Proposed Action on each
 32 resource are described
 33 below.
 34
 35
 36
 37
 38
 39
 40

41
 42
 43 **Chicago, Rock Island &**
 44 **Pacific Railroad** - Informally
 45 known as the “Rock Island
 46 Line”, this railroad was
 47 completed from Kansas to
 48 Colorado Springs in 1888,
 49 and operated for about 100
 50 years before being
 51 abandoned two decades
 52 ago. Railroad tracks remain
 53 in place for some portions of
 54 the railroad line, but are
 55 nearly all gone within the
 56 Powers Boulevard study
 57 area.
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Exhibit 7-2. Aerial View of Rock Island Railroad Impact Location



1 In Exhibit 7-2, the area shaded in green is a 0.2 mile portion of the railroad grade adjacent to the
2 west side of Powers Boulevard and just south of Constitution Avenue. This segment,
3 designated as historic resource # 5EP1815.19, is part of the much longer, historic railroad line.
4 Based on conceptual plans, it is anticipated that the Proposed Action would affect 58 linear feet
5 of railroad grade that is already within Powers Boulevard right-of-way, and would require
6 acquisition of an additional linear 55 feet of the abandoned railroad grade.

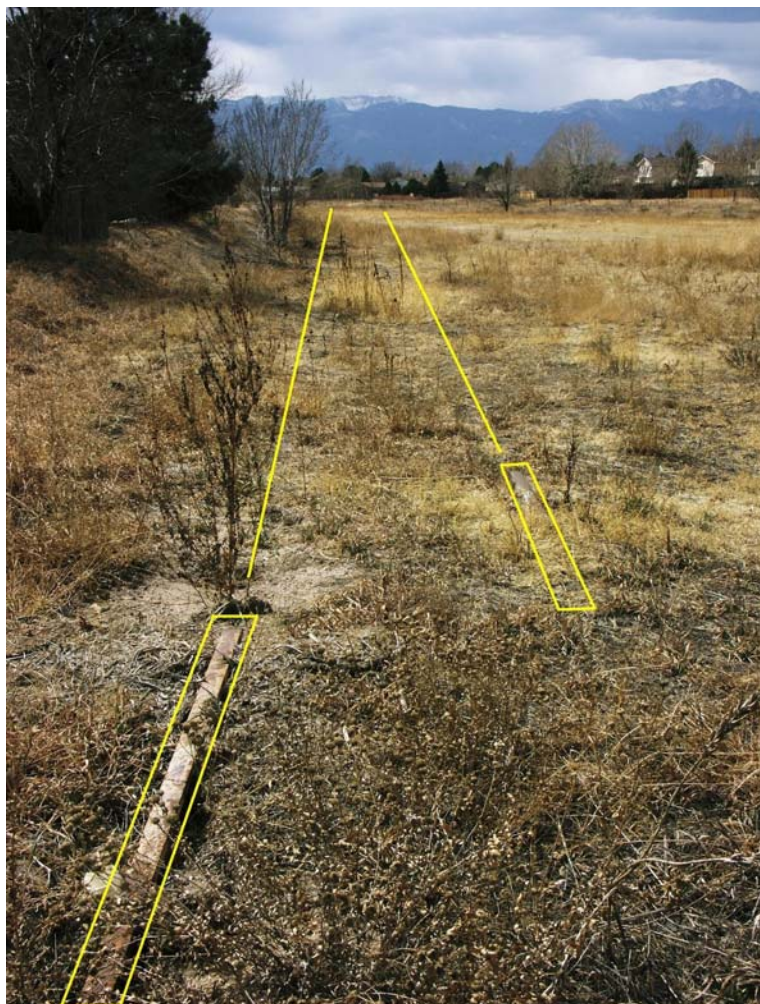
7
8 Exhibit 7-2 shows land needed for the Proposed Action shaded in red. The Section 4(f) impact
9 would occur where the red area overlaps the historic resource (green). The Proposed Action
10 would use this area for the construction of a southbound frontage road, sidewalk, retaining
11 walls, elevated roadway (where Powers Boulevard would cross over Constitution Avenue) and a
12 ramp providing access from Constitution Avenue to Powers Boulevard. Additionally, a small
13 water detention pond would be established to the north of the railroad grade.

15
17 A bicycle/pedestrian bridge
19 over the freeway would be
21 constructed in the future on
23 part of the railroad grade to
25 connect with the trail that is to
27 be constructed (by others) on
29 the eastern side of Powers
31 Boulevard.

33
35 Exhibit 7-3 is a photo of the
37 railroad grade adjacent to
39 Powers Boulevard. The photo
41 is a view to the west, away
43 from the existing expressway.
45 Yellow boxes added to the
47 photo indicate two remaining
49 rails and the yellow lines show
51 where the railroad tracks used
53 to be.

55
57 This segment of the former
59 railroad lacks historic integrity
61 to such a great extent that
63 historians from CDOT and the
65 State Historic Preservation
67 Officer have determined that
69 there would be no adverse
71 effect to this historic resource.
73

Exhibit 7-3. View Westward of the Former Rock Island Railroad Grade



1 **Cherokee Ridge Golf Course** - A public golf facility consisting of two nine-hole courses,
 2 owned and operated by the Cherokee Metropolitan District, is located on the north side of
 3 Palmer Park Boulevard, to the east of Powers Boulevard. The smaller of the two courses, on
 4 13.5 acres, abuts Palmer Park Boulevard, as shown in Exhibit 7-4. Highlighted in red is the
 5 triangular sliver of land that would be acquired from the southwestern edge of this property.

Exhibit 7-4. Aerial View of the Cherokee Ridge Par 3 Golf Course



6 The Proposed Action includes a grade-separated Powers Boulevard interchange at Palmer Park
 7 Boulevard and would also relocate the existing Waynoka Drive. To make these improvements,
 8 CDOT would need to acquire a sliver of golf course land, approximately 670 square feet in size.

9
 11 As seen in Exhibit 7-5,
 13 the land that would be
 15 acquired by CDOT
 17 (highlighted in red) is
 19 largely covered by an
 21 existing sidewalk, which
 23 was constructed by the
 25 Cherokee Metropolitan
 27 District. CDOT would
 29 replace the sidewalk
 31 adjacent to the existing
 33 one, on golf course
 35 property. It would be
 37 built on land that is
 39 unimproved, non-
 41 irrigated, and not
 43 intended or normally
 45 used for golf.

Exhibit 7-5. View Eastward of Land Needed from the Cherokee Ridge Golf Course



47
 49
 51
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 55
 57

2 **Skyview Sports Complex** –
 4 The Skyview Sports
 6 Complex is a regional
 8 softball facility operated by
 10 the Colorado Springs Parks,
 12 Recreation and Cultural
 14 Services Department on land
 16 owned by a public authority.
 18 The complex is located on
 20 the eastern side of Powers
 22 Boulevard between Hancock
 24 Expressway (called Zeppelin
 26 Road, east of Powers) and
 28 Milton E. Proby Parkway.
 30 The Proposed Action would
 32 use two pieces of land from
 34 the western side of the
 36 Skyview property. These
 38 two areas are highlighted in
 40 red on Exhibit 7-6. None of
 42 the needed land is actively
 44 used for recreation.

46
 48 The larger piece, estimated
 50 to be 0.97 acre, is located at
 52 the northwestern edge of the
 54 41-acre recreation complex.
 56 This land would be needed
 58 to accommodate the
 60 proposed northbound off-
 62 ramp to Zeppelin Road.

64
 66 Exhibit 7-7 shows the
 68 land where it is closest
 70 to Field #7 (a
 72 wheelchair softball
 74 field). The field and the
 76 service road around it
 78 would remain intact.
 80 CDOT wil coordinate
 82 with the owner during
 84 final design to explore
 86 possibilities for further
 88 reducing land impacts
 90 and minimizing impacts
 92 at this location.

94

Exhibit 7-6. Aerial View of Skyview Sports Complex



Exhibit 7-7. View Southward of Land Needed near the Corner of Softball Field #7



1 A smaller, 0.19-acre piece would be needed from the southwestern edge of the property to
 2 accommodate northbound ramps for the proposed grade-separated interchange of Powers
 3 Boulevard at Milton E. Proby Parkway. This land is shown in Exhibit 7-8.

5

Exhibit 7-8. View Northward of Land Needed from the Southern End of Skyview Sports Complex



8 This southern piece of land includes part of an informal haul road that is currently used for
 9 delivery of materials to maintain the softball fields. With the Proposed Action, this informal
 10 access from Powers Boulevard would be closed, and future deliveries of materials would be
 11 made from the safer, official service road that is accessed from the southeastern corner of the
 12 parking lot on Resnik Drive. This change would not affect recreational use of the sports
 13 complex.

14

15 **7.3 FINDINGS OF *DE MINIMIS* IMPACTS**

16

17 A separate finding of *de minimis* impact has been made by the Federal Highway Administration
 18 for each of the three Section 4(f) resources that would be affected by the Proposed Action.

19

20 **Chicago, Rock Island & Pacific Railroad** - As stated in FHWA's Guidance for Determining
 21 *De Minimis* Impacts to Section 4(f) Resources (FHWA 2005), the State Historic Preservation
 22 Officer (SHPO) must concur in writing with the Section 106 "no adverse effect" determination
 23 and must be informed that FHWA intends to make a *de minimis* finding based on the Section
 24 106 effect determination. Consulting parties under Section 106 must also be informed of the *de*
 25 *minimis* finding. On October 31, 2008, CDOT submitted a letter to SHPO requesting a letter of
 26 eligibility and effects determination, and indicated FHWA's intent to make a *de minimis* finding.
 27 SHPO concurred with the "no adverse effect" finding on November 11, 2008, provided that no
 28 new information from consulting parties would result in a reconsideration of this finding (see
 29 letter in Appendix A, Agency Correspondence). As the certified local government with
 30 jurisdiction for this site, the City of Colorado Springs was informed of the *de minimis* finding on
 31 November 10, 2008. The City, in consultation with the Historic Preservation Board, concurred
 32 on November 26, 2008 in the "no adverse effect" determination and had no objection to a *de*
 33 *minimis* finding. On January 7, 2009, FHWA made a *de minimis* finding for this resource.

1 **Cherokee Ridge Golf Course** - On March 13, 2009, CDOT met with officials of the District and
2 the Cherokee Ridge Golf Course to review the anticipated impacts of the Proposed Action and
3 to confirm that this land is not used for recreation. Subsequently, the Board of Directors of the
4 Cherokee Metropolitan District at their April 14, 2009 public meeting authorized the District's
5 Manager to send CDOT a letter concurring with the proposed *de minimis* finding for this
6 resource. The letter, included in Appendix A, Agency Correspondence, indicates that in the
7 view of the owner of this property, the Powers Boulevard Proposed Action would not "adversely
8 affect the activities, features, and attributes that qualify the property for protection under Section
9 4(f)." On October 21, 2009, FHWA made a *de minimis* finding for this resource.

10
11 **Skyview Sports Complex** - On December 10, 2008 and March 6, 2009, CDOT met with staff
12 of the City of Colorado Springs Department of Parks, Recreation and Cultural Services to
13 discuss effects of the Powers Boulevard Proposed Action on the Skyview Sports Complex. City
14 staff agreed with CDOT that the Proposed Action would not adversely affect the activities,
15 features, and attributes that qualify the property for protection under Section 4(f). Since the City
16 is in the process of paying for this facility over time, a separate entity called the City of Colorado
17 Springs Public Facility Authority has responsibility for matters relating to the ownership of the
18 property. At their meeting on August 7, 2009, the authority's Board of Directors directed its
19 president to transmit a letter to CDOT concurring with a *de minimis* finding. That letter is
20 included in Appendix A, Agency Correspondence. Concurrence was also provided by the
21 Colorado Springs Parks and Recreation Advisory Board at their regularly monthly meeting on
22 October 8, 2009. This open public meeting afforded an opportunity for citizens to comment
23 regarding the effects of the Proposed Action on the operation and recreational use of the facility.
24 However, no public comments were received. Subsequently, on October 21, 2009 FHWA made
25 a *de minimis* finding for this resource.