



## CHAPTER 1 INVENTORY - AIRPORT & ACTIVITY

### SUMMARY AND KEY POINTS

- GUC is a publicly-owned, public-use airport situated on 1,600 acres within the City and County of Gunnison, CO. It is owned and operated by Gunnison County, which is recognized by the FAA as the airport sponsor.

### AIRPORT DESIGN & AIRCRAFT

- GUC is classified as a commercial service, primary airport by the FAA, and a major commercial service airport by Colorado DOT. FAA has issued GUC an operating certificate under 14 CFR Part 139 (Class I, ARFF Index B).
- GUC airport reference code (ARC) is C-IV, and the critical design aircraft is the Boeing B-757-200.
- In addition to air carrier and general aviation aircraft, there are also a number of transient military operations (training touch-and-go activity) at GUC conducted by USAF C-17 (ARC D-IV) and C-130 aircraft (ARC C-IV). Additionally, a variety of civilian and military aircraft stage at GUC to conduct high altitude tests. However, they do not meet FAA's definition of 'substantial use' and are therefore not designated as critical design aircraft.

### NON-STANDARD CONDITIONS

- GUC meets current FAA design criteria for airport reference code (ARC) C-IV. Existing non-standard conditions include:
  - The Runway 6-24 safety area has non-standard grading in certain locations that will be brought into compliance in an upcoming construction project.
  - B-757-200 aircraft parked at the terminal gates penetrate the FAR Part 77 transitional surface with their tail by approximately 38.7'. In 2013 and 2014 American Airlines replaced the 757 with A-319 aircraft, which is also flown by United. The A-319 tail penetrates the transitional surface by approx. 27'. FAA determined the penetration is not a hazard to air navigation.
  - FAA AC 150/5300-13A, *Airport Design*, recommends no straight (direct) taxiway access between aircraft parking aprons and the runway. There are currently 3 stub taxiways that provide direct access between the GA and air carrier parking aprons and Runway 6-24.

## **RUNWAY PROTECTION ZONE**

- There is a popular recreational whitewater park in the Runway 6 protection zone (RPZ) on the Gunnison River. Current FAA policy is for sponsors to prevent the congregation of people within an RPZ. The FAA approved the Gunnison Whitewater Park in 2003 with certain conditions, including a maximum of 50 people at one time in the park. However, attendance has increased to more than 50 people, and studies prepared by the FAA and the Airport Cooperative Research Board have shown increased risk from aircraft overruns and undershoots within runway safety areas, which are encompassed by runway protection zones.

## **AIRPORT NOISE CURFEW**

- The airport is situated on the south side of the City of Gunnison, and there are single and multi-family residential neighborhoods adjacent to airport property. In 2001 the Gunnison County Commissioners adopted a resolution that imposed a voluntary curfew on takeoffs and landings between 10:30pm and 6am local time “in recognition of adverse noise and light glare effects on residential neighborhoods”. The resolution also noted that no “runway lights, snow plowing, wildlife patrols, runway condition reports, ARFF or other services are available at the Airport during these hours” (i.e. 10:30pm – 6am local). The County excluded “emergency situations” from the curfew, such as St. Mary’s Careflight medical evacuation based in Grand Junction, and the military. The FAA’s Airport Facility Directory (A/FD) notes: “Airport CLOSED 0530Z – 1300Z except for emergency”

## **RUNWAY 6-24 PAVEMENT**

- Runway 6-24 pavement is in need of rehabilitation due to the type of material (Trinidad Lake Asphalt) used in the prior runway reconstruction project. The taxiway and runway shoulders used standard asphalt, and they are not showing similar deterioration. Moisture leakage causes pavement cracking and deterioration, which requires continual maintenance. The runway is programmed to be rehabilitated before 2020.
- As is the case at the majority of airports in the state, there is no air traffic control tower at GUC. Pilots self-announce their position and intentions on the unicom (common traffic advisory frequency – CTAF). Because there is no control tower, relatively few aircraft operations at GUC are counted, except for airline activity and certain GA aircraft on flight plans. The majority of aircraft operations were estimated by FAA.

## **NEW SURVEILLANCE SYSTEM**

- The FAA, working with Colorado DOT, recently installed a new aircraft surveillance system - the Wide Area Multilateration (WAM) system that enhances air traffic control monitoring of

arrivals and departures. It also increases aircraft arrival and departure rates into and out of GUC. The new WAM surveillance system was installed to enhance operations at a number of airports in the Western Slope region that were also impacted by radar line-of-sight limitations.

## **INSTRUMENT APPROACH PROCEDURES**

- FAA has published five instrument approach procedures to GUC, including a precision instrument landing system (ILS) approach to Runway 6. Two of the procedures are circle-to-land. The approach with the lowest published minimums is the Required Navigation Performance (RNP) RNAV approach to Runway 24 (309' & 1 mile). However, that approach requires special aircraft and pilot authorization, as well as equipment and training to use. The RNP approaches are used by some airlines and corporate operators, while some airlines and corporate operators are not qualified to use those approaches.

## **IMPROVED WEATHER REPORTING**

- Currently the National Weather Service (NWS) does not prepare Terminal Aerodrome Weather Forecasts (TAF) for GUC, which they do for Aspen (ASE), Montrose (MTJ), Durango (DRO), and Telluride, (TEX), among other airports. The lack of terminal weather forecast for GUC impacts service by 14 CFR Part 121, 125, and 135 operators which have very specific weather requirements for arrivals and departures. The reason that the National Weather Service does not issue weather forecasts for GUC is the lack of radar coverage by the Doppler radar unit situated on Grand Mesa Mountain, and also because the AWOS-3 situated on GUC does not provide the reason for obstructions to visibility (e.g. snow, rain, fog, etc.) The FAA has stated they will replace the AWOS-3 in September 2016, and then begin issuing terminal weather forecasts for GUC.

## **SCHEDULED AIRLINE SERVICE**

- Airline service in 2014/2015 is provided by American and United and their regional partners. Non-stop markets served include Denver (DEN), Houston (IAH), Dallas Fort Worth (DFW), and Chicago O'Hare (ORD). In the winter of 2015/2016, Alaskan Airlines stated scheduled service between LAX-GUC using DH Dash 8-Q4000 aircraft.
- In CY 2013 there were 30,780 scheduled airline passenger enplanements at GUC. Both passenger enplanements and available seats at GUC have declined by 44 % between 2000 and 2013. 81% of all passengers are in-bound visitors (primarily skiers) vs. local residents (19%). According to Mead & Hunt, the majority of local residents use airports other than GUC because they have higher frequency of service and/or lower fares.

## ROLE OF CBMR & RTA

- Two local organizations, the Gunnison Valley RTA (<http://www.gunnisonvalleyrta.com/>) and the Crested Butte Mountain Resort (CBMR - <http://www.skicb.com/>), market and promote airline service to GUC, including providing revenue guarantees to the airlines. Revenue guarantees are common among Western Slope airports.

## OPERATIONAL CAPACITY

- There is more than adequate operational capacity available in the current runway / taxiway system to accommodate existing demand, as well as to accommodate future demand projected in the FAA's Terminal Area Forecast (TAF) for GUC.

## RUNWAY 6-24 LENGTH

- The 2006 GUC Airport Master Plan concluded that the existing length of Runway 6-24 (9,400') was adequate for the fleet mix operating at the airport. Some operators reduce weight in order to land and takeoff on the runway under certain conditions, but discussions with airport management and tenants, as well as examination of runway length requirements by the current air carrier and GA fleet indicate that Runway 6-24 provides adequate length.

## GA AIRCRAFT OPERATIONS

- The FAA estimated that between 2000 and 2012 GA operations at GUC declined by almost 70%. Data from control towers in the state of Colorado over the same period show that overall GA operations declined by more than 22%. The GA terminal parking apron accommodates transient aircraft. Parking demand typically exceeds available capacity over the July 4<sup>th</sup> weekend. Overflow GA aircraft are parked on the air carrier apron. Demand during some winter weeks approaches but does not exceed parking capacity.

## TERMINAL BUILDING

- The terminal building is approximately 38,400' in size. Improvements were recently made to bring it into compliance with building and fire codes. However, the internal layout of the building is inefficient in terms of passenger and baggage handling traffic flows. For example, the security screening area is on the first floor, while the hold rooms for the two gates with loading bridges are on the second floor. Both arriving and departing passengers use the same staircase, which is inadequate for the peak traffic volumes. The single waiting/hold room on the second floor is too small to serve two gates. The concessions on the second floor are primarily vending machines; the seating is not fixed, and the seats are relatively small. There is insufficient queuing area in front of the airline ticket counters for peak passenger flows. There are no flight

information display systems (FIDS) on the second floor. There are no covered parking and loading zones for buses, taxis, or other vehicles. There is no passenger drop-off/pickup curb frontage in front of the terminal building. The existing payment system for vehicle parking is inefficient and labor intensive - an automated payment system could increase revenue from vehicle parking as well as decrease administrative costs.

### **WETLANDS & HISTORIC PROPERTY**

- There are wetlands and floodplains on and in the vicinity of the airport. Both Gunnison River and Tomichi Creek cross airport property. Two bridges on U.S. 50 just south of GUC Airport are on the National Register of Historic Places. The Gunnison sage grouse is a state and federally protected species with habitat throughout Gunnison County.

### **ADJACENT RESIDENTIAL & BLM PROPERTY**

- There are single and multi-family residential neighborhoods adjacent to the airport property boundary, as well as a large proposed residential development to the northeast of Runway 6-24. The U.S. Bureau of Land Management (BLM) owns property to the east and south of GUC.

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## 1.1 INTRODUCTION

Gunnison - Crested Butte Regional Airport (FAA identifier = GUC) is a publicly owned, public-use airport situated in the City and County of Gunnison, CO. GUC Airport encompasses 1,600 acres, and is located 28 miles from the Town of Crested Butte and 31 miles from the Town of Mt. Crested Butte (Figure 1-3). GUC Airport is owned by the County of Gunnison, which is also the official sponsor of the airport as defined by the Federal Aviation Administration (FAA – see Figure 1-2)<sup>1</sup>. The primary objectives of the inventory element of the Master Plan are:

- Document the existing airport facilities in terms of their location, dimensions, and condition, as well as aviation activity levels, airspace, and air traffic procedures.
- Identify applicable FAA airport design standards, if any facilities are not in compliance with those standards, as well as any plans to bring them into compliance.
- Determine the operational capacity of the various components of GUC Airport, and compare existing demand levels against the operational capacity to determine existing constraints or delays.
- Identify current adjacent land uses as well as sensitive environmental resources.
- Coordinate with parallel County and City planning studies.

## 1.2 COLLECT AND REVIEW EXISTING DOCUMENTATION

Existing documentation relating to the airport has been obtained and reviewed, including the following:

- Airport engineering and construction drawings, plans and specifications
- 2006 Airport Master Plan, prepared by Barnard Dunkelberg & Company
- GUC Airport Terminal and Landside Studies
- Colorado DOT Aviation System Plan (2011) and Economic Impact Study of Airports (2013)
- FAA and Colorado DOT Aviation Activity Estimates

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<sup>1</sup> FAA Order 5100.38D, *Airport Improvement Program Handbook*, Chapter 2, “Airport sponsors include: Public agency owning (or leasing from another government entity) a public-use airport. A state, a political subdivision of a state (such as a city, municipality, or state agency), a tax-supported organization, and an Indian tribe or pueblo are all considered public agencies.”

- Airport Minimum Standards, Rules and Regulations, Tenant Leases, Budget
- FAA airport, airspace, and air traffic data, charts, and documents
- Gunnison County and City of Gunnison Plans, Budgets, and Guidance Documents
- Airport Tenant Survey Results

### **1.3 AIRPORT AERIAL IMAGERY AND MAPPING**

The FAA requires that new mapping be collected as part of its Airports Surveying Geographic Information System (AGIS - <https://airports-gis.faa.gov/public/>). In November, 2014, Woolpert, Inc. acquired the aerial imagery as required by FAA, and will prepare the mapping to FAA and National Geodetic Survey (NGS) standards as described in pertinent FAA advisory circulars<sup>2</sup>. Both the FAA and National Geodetic Survey (NGS) will review and approve the AGIS.

In addition to creating and uploading the AGIS files, Woolpert has also collected the data for the imaginary surfaces prescribed in 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*. This data is used to create the airspace drawings as part of the Airport Layout Plan drawing set, as required by FAA ARP Standard Operating Procedures (SOP) No 2.00, ALP Review Checklist.

### **1.4 EXISTING AIRPORT FACILITY ASSESSMENT**

The facility assessment encompasses not only Gunnison Airport's physical facilities and property, but also the airport's role and appropriate design standards, the airspace adjacent to it, as well as air traffic control procedures (Figure 1-1). A key element in the assessment of the airport is the determination of its current role and service level, and critical design aircraft, which serve as a key factor in airport design standards.

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<sup>2</sup> Sources: FAA AC 150/5300-16A, *General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey*, FAA AC 150/5300-17C, *Standards for Using Remote Sensing Technologies in Airport Surveys*, FAA AC 150/5300-18B, *General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards*

Gunnison-Crested Butte Regional Airport  
Master Plan

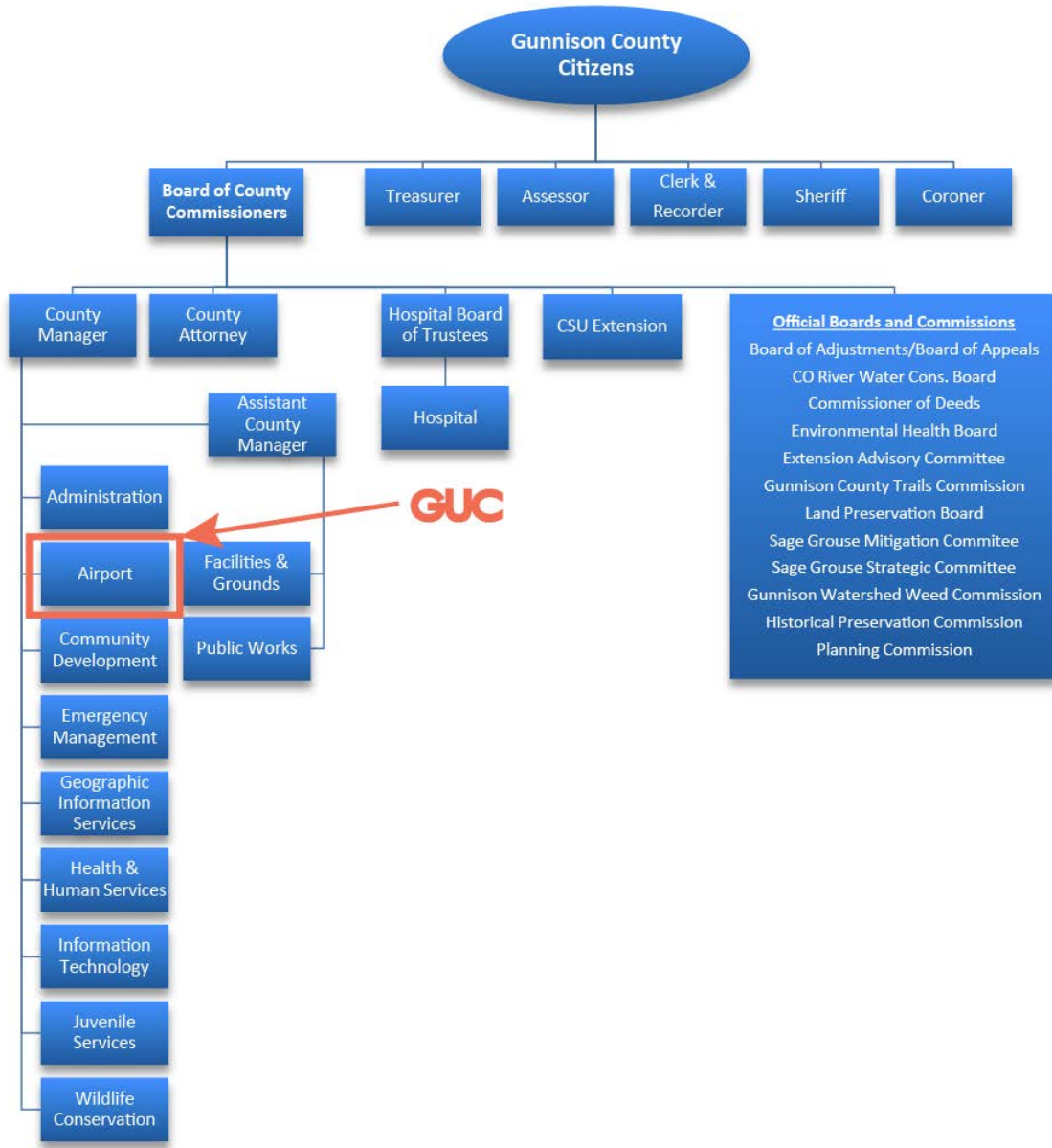
FIGURE 1-1 GUNNISON CRESTED BUTTE REGIONAL AIRPORT



Source: Jviation

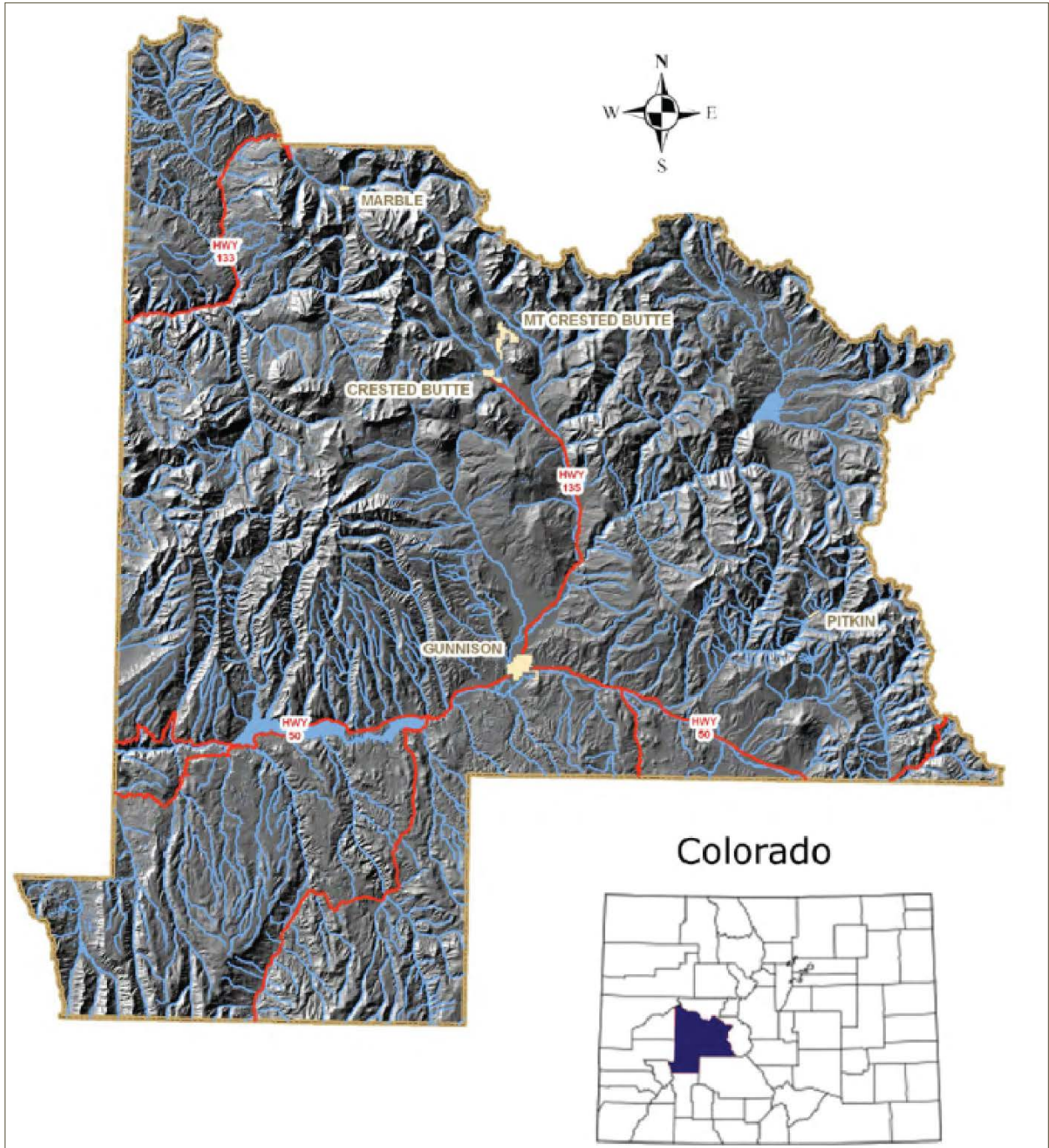


FIGURE 1-2 GUNNISON COUNTY ORGANIZATIONAL STRUCTURE



Source: Gunnison County 2014 Budget

FIGURE 1-3 GUNNISON COUNTY



Source: Gunnison County 2014 Budget

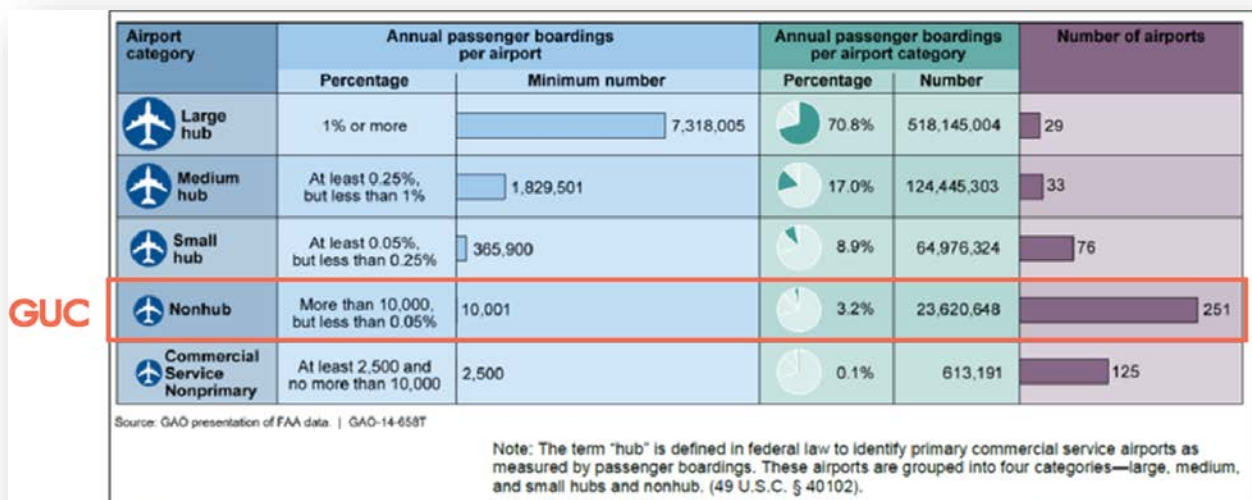
### 1.4.1 Airport Role and Service Level

GUC is included in the FAA’s National Plan of Integrated Airport Systems (NPIAS) as well as Colorado DOT’s (CDOT) Aviation System Plan. GUC is eligible for federal funding for capital improvement projects under FAA’s AIP program, as well as for state funding through their aeronautics program.

The FAA classifies airports in the NPIAS by type of activity and level of passenger traffic (Figure 1-4). GUC is classified by the FAA as:

- **Commercial service** - GUC receives scheduled airline service from American and United Airlines, and there were 30,780 passenger enplanements in CY 2013.
- **Primary** - there are more than 10,000 passenger enplanements annually.
- **Non-hub** - annual passenger enplanements represent less than 0.05 percent of total annual passenger enplanements in U.S.

FIGURE 1-4 FAA CLASSIFICATION OF U.S. COMMERCIAL AIRPORTS



Source: GAO Presentation of FAA data, GAO-14-658T

The Colorado DOT classifies GUC as a major commercial service airport. GUC was also included in CDOT’s 2010 Colorado Mountain Airport Study (CMAS). The CMAS noted:

“In many areas throughout the Western Slope, local airports, many of the study airports in particular, have been a key component in facilitating growth and economic development. Additionally, many of the CMAS airports are located in resort/destination communities and often times, owners of vacation homes and hobby ranches in such communities take advantage

of the close and convenient access to their property by using general aviation aircraft. On any given holiday weekend, nearly 1/10 of the nation's business jets can be found in Colorado.

The physical location of many of the CMAS airports also results in an extreme operating environment for both airport and aircraft operators when compared to airports in non-mountainous environments. Impacts of this extreme operating environment on both airports and aircraft include: significant and localized weather such as snow and severe thunderstorms; high density altitude; higher construction and maintenance costs; physical facility constraints due to terrain that leads to a lack of apron space; and the inability to accommodate longer runway lengths.

The oil and gas sector, along with the overall energy industry are important players in the dynamics of mountain airport usage on the Western Slope. CMAS airports serve as a critical link to energy companies' operations in Colorado. The Colorado mountain airports are critical to the business of producing energy because they provide:

- Efficient access to Colorado's vast energy resources on the Western Slope
- Quick access to power plants for maintenance and repair
- Corporate executive access for meetings
- Access to field crews and engineers"

Gunnison Airport is one component of a larger system of commercial service airports that serve the Western Slope and Mountain region of western Colorado. Passenger traffic at each of the mountain commercial airports has fluctuated since 2011 (Table 1-1). Each of the mountain airports, including Gunnison, serve a wide variety of users including skiers, spring-summer-fall tourists and visitors, energy companies, business travelers, local residents, public service agencies (e.g. law enforcement, emergency medical, etc.), local businesses, as well as the military. The airports accommodate scheduled airlines, charters/air taxis (FAR Part 135), and general aviation/corporate activity. As noted above, all of the mountain airports combined may host up to 1/10<sup>th</sup> of all corporate jets in the U.S. during peak winter season. Interestingly, each of the mountain airports experienced a decline in scheduled passenger traffic between CY 2011 and 2013.

Gunnison-Crested Butte Regional Airport  
Master Plan

TABLE 1-1 MOUNTAIN AIRPORTS - COLORADO

Airport Code	City	Airport	Airport Category	Hub	CY 2013 Enplanements	CY 2012 Enplanements	CY 2011 Enplanements	% Change 11-13
<b>GUC</b>	Gunnison	Gunnison-Crested Butte Regional	P	N	30,780	31,181	36,516	-15.7%
<b>EGE</b>	Eagle	Eagle County Regional	P	N	167,166	167,914	189,276	-11.7%
<b>ASE</b>	Aspen	Aspen-Pitkin County	P	N	206,686	214,892	221,256	-6.6%
<b>HDN</b>	Hayden	Yampa Valley	P	N	91,823	99,969	106,534	-13.8%
<b>TEX</b>	Telluride	Telluride Regional	CS	None	6,470	7,828	11,017	-41.3%
<b>MTJ</b>	Montrose	Montrose Regional	CS	N	84,579	75,269	87,228	-3.0%

Source: FAA Air Carrier Activity Information System (ACAIS)

GUC has an Airport Operating Certificate issued by the FAA under 14 CFR Part 139. Part 139 requires airports to have operating certificates issued by the FAA when they:

- Serve scheduled and unscheduled air carrier aircraft with more than 30 seats;
- Server scheduled air carrier operations in aircraft with more than 9 seats but less than 31 seats;

As noted by FAA: “Airport Operating Certificates serve to ensure safety in air transportation. To obtain a certificate, an airport must agree to certain operational and safety standards and provide for such things as firefighting and rescue equipment. These requirements vary depending on the size of the airport and the type of flights available.” (Source: [http://www.faa.gov/airports/airport\\_safety/part139\\_cert/?p1=what](http://www.faa.gov/airports/airport_safety/part139_cert/?p1=what))

Part 139 presents a number of operating, staffing, maintenance, and record requirements that must be met by airports. The FAA inspects Part 139 airports annually to ensure compliance with the regulation.

GUC is classified by FAA within 14 CFR Part 139 as Class I, ARFF Index B. Class I airports can accommodate large scheduled air carriers (i.e. those with more than 30 passenger seats), unscheduled large air carrier aircraft (more than 30 passenger seats), and scheduled small air carrier aircraft (with 10 – 30 passenger seats). Aircraft rescue and firefighting (ARFF) index B airports accommodate aircraft with fuselage length of at least 90’ but less than 126’ in length. That fuselage length includes aircraft such as the Airbus A-319 and A-320; Boeing 737-300 and 737-700; Embraer ERJ-145, Embraer ERJ-170, E-175, E-190; and the Canadair CRJ-200, and CRJ-700.

#### **1.4.2 Airport Service/Market Area**

Gunnison Airport’s market (service) area encompasses Gunnison County (Figure 1-3). Airports across the U.S. operate in a very competitive environment, and the Western Slope region of Colorado is no exception. Each airport tenant and type of service offered at an airport (airlines, FBOs, restaurants, rental car companies, etc.) have different market (service) areas, and different competitors. For example, airline passengers travelling to/from Gunnison may also use Montrose (MTJ), Aspen (ASE), Grand Junction (GJT), Colorado Springs (COS), and even Denver International (DEN) Airports.

In terms of fuel sales, Gunnison Valley Aviation (GVA) competes against a number of other FBOs at mountain airports, as well as FBOs located outside of Colorado. Many aircraft, particularly corporate jets, have the ability to fly to multiple airports without refueling, and buy fuel wherever it is available at the lowest price. Rental car companies, the restaurant, and other concessions situated at GUC serve relatively compact (i.e. smaller) market areas.

### 1.4.3 Airport Reference Code (ARC) and Critical Design Aircraft

The FAA’s airport design standards are prescribed in Advisory Circular 150/5300-13A, *Airport Design*. Airport design standards are based on accommodating the critical design aircraft. The FAA notes that the largest aircraft that uses an airport, and that exceeds FAA’s ‘substantial use’ threshold of 500 itinerant operations (takeoffs and landings) per year, serves as the critical aircraft.

Because there is no air traffic control tower at GUC, the majority of aviation activity (i.e. aircraft operations) is estimated by the FAA, Airport management, and the FBO. Relatively few aircraft operations are actually counted. In addition, the various sources of aviation activity at GUC (the FAA, the airport, FBO, etc.) estimated different levels of activity at GUC. Airline operations at GUC maintain better records and therefore offer better traffic data, including identification of the critical design aircraft. Passenger enplanement data is maintained by each airline, the U.S. DOT, the FAA, and the airport. A more detailed discussion of historic aircraft and passenger activity at GUC is provided in Chapter 2.

TABLE 1-2 GUC AIRPLANE DESIGN GROUP (ADG)

	Design Group	Tail Height (ft)	Wingspan (ft)
	I	<20	<49
	II	20 ≤ 30	49 ≤ 79
	III	30 ≤ 45	79 ≤ 118
GUC	IV	45 ≤ 60	118 ≤ 171
	V	60 ≤ 66	171 ≤ 214
	VI	66 ≤ 80	214 ≤ 262

Source: FAA AC 150/5300-13A

At Gunnison Airport, the Boeing 757-200 was determined to be the critical design aircraft in the 2006 Airport Master Plan (Tables 1-2 & 1-3). The B-757-200 is classified by FAA as Airport Reference Code (ARC) C-IV (see [https://www.youtube.com/watch?v=kgQD\\_4zrsrk](https://www.youtube.com/watch?v=kgQD_4zrsrk) for B-757s at GUC). Smaller aircraft including the Airbus A-319/320, B-737-700, regional jets (ERJ-145, CRJ-200, CRJ-700), piston-engine airplanes, corporate jets and turboprops, regularly operate at GUC.

TABLE 1-3 AIRCRAFT APPROACH CATEGORY

Category	Approach Speed
A	<91 kts.
B	91 kts. - < 121 kts.
<b>C</b>	<b>121 kts. - &lt;141 kts.</b>
D	141 kts. - <166 kts.
E	166 kts. +

Source: FAA AC 150/5300-13A, Airport Design

Airlines are constantly adjusting their fleets based on various market forces such as passenger traffic, maintaining certain load factors, fuel prices, etc. In general, carriers have been controlling (limiting) capacity (i.e. available seat miles) in an effort to increase load factors, as well as increasing the overall size of their aircraft. A number of carriers have been grounding their 50-seat regional jets and turboprops, and replacing them with larger regional jets (such as the CRJ-700, ERJ-190, etc.) Carriers are also replacing their B-757s with various models. For example, both United and American are flying Airbus A-319s into GUC in 2014/2015, as well as CRJ-700s, and fewer B-757s are operated at GUC (Figures 1-8 & 1-9).

In addition, although there are no based military aircraft at GUC, a variety of transient military aircraft perform recurring training missions (touch-and-go operations) at GUC, including Lockheed C-130s (ARC C-IV) and Boeing C-17s (ARC D-IV).<sup>3</sup> See Figures 1-5 and 1-6. Based on the B-757 and the C-17, the Airport Reference Code (ARC) for GUC is C-IV (see Figure 1-7).

There are also a variety of civilian and military aircraft that use GUC for high altitude performance testing, however they do not meet FAA's 'substantial use' threshold and are not designated as critical design aircraft.

The FAA is aware that airports accommodate occasional operations (defined as less than 500 itinerant operations annually) by aircraft larger than the critical design airplane, but they do not generate sufficient activity to justify the cost to design and construct facilities to accommodate them.

<sup>3</sup> See video of C-17s & C-130s at GUC: <https://www.youtube.com/watch?v=uTM61GkZYSQ>.



FIGURE 1-5 C17 AT GUNNISON AIRPORT, 2015

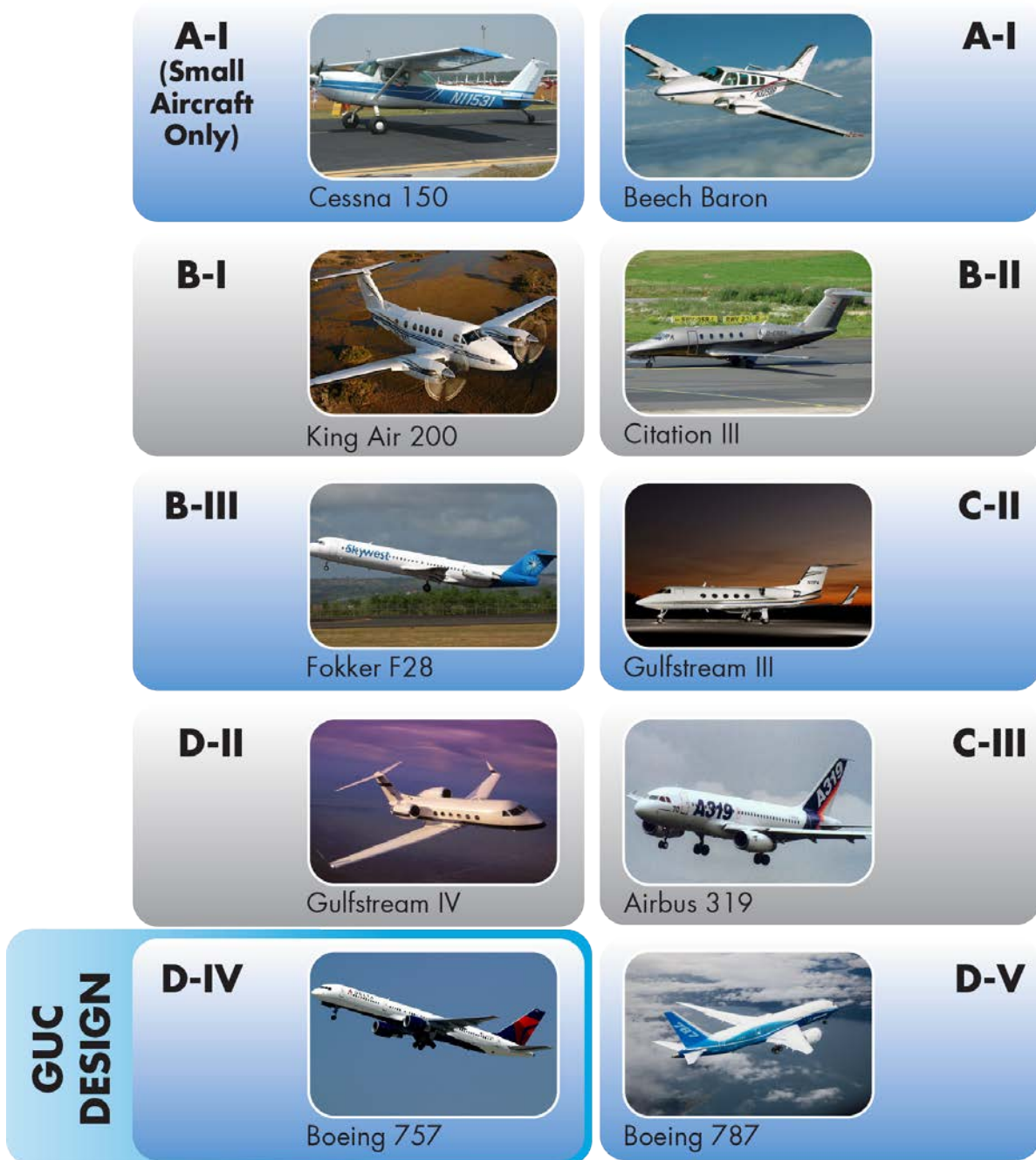


FIGURE 1-6 C-17s AT GUNNISON AIRPORT, 2015



Source: Gunnison Airport

FIGURE 1-7 AIRCRAFT TYPE BY AIRPORT REFERENCE CODE (ARC)



Source: Jviation, Inc. and FAA

FIGURE 1-8 AMERICAN AIRLINES B-757-200 AT GUC



Source: Google Images

FIGURE 1-9 UNITED AND AMERICAN AIRBUS A-319S PARKED AT GUC



Source: Google Images

The Runway Design Code (RDC) of a runway determines the runway width, shoulder width, runway separation distances from other runways and taxiways, runway safety area (RSA) dimensions, object free area (OFA), obstacle free zone (OFZ), and the widths and length of the runway protection zone (RPZ). The RDG for Runway 6-24 at GUC is C-IV-5000. The RDG for 17-35 is B-I-5000. The Taxiway Design Group (TDG) establishes the design criteria for taxiway width, fillets, etc. The TDG for Taxiway A, parallel to Runway 6-24, is 4 (Table 1-4).

TABLE 1-4 GUC AIRPORT DESIGN CODES

Runway Design Code (RDC)	
6-24	17-35
C-IV-5000	B-I-5000
Taxiway Design Group (TDG)	
6-24	17-35
4	N.A.

Source: Jviation

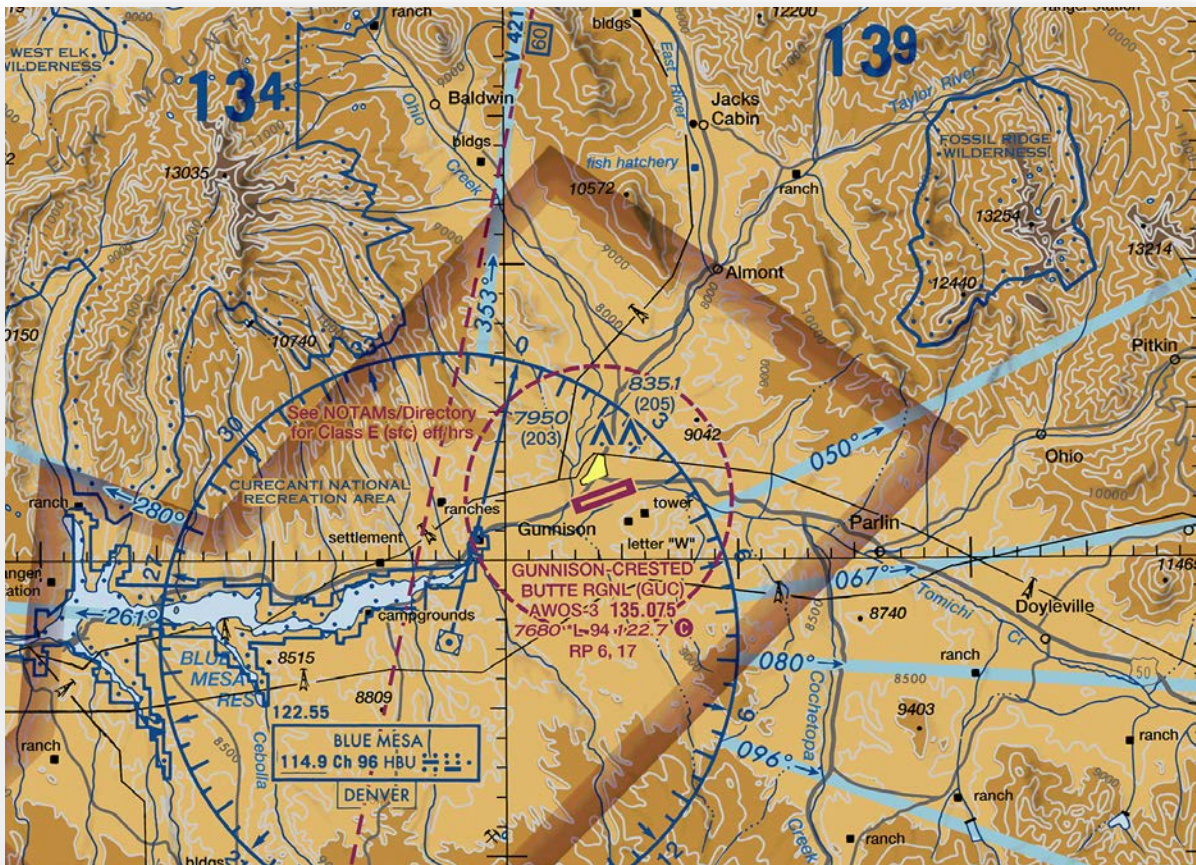
#### 1.4.4 Air Traffic Control (ATC)

Similar to the majority of airports in Colorado, GUC does not have an air traffic control tower (ATCT). Pilots self-announce their position and intentions on the Common Traffic Advisory Frequency (CTAF)/Unicom - 122.7 MHz. That same Unicom frequency is also used by pilots to turn on the runway and taxiway lights (except between 10:30pm – 6am local time, as discussed below). When activated, the lights remain on for 15 minutes then automatically turn off. The rotating beacon remains on throughout the night time and reduced visibility.

GUC is situated in FAA designated Class E airspace (**Figure 1-10**). It extends for a 5 mile radius and up to 18,000'. Class E airspace is frequently designated around non-towered airports that have straight-in instrument approach procedures. Aircraft may arrive and depart GUC in visual meteorological conditions (VMC) without having to contact FAA's Denver Center or communicate with another air traffic control facility. However, when weather conditions are reported by the AWOS to be less than 1,000' ceiling and/or less than 3 miles visibility, then a clearance (either special VFR or an IFR clearance) from FAA air traffic is required to operate within Gunnison's Class E airspace. (Note: the minimums for operating under VFR in Class E airspace is similar to the minimums for the ILS approach to Runway 6. The similarity is just a coincidence – there is no connection between Class E and the ILS approach minimums.)

FAA's Denver Center provides air traffic control services (flight following, radar vectoring, etc.) for aircraft arriving and departing GUC. With the initiation of service of the Wide Area Multilateration (WAM) Service, Denver Center is able to provide radar and communications services to aircraft on the ground at GUC. That capability increases operational capacity on and in the vicinity of Gunnison Airport.

FIGURE 1-10 AIRSPACE AND NAVIGATION AIDS



Source: Skyvector.com

Because radar signals and high frequency communications operate based on line-of-sight, the signals are blocked by mountains. As a result, airspace capacity was severely reduced because FAA's Denver Center could not 'see' or talk directly to arriving or departing aircraft below certain altitudes. As a result, the Center applied very conservative (i.e. large) separation standards between aircraft, particularly during periods of poor (instrument - IMC) weather. The FAA noted that the normal 'acceptance rate' of aircraft at mountain airports was approximately 12 to 17 flights per hour, which was reduced to approximately 4 flights per hour due to the limited radar and communications limitations.

In the fall of 2013, the FAA implemented a new aircraft monitoring/tracking system known as Wide Area Multilateration (WAM) technology (see Appendix 1-1). First deployed by the FAA in Alaska, Colorado DOT and FAA recently installed WAM along the Western slope of the Rocky Mountains in an effort to overcome the inherent line-of-sight limitations of traditional radar and high frequency communications, particularly for aircraft arriving and departing from:

- Gunnison (GUC)
- Aspen (ASE)
- Montrose (MTJ)
- Garfield County-Rifle (RIL)
- Telluride (TEX)
- Durango-LaPlata (DRO)
- Steamboat Springs (SBS)
- Craig (CAG)
- Hayden (HDN)

The WAM technology receives signals from transponders on individual aircraft, and by analyzing those signals is able to accurately identify the location and trajectory of each aircraft, thereby allowing air traffic controllers to provide similar services as if the aircraft were in radar contact. As a result, airspace capacity (i.e. the rate of arrivals and departures) at each of the airports, including GUC, has been increased with the WAM technology.

The FAA has published 5 instrument approach procedures to GUC (Table 1-5). Two of the procedures are ‘Required Navigation Performance (RNP)’ approaches to Runway 6 and 24, which provide the lowest published minimums. However, the RNP approaches require special equipment and aircraft and pilot authorization to fly, and as a result some airlines, corporate, and GA aircraft do not use the published RNP approaches.

The other instrument approaches, including the ILS Runway 6, have relatively high approach minimums due to obstructions in the vicinity of GUC. Aircraft cannot land at GUC when the weather (clouds, visibility) is lower than the published minimums. In low visibility conditions, airlines and corporate operators either land at an airport other than GUC where the weather is better, or else cancel the flight to/from GUC. When the National Weather Service starts developing terminal weather forecasts for GUC that will improve the ability of airlines and air taxi operators to provide more reliable service to GUC.

TABLE 1-5 PUBLISHED INSTRUMENT APPROACHES AND LOWEST MINIMUMS

Type of Approach	Runway End	Lowest Minimums
ILS/LOC	6	923' 3 miles
RNAV / RNP	6	458' 1¼ mile
RNAV / RNP	24	309' 1 mile
GPS-B	Circle-to-Land	1,500' 1¼ mile
VOR / GPS-A	Circle-to-Land	1,580' 2 miles

Source: FAA

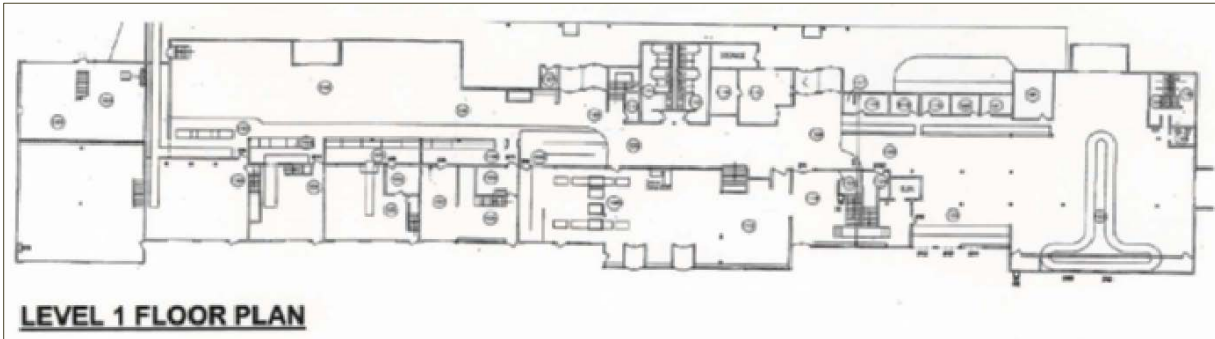
The FAA has also published instrument departure procedures for aircraft departing GUC in reduced visibility (instrument weather – IFR) conditions. The departure procedures prescribe weather minimums, specific flight paths, and altitudes to ensure obstacle clearance (see Appendix 1-2).

### 1.4.5 Gunnison Airport Passenger Terminal Building

Gunnison Airport’s airline passenger terminal building is a two story, wood-frame structure, approximately 38,400 s.f. in size (see Appendix 1-3 for photographs of the exterior and interior of the building). The original building was constructed in 1980, with subsequent building additions constructed later.

The first floor of the building includes airline ticketing and office (ATO) space, rental car (RAC) counters and office space, one baggage claim carousel as well as slide-through doors for large baggage such as skis, etc., security screening area and TSA offices, and two ground level gates/doors to the ramp for ground level enplaning and deplaning passengers (Figures 1-11 & 1-12). The daily airline schedule for 2015/2016 (Figure 1-13) shows the scheduled utilization of the terminal, with the peak period occurring in the winter months.

FIGURE 1-11 GUNNISON AIRPORT TERMINAL BUILDING

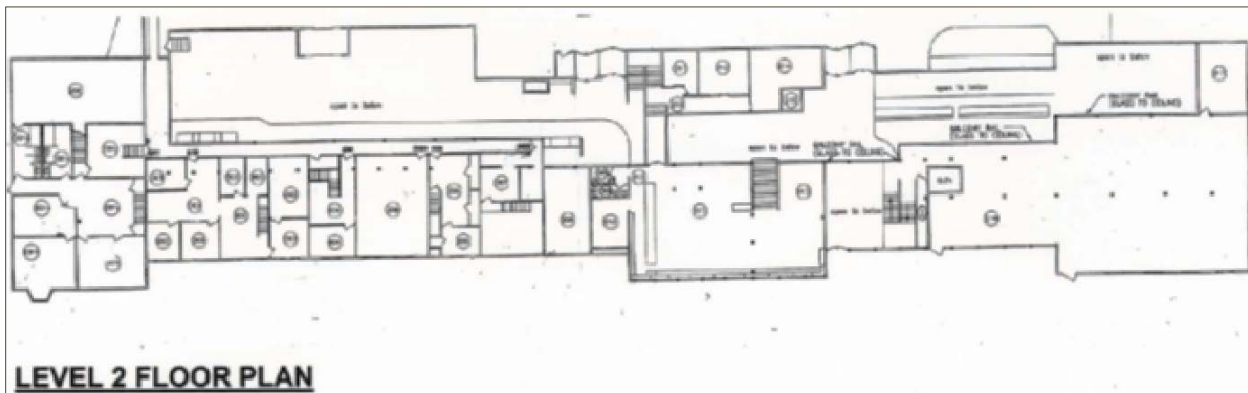


Source: Burt N. Singleton, P.E., Code Analysis Report for Gunnison Crested Butte Regional Airport, September 1, 2004

On the first floor of the terminal, American Airlines has three ticket counters with two customer service positions at each counter (maximum of six passenger queues). Adjacent to American, United Airlines has three ticket counters with two customer service positions at each counter (six passenger queues), plus six self-service check-in kiosks. The self-serve kiosks separate two of United's ticket counters. Also on ground level are three rental car desks (Budget, Avis, Hertz), plus a bus transportation desk.

The second floor contains a single passenger hold room with access to two gates, each with a loading bridge. The hold room contains approximately 75 seats, the majority of which are portable chairs. There is capacity for additional seating, however, enplaning and deplaning passengers, particularly during peak periods in the winter, require open space for walking to and from the loading bridges. Both American and United have customer service desks in the hold room. The restaurant is also located on the second floor. There are stairs between the first and second floor, as well as an elevator.

FIGURE 1-12 GUNNISON AIRPORT TERMINAL BUILDING



Source: Burt N. Singleton, P.E., Code Analysis Report for Gunnison Crested Butte Regional Airport, September 1, 2004



FIGURE 1-13 GUC AIRLINE SCHEDULE 2015-2016

**Alaska Airlines Service to & from Los Angeles – Weds. & Sats. 12/16/2015 – 03/26/2016**

- Los Angeles – Gunnison 1:15 pm (Arrives 4:40PM) Wed. and Sat. only
- Gunnison – Los Angeles 5:20 PM (Arrives 6:55PM) Wed. and Sat. only

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**American Airlines Service to & from Dallas - Daily 12/17/2015 – 04/04/2015**

- Dallas – Gunnison 10:50 AM (Arrives 11:55AM) Daily
- Gunnison – Dallas 2:05 PM (Arrives 5:00PM) Daily
- December 25, 2015 – January 4, 2016**
- Dallas – Gunnison 10:50 AM (Arrives 11:55AM) Daily
- Dallas – Gunnison 1:05 PM (Arrives 2:55PM) Daily
- Gunnison – Dallas 2:05 PM (Arrives 5:00PM) Daily
- Gunnison – Dallas 4:05 PM (Arrives 7:00PM) Daily
- January 5, 2016 – April 4, 2016**
- Dallas – Gunnison 10:50 AM (Arrives 11:55AM) Daily
- Dallas – Gunnison 1:05 PM (Arrives 2:55PM) Saturdays only
- Gunnison – Dallas 2:05 PM (Arrives 5:00PM) Daily
- Gunnison – Dallas 4:05 PM (Arrives 7:00PM) Saturdays only

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**United Airlines Service to & from Houston - Daily 12/17/2015 – 09/04/2016**

- Houston – Gunnison 11:40 AM (Arrives 1:29 PM) Daily
- Gunnison – Houston 2:15 PM (Arrives 5:40 PM) Daily
- Saturdays – February 13 – March 26, 2016**
- Houston – Gunnison 11:40 AM (Arrives 1:29 PM) Saturdays only
- Gunnison – Houston 2:15 PM (Arrives 5:40 PM) Saturdays only
- June 25, 2016 – June 30, 2016 – 2x per week**
- Houston – Gunnison 5:45 PM (Arrives 7:12 PM) Saturday & Wednesday Only
- Gunnison – Houston 7:45 AM (Arrives 11:15 AM) Sunday & Thursday Only
- Daily – July 1, 2016 – August 15, 2016**
- Houston – Gunnison 5:45 PM (Arrives 7:12 PM) Daily
- Gunnison – Houston 7:45 AM (Arrives 11:15 AM) Daily
- August 16, 2016 – September 4, 2016 – 2x per week**
- Houston – Gunnison 5:45 PM (Arrives 7:12 PM) Saturday & Wednesday Only
- Gunnison – Houston 7:45 AM (Arrives 11:15 AM) Sunday & Thursday Only

---

**United Airlines Service to & from Chicago - Saturdays 12/19/2015 – 03/27/2016**

- Chicago – Gunnison 9:45 AM (Arrives 11:40 AM) Saturdays only
- Chicago – Gunnison 7:10 PM (Arrives 9:05 PM) Saturdays only
- Gunnison – Chicago 12:15 PM (Arrives 3:58 PM) Saturdays only
- Sundays – December 20, 2015 – January 3, 2016**
- Gunnison – Chicago 8:00 AM (Arrives 11:43 AM) Sundays only
- Saturdays – February 13 – March 26, 2016**
- Chicago – Gunnison 9:45 AM (Arrives 11:40 AM) Saturdays only
- Chicago – Gunnison 7:10 PM (Arrives 9:05 PM) Sat. only
- Gunnison – Chicago 12:15 PM (Arrives 3:58 PM) Sat. only
- Sundays – February 14 – March 27, 2016**
- Gunnison – Chicago 8:00 AM (Arrives 11:43 AM) Sundays only

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**United Airlines Service to & from Denver - Daily 08/19/2015 – 12/14/2016**

- Denver – Gunnison 11:25 AM (Arrives 12:20 PM)

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- Gunnison – Denver 12:50 PM (Arrives 1:46 PM)  
**Daily December 17, 2015 – January 4, 2016**
- Denver – Gunnison 11:25 AM (Arrives 12:20 PM)
- Denver – Gunnison 6:55 PM (Arrives 7:48 PM)
- Gunnison – Denver 6:00 AM (Arrives 7:00 AM)
- Gunnison – Denver 12:50 PM (Arrives 1:46 PM)  
**Daily January 5, 2016 – April 4, 2016**
- Denver – Gunnison 11:25 AM (Arrives 12:20 PM)
- Gunnison – Denver 12:50 PM (Arrives 1:46 PM)  
**Daily June 9, 2016 – June 30, 2016**
- Denver – Gunnison 3:40 AM (Arrives 4:35 PM)
- Gunnison – Denver 5:06 PM (Arrives 6:02 PM)  
**Daily July 1, 2016 – August 15, 2016**
- Denver – Gunnison 11:15 AM (Arrives 12:10 PM)
- Denver – Gunnison 3:15 PM (Arrives 4:05 PM)
- Gunnison – Denver 12:40 PM (Arrives 1:36 PM)
- Gunnison – Denver 5:06 PM (Arrives 5:59 PM)  
**Daily August 16, 2016 – December 14, 2016**
- Denver – Gunnison 11:15 AM (Arrives 12:10 PM)
- Gunnison – Denver 12:40 PM (Arrives 1:36 PM)

Source: RTA, Gunnison

A report prepared by Burt N. Singleton, P.E., Code Analysis Report for Gunnison Crested Butte Regional Airport, September 1, 2004, identified a number of building code violations. The general areas of non-compliance were identified under: type of construction, fire protection systems, egress, and accessibility. In response to that report a number of improvements were made including installation of fire sprinklers, as well as an emergency egress doorway and stairs from the second floor passenger hold room.

In each of CY 2012 and 2013, approximately 62,000 passengers used the terminal building (approximately 31,000 passenger enplanements and 31,000 deplanements). All of the passengers are origin and destination (O&D) – in other words, they did not connect with another flight in GUC. Only 19% of all passengers originated in Gunnison – the remaining 81% of passengers flew in. The fact that there are no transfer/connecting passengers at GUC is an important consideration in terminal building design, space requirements, and layout.

The majority of passengers that fly into GUC use one the area's ski resorts, as a result the peak season typically occurs between December-March. Approximately 71% of the total annual passenger enplanements occur during peak season. Within that three to four month period, there are approximately 22,000 enplanements (and 22,000 deplanements), which generates an average of approximately 6,400 passenger enplanements per month within the peak period (peak month - PM). Passenger enplanements tend to be concentrated on weekends, so the average-day (AD)

enplanements typically range between 280 – 300 enplanements on Saturday, and the same volume on Sunday. Weekdays typically experience lower passenger volumes.

American and United Airlines currently operate Airbus A-319s with 128 passenger seats during the peak season. Until 2014, American also operated the B-757-200. United Airlines (through its regional partners Express Jet<sup>4</sup> and Skywest) also operate Embraer ERJ-145 and CRJ-700 regional jets, with 50 and 76 passenger seats respectively.

There are a number of constraints in the existing terminal building due to lack of space and the layout of the building (see Appendix 1-3 for additional photographs of the terminal building). There are times when multiple departures occur within one hour, doubling the number of enplanements, combined with deplaning passengers during the same period. There are a number of design and functional constraints within the existing building and vehicle parking, including:

- Insufficient space for enplaning and deplaning passengers. The second floor hold room frequently exceeds capacity, particularly when a departing flight is delayed and overlaps with another scheduled departure (see Figure 1-14).
- There is insufficient seating for passengers waiting to depart, insufficient queuing area in front of the customer representative desk, and insufficient concessions on the second floor (photo below).
- Deplaning passengers must walk through enplaning passengers waiting to board. Most of the seats in the second-floor hold room are portable and can be moved to locations that interfere with arriving and departing passengers. The seats are also relatively old, small, and have no arm rests.
- The restaurant closed in 2014 and there are only vending machines in the second-floor waiting area that are accessible to passengers – no restaurants, newsstands, snack bars, etc.
- There are no electronic flight information display systems (FIDS).
- There are two men's and two ladies restrooms (four total), which is not sufficient capacity for peak winter traffic demand.

FIGURE 1-14 GUNNISON AIRPORT TERMINAL BUILDING – SECOND FLOOR HOLD ROOM

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<sup>4</sup> Trans States Airlines will replace Express Jet in Spring 2015, also operating ERJ-145s.



Source: Gunnison Airport

- Departing passengers go through security screening on the first floor, and must walk up stairs (there is one elevator) to the second-floor hold room. However, arriving passengers use the same stairs to access baggage claim and ground transportation, creating congestion and safety hazards on and in the vicinity of the stairs.
- There is inadequate signage for both arriving (deplaning) and departing (enplaning) passengers inside the terminal building. As a result, some passengers are confused about where to proceed.
- The security screening area is too small to accommodate peak periods of enplaning passengers.
- There is insufficient queuing area in front of the airline ticket counters. During peak periods lines extend out the terminal door.
- There is insufficient queuing area in front of the rental car agencies. Lines interfere with passengers walking from the airline ticket counters, as well as from the stairs, to the baggage claim area and main doors in the terminal building.
- There is no curbside drop-off or pick-up areas in front of the terminal building. There is also no designated cell phone lot for short term waiting.

- There is no designated hold/meeting area for bus passengers going to the resorts, either in or outside of the terminal building. There is designated bus parking area or passenger shelters outdoors.

Any future increase in airline service, including a new airline serving GUC and/or existing carriers increasing frequencies to existing markets, would increase traffic flows and exacerbate the problems listed above.

#### **1.4.5.1 Vehicle Parking Lot**

The paved, open, ground-level vehicle parking lot is situated between West Rio Grand Avenue and the terminal building. There are 174 parking positions in the lot. There are wooden posts with a chain between the posts that separate the parking lot from the loop road and the terminal, with walkways through the fence. Passengers use the honor system to pay for parking, either on-line or by inserting money in an envelope and dropping it in the terminal. Airport staff track parked vehicles, and will fine owners who do not pay for parking. Relative to automated pay stations (example shown on right) the current system is inefficient and time consuming, resulting in less than maximum potential revenue being collected, coupled with additional labor and administrative costs.

There is a loop road that runs from West Rio Grand Ave. in front of the terminal building, but there is no designated waiting area (cell phone lot) or passenger drop-off - pick-up zone in front of the building. In addition there is no designated taxi, limo, or bus stand in front of the terminal building.

Ski resorts use busses to transport air passengers from GUC to the resorts. The bus staging area is an open lot, unpaved with no shelters, north of the terminal building. Demand for auto parking is reduced for two reasons: a) the majority of air passengers using GUC originate from other points (vs. local residents driving to and parking at the airport); and b) the ski resorts use busses to transport passengers in the winter, thereby reducing rental car and parking demand.

#### **1.4.6 Terminal Aircraft Parking Apron**

The terminal apron is approximately 680' wide x 280' deep (190,400 s.f. / 21,155 s.y. / 4.37 acres – Figure 1-15). There are two loading bridges, as well as doors from the terminal for ground level apron access. Each loading bridge can accommodate a B-757-200, as well as smaller aircraft (Figures 1-16, 1-17, & 1-18). The apron pavement was reconstructed in 2011 to replace concrete that has been deteriorated by alkali silica reactivity (ASR).

FIGURE 1-15 GUC TERMINAL BUILDING, PARKING LOT AND APRON



Source: Google Earth, 2014

FAA Advisory Circular 150/5300-13A, *Airport Design*, Chapter 4, Taxiway & Taxilane Design, recommends eliminating direct taxiway access between parking aprons and runways (illustrated on right). “Indirect Access - do not design taxiways to lead directly from an apron to a runway without requiring a turn. Such configurations can lead to confusion when a pilot typically expects to encounter a parallel taxiway but instead accidentally enters a runway.”

There are three direct taxiways between parking aprons and Runway 6-24. The options for meeting FAA design standards at GUC will be examined later in this Master Plan.

FIGURE 1-16 GUC TERMINAL BUILDING AND APRON - AIRSIDE



Source: Jviation, 2014

FIGURE 1-17 GUC TERMINAL BUILDING AND APRON - AIRSIDE

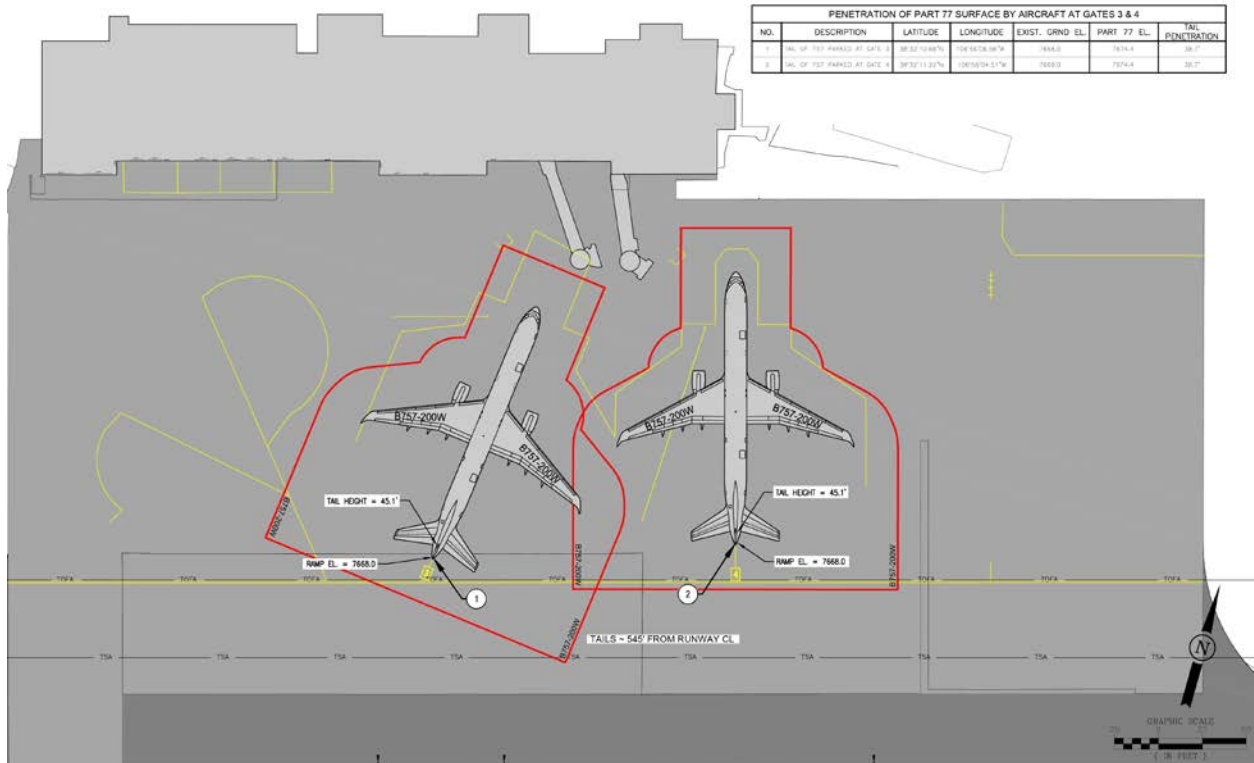


Source: Jviation, 2014

When the B-757-200, which has a tail height of 45.1', is parked at the terminal gate, its tail penetrates the FAR Part 77 transitional surface by approximately 38.7' (see figure below).

In order to avoid penetrating the transitional surface, the aircraft parking position and the terminal building would need to be moved to the northwest by approximately 271'. The Airbus A-319 operated by American and United has a tail height of 39.7' and a shorter fuselage length. When parked at the gate the A-319 tail penetrates the transitional surface by approximately 27'.

FIGURE 1-18 GUC TERMINAL AIR CARRIER PARKING



Source: Jviation, 2014

The Engineer’s Report prepared for the apron reconstruction dated March 11, 2011, provides the details of the reconstruction project. As noted in the report:

“Currently the apron pavement slopes away from the terminal building toward Taxiway “A” at approximately 1.3%. According to *AC 150/530-13*, the maximum grade on a Category C apron cannot exceed 1%. Options for correcting this non-standard gradient include reconstructing the terminal building and lowering the foundation floor, or raising Taxiway “A” approximately 10.5 inches. Both options are cost prohibitive because they must be completed at the same time as the apron rehabilitation, i.e. it is not possible to raise Taxiway “A”, and then two years later, when funding becomes available, rehab the apron concrete to match the elevation of the raised taxiway. Additionally, the airport has not experienced any problems related to the grades being 0.3% out of tolerance. For these reasons, a permanent design modification to standard will be pursued for the non-standard grades which will be present on the apron concrete pavement.”

The Engineer’s Report also noted that the concrete corings determined that the apron pavement was 11 to 12 inches deep, and the reconstruction project would maintain that pavement depth to accommodate the current fleet mix (Table 1-6). The old pavement was replaced with the same 12 inch deep of concrete that was there previously.



A new layer of bond breaker material separating the existing P-305 lean concrete base from the new P-501 concrete surface was installed. Per the FAARFIELD design software, the 12 inches of concrete that were installed are more than adequate to accommodate the current pavement loads (shown below).

TABLE 1-6 GUC 2008-2010 GUC AIRPORT FLEET MIX

2008 Airport Fleet Mix Information		
Name	Gross Wt. (lbs.)	Annual Departures
757-200	256,000	108
Airbus 319	141,978	31
Airbus 320	150,796	20
CRJ 700	72,500	180
Dash 8	36,300	581
2009 Airport Fleet Mix Information		
Name	Gross Wt. (lbs.)	Annual Departures
757-200	256,000	138
Airbus 319	141,978	---
Airbus 320	150,796	4
CRJ 700	72,500	---
Dash 8	36,300	676
2010 Airport Fleet Mix Information (through August)		
Name	Gross Wt. (lbs.)	Annual Departures
757-200	256,000	107
Airbus 319	141,978	25
Airbus 320	150,796	---
CRJ 700	72,500	268
Dash 8	36,300	271

Source: Jviation, Engineer's Report, March 11, 2011

### 1.4.7 General Aviation Facilities

General aviation aircraft are accommodated south of the terminal building, in the vicinity of the Runway 6 end (Figures 1-19 & 1-20). The GA facilities include a terminal building, paved ramp for transient and based aircraft, both T-hangars and conventional ('box' hangars), and vehicle parking.

The aircraft parking apron is approximately 1,175' x 230' in size (270,250 s.f.), and is used exclusively for transient aircraft. There are 39 marked aircraft tiedown positions, many of which are nested. All of the current based aircraft are in hangars. The prior FBO, Gunnison Valley Aviation, reported a need for more tiedowns. GVA was replaced in 2015 by AvFlight.

The peak period for transient aircraft parking at GUC is typically July 4<sup>th</sup> weekend, followed by winter season. Many of the transient aircraft owners are also second home owners in the area. The

transient parking apron is often over capacity during July 4<sup>th</sup> weekend and overflow aircraft are parked on the terminal ramp.

Transient parking demand rarely exceeds capacity in the winter months. Although mostly bituminous pavement, there is also a portland cement hardstand for transient turbine aircraft on the apron, and a second portland cement hardstand in front of a hangar. Based on the latest edition of FAA advisory circular 150/5300-13A, *Airport Design*, FAA recommends eliminating (blocking) direct taxiway access between parking aprons and runways. The options for meeting FAA design standards at GUC will be examined later in this Master Plan.

FIGURE 1-19 GUC AIRPORT – GENERAL AVIATION HANGARS & APRON



Source: Google Earth

FIGURE 1-20 TRANSIENT GA AIRCRAFT



Source: Jviation

The general aviation (GA) area includes the Fixed Base Operator (FBO) (Gunnison Valley Aviation, which was the long time FBO was purchased by another FBO, Avflight, in late 2015). The FBO facilities include terminal building, paved apron for based and transient aircraft, and hangars for based and transient aircraft. The FBO terminal is a two story wooden structure that contains FBO offices, public lounge area, flight planning room, customer service counters, conference room, restrooms, etc. (Figure 1-21 & 1-22) The building footprint is approximately 54' x 47' (2,538 s.f.) There is also a vehicle parking lot adjacent to the terminal building with 45 parking spots.

FIGURE 1-21 GA TERMINAL BUILDING



Source: Gunnison Valley Aviation

FIGURE 1-22 GA TERMINAL BUILDING



Source: Gunnison Valley Aviation

There are two rows of T-hangars with a total of 10 units (Figure 1-23), all of which are reported to be occupied. Gunnison Valley Aviation reported demand for additional T-hangars. There are 12 conventional (box) hangars of varying sizes as well as one Quonset building (Figures 1-23, 1-24, 1-25, & 1-26). The conventional hangars are privately owned. Some of the conventional (box) hangars are used for transient (overnight) aircraft parking. A number of the hangars have Portland cement aprons immediately in front of the hangar doors. The hangars have electricity, water, and sewer hookups.

FIGURE 1-23 T-HANGARS



Source: Jviation

FIGURE 1-24 CONVENTIONAL (BOX) HANGARS



Source: Jviation

FIGURE 1-25 CONVENTIONAL (BOX) HANGARS



Source: Jviation

FIGURE1-26 CONVENTIONAL (BOX) HANGARS AND TRANSIENT GA APRON



Source: Jviation

Some of the conventional hangars are relatively new and in good to excellent condition, and have utility hookups. Gunnison Valley Aviation, the former FBO, noted that three hangars should be replaced ‘over the next 20 years with one or two larger hangars’. The former FBO, GVA, said there were 14 airplanes based in the hangars, and none on tiedowns.

There is a significant amount of storage capacity in the conventional hangars (see **Table 1-7** below). However, as privately owned facilities, owners determine the actual amount of capacity that is used, and some hangars accommodate less than their maximum capacity of stored aircraft. In addition, new tenants often want to construct their own new hangar, regardless of available capacity in existing hangars.

As result, some of the excess hangar storage capacity may not be available to accommodate future demand. In addition, the number of aircraft in each hangar varies over time. The overall number of based aircraft at GUC fluctuates throughout the course of a given year. Some hangars are also used for transient overnight transient parking.

TABLE 1-7 GUC CONVENTIONAL HANGARS

Gunnison Crested Butte Airport

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<b>Conventional (Box) Hangars</b>		
<b><u>No.</u></b>	<b><u>Dimensions</u></b>	<b><u>Area (s.f.)</u></b>
<b>1</b>	77' x 61'	4,697
<b>2</b>	80' x 75'	6,000
<b>3</b>	70' x 61'	4,270
<b>4</b>	69' x 60'	4,140
<b>5</b>	39' x 57'	2,223
<b>6</b>	48' x 80'	3,840
<b>7</b>	112' x 124'	15,128
<b>8</b>	68' x 77'	5,236
<b>9</b>	62' x 79'	4,898
<b>10</b>	59' x 78'	4,602
<b>11</b>	98' x 105'	10,290
<b>12</b>	78' x 80'	6,240
<b>Total</b>		<b>71,564</b>
<p><u>Notes:</u>                      Hangar numbers arbitrary (not assigned by airport).                      Hangar dimensions represent building footprint.                      Hangar dimensions measured from aerial photo.</p>		

Source: GUC Airport Management Records

### 1.4.8 Runways and Taxiways

GUC has two runways: 6-24, 9,400' x 150' (paved), and 17-35, 3,000' x 150' (gravel/turf). Runway 6-24 has a full parallel taxiway (9,400' x 75'), and eight exit (stub) taxiways (ranging between 100' to 130' wide). Runway 17-35 is unlit, available for visual daytime operations only, and is closed during the winter months. There are no taxiways serving Runway 17-35.

The Colorado Airport Directory, 2013-2014 provides an overview of GUC's airside facilities, including runways and taxiways (see **Table 1-8**). See Appendix 1-4 for detailed data of the airport's runways compiled by FAA.

The Runway 6-24 and Runway 17-35 design codes (RDC) are different. Both runways, as well as Taxiway A, meet current FAA design criteria for the design code of aircraft, with the exception of non-standard grading in the Runway 6-24 safety area (see Appendix 1-5 for a discussion and resolution). The safety area grading issues will be addressed as part of the upcoming runway rehabilitation project.

Primarily due to American's 757-200 operations, GUC Airport falls within FAA's Airport Reference Code (ARC) C-IV. The Airbus A-319 operated by American and United is classified as C-III. Table 1-7 lists the FAA design criteria for GUC, and the airport meets current FAA design standards. There is a non-standard grading issue in the Runway 6-24 safety area that will be addressed.

Runway 6-24 has a full parallel taxiway, 'A'. Taxiway A centerline is 400' from the Runway 6-24 centerline, which meets ARC C-IV standards. Taxiway A is 75' wide, which meets Taxiway Design Group 5 width standards. The runway centerline to aircraft parking separation is 530', which exceeds FAA ARC C-IV standards. There are eight exit taxiways (all right angle) off of Runway 6-24, which minimize runway occupancy time and enhances operational capacity.



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TABLE 1-8 GUC AIRPORT FACILITY INFORMATION

Latitude		Longitude		Elevation			
38-32.036667N		106-55.981667W		7,680' MSL			
NAVIGATION							
VOR		GPS		ILS			
114.9 (Blue Mesa)		Yes		Yes			
RUNWAY DATA							
Runway	Length	Width	Surface	Lights	VGSI	App Lgts	
6/24	9,400'	150'	ASPH	HIRL	P4L/P4L	MALSF/REIL	
17/35	3,000'	150'	TURF/GRVL	None	None	None	
COMMUNICATIONS							
CATF/UNICOM	Lights	Weather	ATIS	APP/DEP	Tower	Ground	RCO
122.7	122.7	AWOS 135.075 970-641-3240	...	125.35	...	...	...

Source: Colorado Division of Aeronautics

TABLE 1-9 GUC FAA RUNWAY DESIGN MATRIX

<b>Design Criteria</b>	<b>GUC C-IV Visibility Minimums Not Lower Than 1-Mile</b>
Runway Width	150 ft
Shoulder Width	25 ft
Blast Pad Width	200 ft
Blast Pad Length	200 ft
Crosswind Component	20 knots
RSA Length Beyond Runway End	1,000 ft
RSA Width	500 ft
ROFA Length Beyond Runway End	1,000 ft
ROFA Width	800 ft
ROFZ Length	200 ft
ROFZ Width	400 ft
POFZ Length	N/A
POFZ Width	N/A
Approach RPZ	
Length	1,700 ft
Inner Width	500 ft
Outer Width	1,010 ft
Departure RPZ	
Length	1,700 ft
Inner Width	500 ft
Outer Width	1,010 ft
Runway Centerline Separation to:	
Holding Position	326.8 ft*
Parallel Taxiway/Taxilane Centerline	400 ft
Aircraft Parking Area	500 ft

Source: FAA AC 150/5300-13A, Airport Design, Chapter 3

#### **1.4.8.1 Runway 6-24 Length**

The 2006 Gunnison Airport Master Plan presented a detailed runway length analysis of 6-24, and concluded: “Based on the runway length data presented, it was determined that the existing runway length of 9,400 feet is adequate to accommodate the projected aircraft operational requirements at the Airport.” Discussions with airport personnel indicate that conclusion is still valid in 2015.

Some air carrier aircraft take weight penalties (i.e. reduce weight in the form of less useful load – fuel, passengers, and/or baggage) when departing from Runway 6-24, particularly when the runway is contaminated (i.e. standing water, snow, slush), and/or when the ambient temperatures are high. The weight penalties are taken due to the airport’s elevation (7,680’ above mean sea level) and the need for obstacle clearance procedures during climb-out. All aircraft operators, particularly the airlines, take aircraft performance and ambient conditions into account when determining their appropriate takeoff weight.

Even though some aircraft take weight penalties when departing from GUC, given the location of Runway 6-24 and the airport property boundary, the sensitive environmental resources on and adjacent to the runway, the land uses adjacent to the airport, as well as other factors such as the topography, the existing instrument approach procedures, etc., any extension or modification of Runway 6-24 is not considered to be feasible or practical. Therefore, no extension or modification of Runway 6-24 is considered in this study.

The FAA allows airports to designate clearways off each runway end, which are “defined rectangular areas beyond the end of a runway, cleared or suitable for use in lieu of runway to satisfy takeoff distance requirements.” When departing on runways with designated clearways, some corporate, air taxi, and air carrier operators will use clearways in their takeoff weight calculations, while others will not. The FAA has stringent clearance criteria for designating clearways, as discussed in more detail below. In general, GUC may designate a clearway for departures on Runway 6, but it does not appear that departures on Runway 24 would qualify for a clearway.

#### **1.4.8.2 Runway Protection Zone (RPZ)**

The FAA defines an RPZ as an “area at ground level, prior to the threshold or beyond the runway end, to enhance the safety and protection of people and property on the ground. Guidelines were developed recommending that clear zones be kept free of structures and any development that would create a place of public assembly.” However, there is a popular and growing recreational activity center – the Gunnison Whitewater Park, which also hosts the Gunnison River Festival each spring<sup>5</sup> - that is situated on the Gunnison River inside the Central Portion of the Runway 6 RPZ (Figure 1-

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<sup>5</sup> <http://ugrwc.org/gunnison-whitewater-park/>, <http://www.gunnisonriverfestival.com/>

27). Since 2003, the Park has been attracting a growing number of visitors/customers. The FAA approved the Gunnison Whitewater Park in 2003 with certain stipulations, including that it would accommodate a maximum of 50 people. During the summer, attendance at the Water Park exceeds 50 people.

FIGURE 1-27 GUNNISON AIRPORT - RUNWAY 6 PROTECTION ZONE (RPZ)



Source: Google Earth, 2015

FAA Advisory Circular 150/5300-13A, *Airport Design*, published 9/28/2012, notes:

“The RPZ function is to enhance the protection of people and property on the ground. Where practical, airport owners should own the property under the runway approach and departure areas to at least the limits of the RPZ. It is desirable to clear the entire RPZ of all above-ground objects. Where this is impractical, airport owners, as a minimum, should maintain the RPZ clear of all facilities supporting incompatible activities. See FAA Memorandum, Interim Guidance on Land Uses Within a Runway Protection Zone, dated 9/27/2012, for guidance on incompatible activities.”

Incompatible activities in an RPZ, particularly within the Central Portion of the RPZ where the Whitewater Park is situated, include land uses that attract a public assembly of people.

The Airport Cooperative Research Program (ACRP) sponsored a study: “Analysis of Aircraft Overruns and Undershoots for Runway Safety Areas”, ACRP Report 3, 2008. The report noted: “From 1995 to 2004, 71 percent of the world’s jet aircraft accidents occurred during landing and takeoff and accounted for 41 percent of all onboard and third party fatalities (Boeing, 2005).

Landing overruns, landing undershoots, takeoff overruns, and crashes after takeoff are the major types of accidents that occur during these phases of flight. Records show that while most accidents occur within the boundaries of the runway strip, most fatalities occur near but off the airport area.” The area referred to in the ACRP report lies mostly within the runway protection zones.

FAA’s Memorandum “Interim Guidance on Land Uses Within a Runway Protection Zone”, 09/27/2012, notes that “Regional and ADO (Airports District Office) staff must consult with the National Airport Planning and Environmental Division, APP-400 (who will coordinate with the Airport Engineering Division, AAS-I OO), when Recreational land use (examples include, but are not limited to: golf courses, sports fields, amusement parks, other places of public assembly, etc.)” are proposed to be sited within an RPZ. The FAA’s Memo also notes:

“Prior to contacting APP-400, the Regional Office and ADO staff must work with the airport sponsor to identify and document the full range of alternatives that could:

1. Avoid introducing the land use issue within the RPZ
2. Minimize the impact of the land use in the RPZ (i.e., routing a new roadway through the controlled activity area, move farther away from the runway end, etc.)
3. Mitigate risk to people and property on the ground (i.e., tunneling, depressing *and / or* protecting a roadway through the RPZ, implement operational measures to mitigate any risks, etc.)”

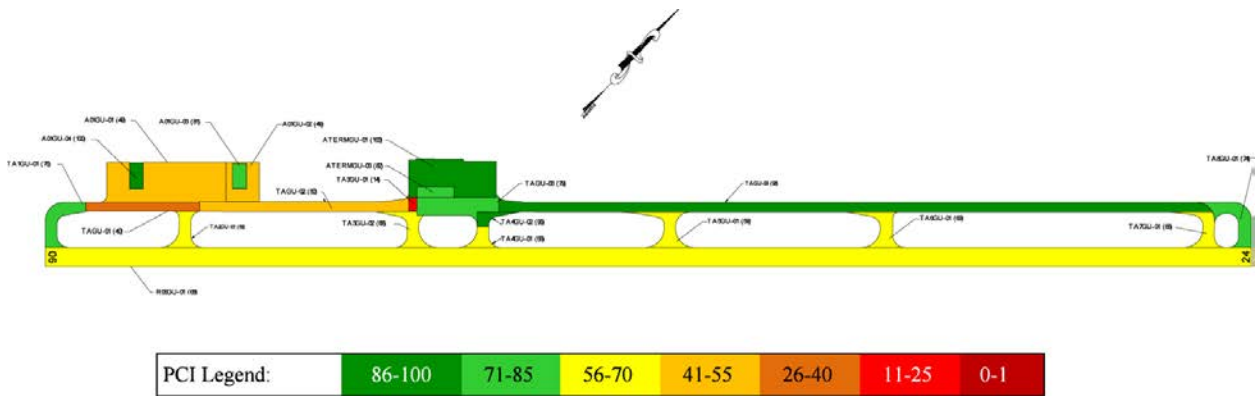
The FAA’s primary goal in setting policies to limit certain types of land uses in runway protection zones, including preventing congregations of people, is to promote safety. Aircraft departing and arriving on runways are at relatively low altitude while they are operating within the area defined by the RPZ, and an emergency on the airplane may result in an off-airport landing or an accident within the RPZ, which poses a threat to people within the RPZ. As a result, FAA recommends that airport sponsors control land uses within each RPZ, and limit or eliminate non-compatible uses whenever feasible.

#### **1.4.8.3 Runway Pavement Condition**

The Colorado Division of Aeronautics prepared a pavement condition study for airports throughout the state, including Gunnison in 2013 (Figures 1-28 & 1-34). The pavement condition index (PCI) study determined portions of Runway 6-24 and Taxiway A are in need of rehabilitation.

The runway was previously constructed with Trinidad Lake Asphalt, which has been deteriorating rapidly, unlike other types of asphalt on the airfield. The water table under the runway is very close to the surface, and water is coming through the surface of the runway and causing cracking and deterioration. In the winter the water causes ice mounds on the runway that must be cleared by operations personnel (see Figures 1-29, 1-30, 1-31, 1-32, 1-33). The Airport has schedule the reconstruction of Runway 6-24 and portions of Taxiway A in 2017 and 2018. Portions of the GA apron also need rehabilitation within the next 10 years.

FIGURE 1-28 AIRFIELD PAVEMENT CONDITION



Source: CDOT, 2013 System Update, Pavement Evaluation & Management

Investigation of Runway 6-24 by Jviation in the fall of 2014 indicated the following distress as shown in **Table 1-10**:

TABLE 1-10 RUNWAY 6/24 DISTRESS (2012)

Section	Inspection Date	Distress (Severity)	Quantity
R06GU-01	9/25/2012	Alligator Cracking (MEDIUM)	1.091 SF
R06GU-01	9/25/2012	Longitudinal Transverse Cracking (HIGH)	156 SF
R06GU-01	9/25/2012	Longitudinal Transverse Cracking (LOW)	33.987 SF
R06GU-01	9/25/2012	Longitudinal Transverse Cracking (MEDIUM)	73.818 SF

Source: Jviation

FIGURE 1-29 RUNWAY 6-24 PAVEMENT BORING AND WATER



Source: Jviation

FIGURE 1-30 RUNWAY 6-24 PAVEMENT CRACKING & SEALING



Source: Jviation

FIGURE 1-31 RUNWAY 6-24 PAVEMENT CRACKING



Source: Jviation

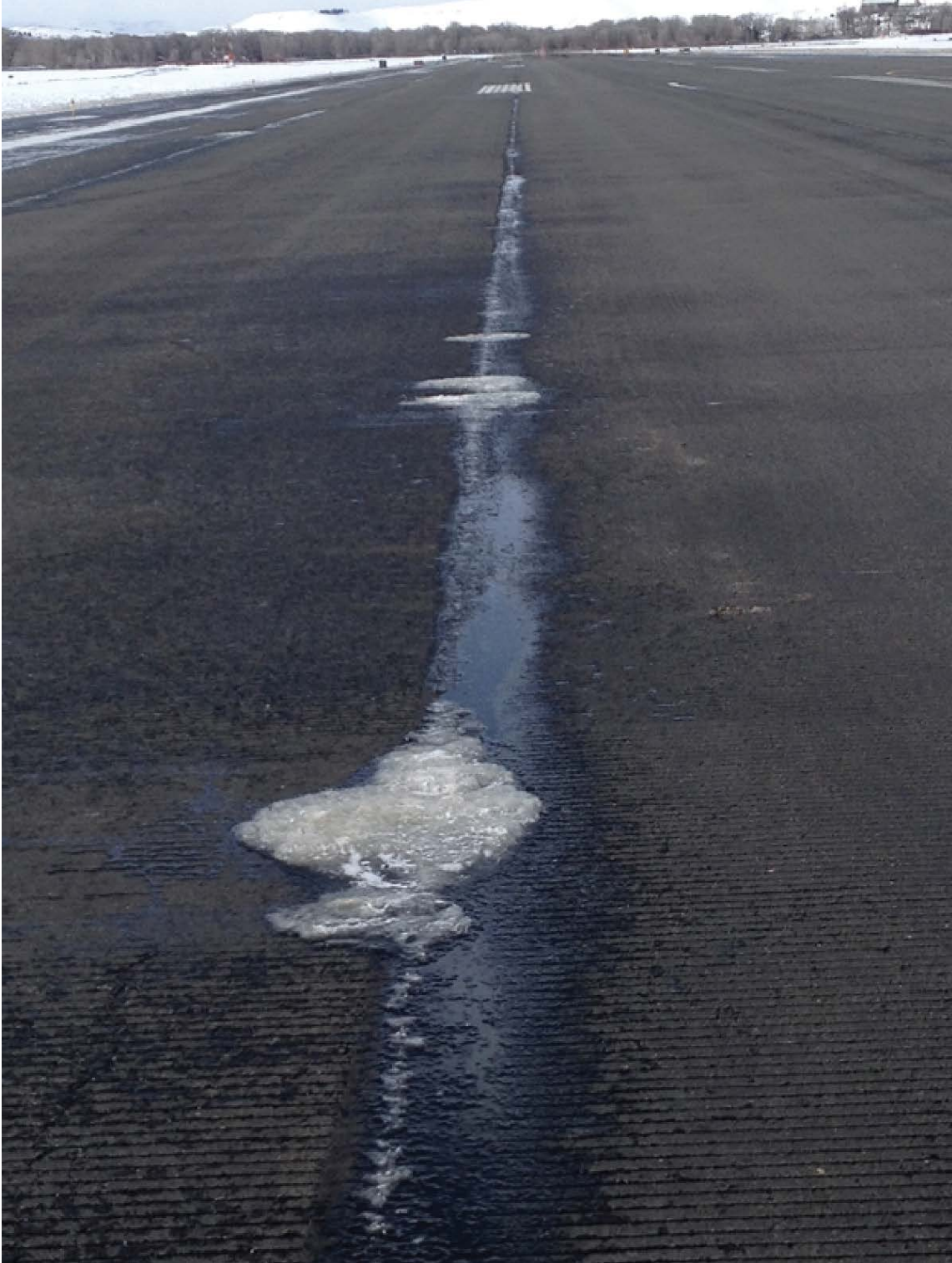
FIGURE 1-32 ICE MOUND ON RUNWAY 6-24



Source: Gunnison Airport

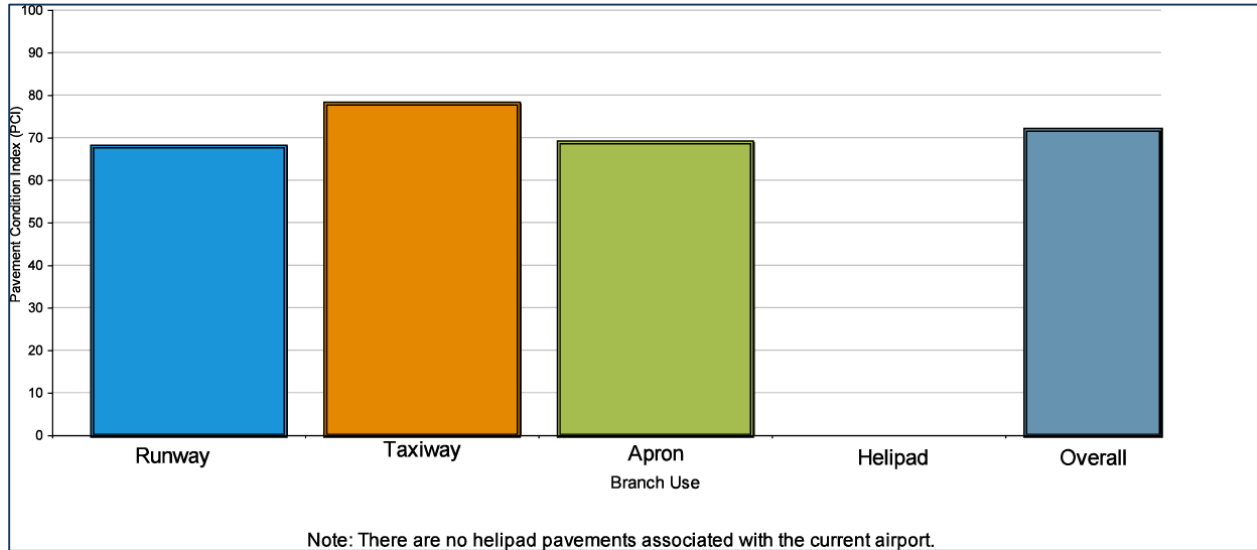


FIGURE 1-33 ICE MOUNDS ON RUNWAY 6-24



Source: Gunnison Airport

FIGURE 1-34 PAVEMENT CONDITION INDEX (PCI)



Source: CDOT, 2013 System Update, Pavement Evaluation & Management

As part of a pavement design project, Jviation compiled data from airline records as well as from flight plans filed with the FAA in CY 2014 (source: GCR).

This activity data was based on records maintained by different sources (airlines, the FAA, flight tracking companies, etc.), and was not estimated. However, the activity data shown below (Table 1-11) represents only a portion of total activity at GUC.

TABLE 1-11 WEIGHT AND FREQUENCY OF AIR CARRIER ACTIVITY

<b>Commercial Flights</b>		
<b>Aircraft Type</b>	<b>Maximum Aircraft Takeoff Weight (lbs)</b>	<b>Annual Departures (2014)<sup>1</sup></b>
Airbus 319	141,978	131
CRJ 700	72,500	177
ERJ-145	42,328	339
<b>Total:</b>		<b>647</b>
<sup>1</sup> Data extracted from Diio Mi report provided by Mead & Hunt		
<b>General Aviation Flights<sup>2</sup></b>		
<b>Aircraft Type</b>	<b>Operations (2013)</b>	<b>Annual Departures (2013)</b>
Air Taxi	336	168
GA Local	580	290
GA Iterant	3,472	1,736
<b>Totals:</b>	<b>4,338</b>	<b>2,194</b>
<sup>2</sup> Data extracted from FAA 5010 form		
<b>Aircraft Type</b>	<b>Gross Taxi Weight (lbs)</b>	<b>Annual Departures (2013)</b>
DC8-73	358,000	2
DW-100,000	100,000	21
DW-50,000	50,000	10
DW-25,000	25,000	74
SW-15,000	15,000	98
SW-12,500	12,500	1,989
<b>Total:</b>		<b>2,194</b>

Source: Jviation

#### 1.4.8.4 Airfield Operational Capacity

One key measurement of the runway and taxiway system is the airport’s operational capacity – that is the ability to accommodate a certain number of takeoffs and landings without incurring excessive delay. Runway 6-24 has a full parallel taxiway with eight exit taxiways. That configuration minimizes runway occupancy time (ROT) and maximizes operational capacity. The Colorado Aviation System Plan, 2011, calculated the demand/capacity for each airport in the state. CDOT’s estimate of activity (annual operations) at GUC in relation to its calculated annual capacity (or annual service volume - ASV) concluded that in 2010 aircraft operations represented approximately 4% of total annual airfield capacity. CDOT predicted that by 2030, aircraft operations would represent only 5% of annual capacity (Table 1-12).

TABLE1-12 AIRCRAFT OPERATIONS AND AIRPORT CAPACITY

City	Airport	Total Annual Operations			Demand/Capacity Ratio	
		2010	2030	ASV	2010	2030
Gunnison	Gunnison Crested Butte Regional Airport	7,780	9,570	195.500	4%	5%

Source: CDOT, Aviation System Plan, 2011. Note: ASV = annual service volume

The latest FAA Airport Master Record Form 5010 for GUC, dated January 1, 2014, estimated a total of 4,671 annual operations in CY 2013, which is lower than activity estimated by CDOT in 2010, and well below the operational capacity of the existing runway-taxiway system.

Discussions with airport management and tenants indicate there are no delays to aircraft arrivals and departures at GUC due to the runway – taxiway system. Based on the excess operational capacity available, the existing runway taxiway system can adequately accommodate existing and anticipated demand without the need for additional taxiways or runways. As noted previously, the installation of the wide area multi-lateration (WAM) surveillance system has increased airspace capacity in the vicinity of GUC by increasing the aircraft arrival-departure rates.

The crosswind Runway 17-35, is 3,000’ long, gravel surface. It is daytime and visual only, and is closed from December-March (see Figure 1-35). 17-35 is useful to smaller airplanes when crosswinds on Runway 6-24 exceed their limit, and also to avoid using 6-24 when larger aircraft, particularly airlines and military, are using the main runway.

FIGURE 1-35 RUNWAY 17-35



Source: GUC Airport Management Records

### 1.4.9 Airport Support Facilities and Equipment

There are two storage tanks for Jet A fuel with a capacity of 25,000 gallons each (total storage capacity of 50,000 gallons). Jet A serves both the airlines and corporate aircraft at GUC. There is one storage tank for 100LL avgas. The FBO manages the storage tanks, buys the fuel wholesale, serves both the airlines and general aviation aircraft, and operates three mobile fuelers; 2 Jet A trucks and one 100LL avgas truck.

As noted previously, GUC operates under 14 CFR Part 139, which requires certain minimum levels of firefighting and support equipment, personnel, and training (Table 1-13).

TABLE 1-13 14 CFR PART 139 – GUC CERTIFICATION CATEGORIES

State	Airport Name	Associated City	FAA Airport Ident.	Part 139 Classification	ARFF Index
Colorado	Gunnison Crested Butte Regional	Gunnison, CO	GUC	Class I	B

Source: FAA

Class I = Scheduled Large Air Carrier Aircraft (30+ seats), Unscheduled Large Air Carrier Aircraft (30+ seats), Scheduled Small Air Carrier Aircraft (10-30 seats). ARFF Index B = includes aircraft at least 90 feet but less than 126 feet in length (A-319/A-320, B-737-700, ERJ 145/170/190, CRJ-200/700)

The Aircraft Rescue and Firefighting (ARFF) and snow removal equipment (SRE) storage building is two stories, approximately 120' x 80' (9,600 s.f.). The airport administrative offices are on the second floor. In terms of ARFF equipment (Figures 1-36, 1-37 & 1-38), the airport has:

- E-One Titan Force 4X4 (delivered summer 2015)
- E-One Titan Force
- 1990 Oshkosh TI 1500 - 1,500 gals. w/500 lbs. Purple K (see below)

FIGURE 1-36 GUC ARFF TRUCK



Source: GUC Airport Management Records

FIGURE 1-37 ARFF AND SRE STORAGE BUILDING AND AIRPORT ADMIN OFFICES



FIGURE 1-38 ARFF AND SRE STORAGE BUILDING AND AIRPORT ADMIN OFFICES

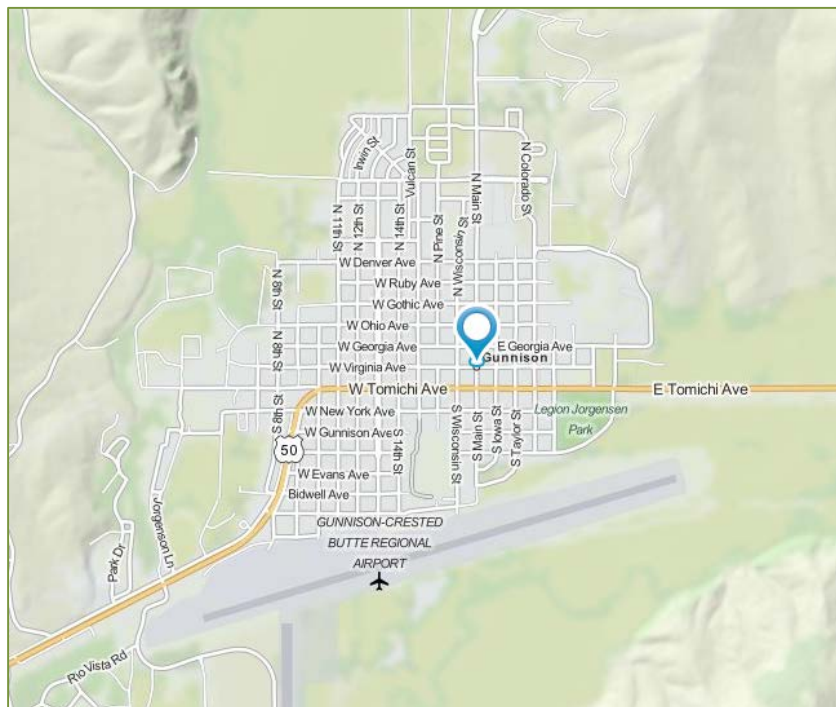


Source: Google Maps

### 1.4.10 Airport Ground Access, Circulation, and Parking

The City of Gunnison is served by a grid roadway system, and connectivity is efficiently served by the network (Figure 1-39). Gunnison Airport is situated on the south side of the City. A variety of north/south streets provide connectivity to and from the airport terminal and related landside facilities. These north/south streets include Boulevard which is a designated Minor Collector, and 11<sup>th</sup> Street which is designated a Major Collector. With the exception of Boulevard, all of the north/south streets for the first two blocks north of Rio Grande are 50 foot wide rights-of-way (ROW), which does not meet the existing City Road Standards.

FIGURE 1-39 CITY OF GUNNISON STREET MAP



Source: Mapquest.com

For the most part, the airport's landside facilities front Rio Grande Avenue, which is an east/west oriented Major Collector Street. However, the Rio Grande's ROW varies between 50 and 70 feet in width. These ROW widths do not meet current municipal Road Standards and these dimensional constraints limit design options for providing safe and efficient transportation infrastructure to serve the community. Additionally, the ROW section of Rio Grande located east of Boulevard, has a substandard reverse curve horizontal alignment which is caused by the limited ROW width. Fortunately, peak traffic volumes on Rio Grande are relatively low and the vehicle traffic flow is functional, but snow storage and pedestrian transportation options are limited by the substandard ROW width.

A recent survey associated with *City of Gunnison Community Analysis* (February 2015) asked if implementing streetscape improvements on designated routes serving the airport was important. Survey results indicated that improvements are supported, but the level of support is not a top priority. Nevertheless, providing appealing streetscape to and from the airport is important but this desire must be weighed in the context of maintaining Industrial district zone uses in this area of the community.

The same survey queried the community's perception for improving transportation facilities, and overwhelmingly citizens' desire improvements to non-motorized transportation facilities. Rio Grande Avenue is a critical corridor identified in the *City of Gunnison Non-Motorized Transportation Plan* (April 2013). The City's desire is to develop a multi-use corridor for transportation, but existing ROW widths are a limiting factor for implementing the improvements.

The City of Gunnison has expressed a desire to improve non-motorized facility functions along Rio Grande Avenue. This includes providing connectivity between Wisconsin Street and Teller Street, which are contiguous portions of the community but are not well served by an efficient non-motorized link. A trail easement on the northern airport fence line is also desired by the City. The *City of Gunnison Non-Motorized Transportation Plan*, adopted by Council in 2013, also contemplates access to public lands that surround the community – this includes the development of a non-motorized trail connecting land uses on the east fringe of the city to Gold Basin Road (County Road 38). This proposed non-motorized connection is identified on the Land Use Drawing of the *Gunnison-Crested Butte Regional Airport Master Plan Update* (June 2006).

The City staff strongly supports the construction of this non-motorized trail because it is essential for establishing contiguity and connectivity to the city's Outer Loop non-motorized transportation system – it is requested that the 2015 Airport Master Plan update maintain this established non-motorized link as a future land use function. The non-motorized transportation connections conform to the Gunnison County Strategic Plan (2013) statement to *build consensus-driven trail and recreation opportunity development*, as well as the Gunnison County Economic Indicator Report (2014) which states that *Connectivity of municipalities, businesses, non-profits, residents and visitors is critical for economic prosperity*. Gunnison Airport is governed by federal regulations, including 14 CFR Part 139, Airport Certification, as well as Transportation Security Administration (TSA) regulations. All future non-motorized trail systems in the vicinity of Gunnison Airport must be fully consistent with all pertinent federal regulations and guidelines.



### 1.4.11 Utilities

Utilities include water, sewer, electric, gas, stormwater, phone/cable. The utility information was provided in the 2006 Airport Master Plan prepared by The Barnard Dunkleberg Company.

**Domestic Water System.** City Well 5 is located on the ROW of Railroad Avenue, between 9<sup>th</sup> and 10<sup>th</sup> Street. This well location is relatively significant because it is the southern-most well in the city system and it maintains adequate system pressure in this part of the community. However, the 38,400 square foot Terminal, which is the largest facility in this area of the city, generates a fire flow demand of 5,250 gallons per minute with a four-hour duration threshold. The combined pumping capacity of all city wells is approximately 3,400 GPM and when combining the city's water storage capacity, the existing system is likely not capable of meeting the fire flow demand generated by the terminal facility.

Approximately two years ago Gunnison County installed an automatic sprinkler on about one-half of the terminal facility and county staff indicated that the remainder of the facility will be equipped with a sprinkler system in the future. This is a critical life-safety issue that should be noted as a priority in the Airport Inventory Plan.

**Wastewater.** An existing 24 inch wastewater main bisects the airport parking lot and this alignment is critical to maintain a fall for gravity flow. As noted in the draft Airport Inventory Report a 15 inch wastewater main traverses across the airport apron - the draft inventory report notes that the city plans to relocate this wastewater main, but that statement is not correct. The airport terminal building is served by the 15 inch line and cannot be removed until the terminal has a new service line connection to the 24 inch line located in the airport parking lot. There are no limitations in the city's wastewater collection and the wastewater treatment facility that would preclude future expansions of the airport facilities.

During the planning phase of the Gunnison Rising annexation, the extension of wastewater services was a detailed point of discussion. The most feasible alignment would include the construction of a wastewater main through the northeast corner of the airport property. This alignment allows for a gravity system and it would preclude the construction of a relatively large lift-station. The City desires this proposed wastewater main be included in the airport master plan update.

**Electrical Services.** The City's electrical service territory includes the entirety of the airport and present electrical rates are some of the lowest in the state of Colorado. The electrical system includes two substations and a grid distribution system. This combination of facilities provides service

redundancy when power outages occur in isolated areas. The city's electrical service infrastructure and facilities are adequate to serve existing and future expansion of airport facilities.

**Stormwater.** The city's stormwater collection system has two primary outfall points that are on the airport property. The eastern outfall point is an existing pond located in the eastern quadrant of the airport property. The second outfall point is on the west end of the airport where it is conveyed by an underground pipe that crosses the airport (north to south) and discharges into Mergleman Pond – the stormwater pipe crossing the western airport facilities is undersized and cannot convey existing or future design flows. It is suggested that the Airport Inventory Report note this inadequate design and the need to install an appropriately sized pipe in conjunction with contemplated improvements to the runway.

**Telephone Services.** In addition to the summary of analog phone services provided in the Airport Inventory Report, the airport terminal is connected to the City of Gunnison fiber network. The fiber network distribution, which links to county, city and WSCU facilities, is an overhead system. Connection to the Airport terminal building was accomplished in 2014. The limiting factor for broadband service at this point in time is related to source system redundancy into the Gunnison Basin. Region 10, which serves as the regional council of governments, has implemented a state funded assessment to address the related broadband service infrastructure needs – several local jurisdictions are involved in the analysis.

#### **1.4.12 Meteorological Data**

There is an automatic weather observation station (AWOS III) situated on Gunnison Airport. It broadcasts weather information to pilots on 135.075 MHz, and also via telephone (970-641-3240). AWOS III stations collect and broadcast the following weather data:

- barometric pressure and altimeter setting (in inches of Mercury)
- wind speed and wind gusts (in knots), wind direction (from which the wind is blowing) and variable wind direction (in degrees of the compass)
- temperature and dew point (in degrees Celsius)
- altimeter setting and density altitude
- visibility and variable visibility (in miles)
- sky condition (in oktas), cloud ceiling height (in feet), and liquid precipitation accumulation (in inches).

Airport personnel, including the airport manager, are trained and certified weather observers under the National Weather Service Supplementary Aviation Weather Reporting System (SAWRS). They can provide weather observations that are required for commercial aircraft operations at GUC if the AWOS is out of service.

The National Weather Service Doppler radar (Nexrad WSR-88D) situated on top of the Grand Mesa just east of Grand Junction, CO, has line-of-sight limitations in the vicinity of Gunnison Airport. As a result, the NWS/FAA cannot prepare terminal aerodrome weather forecasts for Gunnison Airport, which impacts the schedule reliability of aircraft operating under FAR Part 121 (scheduled airlines) and FAR Part 135 (air taxi/charters)<sup>6</sup>. However, it is anticipated that with upgrades to the AWOS and other measures that the NWS/FAA will be able to start issuing terminal weather forecasts for GUC in 2015.

As noted by FEMA in their Flood Insurance Study: “The climate of the Gunnison County includes low precipitation, low humidity, abundant sunshine, a wide daily temperature range, and generally low winds. The surrounding mountains act as a barrier, preventing the northern cold air or eastern storms from penetrating the Upper Gunnison River Valley. Summers are cool in the study area with average high temperatures of 80° F. Temperatures for summer nights usually drop below 50° F. Temperatures have ranged from -47° F in the winter to 96° F in the summer. The mean annual maximum temperature is 52° F, and the mean annual minimum temperature is 17.5° F.”

The 2006 GUC Airport Master Plan, prepared by Barnard Dunkelberg Company, noted that GUC

Airport experiences visual weather (VMC) conditions approximately 97.7% of the time, IFR conditions (IMC) approximately 0.4% of the time, and below instrument approach minimums approximately 2% of the time (Figures 1-40, 1-41, 1-42, & 1-43).

- VMC conditions - ceiling equal to or greater than 1,000 feet above ground level and visibility is equal to or greater than 3 statute miles. These conditions occur at GUC Airport approximately 97.7% of the time annually.
- VFR minimums to Existing Category I ILS minimums - ceiling less than 1,000 feet and/or visibility less than 3 statute miles, but ceiling equal to or greater than 840 feet and visibility equal to or greater than 2¾-statute miles. These conditions occur at GUC Airport approximately 0.4% of the time annually.

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<sup>6</sup> Commercial air carriers are required by federal regulations to make go, no-go decisions for each flight based on weather forecasts. If their destination, such as GUC, does not have terminal aerodrome weather forecasts, they must use the nearest airport's forecast (such as MTJ, TEX, or ASE) plus area forecasts. As a result there are times when an airline will decide not to fly to GUC based on weather forecasts at other airports when GUC weather can, in fact, safely accommodate their arrival.

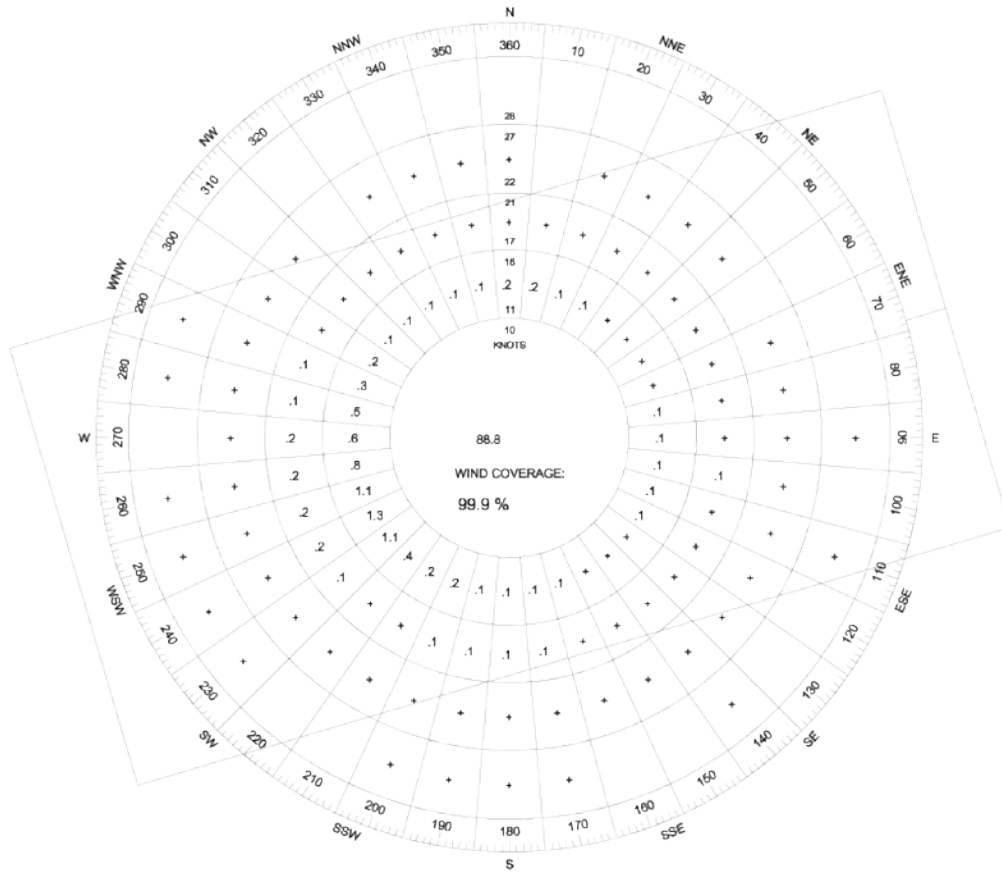
- Below minimums - ceiling less than 840 feet and/or visibility less than  $2\frac{3}{4}$ -statute miles. These conditions occur at GUC Airport approximately 1.9% of the time annually.
- VFR minimums to typical Category I ILS minimums - ceiling less than 1,000 feet and/or visibility less than 3 statute miles, but ceiling equal to or greater than 200 feet and visibility equal to or greater than  $\frac{1}{2}$ -statute mile. These conditions occur at GUC Airport approximately 2.0% of the time annually.

The latest wind data (2006-2014) from the National Atmospheric and Atmospheric Administration (NOAA) shows that wind coverage under VMC, IMC, and all weather conditions on Runway 6-24 exceed FAA's minimum coverage of 95% (i.e., the prevailing wind is oriented within 20 degrees of either side of the runway at least 95% of the time).

As a result, there is no need for a crosswind runway in terms of meeting the FAA's wind coverage requirements on Runway 6-24. Smaller single engine aircraft are more sensitive to crosswinds than turbine-powered aircraft, and some single-engine airplanes will use Runway 17-35 when the winds favor that runway, but as noted from the wind data, that occurs a relatively small percentage of time.

Gunnison-Crested Butte Regional Airport  
Master Plan

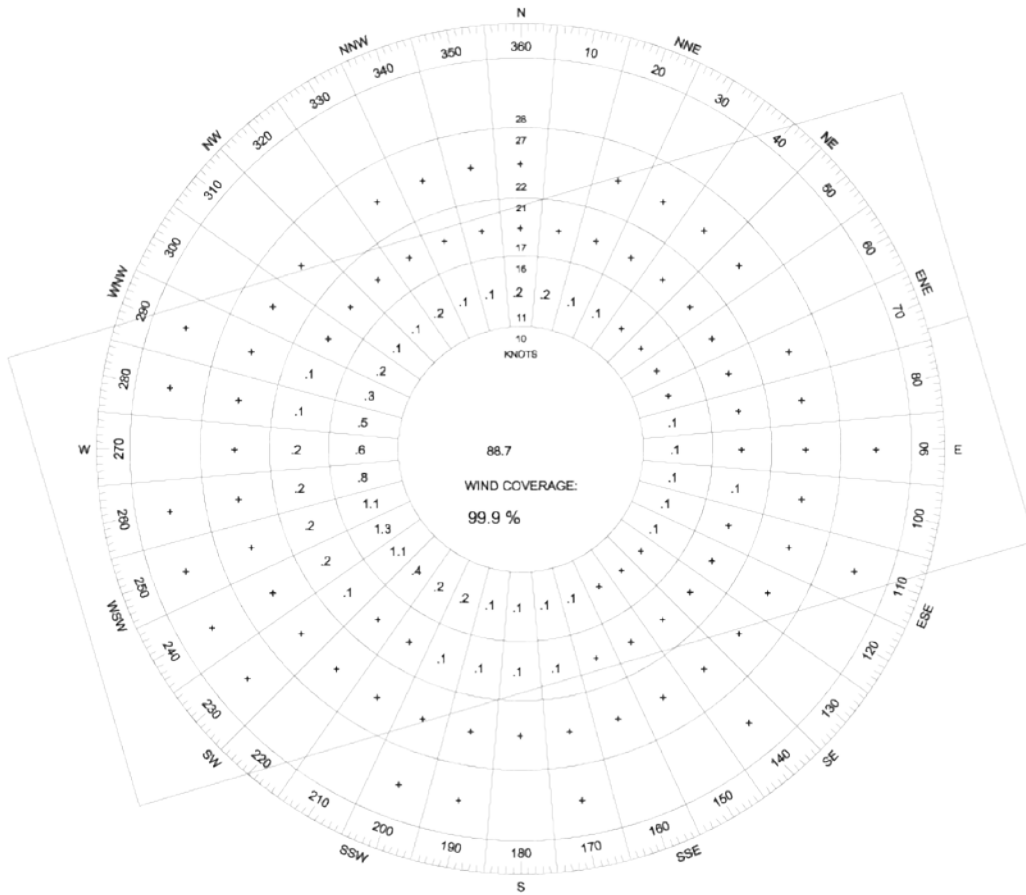
FIGURE 1-40 GUC ALL WEATHER WIND ROSE



Sources: National Oceanic and Atmospheric Administration, National Climatic Data Center, Gunnison-Crested Butte Regional Airport. Period of record 2006-2014; Wind analysis tabulation provided by Jviation, Inc. utilizing the FAA Airport GIS Standard Wind Analysis Tool located at [Airports-GIS.FAA.gov](http://Airports-GIS.FAA.gov)

Gunnison-Crested Butte Regional Airport  
Master Plan

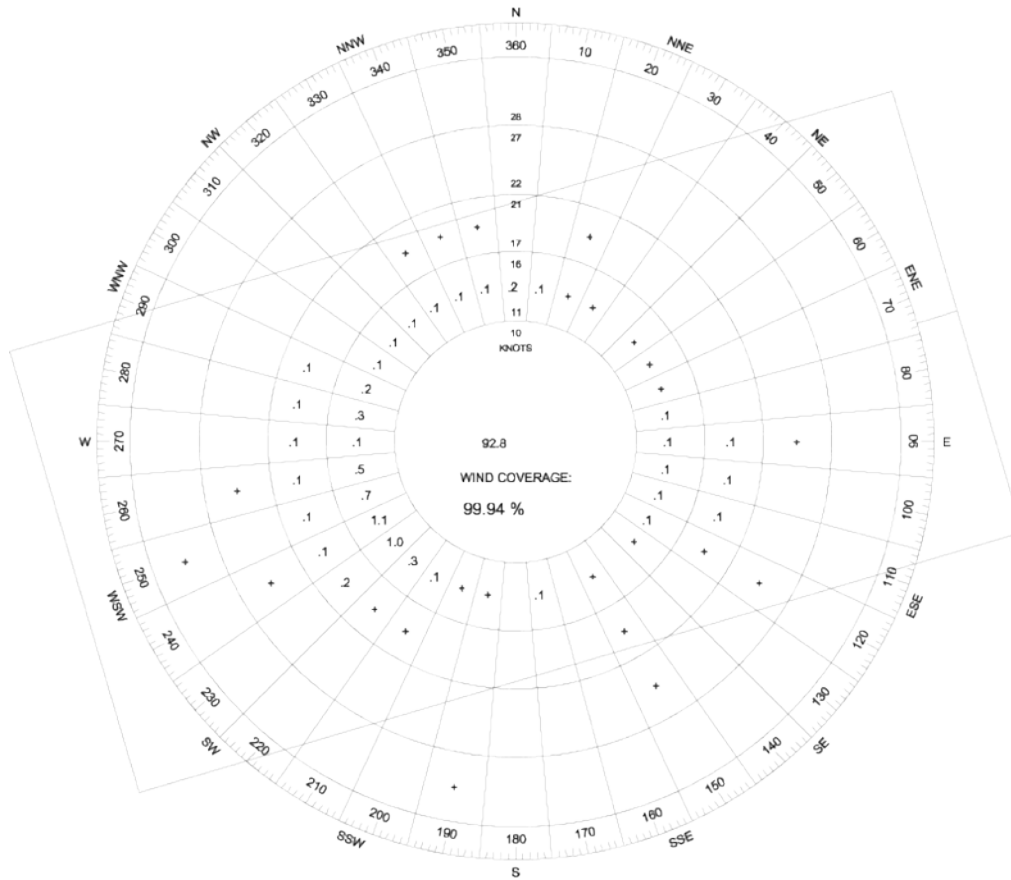
FIGURE 1-41 GUC VFR WIND ROSE



Sources: National Oceanic and Atmospheric Administration, National Climatic Data Center, Gunnison-Crested Butte Regional Airport. Period of record 2006-2014; Wind analysis tabulation provided by Jviation, Inc. utilizing the FAA Airport GIS Standard Wind Analysis Tool located at Airports-GIS.FAA.gov

Gunnison-Crested Butte Regional Airport  
Master Plan

FIGURE 1-42 - GUC IFR WIND ROSE



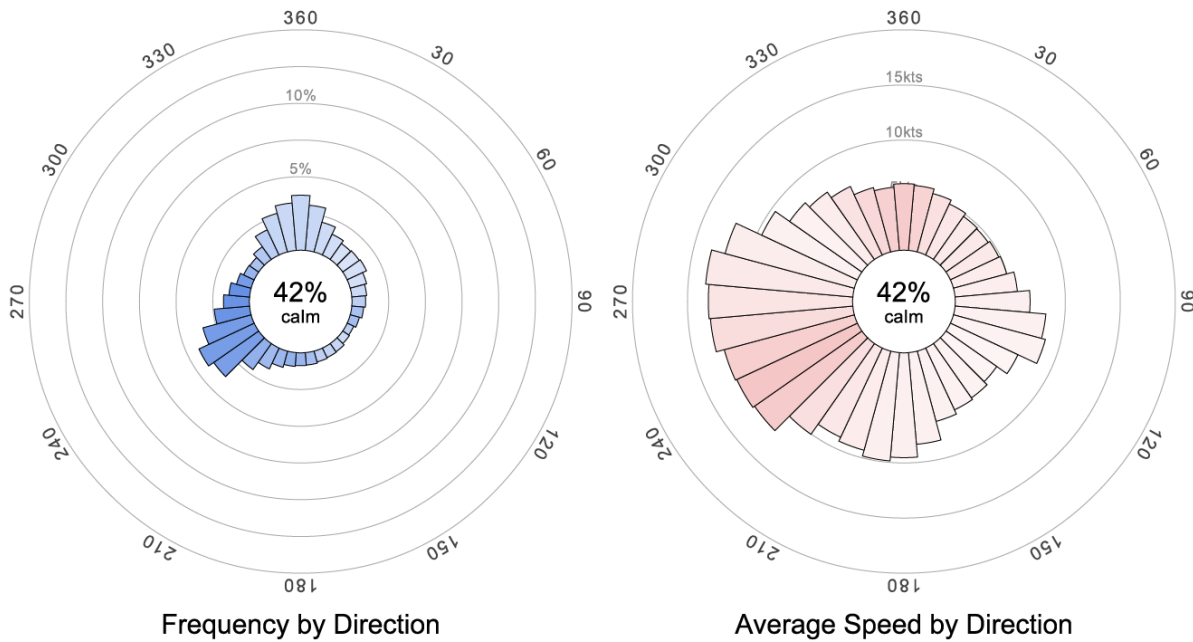
Sources: National Oceanic and Atmospheric Administration, National Climatic Data Center, Gunnison-Crested Butte Regional Airport. Period of record 2006-2014; Wind analysis tabulation provided by Jviation, Inc. utilizing the FAA Airport GIS Standard Wind Analysis Tool located at Airports-GIS.FAA.gov

TABLE 1-14 GUC ALL WEATHER WIND DATA

All Weather	10.5-Knots	13-Knots	16-Knots	20-Knots
<b>Runway 06/24</b>	97.37%	98.59%	99.51%	99.86%
<b>Runway 06</b>	67.42%	67.95%	68.36%	68.46%
<b>Runway 24</b>	67.35%	68.05%	68.56%	68.80%
<b>Runway 17/35</b>	92.01%	95.18%	---	---
<b>Runway 17</b>	58.20%	60.53%	---	---
<b>Runway 35</b>	71.34%	72.20%	---	---
<b>Combined</b>	99.96%	99.98%	99.51%	99.86%

Sources: Wind analysis tabulation provided by Barnard Dunkelberg & Company utilizing the FAA Airport Design Software supplied with AC 150/5300-13.

FIGURE 1-43 GUC PREVELANT WIND DIRECTION



Source: Windhistory.com, data from NOAA

### 1.4.13 Navigation & Communication Aids

There are a number of navigation aids situated on Gunnison Airport. The glide slope antenna (Figure 1-44) and the localizer antenna are part of the ILS to Runway 6, and are owned and maintained by the FAA. In addition, Runway 6 has a medium intensity approach light system with sequenced flashers (MALSF), both Runway 6 and 24 have precision approach path indicator (PAPI) lights, Runway 24 has runway end identified lights (REIL), and Runway 6-24 has high intensity runway lights (HIRL). The ILS navigation aids are owned and maintained by the FAA. The HIRLs are owned and maintained by the airport. The MALSF and the runway lights are turned on by pilots via the Unicom (CTAF) frequency (122.7 MHz). Once turned on they automatically shut off after 15 minutes. They are not available except to emergency response aircraft between 10:30 pm and 6 am local time. The rotating beacon, REILs and PAPIs remain on continuously.

The Automated Weather Observation Station (AWOS-3) is situated adjacent to the glide slope antenna beside Runway 6. The AWOS does not currently allow the National Weather Service to prepare terminal areodrome weather forecasts (TAF) for Gunnison Airport, which impacts airline and Part 135 air taxi operations. However, it is anticipated that the AWOS will be upgraded and the NWS will issue TAFs for GUC in the near future. The FBO operates the Unicom (common traffic advisory frequency - CTAF) on 122.7 MHz. There is no control tower at GUC, so pilots self-announce their position and intentions.



FIGURE 1-44 GLIDE SLOPE ANTENNA AND AWOS-3



Source: Jviation

Aircraft operating under instrument flight rules (IFR) communicate with Denver Center on 125.35 MHz in the vicinity of GUC, and aircraft operating under visual meteorological conditions (VMC) can receive radar vectors and advisories from Denver Center on a workload permitting basis, as well as when in radar coverage (discussed previously).

There is a very high frequency omni-range radio station (Blue Mesa VOR) situated 7 nm south of GUC, that is used by aircraft for enroute and terminal navigation. The Blue Mesa VOR is owned and maintained by the FAA.

## 1.5 AVIATION ACTIVITY – CURRENT AND RECENT TRENDS

GUC Airport accommodates a wide variety of aviation activity, from major and regional airlines to charters/air taxi<sup>7</sup>, general aviation, corporate, cargo, military, and special/unique operations including high altitude flight testing. As is the case at the majority of airports in Colorado, there is no air traffic control tower at GUC. As a result, aircraft activity levels are largely estimated (vs. counted), and the various sources of activity data at GUC (FAA, the airport, the FBO, etc.) estimate different levels of activity. Overall activity estimated by various agencies indicated that aircraft operations and passenger enplanements at GUC have declined since 2000.

Air carrier operations and scheduled passenger enplanements at GUC are counted by the FAA, the U.S. DOT, and also tracked by the airport. In addition, FAA maintains activity records based on flight plans filed and contacts with air traffic control facilities such as Denver Center. However, a large (but undetermined) percentage of total operations at GUC are not counted, including all general aviation and military aircraft that operated under VMC, did not file plans or contact FAA air traffic control.

For example, although no military units are based at GUC a variety of military aircraft fly into GUC on a regular basis for training, particularly Boeing C-17s and Lockheed C-130s that perform touch and go (training) operations. Observations by airport management have noted that military aircraft operations far exceed FAA's estimates. GUC is also used for high altitude and cold weather testing by a variety of military and civilian aircraft. The FAA publishes activity data and forecasts for each airport within its National Plan of Integrated Airport Systems (NPIAS), including Gunnison. See Appendix 1-7 for excerpts from the Terminal Area Forecast (TAF) Summary Report, FY 2013-2040, explaining their methodology.

For non-towered airports such as GUC, the FAA relies on the Airport Master Record, Form 5010, for current activity estimates. The FAA estimated that there are currently 25 based aircraft at GUC (Table 1-15). However, the FBO Gunnison Valley Aviation (GVA) noted that as of late 2014 there were a total of 14 based aircraft at GUC. Part of the discrepancy is likely due to the fact that the number of based aircraft regularly fluctuates throughout the course of the year, with more based aircraft in the summer than winter.

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<sup>7</sup> Including Budweiser's 'Whatever USA' event held in Gunnison in September, 2014. That event involved numerous charter aircraft, including a B-767, B-757, Saab 2000, three CRJ-200s, and a B-737-200.

Gunnison-Crested Butte Regional Airport  
Master Plan

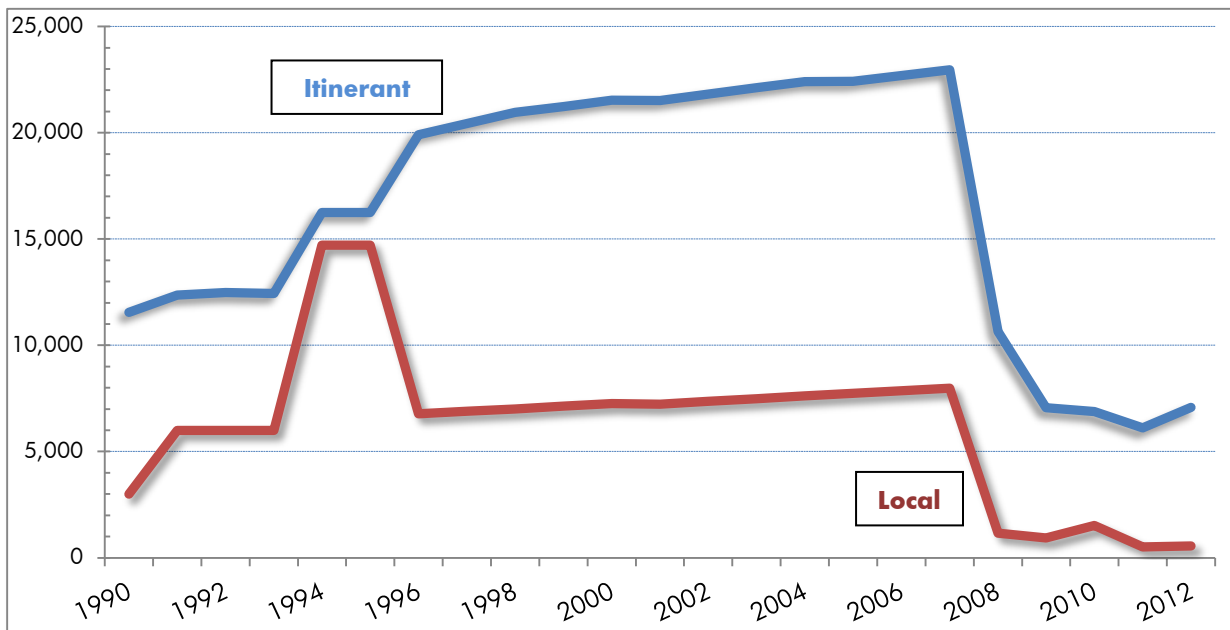
TABLE 1-15

<b>Based Aircraft</b>	
Single Engine (SE):	21
Multi Engine (ME):	4
Jet (J):	0
<b>TOTAL FIXED WING:</b>	<b>25</b>
Helicopters:	0
Gliders:	0
Military:	0
Ultra-Light:	0
<b>Aircraft Operations (estimated)</b>	
Air Carrier:	251
Air Taxi:	336
General Aviation Local:	580
General Aviation Itinerant:	3,472
Military: *	32
<b>TOTAL OPERATIONS:</b>	<b>4,671</b>

63Source: FAA Airport Master Record Form 5010, Aircraft Operations for 12 Months Ending: 01/01/2014

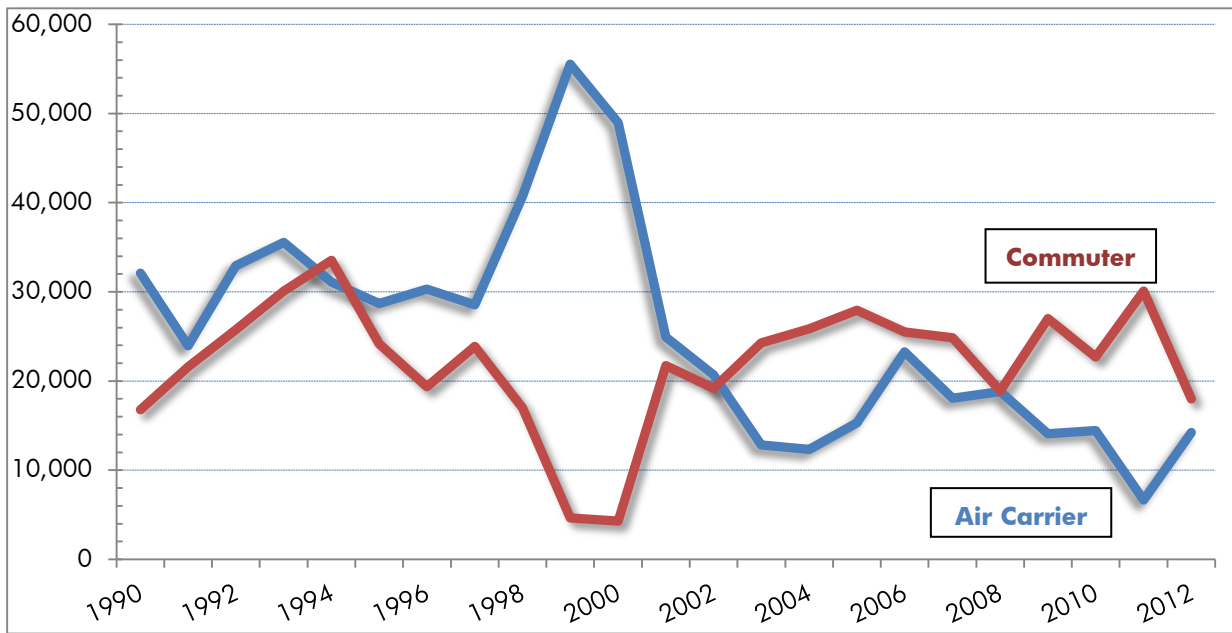
\* Note: Airport management has observed significantly more military training activity than indicated in the Form 5010.

FIGURE 1-45 AIRCRAFT OPERATIONS (Estimated)



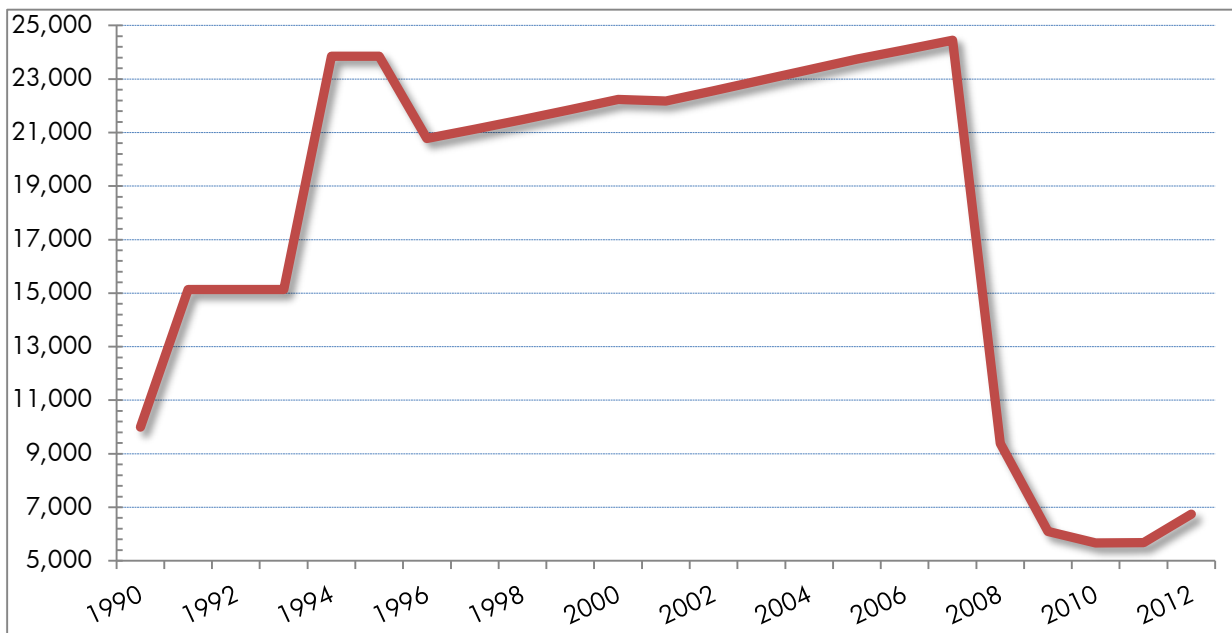
Source: FAA Terminal Area Forecast

FIGURE 1-45 PASSENGER ENPLANEMENTS (Counted)



Source: FAA Terminal Area Forecast

FIGURE 1-446 TOTAL GA AIRCRAFT OPERATIONS (Estimated)



Source: FAA Terminal Area Forecast

FAA estimated that general aviation operations at GUC experienced a sharp decline in 2007-2009, which coincides with the national economic recession. However, FAA did not identify possible causes of the steep decline or the source of their estimate. Absent specific traffic counts it is difficult to verify actual levels of GA aircraft operations at GUC.

The Government Accountability Office (GAO) recently issued a report; “Impact of Fuel Price Increases on the Aviation Industry”.<sup>8</sup> The GAO concluded: “According to aviation associations and government officials, fuel price increases have contributed to a decline in general aviation activity (which is all non-scheduled air service), including the hours flown in general aviation aircraft. This decline in activity adversely affected general aviation airports and the services provided at these airports (such as reductions in flight training and refueling). For these activities and services, the price of fuel is not the only factor that contributed to this decline. According to associations that represent general aviation interests, a weak economy and other factors, such as increased security requirements, also contributed to the decline.”

Aviation trade associations have also noted that the average price of 100LL avgas has not declined at the same rate as auto fuel since the fall of 2014, for a variety of reasons. As of January 2105, the national average price per gallon of 100LL is \$5.31, Jet A is \$4.76 (source Airnav), and auto fuel is \$2.033 (source: AAA). Air traffic controllers count aircraft operations at towered airports. Traffic counts at all civilian towered airports in Colorado<sup>9</sup> show that between CY 2000 and 2014, GA aircraft operations declined by 22.1%, with local (training) GA operations declining slightly more than itinerant ops (**Table 1-16**). FAA’s Terminal Area Forecast (TAF) estimated a much steeper decline in GA operations at GUC than is reflected in tower counts over the same period.

TABLE 1-16 GA AIRCRAFT OPERATIONS

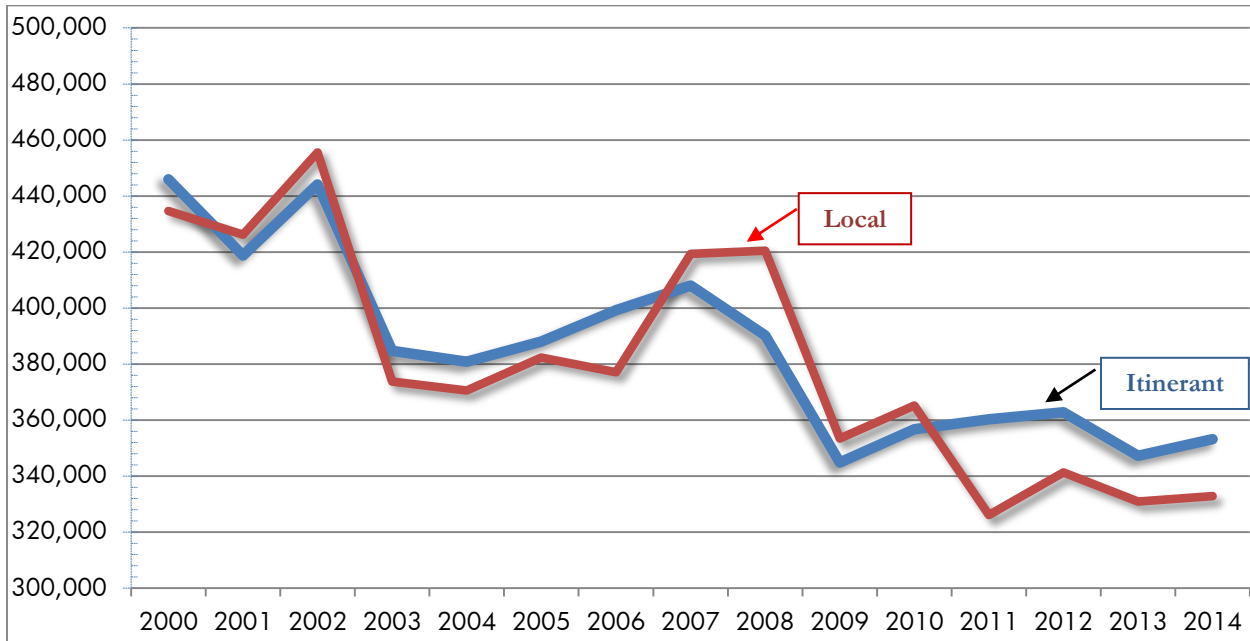
<b>General Aviation Aircraft Operations</b>			
<b>Percent Change: 2000-2014</b>			
	<b><u>Local</u></b>	<b><u>Itinerant</u></b>	<b><u>Total</u></b>
<b>GUC</b>	-92.2%	-57.4%	-68.8%
<b>CO ATC</b>	-23.4%	-20.8%	-22.1%
CO ATC = Towered civilian airports in Colorado			
Towered airport data source: FAA ATADS			
GUC operations data source: FAA TAF			

Source: FAA ATADS

<sup>8</sup> GAO-14-331, September 2014

<sup>9</sup> DEN, COS, PUB, APA, FTG, BJC, GJT, ASE, EGE. Some towers operational less than 24/7.

FIGURE 1-48 GA AIRCRAFT OPERATIONS - COLORADO TOWERED AIRPORTS



Source: FAA ATADS. Note: Gunnison Airport does not have a control tower and is therefore not included in this chart.

FAA records aircraft arrivals and departures that are on flight plans and in contact with FAA air traffic control (e.g. a control tower, an approach control, or with Center). FAA compiles and publishes the data in their Traffic Flow Management System Counts (TFMSC)<sup>10</sup>. Their data does not include aircraft operating under visual flight rules (VFR) or those that did not contact ATC (e.g. Denver Center in the vicinity of GUC).

Piston-engine aircraft operators generally file flight plans and fly under IFR less frequently than corporate or air carrier aircraft, and are therefore not captured in FAA’s data. By contrast, a high percentage of corporate and air taxi aircraft file flight plans and are in contact with ATC, as are all airline operations. As a result, FAA’s data represents only a portion of total traffic at GUC. FAA’s data for corporate jet operations at GUC between 2000 – 2014 shows considerable fluctuations in activity over that 15 year period.

The national economic recession between 2007-2010 significantly impacted corporate aviation throughout the U.S., but it has generally rebounded since 2010, although it has not returned back to

<sup>10</sup> **Traffic Flow Management System Counts (TFMSC)** is designed to provide information on traffic counts by airport or by city pair for various data groupings such as aircraft type or by hour of the day. It includes data for flights that fly under Instrument Flight Rules (IFR) and are captured by the FAA’s enroute computers. Most VFR and some non-enroute IFR traffic is excluded. TFMS source data are created when pilots file flight plans and/or when flights are detected by the National Airspace System (NAS), usually via RADAR. Traffic Flow Management System Counts (TFMSC) records are assembled by the FAA Air Traffic Airspace (ATA) Lab by combining electronic messages transmitted to the Host (En Route) computer for each flight into a complete record of that flight. TFMS contains information about Commercial Traffic (air carriers and air taxis), General Aviation, and Military to and from every landing facility.

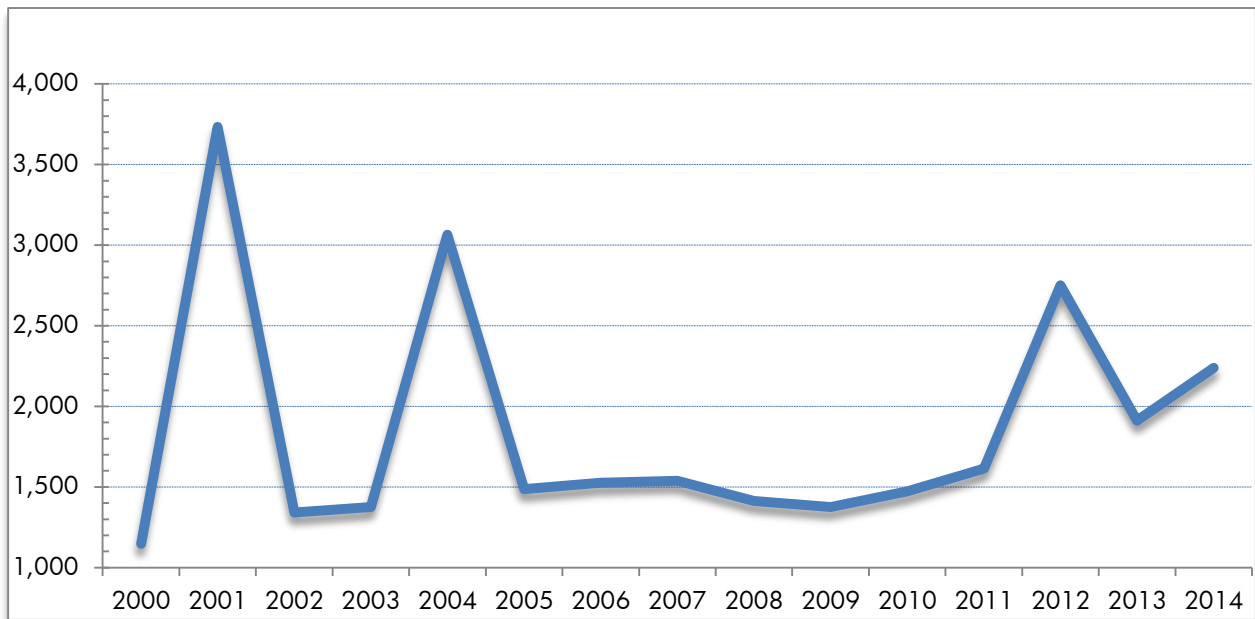
the levels experienced in 2004-2007. Corporate aircraft activity at GUC has fluctuated in a similar manner (Figure 1-49). Corporate and air taxi activity at GUC is generated by businesses as well as by second-home owners in the County.

The Colorado Division of Aeronautics collects and distributes taxes levied on aviation fuel. CDOT maintains records for taxes on 100LL Avgas, Jet A bought by general aviation aircraft, and Jet A bought by airlines. Each type of fuel is taxed at different rates. CDOT reimburses tax revenue to each airport. Fuel sold is an approximate indicator of aviation activity at a given airport. However, fuel prices at other airports also impact fuel sales, regardless of activity levels.

As seen in **Figure 1-50**, the amount of Jet A sold to GA aircraft at GUC increased slightly in FY 2014, 100LL avgas volume has remained relatively steady for five years, and commercial Jet A increased sharply between 2011-2013, and declined in 2014.

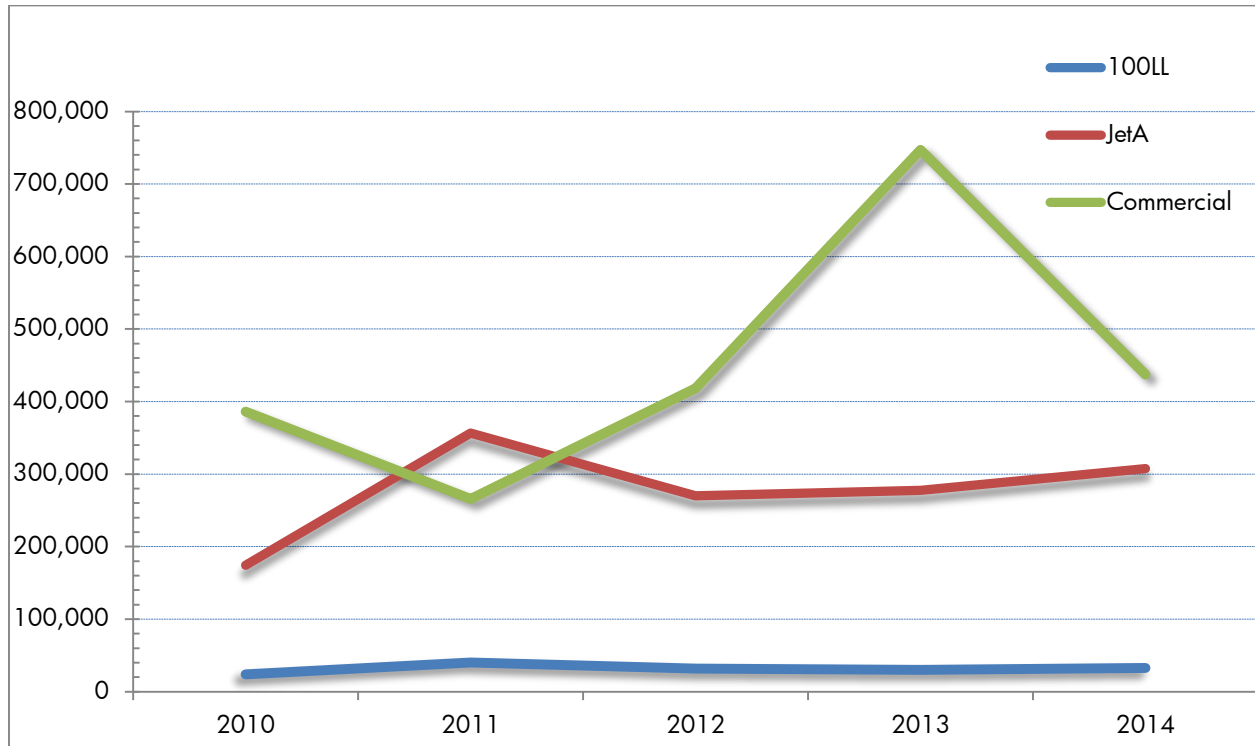
The decline in commercial fuel may be due to the shift to smaller aircraft, for example from the B-757-200 to the A-319 and CRJ-700. Gunnison Valley Aviation, the FBO, reported that fuel sales have been steady over the last three years (2011-2014). They estimated that approximately 38% of their Jet A fuel sales were to the airlines. Fuel is not sold to transient military aircraft.

FIGURE 1-49 CORPORATE AIRCRAFT OPERATIONS



Source: FAA Traffic Flow Management System Counts (TFMSC)

FIGURE 1-470 AVIATION FUEL SOLD (GALS.) - GUNNISON AIRPORT



Source: CDOT Division of Aeronautics

The FAA tracks scheduled passenger enplanements at individual airports primarily by reports filed by airlines with U.S. DOT. As noted on the FAA’s web site: “Passenger (enplanement) and cargo data is extracted from the Air Carrier Activity Information System (ACAIS), an FAA database that contains revenue passenger boarding and all-cargo data”.<sup>11</sup>

The U.S. Department of Transportation (DOT) is the primary source of enplanement statistics. U.S. scheduled and nonscheduled certificated air carriers, commuter air carriers, and small certificated air carriers submit activity data to DOT on Form 41 Schedule T-100, U.S. Air Carrier Traffic and Capacity Data by Nonstop Segment and On-Flight Market.

In addition, the FAA conducts an annual survey of air taxi/commercial operators who report their nonscheduled activity on FAA Form 1800-31, Airport Activity Survey.”

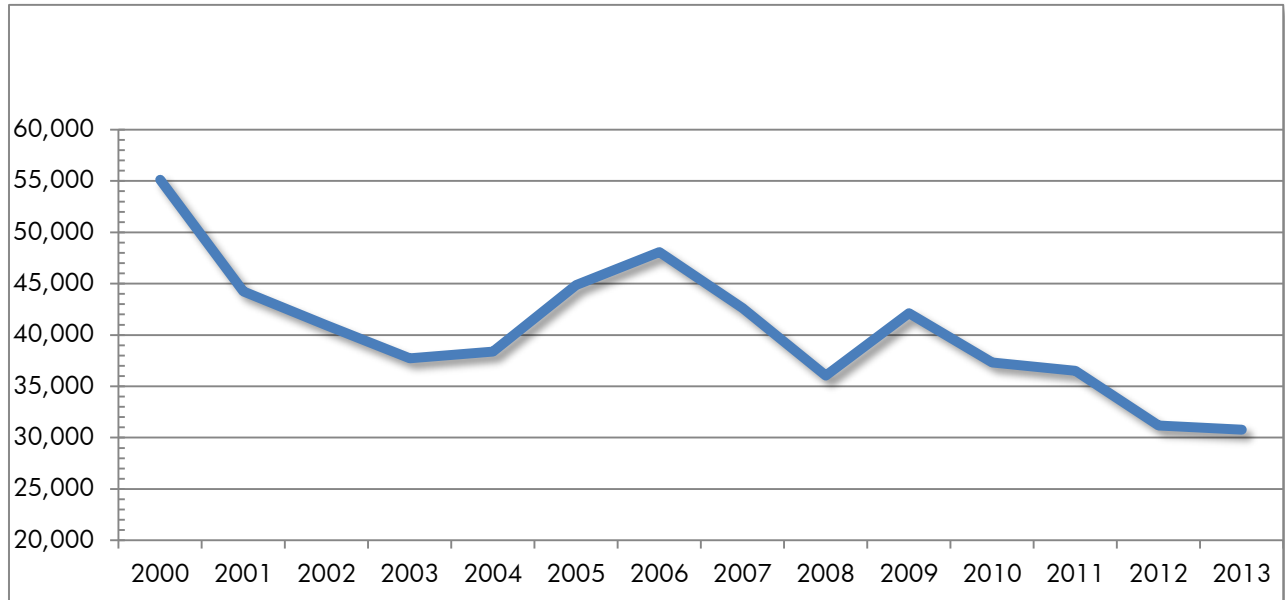
Overall passenger enplanements have been declining at GUC, particularly since 2009. As noted in the separate air service analysis prepared by Mead & Hunt, in addition to declining passengers the total number of seats, scheduled departures, and the average size of air carrier aircraft, also declined. On the other hand, average fares have increased steadily over the period.

<sup>11</sup> Source: FAA, [http://www.faa.gov/airports/planning\\_capacity/passenger\\_allcargo\\_stats/passenger/](http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/)



As noted by Mead & Hunt, GUC's average air fare has increased from \$170 (2005) to \$257 (2014), a compound average growth rate of 4.7 percent per year. Mead & Hunt also noted that a large percentage of local passengers from Gunnison use other airports (Montrose, Denver, Colorado Springs, etc.), in part due to higher frequency of flights available, and lower fares.

FIGURE 1-51 SCHEDULED PASSENGER ENPLANEMENTS - GUNNISON AIRPORT



Source: FAA Air Carrier Activity information Service (ACAIS)


# Gunnison-Crested Butte Regional Airport Master Plan

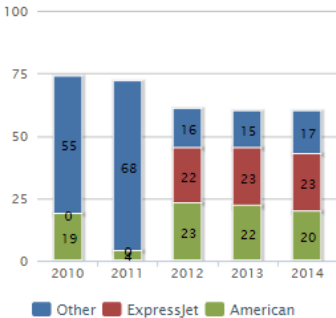
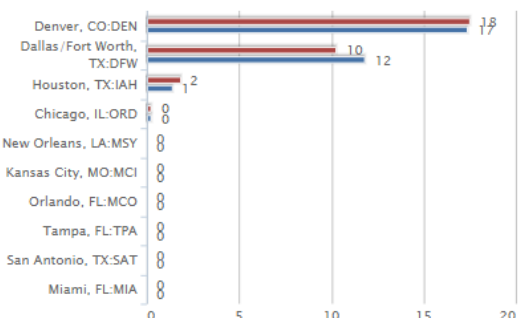
OST-R > BTS

Select a month: February 2014
Select an airport: Gunnison, CO: Gunnison-Crested Butte Re   
(The month selection does not apply to on-time data.)
[Show all airports \(by state\)](#)

### Gunnison, CO: Gunnison-Crested Butte Regional (GUC)

Scheduled Services except Freight/Mail BTS Data as of 4/28/2015

Summary Data (U.S. Flights Only)					Carrier Shares for March 2013 - February 2014		
<b>Passengers*</b>	<b>2013**</b>	<b>2014**</b>	<b>%Chg</b>	<b>Rank***</b>	<b>Carrier</b>	<b>Passengers</b>	<b>Share</b>
Arrival	30k	30k	-1.15%	300	<b>ExpressJet</b>	22.60	37.85%
Departure	31k	30k	-2.24%	300	<b>American</b>	20.49	34.32%
<b>Scheduled Flights</b>					<b>SkyWest</b>	8.84	14.81%
Departures	591	595	0.68%	552	<b>United</b>	3.95	6.61%
<b>Freight/Mail (lb.) (Scheduled and Non-Scheduled)</b>					<b>Republic</b>	3.83	6.42%
Total	144	703	388.19%	600	<b>Other</b>	0.00	0.00%
<b>Carriers</b>							
Scheduled	5	5	0.00%		<small>Based on enplaned passengers(000) both arriving and departing.</small>		

Total Passengers (U.S. Flights, in thousands)	Top 10 Destination Airports (U.S. Only, Passengers (000))
	
<small>* Before October 2002, only carriers operating aircraft with more than 60 seats or 18,000 pounds in payload reported traffic data.                  ** 12 months ending February of each year.                  *** 2014 represents data for March 2013 - February 2014.</small>	<small>Source: T-100 Domestic Market (US Carriers).</small>

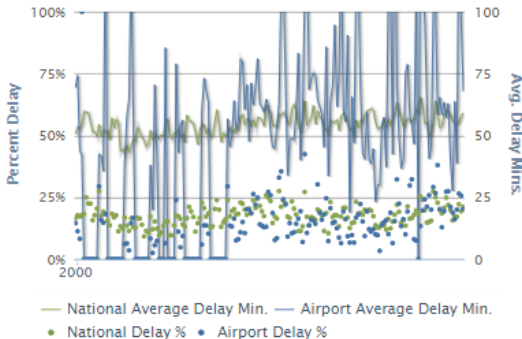
GUC vs. National Departure Delays (Major U.S. Carriers)	GUC On-Time Performance Summary (Major U.S. Carriers Only)																																																																																																								
	<table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr style="background-color: #f2f2f2;"> <th colspan="8">Domestic Flights, 2010-2015</th> </tr> <tr> <th>% On Time</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015*</th> <th>Rank**</th> </tr> </thead> <tbody> <tr> <td><b>Departure</b></td> <td>83%</td> <td>80%</td> <td>80%</td> <td>76%</td> <td>70%</td> <td>73%</td> <td>N/A</td> </tr> <tr> <td><b>Arrival</b></td> <td>79%</td> <td>75%</td> <td>77%</td> <td>71%</td> <td>64%</td> <td>67%</td> <td>N/A</td> </tr> <tr> <td colspan="8"><b>Avg Delay (min.)</b></td> </tr> <tr> <td>Departure</td> <td>77.61</td> <td>63.22</td> <td>70.71</td> <td>80.47</td> <td>74.82</td> <td>73.40</td> <td>N/A</td> </tr> <tr> <td>Arrival</td> <td>51.49</td> <td>47.15</td> <td>54.50</td> <td>64.65</td> <td>50.59</td> <td>51.01</td> <td>N/A</td> </tr> <tr> <td colspan="8"><b>% Cancelled</b></td> </tr> <tr> <td>Total</td> <td>3.75%</td> <td>4.48%</td> <td>3.06%</td> <td>4.00%</td> <td>4.95%</td> <td>4.20%</td> <td>N/A</td> </tr> <tr> <td colspan="8"><b>Number of Flights</b></td> </tr> <tr> <td>Total</td> <td>881</td> <td>871</td> <td>620</td> <td>500</td> <td>646</td> <td>500</td> <td>N/A</td> </tr> <tr> <td colspan="8"><b>Number of Reporting Carriers</b></td> </tr> <tr> <td>Total</td> <td>7</td> <td>5</td> <td>4</td> <td>4</td> <td>5</td> <td>5</td> <td></td> </tr> </tbody> </table>	Domestic Flights, 2010-2015								% On Time	2010	2011	2012	2013	2014	2015*	Rank**	<b>Departure</b>	83%	80%	80%	76%	70%	73%	N/A	<b>Arrival</b>	79%	75%	77%	71%	64%	67%	N/A	<b>Avg Delay (min.)</b>								Departure	77.61	63.22	70.71	80.47	74.82	73.40	N/A	Arrival	51.49	47.15	54.50	64.65	50.59	51.01	N/A	<b>% Cancelled</b>								Total	3.75%	4.48%	3.06%	4.00%	4.95%	4.20%	N/A	<b>Number of Flights</b>								Total	881	871	620	500	646	500	N/A	<b>Number of Reporting Carriers</b>								Total	7	5	4	4	5	5	
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<small>A flight is considered delayed when it arrived or departed 15 or more minutes than the schedule. Delayed minutes are calculated from delayed flights only.</small>	<small>* March 2014 - February 2015.                  ** Ranked only for major U.S. airports, March 2014 - February 2015.</small>																																																																																																								

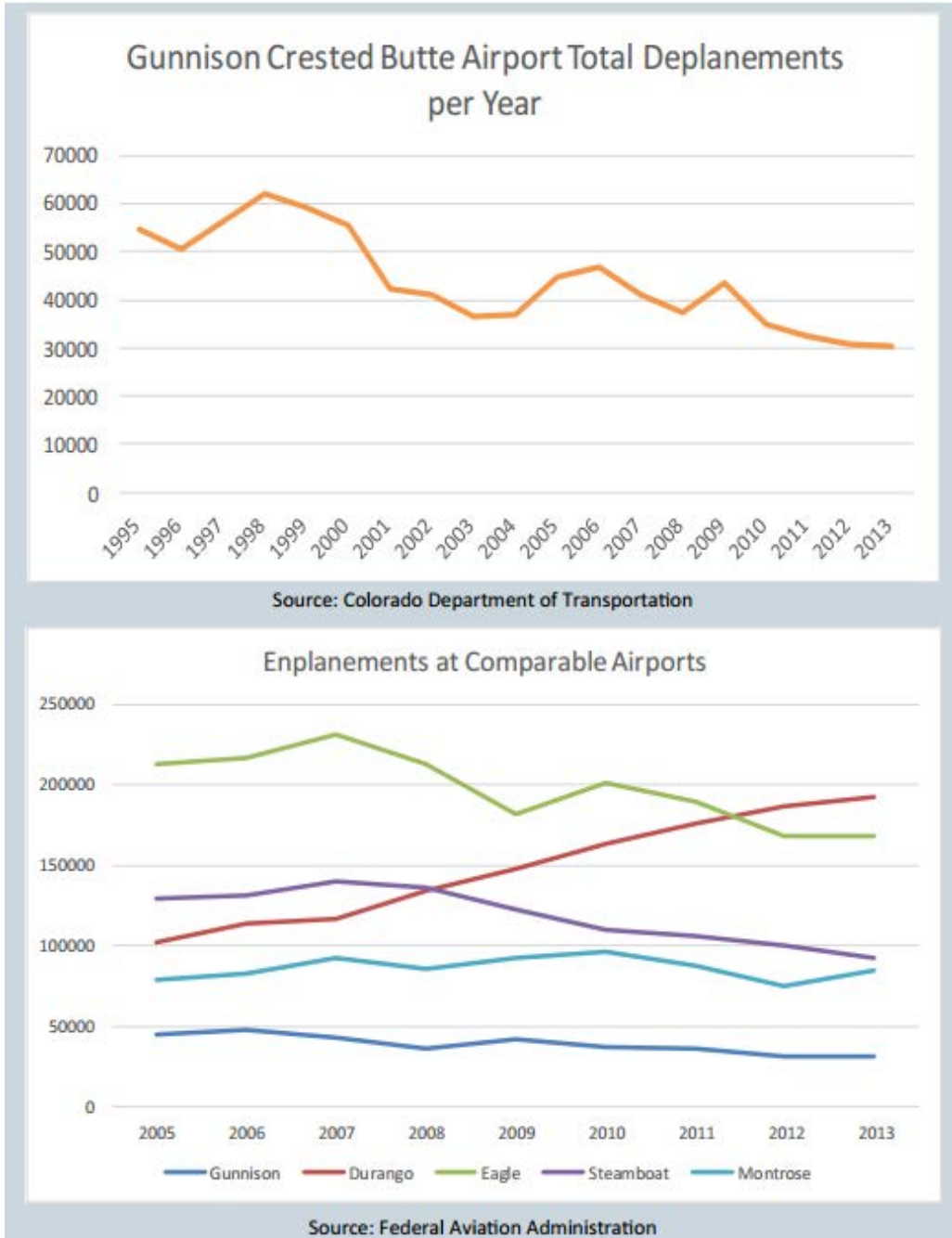
TABLE 1-17  
GUNNISON AIRPORT – ANNUAL PASSENGER ENPLANEMENTS

CY	Passenger Enplanements
2000	55,131
2001	44,237
2002	40,944
2003	37,717
2004	38,395
2005	44,865
2006	48,073
2007	42,622
2008	36,035
2009	42,130
2010	37,316
2011	36,516
2012	31,181
2013	30,780
<b>2000-2013</b>	<b>-44.2%</b>

Source: FAA ACAIS

Scheduled passenger traffic at GUC is very seasonal, with the peak period typically between December – March. The decline in passenger traffic at GUC has been tracked by a number of agencies, including Gunnison County (**Figure 1-52**).

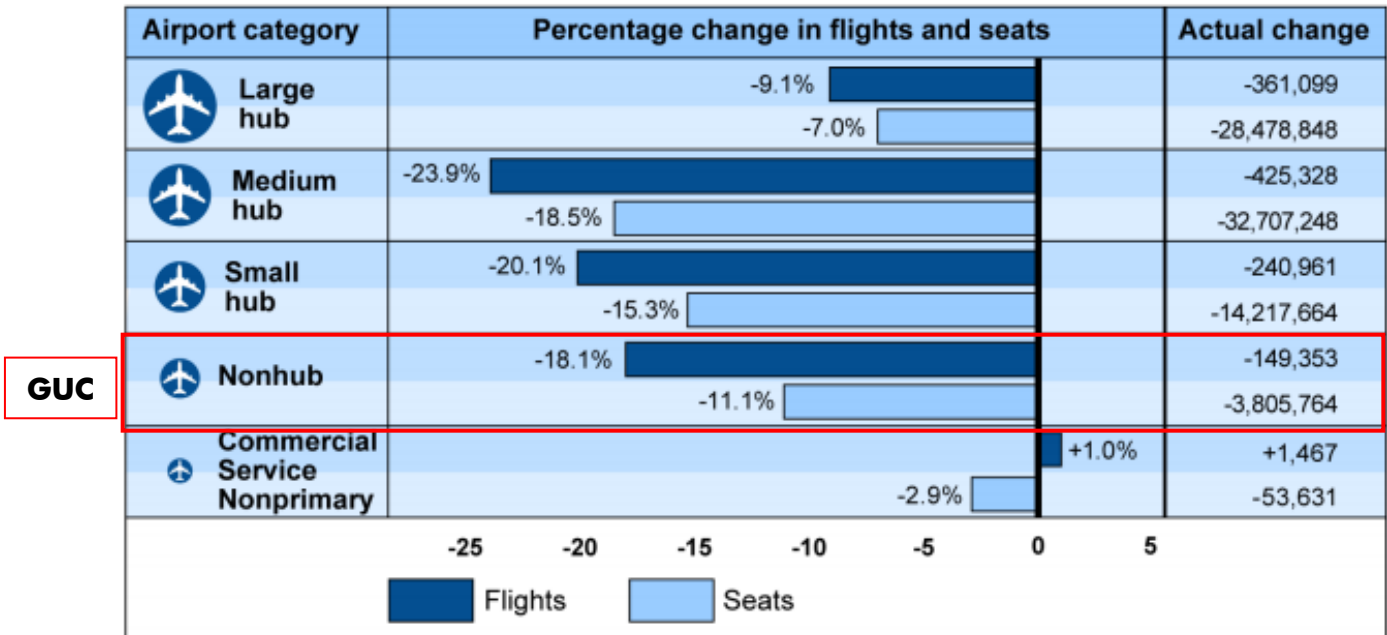
FIGURE 1-52 GUC PASSENGER TRAFFIC



Source: Gunnison County Economic Indicators Report, August, 2014

It should be noted that there has been an overall downward trend in passenger enplanements at commercial airports across the U.S. between 2007 and 2013, and that it is not unique to GUC. The most pronounced decrease in passengers has been experienced at smaller commercial airports (Figure 1-53).

FIGURE 1-53 PERCENTAGE CHANGE IN NUMBER OF FLIGHTS AND AVAILABLE SEATS BY AIRPORT CATEGORY IN U.S.



Source: GAO Analysis of DOT Data, GAO-14-658T

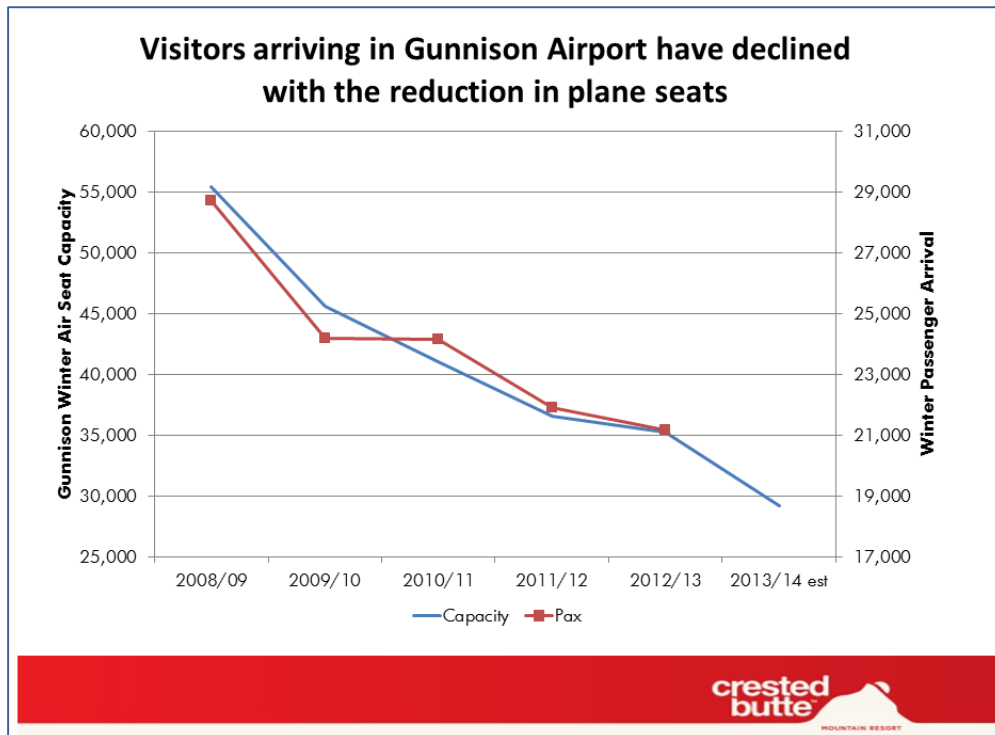
The Crested Butte Mountain Resort (CBMR) made a presentation to the Gunnison County BOCC Economic Development Committee in 2013. The highlights of the recent air service trends at GUC are attached below (Figures 1-54 - Figure 1-58). The decline documented at GUC by the CBMR is similar to the decline seen nationally at small and non-hub airports nationally.

FIGURE 1-54



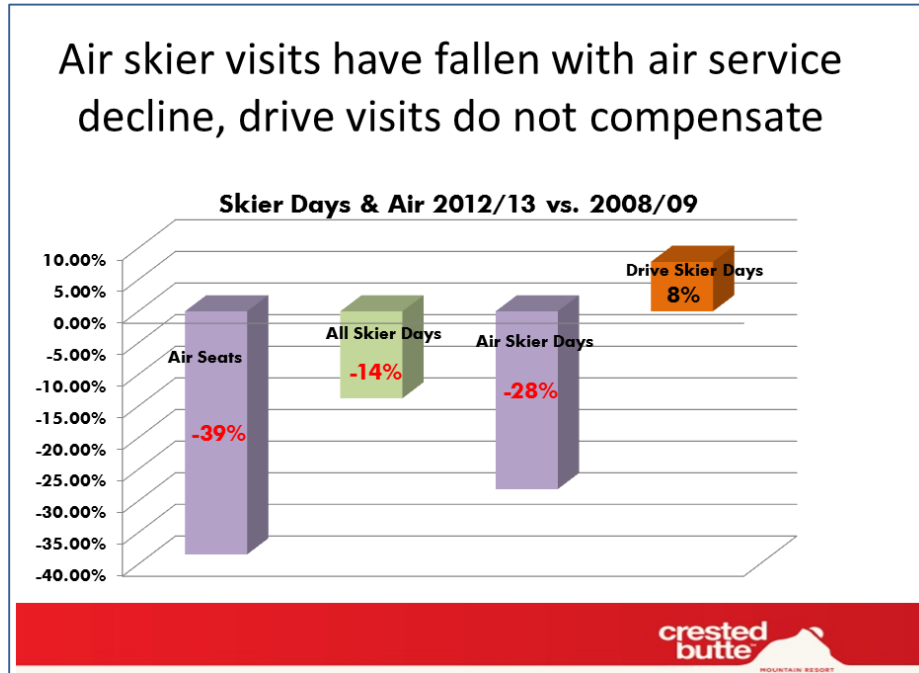
Source: Crested Butte Mountain Resort

FIGURE 1-55



Source: Crested Butte Mountain Resort

FIGURE 1-56



Source: Crested Butte Mountain Resort

FIGURE 1-57

**Direct Impact of Visitor Spending**

TAX ROI	Resort Revenues	4.0% Lodging Tax	4% Admission Tax	5% Sales Tax	1% County	2.9% State	0.6% RTA	Tax Totals
Room Revenue	\$6,480,000	\$237,600		\$297,000	\$59,400	\$172,260	\$35,640	<b>\$801,900</b>
Ancillary Spend Per Guest @ \$190 Per Day Average	\$20,520,000			\$940,500	\$188,100	\$545,490	\$112,860	<b>\$1,786,950</b>
Lift Ticket Revenue	\$4,320,000		\$158,400					<b>\$158,400</b>
<b>Totals</b>	<b>\$31,320,000</b>	<b>\$237,600</b>	<b>\$158,400</b>	<b>\$1,237,500</b>	<b>\$247,500</b>	<b>\$717,750</b>	<b>\$148,500</b>	<b>\$2,747,250</b>

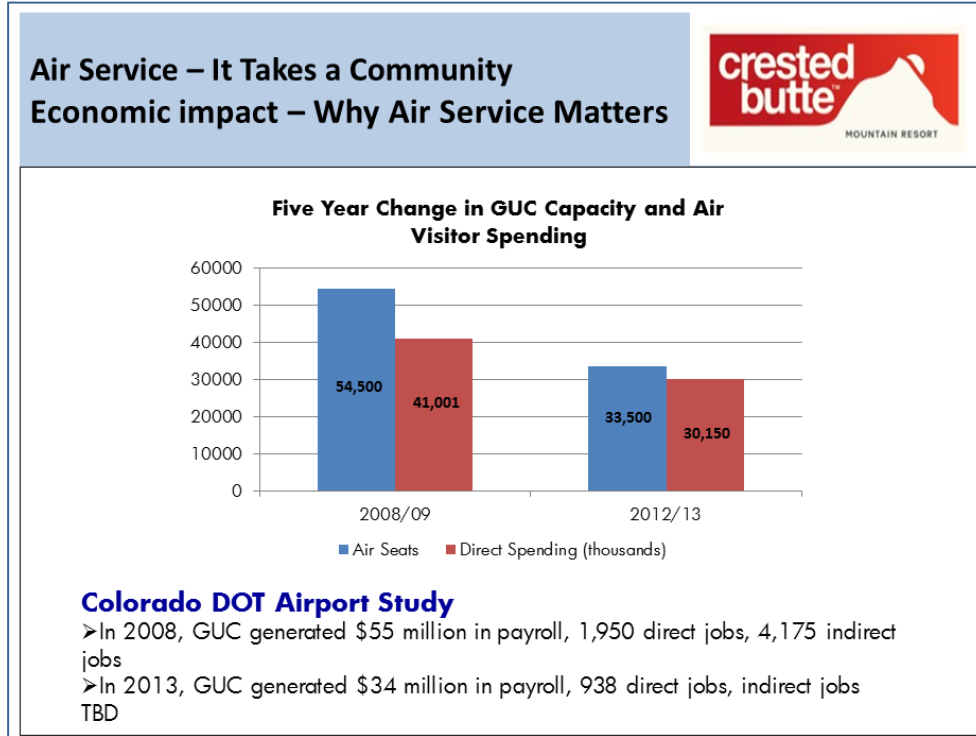
Assumes 22,000 passengers

- 90 percent destinations guests
- 5 night LOS
- 60 percent rent lodging

**crested butte**  
MOUNTAIN RESORT

Source: Crested Butte Mountain Resort

FIGURE 1-58



Source: Crested Butte Mountain Resort