

Chapter 2
EXISTING CONDITIONS
Colorado Springs Airport

INTRODUCTION

This chapter summarizes the facility, land use, infrastructure, and environmental data that were considered in the development of Colorado Springs Airport (Airport) development alternatives. The data are based on site visits, interviews, surveys, airport records, and third party sources, including the following:

- *Airport Layout Plan (ALP)*, March 2008
- *Airport Master Plan Update*, Barnard Dunkelberg, November 1998
- *Jeppesen Charts*, November 2010
- *Pavement Management Investigation and Field Investigation*, Carter and Burgess, December 2006
- Miscellaneous drawings for the passenger terminal facilities, provided from airport records and The Van Sant Group
- Aerial ortho-photography and planimetric data from The Sanborn Map Company, November 2010.

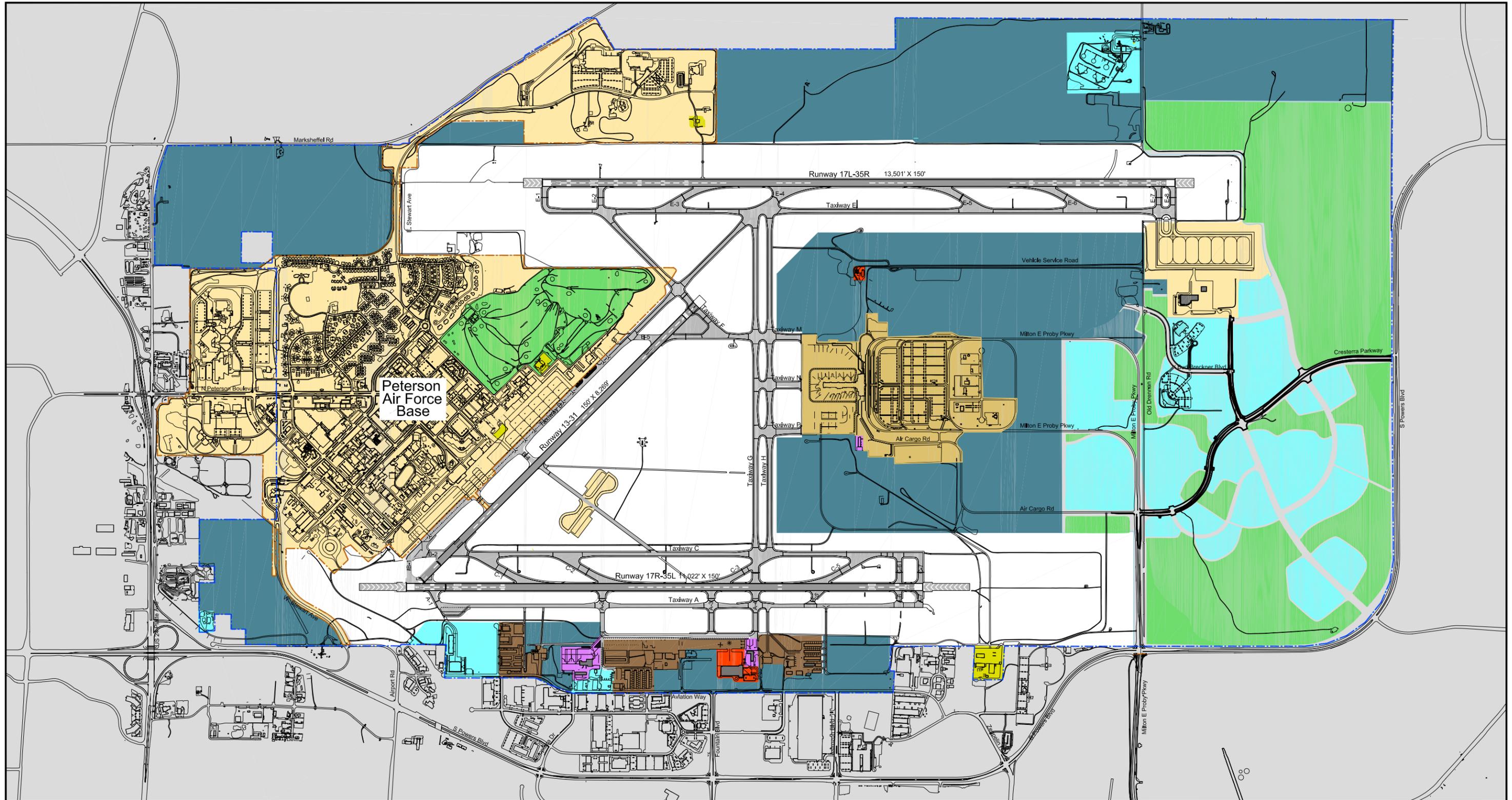
The information throughout this chapter is current as of March 2012, except where noted otherwise.

FACILITIES OVERVIEW AND AIRPORT LAND USE

The Airport consists of the airfield and the following other primary facilities: passenger terminal with two concourses accommodating 19 aircraft gates, ground transportation facilities, surface parking lots, rental car facilities, air cargo ramp, fixed base operator facilities, aircraft maintenance facilities, fuel farms, and Federal Aviation Administration facilities. The airfield occupies approximately 30% of the Airport land area, with three runways, Runway 17L-35R, Runway 17R-35L, and Runway 13-31, associated taxiways, safety areas, and runway protection zones.¹

The Airport occupies approximately 7,253 acres. The passenger terminal complex and terminal support facilities are located in the center of the Airport campus; general aviation, cargo, aircraft maintenance, and airline support facilities are located primarily in the West Aviation Development Area, west of Runway 17R-35L. Existing land use is depicted on Figure 2-1. The uses and acreage of Airport land by functional designation are presented in Table 2-1.

¹ The magnetic declination of Runway 13-31 recently changed from 12-30, and the runway was recently redesignated as such.



LEGEND

- | | |
|---|--|
|  Airport property boundary |  Airline support |
|  Peterson Air Force Base boundary |  Military |
|  Airfield |  Commercial use |
|  Airfield pavement |  Open space |
|  Passenger terminal complex |  Strategic reserve |
|  General aviation |  Non-airport property |
|  Air cargo | |
|  Airport support | |

Figure 2-1
BASELINE AIRPORT LAND USE

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Colorado Springs Airport
July 2013

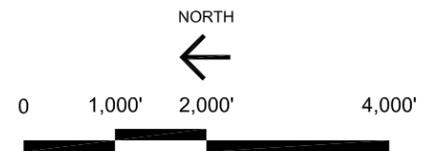


Table 2-1
LAND USE AND ACREAGE
 Colorado Springs Airport

Land use	Area (acres)
Airfield	2,202
Passenger terminal complex	220
General aviation	82
Airport support	10
Air cargo	16
Airline support	12
Military	1,399
Commercial use	552
Strategic reserve	1,873
Open space (e.g. golf course)	887
Total	7,253

Note: all area totals are approximate.
 Source: Exhibit A from Airport Layout Plan set,
 August 2013.

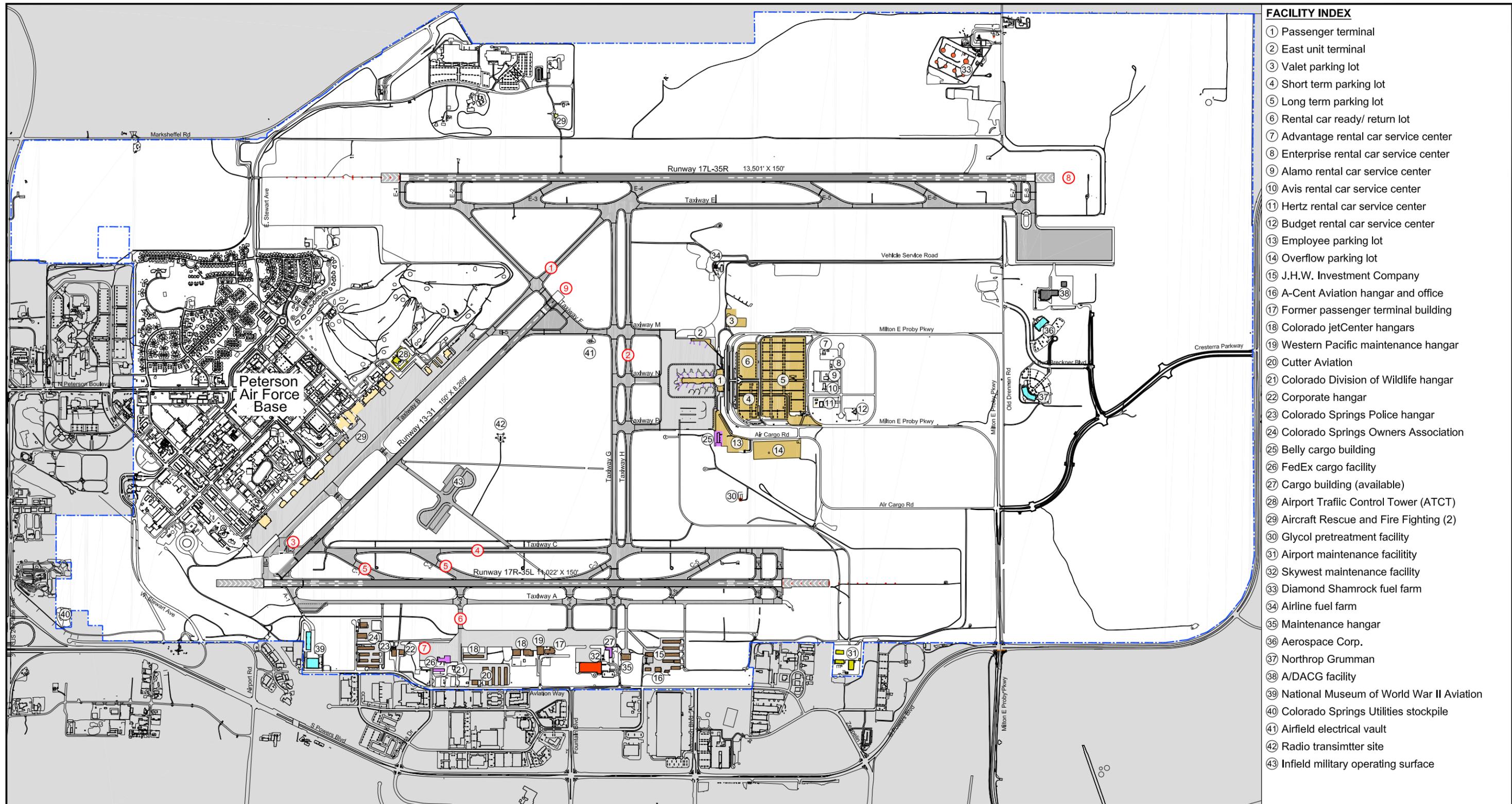
AIRFIELD

The existing airfield consists of runways, taxiways, apron areas, and navigational aids, as discussed below.

Runways

As illustrated on Figure 2-2, the airport has three runways: two parallel runways, 13,501-foot-long Runway 17L-35R and 11,022-foot-long Runway 17R-35L and the crosswind runway, 8,269-foot-long Runway 13-31. The characteristics of the Airport’s runways, including their dimensions, pavement strength, end elevations, and gradient are summarized in Table 2-2.

The FAA uses a two-part code to designate the design criteria that apply to runways. This two-part code, termed the Airport Reference Code (ARC), describes two key aircraft characteristics—approach speed and wingspan—that govern the required dimensions of runways and their design surfaces. The first part of the ARC indicates the maximum approach speed of the aircraft that the runway can accommodate. The second part of an ARC—indicated with a Roman numeral ranging from I to VI—is termed the Airplane Design Group (ADG) and indicates the maximum aircraft wingspan a runway can accommodate. As explained below, the ADG is also used to determine taxiway dimensional standards and associated design surface dimensions. Table 2-3 summarizes the ARC and design standards for each runway.



FACILITY INDEX

- ① Passenger terminal
- ② East unit terminal
- ③ Valet parking lot
- ④ Short term parking lot
- ⑤ Long term parking lot
- ⑥ Rental car ready/ return lot
- ⑦ Advantage rental car service center
- ⑧ Enterprise rental car service center
- ⑨ Alamo rental car service center
- ⑩ Avis rental car service center
- ⑪ Hertz rental car service center
- ⑫ Budget rental car service center
- ⑬ Employee parking lot
- ⑭ Overflow parking lot
- ⑮ J.H.W. Investment Company
- ⑯ A-Cent Aviation hangar and office
- ⑰ Former passenger terminal building
- ⑱ Colorado jetCenter hangars
- ⑲ Western Pacific maintenance hangar
- ⑳ Cutter Aviation
- ㉑ Colorado Division of Wildlife hangar
- ㉒ Corporate hangar
- ㉓ Colorado Springs Police hangar
- ㉔ Colorado Springs Owners Association
- ㉕ Belly cargo building
- ㉖ FedEx cargo facility
- ㉗ Cargo building (available)
- ㉘ Airport Traffic Control Tower (ATCT)
- ㉙ Aircraft Rescue and Fire Fighting (2)
- ㉚ Glycol pretreatment facility
- ㉛ Airport maintenance facility
- ㉜ Skywest maintenance facility
- ㉝ Diamond Shamrock fuel farm
- ㉞ Airline fuel farm
- ㉟ Maintenance hangar
- ㊱ Aerospace Corp.
- ㊲ Northrop Grumman
- ㊳ A/DACG facility
- ㊴ National Museum of World War II Aviation
- ㊵ Colorado Springs Utilities stockpile
- ㊶ Airfield electrical vault
- ㊷ Radio transmitter site
- ㊸ Infield military operating surface

LEGEND

	Airport property boundary		Commercial use
	Airfield pavement		Non airport property
	Passenger terminal complex		
	General aviation		
	Air cargo		
	Airport support		
	Airline support		
	Military		

- 1998 MASTER PLAN PROPOSED PROJECTS THAT HAVE BEEN IMPLEMENTED**
- ① Extension of Taxiway B from the military ramp to Taxiway E-4.
 - ② Connection of the east and west portions of Taxiway H from Taxiway M to Taxiway P.
 - ③ Construction of Taxiway B-3.
 - ④ Extension of Taxiway C from Taxiway G to Runway 12-30.
 - ⑤ Construction of high speed exits C-1 and C-2.
 - ⑥ Construction of a new taxiway from Runway 17R-35L to the north portion of the GA area
 - ⑦ Extension of the apron north of the FedEx cargo facility.
 - ⑧ Provision of Category I instrument approach capabilities to Runway 35R.
 - ⑨ Provision of non-precision instrument approach capabilities to Runway 30.

Figure 2-2
BASELINE AIRPORT FACILITIES

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NORTH
←

0 1,000' 2,000' 4,000'

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**Table 2-2
EXISTING RUNWAY CHARACTERISTICS
Colorado Springs Airport**

	17L-35R		17R-35L		13-31	
Runway pavement length (ft)	13,501		11,022		8,269	
Runway pavement width (ft)	150		150		150	
Pavement strength (lbs)						
S	75,000		75,000		75,000	
D	175,000		175,000		175,000	
2D	400,000		340,000		280,000	
2D/D1	-		443,000		-	
2D/2D2	850,000		-		550,000	
Pavement type/friction	Concrete, grooved		Asphalt, grooved		Asphalt, grooved	
	17L	35R	17R	35L	13	31
Runway end elevation (feet above MSL)	6,187.12	6,102.87	6,176.56	6,045.20	6,173.22	6,137.21
Effective gradient	-0.62%	0.62%	-1.2%	1.2%	-0.4%	0.4%

Gear designations per FAA Order 5300.7:

S = single wheel main gear;

D = dual wheel main gear;

2D = two dual wheels in tandem main gear with dual wheels nose gear;

2D/D1 = two dual wheels in tandem main gear/dual wheel body gear with dual wheel nose gear;

2D/2D2 = two dual wheels in tandem main gear/two dual wheels in tandem body gear with dual wheel nose gear.

MSL = Mean sea level

Source: Sanborn survey, April 2011; airport records, 2010.

Runway 17L-35R is the Airport's primary runway; it is utilized by air carrier, military, air cargo and general aviation aircraft. The runway is constructed of Portland cement concrete and is equipped with an instrument landing system (ILS) on both ends, which enables the runway to serve arriving aircraft in inclement weather conditions. The secondary runway is Runway 17R-35L, which is also utilized by air carrier, military, air cargo and general aviation aircraft. Runway 17R-35L is constructed of asphaltic concrete and is equipped with an ILS for Runway 35L. The crosswind runway is Runway 13-31, which serves all aircraft at the Airport. The Runway 31 threshold is displaced 356 feet. The runway is constructed of asphaltic concrete.

Table 2-3
RUNWAY DESIGN STANDARDS
Colorado Springs Airport

	FAA Standard	Runways					
		17L-35R		17R-35L		13-31	
		17L	35R	17R	35L	13	31
Physical characteristics							
Airport reference code	C-IV	C-IV	C-IV	C-IV	C-IV	C-IV	C-IV
Runway width (feet)	150	150	150	150	150	150	150
Runway shoulder width (feet)	25	25	25	25	25	Turf	Turf
Runway blast pad width (feet)	200	200	200	200	200	n.a.(a)	200
Runway blast pad length (feet)	200	400	400	200(b)	200(b)	n.a.(a)	200
Runway centerline to parallel taxiway centerline distance (feet)	400	600	600	400W/ 700E	400W/ 700E	550	550
Obstacle free areas							
Runway safety area (RSA) width (feet)	500	500	500	500	500	500	500
RSA length beyond runway end (feet)	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Runway object free area (OFA) width (feet)	800	800	800	800	800	800	800
Runway OFA length beyond runway end (feet)	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Runway protection zone (RPZ)(c)							
Length (ft)	-	2,500	1,700	1,700	2,500	1,700	1,700
Inner width (ft)	-	1,000	1,000	500	1,000	500	500
Outer width (ft)	-	1,750	1,510	1,010	1,750	1,010	1,010

Notes: Airport Reference Code C-IV standard is a combination of approach category C with a maximum approach speed of 140 knots and Airplane Design Group IV with a wingspan of less than 170 feet.

(a) The end of Runway 17R is located just off the end of Runway 13, which prevents provision of a blast pad for Runway 13.

(b) The overall blast pad length for Runway 17R-35L is 1,000 feet, with a width of 200 feet for the first 200 feet and a width of 150 feet for the remaining 800 feet.

(c) The RPZ dimensions for approach minimums for visual approaches or visibility not lower than 1 mile are: 1,700' length x 500' inner width x 1,010' outer width. The RPZ dimensions for approach minimums for visibility not lower than 0.75 mile are: 1,700' length x 1,000' inner width x 1,510' outer width. The RPZ dimensions for approach minimums for visibility lower than 0.75 mile are: 2,500' length x 1,000' inner width x 1,750' outer width.

Sources: Federal Aviation Administration Advisory Circular 150/5300 – 13A, *Airport Design*, September 28, 2012 and Airport Layout Plan, Colorado Springs Airport, March 2008.

The *1998 Airport Master Plan* proposed that Runway 17R-35L be extended from its current length of 11,022 feet to 12,801 feet, and Runway 13-31 be shortened from its existing length of 8,269 feet to 7,973 feet. These recommendations have not yet been implemented and are revisited in this Master Plan.

Taxiways

Figure 2-2 shows the locations of the taxiways that connect the runways, aircraft parking and hangar areas of the airport. All taxiways are at least 75 feet wide, satisfying the dimensional requirement for accommodating ADG IV aircraft.

Taxiway Alpha (A) and its connectors, A-1 through A-7, provide the parallel taxiway system on the west side of the Runway 17R-35L and connect it with the apron area on the west side of the airport, including the former passenger terminal facilities (the Fountain Terminal), the general aviation areas, and the cargo areas. Taxiway Bravo (B) and its connectors, B-1 through B-6, form the parallel taxiway system on the northeast side of Runway 13-31 and connect the crosswind runway with the military apron area. Taxiway Echo (E) and its connectors, E-1 through E-8 provide the parallel taxiway system on the west side of Runway 17L/35R and connect it with other taxiways that lead to Runway 13-31 and the main passenger terminal complex.

Other major taxiways on the airport include Taxiway Golf (G), which is a mid-field east/west taxiway connecting Taxiway E and Runway 17R-35L with the passenger terminal apron area; Taxiway Hotel (H) which is parallel with Taxiway G and connects Taxiway E with the terminal apron area; Taxiways November (N), Mike (M) and Papa (P), which connect the passenger terminal apron with Taxiways G and H; Taxiway Delta (D), which connects the approximate mid-point of Runway 17R-35L with the approximate mid-point of Runway 13-31; Taxiway Charlie (C), which is a partial parallel taxiway on the east side of Runway 17R-35L; and Taxiway Foxtrot (F), which is a diagonal taxiway connecting Taxiway M with Taxiway E.

The *1998 Airport Master Plan* proposed various improvements to the then existing taxiway network, some of which have been implemented. The improvements implemented are listed as items 1 through 6 on Figure 2-2 including:

- Extension of Taxiway B from the military ramp to Taxiway E-4 (1)
- Connection of the east and west portions of Taxiway H (2)
- Construction of Taxiway B-3 (3)
- Extension of Taxiway C to Runway 13-31 (4)
- Construction of high speed exits C-1 and C-2 (5)
- Construction of a new taxiway from Runway 17R-35L to the north portion of the general aviation area (6)

The other improvements proposed in the *1998 Airport Master Plan* include:

- Construction of a full length parallel taxiway to the west of Taxiway E
- Construction of a partial length parallel taxiway to the east of Runway 17L-35R
- Construction of a partial length parallel taxiway to the southwest of Runway 13-31
- Construction of a partial length parallel taxiway east of Taxiway C and other perpendicular taxiways

These recommendations have not yet been implemented and are revisited in this Master Plan.

Apron Areas

The primary aircraft aprons at the Airport include the passenger terminal apron, the general aviation/cargo apron west of Taxiway A, and the military apron north of Taxiway B. The *1998 Airport Master Plan* proposed widening the existing passenger terminal apron and the general aviation/cargo apron. These improvements have not yet been implemented. It was also proposed that the cargo apron for the FedEx facility be expanded to the north. As shown on Figure 2-2, this apron expansion has been constructed.

Navigational Aids

Navigational aids assist pilots by providing horizontal and/or vertical guidance to an aircraft's instrumentation during navigation and facilitate flight procedures during poor weather or low visibility conditions. A summary of navigational aids for which each runway is equipped is provided in Table 2-4.

As previously mentioned, Runways 17L, 35R and 35L are each equipped with ILS. Runways 17L and 35L both include approach lighting systems which provide for operations in visibility as low as 0.5 mile. Because Runway 17L includes runway centerline lights, the ILS procedure provides the Airport's best approach with a runway visual range (RVR) of 1,800 feet, as opposed to the Runway 35L procedure with an RVR of 2,400 feet. The Runway 35R ILS procedure can accommodate operations with visibility as low as 0.75 mile with the higher visibility minimum a result of Runway 35R not having an approach lighting system.

In addition to the ILS procedures, several of the runways also include Area Navigation or RNAV procedures. These RNAV procedures include GPS approaches for Runways 17L, 35R, 17R, 35L, and 31. In addition, RNAV procedures designated as Required Navigation Procedures (RNP) are also available for Runways 17L, 35R, 17R, and 35L. These RNAV procedures provide approach minimums approaching the capability of the ILS procedures. For example, the Runway 17R GPS approach can accommodate operations with visibility as low as 0.75 mile.

Table 2-4
AIRPORT NAVIGATIONAL AIDS
Colorado Springs Airport

	17L-35R		17R-35L		13-31	
	17L	35R	17R	35L	13	31
Runway markings	Precision	Precision	Precision	Precision	Visual	Non-precision
Runway lighting	HIRL/HIRCL	HIRL/HIRCL	HIRL	HIRL	MIRL	MIRL
Approach aids	ILS DME GPS MALSR PAPI-L TDZL CL GS	ILS DME GPS PAPI-R REIL TDZL CL GS	PAPI-L REIL GPS	ILS NDB GPS MALSR PAPI-L GS OM MM	PAPI-R REIL	GPS PAPI-L REIL
Instrument runway status	Precision	Precision	Non-precision	Precision	Visual	Non-precision
Instrument approach procedures	ILS (CAT I) LOC RNAV(GPS) RNAV (RNP)	ILS LOC RNAV(GPS) RNAV (RNP)	RNAV (GPS) RNAV (RNP)	ILS (CAT I) LOC RNAV(GPS) RNAV(RNP) NDB	n.a.	RNAV (GPS)
Approach minimums (a)						
Ceiling						
DA	6,387	6,318	-	6,275	-	-
LPV DA	-	-	6,377	-	-	-
LNAV MDA	-	-	-	-	-	6,580
Visibility	RVR 1,800 (b)	0.75 mile	0.75 mile	RVR 2,400	Visual	1.25 mile

CL = runway centerline lights

DA = decision altitude

DME = distance measuring equipment

GPS = global positioning system

GS = glide slope

HIRL = high-intensity runway lights

HIRCL = high-intensity runway centerline lights

ILS = instrument landing system

LOC = localizer

MALSR = medium-intensity approach light system with runway alignment indicator lights

MDA = minimum descent altitude

MIRL = Medium-intensity runway lights

MM = Middle maker

n.a. = Not applicable

NDB = Non-directional beacon

OM = Outer marker

PAPI = Precision approach path indicator

REIL = Runway end identifier lights

RNAV = Area navigation global positioning system approach

RVR = Runway visual range

TDZL = Touchdown zone lights

Notes:

(a) Approach minimums are shown for the procedures with the lowest approach minimums, accordingly the ILS procedures are reported for Runways 17L, 35R, and 35L and the RNAV (GPS) procedures for Runways 17R and 31. All minimums are reported for Approach Category C aircraft (with approach speeds of 141-165 knots).

(b) The runway centerline lighting improves the Category I ILS for Runway 17L to provide for a range of 1,800 RVR.

Sources: Jeppesen, AVN data online, November 2011.

In addition to the landing aids available at the Airport, the primary navigational aids include a very-high frequency omnidirectional range/tactical air navigation facility (VORTAC) and an airport surveillance radar (ASR) system.² The VORTAC is located approximately 9 miles northeast of the Runway 17L threshold, and the ASR antenna is located approximately 1,600 feet southeast of the Runway 17L threshold.

The *1998 Airport Master Plan* proposals for improving the approach capabilities of the runways that have already been implemented include:

- Runway 35R ILS
- Runway 31 non-precision instrument approach capabilities (RNAV GPS)

The other improvements proposed in the *1998 Airport Master Plan* that have not yet been implemented include:

- Category II/III ILS for Runways 17L, 35R, and 35L
- Runway 13 non-precision instrument approach capabilities

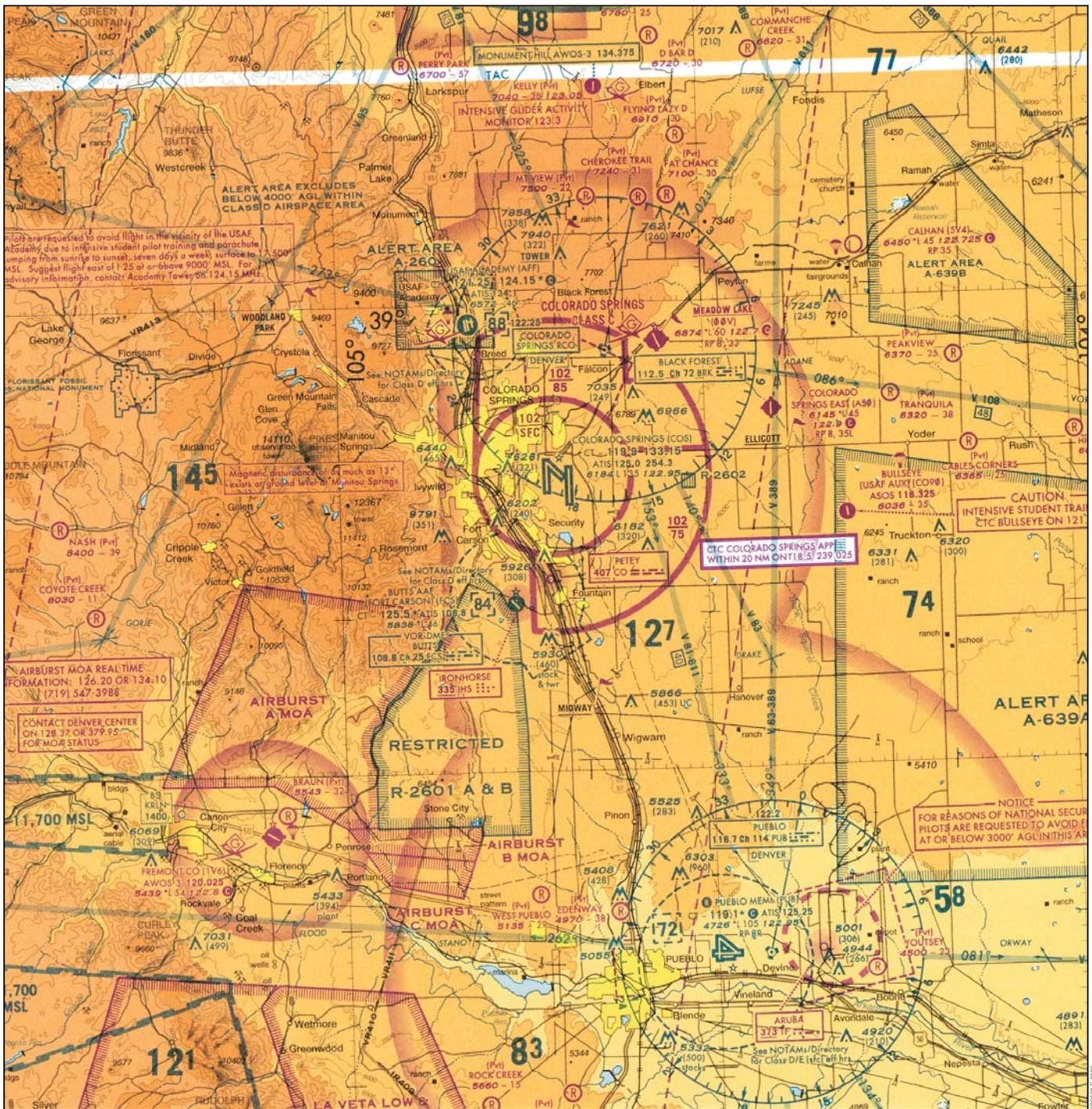
Airspace and Air Traffic Control Overview

The airspace in the Colorado Springs area falls under the jurisdiction of two entities: (1) the Denver Air Route Traffic Control Center (ARTCC), and (2) the Colorado Springs Terminal Radar Approach Control (TRACON). The airspace over the continental United States is divided into 20 geographically defined Air Traffic Control (ATC) jurisdictions based on ARTCCs. The primary purpose of an ARTCC is to provide radar service and other ATC services to en route aircraft (i.e., those aircraft that are not landing or taking off). The Denver ARTCC (ZDV), which has jurisdiction over Colorado Springs Airport, is located in Longmont, Colorado.

The purpose of a TRACON is to provide radar approach and departure control as well as other ATC services to aircraft flying in terminal area airspace.³ The Denver Center has delegated control over certain airspace in the Colorado Springs area to the Colorado Springs TRACON, located at the Airport. In radio communications, pilots refer to the Colorado Springs TRACON as either Colorado Springs approach control or Colorado Springs departure control, depending on the phase of flight. The area within and around the Colorado Springs TRACON airspace is depicted on Figure 2-3.

² The term VORTAC refers to a navigational aid that incorporates very-high frequency omnidirectional range (VOR) and tactical air navigation equipment, providing both azimuth and distance information. The ASR is used to detect and display an aircraft's position in the airspace terminal area, providing azimuth and range information.

³ Typically Class B or Class C airspace, as defined in the "Controlled Airspace" section.



Source: Federal Aviation Administration.

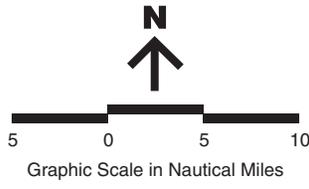
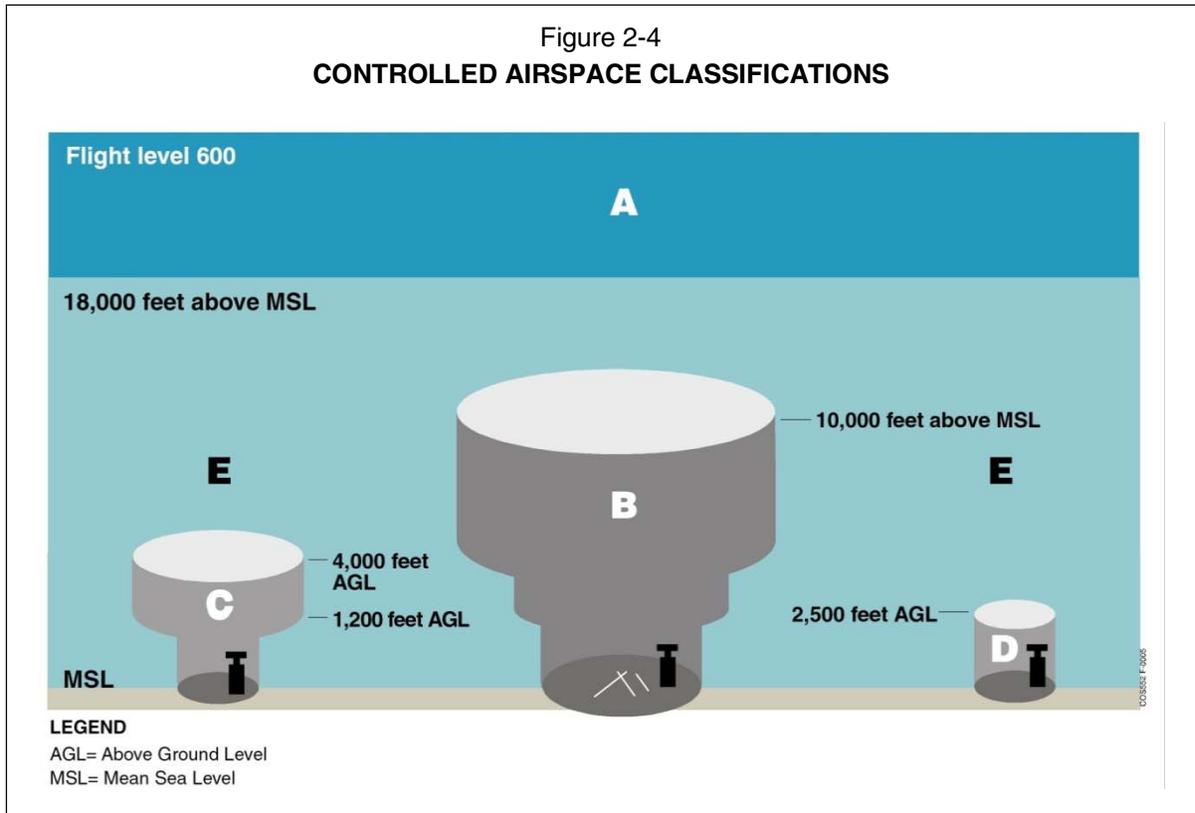


Figure 2-3
COLORADO SPRINGS TERMINAL AREA AIRSPACE
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Controlled airspace is airspace that has defined dimensions within which ATC service is provided to aircraft in accordance with the airspace classifications established by the FAA. As illustrated on Figure 2-4, there are five classes of controlled airspace in the United States: Class A, Class B, Class C, Class D, and Class E.



Class C airspace surrounds the Airport. Class C airspace is generally that airspace from the ground to 4,000 feet above airport elevation surrounding those airports that have both an operational tower and a certain number of IFR operations or passenger enplanements. Control responsibilities within Class C airspace are typically assumed by either a TRACON or a tower. Although the configuration of each Class C area is individually tailored, the airspace usually consists of a first tier with a 5 nautical mile radius and a second tier with a 10 nautical mile radius that extends from 1,200 feet to 4,000 feet above the airport's elevation. Pilots must establish two-way communications with the facility providing ATC services prior to entering Class C airspace and must maintain these communications while within the airspace. Within Class C airspace, aircraft operating under VFR are only provided with separation services from aircraft operating under IFR.

The Colorado Springs Class C airspace boundary is shown as a thick magenta line surrounding the Airport on Figure 2-3, and resembles an upside-down, two-tiered wedding cake, as shown on Figure 2-4. In the vicinity of the Airport, the Class C airspace extends from the ground up to 4,000 feet above mean sea level (MSL). The

floor of the airspace at more distant locations from the Airport ranges from 1,200 feet above MSL up to 4,000 feet above MSL. The outer portion of the Class C airspace circle is irregular to because of terrain to the west, Fort Carson/Butts Army Air Field on the southwest, and Meadow Lake Airport on northeast.

Class B airspace is generally that airspace surrounding the nation's busiest airports from the ground to 10,000 feet above MSL. With the exception of the airspace within approximately 3 to 6 nautical mile of a towered airport, control responsibilities within Class B airspace are typically assumed by a TRACON. The configuration of Class B airspace is individually tailored and designed to contain all published instrument procedures once an aircraft enters the airspace. ATC provides radar vectoring and sequencing on a full-time basis for all aircraft operating in Class B airspace.

The Denver Class B airspace is approximately 30 nautical miles north of Colorado Springs Airport. The Airport is not located within the Denver Class B airspace; however its proximity influences the use of the Airport and surrounding airspace. Discussions with Colorado Springs Tower/TRACON staff revealed that the Denver Class B airspace currently has minimal impact on operations at the Airport.

As depicted on Figure 2-3, there are several military operations areas (MOAs) and restricted areas in the vicinity of the Airport which impact the use of airspace surrounding the Airport. To the northwest of the Airport, Alert Area A-260 surrounds the Air Force Academy, and to the southwest of the Airport, Restricted Area R-2601 surrounds Fort Carson. There are also two alert areas, A-639A and A-639B to the east of the airport. Two MOAs are proximate to the Airport, Airburst A and Airburst B, both southwest of the Airport.

PASSENGER TERMINAL COMPLEX

The passenger terminal complex is located between the parallel runways, south of Taxiway H, as shown on Figure 2-5. This area encompasses the main passenger terminal, the east unit terminal, and supporting facilities. The main passenger terminal building was opened in 1994. It has three levels and comprises approximately 314,000 square feet. The east unit terminal was constructed in 1996 and acquired by the Airport in 1998. The east unit terminal comprises approximately 38,000 square feet and is currently used on an infrequent basis. Table 2-5 summarizes the amount of area designated for each terminal function.

The departures level of the main passenger terminal accommodates airline ticket counters and offices for United Airlines on the west side of the primary entrance and Delta Air Lines, American Airlines and Allegiant Air on the east side.⁴ The departure level also includes concessions areas including a retail facility and two restaurants. Other areas on the departures level include: the passenger

⁴ The United Airlines and Continental Airlines merger transaction was closed in October 2010, and the FAA issued a single operating certificate to the merged airline in November 2011.

Table 2-5
PASSENGER TERMINAL FUNCTIONAL AREAS
 Colorado Springs Airport

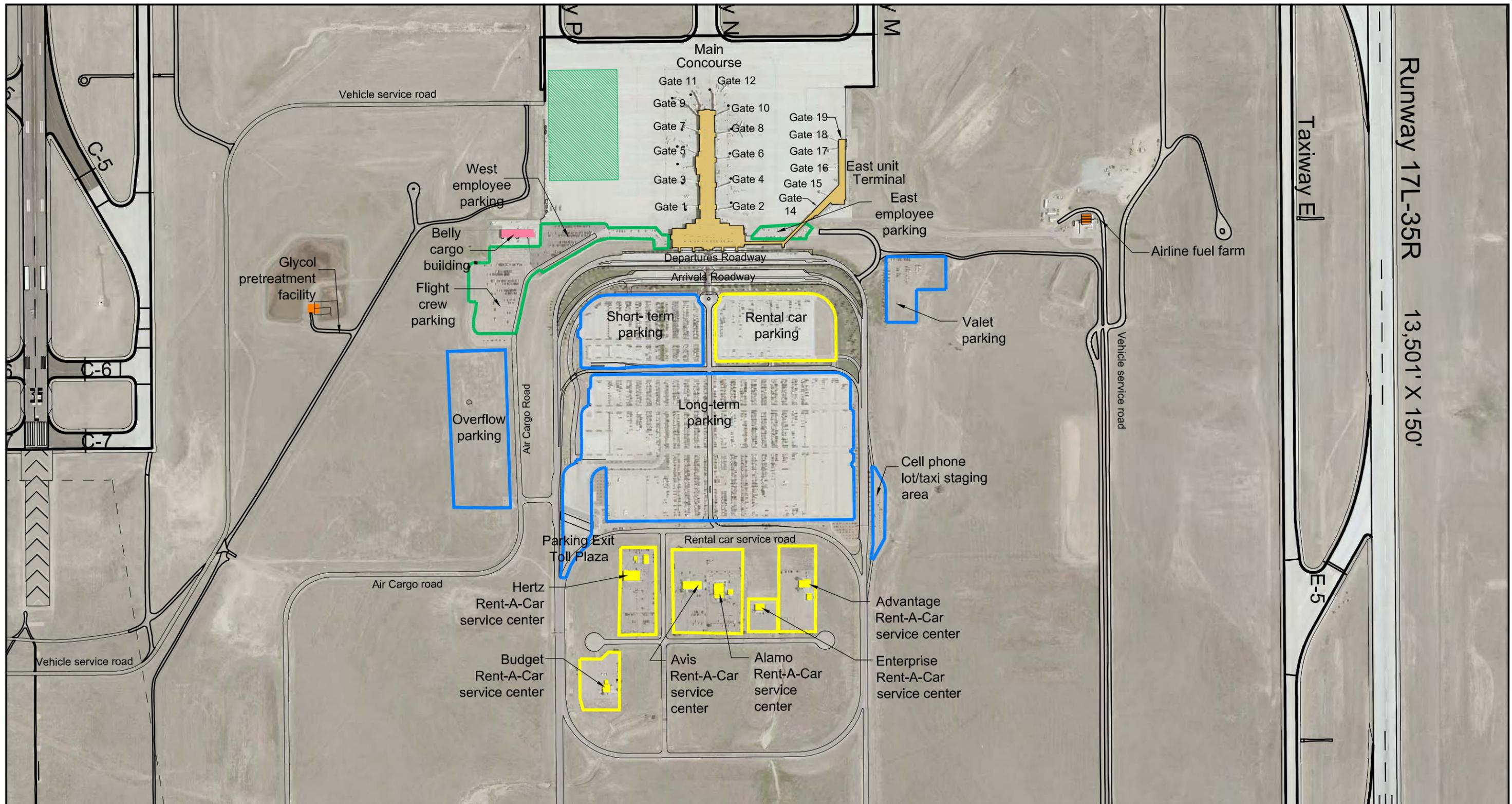
Functional area ^(a)	Departures level			Arrivals level			Total
	Processor	Concourse	East unit terminal	Processor	Concourse	3rd floor	
Airline operations	9,700	16,300	-	5,500	9,000	-	40,500
Airline operations (available)	6,700	14,600	16,600	4,200	12,000	-	54,100
Airport administration	2,800	-	-	200	3,700	10,500	17,200
Baggage claim	-	-	-	15,300	-	-	15,300
Baggage handling	-	-	-	21,100	-	-	21,100
Building operations, storage and mechanical	1,800	4,000	-	4,800	22,600	3,500	36,700
Concession	11,200	8,300	200	3,200	500	-	23,400
Transportation Security Administration	4,700	-	-	2,800	1,400	-	8,900
Public space and circulation ^(b)	35,500	16,100	22,000	16,100	7,300	-	97,000
Total	72,400	59,300	38,800	73,200	56,500	14,000	314,200

Notes:

(a) All areas in square feet

(b) Includes ticketing areas, public waiting and circulation areas, and airport staff circulation areas

Source: Colorado Springs Airport records, December 2011.



- LEGEND**
- Airfield pavement
 - Passenger terminal
 - Remote aircraft parking area
 - Air cargo
 - Airline support
 - Employee parking
 - Public parking
 - Rental car lot

Figure 2-5
PASSENGER TERMINAL COMPLEX

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Colorado Springs Airport
July 2013

NORTH

0 300' 600' 1,200'

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screening checkpoint, departure hold rooms, airport administrative offices, building operations and storage, and restrooms.

The main terminal has three levels. The departures level includes the ticketing lobby, security checkpoint, and concourse serving departing passengers, and the arrivals level includes the baggage claim lobby and rental car counters serving arriving passengers. The third level is primarily comprised of airport administrative offices. Figure 2-6 depicts the departures and third levels, and Figure 2-7 depicts the arrivals level.

The *1998 Airport Master Plan* proposed that in the long term, which was assumed to be a twenty-year planning period, the main terminal concourse would be expanded to include four additional gates. The master plan also proposed the demolition of the east unit terminal and construction of two additional passenger terminal concourses, each with 20 aircraft gates, located on either side of the main concourse. This configuration would provide a total of 60 aircraft gates. These proposals have not yet been implemented.

The arrivals level accommodates the baggage claim lobby with 6 claim devices, ground transportation facilities, a visitors center, and rental car counters for Advantage, Hertz and Alamo on the west side of the primary entrance, and Avis, Enterprise and National on the east. The lower level also includes space for the Airport Development and Maintenance Office, Airport Facilities Maintenance Office, the Transportation Security Administration (TSA) office, and offices for Delta, Skywest, and United Airlines. The outbound baggage makeup and TSA screening for outbound baggage are also provided on this level.

The main terminal concourse has 12 aircraft gates, each of which is equipped with a passenger boarding bridge. The east unit terminal concourse, which is currently used on an infrequent basis, has 6 additional aircraft gates and 4 passenger boarding bridges. As of July 2013, the airlines currently operating at the airport include Allegiant Air, American Airlines, Delta Air Lines, and United Airlines.⁵ A summary of the passenger loading bridges is provided in Table 2-6.

Aircraft Parking Apron

Approximately 52 acres of apron are available for aircraft maneuvering and parking at the passenger terminal. The terminal concourse provides aircraft parking for approximately 12 narrowbody jets, and the terminal apron can accommodate an additional 16 narrowbody jets. The size and configuration of the apron would accommodate the future concourse expansion or additional concourses as proposed in the *1998 Airport Master Plan*.

⁵ Further information regarding the airlines and aviation demand at the airport, see Chapter 3, Aviation Demand Forecasts.

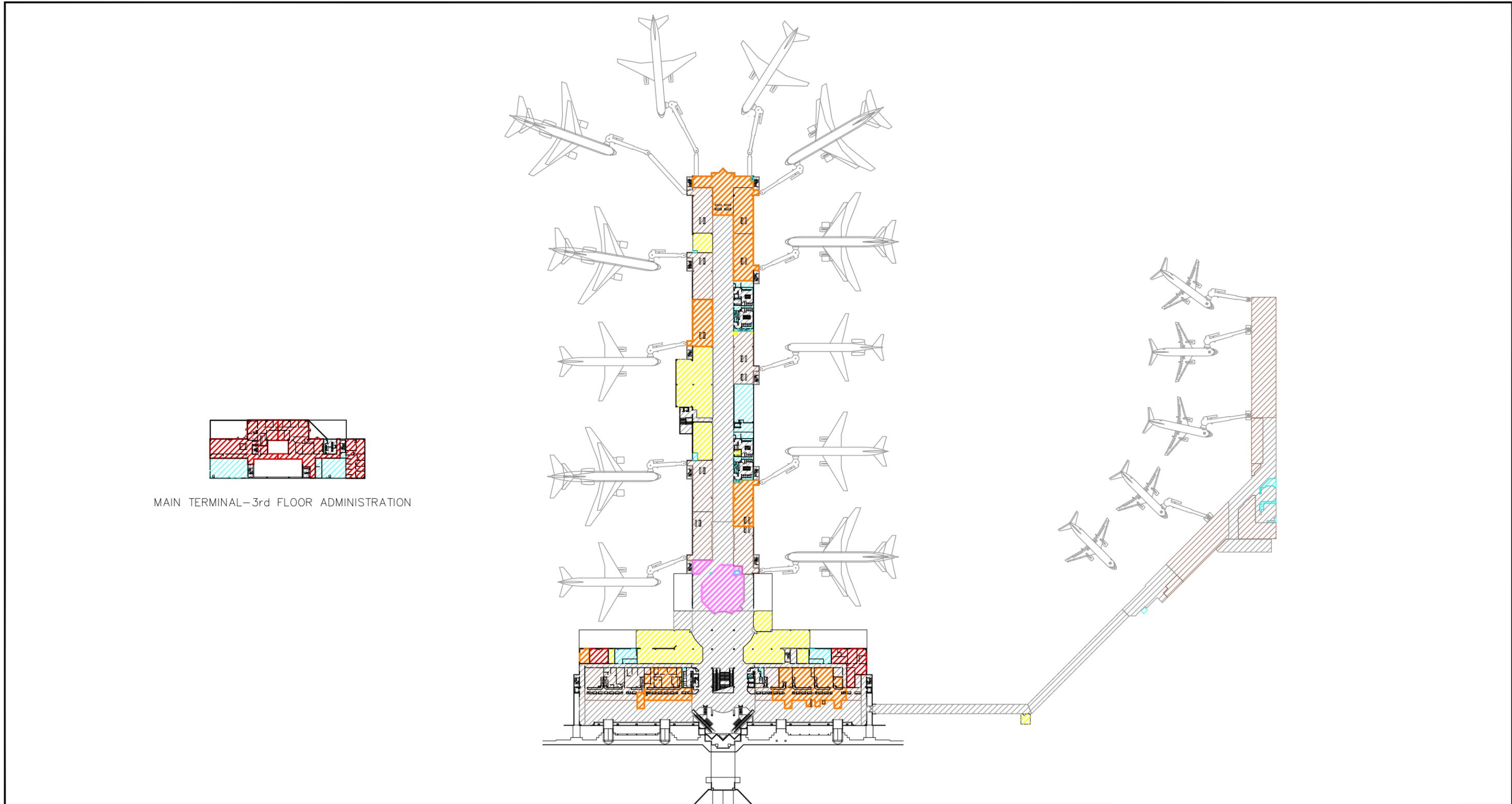
Table 2-6
PASSENGER LOADING BRIDGE SUMMARY
Colorado Springs Airport

	Airline	Make	Model	Year of installation
1	Unassigned	Jetway	A3 60/119 125R	1994
2	Unassigned	Jetway	A3 60/119 125R	1994
3	Allegiant Air	Jetway	A3 60/119 125R	1994
4	Delta Air Lines	Jetway	A3 60/119 125R	1994
5	Unassigned	Jetway	A3 60/119 125R	1994
6	Unassigned	Jetway	A3 60/119 125R	1994
7	Unassigned	Jetway	A3 60/119 125R	1994
8	American Airlines	Jetway	A3 60/119 125R	1994
9	Unassigned	Jetway	A3 60/119 125R	1994
10	United Airlines	Jetway	A3 60/119 125R	1994
11	United Airlines	Jetway	A3 60/119 125R	1994
12	United Airlines	Jetway	A3 60/119 125R	1994
14	Unassigned(a)(b)	-	-	-
15	Unassigned(b)	Jetway	A3 60/119 125R	1996
16	Unassigned(b)	Jetway	A3 60/119 125R	1996
17	Unassigned(b)	Jetway	A3 60/119 125R	1996
18	Unassigned(b)	Jetway	A3 60/119 125R	1996

(a) Gate 14 provides ground level boarding.

(b) Gates 14 through 18 are located in the east unit terminal.

Source: Van Sant Group, November 2010.



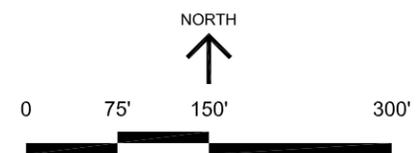
MAIN TERMINAL-3rd FLOOR ADMINISTRATION

LEGEND

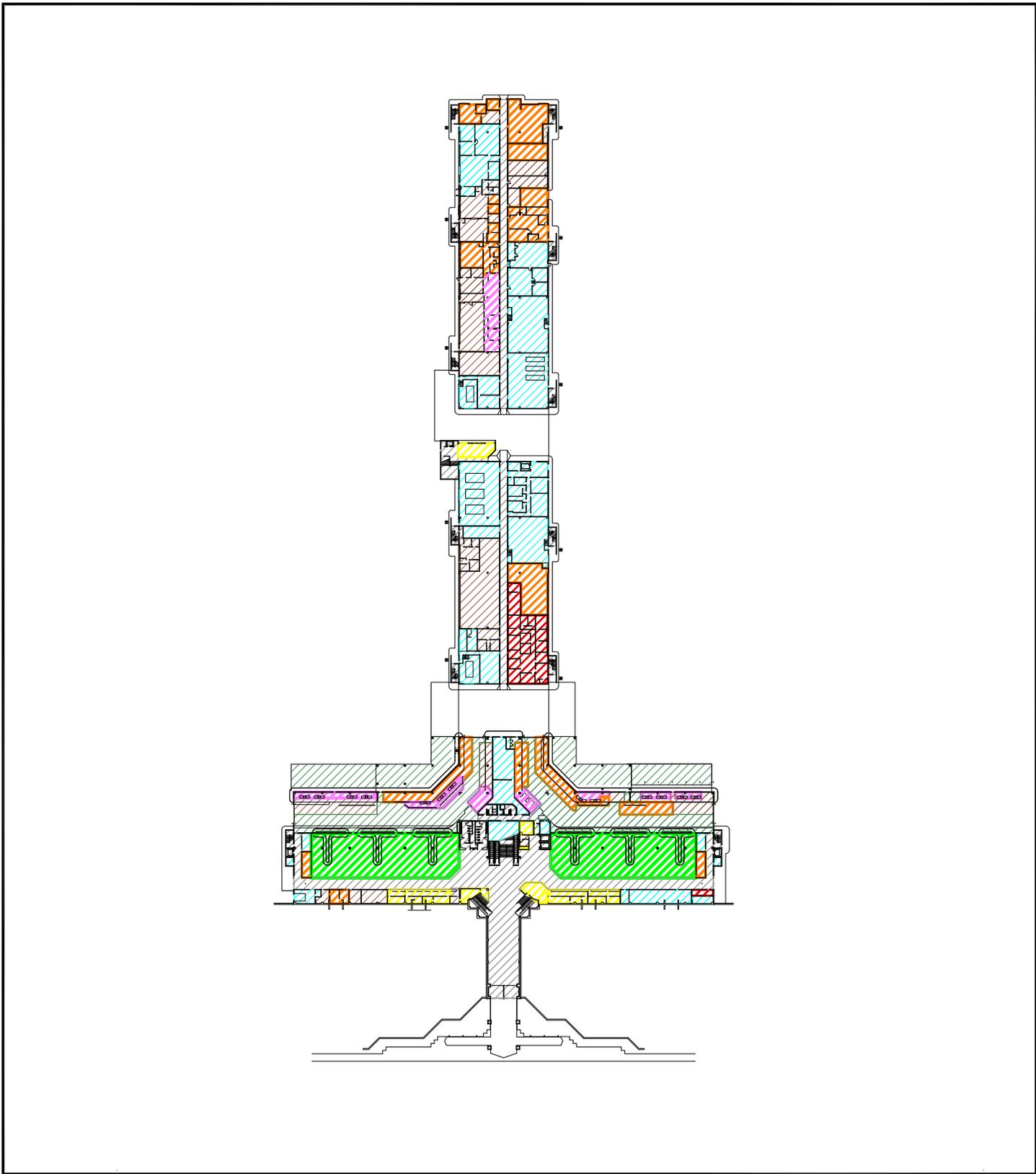
- | | |
|--|--|
|  Airline operations |  Concession |
|  Airline operations - available |  Transportation Security Administration |
|  Airport administration |  Public space and circulation |
|  Baggage claim | |
|  Baggage handling | |
|  Building operations, storage and mechanical | |

Note: This exhibit does not depict changes made during the 2013 passenger security screening checkpoint expansion/renovation project.
 Source: Colorado Springs Airport records, December 2011.

Figure 2-6
MAIN TERMINAL - DEPARTURES LEVEL



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 Colorado Springs Airport
 July 2013



LEGEND

- | | |
|---|--|
|  Airline operations |  Transportation Security Administration |
|  Airline operations - available |  Public space and circulation |
|  Airport administration | |
|  Baggage claim | |
|  Baggage handling | |
|  Building operations, storage and mechanical | |
|  Concession | |

Source: Colorado Springs Airport records, December 2011.

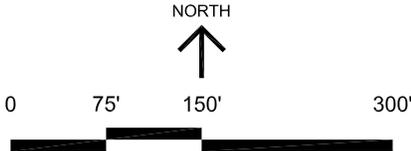


Figure 2-7
MAIN TERMINAL - ARRIVALS LEVEL

Master Plan Update
Colorado Springs Airport
July 2013

GROUND TRANSPORTATION FACILITIES

As illustrated on Figure 2-8, access to the passenger terminal complex and ground transportation facilities is via Milton E. Proby Parkway. Milton E. Proby Parkway provides access to ground transportation facilities including the terminal curbside, public parking lots, rental car ready/return lot, cell phone lot, and commercial vehicle hold lot. Milton E. Proby Parkway also provides access to the Cresterra Business Park. Vehicles bound for the employee parking lots located west of the terminal building turn north from Milton E. Proby Parkway onto Air Cargo Road.

Peterson Air Force Base (PAFB) facilities are accessed primarily from U.S. 24/Platte Avenue and Airport Road, both on the north side of the airport. Access to the west side aviation facilities is via Powers Boulevard to Aviation Way.

In the fall of 2011, the City of Colorado Springs, in conjunction with the Pikes Peak Rural Transportation Authority (PPRTA), completed construction of the segment of Milton E. Proby Parkway between Powers Boulevard and Academy Boulevard which runs adjacent to, and north of, existing Drennan Road. This project is expected to improve traffic flow between Interstate 25 and the Airport while reducing traffic impacts to the nearby Deerfield Hills and Soaring Eagles neighborhoods.

In January 2011, the Federal Highway Administration approved a Finding of No Significant Impact (FONSI) for the Powers Boulevard corridor improvements being proposed by the Colorado Department of Transportation (CDOT). CDOT completed an Environmental Assessment (EA) of the proposed improvements in late 2010. The proposed action evaluated in the EA included the following: (1) upgrading Powers Boulevard to a six-lane freeway for 11 miles between Woodmen Road and Milton E. Proby Parkway; (2) preserving the right-of-way for future interchanges that anticipate a 4-lane freeway on the approximately 6-mile stretch between Milton E. Proby Parkway and State Highway 16; and (3) building 11 new grade-separated interchanges between Woodmen Road and Milton E. Proby Parkway, such that motorists on Powers Boulevard would no longer encounter stoplights along the corridor. The grade-separated interchanges considered include several along the west side of the Airport boundary, including Powers Boulevard and the following roads: Airport Road, Fountain Boulevard, Hancock Expressway, and Milton E. Proby Parkway.

Terminal Area Access and Circulation Roadways

As illustrated on Figure 2-8, Milton E. Proby Parkway is the primary access route to and from the terminal area. Immediately east of Powers Boulevard, Milton E. Proby Parkway consists of two one-way roadways separated by a median. Further east, the roadway becomes a one-way loop that turns north to provide access to the curbside and other ground transportation facilities. In front of the passenger terminal building, the inbound roadway splits to the departure and arrival curbside

levels. West of the terminal building, the curbside roadways merge as the roadways turn to the south.

The one-way loop road also provides access to the rental car service facilities, public parking lots, and rental car service centers located inside the loop as well as the cell phone lot and commercial vehicle hold lot located outside the loop. Vehicles exiting the rental car area and the parking exit toll plaza merge with the loop roadway as it heads south. A return-to-terminal road is provided south of the rental car service centers allowing vehicles to return to the curbsides, parking, and other terminal area access facilities.

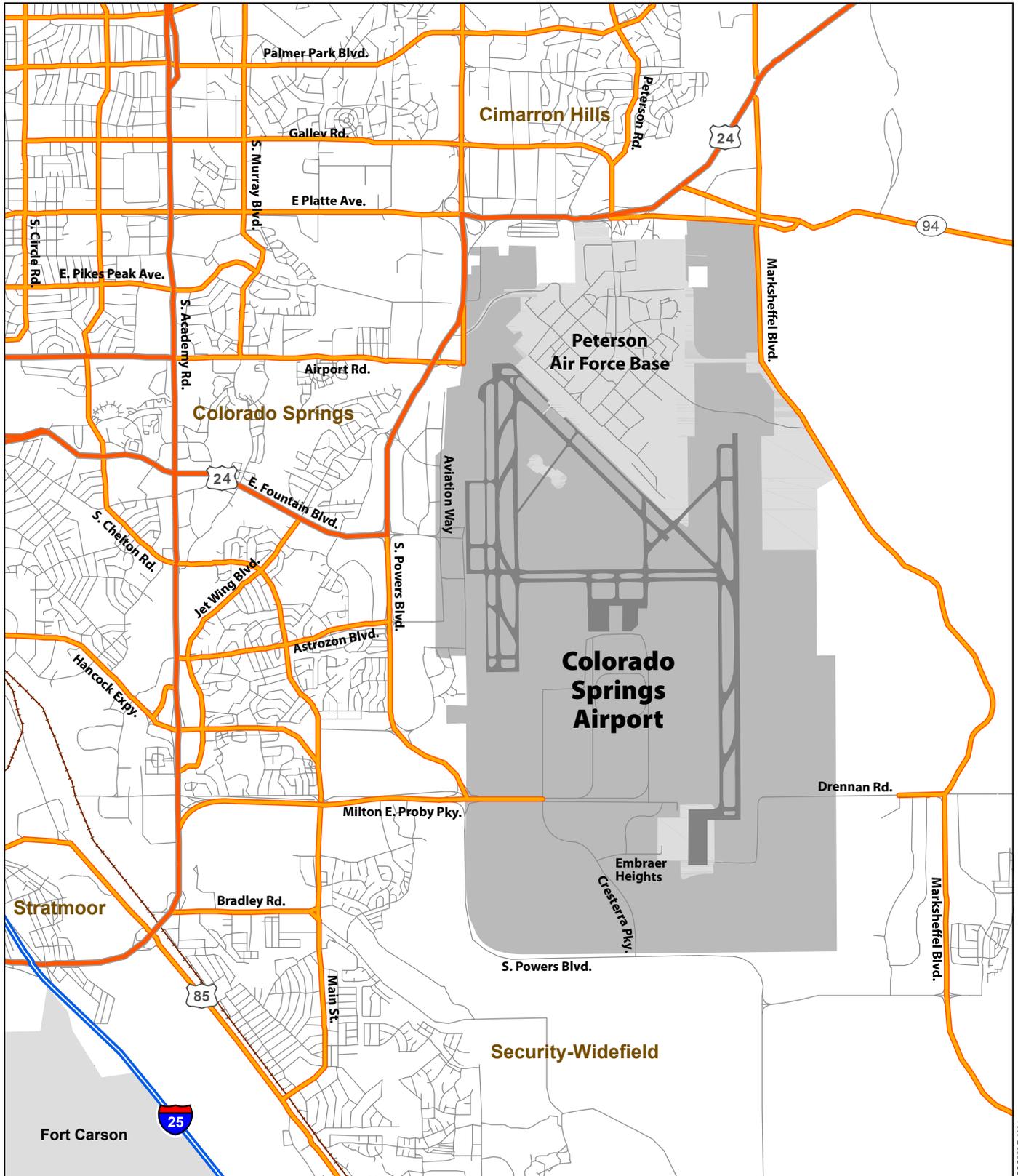
Cresterra Business Park Roadways

Cresterra Business Park roadways Cresterra Parkway and Embraer Heights roadways were constructed in 2011. Cresterra Parkway bisects the business park in a northwest-southeast orientation providing access to the business park parcels and connecting Milton E. Proby Parkway and South Powers Boulevard. Embraer Heights bisects the business park in an east-west orientation and connects Cresterra Parkway to the A/DACG facility. These roadways are shown in Figures 2-1 and 2-2.

Curbside Facilities

Drivers dropping off passengers at the Terminal typically use the Upper Level roadway, which is comprised of (a) a terminal-front curb (“inner curbside”) for private vehicles, taxicabs, and limousines and (b) an island curb (“outer curbside”) for courtesy vehicles and large buses. The inner curbside, which provides two stopping lanes and two through lanes, provides approximately 950 linear feet of curbside, not including area occupied by pedestrian crosswalks to the island curb. The outer curbside, which provides one stopping lane and one through lane, provides approximately 1,065 linear feet of curbside. Figure 2-9 depicts the passenger terminal curbside, including those areas that are underutilized at the outer edges of the terminal building façade.

Drivers picking up passengers at the Terminal typically use the Lower Level roadway. The Lower Level roadway has a similar configuration as the Upper Level roadway, with a 4-lane inner curb for private vehicles and a 2-lane outer curb for taxicabs and other commercial vehicles. The inner curb provides approximately 925 linear feet of curbside, not including area occupied by pedestrian crosswalks, and the outer curb provides approximately 975 linear feet. Passengers walk to the Lower Level from the terminal via a pedestrian tunnel located in the middle of the curbside. The tunnel location results in much of the curbside parking activity on the inner curb concentrating at the center near the tunnel exit.



LEGEND

- Airport area
- Military installation
- Railroad
- Major highway
- Secondary highway

Source: ESRI data.

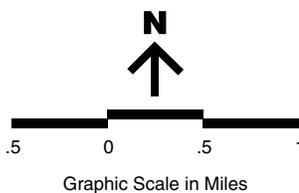
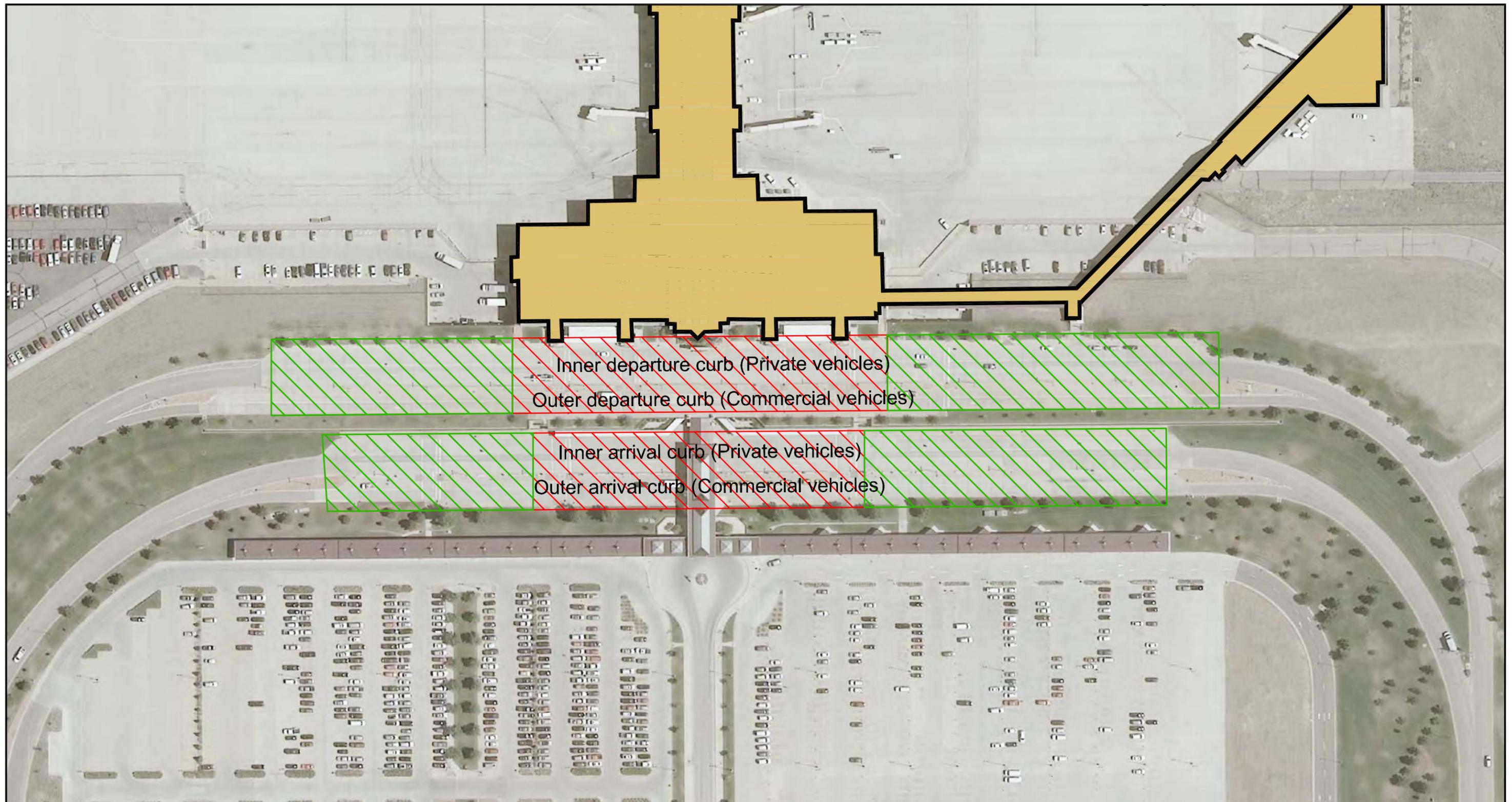


Figure 2-8
KEY ACCESS ROADWAYS
 Master Plan Update
 Colorado Springs Airport
 July 2013

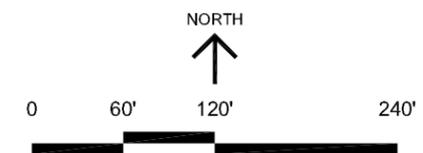
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- LEGEND**
- Airfield pavement
 - Passenger terminal
 - High curbside utilization
 - Low curbside utilization

Figure 2-9
TERMINAL CURBFRONT

Master Plan Update
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Automobile Parking Facilities

The following summarizes public parking and employee parking facilities on Airport. Each of the parking facilities are shown on Figure 2-3.

Public parking. Approximately 5,510 public parking spaces are provided on-Airport in two surface lots. The Short Term lot provides 716 spaces and the Long Term lot provides 3,919 spaces. For passengers using Long Term parking, the Airport provides a shuttle bus that circulates through the lot and picks up and drops off passengers at the north end of the lot, across from the tunnel leading to the terminal building. An overflow lot is also available during peak periods (e.g. major holidays) which provides approximately 875 additional spaces.

Employee parking. The Airport currently provides employee parking in four surface lots. The East Manager Lot, located adjacent to and east of the terminal building, provides 40 spaces shared by Airport staff, airlines, rental car operators, concessionaires, and public safety agencies. The West Manager Lot, located adjacent to and west of the terminal building, provides 41 spaces shared by Airport staff and other tenants. The West Auxiliary Lot, located to the west of the West Manager Lot provides 193 spaces used by Airport staff, vendors, and ground handlers. The Flight Crew Lot, located west of the West Auxiliary Lot, provides 430 parking spaces and is predominately used by flight crews.

Table 2-7 summarizes the Airport's parking facility supply.

Facility	Total spaces
Public parking	
Short-term parking lot	716
Long-term parking lot	3,919
Overflow parking lot	875
Total	5,510
Employee parking	
East manager lot	40
West manager lot	41
West auxiliary lot	193
Flight crew lot	430
Total	704
Source: Colorado Springs Airport records, November 2010.	

Rental car facilities. The rental car counters for Advantage, Alamo, Avis, Enterprise, Hertz and National are located at the arrival level of the main passenger terminal. National, Enterprise, Budget, and Avis are located on the east side of the escalators to the departures level, and Thrifty, Hertz, Alamo, and Advantage are located on the west side. The ready/return parking area is located to the west of the short term terminal parking lot. The rental car service areas are located south of the terminal parking lot on parcels leased from the Airport. Presently fourteen lots varying in size from 1.0 to 3.0 acres comprise the rental car service area. Six of these lots are leased to: Advantage, Alamo, Avis, Budget, Enterprise and Hertz. The total rental car revenue for 2008 at the Airport was approximately \$28 million.

Commercial vehicle facilities. A variety of ground transportation providers service the Airport on a 24-hour schedule. The providers include charter bus, limousine, and taxi. During the day, taxis and shuttles are available outside the arrivals level of the main passenger terminal, and a 24-hour ground transportation hotline provides links to taxis and other transportation providers. In addition, there is a commercial vehicle staging/mobile phone parking lot available to vehicles picking up arriving passengers; the lot includes space for approximately 60 vehicles.

AIRLINE SUPPORT FACILITIES

Airline support facilities are dedicated to supporting passenger and cargo airline operations. At the Airport, these facilities include an airline maintenance hangar, fuel storage and distribution facilities, and glycol storage and treatment facilities.

Airline Maintenance and Support

In 1996, the Airport constructed an airline aircraft maintenance hangar on the west side of the airport property, originally intended for use by Western Pacific Airlines. The hangar is approximately 23,300 square feet in size. This facility is shown on Figure 2-2, facility number 19. Skywest Airlines constructed an additional aircraft maintenance hangar in 2006; the hangar is approximately 100,000 square feet in size and is facility number 32 on Figure 2-2.

Fuel Storage and Distribution

The Airport's primary fuel storage facility was constructed in 1995 and is located directly east of the terminal. The fuel storage facilities currently include four 50,000 gallon tanks providing the airport with Jet A fuel, and one 10,000 gallon tank providing non-aviation gasoline for equipment. Also located on the southeastern portion of the airport property is the Diamond Shamrock Terminal and Pipeline facility which provides fuel to the Airport and the region. The Diamond Shamrock facility is shown on Figure 2-2, facility number 33. Additional fuel storage primarily for general aviation aircraft is located on individual tenant sites, including JHW Investment Company, Colorado jetCenter, Cutter Aviation, Colorado Springs Owners Association, facility numbers 15, 18, 20, and 24, respectively.

Glycol Storage and Treatment

During the winter months, deicing fluid is recovered by the apron drainage system surrounding the deicing areas and diverted from the storm sewer system to a glycol solution holding pond, located west of the passenger terminal area and east of the Runway 35L end. This facility is shown on Figure 2-2, facility number 30. The holding pond has a capacity of 16 acre-feet. When the holding pond is approximately two-thirds full, the glycol solution is pumped to a pretreatment pond with a capacity of 4 acre-feet. This transfer is typically completed once per year. Once the glycol solution is treated in accordance with the wastewater discharge permit, the solution can be discharged into the sanitary sewer. De-icing fluid is stored on the west ramp in four storage tanks and approximately 7 glycol totes with a total capacity of approximately 45,160 gallons.

AIR CARGO

The airport has three air cargo facilities on site: a belly cargo facility for passenger airlines, and two facilities capable of serving all-cargo airlines, one of which is currently occupied by FedEx. The belly cargo facility is located directly west of the terminal building. The FedEx air cargo facility is located on the west side of Runway 17R-35L on the north end of the general aviation/cargo apron north of Taxiway A-2. The other all-cargo airline facility is located on the south end of the general aviation/cargo apron directly west of Taxiway A-4. The air cargo facilities are shown on Figure 2-10.

The *1998 Airport Master Plan* proposed the following:

1. Expansion of the cargo facilities to the west. However, the all-cargo facilities were relocated and the original cargo facilities were converted to the existing belly cargo facility.
2. The expansion of the FedEx apron to the north. This expansion was constructed.
3. A new cargo facility south of the former passenger terminal building. This new cargo facility was constructed and previously occupied by Airborne Express and its successor DHL, but is currently available.

GENERAL AVIATION

The general aviation facilities are located along the west side of the Airport, referred to as the Westside Development Area, parallel to Runway 17R-35L, as depicted in Figure 2-10. Three fixed base operators are located on the Airport, Colorado jetCenter, Cutter Aviation, and JHW Aviation. The fixed base operators and general aviation support businesses provide a wide-range of services, including aircraft fueling, aircraft maintenance, engine repair, aircraft parking and tie-downs, ground handling, hangar storage, and crew and passenger lounges.

Table 2-8 provides a summary of the general aviation based aircraft. Table 2-9 summarizes the hangars and apron areas of the various general aviation entities on the Airport. The general aviation facilities are shown on Figure 2-10. The 1998 *Airport Master Plan* proposed the expansion of the general aviation apron to the south, however, this expansion has not yet been implemented.

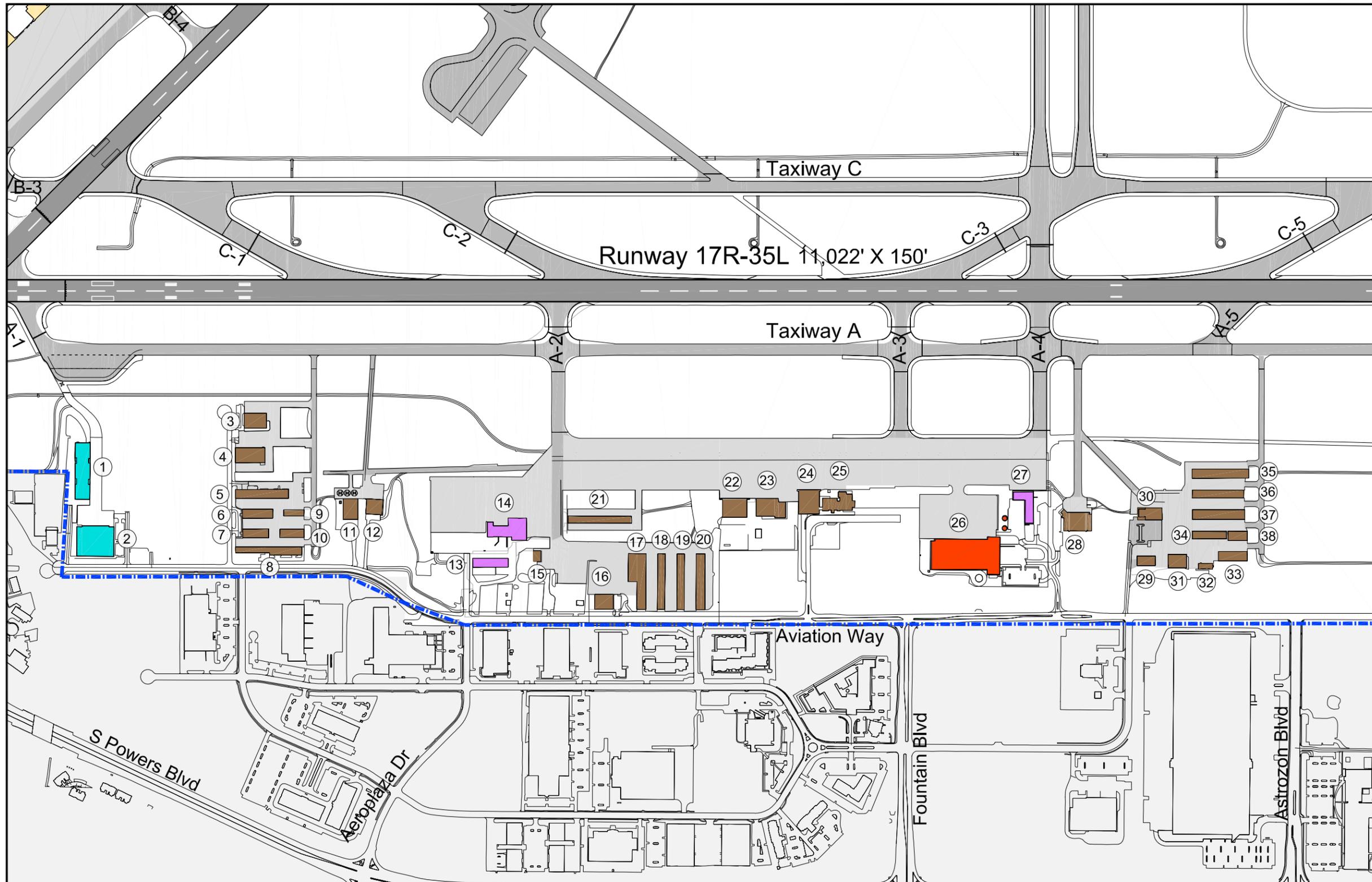
Table 2-8
BASED AIRCRAFT SUMMARY
 Colorado Springs Airport

Fixed base operator	Single- engine piston	Multi- engine piston	Turbo- prop	Jet	Heli- copter	Total
Colorado jetCenter	31	5	5	3	--	44
Cutter Aviation	38	12	4	7	--	61
JHW Aviation	52	10	4	4	--	70
Peak Aviation Center	4	1	--	--	--	5
Springs Aviation	3	--	--	--	--	3
A-cent Aviation	4	3	--	--	--	6
Colorado Vertical	--	--	--	--	1	1
Colorado Springs Police Department ^(a)	--	--	--	--	2	2
Peterson Air Force Base Aero Club	12	2	--	--	--	14
Business Airpark	16	3	11	3	--	33
Aviation Museum ^(b)	2	1	--	--	--	3
Executive Aviation Services	--	--	--	2	--	2
Total	162	37	24	19	3	245

^(a) The police helicopters are not flying missions as of 2010.

^(b) Includes WestPac Restorations and Northpoint Aero.

Source: Colorado Springs Airport records, January 2010.



FACILITY INDEX

- National Museum of World War II Aviation ① ②
- Colorado Springs Owners Association ③ - ⑩
- Colorado Springs Police hangar ⑪
- Perry Park Investments hangar ⑫
- FedEx Cargo facilities ⑬ ⑭
- Colorado Division of Wildlife hangar ⑮
- Cutter Aviation ⑯ - ⑳
- Colorado Jet Center ㉑ - ㉓
- Maintenance hangar ㉔
- Former passenger terminal building ㉕
- Skywest maintenance hangar ㉖
- Cargo sort facility ㉗
- Cordillera maintenance hangar ㉘
- A-Cent maintenance hangar (J.H.W) ㉙
- J.H.W. Investment Company ㉚ - ㉜

LEGEND

- - - - Airport property boundary
- Airfield pavement
- Air cargo
- Airline support
- General aviation (GA)
- Commercial use
- Non airport property

Figure 2-10
WESTSIDE AREA FACILITIES

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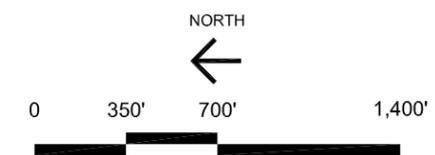


Table 2-9
GENERAL AVIATION HANGAR AND APRON FACILITIES
Colorado Springs Airport

Facility	Lessee	Hangar / apron space (sq ft)	Figure 2-10 Reference No.
Corporate hangar	Cutter Aviation	34,100	17
Corporate hangars (2)	JHW Aviation	13,700	30,31
Corporate hangar	Perry Park Investments	10,800	12
Total		58,500	
Community hangars (2)	Colorado Jet Center	44,600	22,23
Community hangar	Cutter Aviation	12,600	16
Community hangars (2)	Colorado Springs Owner's Assoc'n	35,700	3,4
Other aircraft storage	Colorado Springs Police Depart't	13,800	11
Total		106,600	
3 T-hangars – 49 units	Cutter Aviation	95,300	17,18,19,20
1 T-hangar – 20 units	Colorado Jet Center	20,000	21
6 T-hangars – 57 units	JHW Aviation	97,600	33,34,35,36,37,38
6 T-hangars	Colorado Springs Owner's Assoc'n	81,600	5,6,7,8,9,10
Total		294,400	
Maintenance hangar	Colorado Jet Center	23,300	24
Maintenance hangar	JHW Aviation (A-cent Aviation)	8,100	29
Maintenance hangar	Cordillera Corporation (ARINC)	24,700	28
Total		56,100	
Aircraft apron	Colorado Jet Center	400,000	-
Aircraft apron	Cutter Aviation	125,700	-
Aircraft apron	JHW Aviation	54,500	-
Total		580,200	-

Source: Colorado Springs Airport records and airport basemap files from The Sanborn Map Company, 2010.

AIRPORT SUPPORT FACILITIES

Airport support facilities include the FAA Airport Traffic Control Tower (ATCT), Aircraft Rescue and Fighting (ARFF) facilities, and Airport maintenance offices. The primary support facilities are shown on Figure 2-1.

FAA Airport Traffic Control Tower

The ATCT, which operates on a 24-hour schedule, is located north of Runway 13-31 on PAFB. The ATCT is centrally located on the airfield and is approximately 200 feet north of the military ramp between the parallel runways and north of crosswind Runway 13-31.

Aircraft Rescue and Fire Fighting Facilities

The primary ARFF is located in the north quadrant of the Airport on PAFB. In addition, a secondary ARFF station exists on the east side of Runway 17L-35R, also located on PAFB. The ARFF facilities are operated by the U.S. Air Force. The firefighting services provided to the Airport include first response medical emergency support, aircraft crash rescue capabilities, structural and brush fire support. Ambulance service is also available at the Airport. The ARFF is has an Index C classification, which accommodates regular operations by aircraft with lengths of 158 feet or less.

Airport Maintenance Facilities

The airport maintenance facility encompasses approximately 11 acres of land and is located on the west side south of the JHW Investment Company general aviation facilities. The facility includes 5 buildings for equipment maintenance, storage, and administrative offices.

Airport Administrative Facilities

The Airport administrative facilities are located in the passenger terminal. The airline ramp operation offices; the TSA operations center, training area, and break room; the facilities maintenance office; and the airport development offices are located on the lower level. The Airport Director's office, the Airport Communications Center, and other airport administrative offices are located on the third level. Airport administrative facilities are shown on Figures 2-6 and 2-7.

MILITARY FACILITIES

The Airport is home to two military facilities: Peterson Air Force Base and an Arrival/Departure Airfield Control Group (A/DACG) facility as described in the following sections.

Peterson Air Force Base

Peterson Air Force Base, located on the north side of the Airport, is home to several military units, hosted by the Air Force 21st Space Wing.* Units at the base include: the Air Force Reserve 302nd Airlift Wing, which operates the C-130 Hercules aircraft and the Colorado National Guard 200th Airlift Squadron and the Air Force 311th Airlift Squadron which both operate the C-21 aircraft. According to a FFY 2009

*Peterson Air Force Base is a tenant of the Colorado Springs Airport.

Economic Impact Analysis prepared by the 21st Space Wing, the total economic impact of the Peterson Complex* was \$1.2 billion in FFY 2009, including an annual payroll of over \$500.9 million, approximately \$516.5 million in annual expenditures for construction services and procurement of materials, equipment and supplies, and an estimated \$217.1 million in annual payroll for the indirect jobs created in the regional economy.

A/DACG Facility

The A/DACG facility, constructed in 2008, is used by the Department of Defense to deploy military troops and equipment as needed. Aircraft using the A/DACG facility include a mix of commercial and military aircraft. The commercial aircraft using the facility are operated by charter airlines (e.g., Boeing 737, Boeing 757), and the military aircraft are typically large transport aircraft (e.g., C5, C17). In calendar year 2009, the facility served approximately 316 commercial operations, and 152 military transport operations. The facility is located immediately west of the Runway 35R end.

INFRASTRUCTURE ASSESSMENT

The assessment of airport infrastructure (i.e. airfield pavements, and utilities) was based on professional judgment and did not include site analysis that would require testing of building materials, soils, and pavements.

Airfield Pavements

Detailed pavement inspections were conducted at the Airport in August 2009. The runway, taxiway, and apron sections that are maintained by the airport maintenance staff were inspected. The Pavement Condition Index (PCI) procedure was used to visually assess the pavement condition.** The PCI inspection was conducted following the methodology specified in both the FAA Advisory Circular 150/5380-6B, *Guidelines and Procedures for Maintenance of Airport Pavements* and the American Society for Testing and Materials Standard D5340-04e1, *Standard Test Method for Airport Pavement Condition Index Surveys*.

The PCI procedure provides a numerical indication of overall pavement condition. The survey provides a composite index (PCI number) that represents the overall condition of the pavement in numerical terms, ranging from 0 (failed) to 100 (excellent). Generally, pavements with a PCI of 65 or better would benefit from preventative maintenance, such as crack sealing. Pavements with a PCI of 40 – 65 may require major rehabilitation, such as an overlay, and pavements with a PCI of less than 40 will typically require reconstruction.

* The Peterson Complex includes Peterson Air Force Base, Cheyenne Mountain Air Station, and four major military headquarters—the North American Aerospace Defense Command (NORAD), the U.S. Northern Command, the Air Force Space Command and the Army Strategic Command.

**The apron was also inspected using the Material Related Distress Rating system; see the Pavement Condition Summary in the appendix for additional detail.

The overall area-weighted PCI for the Airport was 82, with conditions ranging from 7 to 100. The PCI number for each pavement type is shown in Table 2-10. The Airport has approximately 16.6 million square feet of pavement onsite. Table 2-10 also lists an area-weighted age of each pavement branch (e.g. apron, runway and taxiway), as well as the total area comprised of each type of pavement (i.e. asphaltic concrete, Portland cement concrete).

Figure 2-11 depicts the PCI for all airfield pavements. As shown, most of the airfield is in good condition; however, there are some areas which require major rehabilitation, including a significant portion of the general aviation/cargo apron edge taxilane, and sections of Taxiway F. It should be noted that weather conditions in the Colorado Springs region can contribute to pavement deterioration due to weather conditions and pavement treatments. Specifically in Colorado Springs, the alkali-silica reaction (ASR) can cause premature deterioration of concrete pavements, due to pavement cracking. A pavement management plan accounting for the local conditions will be developed as part of this master plan, and necessary improvements will be included within the proposed projects. For more information see Appendix A to this document which includes the complete Pavement Condition Summary report.

Table 2-10
AIRFIELD PAVEMENT SUMMARY
 Colorado Springs Airport

Pavement	Area (thousands of square feet)	Area- weighted age in years	Area- weighted PCI
Runway	5,000	7	89
Taxiway	8,800	11	85
Apron	2,800	17	77
Portland cement concrete	10,500	11	87
Asphaltic concrete	1,500	14	70
Asphaltic concrete with overlay	4,600	10	72
Pavement condition index			
0 – 40	212	-	-
41 – 55	123	-	-
56 – 70	1,990	-	-
71 – 85	6,678	-	-
86 – 100	7,219	-	-

Source: *Colorado Springs Airport Pavement Condition Summary – Draft*, prepared by Applied Pavement Technology, October 2010.

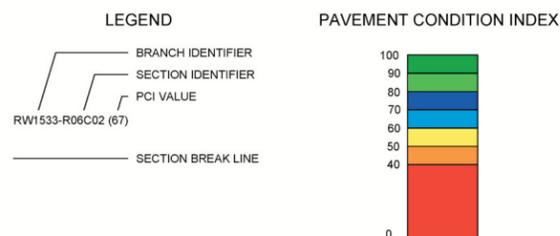
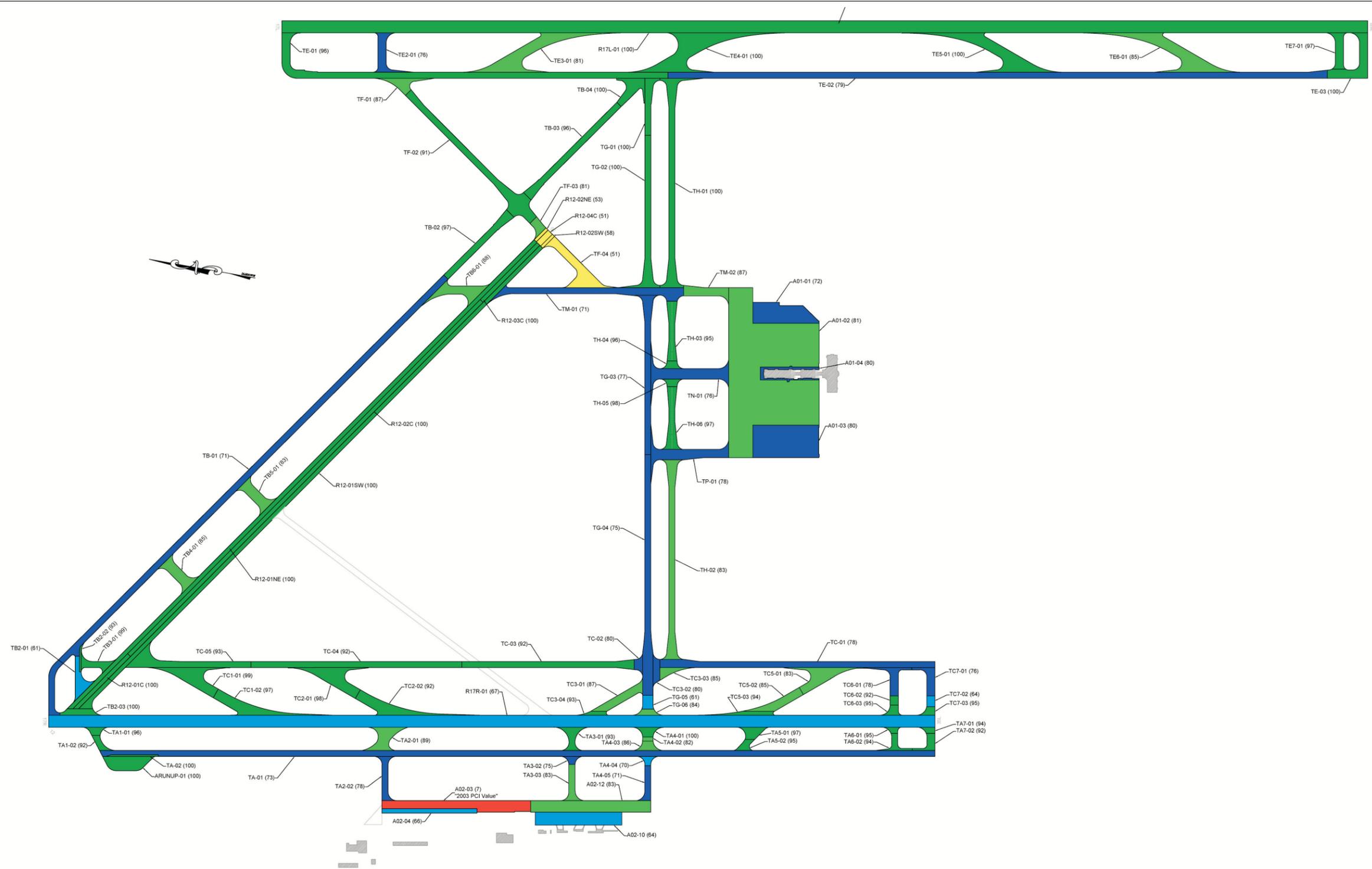


Figure 2-11
PAVEMENT CONDITION INDEX MAP
 Master Plan Update
 Colorado Springs Airport
 July 2013

Note: This map was obtained from the 2009 Colorado Statewide Airport Pavement Maintenance System Update.
 Source: Applied Pavement Technology, November 2010.

OFF-AIRPORT LAND USE

The land use of the parcels surrounding the Airport is shown on Figure 2-12. As shown, the area to the east of the Airport is comprised of agricultural land use, whereas the area to the west of the Airport is comprised largely of residential land with some areas of commercial, industrial, and office uses. The City of Colorado Springs and El Paso County also control the land use surrounding the airport with land use codes that define Commercial Airport Overlay Districts. The Commercial Airport Overlay Districts are shown in Figure 2-13.

The City of Colorado Springs Code (Section 7.3.506) defines the following sub-zones:

- Runway Protection Zone sub-zones: inner width of 1,500 feet; outer width of 2,284 feet, and length of 3,000 feet beginning at the landing threshold;⁶
- Accident Potential Zone 1 (APZ-1) sub-zone: width of 3000 feet, length of 5,000 feet beginning at the end of Runway Protection Zone;
- Accident Potential Zone 2 (APZ-2) sub-zone: width of 3000 feet, length of 7,000 feet beginning at the end of the APZ-1;
- Aircraft Navigation (ANAV) sub-zone: defined by extent of FAR Part 77 imaginary surfaces; and
- ADNL sub-zone: defined by noise contours.

Notably, the El Paso County Land Development Code (Sections 4.3.1 and 8.4.2) define the same sub-zones with the exception of the Runway Protection Zone sub-zones as defined by the City code.

ENVIRONMENTAL OVERVIEW

The environmental overview for this Master Plan Update has been prepared in accordance with FAA Advisory Circular 150/5070-6B Change 1, *Airport Master Plans*, which states that “the principal objective of an environmental overview is to document environmental conditions that should be considered in the identification and analysis of airport development alternatives.”

This section enumerates major environmental conditions that could affect development of Airport facilities. Environmental conditions identified in this chapter follow the guidelines set forth in FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*. Recent environmental studies completed regarding Airport facilities include:

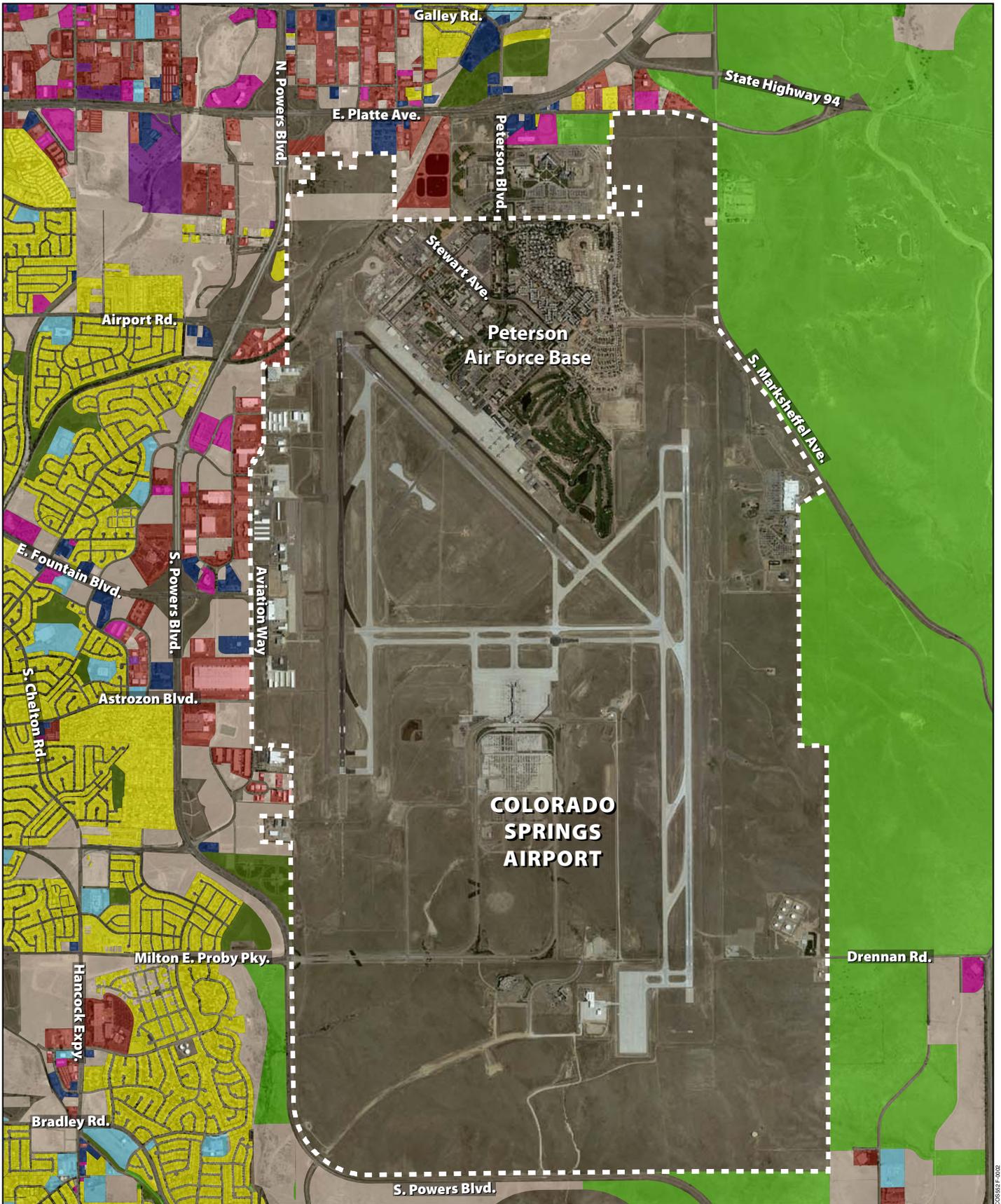
⁶ The City code definition of the Runway Protection Zone sub-zone is different than the FAA Runway Protection Zone (RPZ) which vary in size depending on the capability of the runway to accommodate

- *Colorado Springs Airport Business Park, Airbus Point Realignment, Supplemental Environmental Assessment, CH2M Hill, May 2009.*
- *Reconstruction of Runway 12/30, Categorical Exclusion, December 2008*
- *Colorado Springs Open Space Management Plan: A Resource Management Guide, Colorado Springs Airport, January 2007.*
- *Colorado Springs Airport ILS, Environmental Assessment, Bionomics Environmental, May 2006*
- *Colorado Springs Airport Business Park, Environmental Assessment, CH2M Hill, September 2005.*
- *Fort Carson A/DACG Complex, Final Environmental Assessment, U.S. Army, February 2004.*
- *FAR Part 150 Study, Colorado Springs Airport, Barnard Dunkelberg & Company, August 2001.*

Factors Affecting the Man-Made Environment

Airport development projects have the potential to affect the surrounding manmade environment, which includes a diverse mix of neighborhoods, land uses, and established communities.

Noise. Federal guidelines for land use compatibility and associated with airport noise levels are published in Federal Aviation Regulations (FAR) Part 150, Airport Noise Compatibility Planning. FAR Part 150 classifies noise in terms of an average day-night sound level (DNL), deeming any incompatible land use within the area exposed to DNL 65 to be problematic. The most recent Part 150 Study, completed in 2001, concluded that there was no residential land exposed to DNL 65 and higher, for either the existing or future conditions, at the time in 2001 or for forecasted conditions in 2005. It was also determined that there were no noise-sensitive facilities (schools, churches, and other places of public gathering) located within the area exposed to DNL 65 for the existing and future conditions. Updating the Part 150 Study or its noise contours is not included in the scope of this Master Plan Update.



LEGEND

- | | | |
|------------------|-------------------|-------------|
| Airport boundary | Government/public | Residential |
| Agricultural | Office | Parking |
| Commercial | Undeveloped land | |
| Industrial | Recreational | |

Source: Land use data provided by City of Colorado Springs, December 2011.

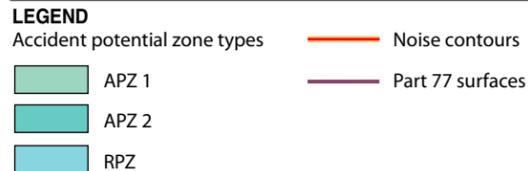
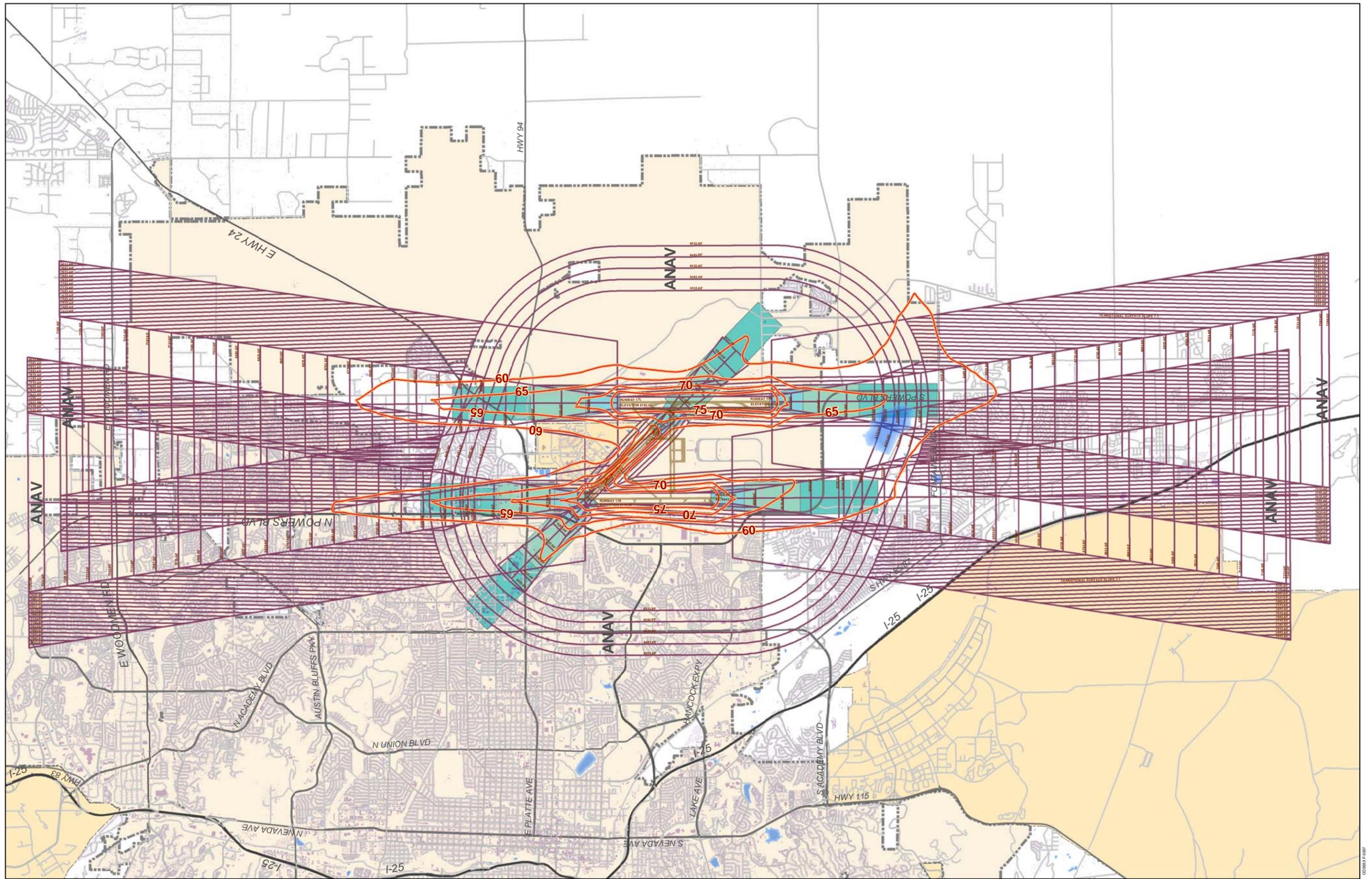
GENERALIZED OFF-AIRPORT LAND USE

Master Plan Update
Colorado Springs Airport
July 2013



Leigh Fisher
Management Consultants

Figure 2-12



Source: City of Colorado Springs on behalf of the Colorado Springs Utilities, 2006.

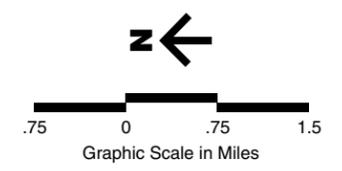


Figure 2-13
COMMERCIAL AIRPORT OVERLAY DISTRICT
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Historic, Architectural, Archeological, and Cultural Resources. Three primary federal laws mandate the identification and preservation of cultural resources. The National Historic Preservation Act of 1966, as amended, includes directives for the identification, assistance, and protection of historic properties. The Archeological and Historic Preservation Act of 1974 requires the survey, recovery, and preservation of significant and prehistoric data that may be destroyed or irreparably lost as a result of federal, federally funded, or federally licensed projects. Lastly, the Department of Transportation (DOT) Act of 1966, Section 4(f), requires environmental analysis of potential impacts to publicly-owned recreational resources that could be affected by DOT projects.

Nearby Section 4(f) resources include historic resources, recreation areas, and public parks.

- **Historic** – The Old Colorado Springs Municipal Airport on Peterson Air Force Base including five buildings were designated as a Historic District in 1988, and four of the buildings were listed in the National Register of Historic Places (NRHP) in 1996 – City Hangar (Bldg. 979), Municipal terminal (Bldg. 981), Broadmoor Hangar (Bldg. 982) and Spanish House/Caretakers Residence (Bldg. 999). The Utility/Maintenance building (Bldg. 980) is not eligible for the NRHP as it was not considered as a contributing resource due to the building’s age, and the building was not used by the original Colorado Springs Airport during the period of 1926-1945.
- **Recreational** – There are two nearby recreational facilities: Peterson Air Force Base Golf Course, located adjacent to Runway 31, and the Skyview Sports Complex, located approximately two miles south of the Airport. Skyview is approximately 41 acres in size and consists of six softball fields, two wheelchair fields, playground, maintenance building, and restrooms.
- **Public parks** – Penstemon Park is located approximately 1.2 miles west of the Airport and consists of approximately 3.2 acres with a basketball court, picnic area, playground, and playfield. Wildflower Park is located approximately 1.25 miles west of the Airport and consists of approximately 21.9 acres with baseball and soccer fields, a basketball/in-line skate court, picnic pavilion, and playground. Sagebrush Park is located approximately 1.5 miles west of the Airport and consists of approximately 4.7 acres with a basketball court, playground, picnic area, soccer field, and trails/sidewalk paths.

Potential impacts to these historic and recreational areas arising from master plan proposed projects would require an analysis to determine if there are alternatives that would avoid impacting these facilities.

Air Quality. The Clean Air Act (CAA) (42 US Code [USC], Sections 7401-7671, et seq., as amended) established federal policy to protect and enhance the quality of the nation’s air resources to protect human health and the environment. The 1990

amendments to the CAA require federal agencies to determine the conformity of proposed actions with respect to State Implementation Plans (SIP) for achieving and maintaining attainment of the National Ambient Air Quality Standards. The EPA also set forth regulations under 40 CFR 51, Subpart W that require the proponent of an action potentially affecting air quality to perform an analysis to determine if implementation of the action will conform with the SIP.

Accordingly, any master plan proposed projects that involve federal actions will require an air quality conformity determination. As of November 2010, the City of Colorado Springs including Colorado Springs Airport is in attainment for all criteria pollutants and in maintenance status for carbon monoxide.

Environmental Justice. Executive Order 12898 directed that federal agencies focus attention on the potential impacts of federal actions on minority and low-income populations. Accordingly, any master plan proposed projects that would impact nearby residential neighborhoods would be subject to an analysis assessing potential impacts on minority or low-income populations. Specifically, the analysis would examine U.S. Census data to determine if there would be a disproportionate impact on minority or low-income populations.

Factors Affecting the Natural Environment

Airport development projects have the potential to affect the natural environment; accordingly this section addresses wetlands and Waters of the United States, floodplains, wildlife and plants, and hazardous materials sites.

Wetlands and Waters of the United States. Wetlands and Waters of the United States are regulated under the Clean Water Act, as amended in 1977, and the Rivers and Harbors Appropriations Act of 1899. Additionally, Executive Order 11990, Protection of Wetlands, is implemented by DOT Order 5660.1A, Preservation of the Nation's Wetlands. Any potential impacts to wetlands or Waters of the United States arising from master plan proposed projects would require coordination with Army Corps of Engineers as well as a Section 404 permit. The wetlands in the vicinity of the Airport are shown on Figure 2-14.

Floodplains. Executive Order 11988 "directs Federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains." Accordingly, any master plan proposed projects will be evaluated to determine if they encroach any floodplains. If so, alternatives will be examined to eliminate or minimize the encroachment. The floodplains on and in the vicinity of the Airport are shown on Figure 2-14.

Wildlife and plants. Coordination with the U.S. Fish and Wildlife Service is required to assess any potential impacts arising from master plan proposed projects on threatened or endangered species. The Airport plant community consists of tall

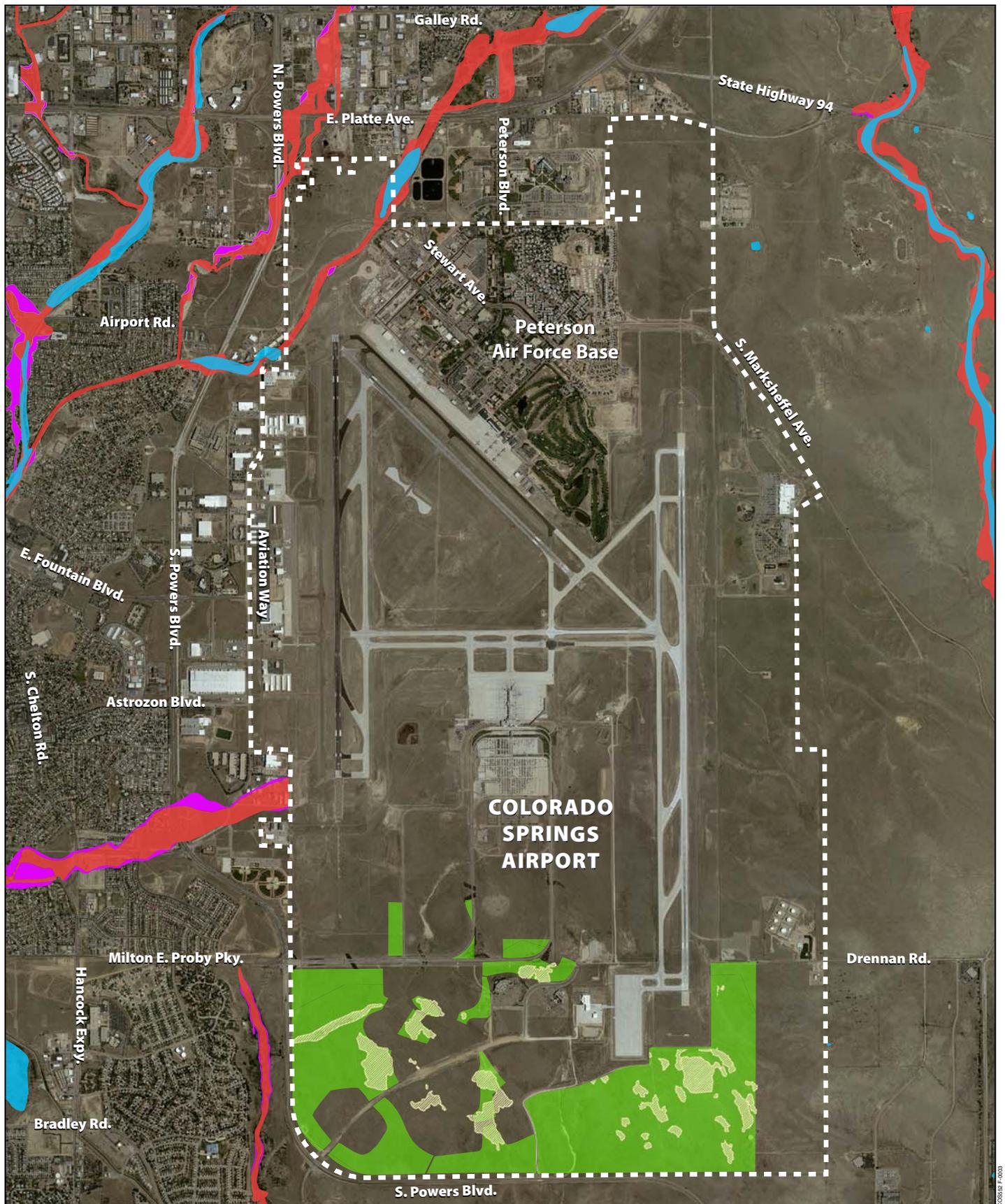
and shortgrass prairie, and there are no plant species in the area that are listed as state or federally threatened or endangered.

As part of the September 2005 Environmental Assessment for the Cresterra Business Park, the Airport committed to development of an open space plan to protect “high-value” stands of plant communities, including big bluestem/prairie sandreed (and a few acres of little bluestem/sideoats grama). Accordingly, the Airport published the *Colorado Springs Airport Open Space Management Plan: A Resource Management Guide* in January 2007.

The plan provides a comprehensive and practical management tool for Airport management including a strategy for protecting the natural, visual, and passive recreational value of the open space on the Airport. The Airport open space serves as a community buffer and aesthetic resource for the cities of Colorado Springs, Fountain, and Security, maintaining outstanding views of Pikes Peak and the Front Range. The open space areas provide valuable habitat for numerous wildlife species including birds, antelope, and small mammals and comprise a critical area of prairie in the City of Colorado Springs’s open space system while allowing for limited public access. The Airport open space consists of approximately 383 contiguous acres located south of the Airport’s east runway, along with approximately 140 acres of smaller open space parcels interspersed throughout the 500-acre Cresterra Business Park.

Hazardous materials and solid waste. Hazardous materials are regulated by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund) of 1980 and the Resource Conservation and recovery Act (RCRA) of 1976, as amended in 1986. On-airport potentially hazardous sites include (1) several above- and below-ground liquid storage tanks; (2) fuel storage and distribution facilities; (3) the airfield maintenance facility; (4) ARFF facilities, and (5) a former military training area referred to as the Rapier Site described in the following paragraph. Any proposed master plan projects will be evaluated for impacts to hazardous materials sites, including storage tank locations.

South and east of the fuel farm is a former military training area (Rapier Site) formerly used by Peterson AFB that consists of approximately 84 acres. The site was historically used as a skeet range, pistol range, ordinance storage area, lead deposit site, small arms open burn/open detonation area, disposal area, and gas instruction storage area. The site is currently undergoing remedial investigation through the United States Air Force Environmental Restoration Program, Military Munitions Response Program in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).



LEGEND

-  Airport boundary
-  Floodplain (100 year)
-  Wetlands
-  Floodplain (500 year)
-  High value grass
-  Open space

Sources: U.S. Fish and Wildlife Service, National Wetland Inventory.
 Federal Emergency Management Agency (FEMA), Map Service Center.
 Colorado Springs Airport Business Park, Environmental Assessment,
 September 2005.

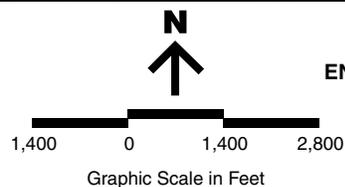


Figure 2-14
ENVIRONMENTALLY SENSITIVE AREAS
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