

## 2. Inventory of Existing Conditions

The inventory consists of data collection and documentation of the existing conditions at Colorado Springs Airport (COS or the Airport and officially titled as City of Colorado Springs Municipal Airport) and its surroundings. It serves as the foundation from which facility deficiencies and proposed improvements may be identified later in the Master Plan Update (MPU). This inventory, like other study elements, follows the guidance outlined in Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*.

### Airport Overview

Located at the foot of Colorado's Front Range, the Colorado Springs Airport lies in the southeast portion of the City of Colorado Springs (Colorado Springs or the City) and within El Paso County (the County). COS is a publicly owned (by the City), public-use, small hub Commercial Service (CS) airport. It provides the City, the County, and other communities within the region immediate access to aviation facilities designed to accommodate a range of activities and users, including commercial airline service with jet aircraft, to general aviation operations with piston and turbine aircraft, to military operations.

The Airport is a critically important transportation and economic asset to Colorado Springs and the region. In addition to its aviation-related benefits driven by on-airport businesses and facilities, the Airport supports civilian and military personnel at Peterson Space Force Base (SFB) and provides a reliable alternative for businesses and leisure travelers who would otherwise drive more than an hour and a half north to Denver International Airport. The complete economic benefit of the Airport is reflected in the *2020 Colorado Aviation Economic Impact Study*, which estimates the total annual aviation and non-aviation-related benefits attributable to COS to be 25,093 jobs, over \$1.5 billion in payroll, and nearly \$3.5 billion in economic activity. This includes the Peak Innovation Park located on Airport property that is home to Amazon (which recently constructed three new facilities), Northrop Grumman, Aerospace Corporation, among others that all generate activity in the local and regional economies.

The previous COS Airport Master Plan was completed in 2013, with an Airport Layout Plan (ALP) update completed in 2018. Since the time of that planning effort, the Airport and surrounding areas have experienced significant growth. Airline service at COS has expanded rapidly with the addition of new carriers, including Southwest Airlines, and the reintroduction of past providers, such as Frontier Airlines. The City continues to experience significant annual population growth and business development that likely warrants enhanced Airport facilities and activities. This continued growth combined with the rapidly changing dynamics of the aviation industry has required that the COS Airport Master Plan be updated to formally analyze current and forecasted operational characteristics and facilities, as well as to evaluate and revise the Airport's program for future

development. The overarching goal of this study is to identify a long term (20-year) airport development plan that prepares the Airport for future demands and requirements from the Colorado Springs area and the surrounding region.

This chapter focuses on the entire aviation facility at COS and its surrounding environment. It combines existing supporting data from multiple sources into a single document to provide a foundation for the subsequent planning analyses conducted as part of the MPU. Specifically, Chapter 2 examines three basic elements that contribute to the existing and future development of Colorado Springs Airport:

1. the Airport's facilities (e.g., runways, taxiways, aircraft parking aprons, commercial passenger terminal, hangars, maintenance facilities, ground access, etc.);
2. the relationship between the Airport, the regional airport system, and the National Aviation System (NAS); and
3. the Airport environs.

Existing data associated planning documents was incorporated into this chapter to ensure accuracy. The information collected and included in this chapter was obtained from many sources, including those listed below:

- Airport site visits;
- Tenant and user interviews;
- Airport administration records and documents;
- FAA 5010 forms;
- COS Airport Master Plan (2013);
- 2020 Colorado Aviation System Plan (CASP); and
- Other pertinent data from the FAA, the Colorado Department of Transportation (CDOT) Division of Aeronautics, and the Colorado Springs Airport Administration and Advisory Commission.

Subsequent chapters in this Airport Master Plan detail forecasts of the Airport's aviation activity, the ability of Airport facilities to safely and efficiently meet the needs associated with that projected aviation activity, and the recommended future development within and around Airport property.

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### Airport Setting

The Airport's location within the region is shown in **Figure 2-1**. Colorado Springs is the seat of El Paso County, whose estimated populations in 2020 were 478,961 and 730,395<sup>1</sup>, respectively. The City and County's location along Colorado's Front range is a highly desirable setting for people seeking an active work/play lifestyle.

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<sup>1</sup> Colorado Department of Local Affairs

Figure 2-1: COS Regional Map



Source: Jviation, a Woolpert Company

While the origins of Colorado Springs can be traced to the 1860s gold boom when mining companies settled the area, the City was officially founded in 1871 by General William Jackson Palmer. General Palmer was a veteran of the Civil War and a railroad magnate, developing several railways throughout the West that eventually brought him to the foot of Pikes Peak. Amazed by the scenery and beauty of the area, he decided it was the ideal location for a community.

Mining continued to be the primary economic driver, spurring residential and tourist developments throughout the region, until the early 1900s. During World War II, the City and surrounding areas developed a significant military presence that still exists today. Currently, there are five prominent military installations located within the immediate area: the United States Air Force Academy, Cheyenne Mountain Space Force Station, Peterson Space Force Base (previously Peterson Air Force Base), Schriever Space Force Base (previously Schriever Air Force Base), and Fort Carson, home of the Army's 4<sup>th</sup> Infantry Division.

The Airport is situated approximately 12 miles southeast of downtown Colorado Springs, five miles southwest of Interstate 25, and six miles north of U.S. Route 24 (S Powers Boulevard). Visitors access the commercial terminal from the south

and west via Milton E. Proby Parkway, while visitors to general aviation landside buildings can access the Airport via several east-west connector streets that stem from U.S. Route 24. Peterson SFB occupies the entire northeast side of the airport property and is accessed from U.S. Route 24 to the west and north, and Marksheffel Road to the east.

The Airport itself has approximately 7,444 acres with a defined elevation of 6,187.1 feet Mean Sea Level (MSL). The FAA site number for COS is 02543\*A. The Airport Reference Point (ARP) is Latitude 38° 48' 20.9270" N and Longitude 104° 42' 02.7890" W. The mean high temperature of the hottest month (July) at the Airport is 84.8 degrees Fahrenheit. The mean low temperature of the coldest month (January) at the Airport is 18.5 degrees Fahrenheit.

### Airport History

Originating in the 1920s based on the need for a municipal aviation facility for Colorado Springs, the Airport began operations in 1925 and was officially opened in 1927. It original consisted of 640 acres and was configuration with two gravel runways. The military took control of the facility just prior to the United States' entry into World War II, later relinquishing control back to the City.

The existing commercial terminal facility, opened in 1994, is actually the third iteration of such facilities. The first terminal building was located on the north side of the Airport and is currently under the management of Peterson SFB; the second facility was located west of S Powers Boulevard.

Development of the Airport over time has progressed in many forms in order to fulfill the various need of its users and activities. **Table 2-1** provides a listing of FAA Airport Improvement Program (AIP) projects over the past 15 years to illustrate where major investments have been most recently directed. Note that airfield pavement represents a majority of this investment, with funds primarily devoted to pavement rehabilitation for runways and taxiways.

**Table 2-1: COS AIP History**

Year Grant Received	Project	Total Cost
2005	Runway 17L/35R Reconstruction	\$17,032,811
2006	Runway 17L/35R Reconstruction	\$272,258
2006	Runway 17L/35R Reconstruction	\$275,986
2006	Runway 17L/35R Reconstruction	\$14,667,329
2006	Runway 17L/35R Reconstruction	\$786,732
2007	Taxiway E, G, and H Reconstruction – Phase I	\$4,324,857
2007	East Vehicle Service Road-Phase I	\$422,262
2007	Business Park DAR Roads	\$7,677,667
2008	Taxiway E, G and H Reconstruction – Phase II	\$9,115,128
2009	Taxiway G & H Reconstruction – Phase I	\$1,841,304
2009	Reconstruct Taxiway E4 & E5 – Partial	\$6,673,418
2009	Taxiway G & H Reconstruction – Phase II	\$811,421
2009	Runway 12/30 Rehabilitation – Design	\$336,801

Year Grant Received	Project	Total Cost
2009	Taxiway G & H Reconstruction – Phase III	\$7,488,221
2010	Master Plan Update/Reconstruct Taxiway H and Taxiway M	\$1,571,331
2010	Taxiway G & H Reconstruction – Phase IV	\$3,199,630
2010	Runway 12/30 Rehabilitation – Construction	\$5,827,997
2011	Taxiway E, G, and H Reconstruction – Phase III	\$10,009,803
2012	Taxiway M & F Reconstruction	\$6,844,971
2013	Taxiway E, G, and H Reconstruction – Phase IV	\$13,915,564
2013	Taxiway E, G, and H Reconstruction – Phase IV	\$15,167
2014	Re-Stripe Runways 17R/35L and 17L/35R	\$1,912,772
2014	Taxiway E, G, and H Reconstruction – Phase V	\$7,353,414
2014	Taxiway A Rehabilitation	\$3,373,988
2015	Rehabilitate Taxiway (Terminal Taxilanes) – Rehabilitation of Terminal Apron and Trench Drain System	\$12,319,120
2016	Reconstruct Taxiway C from Taxiway C7 to Taxiway H	\$10,658,454
2017	Rehabilitate Taxiway G and Terminal Connectors, Phase 1	\$8,605,972
2017	Rehabilitate Taxiway G and Terminal Connectors, Phase 2 – Design	\$413,523
2018	Rehabilitate Taxiway G and Terminal Connectors, Phase 2 – Construction	\$11,444,432
2018	Rehabilitate Taxiway G and Terminal Connectors, Phase 3 – Design	\$446,261
2018	Rehabilitate Taxiway G and Terminal Connectors, Phase 3 – Construction	\$10,829,607
2019	Construct Deicing Pad and Rehabilitate Runway 17R/35L – Designs	\$2,162,576
2020	Construct Deicing Pad	\$12,153,953
2020	Rehabilitate Runway 17R/35L – Construction	\$57,241
<b>Total</b>		<b>\$194,857,137</b>

Source: Colorado Springs Airport

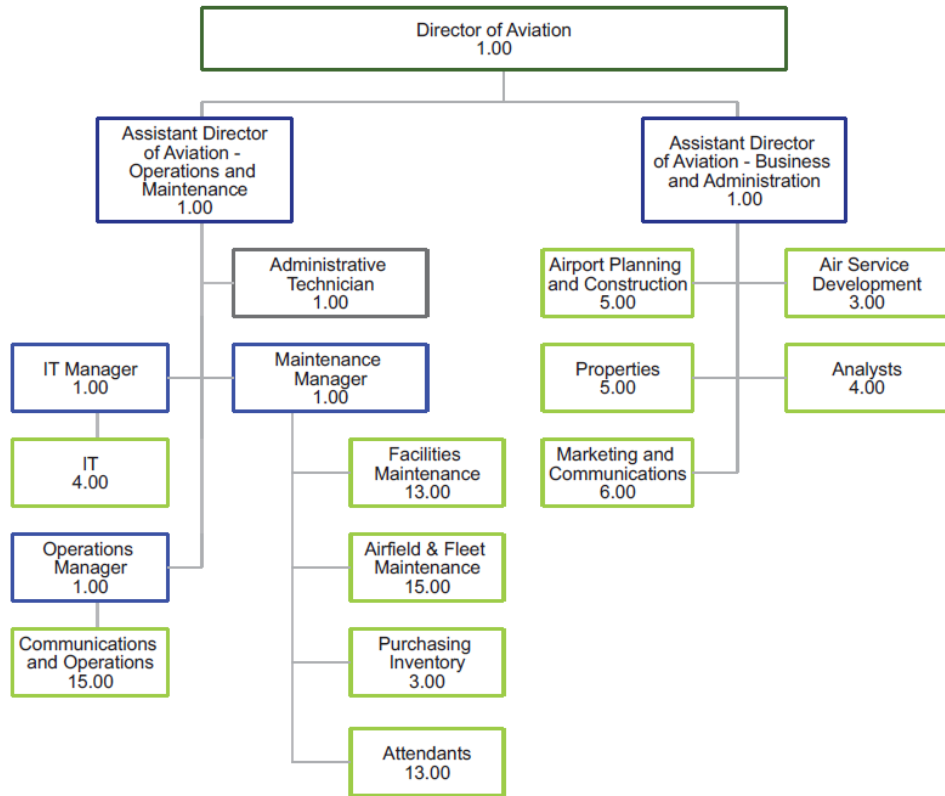
Other airport improvements have been funded through Passenger Facility Charge (PFC) Program funds, the CDOT Division of Aeronautics Aviation Grant Program, and local investments.

### Airport Management and Administration

The Colorado Springs Airport is owned and operated by the City of Colorado Springs, Colorado as a separate enterprise of the City. Additionally, the Airport is overseen by an Airport Advisory Commission (AAC), established by the City Council in 1978. The AAC is a seven-member board that supports the Mayor, the City Council, and the City Planning Commission on matters related to airport management. The AAC meets monthly, with each commissioner serving up to two three-year terms.

The Airport is managed by a dedicated full-time Director of Aviation who is supported by two Assistant Directors of Aviation, and a full complement of staff. **Figure 2-2** illustrates the current airport organizational chart with position types and number of employees.

**Figure 2-2: COS Organizational Chart**



The organizational chart illustrates all positions that report to this department, not including 13.00 positions that report to the Police Department but are funded by the Airport; however, all positions funded by the Airport are reflected in the Position Totals of the funding tables in this narrative.

Source: Colorado Springs Airport

**Integration with Colorado Springs City Strategic Plan**

The Airport aligns its vision and associated development initiatives with the Colorado Springs City Strategic Plan. Goals identified in the Strategic Plan are broad and apply to City departments, including COS. Specific to the Airport, three goals have been identified as have three general initiatives designed to meet those goals (see **Table 2-2**).

**Table 2-2: 2021 Strategic Plan Initiatives**

Goal	Initiative
Promoting Job Creation	Continue efforts to diversify revenue through air service growth and economic development.
Building Community & Collaborative Relationships	Plan for the Airport of 2040, ensuring compatible land use and adequate protections for future needs.
Excelling in City Services	Ensure a safe, efficient, and financially stable airport.

Source: Colorado Springs Airport

Recent or ongoing developments illustrate the Airport’s effort to support these initiatives. The Airport continues to diversify its air service offerings, evidenced by Southwest Airlines’ initiation of service in 2021. Additionally, the completion of a Land Use Compatibility Study in October 2020 and the undertaking of this

Airport Master Plan support the vision of the Airport in 2040. Finally, the Airport continues to enhance its levels of operational safety and efficiency, as well as to be fiscally stable and self-sufficient.

### Airport Finances

The FAA requires that those airports that accept financial grants “...maintain a fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, considering such factors as the volume of traffic and economy of collection.”

Because COS is owned and operated by the City of Colorado Springs, the fiscal responsibility of the Airport resides with the City and, by extension, airport management. Airport finances are managed through a municipal enterprise fund (a fund segregated in purpose and use from other municipal funds or accounts. Revenue generated by the enterprise activity and deposited back into the enterprise fund is the principal funding source for that enterprise). In this case, the airport enterprise fund is dedicated to the operation and maintenance of COS. Airport revenues are generated from airline operating fees, automobile parking fees, rental car fees, ground, building and terminal rent, and other facility charges (see **Table 2-3**). It is important to note that the Airport is a fully self-sustaining public enterprise and receives no local tax revenue.

The majority of facilities on the Airport, including all of the hangar structures, are privately-owned but where facility structure owners have a ground lease with the Airport. The facility owners are also taxed at the prevailing property tax rate, and as result, the property taxes generate revenue for the City in addition to fees generated by the leases.

Refer to Chapter Seven, *Program Implementation Plan*, for additional information on the Airport’s financial structure.

**Table 2-3: COS Rates and Fees**

Source/Service	Fee
<b>Landing and Other Airfield-Related Charges</b>	
<i>Signatory Operating Fees</i>	
Landing Fee	\$1.33 per 1,000lbs MGLW
Maintenance/Ferry Landing Fee	\$0.67 per 1,000lbs MGLW
Diversion Landing Fee	\$0.67 per 1,000lbs MGLW
<i>Non-Signatory Scheduled Fees</i>	
Landing Fee	\$1.66 per 1,000lbs MGLW
Maintenance/Ferry Landing Fee	\$0.83 per 1,000lbs MGLW
Diversion Landing Fee	\$0.83 per 1,000lbs MGLW
<i>Non-Signatory Itinerant Fees</i>	
Landing Fee	\$2.00 per 1,000lbs MGLW
Maintenance/Ferry Landing Fee	\$1.00 per 1,000lbs MGLW
Diversion Landing Fee	\$1.00 per 1,000lbs MGLW



Source/Service	Fee
<b>Miscellaneous Aircraft Operating Fees</b>	
City West General Aviation Ramp MGLW 0-40,000	\$10.00 per aircraft
City West General Aviation Ramp MGLW 40,001-100,000	\$20.00 per aircraft
City West General Aviation Ramp MGLW 100,001-150,000	\$25.00 per aircraft
City West General Aviation Ramp MGLW 150,001-200,000	\$30.00 per aircraft
City West General Aviation Ramp MGLW 200,001-Greater	\$50.00 per aircraft
Ground Power	\$50.00 per day
Terminal North, East, West Apron & Taxiway Parking for < 3 hours on City Ramp	\$69.00 per aircraft
Terminal North, East, West Apron & Taxiway Parking for > 3 hours on City Ramp	\$138.00 per aircraft, per day
Scheduled Non-Preferential Gate and Bridge Usage	\$64.00 per use
Itinerant Non-Preferential Gate and Bridge Usage	\$65.00 per use
City Ramp Parking < 3 hours and Gate Usage (Enplane/Deplane) – Scheduled Carriers	\$120.00 per aircraft, per use
City Ramp Parking < 3 hours and Gate Usage (Enplane/Deplane) – Itinerant Carriers	\$121.00 per aircraft, per use
City Ramp Parking > 3 hours and Gate Usage (Enplane/Deplane) – Scheduled Carriers	\$189.00 per aircraft, per use
City Ramp Parking > 3 hours and Gate Usage (Enplane/Deplane) – Itinerant Carriers	\$190.00 per aircraft, per use
Fuel Flowage Fee	\$0.06 per gallon
<b>Terminal Building Fees</b>	
<b>Signatory Operating Fees</b>	
Terminal Fee	\$36.07 per square foot, annually
Loading Bridge Fee	\$6,933 annually
Dual Operation Parking Position	\$5,199 annually
<b>Non-Signatory Scheduled Fees</b>	
Terminal Fee	\$45.09 per square foot, annually
Small 300 square foot Ticket Counter	\$5.00 per enplaned operation
Large 600 square foot Ticket Counter	\$9.00 per enplaned operation
Small 800 square foot Baggage Makeup	\$12.00 per enplaned operation
Large 1,300 square foot Baggage Makeup	\$20.00 per enplaned operation
Small Ticket Counter & Bag Makeup	\$17.00 per enplaned operation
Large Ticket Counter & Bag Makeup	\$29.00 per enplaned operation
<b>Non-Signatory Itinerant Fees</b>	
Joint Use	\$2.21 per enplanement
Small 300 square foot Ticket Counter	\$6.00 per enplaned operation
Large 600 square foot Ticket Counter	\$11.00 per enplaned operation
Small 800 square foot Baggage Makeup	\$15.00 per enplaned operation
Large 1,300 square foot Baggage Makeup	\$24.00 per enplaned operation
Small Ticket Counter & Bag Makeup	\$21.00 per enplaned operation
Large Ticket Counter & Bag Makeup	\$35.00 per enplaned operation
<b>Miscellaneous Rates and Charges</b>	
FedEx Glycol Dump	\$123.71 monthly
Unimproved Ground Rent	\$0.21 per square foot



Source/Service	Fee
Improved Ground Rent	\$0.44 per square foot
Terminal Rent (Non-Airline)	\$45.09 per square foot, annually
Ramp Space	\$0.90 per square foot, annually
Delta Cargo Bay	\$19.74 per square foot, annually
New User Cargo Bay	\$19.82 per square foot, annually
GA Operator Permit	\$10.00 annually
Newspaper Permit	\$16.00 per location, monthly
Standard Cable TV Connection	\$36.23 per hookup
Cable TV Installation	\$160.00 per instance
<i>Telephone</i>	
2 button (display)	\$3.70 per device
2 button (New 2012)	\$4.70 per device
2 button (non-display)	\$3.80 per device
4 button (display)	\$4.90 per device
6 button (New 2012)	\$4.80 per device
8 button (display)	\$5.70 per device
8 button (non-display)	\$3.90 per device
12 button (New 2012)	\$5.60 per device
16 button	\$6.30 per device
Analog – NEC	\$1.50 per device
Analog – Wall Phone	\$1.50 per device
Analogs in stock (from 2001)	\$1.50 per device
Telephone Cable only	\$6.37 per cable
Telephone extension	\$6.90 per extension

Source: Colorado Springs Airport, 2021

### Airport Role

Airports can play a variety of different functional roles and contribute at varying levels to meeting the transportation and economic needs on national, regional, state and local levels. Identifying and understanding the various roles that an airport plays is essential so that facilities and services can be developed appropriately to fulfill that airport’s respective roles. **Table 2-4** lists the Colorado Springs Airport’s various role classifications.

**Table 2-4: COS Airport Roles**

Role Identification Source	Role
National Plan of Integrated Airport Systems 2021-2025	Primary—Small Hub
2020 Colorado Aviation System Plan	Commercial Service

Source: FAA, CASP

### *National Plan of Integrated Airport Systems (NPIAS)*

The NPIAS is an FAA-sponsored national airport system plan whose purpose is to identify those airports considered important to the national air transportation system, and to understand how those airports currently operate within the

system. An airport identified within NPIAS is eligible for grants under the AIP for the planning and implementation of airport capital improvements and infrastructure development. In practice, those airports included in the NPIAS are assigned a specific service level or role based on the services provided to host communities. These service levels or roles also help define the AIP funding categories established by Congress to assist in the distribution of financial resources for airport development.

The 2021 NPIAS classified Colorado Springs Airport as a Primary—Small Hub airport. This Primary airport category is defined by the FAA as public airports receiving scheduled air carrier service with 10,000 or more enplaned passengers per year. There are four sub-categories within the Primary category: Large Hub, Medium Hub, Small Hub, and Nonhub. Small Hubs are defined as airports that account for 0.05 percent to 0.25 percent of total U.S. passengers.

**2020 Colorado Aviation System Plan (CASP)**

The 2020 CASP is a strategic analysis of the statewide system of public-use airports conducted by the CDOT Division of Aeronautics. The CASP produced both an extensive assessment of the current state airport system’s condition, and a guide for meeting its current and future needs. This plan provides tools to facilitate the continued successful development of the statewide aviation system, to respond to its future challenges, and to meet changes in demand to promote system sustainability. This plan also identifies roles for each public-use airport in the state.

Colorado Springs Airport is currently classified in the CASP as a Commercial Service airport, which is defined in the study as follows:

*[A Commercial Service airport] has scheduled commercial air carrier service and provides access to large metropolitan areas around the country. These airports receive higher levels of activity from a wide variety of aircraft and airport users. Commercial Service airports often serve as gateways for interstate and international travelers and host many aviation- and non-aviation-related businesses that support the local community.*

**Primary Airport Data**

**Table 2-5** below summarizes some of the important primary data elements for the Colorado Springs Airport.

**Table 2-5: COS Primary Data – Existing Conditions**

Colorado Springs Airport (COS) - Primary Airport Data	
Associated Town	Colorado Springs, CO
Airport Owner / Sponsor	City of Colorado Springs (Public)
Airport Management	Director of Aviation
Airport Advisory Commission	Seven members
Airport Roles	FAA NPIAS: Primary – Small Hub

Colorado Springs Airport (COS) - Primary Airport Data	
	2020 CASP: Commercial Service
Commercial Air Service Providers	American Airlines, Delta Air Lines, Frontier Airlines, Southwest Airlines, United Airlines
Air Traffic Control Tower (ATCT)	Hours of Operation: 24/7
Part 139 Classification	Class I
Aircraft Rescue and Fire Fighting (ARFF) Index	C
Airport Acreage	7,444 acres
Airport Reference Point (ARP)	38° 48' 20.9270" N 104° 42' 02.7890" W
Airport Elevation	6,187 Feet - Mean Sea Level
Area Mean Maximum Temperature	84.8° F
FAA Sectional Chart	Denver

Source: Jviation, a Woolpert Company, and FAA 5010

**Airport Services** Airports can provide a range of services to meet the demands of its individual market. **Table 2-6** provides a general listing of Colorado Springs Airport’s current range of aviation-related services and the entities that provide them.

**Table 2-6: COS Aeronautical Services**

Service	Provider
Fixed Base Operator (FBO) Services <ul style="list-style-type: none"> <li>- Aircraft support services (e.g., fueling, deicing, oxygen, GPU, lavatory, etc.)</li> <li>- Passenger support services (e.g., ground transportation, catering, etc.)</li> </ul>	Cutter Aviation, LLC Colorado jetCenter JHW Hangar Complex
Flight Training	Arapahoe Flight Club Direct Connect Flight Academy (DCFA) Peak Aviation, ATP, Peterson Flight Club
Aircraft Management	Cutter Aviation, LLC Eclipse Management, LLC
Aircraft Maintenance	Arapahoe Flight Club Cutter Aviation, LLC D&J Aviation, Inc. Grand Aviation Businesses JC Aviation, LLC Rampart Aviation, LLC Trine Aerospace, LLC
Aircraft Parking (based/transient) – Tie Downs & Hangars	Cutter Aviation, LLC Colorado jetCenter Five Star Aviation LLC JHW Hangar Complex

Source: Colorado Springs Airport

**Accident History  
at COS**

National Transportation Safety Board (NTSB) records were examined to identify any trends in the types of accidents that have occurred over the previous 30 years. Accident history is important to recognize, especially those that might be attributable to airport design, layout, or aircraft operation. Most civilian accidents

or incidents (no injuries) at COS are typical of most CS airports (e.g., during landings). Based on a review of accident reports, presented in **Table 2-7** there were no accidents that were attributed to the Airport’s design or operation.

**Table 2-7: NTSB Accident Reports at COS: 1991-2021**

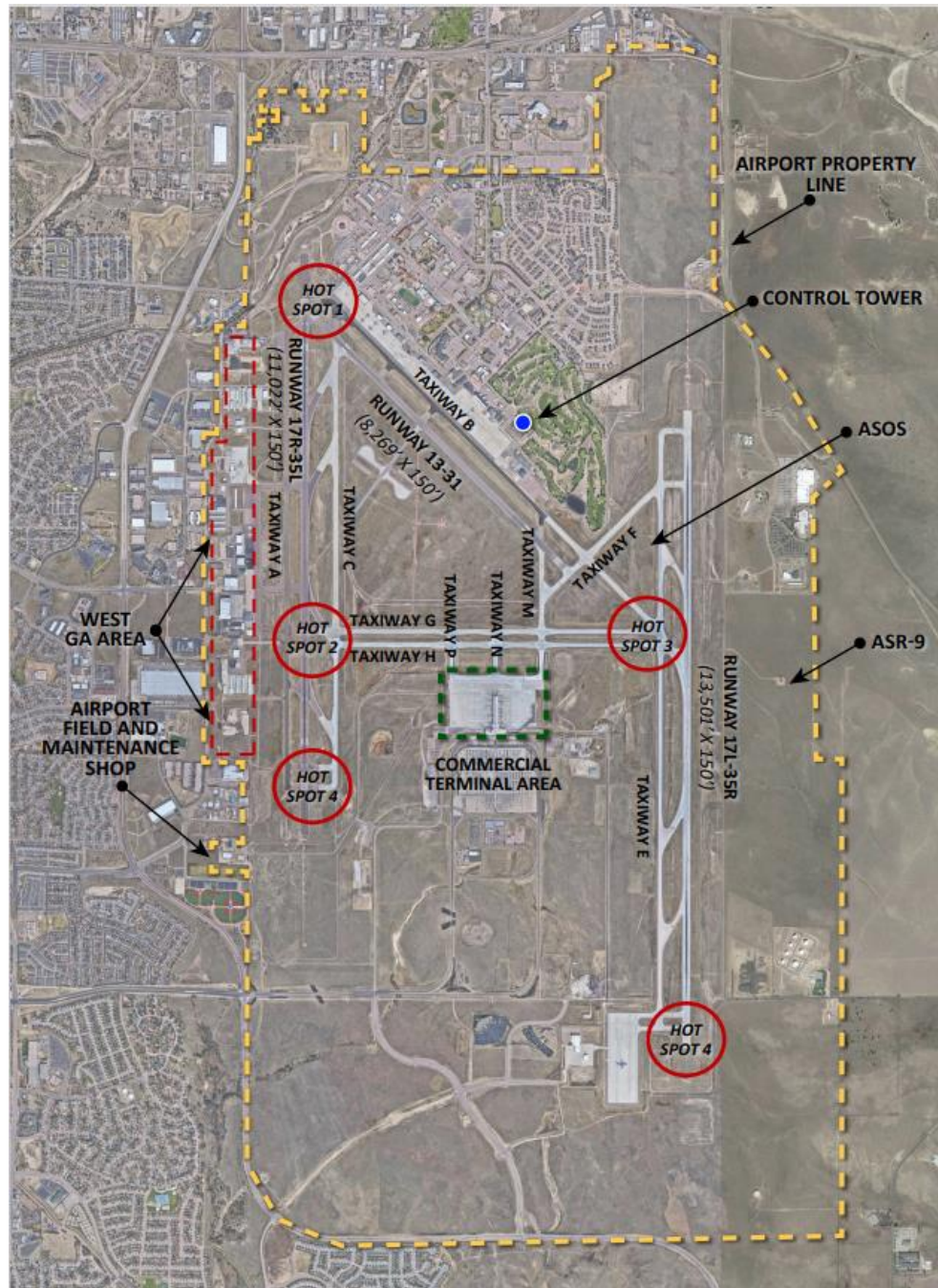
Date	Aircraft Type	Injuries/Fatalities
3/3/1991	Boeing 737-200	Fatal (25)
10/18/1992	Cessna 172	Non-Fatal
10/15/1993	Cessna 172F	Non-Fatal
1/13/1994	Bellanca 8KCAB-180	Non-Fatal
10/29/1994	Cessna 172P	Non-Fatal
9/01/1995	Cessna 172N	Non-Fatal
4/23/1996	Cessna 172P	Non-Fatal
10/04/1996	Cessna 152	Non-Fatal
4/16/1997	Boeing 737-300	Incident
8/05/1997	Beech 58P	Fatal (2)
12/21/1997	Beech A100	Fatal (2)
2/11/1998	Beech 23	Non-Fatal
2/16/1999	Piper PA-28-180	Non-Fatal
1/30/2001	Cessna R172E	Non-Fatal
10/08/2001	Cessna 172N	Non-Fatal
3/09/2003	Mooney M20C	Non-Fatal
5/23/2003	Mooney M20K	Non-Fatal
4/17/2004	Canadair CL-600-2B19	Incident
9/04/2004	Gates Learjet 25B	Non-Fatal
6/11/2005	Beech S35	Non-Fatal
6/22/2006	Excel Jet Sport Jet	Non-Fatal
9/13/2006	Piper PA-46T-350P	Non-Fatal
12/15/2006	Boeing 737-824	Incident
7/23/2009	Piper PA-32R	Non-Fatal
9/4/2010	Beech E-90	Non-Fatal
12/19/2011	Mooney M20E	Fatal (2)
4/3/2011	Cessna 172N	Non-Fatal
2/4/2012	Cessna R182	Minor Injury
7/19/2012	Cessna T210M	Non-Fatal
4/21/2013	Cessna T182T	Non-Fatal
9/4/2013	Cessna T207	Minor Injury
11/28/2014	American Champion Aircraft 7EC	Non-Fatal
11/9/2015	Cirrus SR22	Fatal (2)
3/18/2017	Cessna R182	Non-Fatal
8/3/2017	Beech D17S	Non-Fatal
4/15/2018	Cessna T210N	Minor Injury
9/11/2019	Piper PA-28	Non-Fatal
4/15/2021	LearJet 35A	Non-Fatal

Source: NTSB

## Airside Facilities

Airside facilities are the portions of the Airport that accommodate the movement of aircraft and encompass runways, taxiways, and other facilities necessary to support flight activity. **Figure 2-3** depicts some of COS's existing airside facilities.

**Figure 2-3: COS Airside Facilities**



Source: Jviation, a Woolpert Company



## Runways

Colorado Springs Airport is comprised of three runways: two north/south parallel runways (Runway 17L-35R with a concrete surface and Runway 17R-35L with a paved asphalt surface) and one southwest/northwest runway (Runway 13-31 with a paved asphalt surface) that serves as the secondary or crosswind runway. All runway ends except for Runway 13 are served by an instrument approach procedure. Each runway has a full parallel taxiway and connecting taxiways that provide aircraft access to the various ramp areas and other facilities on the Airport. **Table 2-8** provides additional details about the runways at COS.

**Table 2-8: COS Runway Data**

	Runway 17L-35R	Runway 17R-35L	Runway 13-31
Dimensions	13,501 ft x 150 ft	11,022 ft x 150 ft	8,269 ft x 150 ft
Runway Surface Type	Concrete – Grooved	Asphalt – Grooved	Asphalt – Grooved
Pavement Condition	Good	Good	Good
Runway End Location	(17L) 38° 48' 57.9122" N 104° 41' 08.6418" W (35R) 38° 46' 44.4700" N 104° 41' 08.8697" W	(17R) 38° 49' 26.6740" N 104° 42' 57.2254" W (35L) 38° 47' 37.7637" N 104° 42' 57.3636" W	(13) 38° 49' 23.3600" N 104° 42' 55.2700" W (31) 38° 48' 25.4900" N 104° 41' 41.5300" W
Runway End Elevations	(17L) 6,187.1 MSL (35R) 6,102.9 MSL	(17R) 6,176.6 MSL (35L) 6,045.2 MSL	(13) 6,173.2 MSL (31) 6,137.2 MSL
Effective Gradient	(17L) -0.62% (35R) 0.62%	(17R) -1.2% (35L) 1.2%	(13) -0.4% (31) 0.4%
Runway Markings	Precision Instrument	Precision Instrument	Non-Precision Instrument
Pavement Classification Number	95 /R/B/W/T	99 /F/B/X/T	48 /F/C/X/T
Runway Strength	Single Wheel – 120,000 lbs. Dual Wheel – 250,000 lbs. Double Tandem Wheels – 550,000 lbs. Dual Double Tandem – 1,120,000 lbs.	Single Wheel – 120,000 lbs. Dual Wheel – 250,000 lbs. Double Tandem Wheels – 550,000 lbs. Dual Double Tandem – 1,120,000 lbs.	Single Wheel – 120,000 lbs. Dual Wheel – 171,000 lbs. Double Tandem Wheels – 279,000 lbs. Dual Double Tandem – 691,000 lbs.
Threshold Displacement	(17L) 0 ft (35R) 0 ft	(17R) 0 ft (35L) 0 ft	(13) 0 ft (31) 356 ft
Visual Approach Slope Indicator (VGSI)	(17L) Prec. Approach Path Indicator (35R) Prec. Approach Path Indicator	(17R) Prec. Approach Path Indicator (35L) Prec. Approach Path Indicator	(13) Prec. Approach Path Indicator (31) Prec. Approach Path Indicator
Edge Lighting	HIRL	HIRL	MIRL
Approach Lighting	(17L) MALSR (35R) NA	(17R) NA (35L) MALSR	(13) NA (31) NA
Other Runway Lighting	(17L) NA (35R) REILs	(17R) REILs (35L) NA	(13) REILs (31) REILs
Runway Design Code (RDC)	C-IV	C-IV	C-IV
Critical Aircraft	B757-200	B757-200	C130

Source: FAA 5010, 2018 COS Airport Layout Plan

**Taxiways** Taxiways are paved areas used by airplanes to move from one part of an airfield to another. A taxiway’s primary function is to provide access between terminal/hangar facilities and the runways. There are two general types of taxiways: parallel and connector. Taxiways that are located parallel to runways generally provide a route for aircraft to reach a runway end. Connector taxiways, which can connect runways to parallel taxiways, provide paths for aircraft to enter the runway for departure or leave the runway after landing. Some connector taxiways are at a right angle to the runway while others are at an acute angle to provide high-speed accessibility. Connector taxiways also provide a means for aircraft to move among the various airside components of an airport including aircraft hangar and storage areas, fueling area, and aircraft parking and aprons. Note that taxiways are generally identified by letters.

COS has a comprehensive taxiway system that meets taxiway design group 5 standards and provides access between the three main ramp areas and the three runways. The taxiway system is shown in **Figure 2-3** and detailed information about each taxiway is below in **Table 2-9**.

**Table 2-9: COS Taxiway Details**

Taxiway ID	Type	Width	Condition
A	Full Parallel	75 ft	Good/Satisfactory/Very Poor
B	Full Parallel	75 ft	Fair/Poor
C	Full Parallel	75 ft	Good/Satisfactory
E	Full Parallel	75 ft	Good/Satisfactory
F	Connector	75 ft	Good/Fair
G	Connector	75 ft	Good
H	Connector	75 ft	Good/Satisfactory
M	Connector	100 ft	Good
N	Connector	100 ft	Good
P	Connector	100 ft	Good

Source: 2018 APMS, 2018 Airport Layout Plan

It is important to recognize that COS has four “hot spots.” The FAA defines hot spots as problematic areas (as it relates to runway safety) that present increased risk to aircraft during surface operations. Typically, a hot spot is a complex or confusing taxiway/taxiway or taxiway/runway intersection. The area of increased risk has either a history of, or potential for, runway incursions or surface incidents due to a variety of causes, such as airport layout, traffic flow, airport marking, signage and lighting, situational awareness, and training. Hot spots are depicted on airport diagrams until such time the increased risk has been reduced or eliminated. Following are the four COS hot spots as defined by FAA (see also **Figure 2-3** for their specific locations):



- *Hot Spot 1 (HS 1) Runway threshold 13 and 17R are next to each other; wrong runway departure and landing potential. Runway 17R connector Taxiway B1; tower line of sight limited. Maintain close communication with ATCT when in this area.*
- *Hot Spot 2 (HS 2) Intersection of Taxiway A4 and Taxiway G at Runway 17R-35L: “High volume” crossing point.*
- *Hot Spot 3 (HS 3) Large concrete area at the intersection of Taxiway E4, Taxiway G, Taxiway H and Taxiway E. High risk of entering wrong taxiway.*
- *Hot Spot 4 (HS 4) The approach ends of Runway 35R and Runway 35L are very far from the control tower. Small aircraft may not be readily visible to the controller. Maintain strict communication with ATCT when in this area.<sup>2</sup>*

**Aprons** An aircraft apron is used for aircraft movement, positioning, storage, tiedowns, and fueling, and vehicle movement and parking. COS has aircraft apron areas on the south (commercial terminal area), on the west (general aviation/air cargo area), and the north (military area) sides of the Airport. Approximate paved areas for each of the aprons include 1.9 million square feet on the south apron, 580,000 square feet on the west apron, and 2.5 million square feet on the north apron. The south apron, which accommodates aircraft serving the commercial airline terminal, can currently accommodate 12 narrowbody jet aircraft at existing gates, with additional parking space for another 16 narrowbody jets not at gates. The north apron near Peterson Space Force Base is only for military aircraft use.

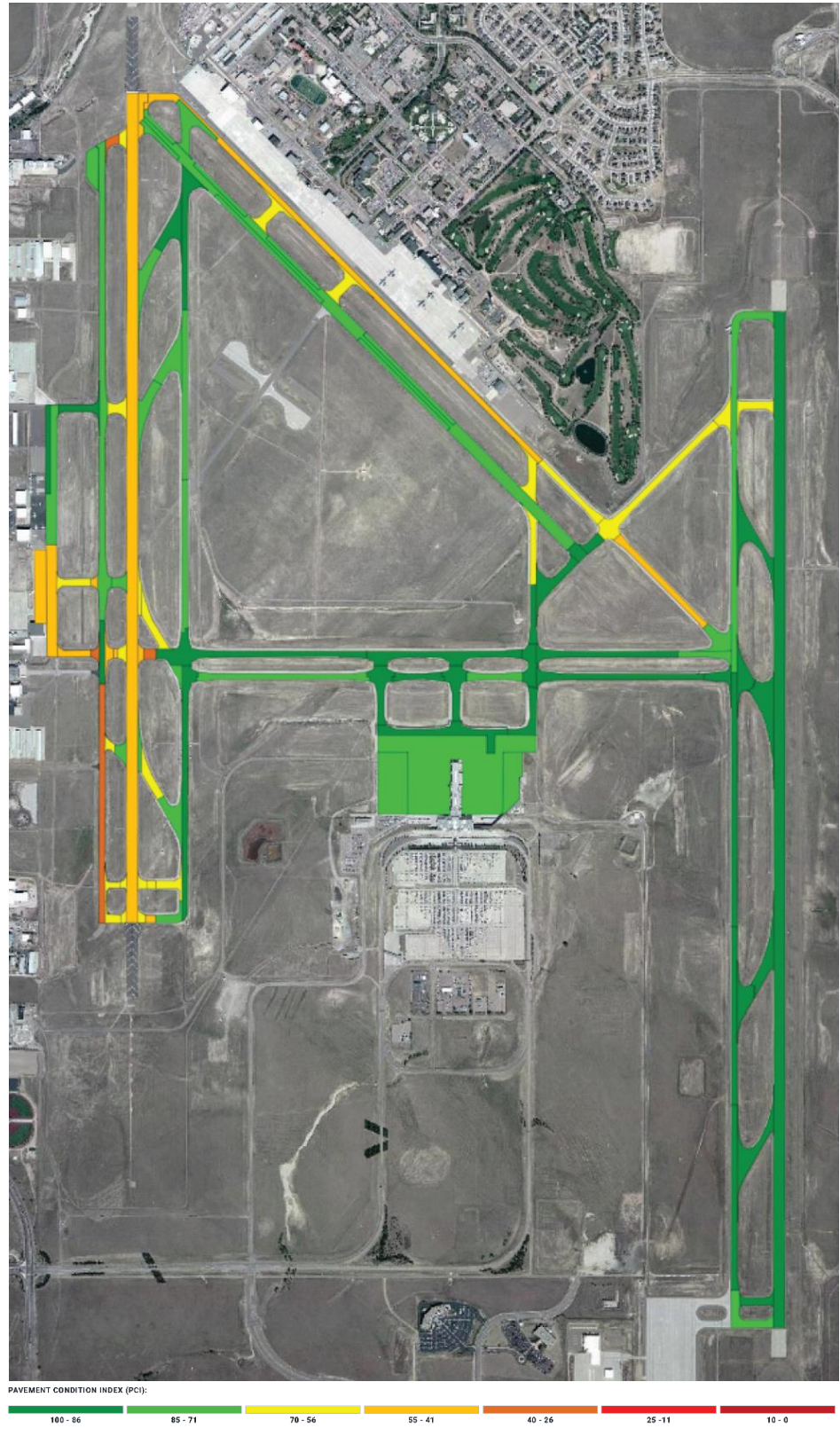
With respect to the general aviation apron, it should be noted that transient general aviation aircraft typically prefer power-in/power-out parking versus nested tiedowns that requires physically moving (e.g., by hand or by tug) an aircraft into and out of each parking position. Power-in/power-out parking requires more space on an apron than nested tiedowns due to the need for additional taxilanes and space between aircraft parking spots. COS has both types of aircraft parking available.

**Pavement Condition** FAA AC 150/5380-6B, *Guidelines and Procedures for Maintenance of Airport Pavements*, recommends a detailed pavement inspection that follows the American Society for Testing and Materials (ASTM) D5340, *Standard Test Method for Airport Pavement Condition Index Surveys*. A detailed pavement inspection employs a visual rating system for pavement distress. The condition and strength values are summarized in the Pavement Condition Index (PCI). The PCI scale ranges from a value of zero (representing a pavement in failed condition) to a value of 100 (representing a pavement in excellent condition).

<sup>2</sup> FAA Runway Safety - Hot Spots List

The CDOT Division of Aeronautics 2020 Airport Pavement Management System (APMS) shows that the pavement surfaces at COS range from a PCI of 85-100 (good) to 26-40 (very poor). **Figure 2-4** illustrates the PCI of pavement at COS following a 2018 inspection. COS's overall airfield pavement is considered to be in "satisfactory" condition with a weighted airport PCI of 77. COS's lowest PCI values, indicating pavement in "very poor" condition, are limited to a relatively small area dedicated to parallel taxiways and connectors. It should be noted that Runway 17R/35L was overlaid in 2021, which is not reflected in this graphic.

Figure 2-4: Pavement Condition Index Map



Source: Applied Pavement Technology, CDOT Division of Aeronautics

**Airfield Lighting**     *Airport Identification Lighting*

A rotating beacon identifies the location of the Airport at night and during periods of poor visibility. This beacon projects alternating green and white beams from dusk to dawn. When activated during daylight hours, the beacon signals Instrument Flight Rule (IFR) conditions. The COS rotating beacon is located on the airfield, next to the electrical vault and Taxiway M.

**Runway Lighting**

Runway lighting aids are necessary to provide pilots with critical takeoff and landing information concerning runway alignment, lateral displacement, rollout operations, and runway distance remaining. COS’s existing runway lighting capabilities are detailed in **Table 2-10**.

Runway edge lights are used to outline the edges of runways during periods of darkness or restricted visibility conditions. Both Runway 17L-35R and Runway 17R-35L are outfitted with High Intensity Runway Lights (HIRL), while Runway 13-31 is equipped with Medium Intensity Runway Lights (MIRL).

A Precision Approach Path Indicator (PAPI) is a series of lights that provide visual guidance during a runway approach. Four-light PAPI systems are installed on all six runway ends. Additionally, Runway 17L and Runway 35L are equipped with a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR). Note that approach light systems are designed to provide pilots with the basic means of transitioning from instrument flight to visual flight during landing.

Runway End Identifier Lights (REILs) are high intensity white strobe lights located on each side of the runway threshold to enable rapid identification of the runway threshold, particularly at night and during periods of poor visibility. Runway 35R, Runway 17R, Runway 13, and Runway 31 are equipped with REILs.

**Table 2-10: COS Runway Lighting**

Lighting	Runway 17L	Runway 35R	Runway 17R	Runway 35L	Runway 13	Runway 31
Approach Lighting	MALSR	-	-	MALSR	-	-
Runway Edge Lighting	HIRL	HIRL	HIRL	HIRL	MIRL	MIRL
Centerline Lights	Yes	Yes	-	-	-	-
Visual Approach Slope Indicator (VGSI)	PAPI	PAPI	PAPI	PAPI	PAPI	PAPI
Other Lighting	-	REIL	REIL	-	REIL	REIL

Source: FAA 5010

### *Taxiway Lighting*

Taxiway lights provide visual guidance to pilots and ground service/maintenance vehicles accessing the taxiway at night or in low visibility conditions. COS has Medium Intensity Taxiway Light (MITL) systems installed along the edge of all taxiways to guide aircraft between the runway to the apron areas.

### *Other Visual Aids*

Additional visual aids and instrumentation at COS assist pilots in arriving or departing. The Airport's integrated wind cone provides pilots with traffic pattern and wind direction/velocity information. This equipment is located near the central area of the airfield, just west of Taxiway M and south of Runway 31.

Signage provides guidance and identifies essential facilities and locations on an airport. Airfield signage gives pilots visual guidance information for all phases of movement on the airfield. COS is equipped with FAA-compliant signs that include instruction, location, direction, destination, and information signs.

### **Automated Terminal Information System (ATIS) and Automated Surface Observation System (ASOS)**

The Airport maintains an Automatic Terminal Information System (ATIS), which includes weather information provided by an Automated Surface Observing Systems (ASOS) program. The ASOS is owned and maintained by the FAA, and serves as the nation's primary surface weather observation network. It is designed to facilitate weather forecast activities and aviation operations while supporting the needs of the meteorological, hydrological, and climatological research communities. The ASOS at COS is located in the northeast portion of the airfield, just west of Taxiway E and south of Taxiway F. The system provides on-site weather data collection and reporting capabilities. The ATIS transmits the airport name, a phonetic letter code, weather data, and other remarks to pilots on a frequency of 125.0 MHz and is also available by telephone (719-380-6748).

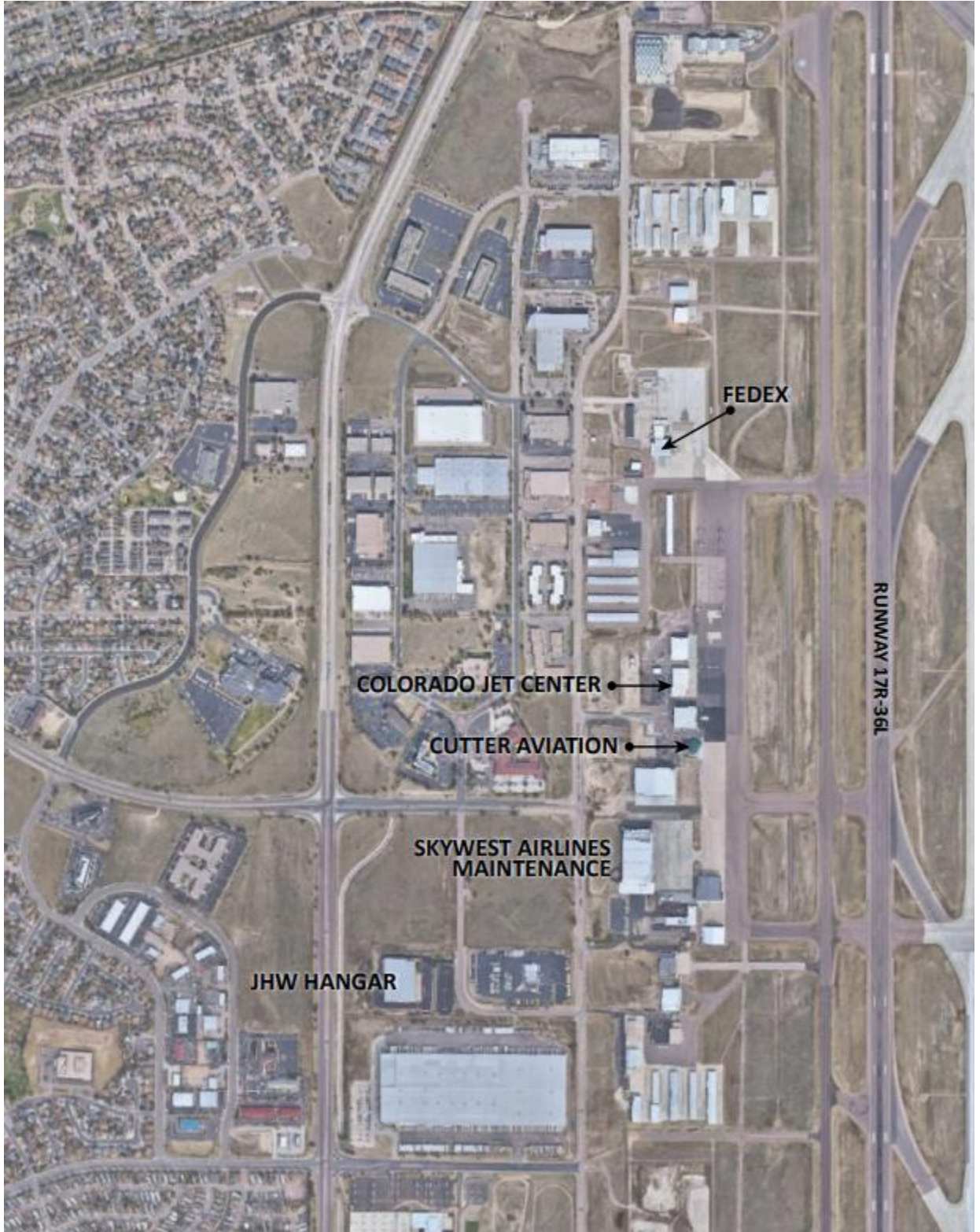
## **Landside Facilities**

Landside development at the Airport is generally divided into three primary development areas, located on the west, the south, and the east sides. These areas are all in different stages of development, each with unique attributes and intended users. The west side area features existing general aviation and air cargo facilities; the south side features current aviation-related business tenants and the Peak Innovation Park; and the east side features greenfield development opportunities with limited existing improvements. Separately, Peterson SFB operates on the north side of the Airport and occupies all landside development area in that area.

COS's Development Areas are represented in **Figure 2-5**, **Figure 2-6**, and **Figure 2-7** and are described in the following sections.



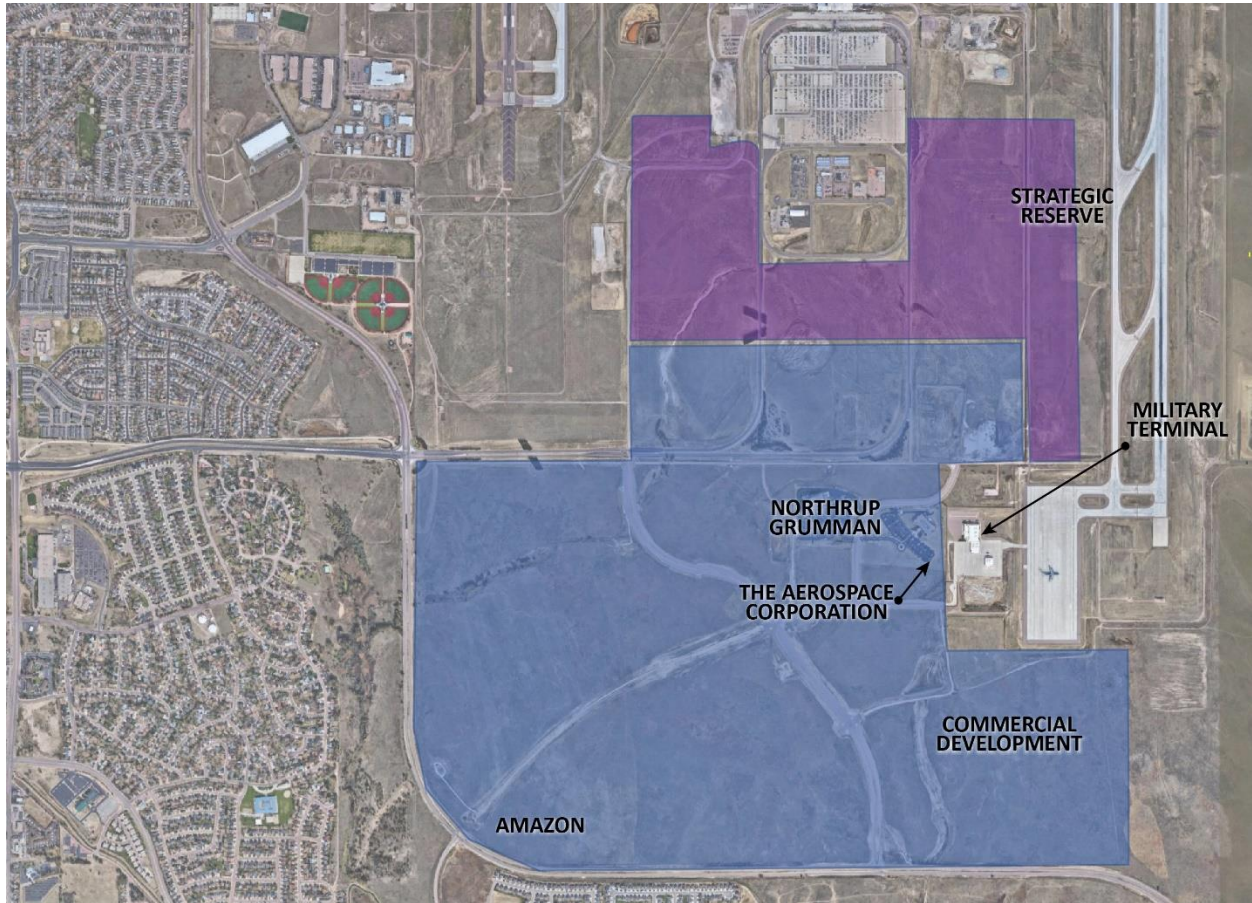
Figure 2-5: COS West Side Development Area



Source: Jviation, a Woolpert Company

Development on the west side of the airport consists primarily of aircraft hangars, airport-reliant businesses, and air cargo facilities. Construction of buildings and access has occurred over many years, often in an ad hoc manner, as is typical at most airports.

**Figure 2-6: COS South Side Development Area**



Source: Jviation, a Woolpert Company

The Peak Innovation Park occupies most of the south side development area. The Park provides greenfield construction opportunities for businesses to locate near the Airport. This portion of airport property does not have direct access to the airfield and is primarily directed at aviation-adjacent businesses including defense contractors, hotels, and logistics companies.



Figure 2-7: COS East Side Development Area



Source: Jviation, a Woolpert Company

The east side development area has experienced little development to date. The northern section of this site contains parcels supporting Peterson SFB and a section dedicated to fuel storage for the Airport and the region. There remains a large amount of undeveloped land available for new aviation-related construction and/or non-aeronautical development.

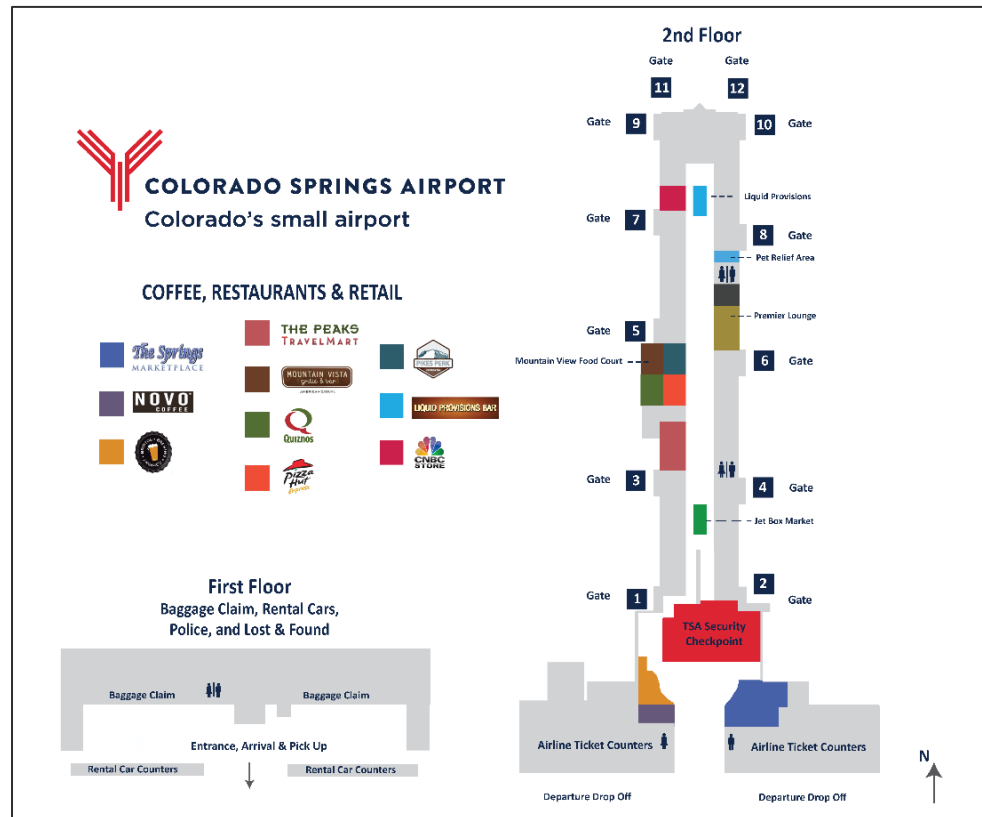
**Commercial  
Terminal Building**

Constructed in 1994, the Colorado Springs Airport’s commercial terminal building has three levels and a total of approximately 314,000 square feet. An eastern branch of the terminal was constructed in 1996 but (East Terminal Unit – ETU) is now primarily used for other purposes.

The second floor of the main passenger terminal is the departures level and accommodates airline ticket counters and offices, as well as concessions including a retail facility and two restaurants. Other departure level areas include the TSA screening facility, departure hold rooms, airport administrative offices, building operations and storage, and restrooms. The arrivals level is located on the first floor and includes the baggage claim lobby and rental car counters for Alamo, Avis, Budget, Enterprise, Hertz, and National. The third floor is primarily dedicated to airport administrative offices.

The main terminal concourse has 12 aircraft gates with passenger boarding bridges. As of October 2021, five airlines operate at the Airport: American Airlines, Delta Air Lines, Frontier Airlines, Southwest Airlines, and United Airlines. Several retail and restaurant vendors currently operate within the main terminal concourse. **Figure 2-8** illustrates current concourse tenants as of October 2021, while **Table 2-11** presents the terminal’s functional areas in terms of square footages.

**Figure 2-8: COS Terminal Building Layout**



Source: Colorado Springs Airport

**Table 2-11: Commercial Terminal Areas**

Functional Area	Terminal Area	Area (sq ft)
Airline Operations	Departures Level	63,900
Airline Operations	Arrivals Level	30,700
Airport Administration	Departures Level	2,800
Airport Administration	Arrivals Level	3,900
Airport Administration	3 <sup>rd</sup> Floor	10,500
Baggage Claim	Arrivals Level	15,300
Baggage Handling	Arrivals Level	21,100
Building Operations	Departures Level	5,800
Building Operations	Arrivals Level	27,400
Building Operations	3 <sup>rd</sup> Floor	3,500
Concession	Departures Level	19,700
Concession	Arrivals Level	3,700
TSA	Departures Level	4,700
TSA	Arrivals Level	4,200
Public Space/Circulation	Departures Level	73,600
Public Space/Circulation	Arrivals Level	23,400

Source: Colorado Springs Airport

\*Departures Level includes East Terminal space.

**Airport Traffic Control Tower (ATCT)**

The COS Airport Traffic Control Tower (ATCT) is an FAA facility that operates continuously on a 24-hour schedule. The tower is centrally located on the airfield, just north of Runway 13-31 within the boundary of Peterson SFB.

**Aircraft Rescue and Fire Fighting Facilities (ARFF)**

COS has two Aircraft Rescue and Fire Fighting (ARFF) facilities, both of which are located within the boundary of Peterson SFB and are operated by the U.S. Space Force. Services provided by the facilities include first response medical emergency support, aircraft crash rescue capabilities, and structural and brush fire support. The ARFF has an FAA Index C classification, which is appropriate for an airport with regular operations by aircraft having lengths of 158 feet or less.

**Airport Buildings and Hangars**

COS has a wide variety of buildings located on the Airport that serve a range of purposes. Many of the structures on the Airport are related to air cargo, general aviation, commercial air service, or military applications. Note that many of these buildings are aircraft hangars (enclosed structures for the parking, servicing, and maintenance of aircraft) designed to protect aircraft from adverse weather conditions such as wind, snow, hail, ice, sun, and rain. COS currently has nearly 615,000 square feet of hangar space (e.g., corporate hangars, box hangars, and T-hangars), with other structures being utilized for purposes not dedicated to aircraft storage (e.g., office, general storage, business areas, etc.). See **Table 2-12** for a listing of COS buildings and hangars, and **Figure 2-9** for their locations. All hangars are privately-owned but lease their land from the Airport.

There are currently two hangars supporting airline maintenance: a 100,000 square-foot hangar facility for SkyWest Airlines and a 23,300 square-foot hangar for other airlines. Both facilities are located on the west side of the Airport.

The Airport’s aircraft hangars are classified as either T-hangars or box (or conventional) hangars. T-hangars are a series of interconnected hangars with footprints in the shape of a “T” that can store one single- or multi-engine aircraft in each unit. COS currently has four T-hangar structures (a total of 294,400 square feet) that have space to accommodate a total of 175 aircraft. Box hangars, also known as conventional or corporate hangars, have a square or rectangular footprint that accommodate a wide range of aircraft storage needs, from one single-engine aircraft, to multiple corporate jets. There are currently 14 box hangars (a total of 321,200 square feet) on the Airport that range in size from 10,800 to 100,000 square feet.

**Table 2-12: Building and Hangar Data**

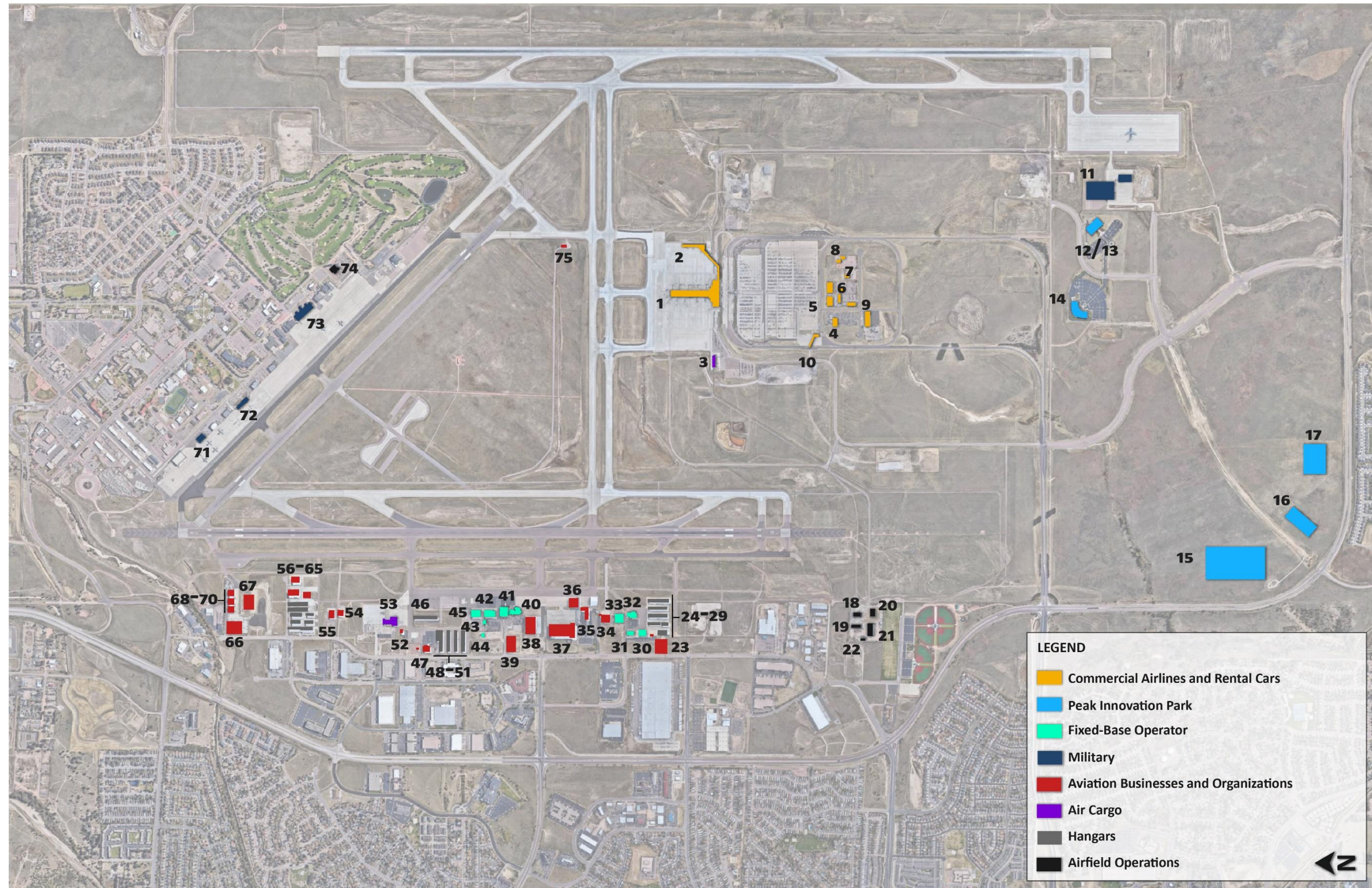
Identification	Current Tenant(s)	Building Address
1	Passenger Terminal	7770 Milton E. Proby Pkwy
2	East Terminal Unit (ETU)	7770b Milton E Proby Pkwy
3	Air Cargo Building	2420 Peak Innovation Pkwy
4	Hertz Rental Car Service Center	7736 Milton E. Proby Pkwy
5	Avis Rental Car Service Center	7740 Milton E. Proby Pkwy
6	Vacant	7744 Milton E. Proby Pkwy
7	Enterprise Rental Car Service Center	774 Milton E. Proby Pkwy
8	Alamo/National Rental Car Service Center	7752 Milton E. Proby Pkwy
9	Vacant	7704 Milton E. Proby Pkwy
10	Toll Plaza	7760 Milton E. Proby Pkwy
11	A/DACG Facility	7330 Embraer Heights
12	Aerospace	7250 Getting Heights
13	Aerospace	7246 Getting Heights
14	Northrop Grumman	3535 Northrop Grumman Point
15	Amazon	4222 Integration Loop
16	Amazon	4303 Grinnell Blvd.
17	Amazon	4333 Integration Loop
18	Airfield Maintenance Facility, Building A	5750 Milton E. Proby Pkwy
19	Airfield Maintenance Facility, Building B	5730 Milton E. Proby Pkwy
20	Airfield Maintenance Facility, Building C	5710 Milton E. Proby Pkwy
21	Airfield Maintenance Facility, Building D	5720 Milton E. Proby Pkwy
22	Airfield Maintenance Facility, Storage Building	5740 Milton E. Proby Pkwy
23	Sierra Nevada Corporation	2121 Aviation Way
24	JHW Investment Company	2049 Aviation Way
25	JHW T-Hangars	2143 Aviation Way
26	JHW T-Hangars	2147 Aviation Way
27	JHW T-Hangars	2149 Aviation Way
28	JHW T-Hangars	2151 Aviation Way
29	JHW T-Hangars	2153 Aviation Way
30	JHW Hangar	1947 Aviation Way

Identification	Current Tenant(s)	Building Address
31	JHW Hangar	N/A
32	JHW Investment Company (Rampart Aviation)	1777 Aviation Way
33	JHW Investment Company (Rampart Aviation)	1727 Aviation Way
34	Cordillera Corporation	1719 Aviation Way
35	Sierra Nevada Corporation	1711 Aviation Way
36	Sierra Nevada Corporation	1707 Aviation Way
37	Skywest Airlines Maintenance Facility	1697 Aviation Way
38	Sierra Nevada Corporation	5751 Camber View
39	Sierra Nevada Corporation	5723 Camber View
40	Cutter Aviation	5763 Camber View
41	Cutter Aviation Hangar	5771 Camber View
42	Colorado jetCenter	1575 Aviation Way
43	Colorado jetCenter Storage Building	N/A
44	Pump House	N/A
45	Colorado jetCenter Hangar	N/A
46	Colorado jetCenter T-Hangars	N/A
47	Five Star Aviation	1360 Aviation Way
48	Five Star Aviation T-Hangars A	N/A
49	Five Star Aviation T-Hangars B	N/A
50	Five Star Aviation T-Hangars C	N/A
51	Five Star Aviation T-Hangars D	N/A
52	Colorado Division of Wildlife Hangar	1280 Aviation Way
53	FedEx	1245 Aviation Way
54	JC Aviation (Direct Connect Flight Academy)	1055 Aviation Way
55	Colorado Springs Police Department Hangar	950 Aviation Way
56	COS Owners Association	905 Aviation Way
57	COS Owners Association Hangar	5705 Taxi Way
58	COS Owners Association Hangar	5715 Taxi Way
59	COS Owners Association Hangar	5725 Taxi Way
60	COS Owners Association Hangar	5735 Taxi Way
61	Eclipse Movement, LLC	5745 Taxi Way #140
62	COS Owners Association Hangar	5755 Taxi Way
63	Trine Aerospace	5765 Taxi Way
64	COS Owners Association Hangar	5775 Taxi Way
65	COS Owners Association Hangar	5795 Taxi Way
66	National Museum of WWII Aviation, Inc.	755 Aviation Way
67	National Museum of WWII Aviation, Inc.	765 Aviation Way
68	National Museum of WWII Aviation, Inc. B1	N/A
69	National Museum of WWII Aviation, Inc. B2	N/A
70	National Museum of WWII Aviation, Inc. B3	N/A
71	Peterson SFB Aero Club, H133	N/A
72	Peterson SFB, Base Operations	N/A
73	Peterson SFB, 302 <sup>nd</sup> Airwing, H210	N/A
74	FAA Air Traffic Control	460 Kinchloe Loop
75	Airfield Lighting Vault	N/A

Source: Colorado Springs Airport



Figure 2-9: COS Building and Hangar Location



Source: Colorado Springs Airport; Jviation, a Woolpert Company



### Fixed Base Operators (FBO)

Airports must provide a wide range of services to meet the varied demands of its individual market area. These demands are frequently accommodated by an on-airport fixed base operator (FBO) that provides a variety of aeronautical services for pilots, aircraft, and passengers. FBO services at COS are offered by three separate entities: Cutter Aviation, LLC; Colorado jetCenter; and JHW Hangar Complex. All three full-service FBOs are located on the west side of the Airport with standard business hours and after-hours capabilities. Specific services offered by the FBOs include the following:

- Aircraft fueling
- Corporate and general aviation services
- Courteous, professional line service
- Aircraft maintenance and repair (including avionics)
- Ramp side vehicle service
- Customs and immigration/foreign nationals
- On-site international regulated/garbage removal
- Heated hangars
- Aircraft parking: short and long term
- Courtesy crew car
- Ground transportation/rental cars
- Passenger and pilot lounge
- Flight planning and weather room
- Long and short-term vehicle parking
- Catering
- Hotel reservations
- Ground power units/lavatory services

### Fuel and Deicing Facilities

COS's primary fuel storage facility (fuel farm) is located between the commercial terminal and Runway 17L-35R. Note that this fuel farm is directly supplied by the NuStar Terminal and Pipeline facility located in the Airport's east side development area. This facility provides fuel receiving, storage, and distribution services for the Airport and the region. **Table 2-13** and **Table 2-14** provide information on fuel storage facilities at the Airport. NuStar storage information is not included in these tables.

The west development area has separate aircraft fuel storage facilities at FBO tenant sites including Cutter Aviation, LLC; Colorado jetCenter, and the JHW Hangar Complex. There are also aircraft fuel tanks with Jet A and 100LL fuel located in the COS Business Airpark.



Fuel is delivered to all transient and based aircraft via two 3,000-gallon Jet-A fuel trucks, and two 1,000-gallon 100LL fuel trucks. Fuel services are provided during standard business hours but can be extended through advance notification.

**Table 2-13: Aircraft Fuel Storage**

Owner	Location	Tank Type	Fuel Type	Capacity (Gallons)	Year Installed
Colorado jetCenter	Fuel Farm	Aboveground	Jet A	50,000	1995
Colorado jetCenter	Fuel Farm	Aboveground	Jet A	50,000	1995
Colorado jetCenter	Fuel Farm	Aboveground	Jet A	50,000	1995
Colorado jetCenter	Fuel Farm	Aboveground	Jet A	50,000	1995
Colorado jetCenter	Colorado jetCenter	Aboveground	100LL	20,000	1998
Colorado Springs Police	Colorado Springs Police	Aboveground	Jet A	4,000	2001
Cutter Aviation	Cutter Aviation	Aboveground	Jet A	25,000	2016
Cutter Aviation	Cutter Aviation	Aboveground	Jet A	25,000	2016
Cutter Aviation	Cutter Aviation	Aboveground	100LL	12,000	2016
JHW Hangar	JHW Hangar	Underground	Jet A	12,000	1984
JHW Hangar	JHW Hangar	Underground	Jet A	12,000	1984
JHW Hangar	JHW Hangar	Underground	100LL	10,000	1984
COS Fuel Depot LLC	COS Business Airpark	Aboveground	100LL	12,000	2008
COS Fuel Depot LLC	COS Business Airpark	Aboveground	Jet A	12,000	2008

Source: Colorado Springs Airport

Several sites at the Airport also store fuel for vehicles and airport equipment. Most of these are located at the rental car facility while others are located elsewhere around the airfield.

**Table 2-14: Equipment and Vehicle Fuel Storage**

Owner	Location	Tank Type	Fuel Type	Capacity (Gallons)	Year Installed
Colorado jetCenter	Fuel Farm	Aboveground	Unleaded	10,000	1996
Alamo National	Rental Car Facility	Underground	Unleaded	12,000	1995
Avis	Rental Car Facility	Underground	Unleaded	12,000	1995
Avis	Rental Car Facility	Underground	Unleaded	12,000	1995
Hertz	Rental Car Facility	Underground	Unleaded	10,000	1994
COS Administration	Rental Car Facility	Underground	Unleaded	10,000	1994
COS Administration	Fueling Facility	Underground	Unleaded	2,000	1990
COS Administration	Fueling Facility	Underground	Diesel	10,000	1990
COS Administration	Emergency Generator	Aboveground	Diesel	2,500	1994
COS Administration	Emergency Generator	Aboveground	Diesel	2,500	1994
COS Administration	Lighting Vault	Aboveground	Diesel	1,000	1992

Source: Colorado Springs Airport

Deicing fluid is stored in three locations around the Airport, with two types of fluid in use (Type I and Type IV). Fluid is stored and distributed by Integrated Deicing Services (IDS) and Airport Terminal Services (ATS), and Southwest Airlines. **Table 2-15** lists deicing fluid storage types and capacities at COS.

**Table 2-15: Deicing Fluid Storage**

Owner/Location	Fluid Type	Capacity (Gallons)
IDS	Type I – Concentrate	40,000
IDS	Type I – Blended	10,000
IDS	Type IV	22,000
ATS	Type I	6,500
ATS	Type IV	5,000
Southwest Airlines	Type I	12,000
Southwest Airlines	Type IV	6,000

Source: Colorado Springs Airport

Note that fluid from the deicing process is diverted from the drainage system and stored in a glycol solution holding pond located west of the terminal area and east of the Runway 35L approach end. The solution in the holding pond is typically transferred once per year to a pretreatment pond where it is treated according to the wastewater discharge permit and discharged into the sanitary sewer.

**Air Cargo** The Airport maintains two air cargo facilities: a belly cargo facility for passenger airlines and a facility capable of serving air cargo airlines. The belly cargo area is located west of the terminal facility for easy access by airline staff and ground handlers. FedEx currently occupies one of the dedicated cargo facilities and is located on the north end of the general aviation ramp area.

**Non-Aviation-Related Development Areas**

Airports that have properties not reasonably accessible for aviation-related purposes will often lease those properties to non-aviation-related development. This practice generates additional revenue streams for the airport and promotes financial sustainability. It is important to note that airports that have accepted federal grants through the AIP must sign grant assurances that commit the airport to developing airport properties for aviation-related purposes unless those properties are specifically released from that obligation by the FAA. Additionally, those properties may be sold or leased for FAA approved time periods, must be leased at fair market value, and income from those sales and leases must remain on the airport.

The Airport controls land as part of the 900-acre Peak Innovation Park and has sold or leased parcels to support business development that provides economic development and revenue for the Airport. The retail giant Amazon, for example, has invested millions of dollars in constructing facilities that bolster their operations in Colorado Springs.

## Airport Support Facilities

### Snow Removal Equipment (SRE) / Airfield Maintenance Structure

An airport requires a wide range of equipment to support its continued safe and efficient operations. Airfield maintenance can include grass cutting, pavement crack sealing, brush/tree removal, building maintenance, fence/gate repair, etc. Snow Removal Equipment (SRE) is specialized to quickly clear runway, taxiways, and aprons during snow events. All equipment requires regular maintenance and should be stored inside a covered facility to avoid long-term exposure to weather. A complete listing of the Airport's current SRE and select airfield maintenance equipment and age is provided in **Table 2-16**.

Additionally, COS has five separate buildings located on the southwest portion of the Airport that serve as airport vehicle maintenance and storage facilities. Collectively, these buildings comprise approximately 50,000 square feet of indoor space. There is additional outdoor space used for vehicle storage at these locations on the airfield.

**Table 2-16: COS SRE/Airfield Maintenance Equipment**

Year	Manufacturer	Equipment Type
<b>Plows</b>		
2019	Western Star	24' Root Plow
2019	Western Star	24' Root Plow
2015	Mercedes-Benz	27' Folding Plow
2013	Western Star	24' Root Plow
2013	Western Star	24' Root Plow
2013	Western Star	24' Root Plow
2013	Western Star	24' Root Plow
2013	Western Star	24' Root Plow
2011	International	24' Root Plow
2000	Sterling	22' Root Plow
2000	Sterling	22' Root Plow
2001	Oshkosh	20' Root Plow
1997	Oshkosh	20' Root Plow
1989	Oshkosh	22' Root Plow
<b>Blowers</b>		
2012	Oshkosh	High Speed Blower
2010	Oshkosh	High Speed Blower
1998	Oshkosh	High Speed Blower
1997	Stewart & Stevenson	High Speed Blower
<b>Brooms</b>		
2019	MB	22' Tow-Behind Broom
2019	MB	22' Tow-Behind Broom
2016	Overaasen	24' Tow-Behind Broom
2016	Overaasen	24' Tow-Behind Broom
2016	Overaasen	24' Tow-Behind Broom
2015	Overaasen	24' Tow-Behind Broom
2009	MB	20' Tow-Behind Broom

Year	Manufacturer	Equipment Type
2009	MB	20' Tow-Behind Broom
2009	MB	20' Tow-Behind Broom
2009	MB	20' Tow-Behind Broom
2003	MB	18' Tow-Behind Broom
2001	Oshkosh	20' Front-Mount Broom
1996	Oshkosh	20' Front-Mount Broom
<b>Deicing Equipment</b>		
2019	Western Star	Batts – Liquid Deicer (75' Boom)
1990	Autocar	Swenson Spreader – Solid Deicer
<b>Miscellaneous</b>		
2015	Halliday	Constant Friction Measuring Equipment
2012	CAT	Loader
2012	CAT	Loader

Source: Colorado Springs Airport

### Airport Access Roadways and Auto Parking

Accommodations for automobile traffic and parking are important considerations for an Airport Master Plan as they facilitate ease of access for airport users and enhance the customer service experience. COS users access the commercial terminal from the south and west via Milton E. Proby Parkway while general aviation users can access the landside building via several east-west connector streets that stem from U.S. Route 24 (S Powers Boulevard). Peterson SFB consists of the entire north side of the airport property and is accessed from U.S. Route 24 to the west and north, and Marksheffel Road to the east.

The commercial terminal building parking lots accommodate approximately 5,510 public parking spaces, with 716 spaces in the short-term lot and 3,919 in the long-term lot. An overflow lot containing 875 spaces is also available.

Employees park in one of four surface lots. The East Manager Lot provides 40 spots adjacent to the terminal building and is shared by Airport staff, airlines, rental car companies, concessionaires, and public safety agencies. The West Manager Lot provides 41 spaces shared by Airport staff and tenants. The West Auxiliary Lot is just west of the West Manager Lot and provides 193 spaces and is used by Airport staff, vendors, and ground handlers. Flight crews park in the long-term parking lot.

Rental car companies use a lot directly south of the terminal area for a Ready/Return area, while rental car service areas are further south along the airport entrance road.

A cell phone lot is available to the southeast of the terminal and provides space for approximately 60 vehicles.

A Master Traffic Impact Study related to the Peak Innovation Park was completed in May 2020. The study analyzed existing and future traffic volumes on roads serving the Airport and the Park. Recommended improvements at separate

planning years (2022, 2030, and 2045) were developed for 18 intersections. As part of this Master Plan, a detailed Regional Transportation Plan for the Airport is included in the Appendices.

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#### **Fencing**

Airport fencing is intended to prevent wildlife and unauthorized people from accessing airport property. COS's airfield is enclosed by an airport security fence of varying types and in various conditions. The terminal area is enclosed by an eight-foot chain link fence topped with barbed wire to enhance security near the hangars and aircraft. Aircraft aprons are accessible to pilots and tenants through controlled access system gates located at various points around the perimeter.

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#### **Peterson Space Force Base**

The Airport plays a major role in military operations, as the host to Peterson Space Force Base (SFB), and its proximity to other installations in the region. Peterson SFB occupies the northern portion of the airfield near Runway 13-31 and Taxiway B. Additional facilities are located east of Runway 17L-35R, but do not have airfield access.

Peterson SFB hosts the North American Aerospace Defense Command (NORAD), the Space Force's 21<sup>st</sup> Space Wing, the Space and Missile Systems Center, the United States Northern Command (USNORTHCOM) and the 302<sup>nd</sup> Airlift Wing (Reserve). An economic impact analysis issued in 2019 estimated that the base supports over 16,000 personnel with payroll of over \$570 million. Additional expenditures related to construction and operations were estimated at \$534 million. Separately, the study estimated that the base supports 4,218 jobs in the community with collective annual pay of over \$227 million. The total annual economic impact of the base was estimated at \$1.33 billion.<sup>3</sup>

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#### **Arrival/Departure Airfield Control Group Facility**

Located immediately west of the approach end of Runway 35R, the Arrival/Departure Airfield Control Group (A/DACG) facility was constructed in 2008 and is leased from the Airport by the Department of Defense to deploy military troops and equipment. A combination of commercial and military aircraft typically utilize the facility.

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<sup>3</sup> Peterson AFB Complex – Economic Impact Analysis FY19

## Airspace System/Navigation and Communication Aids

Colorado Springs Airport operates within the larger National Airspace System (NAS), which comprises a wide array of services, systems, and requirements for airports and pilots. The following sections provide an overview of key aspects of COS's operations within the National Airspace System (NAS).

- Air Traffic and Aviation Communications,
- the National Airspace System,
- Navigational Aids, and
- Part 77 Airspace Surfaces.

### Air Traffic and Aviation Communications

Within the continental United States, there are 22 geographic areas under Air Traffic Control (ATC) jurisdiction. Air traffic services within each area are provided by air traffic controllers in Air Route Traffic Control Centers (ARTCC). The ARTCCs provide air traffic service to aircraft operating on Instrument Flight Rules (IFR) flight plans within controlled airspace—primarily during the enroute phase of flight. Those aircraft operating under Visual Flight Rules (VFR) depend primarily on the "see and avoid" principle for separation and may also contact the ARTCC, or other ATC services, to request traffic advisory services. Traffic advisory service alerts pilots of known air traffic in the vicinity of, or within the flight path of, the aircraft. COS airspace operates within the Denver ARTCC jurisdiction. Denver ARTCC manages airspace ranging from southwest South Dakota to northeast Arizona, along with portions of Utah, New Mexico, Kansas, Nebraska, and Wyoming. COS can be found on the Denver sectional chart (**Figure 2-11**).

The Colorado Springs Terminal Radar Approach Control (TRACON) has jurisdiction over airspace in the Colorado Springs area. The Denver Center delegates control of airspace in the region to the Colorado Springs TRACON and is referred to by pilots as Colorado Springs Approach or Colorado Springs Departure control. The Colorado Springs TRACON is within the COS Airport Traffic Control Tower (ATCT).

Air traffic controllers primarily use computerized radar systems that are supplemented with two-way radio communications to direct aircraft. Altitude assignments, speed adjustments, and radar vectors are techniques used by controllers to ensure that aircraft maintain proper separation. The lateral and vertical separation criterion for aircraft used by controllers is as follows:

- Lateral Aircraft Separation: three miles (radar environment)
- Lateral Aircraft Separation: five miles (non-radar environment)
- Vertical Aircraft Separation: 1,000 feet (below 29,000 feet) and 2,000 feet (at or above 29,000 feet)

Traffic at COS is controlled by an Airport Traffic Control Tower (ATCT) located on the north side within property of the Peterson SFB. The ATCT is an FAA tower



staffed by controllers 24 hours a day, seven days a week. Aviation communication frequencies associated with COS are shown in **Table 2-17**.

**Table 2-17: COS Communication**

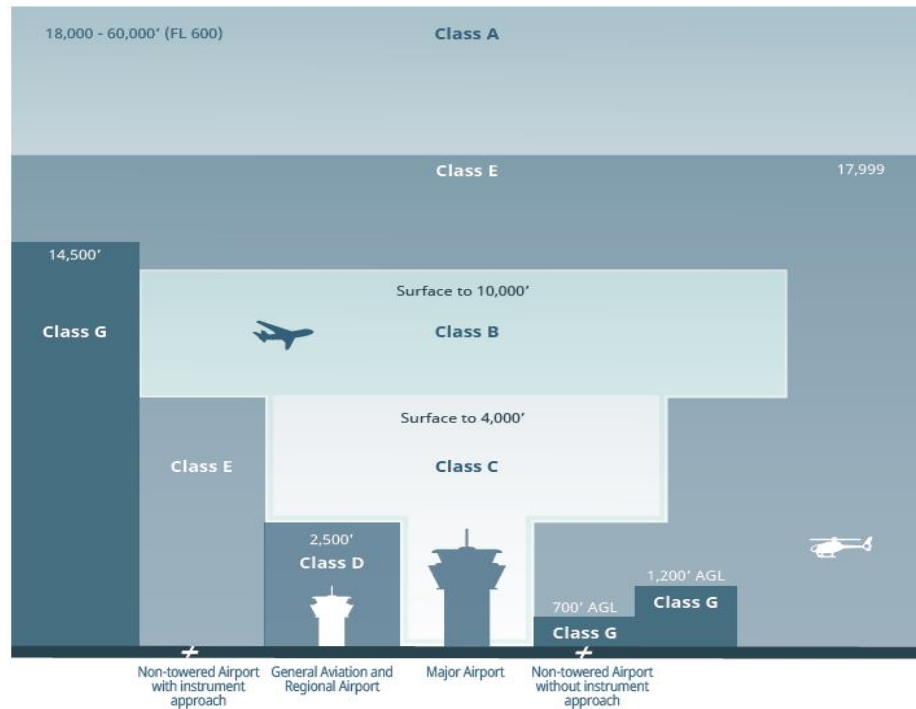
Communications Method	Frequency / Phone Number
UNICOM (Universal Communications)	122.95 MHz
Automatic Terminal Information System (ATIS)	125.0 MHz
Automated Surface Observation System (ASOS)	719-380-6748
Springs Ground	121.7 MHz
Springs Tower	119.9 MHz
Springs Approach and Departure	124.0 MHz
West Local	133.15 MHz
Clearance Delivery	134.45 MHz
Additional Approach Frequency	120.6 MHz

Source: FAA

**The National  
Airspace System  
(NAS)**

To ensure a safe and efficient airspace environment for all aspects of aviation, the FAA has instituted an airspace structure through the Federal Aviation Regulations (FAR) that establishes and regulates procedures for aircraft that use the NAS. This airspace structure provides two basic categories of airspace: controlled (classified as Class A, B, C, D, and E) and uncontrolled (classified as Class G). **Figure 2-10** below generally illustrates each airspace type.

**Figure 2-10: Airspace Classification Illustration**



Source: FAA

Further, FAR Part 71 and FAR Part 73 define these airspace classifications with the following characteristics:

- Class A airspace ranges from 18,000 feet mean sea level (MSL) up to Flight Level 600 (60,000 feet MSL). Unless authorized, all operation in Class A airspace is conducted under instrument flight rules.
- Class B airspace ranges from the surface to 10,000 feet MSL and surrounds the nation's busiest airports. An ATC clearance is required for all aircraft to operate in the area, and all aircraft that are so cleared receive separation services within the airspace.
- Class C airspace ranges from the surface to 4,000 feet MSL above airport elevation surrounding those airports that have an operational control tower, are serviced by a radar approach control, and have a certain number of IFR operations or passenger enplanements. Each aircraft must establish two-way radio communications with the respective ATC facility prior to entering the airspace and maintain those communications while within the airspace.
- Class D airspace ranges from the surface to 2,500 feet MSL above the airport elevation surrounding those airports that have an operational control tower. Unless otherwise authorized, each aircraft must establish two-way radio communications with the respective ATC facility prior to entering the airspace and maintain those communications while in the airspace.
- Class E airspace comprises all controlled airspace that is not Class A, B, C, or D. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. Only aircraft operating under IFR are required to be in contact with an ATC when operating within Class E airspace.
- Class G, or uncontrolled airspace, is the portion of airspace that has not been designated with any of the above classifications. It extends from the surface to the base of the overlying Class E airspace. Although an ATC has no authority or responsibility to control air traffic, pilots must still abide by visual flight rules (VFR) minimums in Class G airspace.

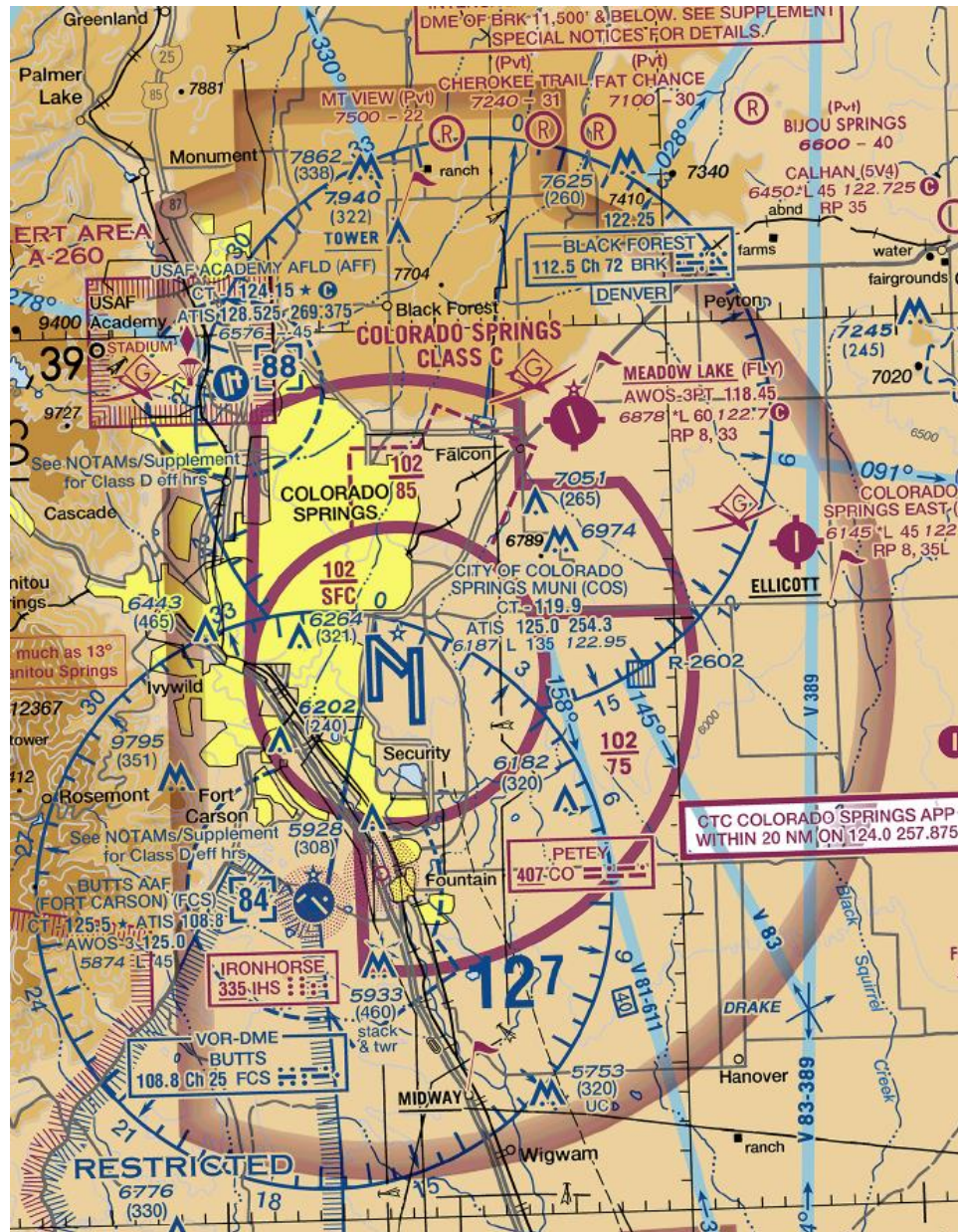
Pilots must obtain air traffic clearances when operating to and from COS in both IFR and VFR conditions. COS lies in Class C airspace, which extends up to 4,000 feet above the Airport's published elevation (extending to 10,200 MSL). **Figure 2-11** and **Figure 2-12** show a portion of the sectional aeronautical chart published by the FAA's National Aeronautical Charting Office for the airspace around COS.

The Denver Class B airspace lies approximately 30 nautical miles north of the Colorado Springs Airport. While the Airport is not located in the Class B airspace, its nearby presence can occasionally influence airport operations.

Several military operations areas (MOAs) and restricted areas are in the vicinity of the Airport and impact the availability of airspace for civilian use. Alert Area A-

260 is located around the United States Air Force Academy, located to the northwest, while Restricted Area R-2601 surrounds Fort Carson to the southwest. Two other alert areas, A-639A and A-639B are located east of the Airport. Three MOAs (Airburst X, Y and Z) are located southwest of the Airport. Further southwest is La Veta Low and High MOA. To the east of the Airport is the Cougar High and Low MOA.

Figure 2-11: COS Immediate Airspace



Source: Denver Sectional Chart, US Department of Commerce, National Oceanic and Atmospheric Administration



Figure 2-12: COS Vicinity Airspace



Source: Denver Sectional Chart, US Department of Commerce, National Oceanic and Atmospheric Administration

### Navigational Aids (NAVAIDS)

A variety of navigational facilities are currently available for use in the region by COS and other pilots. Many of these navigational aids (NAVAIDS) are available to enroute air traffic as well. Specifically, NAVAIDS currently available in the area include a Very High Frequency Omni-range Test (VOT) facility and an airport surveillance radar (ASR) system located on the Airport, two non-directional beacons (NDB), two Very High Frequency Omni-range (VOR)/Distance Measuring Equipment (DME) facilities, and a VOR/Tactical Air Navigation (VORTAC) facility. These NAVAIDS are listed in **Table 2-18**.

**Table 2-18: NAVAIDS in Proximity to COS**

Type	ID	Name	Frequency	Radial	Range
NDB	IHS	Ironhorse	335	010	8.0 nm
NDB	CO	Petey	407	358	6.7 nm
VOR/DME	BRK	Black Forest	112.5	193	8.9 nm
VOR/DME	FCS	Butts	108.8	007	8.0 nm
VORTAC	PUB	Pueblo	116.7	329	33.2 nm
VOT	COS	Colorado Springs	110.4	-	-

Source: Denver Sectional Chart, US Department of Commerce, National Oceanic and Atmospheric Administration

The Airport has two Standard Terminal Arrival Routes (STARs): DEBERRY FOUR and OZZZY FOUR. STARs are used by aircraft following an IFR flight plan to ease coordination with the ATCT while nearing arrival. OZZZY FOUR is also an area navigation arrival procedure for aircraft equipped with GPS.

There are 15 published instrument approaches at COS.

**Table 2-19** summarizes the approach and visibility minimums of these published approaches. **Figure 2-13** through **Figure 2-27** show the current approach plates for these published approaches.

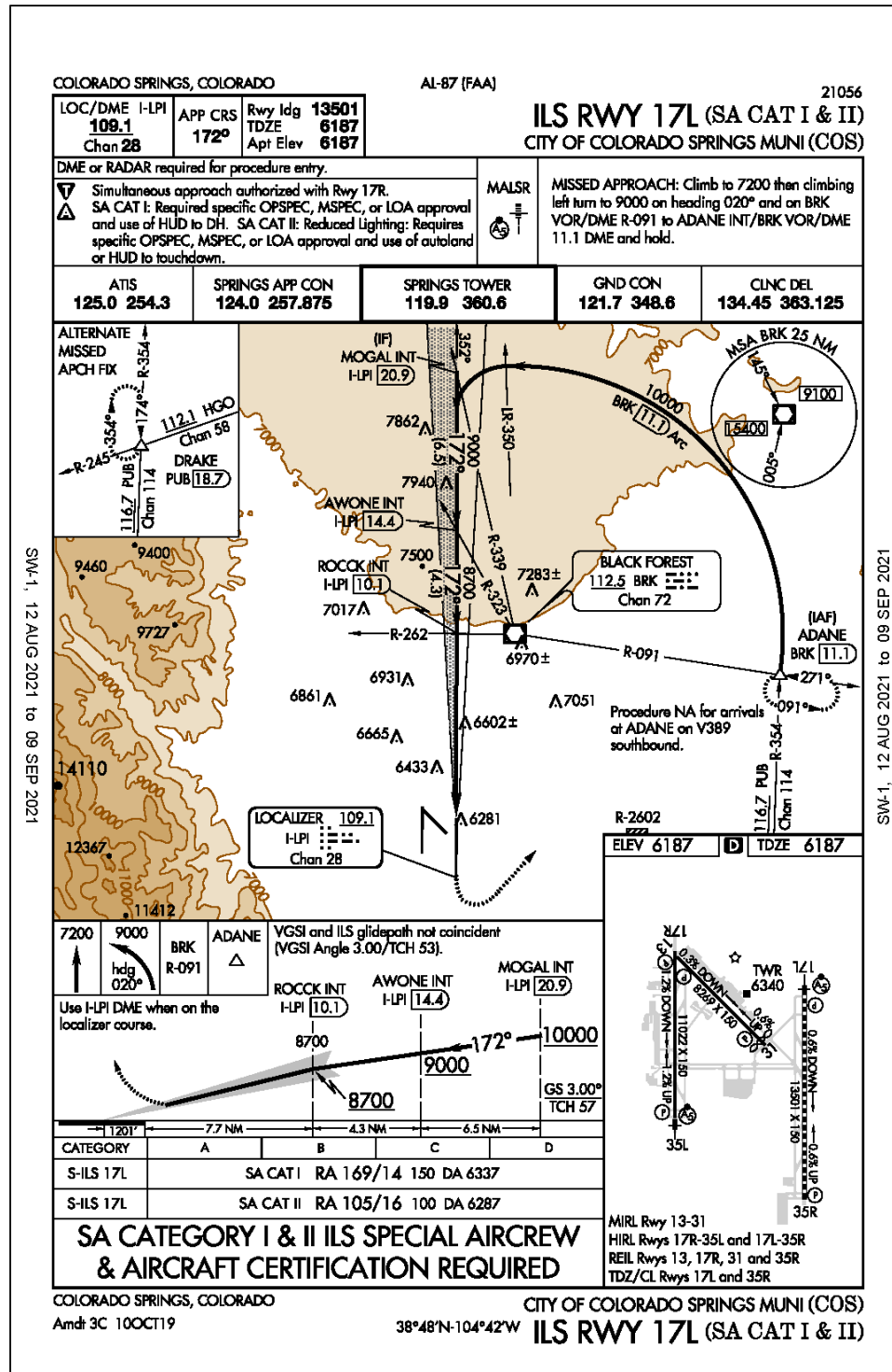
**Table 2-19: Lowest Published Instrument Approach Minima at COS**

Instrument Approach	Lowest Straight-In Minimums		Lowest Circling Minimums	
	Ceiling (MSL/AGL)	Visibility	Ceiling (MSL/AGL)	Visibility
ILS RWY 17L CAT I	6,337' / 150'	1,400'	-	-
ILS RWY 17L SA CAT II	6,287' / 100'	1,600'	-	-
ILS RWY 35L CAT II	6,175' / 100'	1,200'	-	-
ILS/LOC RWY 17L	ILS – 6,387' / 200'	ILS – 1,800'	7,540' / 1,353'	1 ¼-mile (Cat A)
ILS/LOC RWY 35L	ILS – 6,275' / 200'	ILS – 2,400'	6,740' / 553'	1-mile (Cat A)
ILS/LOC RWY 35R	ILS – 6,318' / 200'	ILS – 4,000'	6,740' / 553'	1-mile (Cat A)
RNAV (GPS) RWY 31	6,440' / 284'	7/8-mile (Cat C/D)	6,740' / 553'	1-mile (Cat A/B)
RNAV (GPS) RWY 17L	6,387' / 200'	1,800'	7,000' / 813'	1 ¼-mile (Cat A/B)
RNAV (GPS) RWY 17R	6,377' / 200'	4,000'	6,740' / 553'	1-mile (Cat A)
RNAV (GPS) RWY 35L	6,275' / 200'	2,400'	6,740' / 553'	1-mile (Cat A)
RNAV (GPS) RWY 35R	6,318' / 200'	4,000'	6,740' / 553'	1-mile (Cat A)
RNAV (RNP) RWY 17L	6,557' / 370'	4,000'	-	-
RNAV (RNP) RWY 17R	6,659' / 482'	1 5/8-mile	-	-
RNAV (RNP) RWY 35L	6,372' / 297'	3,000'	-	-
RNAV (RNP) RWY 35R	6,461' / 343'	6,000'	-	-
NDB RWY 35L	6,540' / 465' (Cat A/B)	4,000'	6,740' / 553'	1-mile (Cat A)

Source: FAA, U.S. Terminal Procedure Publications

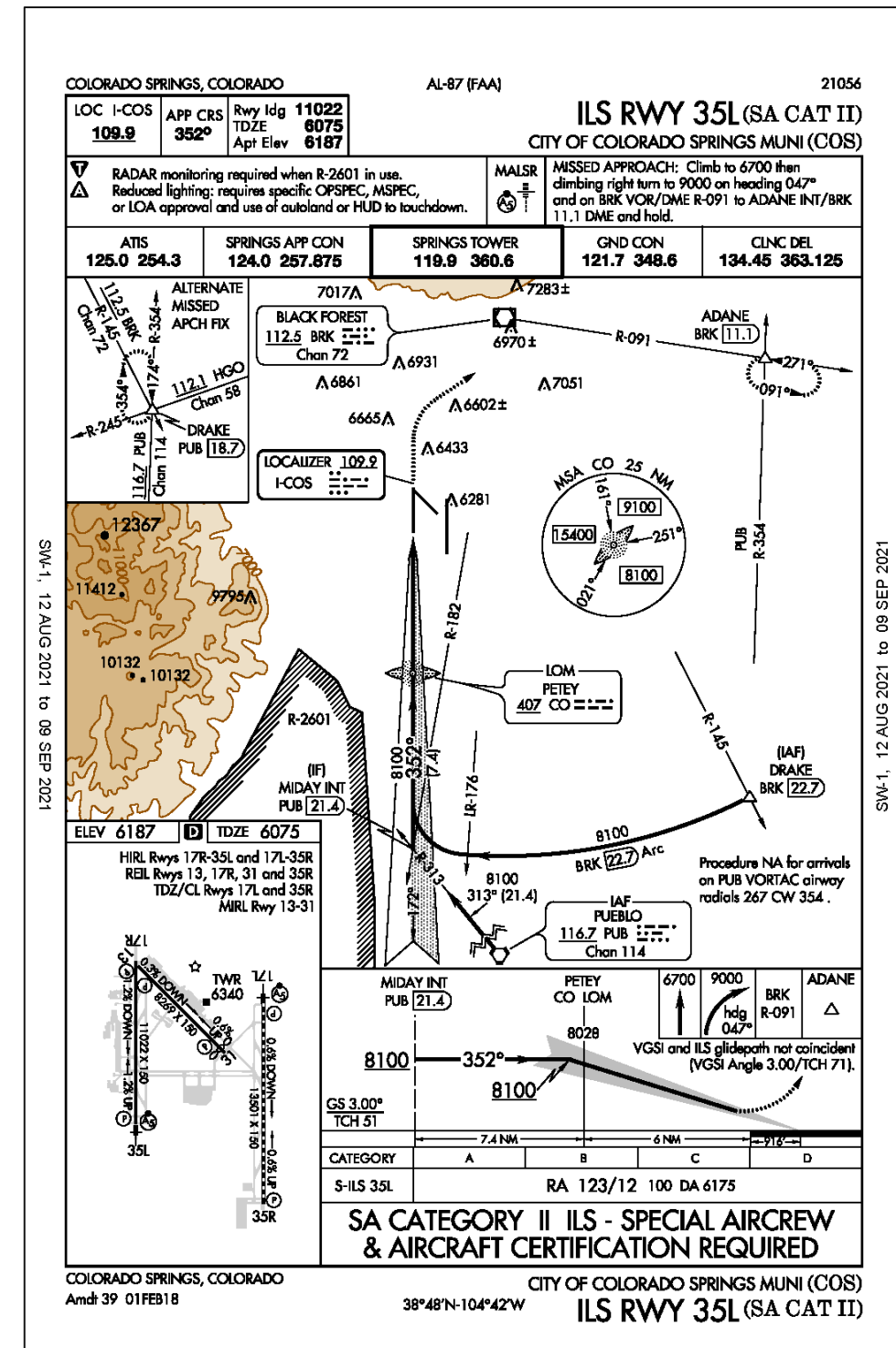


Figure 2-13: Instrument Approach Plate – ILS RWY 17L



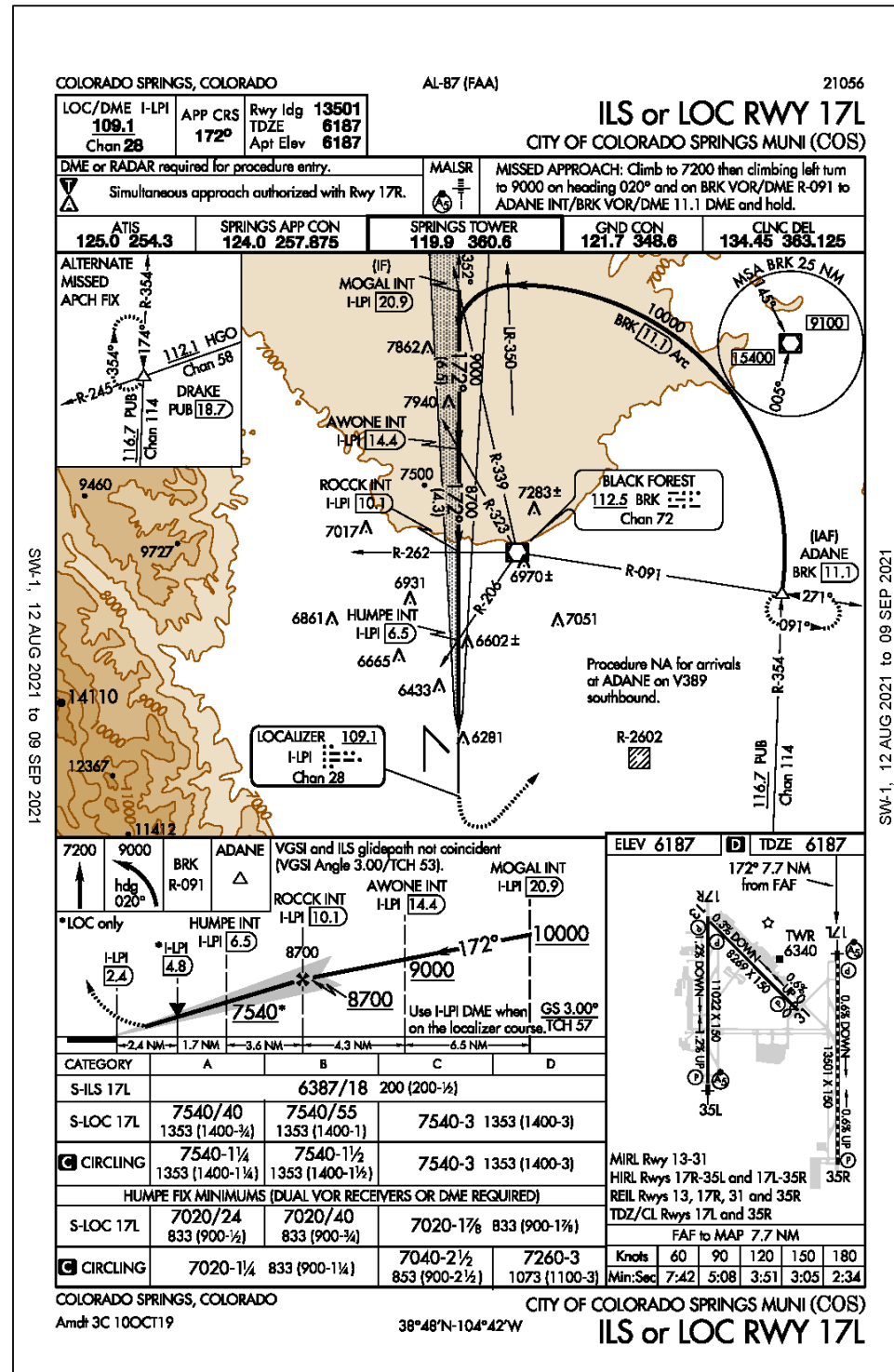
Source: FAA

Figure 2-14: Instrument Approach Plate – ILS RWY 35L



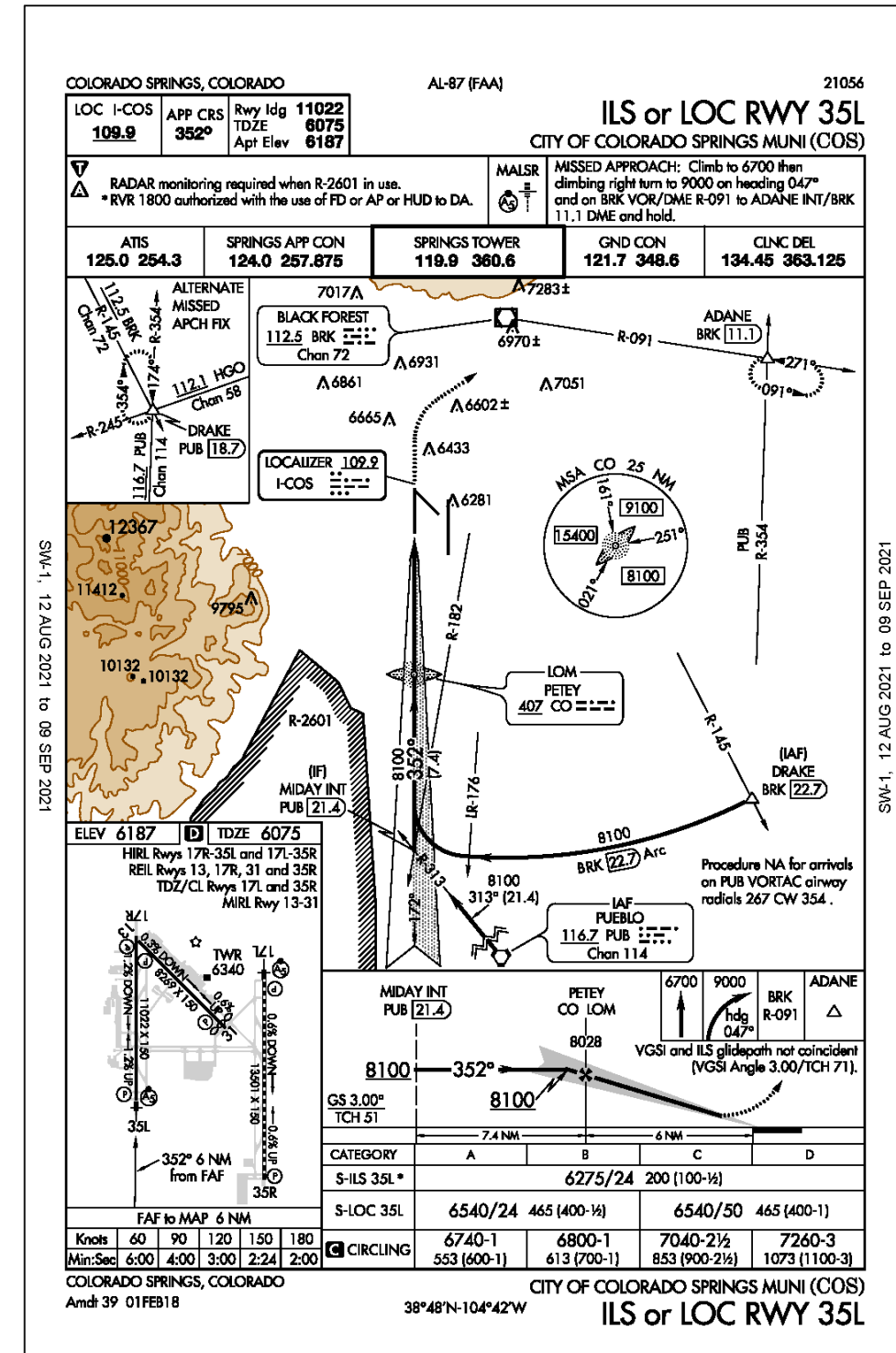
Source: FAA

Figure 2-15: Instrument Approach Plate – ILS/LOC RWY 17L



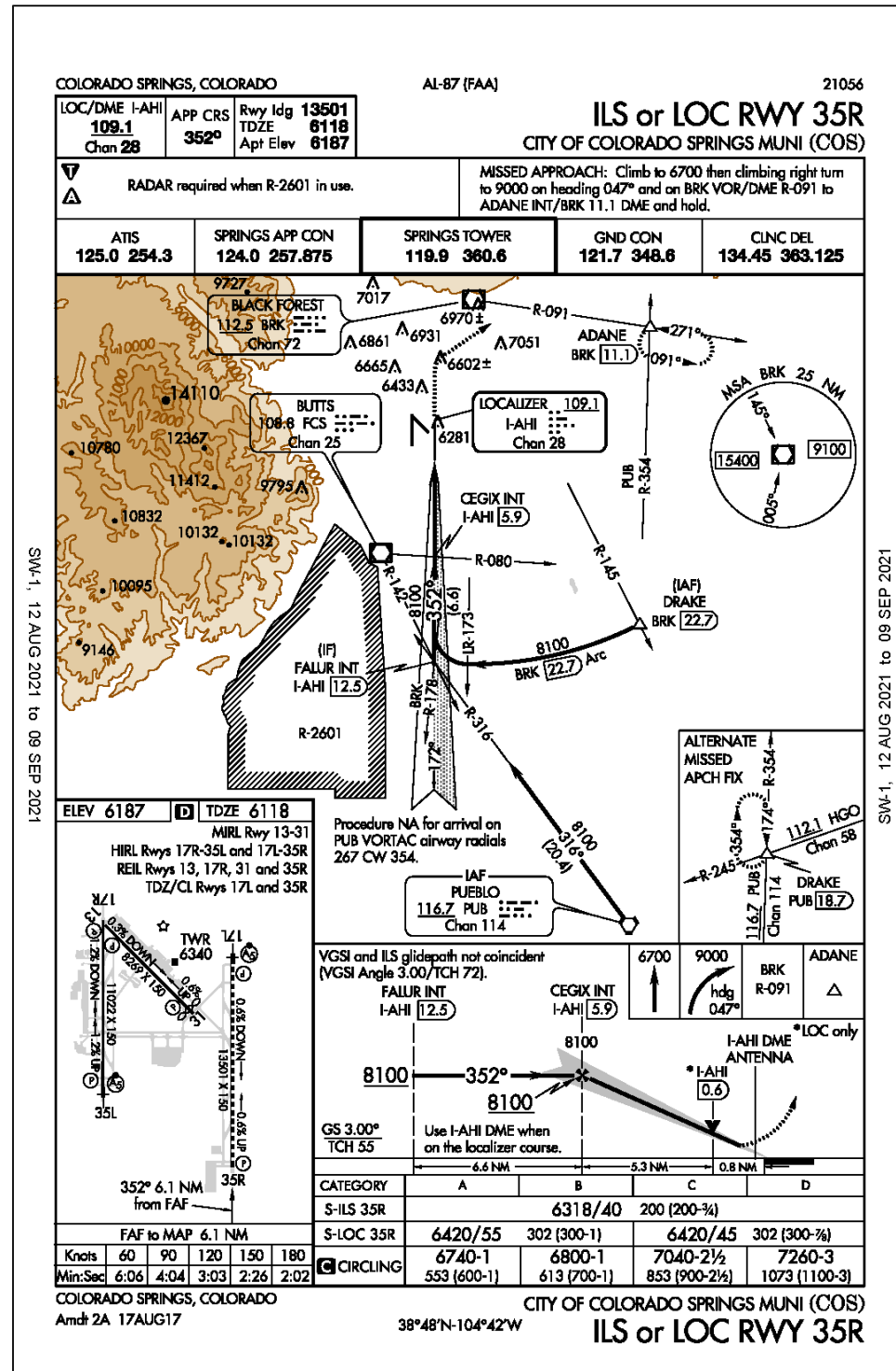
Source: FAA

Figure 2-16: Instrument Approach Plate – ILS/LOC RWY 35L



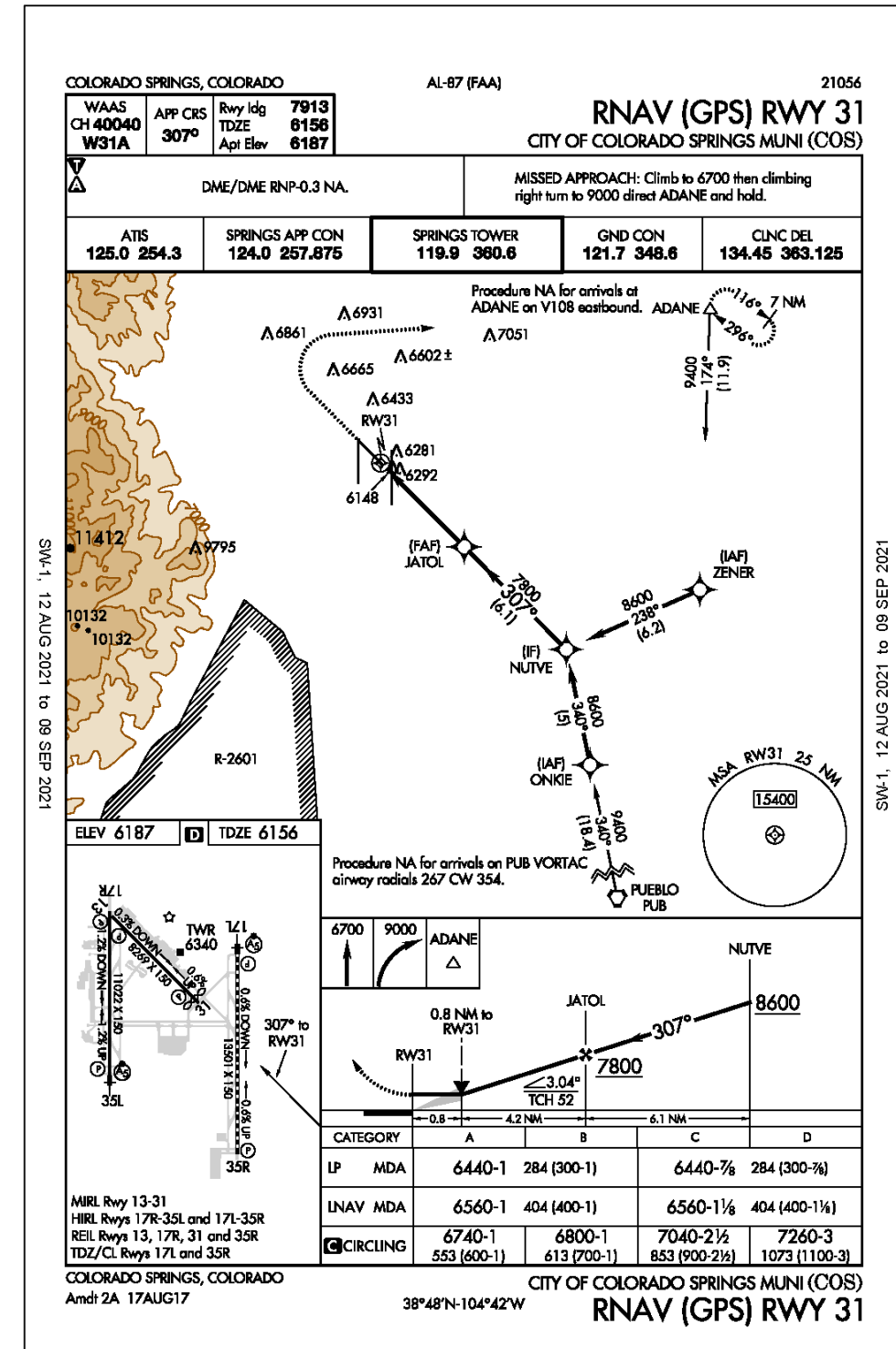
Source: FAA

Figure 2-17: Instrument Approach Plate – ILS/LOC RWY 35R



Source: FAA

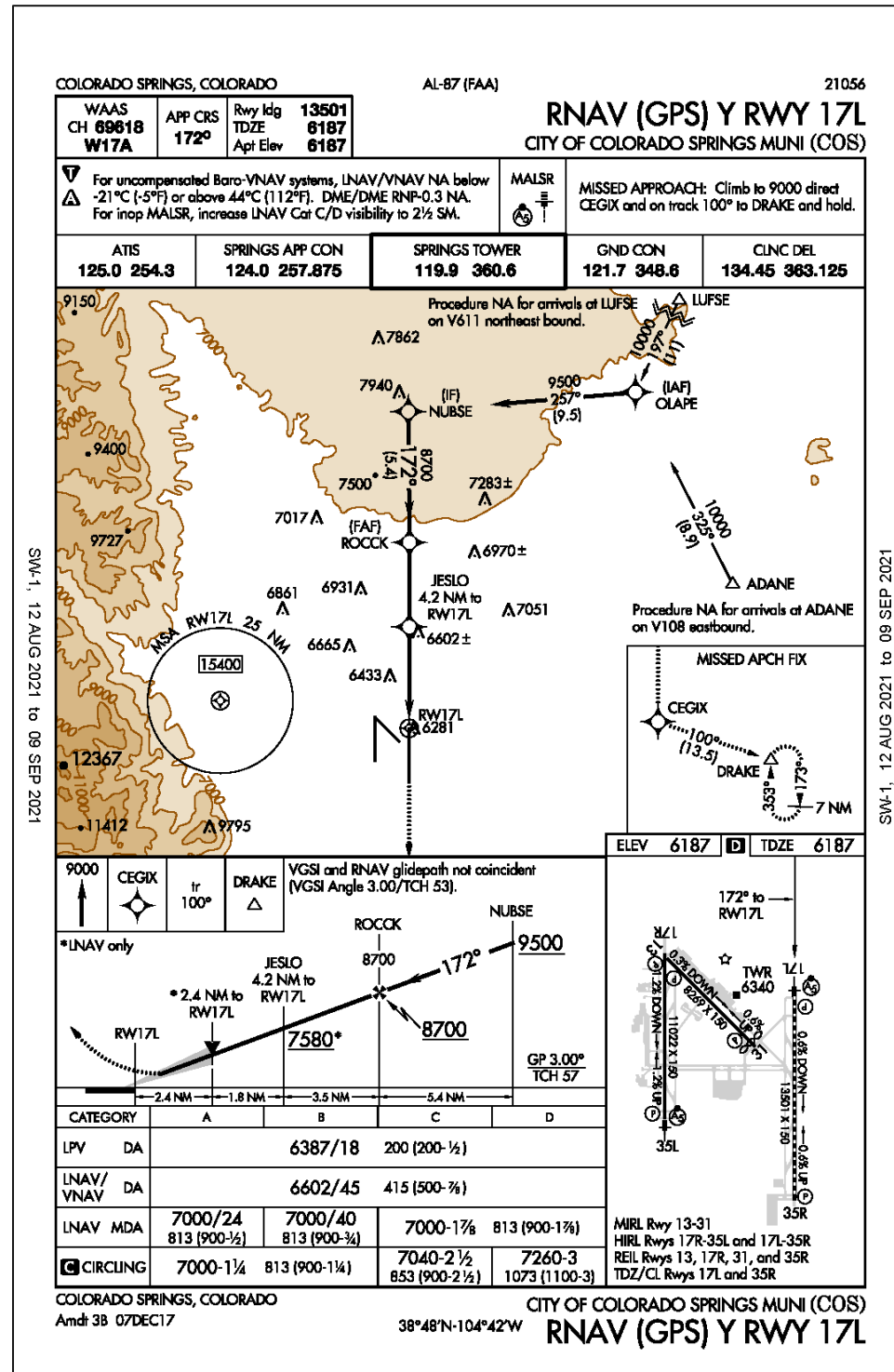
Figure 2-18: Instrument Approach Plate – RNAV (GPS) RWY 31



Source: FAA

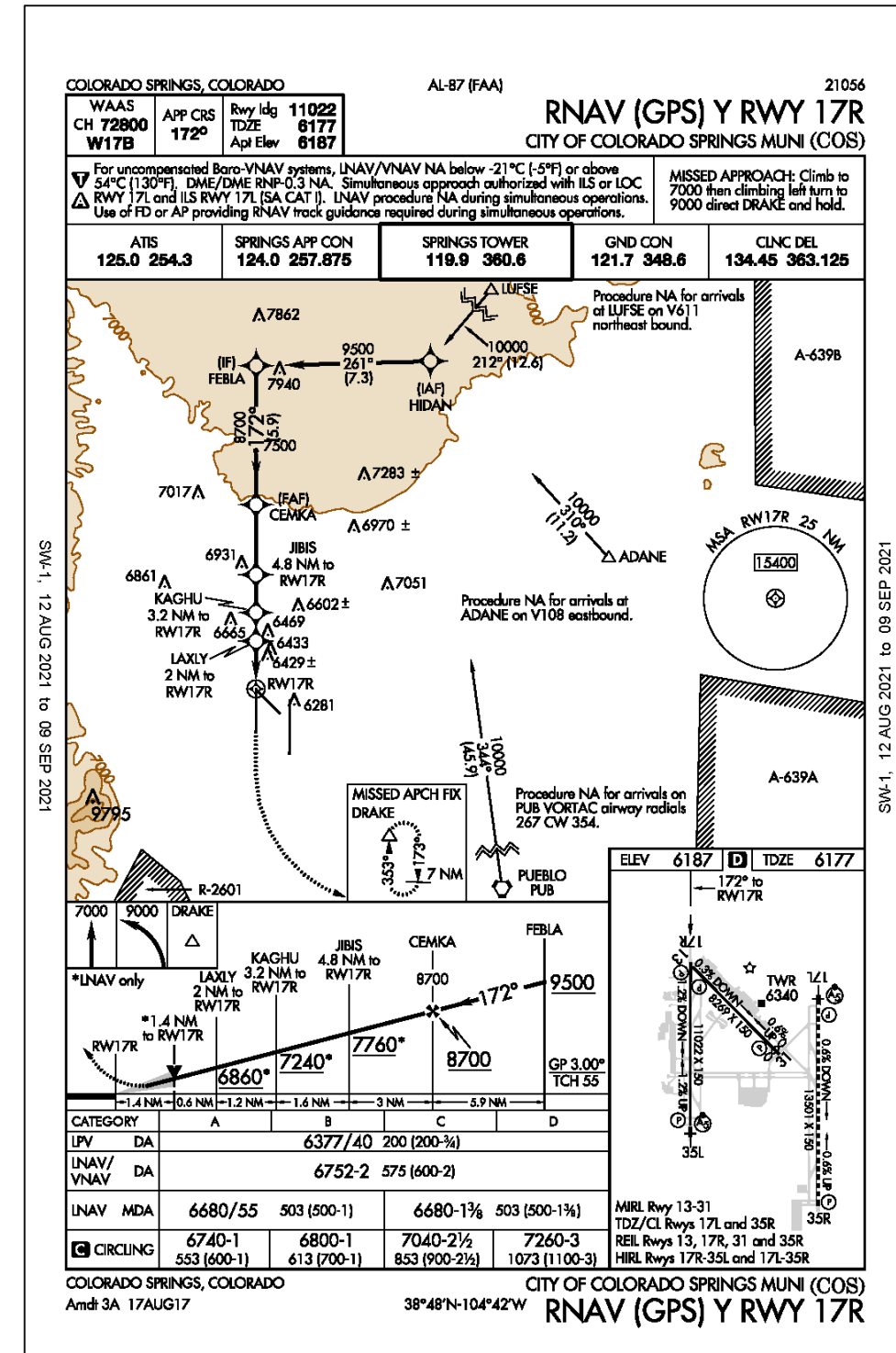


Figure 2-19: Instrument Approach Plate – RNAV (GPS) RWY 17L



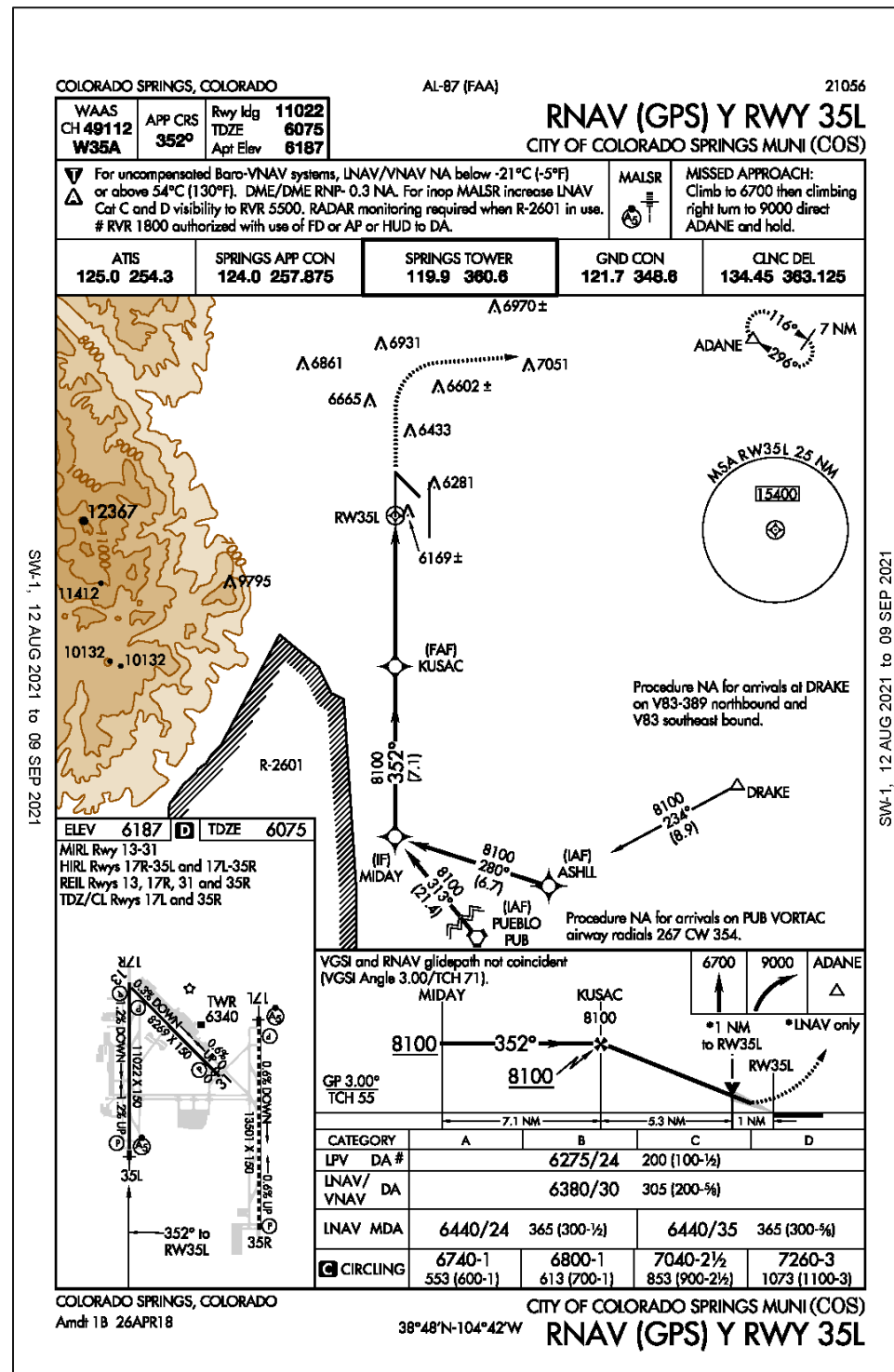
Source: FAA

Figure 2-20: Instrument Approach Plate – RNAV (GPS) RWY 17R



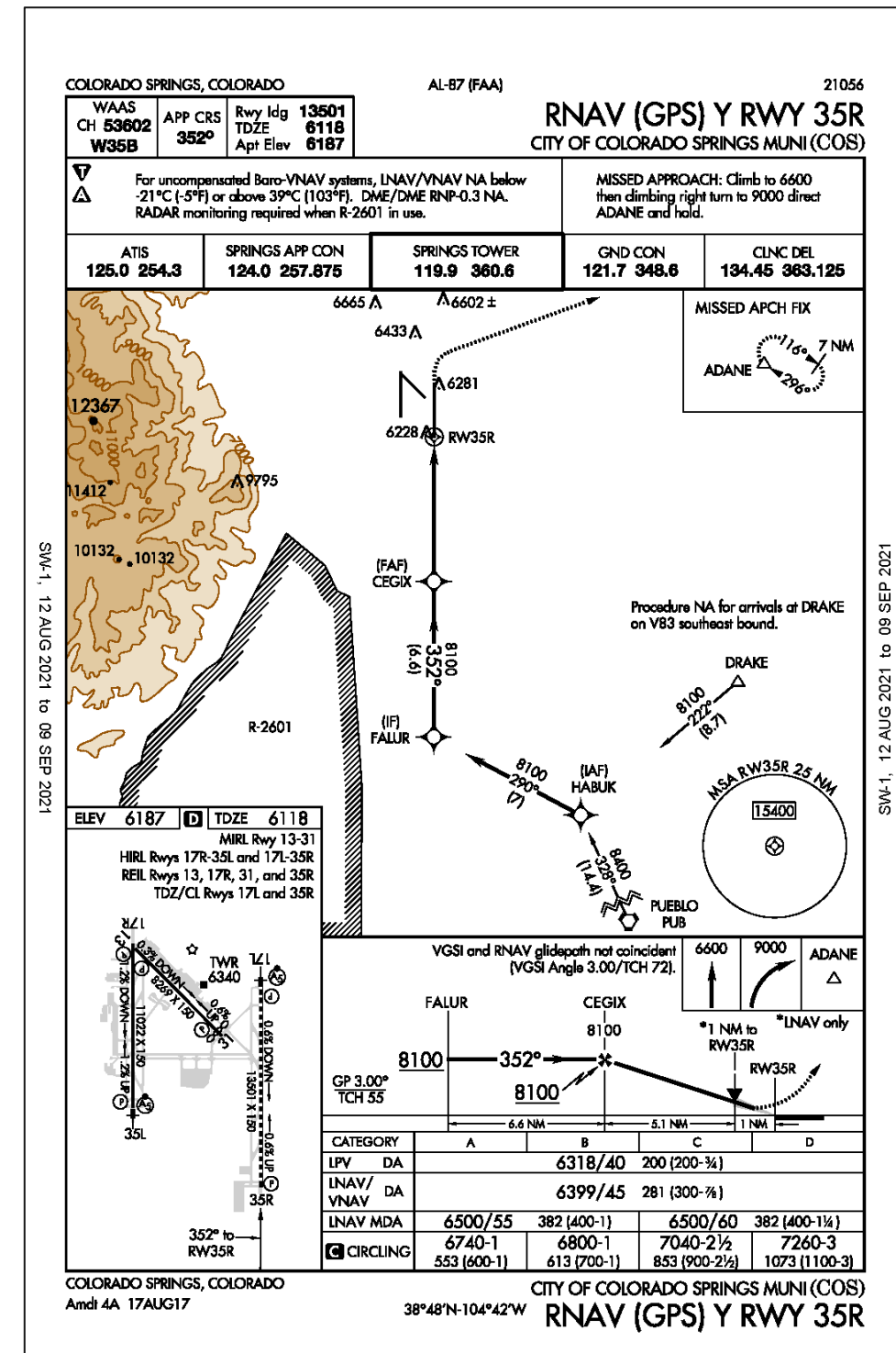
Source: FAA

Figure 2-21: Instrument Approach Plate – RNAV (GPS) RWY 35L



Source: FAA

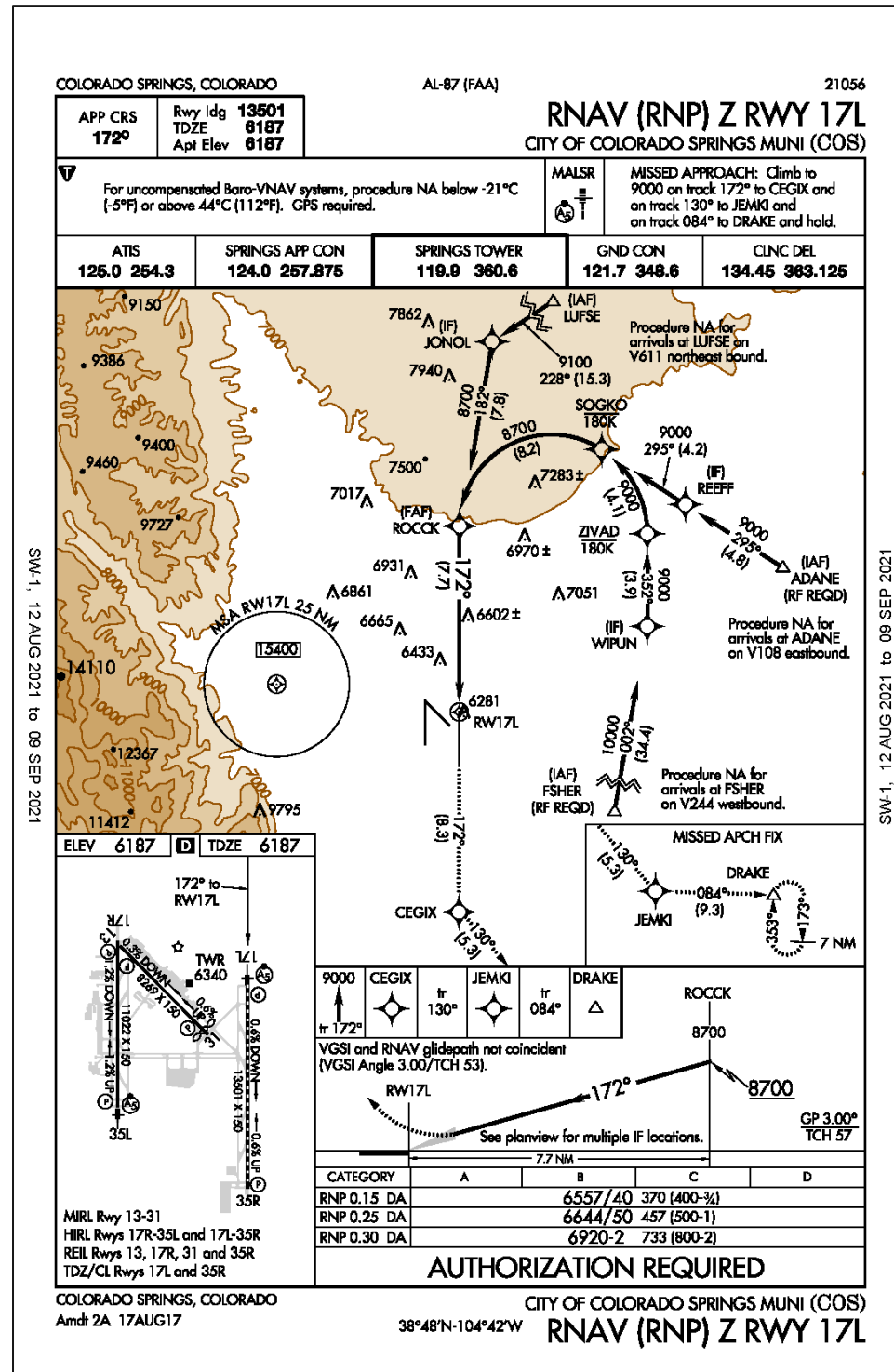
Figure 2-22: Instrument Approach Plate – RNAV (GPS) RWY 35R



Source: FAA

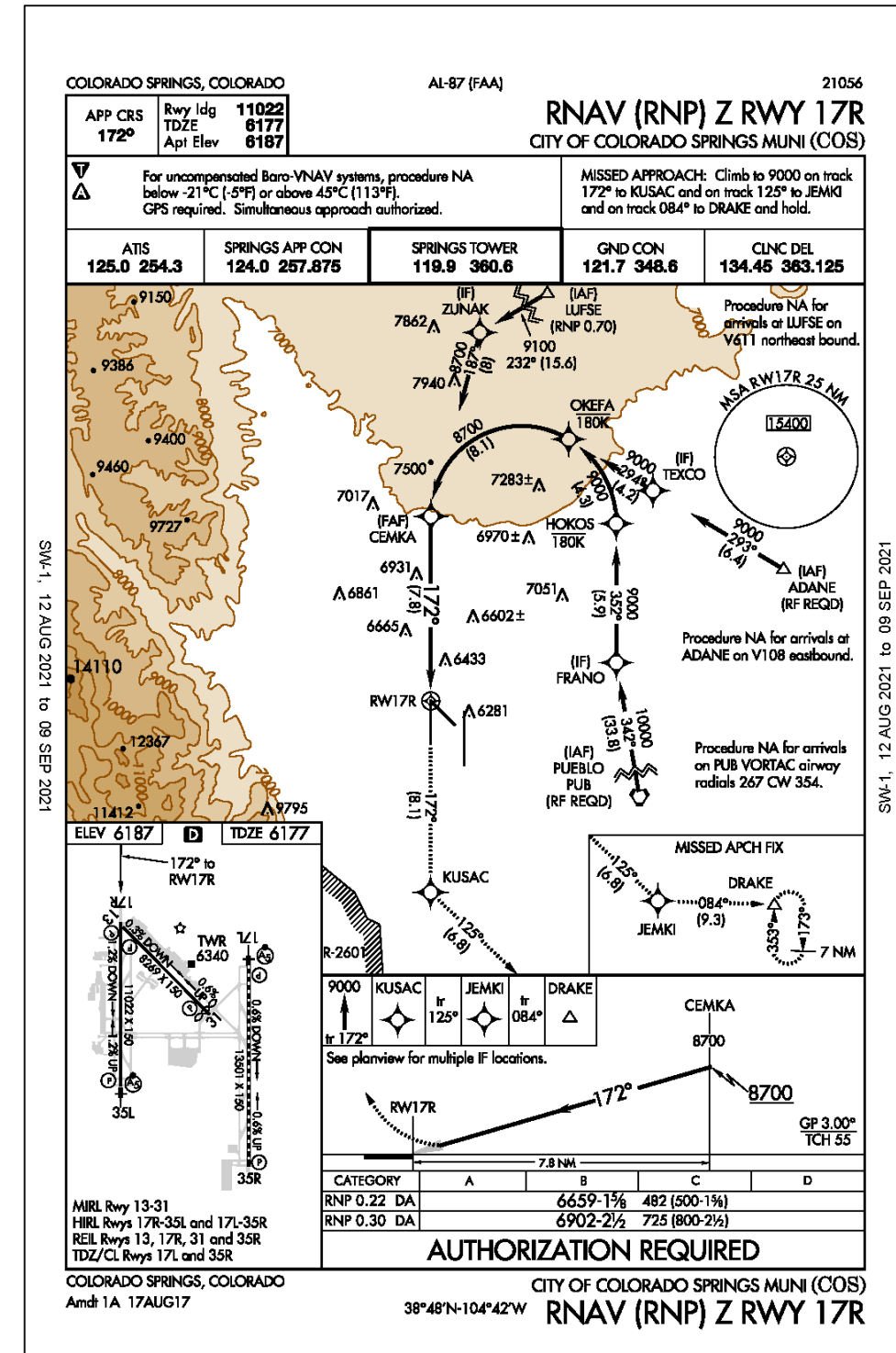


Figure 2-23: Instrument Approach Plate – RNAV (RNP) RWY 17L



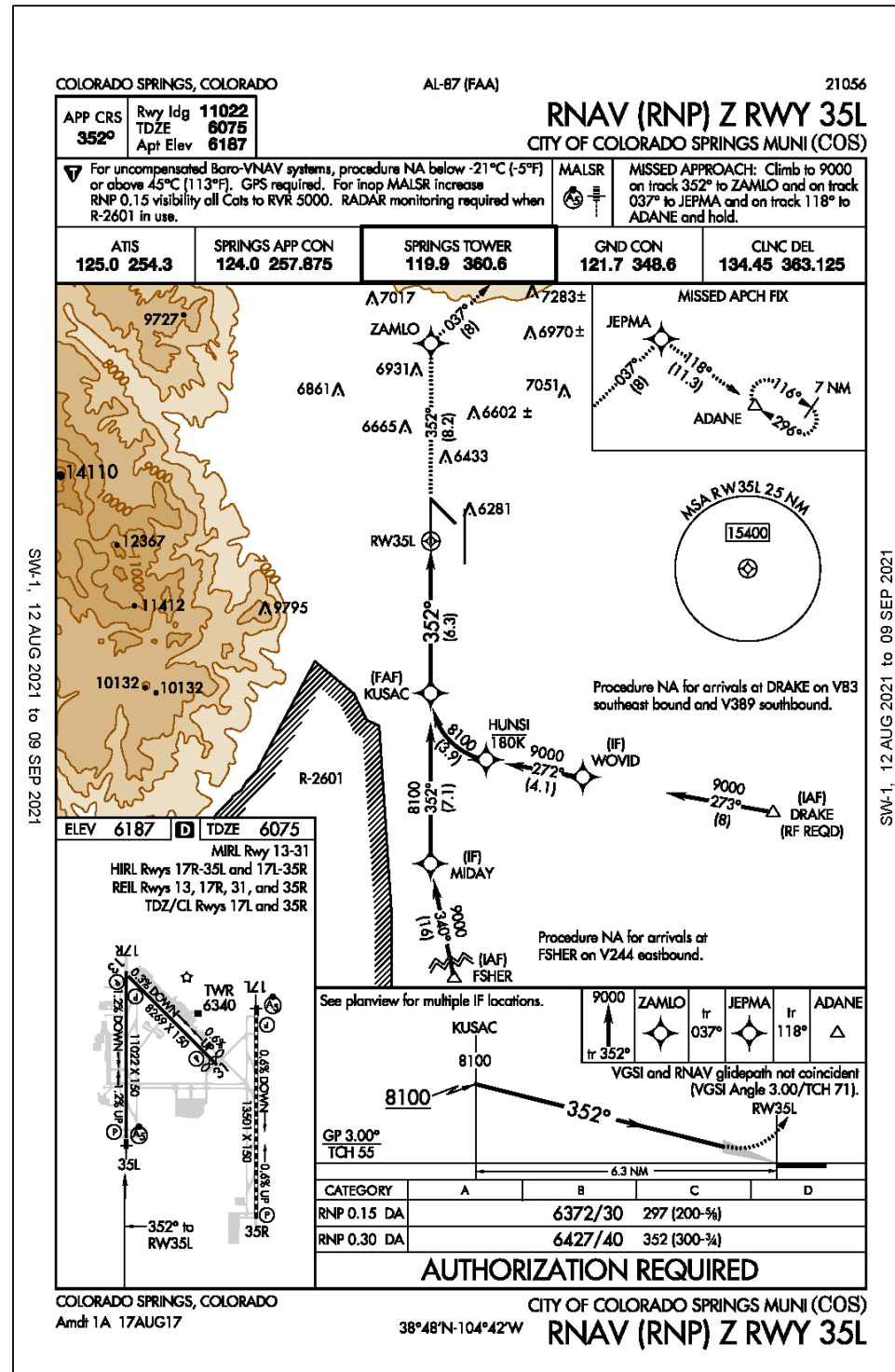
Source: FAA

Figure 2-24: Instrument Approach Plate – RNAV (RNP) RWY 17R



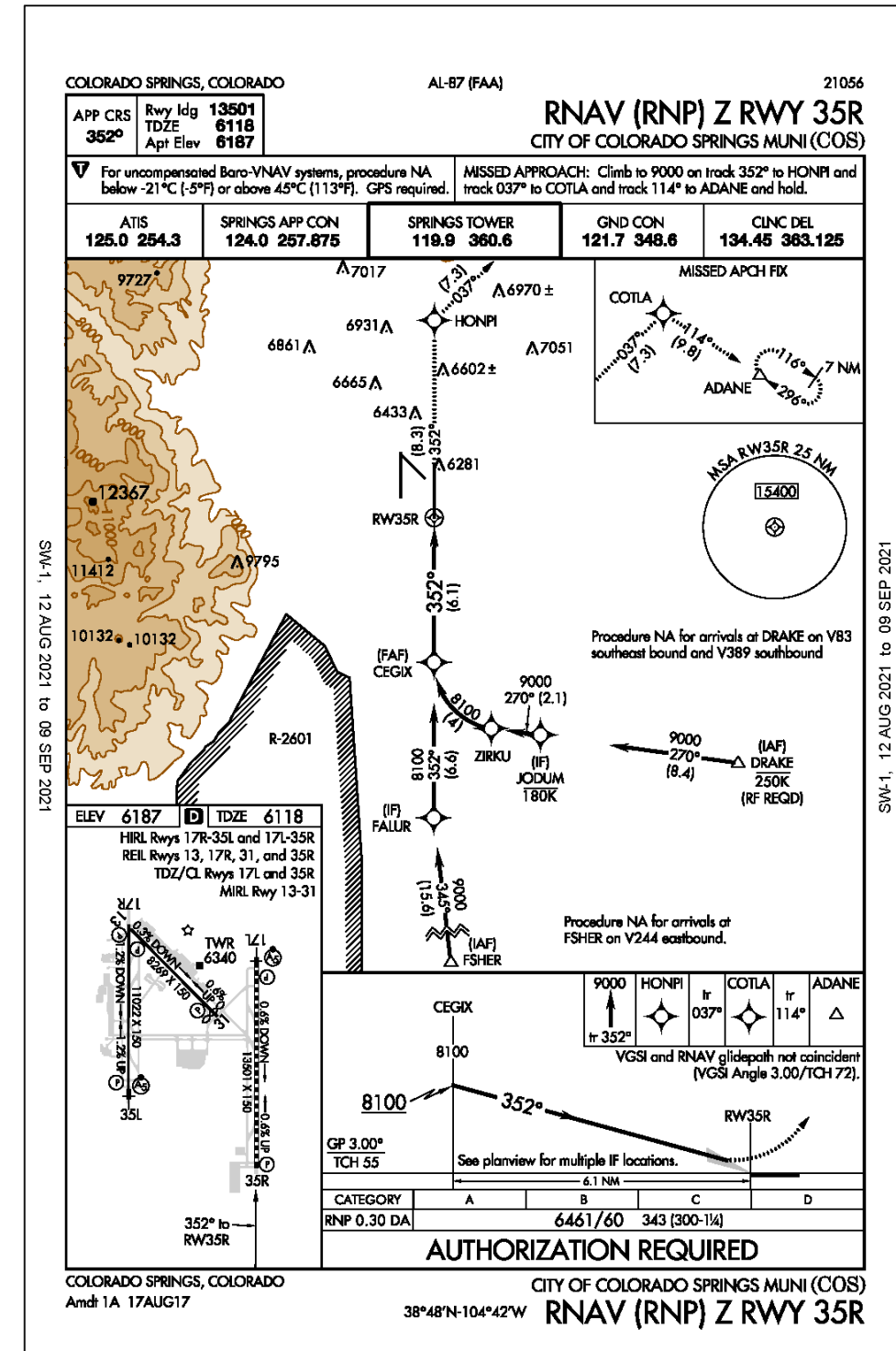
Source: FAA

Figure 2-25: Instrument Approach Plate – RNAV (RNP) RWY 35L



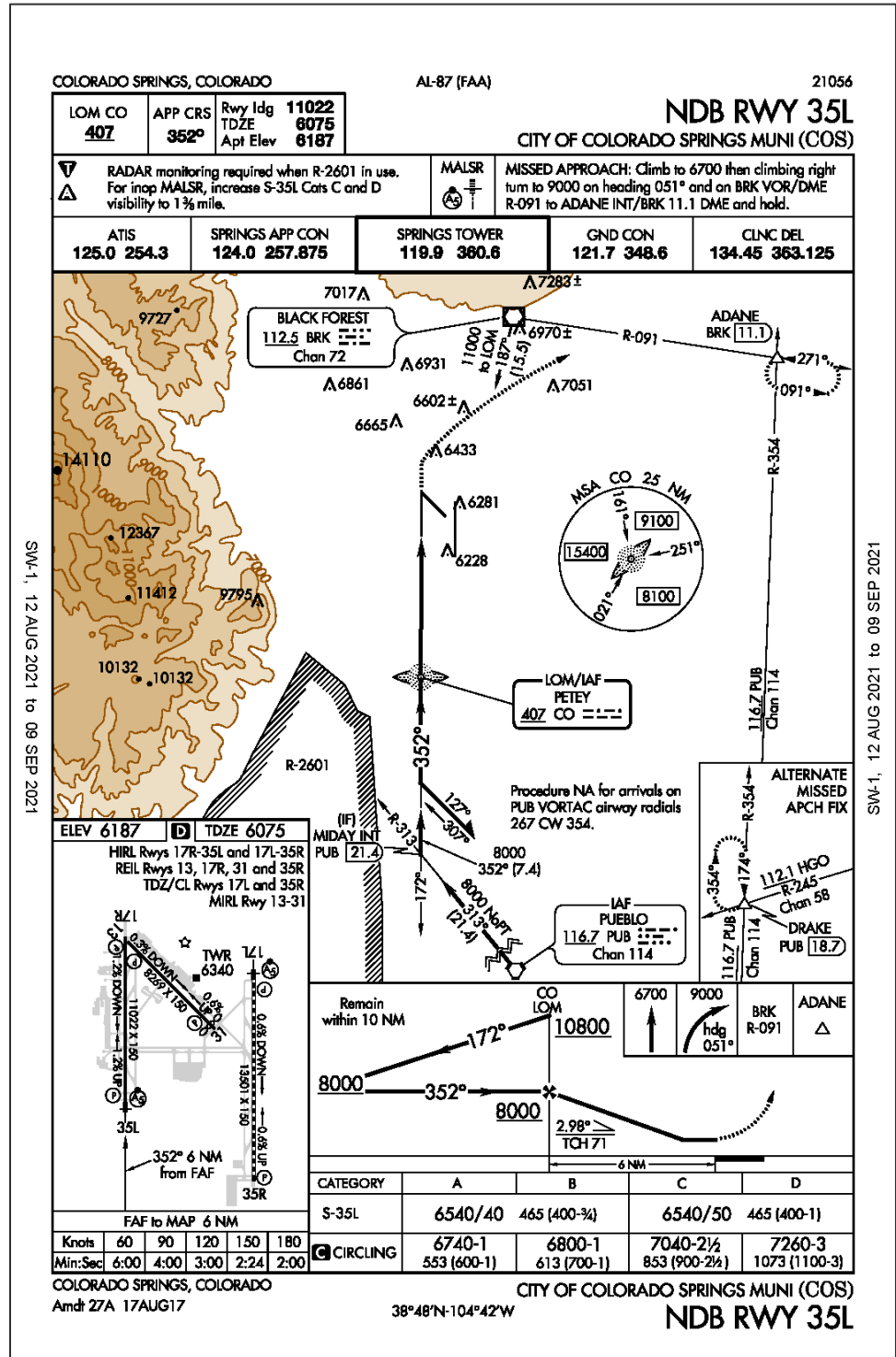
Source: FAA

Figure 2-26: Instrument Approach Plate – RNAV (RNP) RWY 35R



Source: FAA

**Figure 2-27: Instrument Approach Plate – NDB RWY 35L**



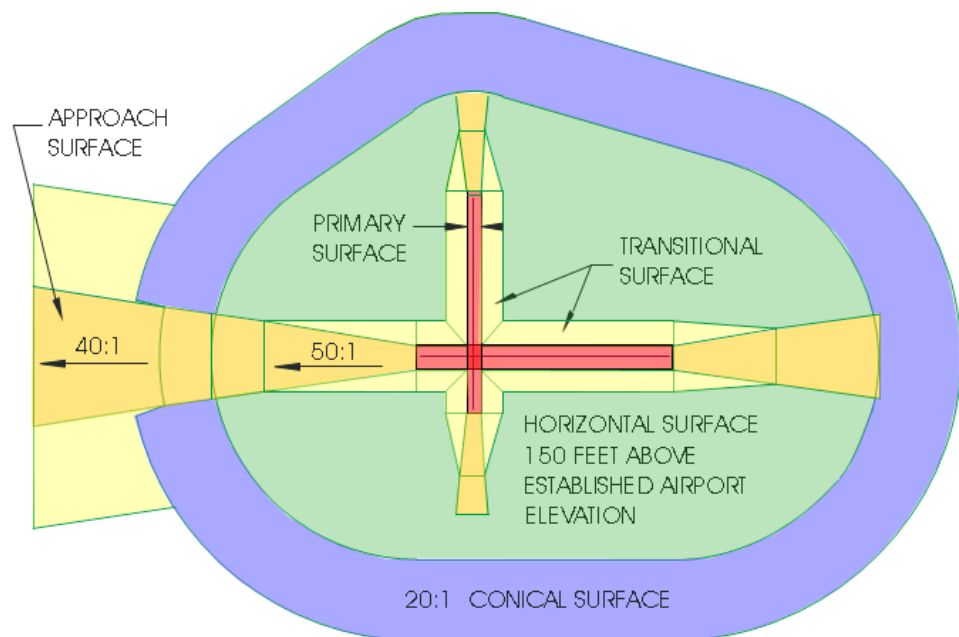
Source: FAA

## Part 77 Airspace Surfaces

Federal Aviation Regulations (FAR) Part 77, *Objects Affecting Navigable Airspace*, is a tool used to protect the airspace over/around a given airport, and each of its runway approaches, from potential obstructions to air navigation. It is important to note that as a federal regulation, all airports included in the NAS are subject to the requirements of Part 77. To determine whether an object is an obstruction to air navigation, Part 77 establishes several imaginary airspace surfaces in relation to an airport and to each runway end. The dimensions and slopes of these surfaces depend on the configuration and approach categories of each airport's runway system. The size of the imaginary surfaces depends largely upon the type of approach to the runway in question. The principal imaginary surfaces are generally described below and are illustrated in **Figure 2-28**.

- Primary Surface: Longitudinally centered on the runway at the same elevation as the nearest point on the runway centerline.
- Horizontal Surface: Located 150 feet above the established airport elevation, the perimeter of which is established by swinging arcs of specified radii from the center of each the primary surface end, connected via tangent lines.
- Conical Surface: Extends outward and upward from the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet.
- Approach Surface: Longitudinally centered on the extended centerline and extending outward and upward from each runway end at a designated slope based on the runway approach.
- Transitional Surface: Extends outward and upward at a right angle to the runway centerline at a slope of 7:1 up to the horizontal surface.

**Figure 2-28: FAR Part 77 Plan View**

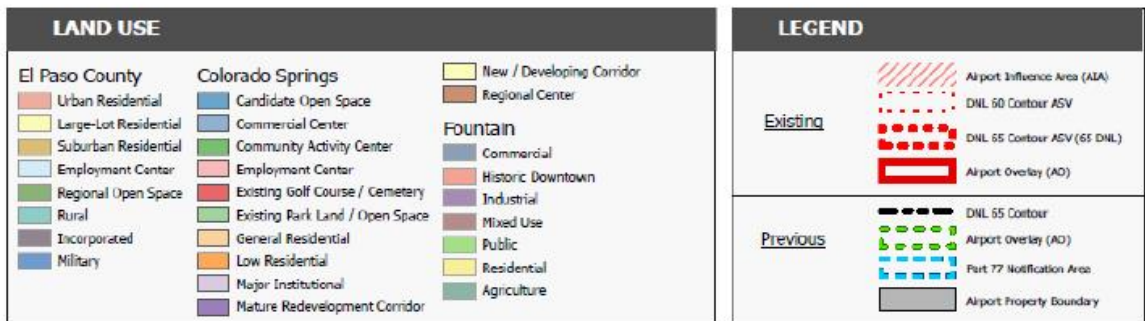
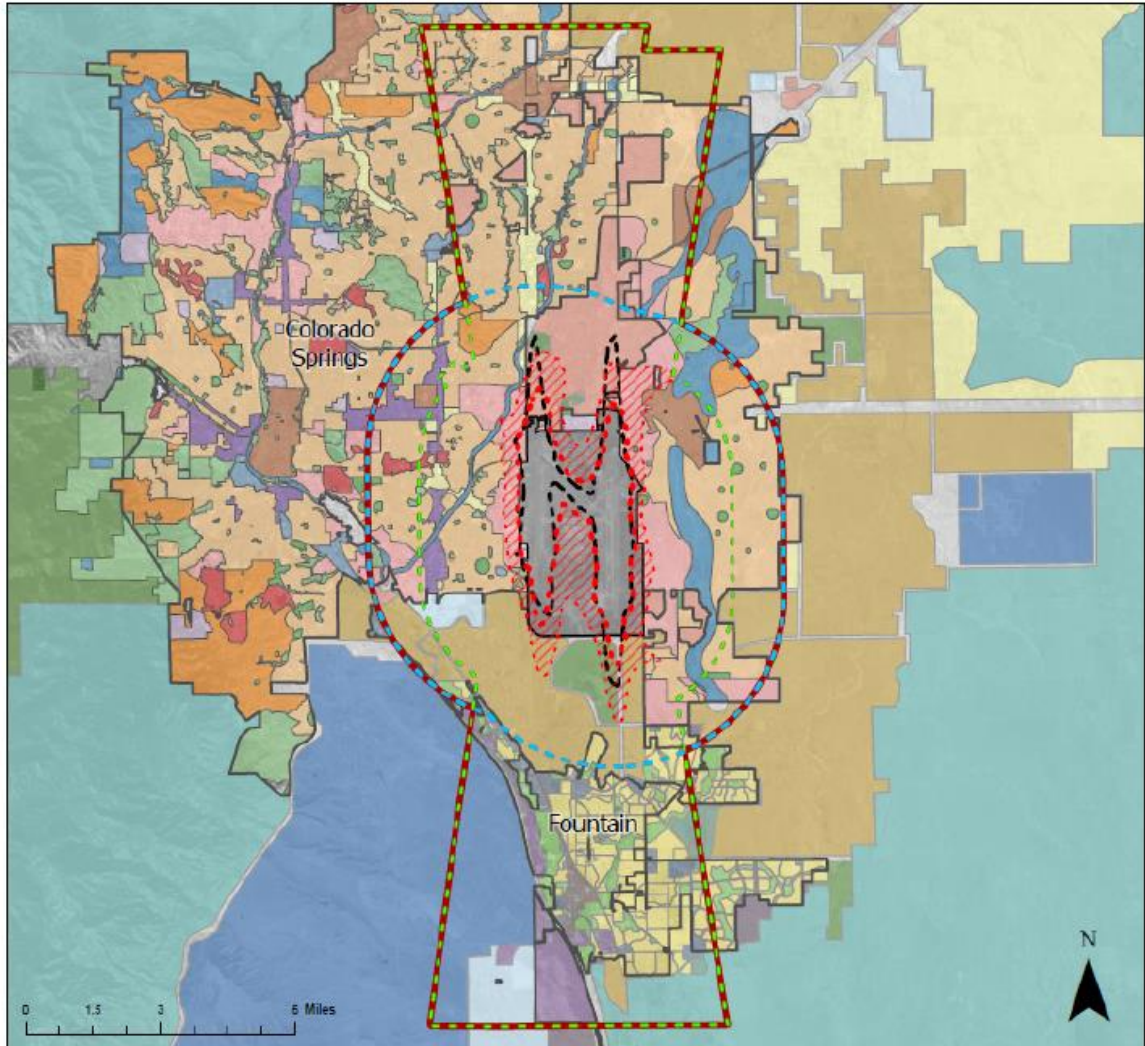


Source: FAA



Figure 2-29 illustrates the limits of the Airport's Part 77 airspace surfaces determined by the operational types and approaches presented in previous sections and depicted as the Airport Overlay (AO). Note that greater details related to Part 77 are presented in the ALP found in **Chapter Six: Airport Plans**.

Figure 2-29: COS FAR Part 77 Airspace Plan View



Source: Colorado Springs Airport, 2020 Land Use Study



## Airport Environs

This section includes demographic and economic data of the City of Colorado Springs and a brief discussion of other factors such as land use planning and zoning, as they relate to COS.

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### Community Demographics

The Colorado Department of Local Affairs estimates the City of Colorado Springs' 2020 population is 478,961, while the population for El Paso County is estimated to be 730,395. These figures indicate population growth of 62,534, or 15.0 percent, for the City, and 108,132, or 17.4 percent, for the County since 2010. **Chapter 3 – Aviation Activity Forecast** provides a more detailed review of demographic information for the Colorado Springs region.

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### Regional Growth

According to the recently completed City of Colorado Springs comprehensive plan (also known as PlanCOS), it is forecasted that the airport market area (El Paso and Teller counties) will grow to nearly 1 million residents and support more than 500,000 jobs by 2040. This is an increase of approximately 300,000 people and 146,000 jobs from 2015 to 2040. PlanCOS anticipates that the City of Colorado Springs itself will accommodate roughly 65 percent of this total growth, resulting in a City population of over 600,000 by 2040. While actual growth will vary, development at some level is certain and the region is already planning for this growth.

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### Regional Airports

COS exists within a regional airport system as the principal facility that serves commercial airline passengers, cargo operations, military personnel, and general aviation business users. While COS supports general aviation activity, there are several other airports in the vicinity that focus on recreational flying, flight instruction, and experimental aircraft activity. The most significant alternative airport in the region, Meadow Lake Airport (FLY) in Falcon, is home to over 400 based aircraft, a large percentage of which are single-engine aircraft. Other airstrips including Springs East Airport (C04) and Calhan Airport (5V4) are also in the vicinity of COS and serve a small slice of the aviation community in the Colorado Springs region. As COS's activity profile continues to evolve, there are airports in the region are available to accommodate and support general aviation activity from smaller aircraft, ensuring that these users will continue to have space to operate and enjoy the benefits of aviation.

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### Local Comprehensive Planning

In 2019, the City of Colorado Springs published its most recent comprehensive plan, PlanCOS. This plan was created to recognize and respond to evolving and growing markets, private initiatives, public investments, and innovation within the region. PlanCOS identified areas where significant change is anticipated, the

majority of which expected to occur on the east side of the City and in proximity to COS, to a large degree pursuant to the Banning Lewis Ranch Annexation Amendment in 2018. The plan recognizes that the Airport serves as the first impression for many of the region’s visitors and is a crucial asset to the current and future growth of the City and region. PlanCOS recommends several goals that can be applied to future development at the Airport:

- Support the growth and adaptation of Colorado Springs Airport to maintain its economic value as an air service provider for the City and region, and to strengthen its role as an integrated hub for economic development. *PlanCOS - Strategy TE-1.D-5*
- Identify, accommodate, and provide supportive zoning for key sites for industrial uses with good multimodal access to highways, railroads, and the Airport. *PlanCOS – Strategy TE-2.A-1*
- Specifically continue to invest in and adapt facilities and services, including multimodal transportation improvements, in order to increase the number, range and cost-competitiveness of airline flights to and from the Colorado Springs Airport. *PlanCOS – Strategy SC-1.A-7*
- Provide convenient and inexpensive transit connections between the Colorado Springs Airport and key locations within the City. *PlanCOS – Strategy SC-2.B-5*

### Existing Land Use and Zoning

As PlanCOS and other Airport goals and associated development progresses, land use and zoning considerations will become ever more important for ensuring the Airport’s land area and airspace is protected.

Thus, a Land Use Compatibility Study was completed for COS in 2020 to evaluate the development of the Airport and contextualize the future plans of area jurisdictions. It was concluded that existing land use and zoning ordinances for the City, County, and the City of Fountain (south of the Airport) provide adequate protection for the Airport and its airspace, but that all proposed changes should be reviewed to ensure the protection of the Airport and its operational capabilities.

More information about this study can be found later in this chapter under the Noise and Compatible Land Use section.

## Environmental Review

Local, state, and federally regulated natural resources that exist on and around the Colorado Springs Airport can have the potential to impact airport activities and future improvements. Permitting or environmental review is often required for future projects that impact regulated environmental resources; therefore, it

is important to conduct a review of those resources in their current condition and in the current regulatory environment. This environmental overview follows the framework of the environmental impact categories listed in FAA Order 1050.1, *Environmental Impacts: Policies and Procedures*.

The scope, location, and feasibility of future projects could be impacted by the presence of environmental resources, as many natural resources are protected by local, state, and federal regulations. Construction-related permits also contain conditions and mitigation measures that must be met prior to the start of a project; these can impact the cost and schedule of a project.

Additionally, the natural environment can influence the location of improvement projects. The cost of construction and permitting can be prohibitive when the proposed development plan impacts environmental resources and/or uses land with physical constraints (e.g., steep slopes, bedrock, or poor soils). By identifying these resources early in the planning process, project alternatives can be selected to avoid these resources or, in cases where avoidance is not possible, minimize the impacts.

Natural resource information was obtained from municipal, state, and federal websites; and reports from governmental agencies, Colorado Springs Airport, and Aviation, a Woolpert Company. The following sources were utilized in the preparation of this document:

- Colorado Parks & Wildlife
- City of Colorado Springs
- El Paso County
- U.S. National Park Service
- U.S. Fish and Wildlife Service
- U.S. Department of Agriculture
- U.S. Environmental Protection Agency (EPA)
- U.S. Natural Resources Conservation Service
- U.S. Department of Transportation
- U.S. Federal Aviation Administration
- Federal Emergency Management Agency
- Previous Airport Environmental Documents

This section addresses environmental factors that specifically apply to COS according to FAA Advisory Circular 150/5070-6B, *Airport Master Plans*. Current information from federal, state, and local agencies concerning environmental conditions on and near COS have been reviewed and are presented below.

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act: Implementation Instruction for Airport Actions*, address specific environmental categories evaluated in environmental documents in accordance with the National Environmental Policy

Act (NEPA). The sections below provide an inventory of the applicable environmental categories as related to COS.

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**Air Quality** An air quality analysis for federally funded projects must be prepared in accordance with applicable air quality statutes and regulations:

- Clean Air Act (CAA), as amended, 42 U.S.C. 7401-7671;
- EPA air regulations, 40 CFR Parts 50 and 51; and
- Colorado Department of Public Health and Environment, 5 CCR 1001-14.

Section 176 of the CAA Amendments of 1977 states, in part, that no federal agency shall engage in; support in any way; provide financial assistance for; or license, permit, or approve any activity that does not conform to a State Implementation Plan (SIP) for meeting air-quality standards after it has been approved or promulgated under Section 110 of that Act. It is the FAA's responsibility to ensure that federally funded airport actions conform to state plans for controlling area-wide air-pollution impacts. development

The CAA, which is monitored by the EPA, is the predominant statute (along with the NEPA) that regulates actions with the potential to affect air quality. The CAA established National Ambient Air Quality Standards (NAAQS) for six pollutants, specifically termed "criteria pollutants."

In accordance with the CAA, all areas within the State of Colorado are designated with respect to the NAAQS as being in attainment, nonattainment, maintenance, or unclassifiable. An area with air quality better than the NAAQS is designated attainment, while an area with air quality worse than the NAAQS is designated nonattainment. The EPA previously designated El Paso County as a nonattainment areas for criteria pollutants (1971) for carbon monoxide (1971); however, the county is currently in maintenance for this pollutant and in attainment for the remaining criteria air pollutants of carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead.

Through Colorado's SIP, the EPA approved a carbon monoxide redesignation request and maintenance plan for the Colorado Springs area on August 25, 1999. The plan was revised in 2000, 2004, and 2009. The 2009 revision extended the maintenance year through 2020. At this time, a fifth revision has not been released.

Attainment of the NAAQS for carbon monoxide is demonstrated when monitoring data for each site show no more than one exceedance per year of the 8-hour (9 ppm) and 1-hour (35 ppm) standards. The 2009 revision states the 8-hour standard has not been exceeded in the Colorado Springs area since 1989. The 1-hour standard has not been exceeded since 1979. Monitoring data for 1999-2008 demonstrates that the Colorado Springs attainment/maintenance area continues

to attain/maintain the national standard for carbon monoxide as required by 40 CFR 50.8.

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### Biological Resources

Both federal- and state-listed threatened and endangered wildlife species receive additional regulatory protection under the U.S Endangered Species Act of 1973 which is managed by the U.S. Fish and Wildlife Service (USFWS). State-listed species in Colorado are regulated under the State Wildlife Action Plan, managed by Colorado Parks & Wildlife.

The USFWS, through use of its Information for Planning and Consultation (IPaC) indicated the possible presence of the following federally protected species:

- Eastern Black Rail (*Laterallus jamaicensis*) - No critical habitat.
- Piping Plover (*Charadrius melodus*) - Only consider if project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins.
- Whooping Crane (*Grus americana*) - Only consider if project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins.
- Greenback Cutthroat Trout (*Oncorhynchus clarkia stomias*) - No critical habitat.
- Pallid Sturgeon (*Scaphirhynchus albus*) - Only consider if project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins.
- Ute Ladies'-tresses (*Spiranthes diluvialis*) - No critical habitat.
- Western Prairie Fringed Orchid (*Platanthera praeclara*) - Only consider if project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins.

An Ecological Resource Survey was completed in 2018 for the Peak Innovation Park. Although, the survey did not include the entire airport property, it gives an indication of what habitat and species may be present at the Airport. A Survey of Critical Biological Resources was also completed for El Paso County in 2001. This Survey is now dated at more than 20 years old; however, again it indicates what resources may be present in the area.

According to the Ecological Resource Survey, the presence of several of the federally protected species on the IPaC report can be ruled out due to lack of habitat at the Airport. This includes the whooping crane and western prairie fringed orchid. The following conclusions were made for the remaining species listed on the IPaC:

- Eastern Black Rail (*Laterallus jamaicensis*) – Not included in the Survey.



- Piping Plover (*Charadrius melodus*) – Due to the lack of sandbars or mud-flats in the vicinity of the project, Piping Plovers are unlikely to occur.
- Greenback Cutthroat Trout (*Oncorhynchus clarkia stomias*) - Not included in the Survey.
- Pallid Sturgeon (*Scaphirhynchus albus*) - Not included in the Survey.
- Ute Ladies'-tresses (*Spiranthes diluvialis*) - The property is not within *Spiranthes* designated Critical Habitat.

Other species included in the Ecological Resource Survey include:

- Western Burrowing Owl (state threatened) – May be present in prairie dog colonies
- Bald Eagles (state threatened) - The Airport is located outside of the Colorado Parks and Wildlife recommended seasonal restriction buffer (½ mile). At the time of the inspection, no eagles were observed on or adjacent to the property. Additionally, no nest, forage, or roost sites were identified on the property.
- Mountain Plover (state concerned species) – May be present in prairie dog colonies
- Piping Plover (federally threatened, state threatened) - Due to the lack of sandbars or mud-flats in the vicinity of the Airport, Piping Plovers are unlikely to occur.
- Plains Sharp-Tailed Grouse (state endangered) - No known populations of the Plains Sharp-Tailed Grouse are known to occur in proximity to the Airport.
- Lesser Prairie Chicken (state threatened) - No known populations of the Lesser Prairie Chicken are known to occur in proximity to the Airport.
- Ferruginous Hawk (state concerned) - At the time of the survey, no ferruginous hawks were observed.
- Preble's Meadow Jumping Mouse (federally threatened, state threatened) – The Airport is located within the FWS Block Clearance Zone for Colorado Springs.
- Black-tailed Prairie Dog - several active colonies of prairie dogs were observed during the field survey.

Although the IPaC and Ecological Resource Survey found the presence or absence of several species at the Airport. a biological survey would be required to verify future habitat and species at the Airport prior to the start of a construction project.

Lastly, a Survey of Critical Biological Resources was completed for El Paso County. Within this survey, the Airport was ranked for biodiversity, protection urgency,

and management urgency. The Airport was ranked as B2 (very high significance) for biodiversity as the Airport contains big bluestem-prairie sandreed tallgrass. The Airport's tallgrass community is the largest known occurrence of this tallgrass community in Colorado. The Airport was ranked as P1 (very high urgency) for protection urgency. The easternmost portion is part of the historic Banning-Lewis Ranch and portions of the City Airport Authority property are planned for development; housing subdivisions are rapidly encroaching and have recently decreased the tallgrass prairie acreage. Impacts to the tallgrass should be considered when native ground is planned for development.

The Survey of Critical Biological Resources also included an analysis of the Fountain and Jimmy Camp Creeks, which receives stormwater from the Airport. The Creeks were ranked with moderate significance for biodiversity as the Arkansas darter, a globally-vulnerable fish species, is present within the Creeks. They were also ranked with high urgency for protection; changes in the hydrologic regime of Fountain Creek and development on the banks of Fountain and Jimmy Camp creeks have the potential to extirpate Arkansas darters from these reaches. Lastly, the Creeks were ranked with high urgency for management as the new management actions are needed to prevent the loss of the Arkansas darter from the stream reaches. Changes to Airport operations or development plans that impact the quality of stormwater runoff into these Creeks should be considered.

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Research has posited that an increase in atmospheric greenhouse gas (GHG) emissions is significantly affecting the Earth's climate. This is based upon a scientific record that includes contributions from the United States Global Change Research Program (USGCRP). This program was mandated by Congress in the Global Change Research Act to "assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change."<sup>4</sup> The scientific assessments of the USGCRP, the National Research Council (NRC), and the Intergovernmental Panel on Climate Change (IPCC), informed a 2009 decision by the EPA concluding that changes to the climate caused by elevated concentrations of GHG in the atmosphere endanger the public health and public welfare of current and future generations.<sup>5</sup> In 2015, EPA acknowledged more recent scientific assessments that "highlight the urgency of addressing the rising concentration of carbon dioxide (CO<sub>2</sub>) in the atmosphere."<sup>6</sup>

The FAA has not established a significance threshold for climate impacts. According to the Council on Environmental Quality (CEQ), it is very difficult to link specific climatological changes to a particular project. Since only a very small percentage of CO<sub>2</sub> emissions originate from aviation sources, emissions are not expected to be a significant concern within the planning period. However, the

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<sup>4</sup> USFWS, HYPERLINK "<https://www.fws.gov/mountain-prairie/es/grizzlyBearHistoryHabitatDiet.php>"

<sup>5</sup> Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496 (December 15, 2009).

<sup>6</sup> EPA < Final Rule for Carbon Pollution Emission Guidelines for Existing Stationary Sources Electric Utility Generating Units, 80 Fed. Reg. 64661, 64677 (October 23, 2015).

Airport can employ and encourage operators at the Airport to reduce their emissions and the resulting GHG.

A larger discussion regarding the changing climate and the airport's resiliency to this change can be found in the Appendices to this report.

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**Department of  
Transportation Act  
Section 4(f)**

Section 4(f) of the U.S. Department of Transportation Act of 1966 requires the Federal Transportation Authority (FTA) and other U.S. Department of Transportation (USDOT) agencies to consider alternatives to developing publicly-owned parks, recreation areas (including trails), wildlife and water fowl refuges, or public and private historic properties, unless there is no feasible and prudent alternative to that use and the action includes all possible planning to minimize harm to the property resulting from such a use (see 23 CFR Part 774).

Numerous city parks are located within the City of Colorado Springs and to the west of the Airport. The nearest city park is the Sky View Community Park and Sports Complex, located adjacent to the Airport and along S. Powers Boulevard. Section 4(f) resources are also located to the north of the Airport and within Peterson SFB. Peak View Park, associated with Peterson SFB, is located adjacent to and east of the Airport. The Bluestem Prairie Open Space is also located adjacent to and south of the Airport. **Figure 2-30** displays the location of the Section 4(f) resources in proximity to the Airport.

Historic sites are also considered a Section 4(f) resource and are discussed within the Historical, Architectural, Archeological, and Cultural Resources section of this section.



Figure 2-30: Section 4(f) Resources Near COS



Source: U.S. Department of Transportation

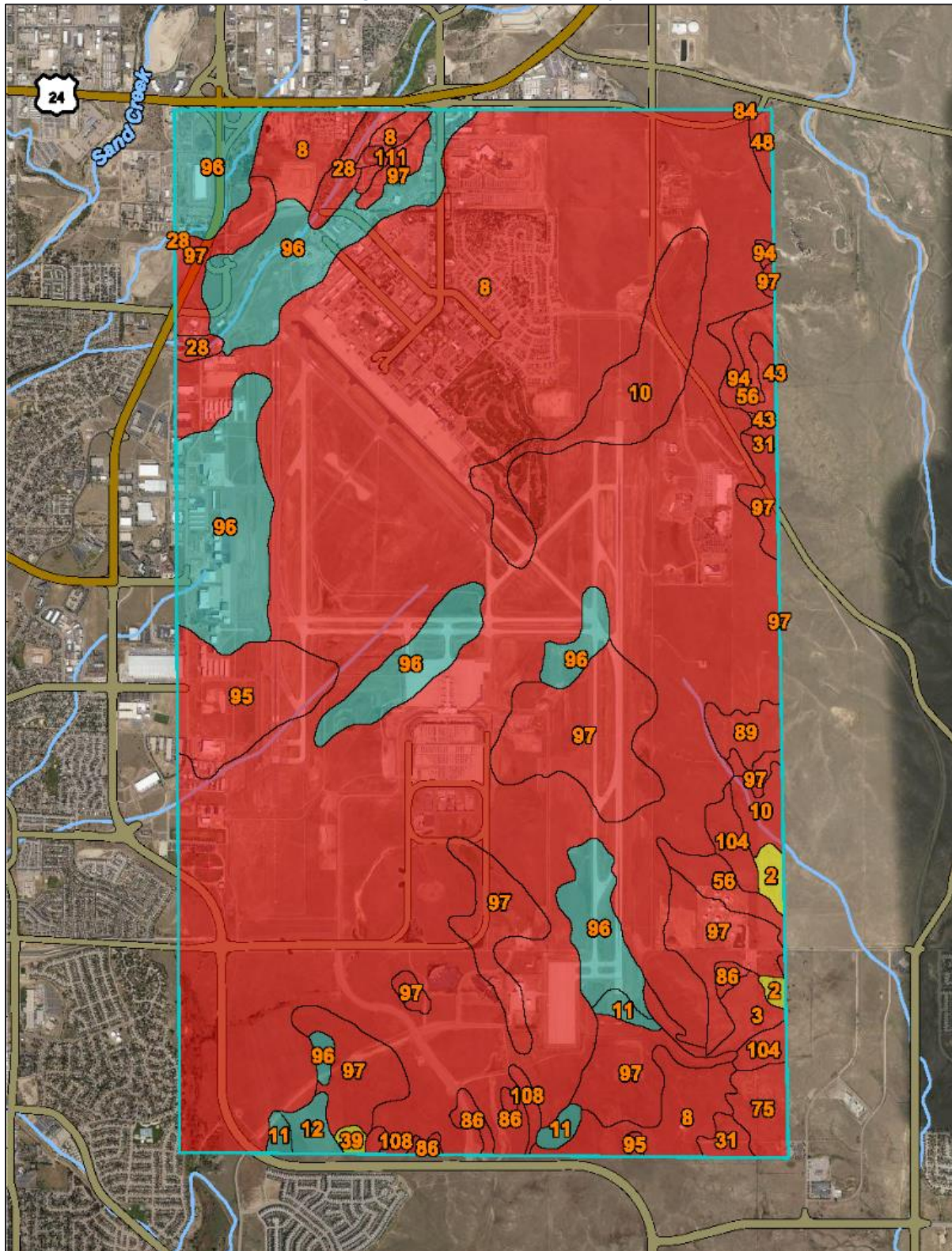
**Farmlands** According to FAA Order 1050.1f, farmlands are defined as those agricultural areas considered important and protected by Federal, state, and local regulations. Important farmlands include all pasturelands, croplands, and forests (even if zoned for development) considered to be prime, unique, or of statewide or local importance. The Farmland Protection Policy Act (7 U.S.C. 4201-4209), through the Natural Resources Conservation Service (NRCS), regulates federal action with the potential to convert important farmland to non-agricultural uses.

The NRCS's Web Soil Survey shows a large portion of the airfield (approximately 85 percent) is designated as not prime farmland (see areas shaded in red in **Figure 2-31**). Areas designated as prime farmland (blue shaded areas) have already been developed with airport-related projects, limiting any potential use for farming.

For proposed improvement projects within areas of farmland importance, it is important to note that conversion of farmlands may require NRCS review. The NRCS uses a scoring of impact system called the Farmland Conversion Impact Rating form; this is done using Form AD-1006 (03-02). The results of this scoring will determine the significance of the impacts and the need for further actions, including mitigation.



Figure 2-31: USDA Soil Survey



Source: USDA

### **Hazardous Materials, Solid Waste, and Pollution Prevention**

Hazardous materials, solid waste, and pollution prevention are most commonly regulated under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Pollution Prevention Act of 1990, and the Resource Conservation and Recovery Act of 1976 (RCRA). Several other Executive Orders also regulate hazardous materials, solid waste, and pollution prevention (see FAA Order 1050.1f Desk Reference for a full list). Additionally, the Colorado Department of Public Health and Environment (CDPHE), Hazardous Materials and Waste Management Division is responsible at the state level for mitigation related to this specific environmental area.

The terms hazardous material, hazardous waste, and hazardous substance are often used interchangeably when informally referring to contaminants, industrial wastes, dangerous goods, and petroleum products. Solid waste, as defined by RCRA, is generally any discarded material that meets specific regulatory requirements and can include such items as refuse and scrap metal, spent materials, chemical by-products, and sludge from industrial and municipal wastewater and water treatment plants. Lastly, FAA Order 10501f, describes pollution prevention as methods used to avoid, prevent, or reduce pollutant discharges or emissions through strategies such as using fewer toxic inputs, redesigning products, altering manufacturing and maintenance processes, and conserving energy.

The Airport and its tenants maintain numerous fuel and deicing tanks (both above and below ground). All tanks are contained and maintained per the Airports Spill Prevention Control and Countermeasure (SPCC) Plan. The SPCC plan provides guidance and measures to minimize the potential for a discharge and to the hazards to human health and the environment from an unplanned discharge

Additionally, the ARFF facilities at Peterson SFB frequently use and dispose of hazardous materials as part of training exercises on the north side of the Airport. These actions are regulated under the SFB.

Waste sites on the Airport include a glycol pond for storing deicing runoff and discussed previously in this chapter. A landfill previously existed on the east side of the long-term passenger parking area and was redistributed to areas south of Runway 35L. This landfill contained refuse from both Airport and military uses; thus, soils should be analyzed prior to any additional construction on these sites. The most recent correspondence, dated March 2007, related to the landfills confirmed compliance with a CDPHE inspection and requests to reseed the area and dispose of a small amount of debris near the site at a permitted facility.

Future development near hazardous material or solid waste sites should be examined for potential impacts. Remediation plans may need to be developed if sites were to be impacted. The Airport should also consider construction practices that reduce the amount of pollution created during construction, from equipment, and those emitted by operation.

**Historical,  
Architectural,  
Archeological, and  
Cultural Resources**

Section 106 of the National Historic Preservation Act (36 CFR 800) (NHPA) requires federal agencies to consider the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation reasonable opportunity to comment on such efforts. Projects subject to Section 106 must consult with the State Historic Preservation Officer, Tribal Historic Preservation Officer(s), and ACHP to determine if the project has the potential to affect historic properties already listed on or eligible for the National Register of Historic Places (NRHP) and what, if any, alternatives exist to avoid, minimize or mitigate the adverse effect(s) to National Register and National Register-eligible properties.

The former Colorado Springs Airport site, now part of Peterson SFB, was listed as a Historic District in 1988. Four of these buildings, the terminal building, City Hangar, Broadmoor Hangar, and Spanish House/Caretakers Residence, were included in the NRHP in November 1996. A fifth building is included in the district but is not in the NHRP due to its age and lack of use during the municipal airport's original use period from 1926-1945.

Any proposed projects that could potentially impact the historic district or NRHP buildings would require additional analysis. Further, future projects proposed on undisturbed ground may require a cultural resource survey to verify the presence or absence of buried archaeological features.

**Natural Resources  
and Energy Supply**

As stated in the FAA Order 1050.1f Desk Reference, as an impact category, natural resources and energy supply provides an evaluation of a project's consumption of natural resources (such as water, asphalt, aggregate, wood, etc.) and use of energy supplies (such as coal for electricity; natural gas for heating; and fuel for aircraft, commercial space launch vehicles, or other ground vehicles). Consumption of natural resources and use of energy supplies may result from construction, operation, and/or maintenance of the proposed action or alternative(s).

The existing energy used at COS is typical of other similar-sized commercial service airports. The buildings and lighting facilities respond to the demand which is triggered principally by airport operations. Energy is provided by Colorado Springs Utilities. Fuel consumption for aircraft will remain generally the same, unless a significant increase in demand occurs. The expected modest growth rate, combined with the minor increases in electrical demand, will not jeopardize the future availability of these resources to the airport or the community. Additionally, only common construction machinery and methods are needed to construct projects as their implemented, putting no continued burden on the area's ability to supply gasoline or diesel fuel. Future improvements to facilities at the Airport will likely result in greater fuel efficiency as a result of improvements in architectural and mechanical equipment and materials.

A more detailed discussion regarding energy resiliency can be found in the Appendices of this report.

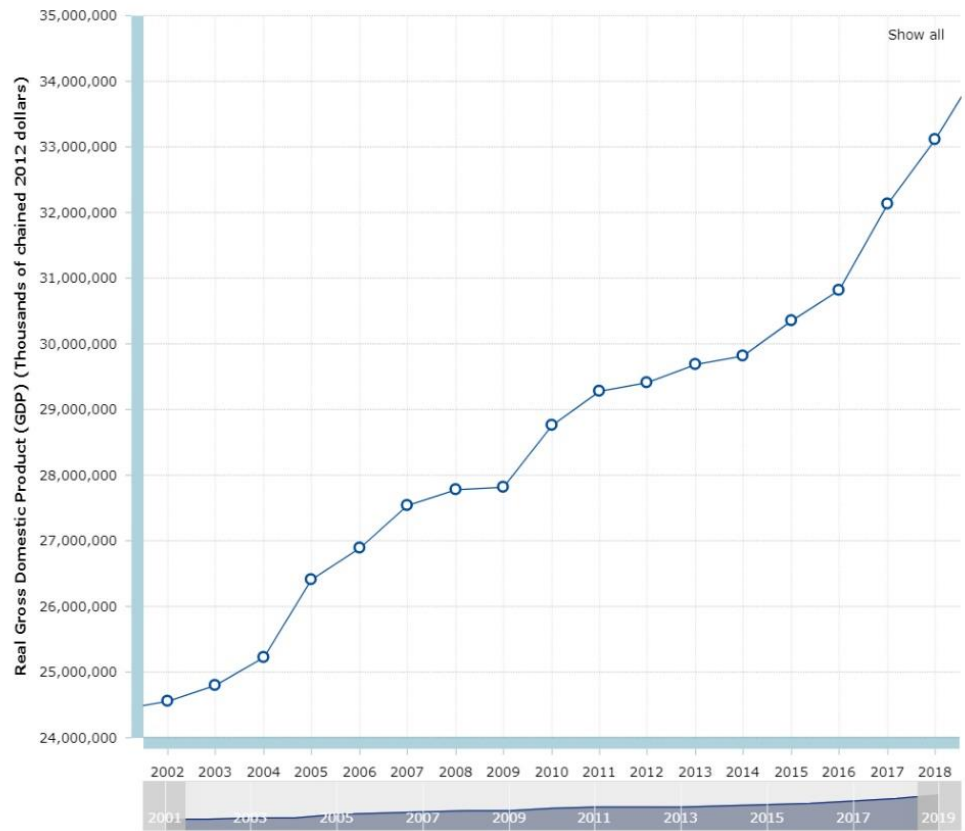


**Socioeconomic Impacts,  
Environmental Justice,  
and Children’s  
Environmental Health and  
Safety Risks**

Socioeconomics is an umbrella term used to describe aspects of a project that are either social or economic in nature. A socioeconomic analysis evaluates how elements of the human environment, such as population, employment, housing, and public services, might be affected by the proposed action and alternative(s).<sup>7</sup> Economic activity and income, employment, population and housing, public services, and social conditions are all indicators of an area’s baseline socioeconomic conditions.

According to the Bureau of Economic Analysis (BEA), the gross domestic product for the City of Colorado Springs was \$34.3 billion in 2019, continuing the historical upward trend (see **Figure 2-32**). The BEA also reports the personal income for the same area was \$38.1 billion in 2019, again a continuation of an upward trend (see **Figure 2-33**).

**Figure 2-32: Gross Domestic Product for Colorado Springs**



Source: U.S. Bureau of Economic Analysis

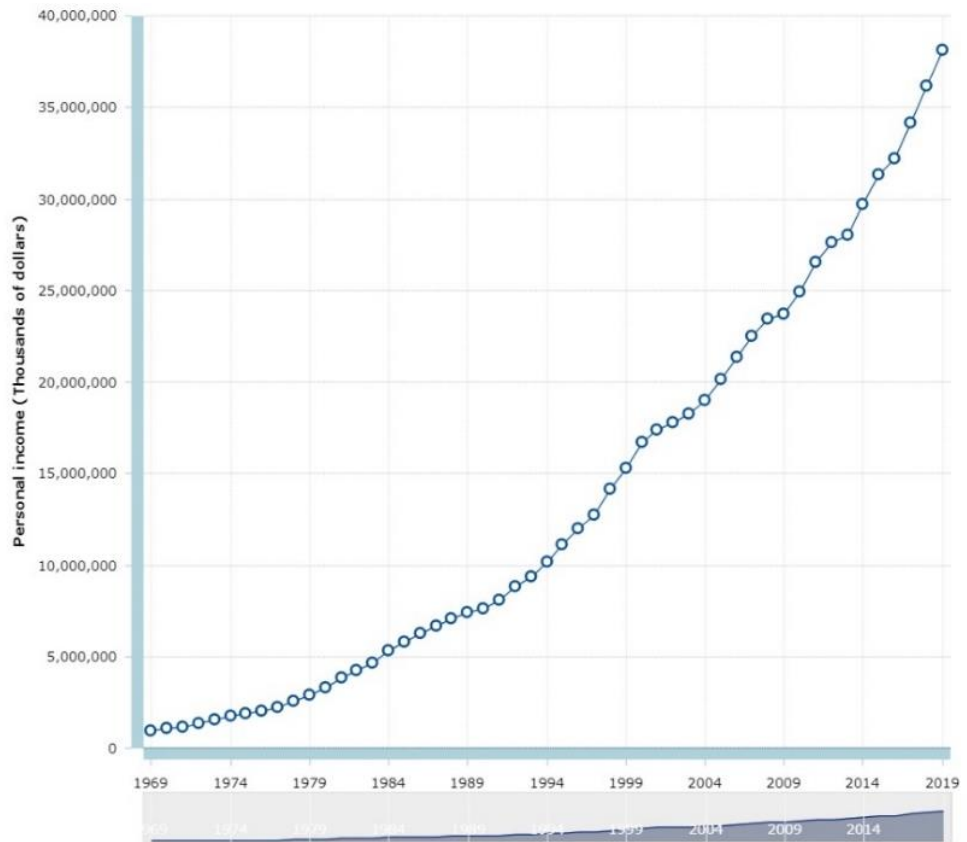
■ Colorado Springs CO (Metropolitan Statistical Area)

Source: U.S. Bureau of Economic Analysis, 2019

<sup>7</sup> FAA, FAA Order 1050.1f, Desk Reference, 201518.1



**Figure 2-33: Personal Income Summary for Colorado Springs**



Source: U.S. Bureau of Economic Analysis

Colorado Springs CO (Metropolitan Statistical Area)

Source: U.S. Bureau of Economic Analysis, 2019

The U.S. Bureau of Labor Statistics reports that the unemployment rate for the City of Colorado Springs in July of 2021 was 6.2 percent, this is slightly higher than the national average of 5.7 percent, for the same time period. Of those employed, a majority of employees work within the professional/business services and government related jobs. **Table 2-20** displays the top employment categories in July of 2021.

**Table 2-20: Employment by Major Section**

Employment Area	Number in Thousands (July 2021)
Professional and business services	51.9
Government	51.2
Trade, transportation, and utilities	44.9
Education and health services	43.7
Leisure and hospitality	39.1
Mining, logging, and construction	18.9
Financial activities	18.7

Employment Area	Number in Thousands (July 2021)
Leisure and hospitality	18.1
Manufacturing	12.1
Information	5.2

Source: U.S. Bureau of Labor Statistics, 2021

### *Environmental Justice*

The EPA defines environmental justice as:

“...the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”

Essentially, environmental justice doctrine attempts to prevent the exposure of environmental negligence to disproportionately affected communities (low-income and communities of color). Throughout US history, polluting factories, landfills, and highways were built near low-income and majority-minority communities, sparing majority-white, upper- or middle-class neighborhoods from the negative impacts. Environmental Justice serves to prevent such policies from continuing.

The U.S. Census Bureau reports that in 2019, the population of Colorado Springs is comprised of a mix of races. A majority of residents identified as “White”; “Hispanic or Latino” is the second-largest racial group. **Table 2-21** breakdowns the racial makeup of Colorado Springs.

**Table 2-21: Race Origins**

Race Origin	Percent of Population
White alone, not Hispanic or Latino, percent	68.60%
Hispanic or Latino, percent(b)	17.60%
Black or African American alone, percent(a)	6.50%
Two or More Races, percent	5.90%
Asian alone, percent(a)	2.90%
American Indian and Alaska Native alone, percent(a)	0.80%
Native Hawaiian and Other Pacific Islander alone, percent(a)	0.30%

Source: U.S. Census Bureau, 2019

Environmental justice actions also protect aging and low-income populations. The U.S. Census bureau reports that, in 2019, 13.4 percent of the population is over 65 and 11.7 percent of the population is living in poverty.

### ***Children’s Environmental Health and Safety Risks***

Federal agencies have been directed through Executive Order 1045, *Protection of Children from Environmental Health Risks*, to identify and assess health and safety risks that may disproportionately affect children. Environmental health and safety risks include hazards attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to. The U.S. Census Bureau reports that in 2019, 23.2 percent of the population of Colorado Springs was under the age of 18, with 6.5 percent under the age of 5.

As the Airport considers future development projects that may include land acquisitions and/or changes to land use, it should examine the impacts to population, employment, housing, and public services. Land uses near the north and west sides of the Airport, where the adjacent land is most densely populated and developed may be key considerations. Similar consideration should be taken for development to the east of the Airport, as future Airport projects may impact homes being planned in the future.

### ***Human Trafficking***

Although not directly related to socioeconomic impacts; environmental justice; or children’s environmental health and safety risks; it’s important to mention the global issue of human trafficking and its impact to the human environment. The United Nations defines human trafficking as “the acquisition of people by improper means such as force, fraud, or deception, with the aim of exploiting them.” In other words, human trafficking is modern-day slavery. According to the International Labor Organization, an estimated 27 million people are currently being held as modern-day slaves, netting approximately \$150 billion in profits each year for traffickers.

The travel industry, specifically airports and airlines, are in a unique position where they lie in the crossroads of the victim’s journey. Airport and airline employees, given appropriate training, can play an important role in detecting and stopping human trafficking. Numerous aviation related organizations such as the Airline Ambassadors International and Air Transport Association provide free online training and resources. The Airport’s participation in such training would be a vital asset to the international effort to eradicate human trafficking.

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### **Visual Effects**

The FAA Order 1050.1f Desk Reference states “visual effects deal broadly with the extent to which the proposed action or alternative(s) would either: 1) produce light emissions that create annoyance or interfere with activities; or 2) contrast with, or detract from, the visual resources and/or the visual character of the existing environment.” Visual effects are therefore often broken into two categories: Light Emission Effects and Visual Resources and Visual Character.

### **Light Emissions**

Light emissions are any light emanating from its source into the surrounding environment. Examples of sources of light emissions at COS include airfield and apron flood lighting, navigational aids, terminal lighting, parking facility lighting, roadway lighting, safety lighting on launch pads, additional lighting to support nighttime commercial space launches, and light generated from such launches. Glare is a type of light emission that occurs when light is reflected off a surface (e.g., window glass, solar panels, or reflective building surfaces).<sup>8</sup>

The light emitted from the Airport is needed and/or required to maintain aircraft and personal safety. The Airport is largely surrounded by developed areas such as roadways, manufacturing and office space, and military facilities. These are not typically light sensitive resources. As development occurs, light emission impacts to neighboring and planned residential development should be considered.

### **Visual Resources and Visual Character**

*Visual resources* include buildings, sites, traditional cultural properties, and other natural or manmade landscape features that are visually important or have unique characteristics. *Visual character* refers to the overall visual makeup of the existing environment. For example, areas in close proximity to densely populated areas generally have a visual character that could be defined as urban, whereas less developed areas could have a visual character defined by the surrounding landscape features, such as open grass fields, forests, mountains, or deserts, etc.<sup>9</sup>

The Airport is located in the southeast corner of the City and is largely buffered from the surrounding communities by Peterson SFB to the north, general aviation hangars and industrial development to the west, and the Peak Innovation Park to the south of the terminal area. The area to the east is a planned development area with some development already occurring. An open space is located to the south of the north/south runways.

When planning future development projects at the Airport, considerations should be made to reduce or mitigate, to the extent possible, light emissions or development that would alter or impact the visual character of the area.

### **Noise and Compatible Land Use**

“Noise” is considered unwanted sound that can disturb routine activities (e.g., sleep, conversation, student learning) and can cause annoyance. Aviation noise primarily results from the operation aircraft, such as departures, arrivals, overflights, taxiing, and engine run-ups.<sup>10</sup> Within the context of an Airport Master Plan, actions and development that may change runway configurations, airport

<sup>8</sup> FAA, Order 1050.1F Desk Reference, 2015

<sup>9</sup> FAA, Order 1050.1f Desk Reference, 2015

<sup>10</sup> FAA, Order 1050.1f Desk Reference, 2015

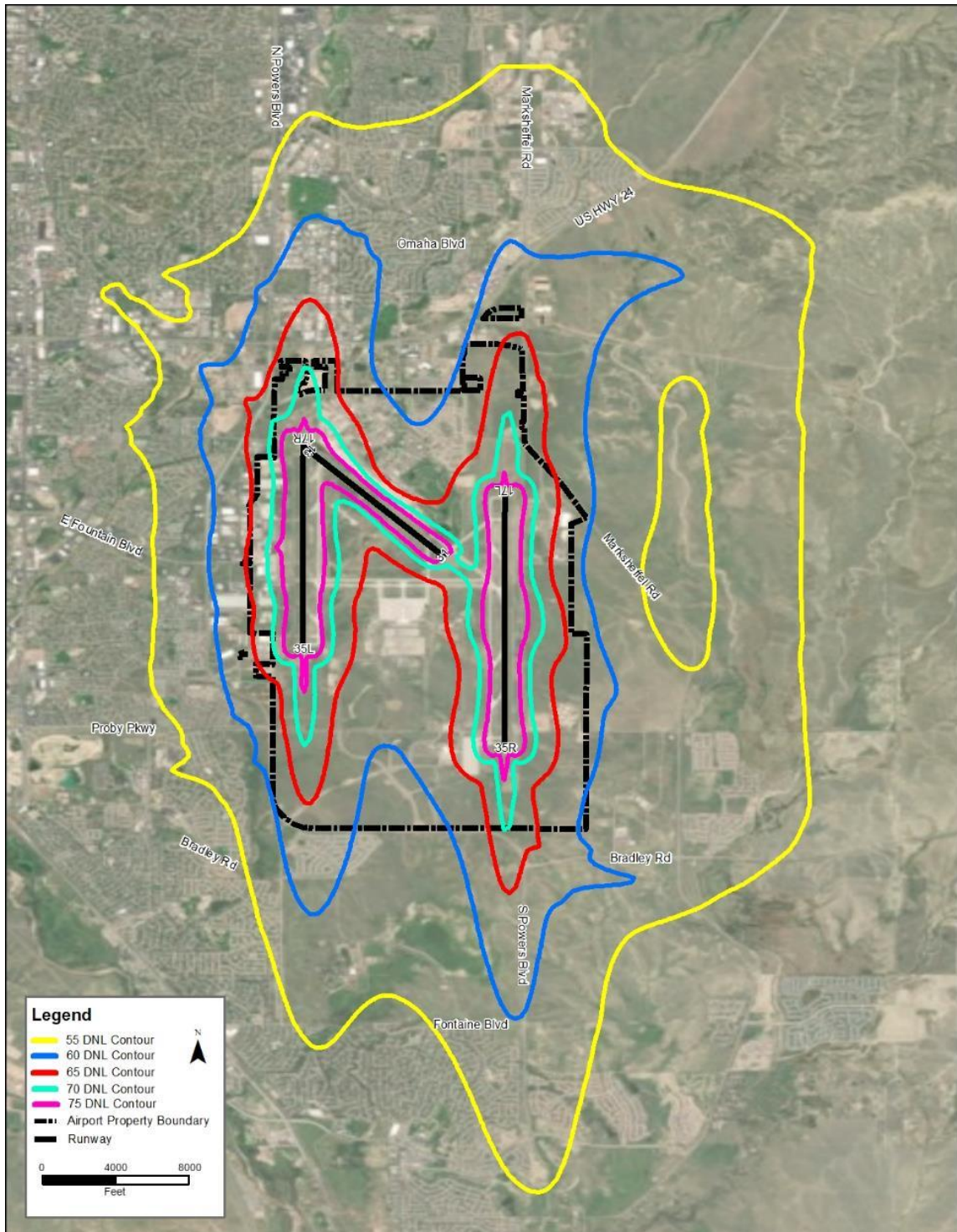


operational patterns, aircraft fleet mix, flight patterns, among others may have the potential to alter noise impacts on local communities.

A Land Use Compatibility Study was completed for the Airport in October 2020 that included the development of existing and future noise exposure contours and recommended an Airport Land Use Compatibility Plan. The Study also analyzed aircraft operations with noise readings conducted at different locations around the Airport. The updated day-night average sound level (DNL) noise contours were based on the Airport's annual service volume (ASV) or capacity. This differs from contours commonly based on an operations forecast. Basing the contours on the Airport's ASV accommodates the change in aircraft engine technology that equates to quiet aircraft, while at the same time protecting airspace for the full build out of the Airport as depicted in the ALP. **Figure 2-34** shows the contours based on ASV.

The Recommended Airport Land Use Compatibility Plan provides requirements for development within the vicinity of the Airport. The Plan took into account industry standards, developed guidance, and requirements to ensure compatible land use in the vicinity of COS as well as an appropriate review process. As a result of the analysis completed in the Plan, the limits of the Airport Overlay (AO) were modified, and the Aircraft Navigation Subzone (ANAV) was discontinued. **Figure 2-35** shows the modified overlay and subzones. Future development should consider the recommendations outlined in the Land Use Compatibility Plan as well as the limits of the modified overlay and subzones.

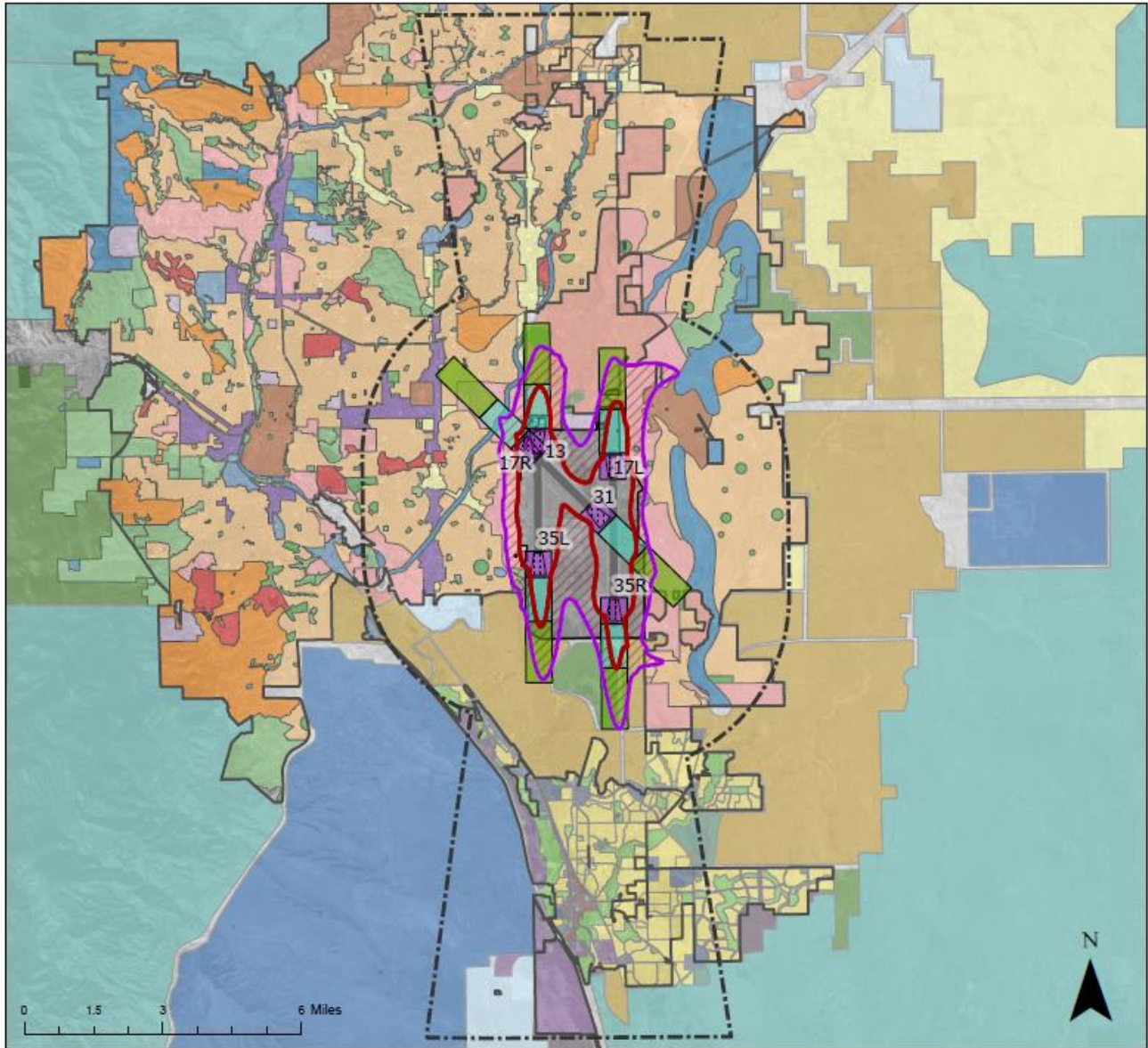
Figure 2-34: ASV DNL Contours



Source: KB Environmental Sciences, Inc.



**Figure 2-35: Overlay and Subzone**



LAND USE		
<b>El Paso County</b>	<b>Colorado Springs</b>	<b>Fountain</b>
Urban Residential	Candidate Open Space	Commercial
Large-Lot Residential	Commercial Center	Historic Downtown
Suburban Residential	Community Activity Center	Industrial
Employment Center	Employment Center	Mixed Use
Regional Open Space	Existing Golf Course / Cemetery	Public
Rural	Existing Park Land / Open Space	Residential
Incorporated	General Residential	Agriculture
Military	Low Residential	
	Major Institutional	
	Mature Redevelopment Corridor	
		New / Developing Corridor
		Regional Center

LEGEND
DNL 60 Contour ASV
DNL 65 Contour ASV (65 DNL)
Airport Influence Area (AIA)
Airport Overlay (AO)
Accident Potential Zone 1 (APZ1)
Accident Potential Zone 2 (APZ2)
Clear Zone (CZ)
Runway Protection Zone (RPZ)
Runway
Airport Property Boundary
City Boundaries

Source: Jviation, a Woolpert Company

**Water Resources** Water resources include wetlands, floodplains, surface waters, ground waters, and Wild and Scenic Rivers. These resources function together as a holistic system and are vital parts of the environment. Impacts to one resource can disrupt the entire system. Water resources provide drinking water and support recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. Water resources near COS are summarized in the following subsections.

### ***Wetlands***

Wetlands, as defined by the Clean Water Act (which regulates the discharge of pollutants into waters of the U.S.), are areas inundated or saturated by surface or ground water at a frequency and duration to support vegetation adapted to these conditions. Wetlands provide many benefits to the human, biological, and hydrological environment, including habitat for fish and wildlife, water quality improvement, floodwater storage, and recreational opportunities.<sup>11</sup> Federal, state, and local agencies are required to minimize the destruction, loss, or degradation of wetlands.

According to the U.S. Fish and Wildlife’s National Wetland Inventory, limited wetlands and other waters of the U.S. exist on Airport property, with a riverine and freshwater pond located just south of E. Platte Avenue near Peterson SFB and north of the Airport. The same riverine channel extends just off Airport property near the WWII Aviation Museum on the west side of the Airport. Other small drainage channels intersect the airport property to the south. **Figure 2-36** illustrates known wetlands and waters of the U.S. in the vicinity of the Airport.

Although limited water resources are present on Airport property, future development should consider impacts to stormwater runoff and drainage areas that may feed into larger water systems and wetland areas.

### ***Floodplains***

As stated in FAA Order 1050.1f, *Desk Reference*, floodplains are lowland areas adjoining inland and coastal waters which are periodically inundated by flood waters. Floodplains are often discussed in terms of the 100-year flood (or base flood). The 100-year flood is a flood having a 1 percent chance of occurring in any given year. Floodplains are valuable as they provide natural flood and erosion control, enhancement of biological productivity, and socioeconomic benefits and functions.

Floodplains are limited on Airport property and only exist on a stretch of the East Fork Sand Creek, a dry creek bed located just north of the approach ends to Runway 13 and Runway 17R.

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<sup>11</sup> FAA, Order 1050.1F Desk Reference 2015



Figure 2-36: National Wetlands Inventory Map



September 9, 2021

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

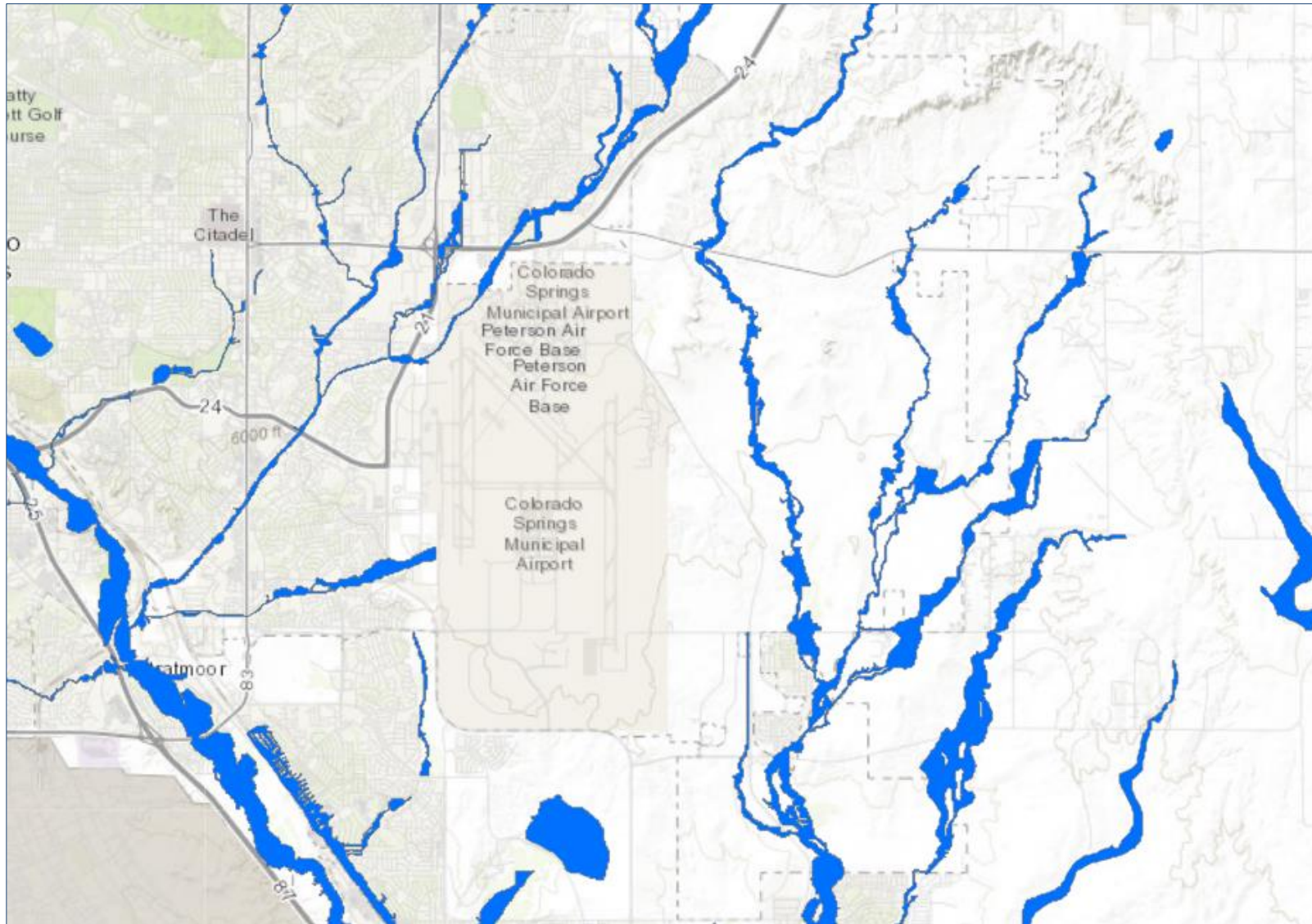
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Source: USFWS

Figure 2-37: 100-Year Floodplain



Source: City of Colorado Springs ArcGIS Map, 2021



### *Surface and Ground Waters*

Surface waters include streams, rivers, lakes, ponds, estuaries, and oceans, while groundwaters include subsurface waters such as aquifers. As discussed above, surface water features are limited on and near the Airport. The East Fork Sand Creek is located to the west of the Airport and the Big Johnson Reservoir is to the south.

The Airport is located in the Fountain Creek Watershed, which extends more than 900 square miles in southern Colorado. Sporadic and widely distributed precipitation in this region has resulted in flooding and sediment deposition in Fountain Creek and its tributaries, resulting in a degraded watershed. The Airport is located near the Denver Basin Aquifer; this aquifer is comprised of four smaller aquifers: the Dawson, Denver, Arapahoe and Laramie-Fox Hills. The Denver Basin Aquifer is used primarily for municipal, domestic, commercial, and agricultural uses.

According to the City of Colorado Springs Stormwater Enterprise, nearly 80 percent of the area's water comes from the Western Slope of the Rocky Mountains, nearly 200 miles from Colorado Springs.

The primary surface water features in proximity to the Airport are the Big Johnson Reservoir, Fountain Creek, Jimmy Camp Creek, Sand Creek, and Windmill Gulch. Runoff from the Airport generally flows off-site via natural and constructed means. The western half of the Airport generally slopes to the southwest and discharges to the Sand Creek or Windmill Gulch; both of which discharge to Fountain Creek. The eastern half of the Airport slopes to the southeast and discharges to Jimmy Camp Creek (ultimately Fountain Creek). The southern portion of the Airport slopes to the south and discharges to the Big Johnson Reservoir. It is noted in the SPCC plan that Fountain Creek, Big Johnson Reservoir, and Jimmy Camp Creek are considered the highest priority water-ways to be protected in the event of a discharge.

### *Wild and Scenic Rivers*

Wild and Scenic Rivers are those rivers having remarkable scenic, recreational, geologic, fish, wildlife, historic, or cultural value, as defined by the Wild and Scenic Rivers Act.

The U.S. National Park Service maintains a database of all rivers and river segments that are currently listed as wild and scenic or have been afforded the status of a "eligible or suitable" and may be eligible in the future for inclusion on the list. This list was updated in April 2021 and does not include any of the streams or tributaries that receive drainage from the Airport. Thus, there are no water resources within the Airport vicinity designated as "wild or scenic." The nearest wild and scenic river to the Airport is the Rio Grande River located over 100 miles to the south.

The Appendices of this report provide additional discussion of water resiliency to include both water quality and quantity and how the Airport can improve the local water quality and reduce consumption.

**Summary** Information from the environmental categories data described above were reviewed, compiled, and have been summarized below in **Table 2-22**.

**Table 2-22: Environmental Category Summary**

Environmental Category	Summary
Air Quality	In maintenance for carbon monoxide, in attainment for other pollutants.
Biological Resources	No critical habitats present at the Airport, some species may be present on Airport property.
Climate	Operational and construction related emissions may contribute to GHG's.
Department of Transportation Act, Section 4(f)	Numerous public parks and the Bluestem Prairie Open Space are located in proximity to the Airport. Historic resources are also present on Peterson SFB.
Farmlands	Limited amount of prime farmland is present but is already developed and is unlikely to be farmland due to lack of irrigation.
Hazardous Materials, Solid Waste, and Pollution Prevention	Storage tanks for hazardous materials are located on the Airport, as well as usage for ARFF and deicing practices. A former landfill is also present near Runway 35L.
Historical, Architectural, Archeological, and Cultural Resources	A Historic District is located on Peterson SFB with four buildings included on the NRHP.
Natural Resources and Energy Supply	The Airport uses energy typical of its size and anticipates a similar level of consumption in the future.
Noise and Noise-Compatible Land Use	Land Use Compatibility Study to include updated noise contours was completed in 2020. Residential areas exist to the west, north, and south.
Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks	Community demographics should be reviewed prior to projects with potential impacts to ensure negative socioeconomic impacts are mitigated.
Light Emissions, Visual Resources, and Visual Character	The Airport uses lighting systems, although with minimal impact to the community. Lights are located away from residential communities and are screened by buildings in most instances.
Wetlands	Limited presence to the north and west, primarily located just off Airport property.
Floodplain	Limited presence to the north as part of the East Fork Sand Creek.
Surface and Ground Waters	Three surface water features are included as part of the Peterson SFB Golf Course.
Wild and Scenic Rivers	The nearest wild and scenic river to the Airport is the Rio Grande River located over 100 miles to the south.

Source: Jviation, a Woolpert Company