



EAGLE COUNTY
Regional Airport



EAGLE COUNTY REGIONAL AIRPORT MASTER PLAN

CHAPTER 2





2.0 INVENTORY OF EXISTING CONDITIONS

The inventory consists of data collection and documentation of the existing conditions at Eagle County Regional Airport (EGE or the Airport) and its surroundings. This section of the Airport Master Plan (AMP) is the foundation for the later identification of facility deficiencies and proposed improvements. This inventory, like other study elements, follows the guidance outlined in Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*.

2.1 AIRPORT OVERVIEW

Eagle County Regional Airport is a premier aviation facility that serves resort communities in the Rocky Mountain region of Colorado. The Airport is located just south of Interstate 70 in the Town of Gypsum within Eagle County. It provides both residents and visitors with a full complement of aviation activities including commercial airline service and general aviation operations. The Colorado Army National Guard also uses the Airport as its High-Altitude Army National Guard Aviation Training Site (HAATS), preparing aviators from around the world to handle a wide range of helicopter flight scenarios.

The Airport is a significant community asset as demonstrated by the findings in the *2020 Colorado Aviation Economic Impact Report*, where it was estimated that EGE supports over 5,000 jobs and generates an estimated \$640 million in economic activity. In 2019, the last year prior to the pandemic, the Airport accommodated nearly 200,000 passenger boardings and over 43,000 aircraft operations. By 2021, the Airport had recovered from pandemic-related impacts to exceed 57,000 aircraft operations, servicing more than 200,000 passengers. Visitors to nearby ski resorts and outdoor recreation areas drive much of that demand, while on-airport businesses host visiting aircraft and provide critical aviation services for customers.

The previous EGE Master Plan was completed in 2014. Since the time of that planning effort, the Airport has instituted multiple improvements: the opening of a renovated and expanded commercial terminal building, construction of a deicing apron, and upgrading various apron pavements, among others. Additionally, the aviation industry itself is highly dynamic and experiences significant changes very quickly on local, regional, and national levels. These factors all have the potential to impact the need for existing and future aviation facilities and services at EGE.

The initial step in the preparation of this AMP is the collection/identification of information pertinent to the Airport and the surrounding areas. This chapter gathers data from multiple sources to provide a solid foundation for subsequent analyses conducted as part of the AMP process. Specifically, this inventory chapter examines three basic elements that contribute to the existing and future development of the Eagle County Regional Airport:

1. The Airport's facilities (e.g., runways, taxiways, aircraft parking aprons, commercial passenger terminal, hangars, maintenance facilities, ground access, etc.)

This Airport Master Plan will provide a comprehensive evaluation of EGE and result in a long-term facilities and operational plan for the Airport.



2. The relationship between the Airport, the regional airport system, and the National Aviation System (NAS)
3. The Airport environs

Existing datapoints from associated planning documents were included in 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
- EGE Airport Master Plan (2014)
- Professional consultant-produced reports
- 2020 Colorado Aviation System Plan (CASP)
- Other pertinent data from the FAA, the Colorado Department of Transportation (CDOT) Division of Aeronautics, and the Eagle County Board of County Commissioners

Subsequent chapters in the AMP detail forecasts for the Airport's aviation activity, the ability of the Airport's facilities to safely and efficiently meet the needs associated with that projected aviation activity, and the recommended future development plan (both within and around the Airport property) that "right-sizes" EGE to accommodate the future demands and requirements.

2.2 AIRPORT SETTING

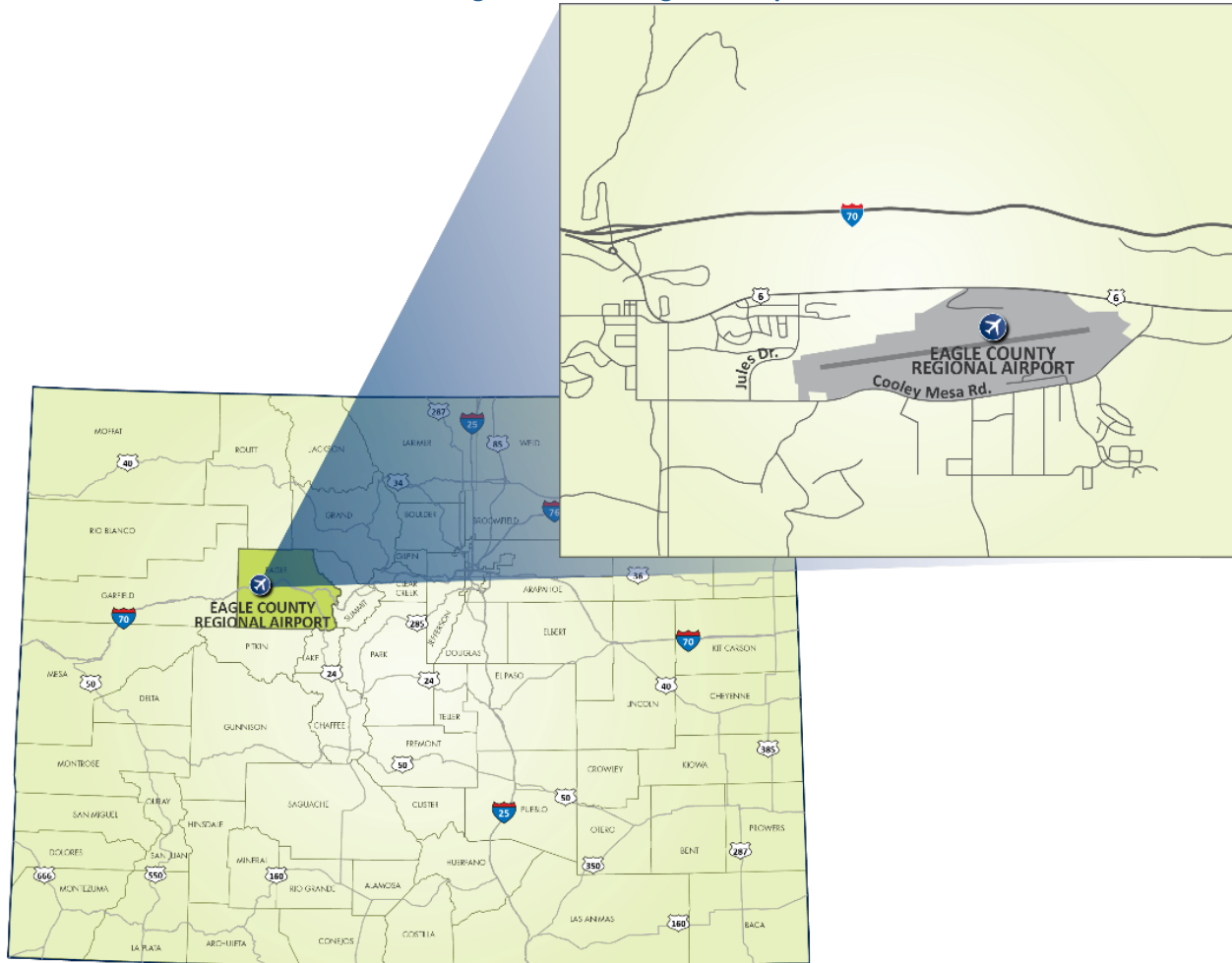
Located in the Town of Gypsum, the Airport serves residents from communities across Eagle County, from communities in neighboring counties, and visitors from around the world. While the Airport lies within the boundaries of Gypsum, its FAA-associated city is the Town of Eagle, which serves as the county seat and is comprised of approximately 7,500 residents. Located in the Eagle River Valley, the Airport sits on a small mesa just south of the Eagle River and surrounded by mountainous terrain.

Eagle County, the Airport's namesake, is home to 55,700 residents. Other notable communities in the county include Avon, Edwards, and Vail. Two world-class ski areas, Beaver Creek Resort and Vail Ski Resort, are located in Eagle County and are major drivers of visitor activity at the Airport.

The Airport can be accessed from Interstate 70 and is approximately three miles driving distance from Exit 140. General aviation hangars and the HAATS facility are located on the north side of the Airport and can be accessed by U.S. Route 6, also known as Grand Army of the Republic Highway, while the commercial service terminal building, the Airport's fixed base operator (FBO) Vail Valley Jet Center, as well as other general aviation facilities and supporting infrastructure can be accessed from Cooley Mesa Road. **Figure 2-1** illustrates the general location of the Airport within Eagle County and Colorado.



Figure 2-1: EGE Regional Map



Source: Jviation, a Woolpert Company.

2.3 AIRPORT HISTORY

Eagle County Regional Airport traces its history back to the 1920s with a purchase of a plot of land by Louise Ellen Cooley who would allow local barnstormers to perform demonstrations. As Eagle County became interested in the development of fully functional airport, plans were made on that land to formally establish the airfield in 1939. The initial 300-foot by 3,000-foot airstrip was constructed as an emergency landing strip to support airline service between Denver and Los Angeles. In 1945, Eagle County officially purchased the land, which had been expanded over the years, and took over the maintenance and operation of the air strip. Eagle County Airport was officially dedicated on September 14, 1947.

The origins of EGE date back to the 1920s barnstorming era with the first formal airstrip being established in 1939 and its formal dedication in 1947.

In 1962, the runway (identified as Runway 8-26) was paved at 50 feet wide by 5,000 feet long, and in January 1966, the Airport's first commercial service airline (Vail Airways) began operations. Commercial service development continued into the 1970s with short trips to Denver and Aspen being offered by Rocky Mountain Airways. The Airports first fixed base operator (FBO) opened in 1973 with a second



opening in 1977. In 1985, the Colorado Army National Guard established an operation to provide high-altitude training for pilots, now referred to as HAATS. On October 11, 1986, a new runway (Runway 7-25) was opened at 150 feet wide by 8,000 feet long with a new, full-length parallel taxiway; the original Runway 8-26 was subsequently decommissioned. In 2003, the current air traffic control tower (ATCT) was constructed and in 2006, an instrument landing system (ILS) was installed. In 2009, Runway 7-25 was reconstructed and extended 1,000 feet, making its total length the 9,000 feet that it is today.

During the 1990s, the Airport initiated regularly scheduled jet operations by mainline carriers. While the airline industry has experienced a series of mergers and acquisitions over the years, the Airport continues to accommodate service from the three remaining legacy carriers: American Airlines, Delta Airlines, and United Airlines. Two of these airlines, American and United, operate year-round routes to hubs in Dallas and Denver respectively, while seasonal routes to other hubs are added in the winter months.

Additional data related to the historical development of the Airport can be gleaned by examining the history of FAA Airport Improvement Program (AIP) grants from 2005 through 2021, as shown below in **Table 2-1**.

Table 2-1: EGE FAA AIP History (2005-2021)

Fiscal Year	Project	FAA AIP Funding
FY 2005	Extend Runway	\$10,879,927
FY 2006	Extend Runway	\$4,066,551
FY 2007	Extend Runway	\$4,861,299
FY 2008	Extend Runway Rehabilitate Runway	\$6,000,000 \$14,520,381
FY 2009	Rehabilitate Runway	\$1,491,524
FY 2010	Rehabilitate Runway	\$1,010,652
FY 2011	Acquire ARFF Vehicle Conduct Airport Master Plan Rehabilitate Apron	\$601,372 \$565,467 \$852,834
FY 2012	Rehabilitate Apron	\$1,855,242
FY 2013	Construct Snow Removal Equipment Building	\$1,764,235
FY 2014	Rehabilitate Apron Rehabilitate Runway Rehabilitate Taxiway	\$8,333,090 \$800,372 \$300,000
FY 2015	Rehabilitate Apron	\$6,727,931
FY 2016	Rehabilitate Apron	\$8,085,814
FY 2017	Acquire Snow Removal Equipment Reconstruct North GA Apron Design	\$936,682 \$375,489
FY 2018	Reconstruct North GA Apron	\$5,582,702
FY 2019	Construct Deicing Pad with Associated Facilities	\$14,641,891
FY 2020	Apron Pavement Maintenance/Pavement Joints	\$817,287
FY 2021	Rehabilitate Taxiway A Design	\$660,000

Source: FAA.



2.4 AIRPORT ADMINISTRATION AND FINANCES

The Airport is owned and operated by Eagle County, which is governed by a three-member Board of County Commissioners (BoCC). The County owns and maintains the Airport facilities and functions as the Airport Sponsor for federal and state grant funding purposes. The commercial passenger terminal is owned and operated by the Eagle County Air Terminal Corporation (ECAT). ECAT is a non-profit corporation created under Colorado law that is owned and controlled by Eagle County and is authorized to both issue bonds to finance the terminal and impose and collect Passenger Facility Charges (PFC) to discharge the debt.

Day-to-day operation of the Airport is handled by a dedicated, professional airport management staff. The BoCC designates a Director of Aviation to oversee the day-to-day operation and development of the airport. Airport staff is responsible for terminal operations, airfield operations, customer service, aircraft rescue and firefighting (ARFF), maintenance, and general administration, among others.

The Federal Aviation Administration (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.”¹ Refer to **Chapter Seven, Program Implementation Plan**, for additional information on the Airport’s financial structure.

2.5 AIRPORT ROLE

The Airport is an important asset within the national and state air transportation systems as well as in its local host communities. At the national level, the FAA maintains the National Plan of Integrated Airport Systems (NPIAS); at the state level, the Colorado Department of Transportation (CDOT) Division of Aeronautics manages the Colorado Aviation System Plan (CASP); and at the local level, Eagle County and the Town of Gypsum establish their own planning documents. Each plan defines the Airport’s role within the context of larger aviation systems and helps outline expectations for how the Airport can contribute within those systems.

EGE plays a variety of roles for the Town of Gypsum, Eagle County, the State of Colorado, and the United States.

2.5.1 National Plan of Integrated Airport Systems (NPIAS)

The NPIAS includes nearly 3,300 public use airports that contribute to the national airport system. There are 49 airports in Colorado included in the NPIAS. Of those 49, ten are designated as Primary Hub airports, which include Large, Medium, Small, and Nonhub airports. EGE is designated as a Primary Nonhub airport in the 2023-2027 NPIAS. Nonhub airports receive less than 0.05 percent of the national share of enplanements but enplane more than 10,000 passengers on an annual basis. Other Nonhub airports in Colorado include those in Alamosa, Aspen, Durango, Grand Junction, Gunnison, Hayden, and Montrose.

¹ FAA Order 5190.68, FAA Airport Compliance Manual.



2.5.2 2020 Colorado Aviation System Plan (CASP)

The 2020 CASP uses six different airport classifications to stratify its 66 airports into unique roles. In the CASP, EGE is considered a Commercial Service Airport, the most demanding role within the system. There are 13 other Commercial Service Airports in the CASP for a total of 14.

2.5.3 Airport Setting Comprehensive Planning, Land Use, and Zoning

Appropriate local planning and land-use compatibility promotes the safety, health, and welfare of airport users and surrounding neighbors by protecting airspace and ensuring appropriate uses of lands both within and surrounding airport property boundaries. Typically, development actions that may affect surrounding land uses are changes in airport fleet mix, number of aircraft operations, air traffic changes, and new approaches. Eagle County Regional Airport property lies entirely within the Town of Gypsum, while some land adjacent to the Airport falls within the jurisdiction of Eagle County.

In 2005, Eagle County published a comprehensive plan as a guiding visionary document to shape Eagle County Land Use Regulations and government actions. Under the plan's "Efficient Transportation" section, it states several policies for transportation development in Eagle County, including:

- Eagle County's Regional Airport should continue to be the airport of choice for western-slope mountain and resort communities. (Eagle County Comp Plan 3.5.2. Efficient Transportation)
- Investment in improvements to service at the Eagle County Airport should continue to be a focus. All other modes of transportation should be connected to the airport to allow full multi-modal access.
- Provide for the expansion of wide-body commercial jet service.
- Plan for and fund airport safety and reliability improvements.
- Continue to provide and enhance world-class traveler amenities.
- Refer to the Eagle County Airport Master Plan for policies related to design, marketing, and operations.
- Discourage development that would potentially interfere with future expansions of the Eagle County Airport.
- Create incentives for locals to use the Eagle County Airport.²

The Town of Gypsum published a Master Plan in 2017 to reflect the community's collective vision for long-term development. While EGE is in Gypsum, it is owned by Eagle County and as such, the Town of Gypsum's primary influence is on the development of land adjacent to the airport. The plan states:

- A large portion of the land located south of the airport is designated for light-industrial use. Not fully developed, future development around the existing FedEx freight complex could allow for expansive growth of

² <https://eaglecounty.us/planning/adoptedplans>



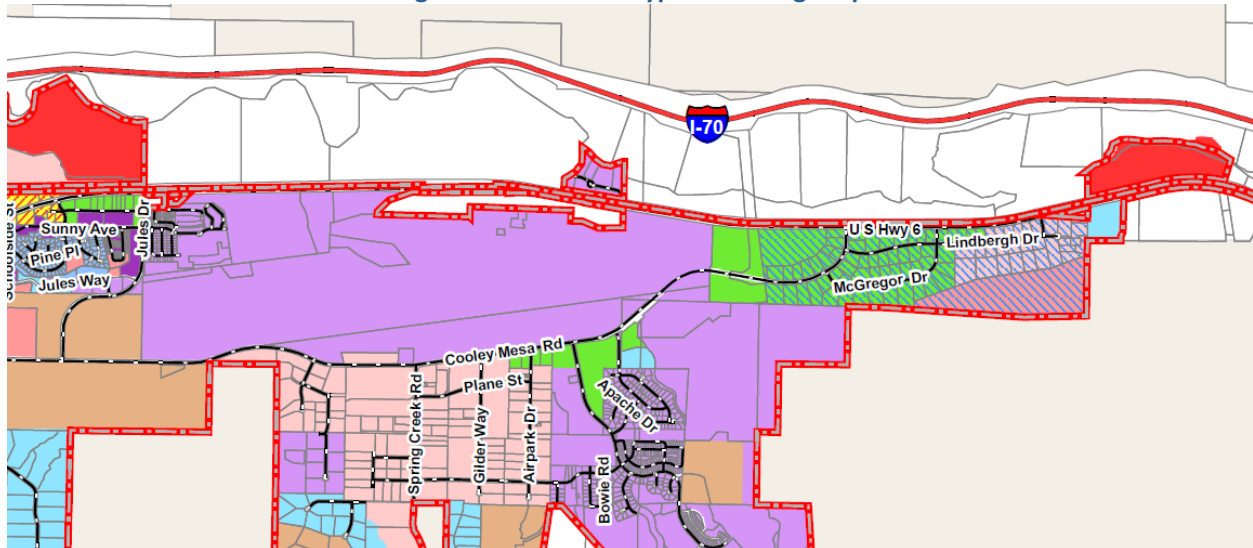
Gypsum's niche in the region as an industrial center offering service, commercial, light industrial, and manufacturing jobs in the Town of Gypsum.³

Airport property within the Town of Gypsum is zoned PUD, or Planned Unit Development. This zone is intended to provide a high level of flexibility for different uses and its lack of Airport-specific restrictions provides the benefit of flexibility for future development at the Airport.

Figure 2-2 illustrates the Town of Gypsum's zoning map for property near the Airport. The area within the blue hatched overlay east of the Airport is defined as the Airport Gateway and consists of property in the Commercial Professional, Institutional District, and Light Industrial zones. Development that occurs within the Airport Gateway design requirements overlay requires separate architectural development and design requirements.

While almost all Airport property and land adjacent to the Airport is within the Town of Gypsum, approximately 36 acres of land north of the Airport is within the jurisdiction of Eagle County. This portion of land is used as a quarry and for recreational vehicle storage. The land is zoned Industrial by Eagle County. **Figure 2-3** illustrates Eagle County's zoning districts near the Airport.

Figure 2-2: Town of Gypsum Zoning Map

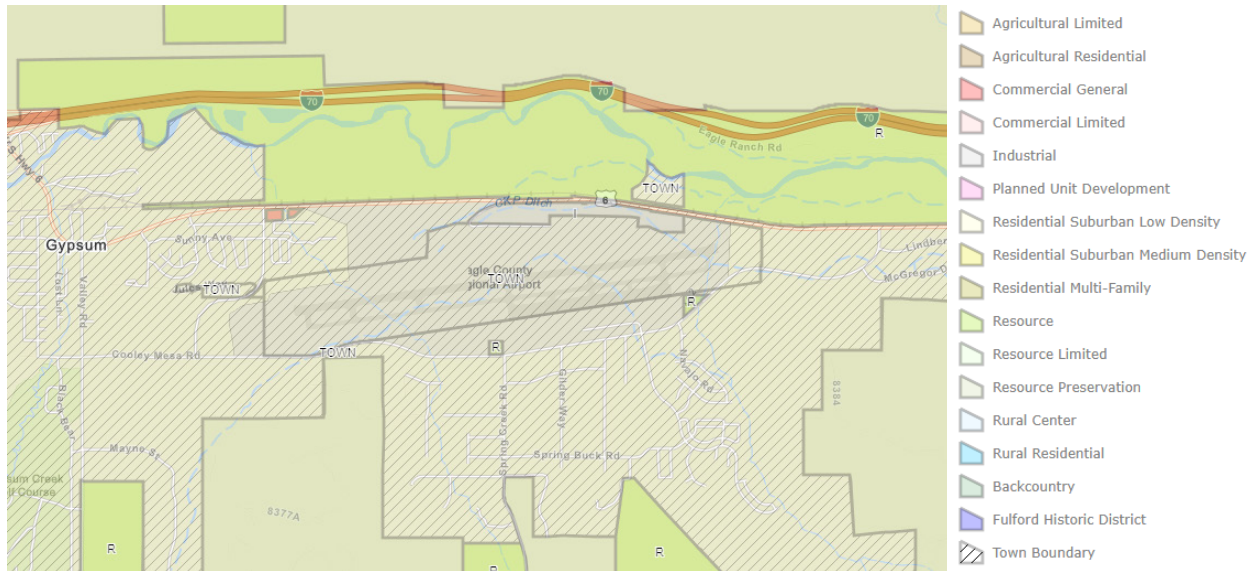


Source: Town of Gypsum.

³ <https://www.townofgypsum.com/business/planning-zoning/long-range-planning>



Figure 2-3: Eagle County Zoning Map



Source: Eagle County.

2.6 PRIMARY AIRPORT DATA

Table 2-2 provides a summary of some of the important primary data elements for the Eagle County Regional Airport.

Table 2-2: EGE Primary Data

Associated City	Eagle
Addressed Town	Gypsum
Airport Owner / Sponsor	Eagle County
Management	Director of Aviation
Commercial Air Service Providers	American Airlines, Delta Air Lines, United Airlines
Air Traffic Control Tower Hours	0700-1900
Part 139 Classification	Class I
Aircraft Rescue and Fire Fighting (ARFF) Index	C
Airport Acreage	632
Airport Reference Point	39-38-33.9000N 106-54-57.4000W
Airport Elevation	6,547.4 ft
Area Mean Maximum Temperature	89F (August)
FAA Sectional Chart	Denver

Source: Jviation, a Woolpert Company, FAA, EGE.



2.6.1 Airport Services

The Airport and businesses located on the airfield provide a range of services to meet the demands of its primary users. **Table 2-3** provides a listing of services typically provided at airports of similar stature and the corresponding businesses at the Airport.

Table 2-3: EGE Airport Services

Services	Provider
Commercial Passenger Air Service	American Airlines Delta Air Lines United Airlines
Commercial Passenger Support Services	Eagle County Regional Airport
Fixed Base Operator Services	
- Aircraft support services (fueling, deicing, oxygen, GPU, lavatory, ground handling, etc.)	Vail Valley Jet Center
- Passenger support services (ground transportation, catering, etc.)	
Flight Training	Alpine Flight Training Due West Aviation
Aircraft Storage (based/transient) - Tie Downs and Hangars	Eagle County Regional Airport Vail Hangair Vail Valley Jet Center

Source: Jviation, a Woolpert Company, EGE.

2.7 AIRSIDE FACILITIES

Airside facilities accommodate the movement of aircraft and encompass runways, taxiways, airfield lighting, and other facilities necessary to support flight activity. The following figure illustrates EGE's existing airside facilities.

Airside facilities accommodate the movement of aircraft and encompass runways, taxiways, airfield lighting, and other facilities necessary to support flight activity.

Figure 2-4: EGE Airside Facilities



Source: Jviation, a Woolpert Company, Google



2.7.1 Runway

Eagle County Regional Airport has one instrument runway, Runway 7-25, which is 9,000 feet long by 150 feet wide in an east-west orientation. The runway is paved asphalt that is grooved and is in excellent condition. **Table 2-4** provides additional detail about Runway 7-25.

Table 2-4: EGE Runway Details

	Runway 7-25
Dimensions	9,000 ft x 150 ft with 25 ft shoulders
Runway Surface Type	Asphalt – Grooved
Pavement Condition	Excellent
Runway End Location	(RW 7) 39-38-27.7001N / 106-55-54.3200W (RW 25) 39-38-40.1800N / 106-54-00.4424W
Runway End Elevations	(RW 7) 6,460.9 (MSL) (RW 25) 6,547.4 (MSL)
Effective Gradient	0.010
Runway Markings	(RW 7) Non-Precision Instrument (RW 25) Precision Instrument
Pavement Classification Number (PCN)	45 /F/B/X/U
Runway Strength	Single Wheel - 75,000 lbs. Dual Wheel - 140,000 lbs. Double Tandem Wheels - 255,000 lbs.
Threshold Displacement	(RW 7) 0 ft (RW 25) 1,000 ft
Visual Approach Slope Indicator (VGSI)	(RW 7) NA (RW 25) 4 Light PAPI Right
Edge Lighting	HIRL
Approach Lighting	(RW 7) NA (RW 25) MALSR
Other Runway Lighting	(RW 7) REILs
Runway Design Code (RDC)	D-IV-5000
Critical Aircraft	Boeing 737-700/757-200

Source: Jviation, a Woolpert Company, FAA.

A runway refers to a defined rectangular area on an airport, typically paved, that provides aircraft with the necessary space and clearance for both takeoff and landing operations

2.7.2 Taxiways

Taxiways are paved areas over which airplanes move from one part of the airfield to another with their primary use being providing access between the 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. 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.

Taxiways refer to defined paths on an airport, typically paved, that connects runways with aprons, hangars, terminals, and other facilities, allowing aircraft to move safely and efficiently between these areas



Taxiway A is a full parallel taxiway located south of Runway 7-25 and is equipped with medium intensity lighting. Taxiway A is supported by nine different connectors, seven from Runway 7-25 and two from the commercial apron. Taxiway connectors B3 and B4 directly link Runway 7-25 to the north GA apron and HAATS facility, respectively. **Table 2-5** provides information about each taxiway.

Table 2-5: Taxiway Details

Taxiway	Description	Condition	Width
A	Full parallel taxiway south of Runway 7-25	Poor*	75 ft
A1	Taxiway connector from parallel Taxiway A to the displaced threshold of Runway 25	Good	90 ft
A2	Taxiway connector from parallel Taxiway A to the threshold of Runway 25	Satisfactory/Poor	100 ft
A3	Taxiway connector from parallel Taxiway A to both Runway 7-25 and Commercial/FBO apron	Satisfactory/Poor	100 ft
A4	Taxiway connector from parallel Taxiway A to the midpoint of Runway 7-25 and the Commercial apron	Satisfactory/Poor	100 ft
A5	Taxiway connector from parallel Taxiway A to Runway 7-25	Satisfactory/Poor	100 ft
A6	Taxiway connector from parallel Taxiway A to Runway 7-25	Satisfactory/Poor	100 ft
A7	Taxiway connector from parallel Taxiway A to the threshold of Runway 7-25	Satisfactory/Poor	100 ft
B3	East connector to North GA Apron	Good/Very Poor	35 ft
B4	West connector to HAATS facility	Good/Serious	35 ft
C1	East connector to Commercial apron	Good/Poor	140 ft
C2	West connector to Commercial apron	Good/Poor	150 ft

* Taxiway A is scheduled to be fully rehabilitated in 2023.

Source: Jviation, a Woolpert Company, CDOT.

Taxiway A is 75 feet wide and can accommodate aircraft from ADG-IV (maximum 171-foot wingspan) while the Taxiway B connectors can only accommodate ADG-II (maximum 79-foot wingspan). It should also be recognized that EGE has started the development of a new parallel taxiway (Taxiway B) to be constructed on the north side of Runway 7-25. Current activities include several permitting and enabling projects in anticipation of the ultimate construction of Taxiway B.

It is important to recognize that EGE has one “Hot Spot,” defined by the FAA as safety-related problem areas on an airport that present increased risk to aircraft during surface operations. Typically, it is a complex or confusing intersection between taxiways or between a runway and a taxiway, or an area of increased risk that has potential for runway incursions or surface incidents. The Airport’s lone FAA-designated Hot Spot directs pilots to avoid accessing Taxiway A east of Taxiway C2. The FAA description includes the following information:

High density parking area on ramp east of Twy C2. Air carrier acft should not leave or enter Twy A east of Twy C2. ⁴

⁴ FAA Chart Supplements, SW, EGE,03NOV2022



Note that the high-density parking area referred to in the Hot Spot is typically used by the FBO for general aviation aircraft parking.

2.7.3 Aprons

An aircraft apron is used for aircraft movement and positioning, aircraft storage and tiedowns, aircraft fueling, and vehicle movement and parking. EGE has aircraft apron areas on the north and south sides of Runway 7-25. There are three aprons on the south side and two aprons on the north side. **Table 2-6** provides information about each apron including their approximate area.

Table 2-6: Apron Details

Apron	Area	Condition
North Side - GA Apron	252,300 sq ft	Excellent
North Side – Colorado National Army Guard HAATS Apron	308,000 sq ft	Good
South Side – Commercial Apron	435,000 sq ft	Good
South Side – GA Apron (East)	1,020,000 sq ft	Good
South Side – GA Apron (West)	TBD sq ft	Excellent

Source: Jviation, a Woolpert Company.

An apron refers to a designated area on an airport where aircraft are parked, loaded, unloaded, refueled, and maintained, providing space for ground support equipment and facilitating safe and efficient aircraft operations

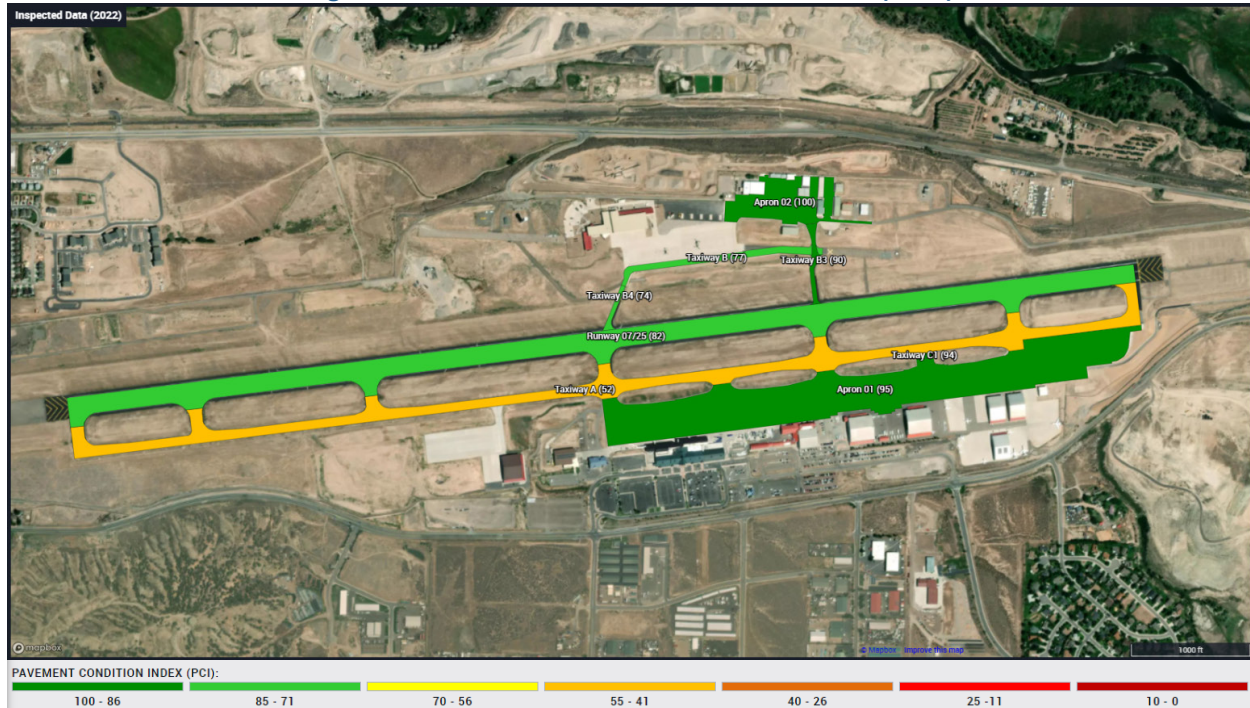
2.7.4 Pavement Condition

FAA AC 150-5380-6B, *Guidelines and Procedures for Maintenance of Airport Pavements*, recommends conducting a detailed pavement inspection that follows American Society for Testing and Materials (ASTM) D5340, *Standard Test Method for Airport Pavement Condition Index Surveys*. A detailed pavement inspection is conducted for airport pavements to employ 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).

The CDOT Division of Aeronautics maintains the state's Airport Pavement Management System (APMS). Airports are regularly scheduled for pavement inspections, results of which are then stored and displayed in an online dashboard for a complete picture of pavement quality throughout the state. The Airport's last inspection as part of the APMS was in 2022, in which the entire facility was scored as a 81, or Satisfactory. Since that time, EGE's lowest PCI values, indicating pavement in a very poor or failed state, are limited to portions of Taxiways B4 and B3, and a majority of Taxiway A which is in design stages for a full reconstruction. **Figure 2-5** shows the pavement condition as displayed on the Colorado APMS website.



Figure 2-5: EGE Pavement Condition Index Visual (2022)



Source: CDOT.

2.8 AIRFIELD LIGHTING

2.8.1 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 EGE rotating beacon is located on top of the air traffic control tower (ATCT) on the north side of the Airport, west of the HAATS facility.

2.8.2 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. EGE's existing runway lighting capabilities are detailed in **Table 2-7**.

Table 2-7: EGE Runway Lighting

Lighting	Runway 7	Runway 25
Approach Lighting	-	MALSR
Runway Edge Lighting	HIRL	HIRL
Centerline Lights	-	-
Visual Approach Slope Indicator (VGSI)	-	PAPI-4 (Right)
Other Lighting	REILS	-

Source: FAA.



Runway edge lights are used to outline the edges of runways during periods of darkness or restricted visibility conditions. Runway 7-25 is outfitted with High Intensity Runway Lights (HIRL). When required, the runway lights can either be activated by the ATCT during its hour of operations, or when the tower is closed, by pilots operating at the Airport through the use of pilot-controlled lighting (PCL) over EGE's Common Traffic Advisory Frequency (CTAF) of 119.8 MHz. Once activated through PCL, the lights remain on for 15 minutes, at which time they will then automatically shut down.

A Precision Approach Path Indicator (PAPI) is a series of lights that provide visual guidance during a runway approach. A four-light PAPI system is installed on the right side of Runway 25. The Instrument Landing System (ILS) on Runway 25 is supplemented by a Medium Intensity Approach Lighting System (MALSR). Runway 25 is also equipped with a localizer which provides the horizontal position of an aircraft relative to the runway centerline, and a glide slope that provides vertical guidance to the touchdown point on the runway.

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 7 is equipped with REILs.

2.8.3 Taxiway Lighting

Taxiway edge lights aid in providing visual guidance to pilots and ground service/maintenance vehicles accessing the taxiway in low visibility or night conditions. EGE has Medium Intensity Taxiway Lights (MITL) systems installed along all taxiways to guide aircraft from the runway to the apron areas.

2.8.4 Other Visual Aids

Additional visual aids and instrumentation at EGE assist pilots in arriving or departing. The Airport's segmented circle and lighted wind indicator provide pilots with traffic pattern and wind direction and velocity information. This equipment is located north of the center point of Runway 7-25, just west of Taxiway B4.

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

2.8.5 Weather and Information

An Automated Weather Observing System (AWOS) is in place at EGE. The AWOS configuration is III P/T, capable of measuring most basic meteorological conditions, and identifies precipitation type and detects thunderstorms. The AWOS is located at the air traffic control tower, which is just north of Runway 7-25 and west of the HAATS facility. Note that without on-airport weather reporting, aircraft may not be allowed to takeoff or land during instrument (poor) weather conditions. The AWOS collects



and transmits weather data to pilots on a frequency of 135.575 MHz and is also available by telephone (970-921-5042).

Additionally, Runway 7-25 is equipped with sensors that provide real time data regarding the pavement surface condition. Five pavement sensors and one temperature probe are installed in the runway pavement surface and the data is wireless transferred to the Airport Operations command center for monitoring.

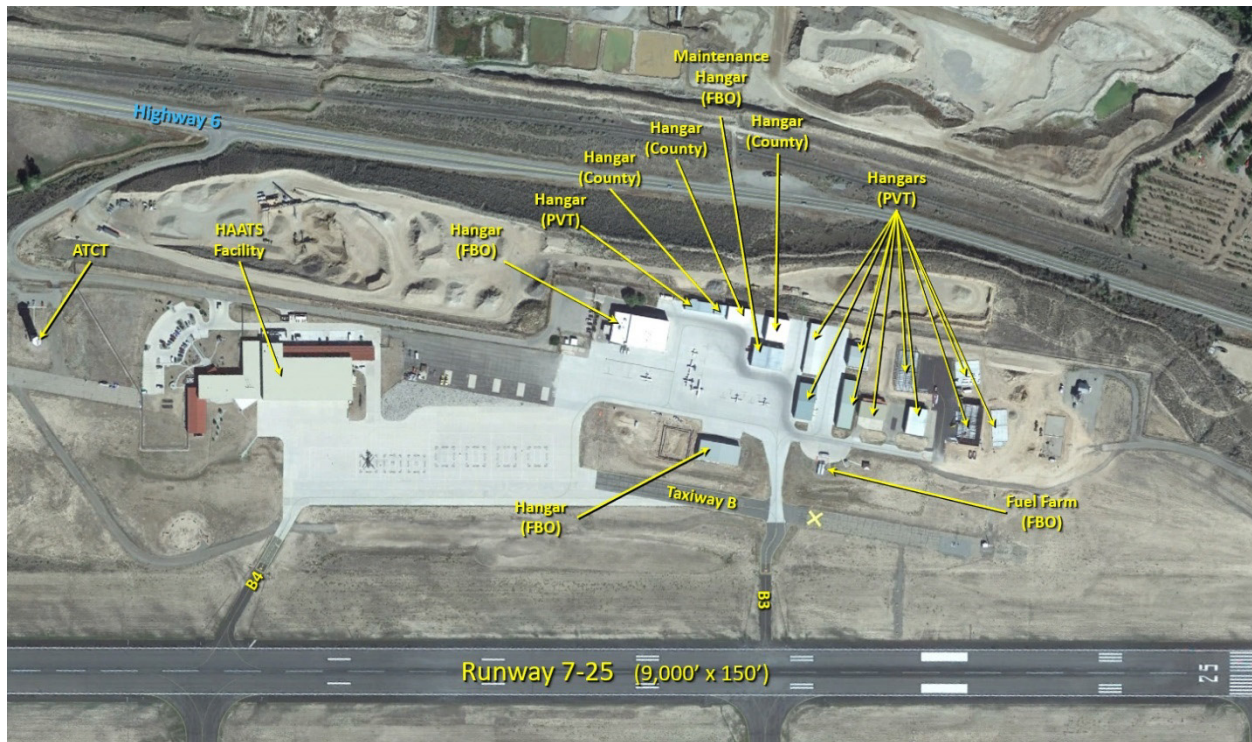
2.9 LANDSIDE FACILITIES

Primary areas of landside development are split between the north side and the south side of Runway 7-25. The landside facilities to the south of Runway 7-25 include a passenger terminal, Fixed Base Operator (FBO) facilities, a fire station, and aircraft hangars. Facilities to the north of Runway 7-25 include a National Guard HAATS Facility and aircraft hangars.

Landside areas and facilities encompass all other areas on the airport apart from airside activities and facilities.

Development areas on the north side and the south side of EGE are shown in **Figure 2-6** and **Figure 2-7**, respectively.

Figure 2-6: North Landside Area



Source: Jviation, a Woolpert Company.



Figure 2-7: South Landside Area



Source: Jviation, a Woolpert Company.

2.9.1 Commercial Terminal Building

Located south of Runway 7-25 on the west end of the commercial apron, the commercial terminal building has over 126,000 square feet of space on two levels, supporting three commercial service airlines, Transportation Security Administration (TSA) services, a baggage claim area, a ticketing lobby, and ground-based transportation options. Additionally, there are four jet bridges and seven gates to facilitate passenger boardings. Commercial aircraft parking is available on the north side of the terminal building and can accommodate ten aircraft up to the size of a Boeing 757.

Figure 2-8: Commercial Terminal Building



Source: Gensler, photo by David Lauer.

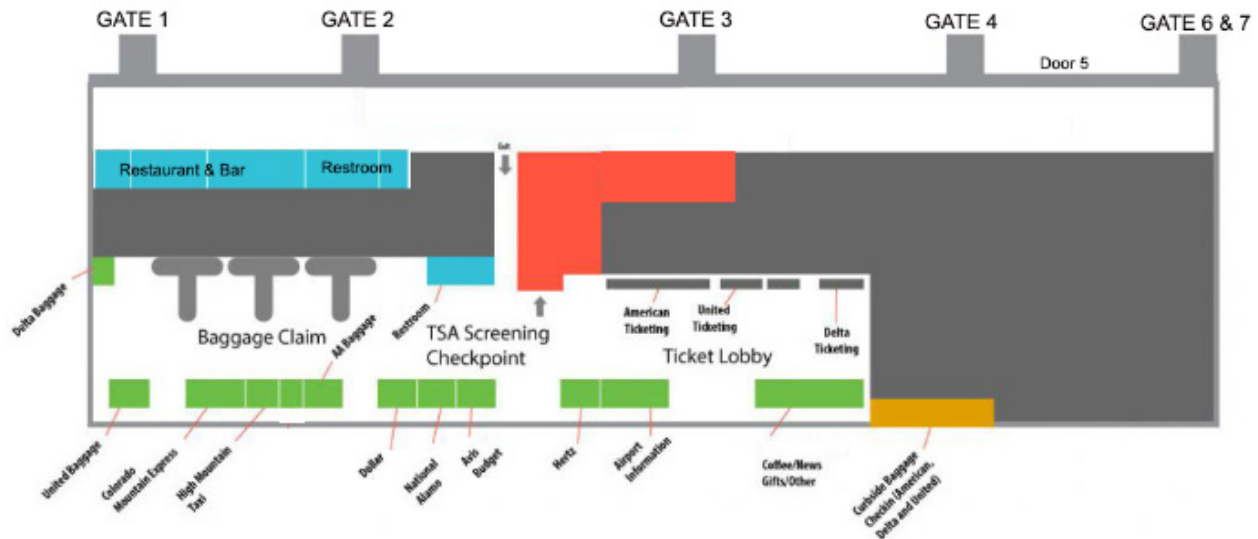


The terminal features counter space for Colorado Mountain Express, High Mountain Taxi, baggage drop areas and ticketing areas for United Airlines, American Airlines, and Delta Airlines, and several rental car companies including Dollar, National, Alamo, Avis, Budget, Hertz, and SIXT.

Constructed in 1996, has since been renovated and expanded, with the most recent expansion being completed in 2019. This 50,000-square foot expansion to the concourse included the installation of the four jet bridges, enhanced consumer concessions, a reconfiguration of the TSA checkpoint, and expanded passenger hold rooms among others. **Figure 2-9** shows the updated terminal configuration and **Figure 2-10** shows the existing terminal program plan.

Note that this master plan also includes a robust terminal area planning effort. A detailed inventory of the terminal building has been compiled and has been included in **Appendix B**.

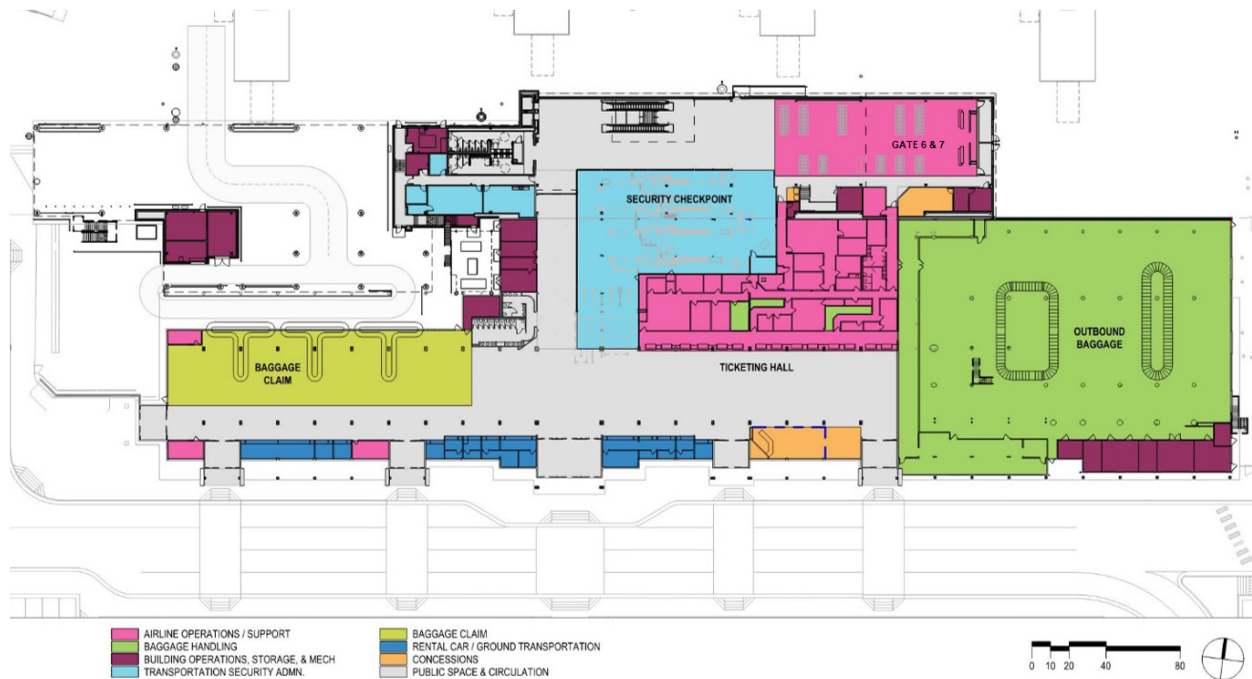
Figure 2-9: Commercial Terminal Schematic



Source: EGE.



Figure 2-10: Commercial Terminal Program Plan



Source: Gensler.

Demand for commercial airline service at the Airport varies by season, typically with an increase in service during the winter months that accommodate travelers visiting local ski resorts.

Table 2-8: Airline Service

Airline	Destination	Availability
American	Austin (AUS)	Seasonal
American	Chicago O'Hare (ORD)	Seasonal
American	Dallas/Fort Worth (DFW)	Year-Round
American	Los Angeles (LAX)	Seasonal
American	Miami (MIA)	Seasonal
American	New York Kennedy (JFK)	Seasonal
American	New York LaGuardia (LGA)	Seasonal
American	Phoenix Sky Harbor (PHX)	Seasonal
Delta	Atlanta (ATL)	Seasonal
United	Chicago O'Hare (ORD)	Seasonal
United	Denver (DEN)	Year-Round
United	Houston Bush (IAH)	Seasonal
United	Newark (EWR)	Seasonal
United	Los Angeles (LAX)	Seasonal
United	San Francisco (SFO)	Seasonal

Source: EGE.



2.9.2 General Aviation Facilities

Fixed Base Operator (FBO)

Vail Valley Jet Center (VVJC) serves as the Airport's Fixed Base Operator (FBO), providing aircraft services from its 39,000 square foot facility on the south side of the airfield, just east of the commercial terminal building. VVJC provides aircraft line service, apron parking, hangar storage space, on-site catering, and flight planning. Other important aircraft services offered by the FBO include fueling (both Jet and Avgas), deicing, and maintenance.

U.S. Customs and Border Patrol (CBP) is available at the VVJC, normally operating from 9 AM to 5 PM MST. Officers are also available after hours with advanced notification. Eagle is a Customs "user fee" airport which requires fee payment for services provided by CBP.

VVJC owns and operates nearly 160,000-square feet of hangar space in five separate corporate hangars, which is primarily used to store transient aircraft in the winter months. Note that hangar space is in high demand due to the high traffic levels that accompany the winter season and the frequent inclement climate during this peak time.

Airport Hangars

EGE has multiple hangars on the airfield. The FBO provides all of the hangar space on south side of the Airport with seven hangars currently and more planned. These hangars are mostly larger corporate style facilities that can accommodate the business jet traffic common to EGE. Options include twelve-month renewable leases for hangar and tie-down rentals as well as short term hangar and tie-down parking for transient aircraft.

On the north GA Apron, there are three Airport-owned box hangars. Additionally, there are multiple privately-owned hangars with more in development. These are accessible via the north GA Apron and consist of box hangars of a variety of sizes. See **Table 2-9** for a complete listing of hangars at the airport as well as their approximate sizes.

A fixed base operator (FBO) is a commercial business that provides a range of aviation services to general aviation aircraft, pilots, and passengers. These can include fueling, aircraft storage, ground services, maintenance, amenities, and charter operations.

An aircraft hangar is an enclosed structure designed to house and protect aircraft when they are not in use for the purposes of storage, maintenance, and security.

Table 2-9: Hangar Facilities

Name#	Owner	Type	Location	Size (sf)
VVJC Hangar 1	Private	Box/Corporate	South Side	22,500
VVJC Hangar 2	Private	Box/Corporate	South Side	45,000
VVJC Hangar 3	Private	Box/Corporate	South Side	45,000
VVJC Hangar 4	Private	Box/Corporate	South Side	28,600
VVJC Hangar 5	Private	Box/Corporate	South Side	28,600
VVJC Hangar 6	Private	Box/Corporate	South Side	28,600
VVJC Hangar 7	Private	Box/Corporate	South Side	35,000
VVJC Hangar 8	Private	Box/Corporate	South Side	35,000
VVJC Hangar 9	Private	Box/Corporate	North Side	12,500
VVJC Hangar 10	Private	Box/Corporate	North Side	7,000
Lanham Hangar	Private	Box/Corporate	North Side	2,700



EGE Storage 1	County	Box/Corporate	North Side	1,200
EGE Storage 2	County	Box/Corporate	North Side	3,150
Skatefish Hangar	County	Box/Corporate	North Side	5,250
Kokes Hangar 1-7	Private	T-Hangar	North Side	8,000
Lazier Hangar	Private	Box/Corporate	North Side	4,250
Vail Hangair A1	Private	Box/Corporate	North Side	3,245
Vail Hangair A2	Private	Box/Corporate	North Side	3,245
Vail Hangair B1	Private	Box/Corporate	North Side	2,860
Vail Hangair B2	Private	Box/Corporate	North Side	2,860
Vail Hangair B3	Private	Box/Corporate	North Side	2,860
Vail Hangair B4	Private	Box/Corporate	North Side	4,030
Vail Hangair C1	Private	Box/Corporate	North Side	3,900
Vail Hangair C2	Private	Box/Corporate	North Side	3,900
Vail Hangair D1	Private	Box/Corporate	North Side	3,900
Vail Hangair D2	Private	Box/Corporate	North Side	3,900
Vail Hangair D3	Private	Box/Corporate	North Side	9,000
Vail Hangair E1	Private	Box/Corporate	North Side	3,900
Vail Hangair E2	Private	Box/Corporate	North Side	3,900
Vail Hangair E3	Private	Box/Corporate	North Side	6,400
Vail Hangair F1	Private	Box/Corporate	North Side	2,500
Vail Hangair F2	Private	Box/Corporate	North Side	2,500
Vail Hangair F3	Private	Box/Corporate	North Side	3,900
Vail Hangair F4	Private	Box/Corporate	North Side	3,900
Vail Hangair G1	Private	Box/Corporate	North Side	3,900
Vail Hangair G2	Private	Box/Corporate	North Side	3,900
Clair Hangar 1	Private	Box/Corporate	North Side	2,640
Clair Hangar 2	Private	Box/Corporate	North Side	2,640
TOTAL:				396,130

Source: EGE.

2.9.3 High Altitude Army National Guard Aviation Training Site (HAATS)

HAATS is the primary training center for Army helicopter pilots for developing experience for operating in high-altitude, mountainous environments. HAATS is the only Department of Defense training facility that teaches power management to rotary wing aviators. It utilizes Forest Service and Bureau of Land Management (BLM) lands to conduct training, ranging from 6,500 to 14,000 feet MSL. The HAATS facility is located on the north side of the airfield to the east of the ATCT. It has nearly 90,000 square feet of building area that is comprised of a training center, administration offices, a hangar, and various other support functions. It also provides space for up to 56 personnel, and the storage and maintenance for six helicopters. Its associated apron provides parking for up to seven helicopters.

HAATS specializes in training military helicopter pilots and crews from all U.S. service branches, as well as allied nations, in high-altitude and mountainous flight operations.

2.9.4 Air Traffic Control Tower (ATCT)

Centrally located on the north side of the airfield and lying directly west of the HAATS facility, the Air Traffic Control Tower (ATCT) at EGE has an above ground height of 117'. The ATCT is part of the FAA's Contract Tower Program with its controllers

An ATCT is an airport facility responsible for managing and coordinating aircraft movements in the airport's airspace and on its ground surfaces.



employed by Serco North America. The tower provides air traffic control, separation, and sequencing services for aircraft within a four-mile radius of the Airport during its hours of operation (7:00 AM to 7:00 PM) on a tower control frequency of 119.8 MHz and a ground control frequency of 121.8 MHz. The Denver Air Route Traffic Control Center (ARTCC) provides approach and departure navigation for activity at the Airport.

2.9.5 Airport Rescue and Firefighting (ARFF) Building

The Airport Rescue and Firefighting (ARFF) building was constructed in 1989 and is located at the southwest corner of the Commercial Apron. The building is approximately 12,000 square feet and also serves as administrative offices for staff of the Airport. EGE maintains its own ARFF department consisting of three fire trucks.

Aircraft Rescue and Firefighting (ARFF) facility provides specialized emergency services at an airport designed to respond to aircraft accidents, incidents, or fires.

2.9.6 Snow Removal Equipment Building

The Snow Removal Equipment (SRE) building was constructed in 2015 and is over 26,000 square feet in size. Located to the west of the ARFF facility, the building accommodates all Airport SRE storage and maintenance requirements. Additionally, the building includes administrative offices, a conference room, and other support areas.

2.9.7 Equipment and Related Storage

SRE and other airfield maintenance equipment is stored within the SRE facility to the west of the ARFF building on the western edge of the south apron. Maintenance of equipment is also conducted at the SRE facilities within the vehicle bays. **Table 2-10** provides a description of each piece of equipment used by Airport staff for airfield operations.

Table 2-10: Equipment List

Unit #	Type	Make/Model	Year
20	SRE/Broom	Oshkosh H-series	1992
22	SRE/Broom	Oshkosh H-series	2006
23	SRE/Broom	MB MB-3	2018
24	SRE/Broom	MB MB-3	2018
25	SRE/Broom	Oshkosh H-series	1999
26	SRE/Broom	Oshkosh H-series	2003
27	SRE/Broom	Oshkosh H-series	2003
28	SRE/Broom	Oshkosh H-series	2003
29	SRE/Broom	Oshkosh H-series	2003
31	SRE/Blower	Oshkosh H-series	1993
32	SRE/Blower	Oshkosh H-series	1992
33	SRE/Blower	StewartStevenson RSS-1000 COP	1998
42	SRE/Plow	International tandem w/ dump bed	1989
43	SRE/Plow	Cat 966 loader	2001
44	SRE/Plow	JohnDeere 770CH motorgrader	2002
45	SRE/Plow	WesternStar tandem w/ dump bed	2012
46	SRE/Plow	International tandem w/ dump bed	1992



47	SRE/Plow	Paystar 5000 4x4 w/ dump bed	1992
48	SRE/Plow	John Deere 624L loader	2020
50	Small Equip.	FordNewholland 9030 tractor	1997
51	Small Equip.	JohnDeere 7410 tractor	2000
52	Small Equip.	JohnDeere 955 tractor	1997
53	Small Equip.	JohnDeere F935 mower	1993
54	Small Equip.	Bobcat T650 track skidsteer	2010
55	Small Equip.	Doosan G25E-3 forklift	2006
56	Small Equip.	Case Tractor	1997
57	Small Equip.	Bobcat S630 wheeled skidsteer	2020
58	Small Equip.	JohnDeere 1585 front mower	2018
16	Light Truck	Chevy 1 ton w/ dump bed	1986
9	Light Truck	Ford 3/4 ton 4x4 PU	2001
13	Light Truck	Dodge 3/4 ton 4x4 PU	2001
11	Light Truck	Ford 1 ton 4x4 w/ utility bed	2009
12	Light Truck	Ford 3/4 ton 4x4 PU w/ crewcab	2013
14	Light Truck	Ford 3/4 ton 4x4 PU w/ crewcab	2013
60	Special Ops	Tymco 600 Vac truck w/ gutterbrooms	1999
61	Special Ops	R/W Closure lighted X trailer	2000
62	Special Ops	R/W Closure lighted X trailer	2000
N/A	Special Ops	R/W Closure lighted X trailer	2007
N/A	Special Ops	R/W Closure lighted X trailer	2007
63	Special Ops	Marathon Crackseal Trailer	2001
N/A	Special Ops	Superior Utility Trailer	1999
64	Special Ops	Atlas Copco Trailer	2007
N/A	Special Ops	Wanco Message Board Trailer	2012
17	Special Ops	Ford 1 ton stair truck	1988
15	Special Ops	GMC 1 ton w/ dump bed	1989
65	Special Ops	Ford backhoe / loader SOLD	1981
66	Special Ops	Polaris Ranger 6x6	1999
67	Special Ops	Polaris Ranger 6x6	2000
68	Special Ops	J.D. Gator	2014
N/A	Special Ops	Bobcat L28	2022
N/A	Special Ops	910 Cat Loader	2022
ARFF 1	ARFF	Oshkosh Striker 1500	2012
ARFF 2	ARFF	Oshkosh T-1500	1993
ARFF 3	ARFF	Oshkosh Striker 3000	2006
N/A	ARFF	Tote ARFF foam trailer	2004
10	ARFF	Staff 10 Chevy Tahoe	2016
18	Director	Jeep Cherokee	2014

Source: EGE.



2.9.8 Support Facilities

Security & Fencing

According to 49 CFR, Part 1542, *Airport Security*, the County is obligated to have an implemented security plan including the following items:

- Security of the secured area
- Security of the Air Operations Area (AOA)
- Security of the Security Identification Display Area (SIDA)
- Access control systems
- Fingerprint-based criminal history records checks (CHRC)
- Identification systems
- Training
- Law enforcement personnel
- Supplementing law enforcement personnel
- Records of law enforcement response

EGE must also take measures to ensure all TSA regulations are satisfied and inspected regularly to ensure proper compliance. To comply with Part 1542, the entire airfield is secured by a 12-foot-tall perimeter security fence. Additionally, airfield access gates are secured using a card reader system that monitors and records all access.

Utilities

The Town of Gypsum provides water and sanitary sewer service to the Airport. The Airport receives its water through mains located around the airfield, and primarily support the commercial terminal building and the FBO on the south side, and the HAATS facility, the ATCT, and other general aviation hangars on the north side. Wastewater is collected and processed through the Town's Aero Mod wastewater treatment plant, which can support up to 960,000 gallons per day.

Communications capabilities including high-speed internet and telephone service is provided by CenturyLink, which is the primary provider for the surrounding communities.

Natural gas is provided to the Airport by Black Hills Energy, while Holy Cross Energy, a non-profit utility, provides electricity to the Airport.

The majority of stormwater runoff from Airport property drains to the north and west into the Eagle River in the direction of the Town of Gypsum, while the eastern side of the airfield drains east and eventually moves north to the Eagle River. Open channels and drains direct water to drainage basins to collect runoff.

Fuel and Deicing

The majority of fuel storage at EGE is contained in underground storage tanks located to the east of the FBO Terminal. Fuel types available include 100LL, Jet-A1, Jet A1+, SAF, and MoGas. These underground fuel storage tanks are equipped with Veeder



Root electronic monitors and monitoring wells with tank alarms. **Table 2-11** contains the capacity and fuel type of each of the fuel storage tanks at the Airport.

Additionally, the FBO owns and operates two above ground fuel storage systems on the north side of the airfield. The first of these tanks provides self-serve MoGas, while the second contains Jet fuel used in refueling trucks. The adjacent HAATS facility also utilizes these two above ground fuel systems owned by the FBO.

Table 2-11: Fuel Storage Tanks

Location	Container Material	Capacity (gal)	Fuel Type
South Fuel Farm	Single Wall Steel	40,000	Jet
South Fuel Farm	Single Wall Steel	40,000	Jet
South Fuel Farm	Single Wall Steel	5,000	Jet
South Fuel Farm	Single Wall Steel	10,000	Unleaded
South Fuel Farm	Single Wall Steel	20,000	Jet
South Fuel Farm	Single Wall Steel	20,000	Jet
South Fuel Farm	Double Wall Fiberglass/Steel	30,000	Jet
South Fuel Farm	Double Wall Fiberglass/Steel	30,000	Jet
North Fuel Farm	Double Wall Steel	12,000	Jet
North Fuel Farm	Double Wall Steel	12,000	MoGas

Source: EGE.

General aviation and commercial aircraft deicing is available on the deicing pad located on the east end of the south apron. At this deicing pad, containment of glycol is achieved through the use of a trench drain located through the center of the pad. Glycol is then collected and stored in recovery tanks for disposal. **Figure 2-11** shows an aerial view of the deicing area as well as the corresponding trench drain location.

Figure 2-11: Aircraft Deicing Areas and Corresponding Trench Drains



Source: Jviation, a Woolpert Company.



2.9.9 Airport Access Roadways and Automobile Parking

Providing the main access route to EGE, Interstate 70 (I-70) is located just under one mile north of the Airport and runs east-west. Travelers coming from the east exit I-70 at Exit 147 and head south on Eby Creek Road towards Highway 6. Travelers then take Highway 6 west until turning left onto Cooley Mesa Road, which provides access to the south side of the Airport which includes the main commercial terminal and the FBO. Travelers coming from the west can access the Airport by taking Exit 140, following Highway 6 east until turning south on Valley Road toward Cooley Mesa Road, which again provides access to the south side of the Airport.

The Airport accommodates short and long term parking, as well as overflow parking to be used during peak ski season. Payment for short and long term parking is completed via kiosks located inside terminal doors 3, 4, and 5. Payment rates are \$8 per day for short term parking and \$6 per day for long term parking with the option to purchase 1-month, 6-month, or 12-month discounted permits. **Table 2-12** below outlines the capacity of each of the parking lots at EGE.

Table 2-12: Parking Facilities

Lot Name	Quantity
Short-term	554 spaces
Long-term	464 spaces
Commercial	95 spaces
Overflow	306 spaces
Rental Car	240 spaces (Ready Lot) 163 spaces (Return Lot)

Source: EGE.

Figure 2-12: Landside Auto Parking Facilities



Source: JVIation, a Woolpert Company, Google



2.10 AIRSPACE SYSTEM/NAVIGATION & COMMUNICATION AIDS

Eagle County Regional Airport operates within the larger National Aviation System (NAS), which comprises a wide array of services, systems, and requirements for the airports and pilots that function within it. The following sections provide an overview of some of EGE's key considerations with respect to navigating and operating within the NAS.

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

2.10.1 Air Traffic and Aviation Communications

Within the continental United States, there are 22 geographic areas that are under Air Traffic Control 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, and primarily during the enroute phase of flight. Those aircraft operating under Visual Flight Rules (VFR) that depend primarily on the "see and avoid" principle for separation, may also contact the ARTCC or other airport traffic control (ATC) services to request traffic advisory services. Traffic advisory service is used to alert pilots of other air traffic known in the vicinity of, or within the flight path of, the aircraft. The airspace overlying EGE is contained within the Denver ARTCC jurisdiction, which ranges from southwest South Dakota to northeast Arizona, along with portions of Utah, New Mexico, Kansas, Nebraska, and Wyoming. EGE can be found on the Denver sectional chart.

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 includes:

- 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 EGE is controlled by the ATCT located on the north side of the airfield, west of the HAATS facility. The ATCT is part of the FAA Contract Tower Program and is staffed by Serco-employed controllers from 0700 to 1900, April through November, and 0700 to 2300 from December through March. Aviation communication frequencies associated with EGE are shown in **Table 2-13**.



Table 2-13: EGE Communications

Communication Method	Contact
CTAF (Common Traffic Advisory Frequency)	119.8 MHz
ATIS (Automatic Terminal Information Service)	135.575 MHz
AWOS (Automated Weather Observation System)	135.575 MHz
Eagle Ground	121.8 MHz
Eagle Tower	119.8 MHz
Clearance Delivery	124.75 MHz
Ops	41.75 Eagles Nest

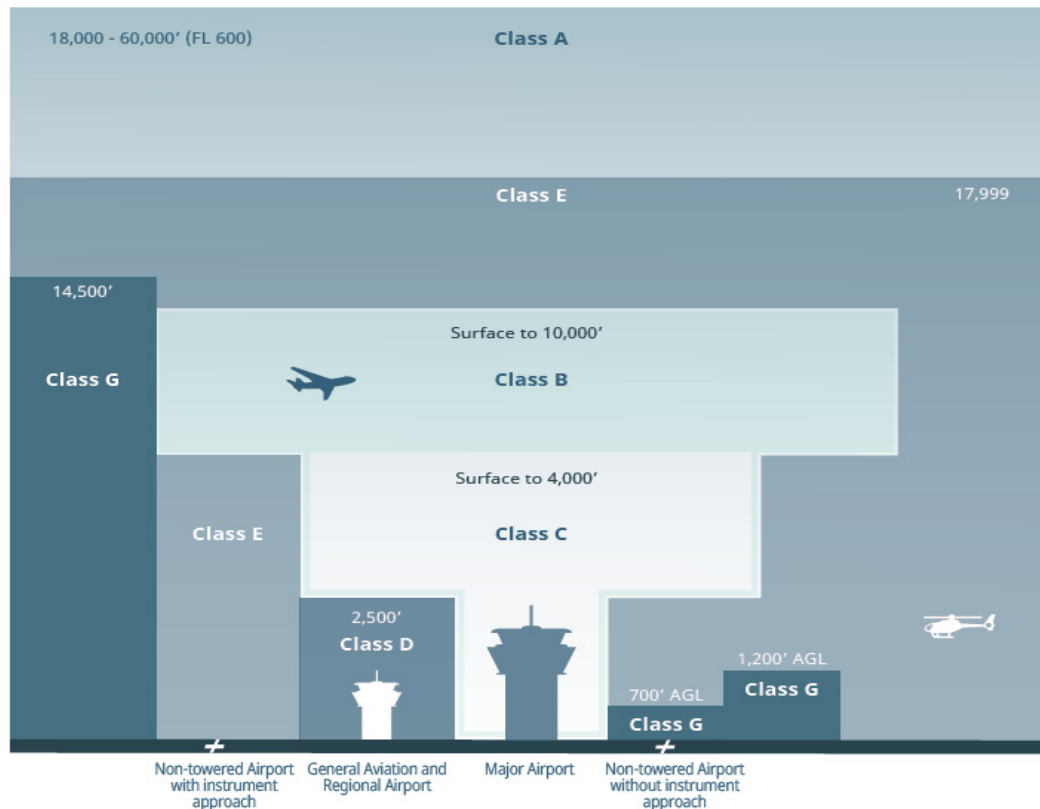
Source: Jviation, a Woolpert Company, FAA.

2.10.2 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).

The NAS is a complex network of airspace, facilities, equipment, services, and procedures managed by the FAA to ensure safe and efficient air travel. It governs all aviation activities within U.S. airspace and certain international areas under U.S. control.

Figure 2-13: Airspace Classification Illustration



Source: FAA.



Furthermore, FAR Part 71 and FAR Part 73 establish these classifications of airspace with the following characteristics:

- Class A airspace is generally the airspace from 18,000 feet mean sea level (MSL) up to Flight Level 600 (approximately 60,000 feet MSL). Unless otherwise authorized, all operation in Class A airspace is conducted under instrument flight rules (IFR).
- Class B airspace is generally airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of airport operations or passenger enplanements. 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 is generally airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) 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 ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while within the airspace.
- Class D airspace is generally airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. Unless otherwise authorized, each aircraft must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while in the airspace.
- If the airspace is not Class A, B, C, or D, and is controlled airspace, then it is Class E airspace. 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 air traffic control 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 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 EGE in both IFR and VFR conditions. EGE lies in Class D airspace, which extends up to 9,100 feet MSL, or 2,553 feet above the Airport's elevation. **Figure 2-14** and **Figure 2-15** show a portion of the sectional aeronautical chart published by the FAA's National Aeronautical Charting Office for the airspace around EGE.



Figure 2-14: EGE Local Airspace



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

Figure 2-15: EGE Regional Airspace



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



2.10.3 Navigational Aids (NAVAIDs)

Numerous navigational aids are available to pilots and airports in the region around EGE. Specifically, the NAVAIDS currently operating in the area include four Very High Frequency Omnitrange (VOR) / Distance Measuring Equipment (DME) facilities. A VOR broadcasts a VHF radio signal, including a navigational component that allows aircraft to navigate from point to point following the signals. More detailed information regarding these four facilities is presented in **Table 2-14**.

Table 2-14: NAVAIDS in Proximity to EGE

Type	ID	Name	Frequency	Radial	Range
VOR/DME	SXW	Snow	109.20	065	3.6
VOR/DME	DBL	Red Table	113.00	343	12.2
VOR/DME	RLG	Kremmling	113.80	211	30.7
VOR/DME	RIL	Rifle	110.60	070	37.8

There is also a network of low altitude published federal airways (i.e., Victor airways), in the vicinity of EGE, which traverse the area. Victor airways include the airspace within parallel lines located four nautical miles on either side of the airway and extend 1,200 feet above the terrain up to, but not including, 18,000 feet MSL. When an aircraft is flying on a federal airway below 18,000 feet MSL, the aircraft may be operating within Class B, C, or E airspace. Near EGE, there is one low altitude Victor airways (V591) that enters the Class D airspace around the Airport.

There are two published non-precision approaches at EGE, both to Runway 25. **Table 2-15** summarizes the approach and visibility minimums of each of these published approaches.

Table 2-15: Lowest Published Instrument Approach Minima at EGE

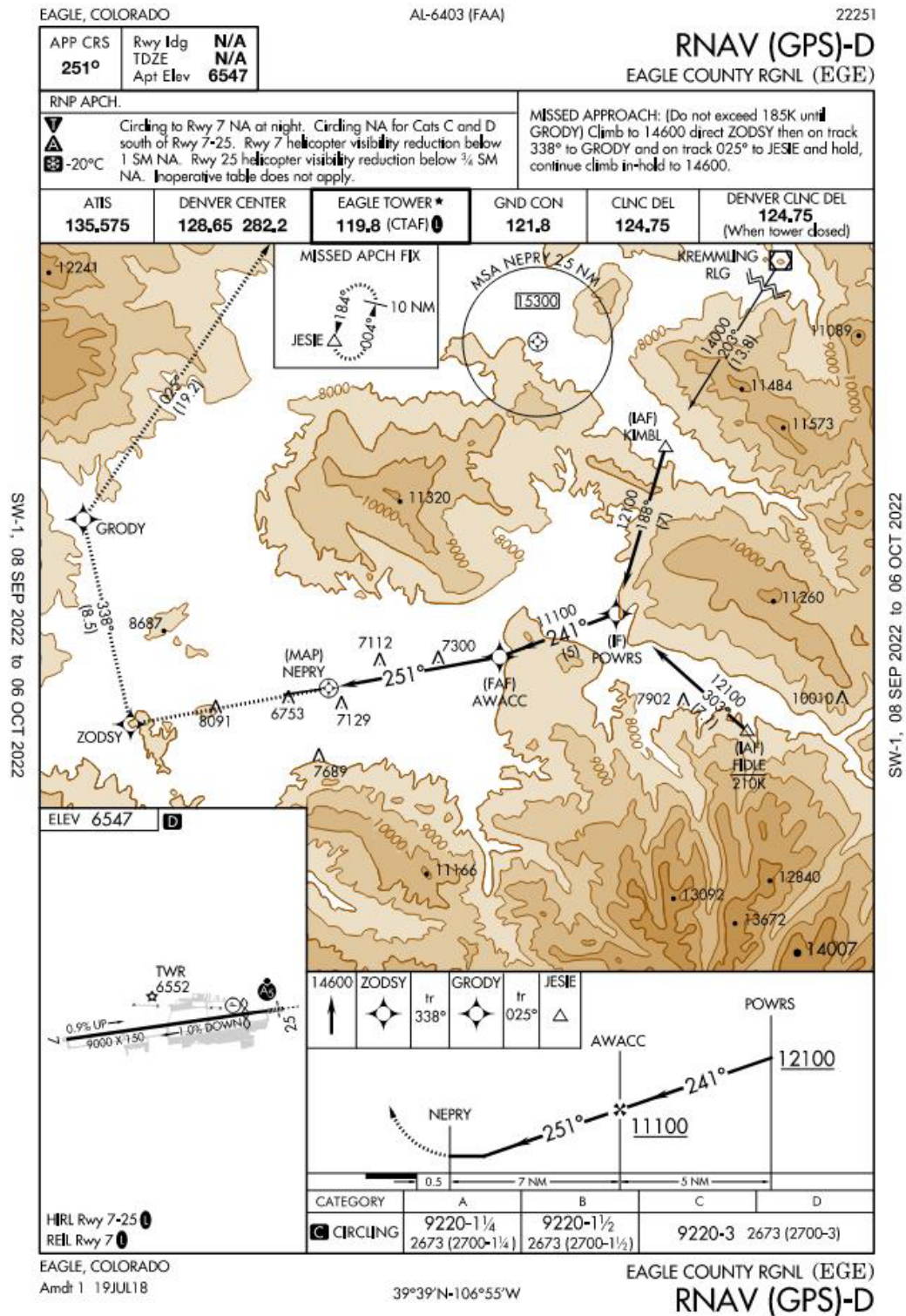
Instrument Approach	Lowest Straight-In Minimums		Lowest Circling Minimums	
	Ceiling (MSL/AGL)	Visibility	Ceiling (MSL/AGL)	Visibility
RNAV (GPS)-D	-	-	9,220 / 2,673	3 mile
LDA RWY 25	8,620 / 2,080	2 ½ mile	-	-

Source: FAA, U.S. Terminal Procedure Publication

Figure 2-16 and **Figure 2-17** show the current approach plates for each of these published approaches. It should also be noted that EGE is currently working to develop three new approach procedures that will optimize the application of current automation and navigational technology. The full set of three procedures will provide a procedure that serves airlines and the highest-capability private aircraft, a second procedure that would be used by the next tier of private aircraft, and a third procedure that provides the broadest level of access by the remainder of the private aircraft fleet. The common denominator of the three approaches will be to combine space-based navigation and flight deck automation for higher navigational precision. The primary benefit of this approach is that aircraft will be able to more completely automate the trajectory planning and match aircraft speed, engine thrust and descent rates for optimal flight control. This optimal flight control means more predictable navigation and descents and those benefits can help during low visibility conditions.

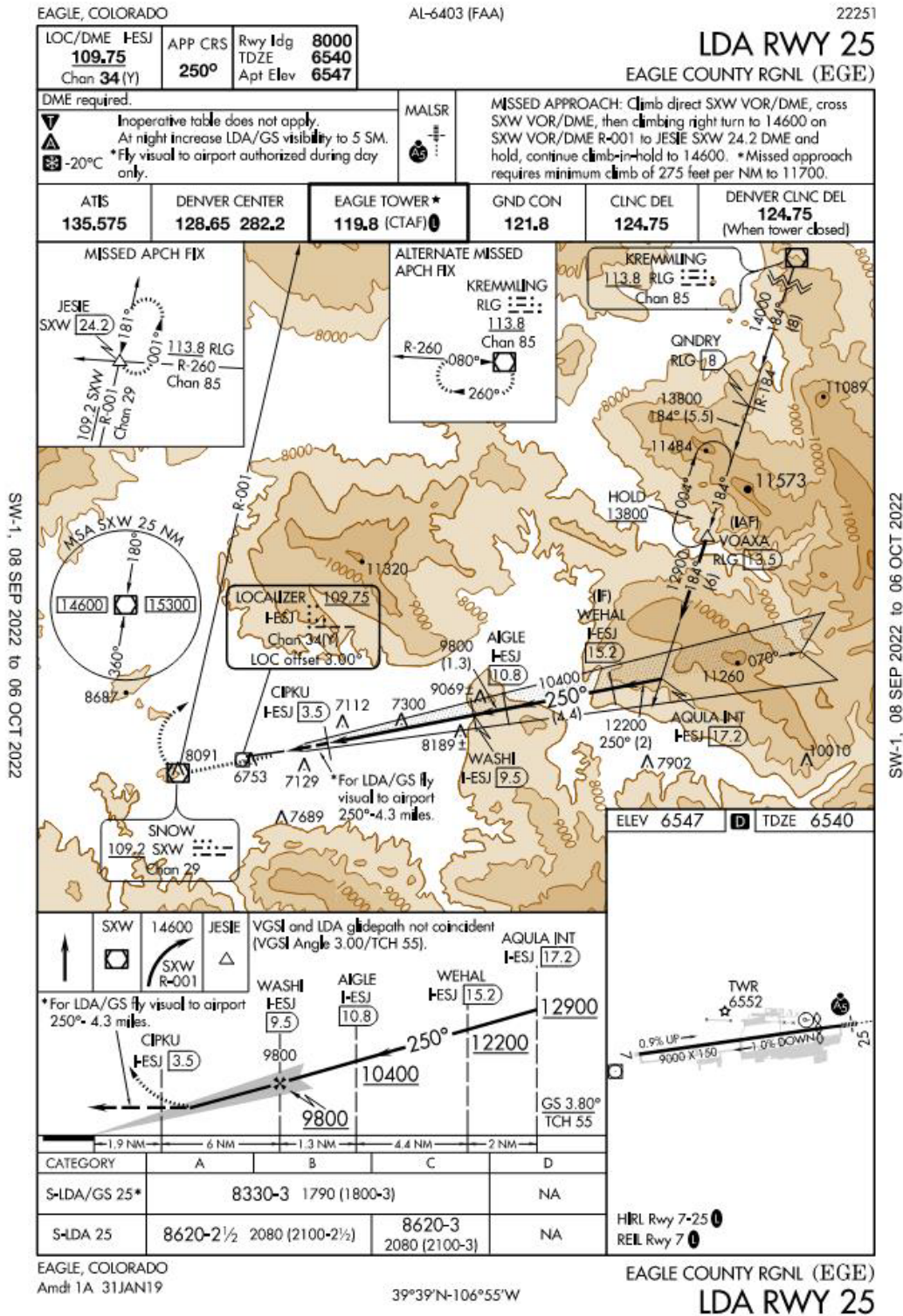
NAVAIDs are systems or devices used to assist pilots in navigating aircraft accurately and safely, both en route and during approaches to airports. They are critical components of the NAS providing guidance for direction, distance, and position. NAVAIDs can be ground-based, satellite-based, or onboard aircraft systems.

Figure 2-16: Approach Plate – RNAV (GPS)



Source: FAA, U.S. Terminal Procedure Publications.

Figure 2-17: Approach Plate – LDA/DME



Source: FAA, U.S. Terminal Procedure Publications



2.10.4 Part 77 Airspace Surfaces

Federal Aviation Regulations (FAR) Part 77, *Objects Affecting Navigable Airspace*, is a tool used to protect the airspace over and around an airport from potential obstructions. As outlined by federal regulations, all airports included in the National Airspace System (NAS) are subject to the requirements set forth in Part 77. Prior to any airport development, Part 77 requires the request of an airspace evaluation to determine the impact of the proposed development on the airspace near the airport and the NAS. To determine these impacts, Part 77 defines protected airspace above and around the airport, known as imaginary surfaces. These imaginary surfaces are defined based on the conditions of the airport and each specific runway. More specifically, the category of each runway under current and future operations determines the size and dimensions of these imaginary surfaces. The five imaginary surfaces, as defined below, are the Primary, Approach, Horizontal, Conical, and Transitional. These principal imaginary surfaces are also illustrated in **Figure 2-18**.

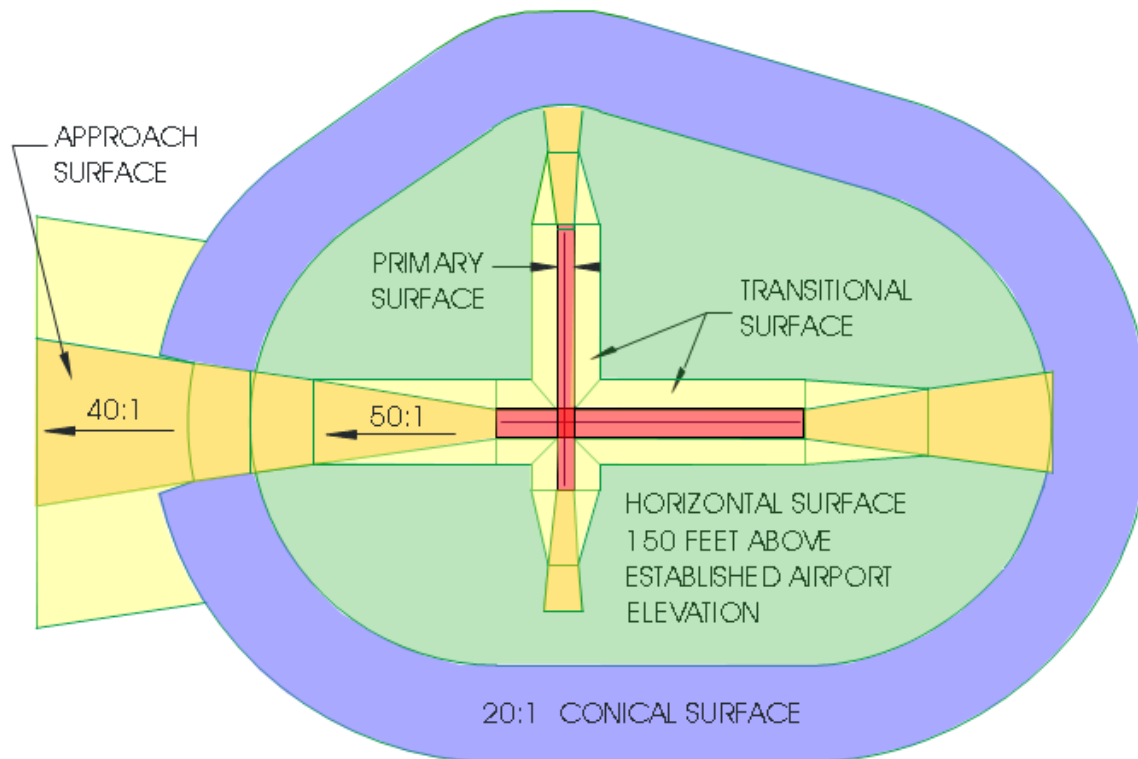
Part 77 establishes standards and procedures to protect navigable airspace around airports from obstructions and ensure safe aircraft operations.

- **Primary Surface** – The Primary Surface is an imaginary obstruction-limiting surface that is specified as a rectangular surface longitudinally centered about a runway. The specific dimensions of this surface are functions of types of approaches, existing or planned, for the runway.
- **Approach Surface** - The Approach Surface is an imaginary obstruction-limiting surface that is longitudinally centered on an extended runway centerline. It extends outward and upward from the primary surface at each end of a runway, at a designated slope and distance, determined upon the type of available or planned approach by aircraft to a runway.
- **Horizontal Surface** - The Horizontal Surface is an imaginary obstruction-limiting surface that is specified as a portion of a horizontal plane surrounding a runway located 150 feet above the established airport elevation. The specific horizontal dimension of this surface is a function of the types of approaches existing or planned for the runway.
- **Conical Surface** - The Conical Surface is an imaginary obstruction-limiting surface that extends from the edge of the horizontal surface outward and upward at a slope of 20 feet horizontally for every one foot vertically (20:1 slope) for a horizontal distance of 4,000 feet.
- **Transitional Surface** - The Transitional Surface is an imaginary obstruction-limiting surface that extends outward and upward at right angles to the runway centerline and the runway centerline, extended at a slope of seven feet horizontally for every one foot vertically (7:1 slope) from the sides of the primary surface.

As defined in Part 77, Runway 7 is a larger than utility runway with a visual approach. Runway 25 is a larger than utility runway with an APV and non-precision approaches and minimums of 2½ miles for localizer only approaches and 3 miles for localizer with glide slope approaches. Note that there are circle-to-land approaches to both runway ends. The current airspace designated for EGE, as well as the immediate surrounding airspace, adequately satisfies current levels of operation. Additionally, the airspace

will be adequate to accommodate the level of operations outlined in the FAA approved forecasts.

Figure 2-18: Part 77 Plan View Example



Source: FAA

Because of the terrain that surrounds the airport, limitations on the number of aircraft that can operate at one time can be expected. With new advances in technology and the potential for more efficient use of existing airspace with future NextGen technology, these limitations may be reduced.

2.10.5 Nearby Airports

While EGE is the only public-use airport in Eagle County, it is one of several airports within the region. The closest airport to EGE is Glenwood Springs Municipal (GWS), a general aviation airport approximately 32 driving miles west of EGE. GWS has 70 based aircraft and a runway length of 3,305 feet, limiting most operations to smaller aircraft. Rifle/Garfield County Airport (RIL) is another general aviation airport in the area, approximately 52 driving miles west of EGE. RIL has 21 based aircraft and a runway length of 7,000 feet giving it the capability of supporting some jet activity. The next closest airport is Aspen/Pitkin County Airport (ASE), approximately 65 driving miles from EGE and the closest airport with commercial airline service. The airport has 94 based aircraft and a runway length of 8,006 feet, allowing it to support jet activity.

Figure 2-19: Area Airport Locations



Source: Google Earth.

Table 2-16: Area Airport Data

Airport Name (Identifier)	Location	Field Elevation	Primary Runway Data	Drive to EGE	Flight Distance to EGE
Glenwood Springs Municipal (GWS)	Glenwood Springs	5,916 ft	3,305 ft x 50 ft	44 min 32 mi	20 nm SW
Aspen-Pitkin County Airport (ASE)	Aspen	7,838 ft	8,006 ft x 100 ft	75 min 65 mi	25 nm S
McElroy Field (20V)	Kremmling	7,414 ft	5,540 ft x 75 ft	78 min 56 mi	35 nm NE
Lake County Airport (LXV)	Leadville	9,936 ft	6,400 ft x 75 ft	82 min 66 mi	38 nm SE
Rifle Garfield County Airport (RIL)	Rifle	5,537 ft	7,000 ft x 100 ft	53 min 51 mi	38 nm W
Meeker Coulter Field Airport (EEO)	Meeker	6,415 ft	6,503 ft x 100 ft	106 min 96 mi	51 nm NW

Source: Jviation, a Woolpert Company, FAA.



2.11 ENVIRONMENTAL REVIEW

Local, state, and federally regulated natural resources that exist on and around EGE can potentially impact airport activities and future improvements. Environmental review and permitting is often required for future projects that impact regulated environmental resources; therefore, it is important to conduct a review of those resources in their existing 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*, as applied in December 2022

The scope, location, and feasibility of future projects could be impacted by the presence of environmental resources 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 and can impact the overall cost and schedule.

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; as well as reports from governmental agencies, EGE, and Jviation, a Woolpert Company, the Airport's engineering consultant. The following sources were utilized in the preparation of this document:

- Colorado Parks & Wildlife
- Town of Eagle
- Town of Gypsum
- Eagle County
- U.S. Federal Aviation Administration
- 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
- Federal Emergency Management Agency

As much development at an airport is subject to both state and federal environmental requirements, it is critical that relevant environmental resources be considered throughout the master planning process.



- Previous Airport Environmental Documents

The Environmental Review section of this chapter provides an overview of environmental factors that apply to EGE based on the requirements of FAA AC 150/5070-6B, *Airport Master Plans*, FAA Order 1050.1, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act: Implementation Instruction for Airport Action*. This review will address those specific environmental categories evaluated in environmental documents in accordance with the National Environmental Policy Act (NEPA). Current information from federal, state, and local agencies concerning environmental conditions on and near EGE have been reviewed and are presented below.

2.11.1 Air Quality

Federally funded projects require that an air quality analysis 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
- 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.

Monitored by the EPA, the CAA is the predominant statute (along with the NEPA) that regulates actions that can potentially affect air quality. It established National Ambient Air Quality Standards (NAAQS) for six, specific "criteria pollutants."

In accordance with the CAA, all areas within the State of Colorado receive NAAQS designations: attainment, nonattainment, maintenance, or unclassifiable. An area with air quality better than the NAAQS is designated as being in attainment, while an area with air quality worse than the NAAQS is designated as being in nonattainment. The EPA has designated Eagle County as being in attainment for all criteria pollutants.

Air quality generally refers to the condition of the ambient air, assessed by analyzing pollutant levels and their potential changes due to a proposed action, to ensure compliance with environmental standards and protect public health and ecosystems.



2.11.2 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 and managed by Colorado Parks & Wildlife.

Through application of its Information for Planning and Consultation (IPaC), the USFWS indicated the possible presence of the following federally protected species near EGE:

Biological resources generally refer to the living organisms and ecosystems, including plants, animals, and habitats, potentially affected by a proposed action, assessed to evaluate impacts and ensure their protection or mitigation.

Table 2-17: USFWS IPaC Species List

Species	Scientific Name	Designation	Habitat
Canada Lynx	Lynx canadensis	Threatened	Not within Critical Habitat
Gray Wolf	Canis lupus	Endangered	Lone, dispersing gray wolves may be present throughout the State of Colorado.
Mexican Spotted Owl	Strix occidentalis lucida	Threatened	Not within Critical Habitat
Yellow-billed Cuckoo	Coccyzus americanus	Threatened	Not within Critical Habitat
Bonytail	Gila elegans	Endangered	Not within Critical Habitat
Colorado Pikeminnow	Ptychocheilus lucius	Endangered	Not within Critical Habitat
Razorback Sucker	Xyrauchen texanus	Endangered	This species only needs to be considered if and when water depletions in the upper Colorado River basin occur.
Monarch Butterfly	Danaus plexippus	Candidate	No critical habitat
Ute Ladies'-tresses	Spiranthes diluvialis	Threatened	No critical habitat

Source: USFWS Information for Planning and Conservation Report, October 2022

As part of the 2019 EGE deice pad project, a Sensitive Species Report was completed by David Evans and Associates. While not all of the Airport's property was surveyed, the project did impact a significant portion of total Airport property; therefore, the survey and report provides a good indication of potentially present endangered species. In short, the report found that no federally listed or state listed species occurred within the study area (see **Figure 2-20**). Because such habitat surveys are



generally accurate and accepted by federal agencies for two years after completion, any new construction projects at EGE that may disturb potential habitat should include a new biological survey to ensure protected species are not present.

Figure 2-20: 2019 Sensitive Species Exhibit

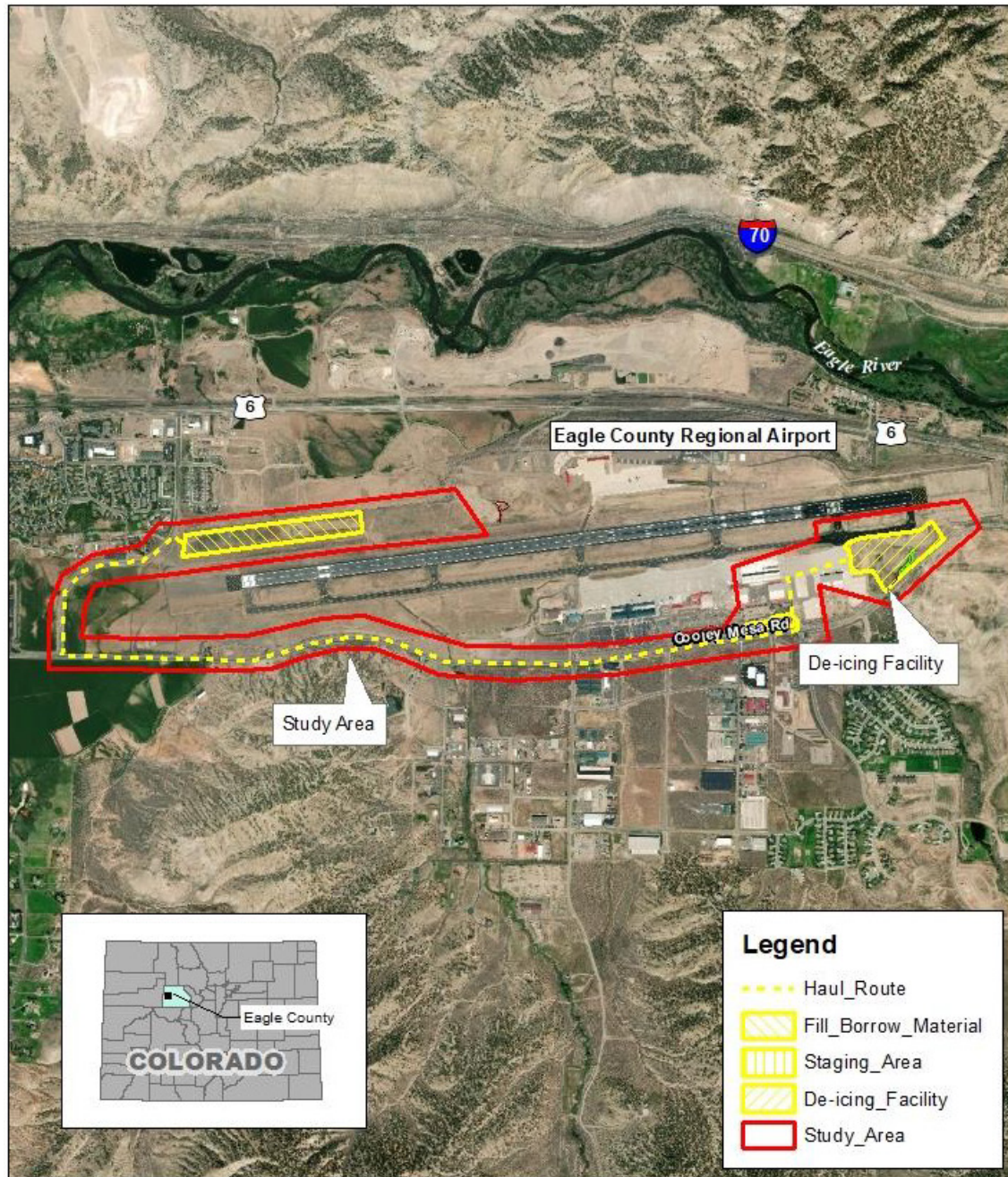


Figure 1
Vicinity Map

Service Layer Credits: Source: Esri,
DigitalGlobe, GeoEye, Earthstar Geographics,



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Miles

ESRI, ArcGIS Online, USA Topographic Maps. 30x60 Grid.
1988. Coos Bay, Oregon.



S:\ENVI\IRONSTAFF\IPRI\Eagle Co. Airport\GIS\Figure 1 Eagle County Airport_VicinityMap.mxd

Source: David Evans and Associates, 2019



In addition to the federally listed species, the IPaC lists nine birds protected by the Migratory Bird Treaty Act that have the potential to inhabit the Airport. Airport construction projects during the avian breeding season (largely from February through August) that include ground disturbance should complete a nesting bird survey prior to that disturbance.

Lastly, the Airport maintains a Wildlife Hazard Management Plan (WHMP)—the last plan was approved by the FAA in 2021.

2.11.3 Climate

A growing body of scientific evidence, including the congressionally mandated United States Global Change Research Program (USGRP), indicates that an increase in atmospheric gas (GHG) emissions is affecting Earth's climate. The USGCRP was mandated 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."⁵ 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 welfare of current and future generations.⁶ In 2015, EPA acknowledged more recent scientific assessments that "highlight the urgency of addressing the rising concentration of carbon dioxide (CO₂) in the atmosphere."⁷

Climate generally refers to the long-term atmospheric conditions and greenhouse gas emissions impacted by a proposed action, evaluated to assess contributions to climate change and ensure alignment with environmental sustainability goals.

Research has indicated there is a direct correlation between fuel combustion and GHG emissions. GHGs, such as CO₂, methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs), trap heat in the atmosphere, and are primarily a result of burning fossil fuels. FAA Order 1050.1F states that GHGs and climate change should be considered and evaluated as an impact category in FAA environmental documents including Environmental Assessments and Environmental Impact Statements. However, there are currently no federal standards for aviation related GHG emissions and, as noted by the CEQ, "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions; as such direct linkage is difficult to isolate and to understand."

There are no federal standards for aviation related GHG emissions; nevertheless, the main sources of GHG emissions at the Airport are associated with gasoline and diesel fuel for airport vehicles and ground support equipment (GSE), fossil fuel for electricity and heating, jet fuel for auxiliary power units (APUs) that power aircraft at airport gates, and other sources. Together, these sources contribute a very small percentage of CO₂ emissions when compared to overall emissions of the region. However, the Airport can employ and encourage operators at the Airport to reduce emissions and the resulting GHG.

⁵ USFWS, "<https://www.fws.gov/mountain-prairie/es/grizzlyBearHistoryHabitatDiet.php>"

⁶ Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496 (December 15, 2009).

⁷ EPA< Final Rule for Carbon Pollution Emission Guidelines for Existing Stationary Sources Electric Utility Generating Units, 80 Fed. Reg. 64661, 64677 (October 23, 2015).

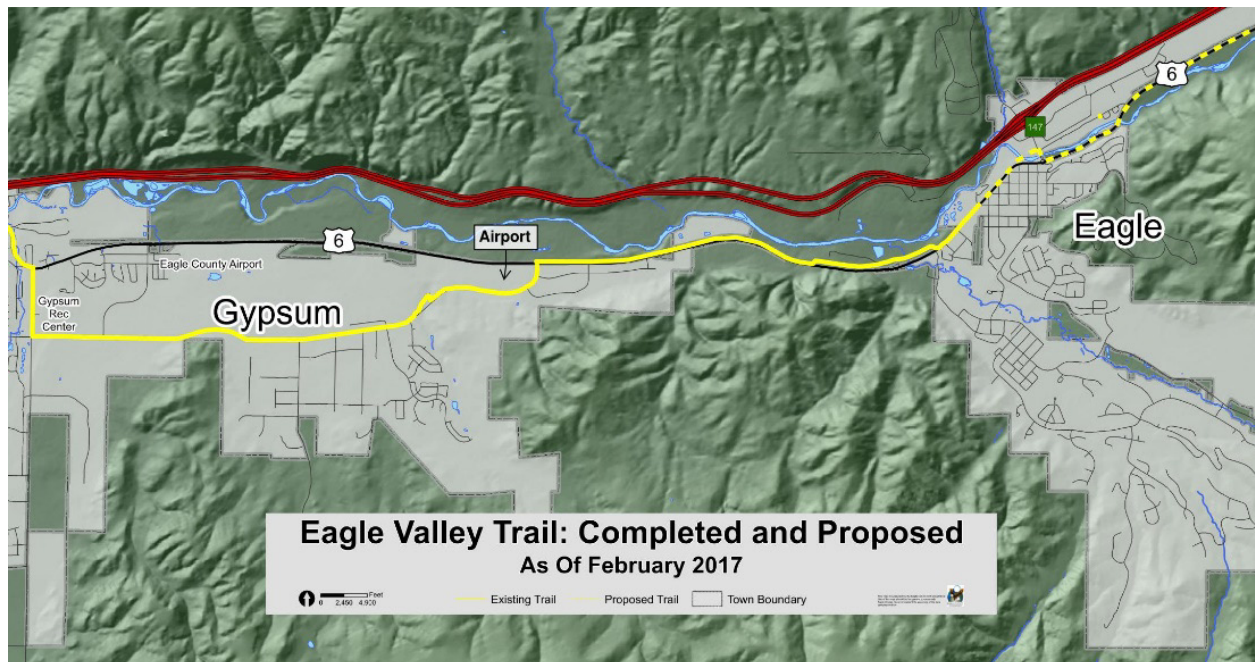
2.11.4 Department of Transportation Act Section 4(f)

Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966, implemented through both the Federal Transit and the Federal Highway Administrations, require USDOT agencies to strongly consider alternatives to developing/redeveloping publicly owned parks, recreation areas (including trails), wildlife and waterfowl refuges, or public and private historic properties. If there are no feasible and prudent alternatives and the proposed the action considers all reasonable planning options to minimize harm to the property, exceptions can be made (see 23 CFR Part 774).

Though numerous public parks, recreation areas, and historic resources are located within the Towns of Eagle and Gypsum, none are in proximity to the Airport. Additionally, no wildlife or water fowl refuges are located within 50 miles of the Airport. The nearest Section 4(f) resource is the Eagle Valley Trail (a bike path) that immediately abuts and runs along the south side of the Airport as shown in **Figure 2-21**.

Section 4(f) generally refers to the protection of publicly owned parks, recreation areas, wildlife refuges, and historic sites from use or adverse impacts by projects unless no feasible and prudent alternative exists and all possible mitigation is applied.

Figure 2-21: Section 4(f) Resources



Source: Eagle County, <https://www.eaglecounty.us/ecotrails/maps>, Accessed October 2022

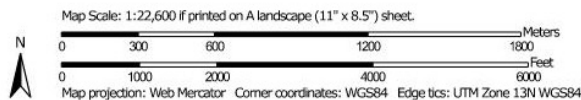
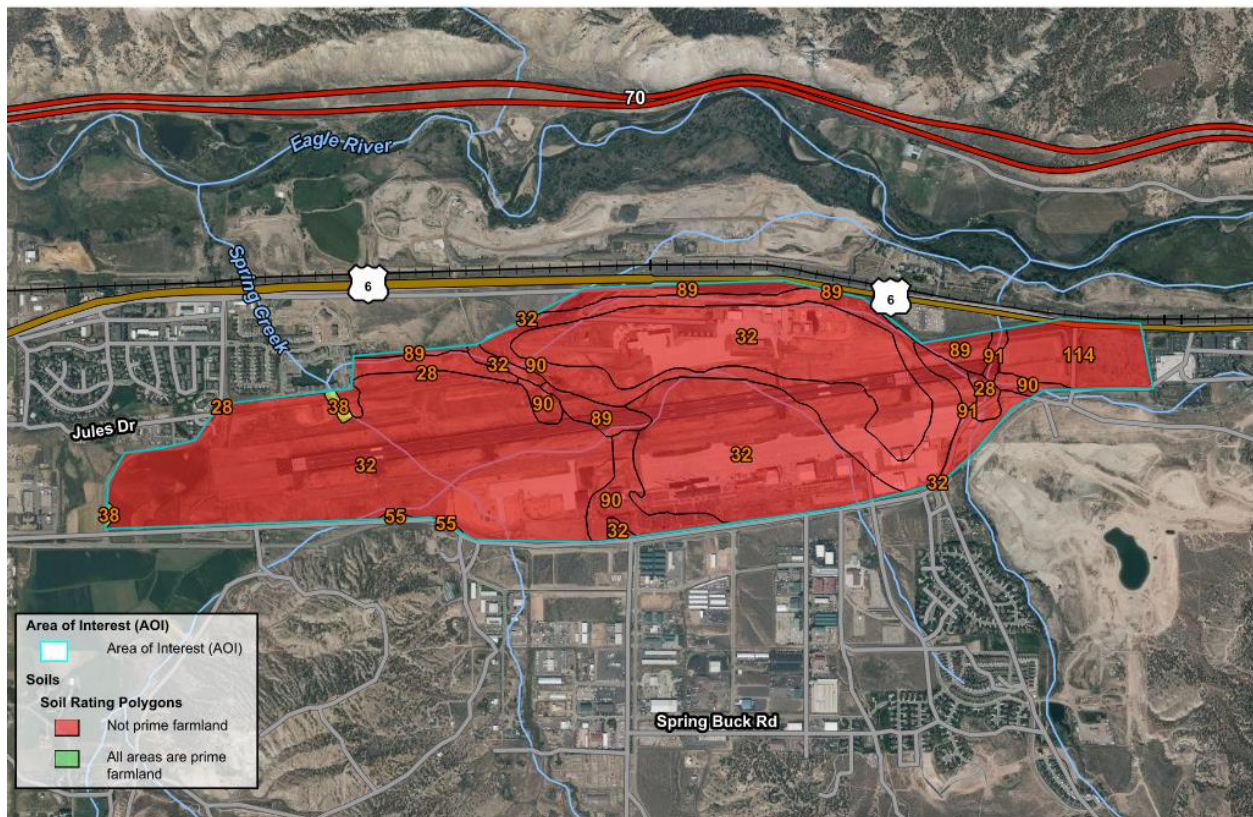
2.11.5 Farmlands

FAA Order 1050.1f defines farmlands 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.

Farmlands generally refer to agricultural lands evaluated for potential impacts from a proposed action to ensure their protection or minimization of conversion to non-agricultural uses.

The NRCS's Web Soil Survey shows the entire Airport is designated as not prime farmland (see areas shaded in red in **Figure 2-22**), and therefore not of consideration.

Figure 2-22: NRCS Web Soil Survey





Source: NRCS, 2022

2.11.6 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 1050.1f, 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) as discussed in **Section 2.9.8**. All tanks are contained and maintained per the Airport's 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.

All glycol used in deicing operations is collected via trench drain located on the north side of the deice pad on the east end of the ramp, and then stored in recovery tanks for disposal. Solid waste generated by the Airport is collected via a waste management contractor and hauled to the local landfill. Additional information regarding solid waste can be found in the Recycling, Reuse, and Waste Reduction plan located in the Appendices.

Lastly, according to the EPA, no superfund or brownfield sites are located on or near the Airport. If the Airport were to pursue future land acquisitions, a Phase I Environmental Site Assessment would be needed to ensure the property is clean prior to acquisition.

Hazardous Materials, Solid Waste, and Pollution Prevention generally refers to the evaluation of a proposed action's potential to generate, disturb, or manage hazardous substances, solid waste, or pollutants, ensuring compliance with environmental regulations and implementation of measures to minimize environmental and health risks.



2.11.7 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 (ACHP) reasonable opportunity to comment on such efforts. Projects subject to Section 106 must consult with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), 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.

A review of the National Register of Historic Places revealed that there are eleven such places located in Eagle County (see **Table 2-18**). None of these properties are located within or adjacent to the Airport. Further, multiple cultural and archaeological surveys have been completed for previous construction projects; as shown in **Figure 2-23**, none of these surveys have identified any eligible resources. Future projects in areas that have not been previously surveyed will need additional investigation to ensure cultural and historic resources are not impacted.

Historical, Architectural, Archeological, and Cultural Resources generally refer to sites, structures, artifacts, or traditions of historical, architectural, archeological, or cultural significance that may be impacted by a proposed action, evaluated to ensure their preservation or mitigation in compliance with laws like the National Historic Preservation Act.

Table 2-18: NRHP Location List

Property Name	Address
Archeological Site 5EA484	Address Restricted
Upper Brush Creek School	Between Coulter Meadow & W. Brush Cr. Rds.
First Evangelical Lutheran Church	400 2nd St.
Camp Hale Site	Address Restricted
Waterwheel	SE of McCoy at Colorado River
Notch Mountain Shelter	Notch Mtn. Summit, White River NF
Tigiwon Community House	FSR 707, Holy Cross Dist., White River NF
Yarmony Archeological Site	Address Restricted
Red Cliff Bridge	U.S. 24
State Bridge	Off CO 131
Woods Lake Resort	11 mi. N of Thomasville at Woods Lake

Source: National Park Service, National Register of Historic Places, 2022



2.11.8 Natural Resources and Energy Supply

FAA Order 1050.1f defines natural resources and energy supply consumption as impact categories, requiring an evaluation of a project's consumption of natural resources (e.g., water, asphalt, aggregate, wood, etc.) and its use of energy supplies (e.g., coal for electricity, natural gas for heating, and fuel for aircraft/vehicles, etc.). This consumption of natural resources and energy supply use typically result from the construction, operation, and/or maintenance of the proposed action or its alternative(s).

The existing energy used at EGE is typical of other similar-sized airports. The buildings and lighting facilities respond to the demand that is triggered principally by airport operations. Electricity is provided by Holy Cross Energy while natural gas is provided by Black Hills Energy. Fuel consumption for aircraft will remain generally consistent unless a significant increase in demand occurs. The expected operations modest growth rates, 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 they are implemented, placing no additional 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 because of improvements in architectural and mechanical equipment and materials.

Additional information regarding energy resiliency can be found in the Eagle County Community Resilience Plan located in the Appendices.

Natural Resources and Energy Supply generally refers to the assessment of a proposed action's impact on the availability, use, and conservation of natural resources (e.g., water, minerals, timber) and energy supplies (e.g., electricity, fuel), ensuring sustainable practices and minimal environmental depletion.

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2.11.9 Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

Socioeconomic Data

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 its alternative(s). 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 (GDP) for Eagle County was nearly \$3.9 million in 2021, this is down from 2019, which is likely a result of the COVID-19 pandemic. See **Figure 2-24** for a historic chart of the GDP for Eagle County. The BEA also reports the personal income for the same area was \$5.4 million in 2021, continuing an upward trend from \$2.4 million in 2010.⁸

Source: U.S. Bureau of Economic Analysis

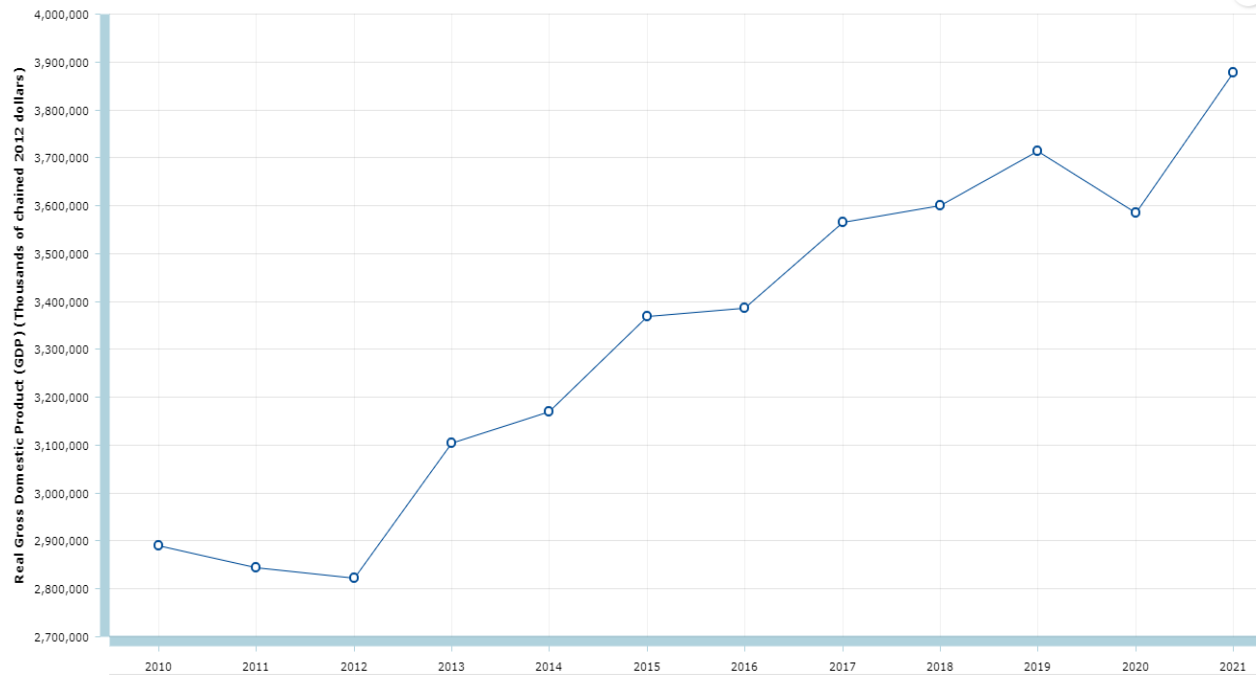
Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks generally refer to the evaluation of a proposed action's effects on community economics, social structures, disproportionately impacted low-income or minority populations, and risks to children's health and safety, ensuring equitable and protective outcomes.

⁸ Bureau of Economic Analysis, 2022



Figure 2-25 displays the historic trends of personal income for Eagle County.

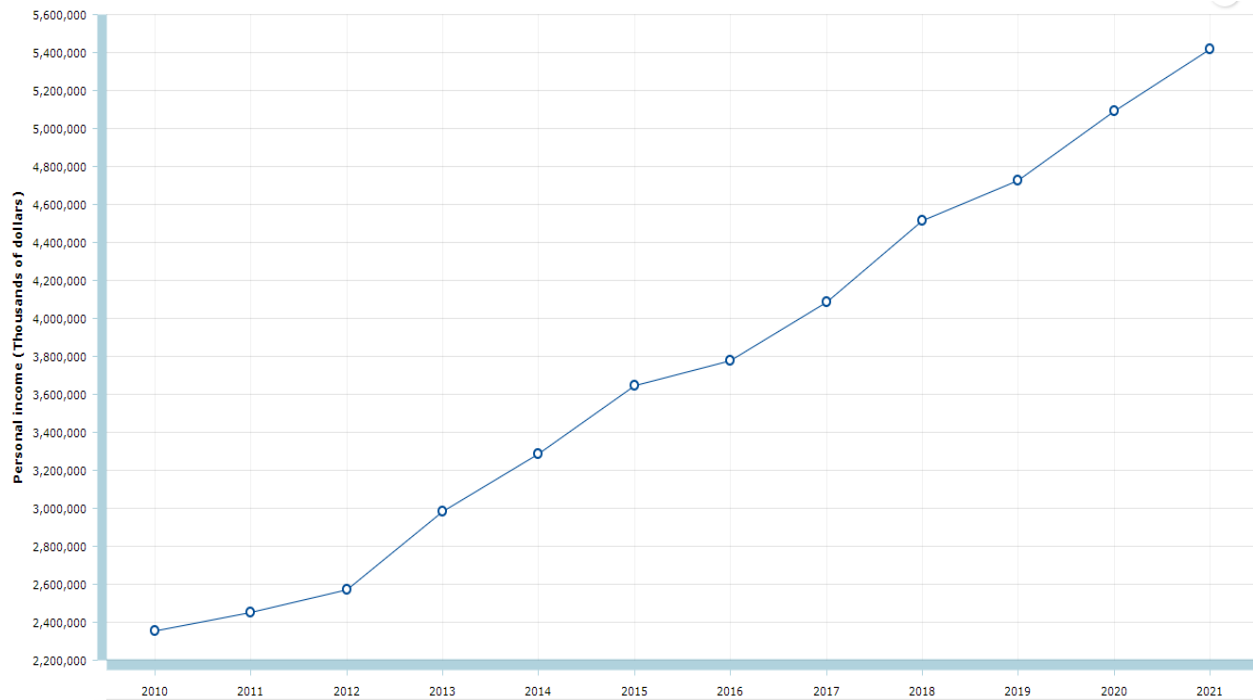
Figure 2-24: Eagle County Gross Domestic Product



Source: U.S. Bureau of Economic Analysis



Figure 2-25: Eagle County Personal Income



Source: U.S. Bureau of Economic Analysis

The U.S. Bureau of Labor Statistics reports that the unemployment rate for Eagle County was 2.4 percent in August of 2022, this is slightly lower than the national average of 3.7 percent, for the same period.

Environmental Justice Data

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 U.S. history, polluting factories, landfills, and highways were often built near low-income and majority-minority communities which received a disproportionate amount of the negative impacts. Environmental Justice seeks to prevent the continuation of such practices.

The U.S. Census Bureau reports that as of 2021, the population of Eagle County is comprised of a mix of races with the majority of residents identified as “White” and the second largest group being “Hispanic or Latino.” **Table 2-19** breakdowns the racial makeup of Eagle County.


Table 2-19: Eagle County Population by Racial Origin

Race Origin	Percent of Population
White alone, not Hispanic or Latino, percent	66.9%
Hispanic or Latino, percent(b)	29.3%
Two or More Races, percent	1.7%
Black or African American alone, percent(a)	1.5%
Asian alone, percent(a)	1.5%
American Indian and Alaska Native alone, percent(a)	1.3%
Native Hawaiian and Other Pacific Islander alone, percent(a)	0.1%

Source: U.S. Census Bureau, 2021

Note that percentages may not total 100% due to rounding.

Environmental justice actions also protect aging and low-income populations. The U.S. Census bureau reports that, in 2021, 13.8 percent of the population is over 65 and 6.4 percent of the population is living in poverty.⁹

Children's Environmental Health and Safety Risks Data

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 2021, 20.8 percent of the population of Eagle County was under the age of 18, with 4.8 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.

Human Trafficking

Although not directly related to socioeconomic impacts, environmental justice, or children's environmental health and safety risks, it is important to mention the global issue of human trafficking and its impact on 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

⁹ U.S. Census Bureau, 2022



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 at the crossroads of many victims' journeys. Given appropriate training, airport and airline employees 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 an important contribution to the international effort to eradicate human trafficking.

2.11.10 Visual Effects

FAA Order 1050.1f notes that "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."¹⁰ 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 EGE include airfield and apron flood lighting, navigational aids, terminal lighting, parking lighting, and roadway lighting. 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).¹¹ The Airport has minimal glare emissions.

The light emitted from the Airport is needed and/or required to maintain aircraft and personal safety. The Airport is surrounded by both developed and undeveloped areas. As development occurs, light emission impacts to neighboring and planned residential development as well as open space 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.¹²

The Airport is located in a relatively flat area within the Rocky Mountains. Residents located to the northwest and southeast of the Airport have an unobstructed view of the Airport with little buffering from airport operations and development. The area

Visual effects generally refer to the extent to which a proposed action would either produce light emissions that create annoyance or interfere with activities; or contrast with, or detract from, the visual resources and/or the visual character of the existing environment

¹⁰ FAA Order 1050.1f Desk Reference, 2015

¹¹ FAA Order 1050.1f Desk Reference, 2015

¹² FAA Order 1050.1f Desk Reference, 2015



to the south of the Airport is largely industrial development with limited views of the Airport. Interstate 70 is located to the north of the Airport and has a full view of the Airport.

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.

2.11.11 Noise and Compatible Land Use

Noise is considered to be unwanted sound that can disturb routine activities (e.g., sleep, conversation, student learning) and can cause annoyance. Aviation-related noise primarily results from aircraft operations (e.g., departures, arrivals, overflights, taxiing, and engine run-ups).¹³ Within the context of an airport master plan, actions and development that may change runway configurations, airport operational patterns, aircraft fleet mix, flight patterns, among others may have the potential to alter noise impacts on local communities.

For planning purposes, the FAA employs a aircraft noise impact model to assess the degree of impacts on and around the airport. The model utilized by the FAA is the Aviation Environmental Design Tool (AEDT) and it specifically evaluates noise impacts through the Day-Night Average Noise Level (DNL) metric to estimate a person's average exposure to sound over a 24-hour period over the span of a year. The DNL is expressed graphically as a noise level contour that represents the average day of the year on the basis of annual aircraft operations. DNL contour calculations utilize a number of variables, including aircraft models and engine types, approach and departure tracks, number of operations, and time of day. It is also important to note that this is a computer algorithm driven model that is based on inputted data and assumptions; it does not depict noise levels occurring in a specific location or for a single aircraft event.

As part of this Airport Master Plan, noise contours were generated for existing and future airport conditions (see **Appendix E**). The results of this modeling indicate that the critical contours as defined by FAA (i.e., the 65 DNL and the 70 DNL) lie either on airport property or over existing unpopulated areas that would not be noise sensitive. While the 60 DNL contour does extend off-airport, it is not significant within federal regulations.

With respect to potential methods of directly addressing aircraft noise on and around EGE, there are currently no formal noise abatement procedures established at the Airport. Following is a general overview of the options that are available and typically employed by airports:

1. There are multiple federal requirements and limitations for the establishment for involuntary noise abatement procedures. These would be procedures that are mandated for use by the FAA and actively employed by the EGE ATCT. It should be recognized that the establishment of such procedures is typically extremely difficult as the first priority of the FAA is

Noise and compatible land use generally refer to unwanted sound that can disturb routine activities and the alignment of existing and planned land uses around an airport are compatible with normal airport operations, including landing and takeoff of aircraft.

¹³ FAA Order 1050.1f Desk Reference, 2015



always based on the promotion of safety for aircraft and the communities surrounding the airport. Thus, any procedure must significantly improve the noise conditions around the airport while also not compromising safe operations to any degree. Additionally, the FAA also must consider if the establishment of a formal noise abatement procedure would adversely impact other surrounding areas – it cannot simply be to shift noise impacts away from one area to another.

2. Based on the challenges associated with establishing formal noise abatement procedures, airports will more often rely on voluntary noise abatement procedures. These are typically procedures that are promoted for use at the airport by the airport itself. While pilots are not obligated to abide by these procedures, an airport can strongly encourage pilots operating on the field to employ them through a variety of educational means. Voluntary noise abatement procedures often include a combination of aircraft operational suggestions (e.g., engine power settings, climb rates, etc.) in combination with suggested flight tracks designed to have aircraft track over unpopulated areas, if that is available. Such voluntary noise abatement procedures are often established through coordination by the airport with key airport users, the air traffic control tower (if one exists), and other stakeholders. Once established, these are often promoted on the airport's website and social media, through direct coordination with users, among others. It is critical to note that pilots in command of aircraft are always the final determinant of whether or not they will employ the voluntary noise abatement procedures as their ultimate responsibility is always the safe operation of their aircraft.

No noise abatement procedures (either involuntary or voluntary) have been established at EGE, largely due to the constraints placed on the airspace by the mountainous terrain in combination with prevailing winds. Simply stated, there are very limited opportunities to establish flight tracks apart from the existing routes used for departing traffic, and those that may exist offer very limited potential benefits. From a practical perspective, once aircraft depart EGE, they are quickly above unpopulated terrain where noise has less potential for a direct impact.

With that stated, EGE is actively working with its users to promote voluntary aircraft operational practices (e.g., reduced power on takeoff, steeper climb gradients, etc.) in conformance with best industry practices to reduce noise impacts on and around the Airport.

2.11.12 Water Resources

Water resources include wetlands, floodplains, surface waters, ground waters, and wild and scenic rivers – all of which function together as a holistic system and are vital contributors the environmental balance. 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 EGE are summarized in the following subsections.

Water resources generally refer to the various bodies of water, including rivers, lakes, streams, floodplains, and groundwater, that are evaluated for their quality, availability, and potential impacts from proposed projects to ensure compliance with environmental regulations and sustainable management.



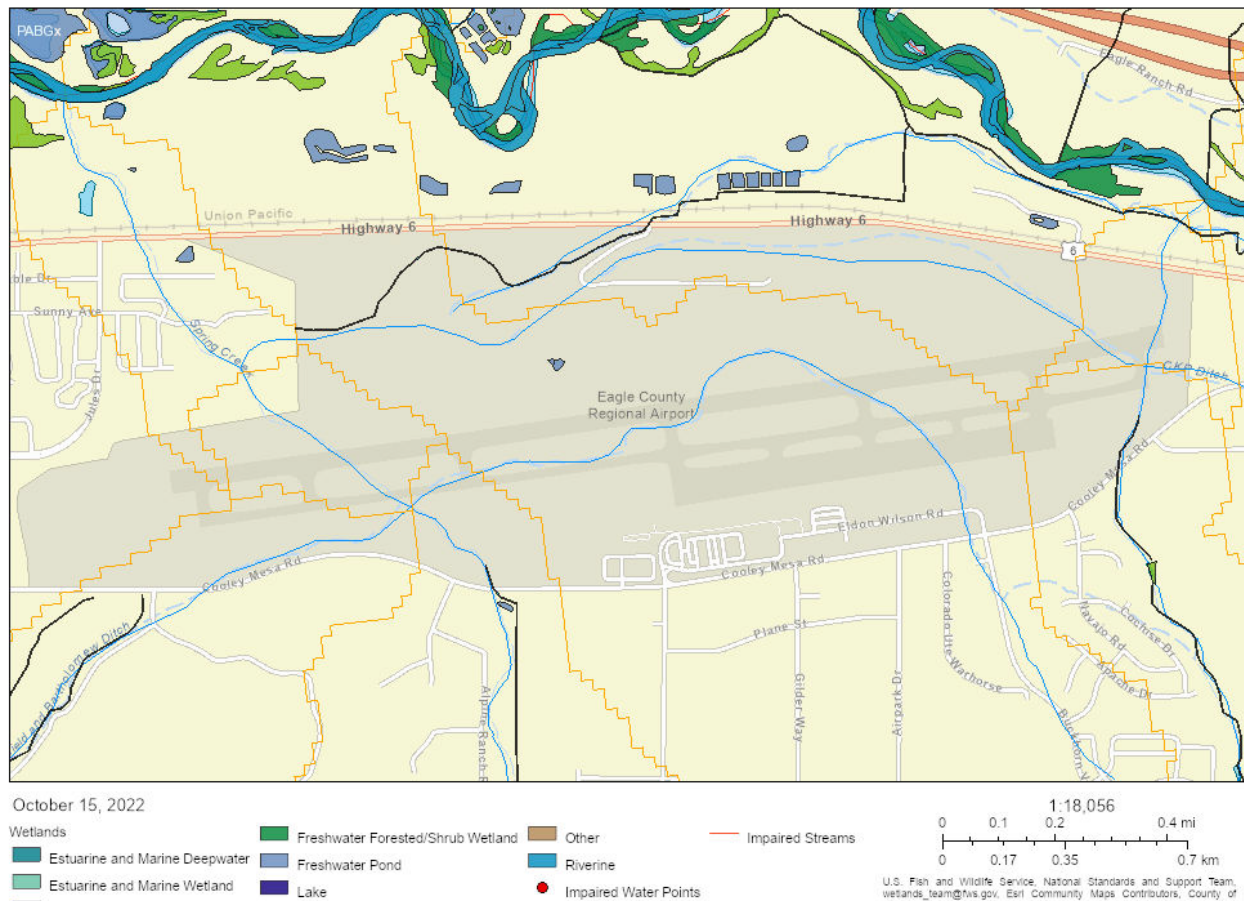
Wetlands

As defined by the Clean Water Act (which regulates the discharge of pollutants into waters of the U.S.), wetlands 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.¹⁴ 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, wetlands and other waters of the U.S. do not exist on Airport property (see **Figure 2-26**). However, the Eagle River is located north of the Airport and tributaries of that river run through and around the Airport. Tributaries shown running through the Airport property have been placed in culverts or rerouted from what is shown. Most recently in 2019, a portion of Spring Creek, located in the southeast corner of the Airport property, was placed in a culvert as part of the deicing apron project. Through a wetland and stream report completed by David Evans and Associates in 2019, it was found that Spring Creek was comprised entirely of wetlands. The wetlands were impacted by the project and mitigated at the Finger Rock Preserve mitigation bank.

¹⁴ FAA Order 1050.1f Desk Reference, 2015

Figure 2-26: USFWS National Wetland Inventory



Source: USFWS National Wetlands Inventory, 2022

Although limited water resources now exist at the Airport, future development should consider impacts to potential wetlands along the banks of streams and creeks on and near the Airport.

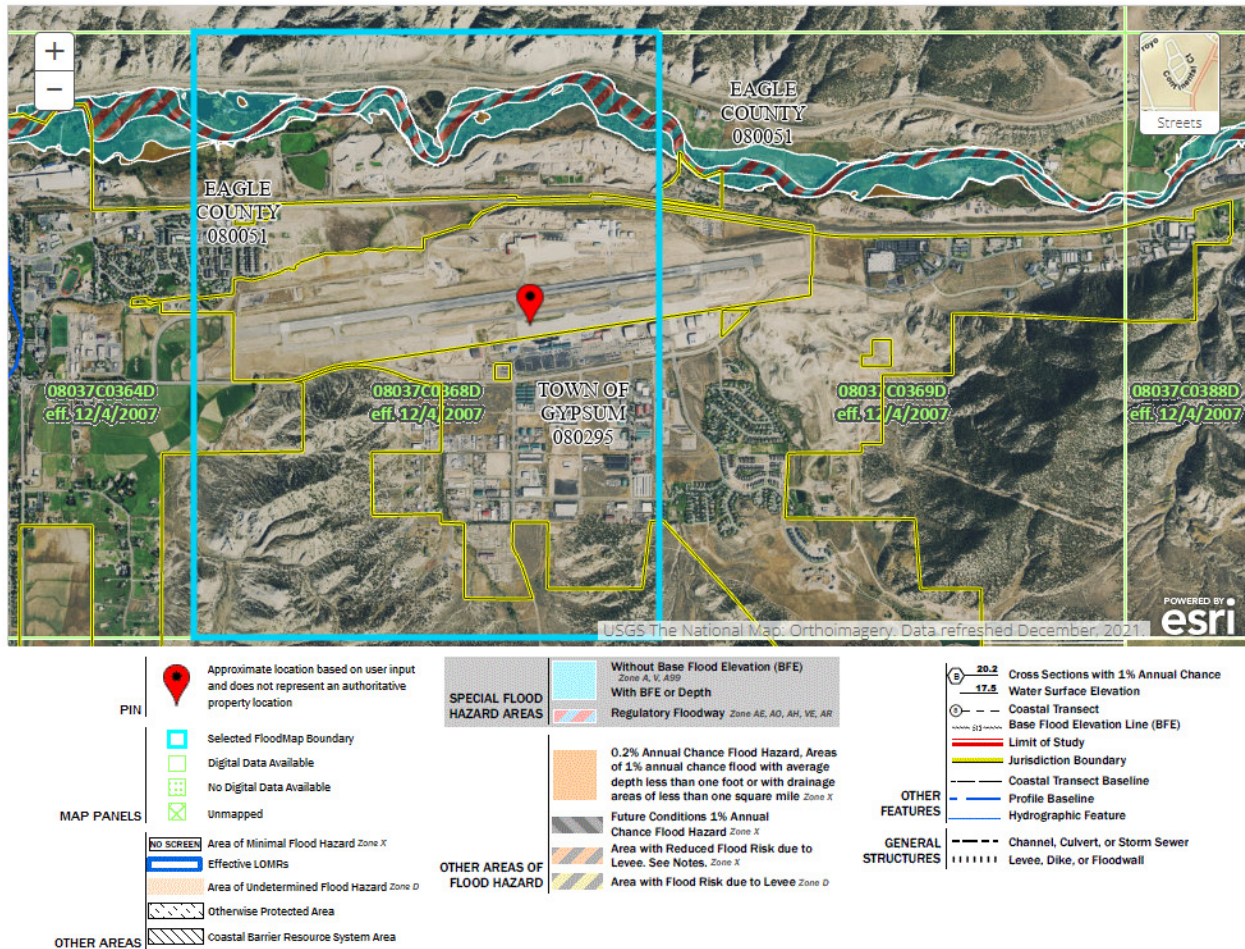
Floodplains

As defined in FAA Order 1050.1f, floodplains are lowland areas adjoining inland and coastal waters that 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 one 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.

According to the Federal Emergency Management Agency (FEMA) flood maps, no areas designated as floodplains occur on Airport property (see **Figure 2-27**). The nearest floodplain is located directly north of the Airport and along the Eagle River. This area is noted as be “AE”; AE flood zones are areas that present a 1% annual chance of flooding.

Future development that changes how stormwater exits the Airport should consider potential impacts to the nearby floodplain.

Figure 2-27: FEMA Flood Map



Source: FEMA, 2022

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 within Airport property; however, the Eagle River is located to the north and its tributaries run through Airport property. None of these streams or tributaries are open flow and have all been placed in culverts through airport development projects.

The Airport is located in the Colorado River watershed and more specifically within the Eagle River Watershed. According to the Eagle River Watershed Plan, “the Eagle River watershed covers a drainage area of approximately 970 square miles and has an average annual water discharge (water yield) of 415,000 acre-feet. Elevations in the watershed range from 6,100 feet at Dotsero to 14,003 feet at the summit of Mount of the Holy Cross. The Eagle River originates near the southeastern border of



Eagle County at Tennessee Pass and flows northwest and then west for about 77 miles to its confluence with the Colorado River at Dotsero, 6 miles west of Gypsum.”

The Airport maintains a National Pollutant Discharge Elimination System (NPDES) permit with the Water Quality Control Division of the Colorado Department of Public Health and Environment. The NPDES permit was last renewed in 2017; however, at the time of this AMP, the permit had been placed in administrative extension until further notice.

The Airport also maintains a Stormwater Management Plan (SWMP). The SWMP was last updated in 2015 and is currently in the process of being updated.

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 Cache La Poudre River located over 100 miles to the northeast.

Additional information regarding water resiliency with respect to both water quality and quantity can be found in the Eagle County Community Resilience Plan included in the Appendices.

2.12 SUSTAINABILITY

Sustainability can be defined in a variety of ways, and it can vary by industry, region, and personal perspective. The UN World Commission on Environment and Development defines sustainability as “meeting the needs of the present, without compromising the ability of future generations to meet their own needs.” This definition fits the sustainability goals of Eagle County and EGE as they bring sustainability to the forefront of their development plans including direct integration within this master plan.

2.12.1 2016 Climate Action Plan

In 2016, over 30 stakeholders from the Eagle area worked to develop the *Climate Action Plan for the Eagle County Community*. Since its completion, the Plan has been adopted by the Eagle County Board of County Commissioners, the Towns of Avon, Basalt, Eagle, Minturn, and Vail, and by Mountain Recreation (formerly the Western Eagle County Metropolitan Recreation District).¹⁵ The Plan’s primary focus is to achieve a reduction in GHG emissions throughout the County with a reduction target

Sustainability generally refers to the integration of practices and development alternatives that promote long-term environmental, economic, and social health, ensuring that projects are efficient, environmentally responsible, and resilient.

¹⁵ [Climate Action Plan \(eaglecounty.us\)](https://eaglecounty.us/climate-action-plan)



of 25 percent by 2025 and 80 percent by 2050 from the 2014 baseline. To meet this goal, five sector-based working groups have been formed with each group meeting regularly to implement goals and strategies. A summary of the recommendations for each sector to meet the Plan's goals are show in **Figure 2-28**.

Figure 2-28: Summary of Recommendations for Climate Action



Source: Climate Action Plan for the Eagle County Community, 2016

2.12.2 2020 Climate Action Plan Update

In 2020, the Climate Action Plan was updated (see **Appendix G**). The purpose of the update was to integrate current research, emphasize the level of urgency needed to implement the Plan, and introduce/highlight the role of the Climate Action Collaborative (CAC). The CAC is a community led organization working to address global climate change and establish a framework to strategize and deliver on GHG emissions reductions.¹⁶ As specifically called out in the Climate Action Plan Update, the CAC is advocating for the following:

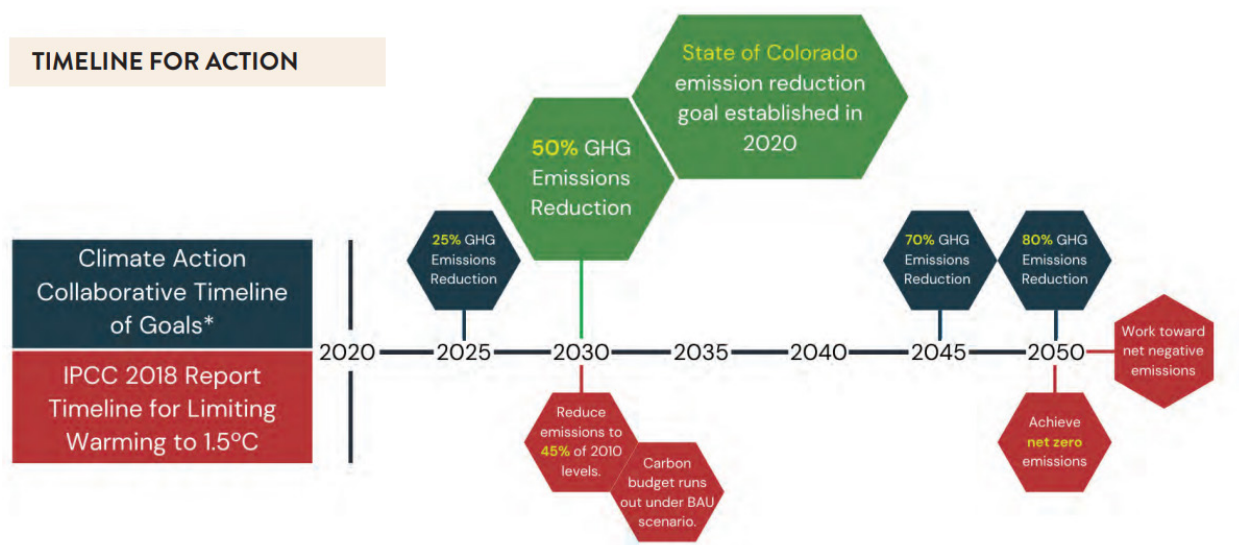
- Immediate emergency-grade action on climate
- Prioritization of strategies within this plan update to immediately reduce carbon emissions
- Timely achievement of carbon pollution reduction goals

¹⁶ CAP UPDATE_2020_2.22 (hubspotusercontent00.net)

- Commitment to a healthier and more resilient future for our Eagle County community

The Intergovernmental Panel on Climate Change (IPCC), released a report in 2018 discussing the benefits of limiting warming of the global surface temperature to less than 1.5°C. According to the Update, the surface temperature has already warmed 1.0°C and that to remain beneath the 1.5°C threshold, the IPCC states a minimum of 45 percent reduction in emissions from 2010 levels is needed by 2030. The CAC is recommending a reduction of 50 percent GHG emissions by 2030. The action timeline proposed by CAC is shown in **Figure 2-29**.

Figure 2-29: CAC Timeline for Action

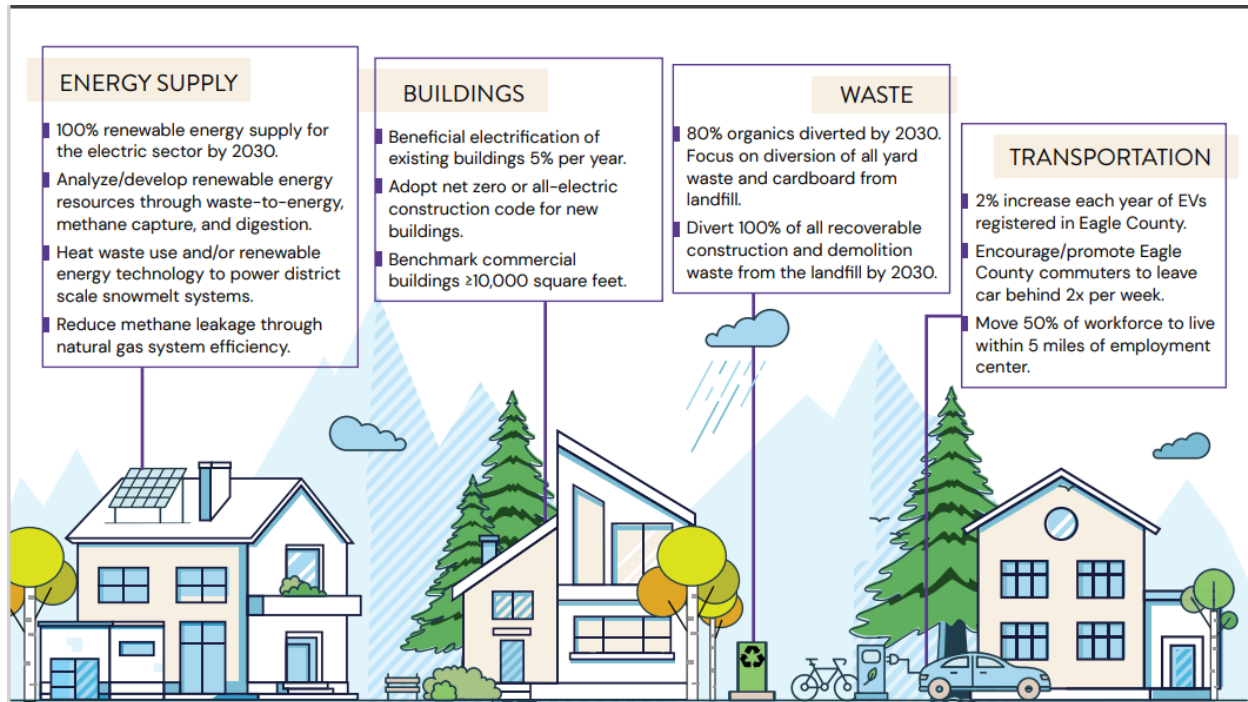


Source: [CAP UPDATE 2020 2.22 \(hubspotusercontent00.net\)](#)

2.12.3 Priority Actions

To achieve the ambitious goal of reducing GHG emissions 50 percent by 2030, the CAC produced a list of priority actions in four main areas: energy supply, buildings, waste, and transportation. The priority actions in each area are summarized in **Figure 2-30**.

Figure 2-30: Priority Actions to Achieve 2030 Goal



Source: [CAP UPDATE 2020 executive summary 2.18 \(hubspotusercontent00.net\)](https://www.hubspotusercontent00.net)

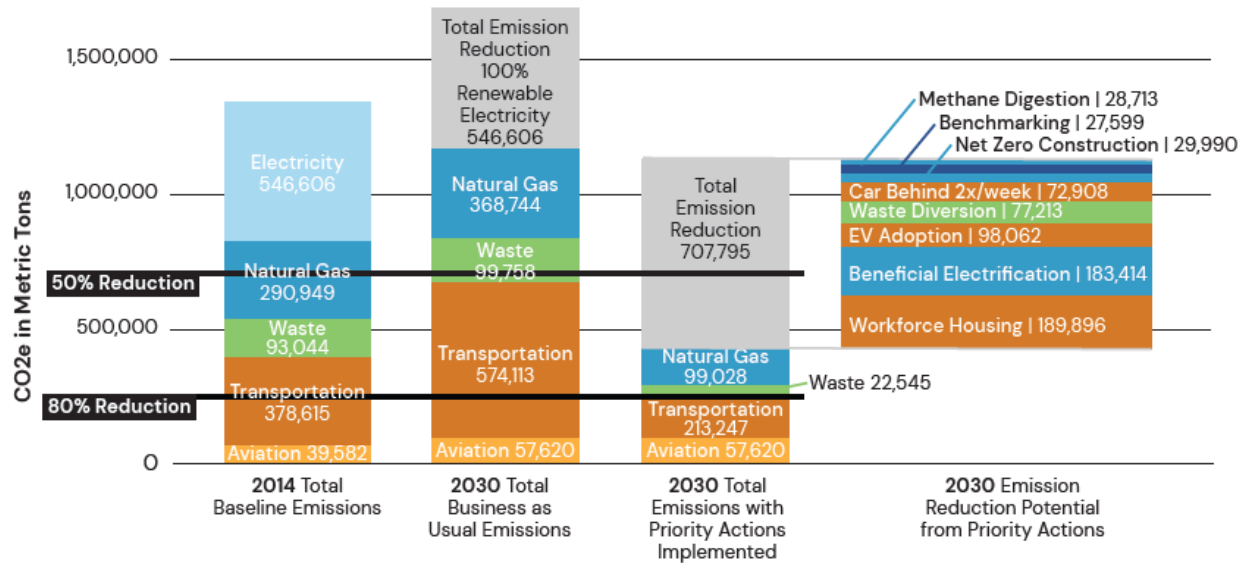
If all the recommended priority actions were implemented, the County would be able to exceed the 50 percent reduction goal by 2030 as shown in **Figure 2-31**. This is largely a result of moving to the usage of all renewables for electricity, integrating beneficial electrification, and providing workforce housing.

The Climate Action Plan Update provides a further breakdown of immediate priority actions for the following areas:

- Buildings
- Transportation and Mobility
- Energy Supply
- Materials Management
- Carbon Sequestration
- Education and Outreach

Figure 2-31: Carbon Emission Reduction Potential from Priority Actions

All numbers reported in Metric tons of CO₂e



ANNUAL SUCCESS BENCHMARKS

Transportation

1,100 new EVs on the road.
2x per week, Eagle County residents leave their cars behind on work commute.

Buildings

10 commercial buildings electrified.
1,641 residential homes electrified.
10% increase of new building SF to be all-electric or net zero.
≥10,000 SF commercial buildings benchmarked.

Waste

8% increase in organic waste diverted through recycling and compost.
10% increase in diversion of recoverable construction waste.

Source: CAP UPDATE_2020_2.22 (hubspotusercontent00.net)

Each area is a vital component to the overall plan to reduce GHG emissions; however, actions that are most applicable to aviation and EGE specifically include the following actions.¹⁷

Airport applicable actions:

- Buildings: “Beneficial Electrification for 5% of existing residential and commercial buildings each year.” EGE could consider the conversion of building utilities from inefficient fuels to clean alternatives.
- Buildings: “For new and remodeled residential and commercial buildings, adopt “above building code” standards and incentives, and implement net-zero or all-electric construction requirements by 2030.” This is most pertinent to new development at the Airport, such as the terminal building being discussed elsewhere in this Master Plan.

¹⁷ The full Update can be found at CAP UPDATE_2020_2.22 (hubspotusercontent00.net).



- **Energy Supply:** “Support goal of 100% renewable energy supply for the electric sector by 2030.” The Airport can look to integrate this goal in future development projects.
- **Materials Management:** “Divert 100% of all recoverable construction and demolition (C&D) waste from the landfill by 2030.” The Airport can look to implement diversion from construction projects.
- **Carbon Sequestration:** “Implement a Good Traveler carbon offset program for Eagle County Airport.” This has already been implemented by EGE.
- **Education and Outreach:** “Grow capacity of Collaborative partners to submit public comment in support of local policy that will help achieve our Climate Action Plan goals.” EGE may help promote goals by allowing advertisement to local travelers through the Airport.

2.12.4 EGE Tenant Sustainability

EGE tenants are also doing their part to support environmental sustainability and setting goals to address climate change. Following are the tenant’s sustainability strategies and what they are doing to achieve environmental sustainability.

American Airlines

American Airlines has an environment, social and governance (ESG) strategy in place to address climate change and environmental sustainability. Approximately 90% of American Airline’s total carbon footprint comes from jet fuel. To reduce their carbon footprint the airlines is working to operate more efficiently and implement a fleet renewal program. American Airline’s sustainability goals include:

- Replace 10% of jet fuel with SAF by 2030
- Reduce GHG emissions intensity by 45% by 2035
- Achieve net zero emissions by 2050

Delta Airlines

Delta has a sustainability strategy in place which includes efforts such as moving to SAF, minimizing impacts from single use plastic, transitioning to electric ground service equipment and encouraging vendors in its supply chain on their own sustainability plans. Approximately 98% of Delta’s total carbon footprint come from jet fuel as well. Delta’s sustainability goals include:

- 10% SAF usage by end of 2030, 35% SAF usage by end of 2035, 95+% SAF usage by 2050
- 100% net-zero operations using electrified GSE by 2050
- 100% waste diversion from landfill



United Airlines

The United Airlines climate strategy includes reducing their carbon footprint, using carbon reduction technologies such as SAF, using carbon removal technologies and collaborating with stakeholders for sustainability in aviation. Approximately 98.5% of United's GHG emissions come from jet fuel. United's sustainability goals include:

- Reduce carbon intensity by 50% by 2035
- 100% SAF usage by 2046
- A net zero goal of becoming 100% green by eliminating GHG emissions by 100% by 2050.

Signature Aviation Vail Valley Jet Center (FBO)

Signature Aviation, through their Signature Renew program, has a sustainability initiative of net-zero carbon emissions by 2050. Signature offers a permanent supply of SAF as well as other solutions to help aviation businesses meet their emission goals. Signature's sustainability strategy also includes incorporating eco-friendly facility design, construction, and operations for LEED-certified FBOs and LEED-certified hangars.

Rent-A-Car (RAC) Centers

EGE RAC tenants such as Hertz, Avis/Budget and Dollar/Thrifty are planning to increase their electric vehicle fleets and charging stations. Hertz plans to have its EGE fleet to 20% electric by end of 2023 and plans to have the fleet to 80% electric by 2025. Dollar/Thrifty's fleet is 75% hybrid and 10% EV and plans to have 50% of their fleet fully electric by 2025.

Dollar/Thrifty's quick turnaround (QTA) facility operations are 100% solar powered from roof top solar on the car wash building. The QTA facility has a water recycling system in place such that each car uses 1 gallon of fresh water and 39 gallons of recycled water per wash. Additionally, Dollar/Thrifty replaced all lighting fixtures with low power bulbs and installed motion sensors where possible.



Army National Guard High-Altitude Aviation Training Site (HAATS)

The HAATS unit at EGE follows the Army Net Zero Waste initiative for their sustainability strategy. HAATS also conducts a NEPA annual environmental assessment/survey. The unit plans to install vehicle charging stations in their parking lot for the Government EVs and will increase their solar power usage going forward.

2.13 ENVIRONMENTAL RESILIENCY

It is being recognized that the frequency of extreme weather events is increasing across the nation and the State of Colorado. Recent fires, floods, severe thunderstorms, and drought have made Eagle County and the Airport acutely aware of the need for proactive strategies to be responsible stewards of the environment. These extreme weather events have the potential to significantly impact the aviation industry as a whole and at EGE.

Airports are accustomed to change and responding to varying circumstances. Typically, they have numerous standard operating procedures and contingencies in place to best address and respond to changes within this dynamic environment. For EGE, the most obvious environmental challenges are related to snowfall; however, changing climate conditions could increase the types of other challenges.

To raise awareness and inform preparedness efforts, the following sections provide a brief discussion of potential environmental threats occurring within and near Eagle County, how they may impact the Airport, and what the Airport can do to be best prepared to respond to such potentials. In the near future, airlines and airport tenants may have to scrutinize the physical, technological, and cultural infrastructures of airports when choosing operational locations, with those airports that proactively address climate resilience being more apt to be most successful.

It should be noted that airport resiliency includes multiple challenges, many of which are unrelated to the natural environment. As discussed in the 2019 Eagle County Community Resilience Plan (see **Appendix F**), the four major focus areas of the County's approach to resilience are health and wellness, the economy and tourism, infrastructure, and natural resources.

To be consistent with Eagle County, this AMP will also consider resiliency in terms of these four focus areas, as well as a general discussion of the region's climate. It should be recognized that resiliency can differ by region and venue. In aviation this may also include risks such as labor interruptions (e.g., airline employee strikes, etc.), fuel/energy crises, national security emergencies, economic recessions, and other crises (e.g., COVID-19 pandemic).

2.13.1 Local Climate

Temperature

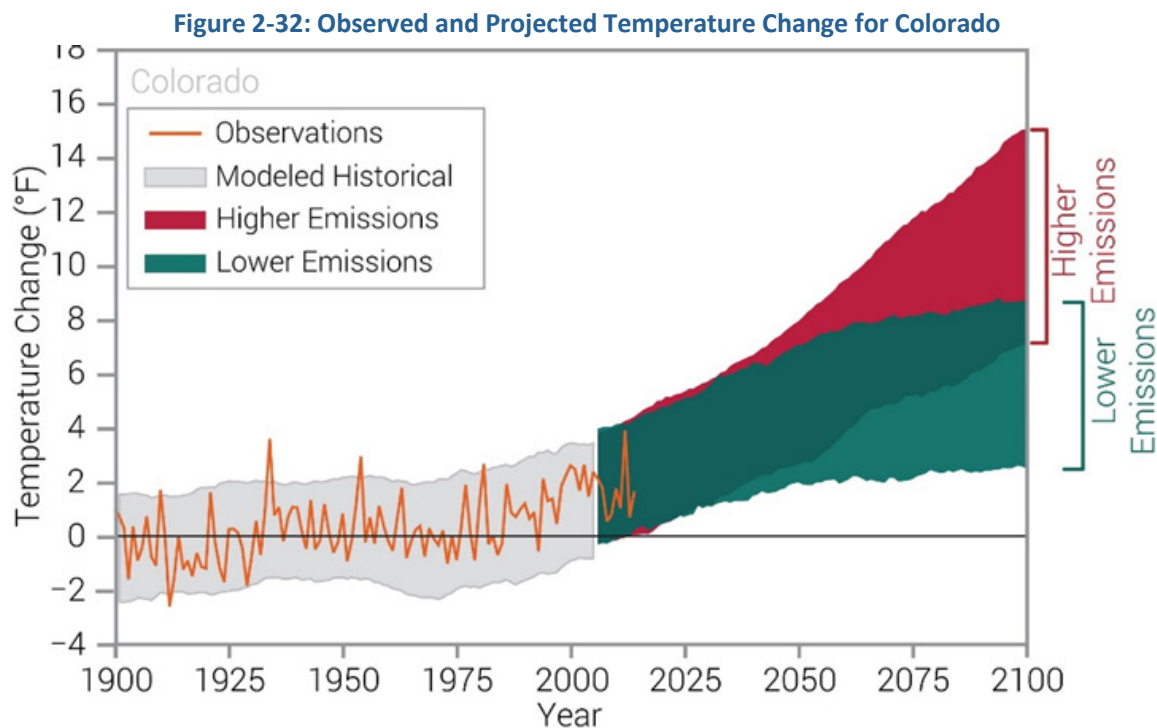
Based on a technical report published by the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI), the 2017 Colorado State Climate Summary attributed the state's variable climate to its

Resiliency generally refers to the capacity of a system, community, or environment to withstand, adapt to, and recover from adverse conditions, disruptions, or changes, ensuring long-term sustainability and minimal impact on ecological and human health.



inland location and varied topography. EGE is situated in the central part of the state within the Rocky Mountains.

The report states, “average annual temperatures for Colorado have remained consistently higher than the long-term average (1895–2015) over the past two decades (see **Figure 2-32**). Since 2000, the state has experienced the highest average spring and summer temperatures on record. The hottest year on record was 2012. In addition to the overall trend of higher average temperatures, the state has experienced an above average number of very hot days (days with a maximum temperature exceeding 95°F) and a decrease in the number of very cold nights (nights with a minimum temperature below 0°F) since 1990. Colorado rarely experiences warm nights (days with a minimum temperature exceeding 70°F) due to its high elevation and generally dry climate. The greatest number of warm nights occurred in the 1930s; however, the state, along with other parts of the United States, has seen an above average number in recent years.”



Source: CICS-NC and NOAA NCEI

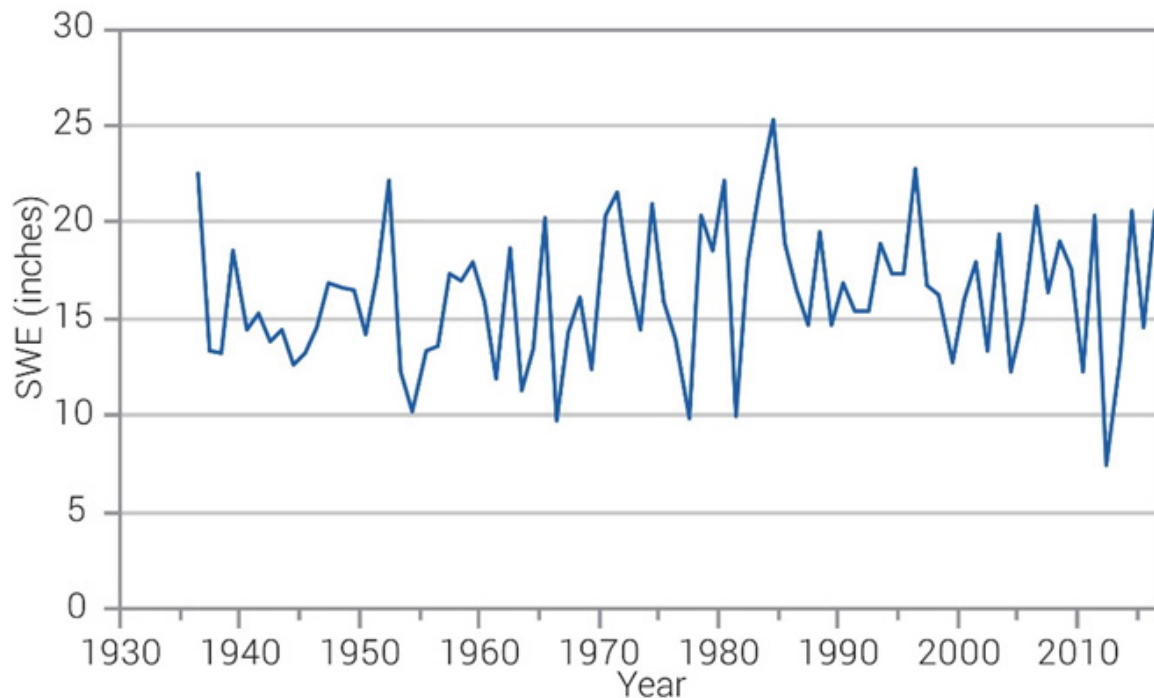


Precipitation

Annual precipitation for the State of Colorado is 17 inches and has ranged from a low of 11.85 inches in 2002 to a high of 25.52 inches in 1941. Eagle County typically receives an average of 10-11 inches of precipitation. Eagle County's water originates from snow accumulated during the winter months in higher elevation areas of the Central Rocky Mountains. Winter snows and summer rains supply the regional aquifers, rivers, streams, creeks and drainages, and snowmelt accounts for the bulk of the water critical to the numerous ecosystem services that fulfill the needs of the County. The 1930s was the state's driest decade, averaged approximately 12 inches of precipitation annually, while the wettest decade was the 1990s with an annual average of 19 inches of precipitation.

Headwaters are the initial sources of bodies of water and Colorado is a headwater state. The sources of the Colorado, Rio Grande, Arkansas, and Platte Rivers are found in Colorado; consequently, any changes in aggregate precipitation impact areas larger than the state itself. Because annual snowpack depths directly contribute to snowmelt levels, variations can result in limited water in low precipitation years and flooding in high precipitation years. According to the USDA National Resource Conservation Service, snow water equivalent (SWE) is the amount of water contained within the snowpack; it is highly variable from year to year and indicates no long-term trends. The variation of SWE at Berthoud Pass, Colorado, a snow course site, is shown in **Figure 2-33**.

Figure 2-33: Snow Water Equivalent at Berthoud Pass, CO



Source: USDA National Resources Conservation Service



Thunderstorms are common events in Colorado, with the more intense storms bringing heavy snowstorms, high winds, and flash floods. Eagle County has the potential for numerous heavy snow events of varying intensity nearly every winter and spring season. These conditions can paralyze the region by stranding travelers, blocking delivery and supply lines, and disrupting emergency and medical services. Heavy ice can collapse trees, electrical wires, telephone poles and lines, and communication towers resulting in wide-spread and lengthy power outages. Although locals are accustomed to these storms, those visiting or passing through are often taken by surprise.

Drought/Wildfires

Colorado also experiences times of severe drought, putting much of the region at risk of wildfires. Between 2000 and 2014, annual Colorado River flows averaged 19 percent below the 1906–1999 average, the worst 15-year drought on record. Approximately one-third of the flow loss is due to high temperatures now common in the basin. Previous comparable droughts were caused by a lack of precipitation and not high temperatures. If temperatures continue to increase in the 21st century, additional temperature-induced flow losses will occur.¹⁸ This effect is alarmingly evident in 2022, as Colorado has faced one of the worst droughts since 2002.

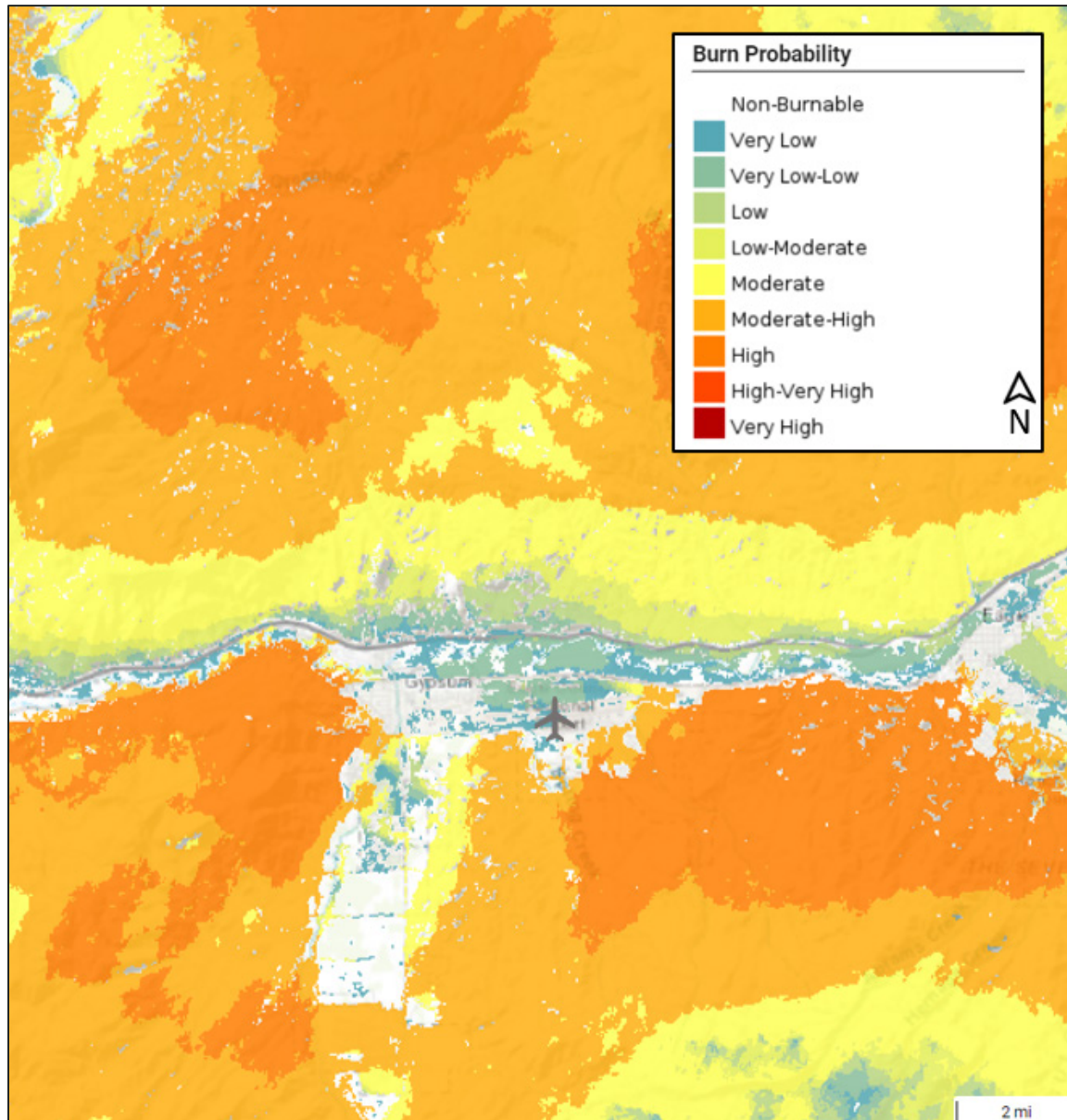
Most notably, Eagle County suffered from the Lake Christine Fire in 2018 that destroyed several homes, forced evacuations of residents, and threatened key energy infrastructure. In 2020, two of Colorado’s largest wildfires, Cameron Peak and East Troublesome Fires, burned 208,913 and 192,560 acres respectively and destroyed 469 structures including approximately 224 residential homes. Additionally, the Grizzly Creek Fire that burned 32,631 acres in Glenwood Canyon was in part within the County. Most recently, the 2021 Marshall Fire burned 6,000 acres and destroyed approximately 900 homes in Louisville, Superior, and unincorporated Boulder County. Such fires not only destroy homes and infrastructure, but they also leave barren soil that is unable to naturally manage water from snow runoff and rainstorms.

In Eagle County, lands are primarily at lower elevations in the vicinity of the Colorado River basin and have an active fire history. According to Eagle County, only two fires have occurred that burned approximately 2,000 acres and four fires burned 1,000 acres including one large fire resulting in property and resource loss. Though Eagle County has been seemingly spared from wildfires to date, it is not exempt from the implications of climate change.¹⁹ According to the Colorado State Forest Service, the area directly within EGE is at a very low to low risk for fire, while the adjacent areas are considered at moderate to moderate-high risk of fire. **Figure 2-34** shows fire risk in relation to the Airport.

¹⁸ <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2016WR019638>

¹⁹ https://gacc.nifc.gov/rmcc/dispatch_centers/r2gjc/fire_prevention/Eagle%20County/EagleCountyCWPP-Revision2011.pdf

Figure 2-34: Fire Risk Map Near EGE



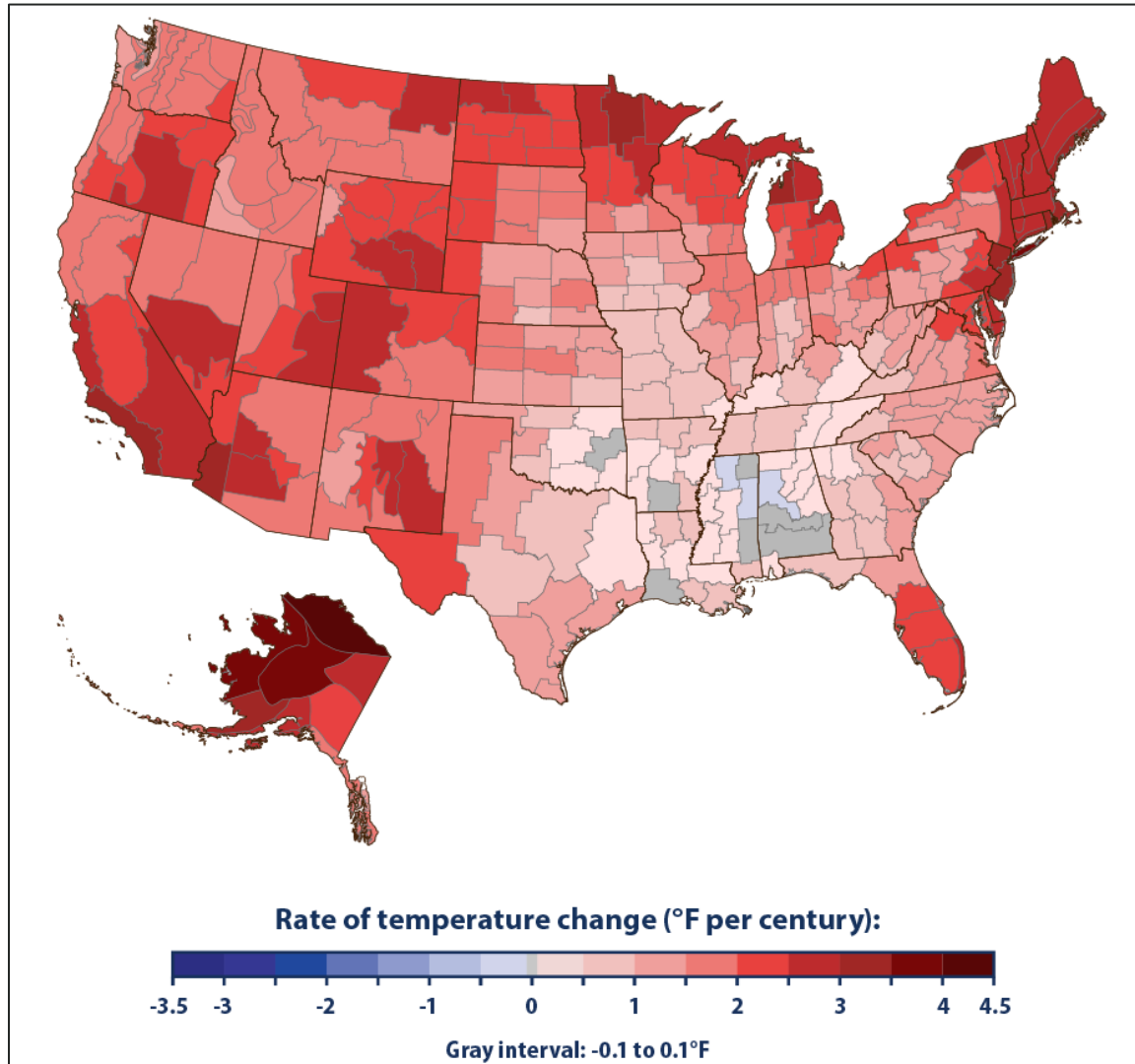
Source: Colorado State Forest Service, Colorado Wildfire Risk Public Viewer, 2022

Climate Projections

Projected GHG emission models show varying degrees of warming with higher emission levels resulting in warming and lower emissions producing only slightly warmer than historical records. *Climate Change in Colorado*, a report prepared by the Cooperative Institute for Research in Environmental Sciences (CIRES) at University of Colorado Boulder, stated "the recent warming trend in Colorado is in step with regional and global warming that has been linked to increasing atmospheric

concentrations of greenhouse gases.²⁰ **Figure 2-35** depicts how annual average air temperatures have changed in different parts of the United States since the early 20th century.²¹

Figure 2-35: Rate of Temperature Change in the United States, 1901–2021



Data source: NOAA, 2022

Historical snowfall information projects a –2 or +2 percent change or up to –40 percent decreased snow and precipitation in the winter in Colorado (see **Figure 2-36**).²² As discussed, a heavier winter and increased snowpack would benefit the

²⁰ https://www.colorado.edu/sites/default/files/2021-09/Exec_Summary_Climate_Change_CO_Report_2014_FINAL.pdf

²¹ <https://www.epa.gov/climate-indicators/climate-change-indicators-us-and-global-temperature#ref3>

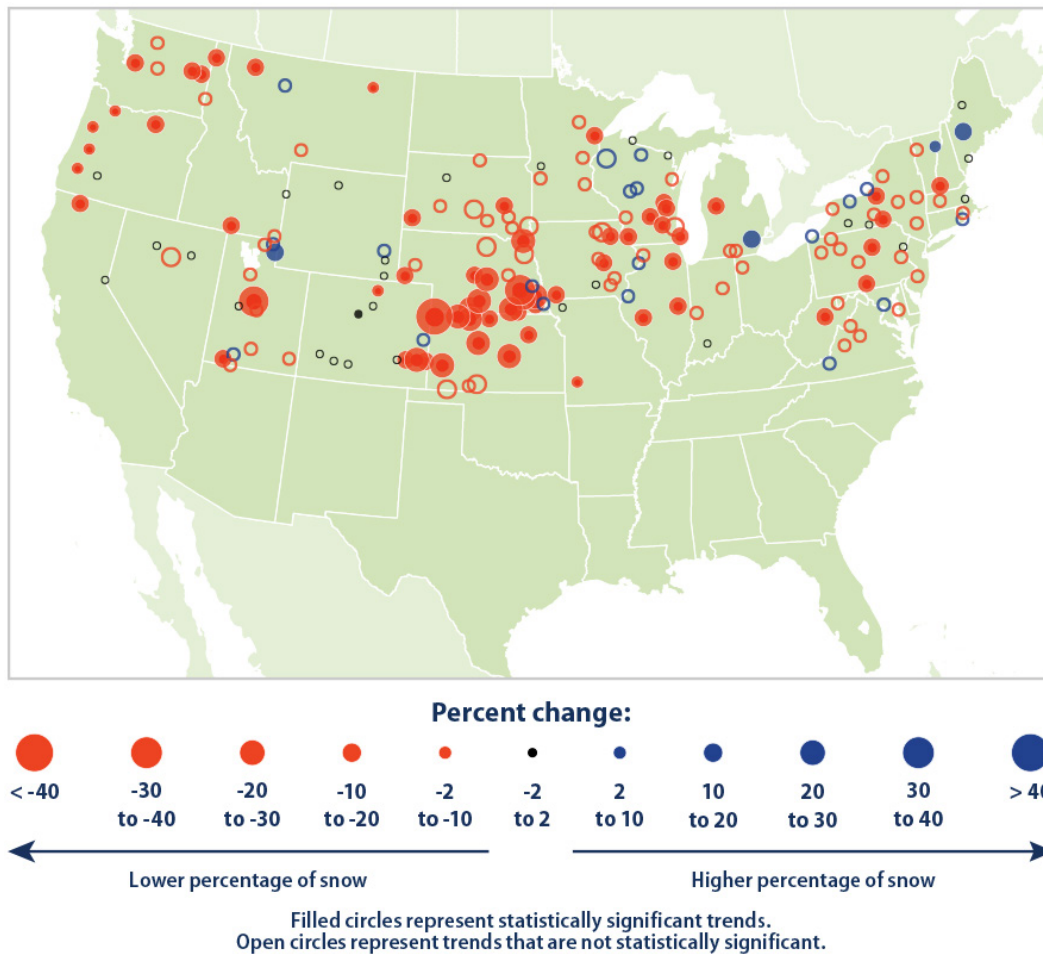
²² <https://www.epa.gov/climate-indicators/climate-change-indicators-snowfall#:~:text=Among%20all%20of%20the%20stations%20shown%2C%20the%20average,in%20the%20form%20of%20rain%20instead%20of%20snow.>



state and the regions that rely on the area as a water source; however, rising temperatures increase, as seen above, the lowest elevation at which snow falls. This results in more precipitation falling as rain that quickly evaporates instead of being stored as snowpack. Furthermore, changes in mountain snowpack can affect agriculture, winter recreation, and tourism in some areas, as well as plants and wildlife.²³

In effect, drought severity is also projected to increase, as dryer summer months impact precipitation patterns that reduce agricultural and metropolitan water supplies. The increased droughts also result in a higher risk of wildfire rate and severity.

Figure 2-36: Historical Change in Snow-to-Precipitation, 1949-2020



Source: NOAA, 2021

²³ <https://www.epa.gov/climate-indicators/climate-change-indicators-snowpack>



2.13.2 Energy Resiliency

Energy resiliency encapsulates an entity’s planning, design, and integration of contingency plans to allow for its continued operation in the event of a power failure. EGE is critical transportation resources not only for the movement of people via aircraft, but also for emergency response operations in the event of an incident or disaster. The following sections provide an overview summary of current area energy providers and how the Airport may plan for more energy resiliency in the future.

Utility Providers

Energy resilience ensures an entity has both a reliable, steady supply of energy, and contingency measures in place in the event of a power failure. As discussed previously, many of the natural weather events that commonly occur in Colorado can result in power outages. These are real and common events that are likely to impact the Airport on an annual basis and, if projections hold true, will continue to increase in severity and frequency.

Utilities, including natural gas, electric, and water and wastewater services are provided to the Airport by Black Hills Energy, Holy Cross Energy, and the Town of Gypsum, respectively. The sustainability and resiliency goals of natural gas provider Black Hills Energy are defined in its 2021 Sustainability Report (see **Figure 2-37**).²⁴

Figure 2-37: Black Hills Energy (BHE) Environmental and Social Priorities



Source: Black Hills Energy 2021 Sustainability Report

Holy Cross Energy, the electricity supplier for EGE, completed a Strategic Plan in 2020 while addressing sustainability and resiliency Strategic Goals for the future. A strength, weakness, opportunity, and threat (SWOT) analysis was included in that Strategic Plan to provides insight regarding the enterprise’s resiliency (see Figure 2-37). As shown, the strengths and opportunities outnumber the weaknesses and threats, providing an optimistic outlook for their ability to be resilient in the future and provide utilities to the Airport in the face of any adverse environmental event.

²⁴ <https://www.blackhillsenergy.com/sites/blackhillsenergy.com/files/2021-sustainability-report.pdf>

Figure 2-38: SWOT Results

<u>Strengths</u> ▪ Power Supply ▪ Member Engagement and Partnership ▪ Leadership ▪ Cooperative Culture ▪ Innovation Reliability/Safety ▪ Financial Health ▪ Diversified and Decentralized Supply	<u>Opportunities</u> ▪ Beneficial Electrification/Services ▪ Rate Design and Structure ▪ Renewable/Clean Power ▪ Member Engagement ▪ Broadband
<u>Weaknesses</u> ▪ Rate Design and Structure ▪ Corporate Culture ▪ Limited Organizational Capacity	<u>Threats</u> ▪ Legislative and Regulatory ▪ Resilience – Cyber and Climate Change ▪ Liability – Fire, Legal, etc. ▪ Rising Costs ▪ Grid/Load Defection ▪ Managing Variable Resources

Source: Holy Cross Energy Strategic Plan

Energy Use Reduction

The Airport can reduce consumption of electricity and natural gas through the implementation of physical and operational changes. Decreased consumption would not only lower the burden on its suppliers and reduce operating costs, but also further diminish the Airport’s overall carbon footprint and reliance on greenhouse gas emitting utilities. Chapter 6 will provide facility recommendations that may assist with the reduction in electricity and gas consumption. Common practices such as the following may be incorporated:

- Evaluate existing systems for leaks and inefficiencies
- Upgrade dated and aging equipment to more energy efficient models
- Install energy efficient lighting
- Power down unused equipment and install automated timers for lighting and other equipment unused at night/off season
- Secure employees buy-in on the importance of reducing energy consumption

Future Energy Use

With resiliency in mind, future development and renovations at EGE should include sustainable and renewable energy design elements. These elements could potentially include passive building design that allows thermal comfort and natural daylight.



Future designs could also include requirements that climate-controlled spaces incorporate back-up power or thermal control.

EGE could also consider the continued use of available renewable energy sources from its current natural gas and electric providers, Black Hill Energy and Holy Cross Energy. These providers, as part of their Strategic and Sustainability Plans, have committed to the use of renewable energies in 2020 and through 2040. Although renewables are not capable of providing enough consistent energy to sustain the Airport on a daily basis, they can be used by energy providers. Future sustainable development with renewable energy options at the Airport can offer a backup if EGE lacks energy for a length of time. Renewable energy options are listed below:

- **Solar:** Holy Cross Energy has numerous initiatives available to businesses to take advantage of renewable energy, such as solar, to reduce GHG emissions and carbon footprints.²⁵ EGE may consider the implementation of solar energy in future development plans, particularly with respect to automobile parking areas.
- **Electric Vehicle Charging Stations:** The Airport may consider supporting electric vehicles by retrofitting parking locations to accommodate electric vehicles with pay-as-you-go or sponsored public charging stations. The Airport may also look for partners to bring free, subsidized, electric charging stations to the Airport.
- **Wind:** An airport is not typically an ideal location for commercial-scale wind turbines due to the proximity to the runways and airspace constraints. However, small, building-integrated, or demonstration-scale wind turbines could be a viable source of on-site renewable energy if they are life cycle cost effective and are guaranteed not to cause frequency/signal/noise interference to radar, testing, and remote sensing equipment used at the Airport.

Renewable energy sources can be a creative way to supplement traditional energy and potentially offer a contingency plan for utility outages; however, each proposed recommendation should go through a life-cycle cost analysis to ensure the initial investment provides adequate return.

2.13.3 Water Resiliency

While water resiliency is a worldwide concern, it is particularly critical in areas like Colorado where increased drought conditions are combining with significant population growth. Resiliency, in terms of water, is not only the ability to continue to operate when water resources have been compromised, but it is also the ability to adapt to a system where water resources have become scarce. The following sections provide a summary of EGE's ability to continue operation if its water sources were to be compromised as well as recommendations for improving water conservation.

²⁵ https://www.holycross.com/wp-content/uploads/2020/12/HCE-Strategic-Plan-121020-FINAL_R2_TOPOST.pdf



Airport Consumption

EGE is located in the Colorado River Basin Watershed that extends more than 970 square miles in northwestern Colorado. Water in Eagle County is protected by the strategies outlined in the Eagle River Watershed Plan, which is managed by the Eagle River Watershed Council, one of the numerous watershed groups within the Colorado Basin.²⁶ Within the watershed, the Eagle River and its tributaries, Homestake, Cross, Gore, Beaver, Lake, Brush, and Gypsum Creeks, supply most of the water to the population in Eagle County. Nearly half of Colorado's storage capacity is located on the western slope in the Colorado River Basin and its tributaries.²⁷

According to the Eagle River Watershed Plan, the Eagle River originates near the southeastern border of Eagle County at Tennessee Pass and flows northwest and then west for about 77 miles to its confluence with the Colorado River at Dotsero, 6 miles west of Gypsum. The Town of Gypsum supplies water utilities to the Airport.

Although drought and groundwater pollution are real risks, water scarcity is an equally valid concern. Though this concern has become a national issue, it is a specific concern to the State of Colorado, especially if projections showing increased temperatures and decreased snowpack hold true. To preempt potential shortages, water conservation strategies should be employed. It is equally important that water quality is maintained or even improved to ensure available water remains usable.

In 2021, the Airport consumed water at a rate consistent with previous years, with an increase in cost throughout the year that is closely related to rate increases. Water consumption remained within the same range between 2020-2022. As discussed below, water conservation measures could reduce the Airport's water consumption volume and associated costs.

Water Use Reduction

To improve resiliency, the Airport should reduce reliance on large quantities of water provided by the Town of Gypsum. By doing so, the Airport would position itself to operate effectively with less water during an emergency or, if water becomes restricted/scarc, slow the consumption of water from sources that are not recharging quickly enough to meet demand.

Strategies the Airport could consider include those listed below:

- Complete a water use audit to establish a baseline of water use and potentially add automated metering to better track consumption.
- Analyze areas that consume the most water and develop a plan for reduction, as well as regularly inspect and fix leaks on all pipes, appliances, and equipment.

26 <https://static1.squarespace.com/static/53f664ede4b032c1fade347d/t/5d407ff524c67c0001326cb5/1564508195823/ERWP-FINAL-with-MAPS-053113.pdf>

27 <https://dnrweblink.state.co.us/CWCB/0/edoc/217373/ColoradoWaterPlanPublicReviewDraft.pdf>



- Ensure existing infrastructure operates at maximum efficiency; keep parts and equipment up-to-date and upgrade systems as needed.
- Ensure all new developments are designed to reduce water consumption.
- Include specific language in new leases that address water consumption.
- Regularly train existing and new employees on the importance of water conservation and how they can contribute to the overall effort. Employees should also be adequately trained on all water-related equipment to understand if it is operating efficiently.
- Reuse water for non-potable uses such as dust control, pavement washing, and plant/tree irrigation.
- Replace water-intensive landscape features with xeriscaping landscapes.

Of the recommendations provided, the most significant element to water conservation is employee, passenger, and administration buy-in and support. Like a recycling plan, successful programs are, generally, those that receive significant support; goals and milestones should be celebrated and communicated to help gain and retain support.

Future Water Use

Water resiliency is an entity's ability to continually provide safe drinking water and properly treated wastewater during and after an emergency. As discussed, water scarcity and potential limitations are a reality for Eagle County. The Airport can best be prepared for periods of low availability by considering the following recommendations:

- Develop an emergency response plan in the event water from Gypsum is unavailable or contaminated. This plan may include on-site storage for both potable and non-potable water.
- Modify water infrastructure in anticipation of frequent severe storms, flooding, drought, and water scarcity.
- Consider a wastewater treatment plant to reduce consumption from Gypsum and offer a backup in the event of an emergency.
- Monitor and test soils and water for contamination; take immediate action upon positive results to ensure water quality is protected.
- Consider flood risks to existing and future development; utilize pervious surfaces when possible.

2.13.4 Climate Resiliency

Climate resiliency can be defined as the ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to the changing climate. As discussed, the climate of our nation, state, and the Eagle County area is changing. It



is predicted that changes may include more severe storms at increased frequency, a rise in temperature, prolonged drought conditions, increased wildfire risks, and water scarcity. This section provides recommendations on how the Airport can best be prepared for other challenges presented by the changing climate.

General recommendations the Airport may consider to best withstand natural disasters include the following:

- Consider preparing a resiliency management plan that would supplement the emergency management plan and would focus on advanced preparation for the changing climate.
- Buildings should be equipped with ample shelter-in-place locations for heavy snowstorms and other natural disasters. Safe locations should be clearly marked, and employees made familiar with their locations and procedures. The ability to issue notifications that can reach all occupants both in and outside the buildings is also important.
- The aggressive decarbonization goals placed on aircraft operations will lead to the replacement of fossil fuels with cleaner energy sources. Infrastructure to support other forms of power should be considered as demand increases.
- New buildings should be oriented such that regularly occupied areas can be daylit via north-facing glazing or windows to the south shaded against the summer sun. East and west facing glazing should be minimized to avoid heat gain.
- If practicable, buildings should be programmed so that unoccupied areas face to the west and protect the occupied portion of the building from the prevailing winter wind. Occupied areas should generally be programmed to the north, east, and south.
- Consider adding emergency plans for wildfires to the Airport Emergency Plan to supplement the Eagle County Wildfire Management Plan. The existing discussion on fires is relevant to aircraft, fuel, and structural fires. The number of wooded areas near the Airport increases the risk of fire. Note that wildfires are not just dangerous to those on the ground, at an airport, arriving and departing aircraft are also at increased risk due to potential of loss of visibility. This can also ultimately hinder firefighting efforts that utilize aircraft.

2.13.5 Eagle County Resiliency

As noted previously, Eagle County recently published its Resiliency Plan in 2019 that is divided into four different sectors:

- Health and Wellness,
- Economy,
- Infrastructure, and



- Natural Resources.²⁸

These four sectors address the many resources in Eagle County and provide action items to enhance its environmental resiliency. Climate change has the potential to have detrimental impacts on Eagle County health and wellness. Eagle County recognizes the potential of increasing wildfire risk, rising temperatures, decreasing snowpack, and the subsequent need for emergency preparedness. As part of the Eagle County governing body, EGE is likewise committed to those County initiatives. The following sections provide a summary of how the Airport may be able to implement relevant actions and recommendations listed in the 2019 Resiliency Plan.

Health and Wellness

EGE could contribute to the County-wide Health and Wellness Resilience Strategies and thereby build community equity, trust, and civic engagement in Eagle County through the following:

- Consider increasing community involvement and civic engagement on resilience. One such recent example that EGE has undertaken is the Airport's partnered with the Good Traveler Program to reduce the impacts of air transportation with carbon offsets.
- Consider implementing/updating an Airport Emergency Plan and post-fire emergency protection measures and coordination with relevant agencies.
- Consider building partnerships with frontline community organizations and community members.
- Develop a Climate or Air Quality monitoring and reporting system for the Airport.

Economy

Eagle County contributes to numerous economic and social resources in the area, with EGE serving as the key contributor for air transportation to and from Eagle Valley. Further, outdoor recreation in Colorado is estimated to provide approximately \$62 billion in economic impacts and revenue. To maintain the integrity, sustainability, and vitality of the climate that supports Eagle Valley's recreational industry, EGE could mitigate the increasing environmental risks to the area by contributing and implementing actions that include:

- Continue to develop and cultivate partnerships among local towns, resort businesses, and others to support the expansion of economic opportunities.
- Educate tourists and airport employees on ways to reduce or eliminate the negative environmental impacts that can result from consumer decisions.

²⁸ <https://www.resilienteaglecounty.com/>



- Consider partnering in a future community-wide, integrated marketing strategy that highlights what makes Eagle County great, special, and worth visiting.

Infrastructure

As stated previously, Colorado is subject to increasing risks associated with wildfires, droughts, and flooding. The 2018 Lake Christine Fire was one example of the potential negative impacts of associated with climate change and how infrastructure plays a vital role for protecting Eagle County natural resources and energy systems. The complexity of the Eagle Valley and its many resources requires resiliency strategies to prevent further damage and risk to its infrastructure. Considering the value of EGE to the community, the Airport should also consider implementing resiliency strategies in future infrastructure development that include:

- Consider development of water protection plans for water utilities and to protect source water from the impacts of wildfire and drought.
- Within the Airport Emergency Plan, model and streamline potential evacuation routes, bottlenecks, and evacuation alternatives for the Airport.
- Ensure evacuation strategies are updated across all plans prior to an emergency event.
- Educate all airport personnel and airport passengers regarding evacuation procedures in effective ways.

Natural Resources

Nestled in its mountainous valley landscape and surrounded by diverse natural resources, one of the many cherished attributes of Eagle County residents is the sense of place. To protect its environmental resources, Eagle County has identified multiple natural resource resilience strategies. Specifically, EGE could implement the following actions:

- Consider cultivating partnerships with organizations focused on enhancing wildlife and ecosystem health.
- Consider protecting Eagle County wildlife travel corridors through smart Airport growth and development.
- Consider sustainable infrastructure planning to mitigate runoff after a wildfire and prevent water contamination.
- Continue to support county water planning efforts focused on potential community growth levels so as not to exhaust the Eagle River's water supply solely for human consumption.
- Consider participating in sustainable landscaping, such as xeriscaping, low water use, and native vegetation.



Among the topics discussed in Eagle County’s Resiliency Plan, the highest priority is given to the health, safety, and wellbeing of the community, its economy, infrastructure, and natural resources. EGE should continue to align with the Eagle County Resiliency Plan by considering implementing the above action items, while also continuing to pursue appropriate Airport infrastructure planning and resiliency. In total, the above action items will aid in:

- Promoting community resilience and sustainability
- Emergency preparedness
- Airport personnel environmental education
- Redundant and resilient water and energy systems
- Protection of healthy ecosystems and thus, healthy wildlife
- Resource Conservation

The full matrix of Eagle County’s Resiliency Plan can be found in the Appendices.