MASTER PLAN UPDATE



FORECASTS OF AVIATION ACTIVITY

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Forecasts of Aviation Activity

Introduction

Forecasting is a key element in the master planning process. The forecasts are essential for analyzing existing airport facilities and identifying future needs and requirements of the facilities. Forecasting, by its very nature, is not exact, but it does establish some general parameters for development and provides a defined rationale for various development activities as demands increase. The amount and kind of aviation activity occurring at an airport are dependent upon many factors, but are usually reflective of the services available to aircraft operators, the meteorological conditions under which the airport operates (daily and seasonally), the businesses located on the airport or within the community the airport serves, and the general economic conditions prevalent within the surrounding area.

Aviation activity forecasting generally commences by utilizing the present time as an initial point, supplemented with historical trends obtained from the previous year's activity and recorded information. Due to the lack of previous planning documents, this data has evolved from a comprehensive examination of historical airport records from airport personnel; the Colorado Statewide Airport Inventory and Implementation Plan; Technical Summary Report, 2000; FAA Form 5010-1 data; FAA Terminal Area Forecasts; and, the FAA Aviation Forecasts Fiscal Years 2003-2014. These documents were assembled in different years, making the base year data quite variable, and emphasizing the need for establishing a well-defined and well-documented set of base information from which to project future aviation activity trends.

Prior to an examination of current and future activity levels at the Airport, there are several conditions and assumptions that should be noted, which form the basis or foundation for the development of the forecasts contained herein. These statements

cover a wide variety of physical, operational and socioeconomic considerations, and, although not necessarily in order of importance or priority, include:

- Weather Conditions. Existing weather data (i.e., visibility, ceiling, and wind conditions) for Gunnison-Crested Butte Regional Airport were available for analysis from the National Oceanic and Atmospheric Administration (NOAA). With the exception of very few days annually, the Airport is not adversely affected by poor weather conditions. Visual Flight Rules (VFR) meteorological conditions are experienced approximately 97.7% of the time annually; therefore, aircraft can operate at the Airport on a regular basis throughout the year, with limited interruption due to weather. The potential negative impact of poor weather conditions on the operational capability of the Airport is documented in the following chapter of this document. This information will be analyzed and evaluated in later chapters regarding the identification of potential instrument approach facility enhancements and the preparation of development alternatives for their implementation.
- Airport/Community Location, Proximity, and Role. Gunnison-Crested Butte Regional Airport is uniquely situated within the Rocky Mountains of west-central Colorado, providing jet and commuter access to popular Crested Butte Mountain Resort and Monarch Mountain Resort. Located within Gunnison, the Airport serves a region of the state that accommodates several thousand summer and winter tourists annually. Vehicular access to the Airport is provided by U. S. Highway 50 and various existing city streets.
- Regional Socioeconomic Conditions. The existing socioeconomic condition of a particular region has historically impacted aviation activity within that area. The two primary socioeconomic indicators, which are often analyzed in the forecast of aviation activity, are population and employment statistics. However, in resort areas, the impact of the tourism industry must also be carefully examined with respect to seasonal variations in visitation patterns. According to the Chamber of Commerce, tourism is the primary influencing factor on the regional economy. Therefore, this economic sector has the greatest influence on future aviation activity and air transportation services within the region. According to Colorado Ski Country USA, skier visits to Crested Butte have averaged 460,000 skier visits over the past nine years, while Monarch has averaged 144,936 skier visits over the past nine years, for which information was available (1993-2002). As an item of interest, there is a direct relationship between the number of available seats on passenger aircraft flown by commercial airlines into Gunnison and the quantity of skier visits on a per-season basis. Historically, ski season enplanements at Gunnison-Crested Butte Regional Airport have represented approximately 72% of the annual passenger enplanements. On a final note, conversations conducted

with Crested Butte Mountain Resort personnel show that, at the present time, Crested Butte is on the market to be sold, and, if the new owners take a proactive approach to planning and re-investing in the current facility, expansion of the resort and ski area could easily take place in the next several years. This expansion would not only increase the number of visitors to the Gunnison area, but would likely increase the need of additional transportation facilities to handle the increased demand.

Sales Tax. In an effort to continue to attract visitors to the Gunnison area, the County recently voted to create a Gunnison Valley Transportation Authority to provide revenue guarantees to negotiate with airlines to operate at Gunnison-Crested Butte Regional Airport. It is of interest to note that, due to the number of seats on board B-757 aircraft, they have been excluded from such revenue guarantees. This initiative increases the county sales tax rate on all transactions, other than food for household consumption, which is collected by the State. The tax increase (now 1.6% within the Town of Mt. Crested Butte, Town of Crested Butte, and unincorporated Gunnison County; except for the Towns of Pitkin, Marble, and Somerset and 1.35% within the corporate limits of the City of Gunnison) will allow an additional \$800,000 in resources per year through 2011.

Additionally, the Gunnison River Valley Local Marketing District has passed an initiative to increase the tax on lodging properties from 1.9% to 4% on a countywide basis. This mechanism allows the county to provide \$1.2 million in resources to assist in marketing the Gunnison area. There has also been the creation of a Tourism Association, which is comprised of the various cities' and towns' chambers within the county. This association will provide the opportunity to focus marketing efforts and possibly achieve a bigger "bang for the buck".

Population. According to the latest population data prepared by the U.S. Census Bureau, Gunnison County population in 2000 totaled 13,967 residents. This service area population group has increased at approximately 3.1% annually since 1990. The year 2022 population projection for Gunnison County is expected to reach 20,282, reflecting an average annual growth rate of 1.6%. This compares to a projected statewide average annual growth rate of approximately 1.6% for the same period. According to the Colorado Department of Local Affairs, employment for Gunnison County in 2000 was 10,749. Employment for Gunnison County through the year 2022 is projected to increase to 16,336. This equates to an average annual growth rate of 2.3% for the years 2000 through 2022. In addition, as referenced by the Colorado Department of Local Affairs, per capita income in the year 2000 for Gunnison County was \$21,407 and is expected to increase to \$66,421 by the year 2023.

• Community Support. Gunnison-Crested Butte Regional Airport benefits from the support of the surrounding cities and county governments, as well as local industry and residents. The Airport is recognized as a vital county asset, which contributes to the stability and the future of the area's economy. The overall position of the county is one of continued growth and development, with special focus on the impetus that the Airport provides to maintain and attract additional economic and aviation-related development to the region.

Additionally, many of the surrounding county communities and much of the west-central Colorado region benefit from the close proximity of a regional commercial service aviation facility and, in turn, provide an economic base, which can attract additional based aircraft, as well as industrial/business development to the Airport.

- Facilities Potential. Gunnison-Crested Butte Regional Airport currently serves a vital commercial passenger service role to the economy of central Colorado. From a runway length standpoint (9,400 feet), it is well situated within the regional service area to accommodate the operation of air carrier jet aircraft. In addition, the Airport can accommodate the operation of large business jet aircraft that are restricted from operating at the region's other general aviation airports.
- Negative or Neutral Factors. There are some broad factors that can have a negative impact on the Airport, and the aviation industry, and these are considered in the planning process. The first issue is the overall condition of the general aviation industry in the United States. Beginning in 1978, many sectors of the general aviation industry have been in recession, and the FAA has identified several factors that precipitated this downturn, including: economic recessions, fuel crisis, the termination of the GI Bill, and the repeal of the investment tax credit.

More obvious contributing factors include the rising expense of owning and operating an aircraft (i.e., costs of insurance, fuel, and maintenance), competition from discount air carriers since airline deregulation, changes in disposable discretionary income, increases in air space restrictions affecting fair-weather flying, reductions in personal leisure time, and shifts in personal preference as to how leisure time is spent. These factors have restricted the single engine light aircraft segment of the industry in particular.

However, there are a number of bright spots having a positive impact in certain segments of the general aviation industry. They include the passage of the General Aviation Revitalization Act of 1994. This legislation has caused renewed interest and optimism among U.S. aircraft manufacturers, who are either re-entering the single engine aircraft market after several years' absence, or are increasing future production schedules to meet expected renewed demand. The growth in the

amateur-built aircraft market, and the strength of the used aircraft market, indicate that demand for inexpensive personal aircraft is still relatively strong.

The FAA's efforts to aid general aviation revitalization include streamlining the certification process for new entry-level aircraft and implementing measures to provide regulatory relief and reduce user costs (i.e., reduced rules, improving the delivery of FAA services by decreasing excess layers of management, and the elimination of unnecessary programs and processes). Groups such as the Aircraft Owners & Pilots Association (AOPA) are sponsoring programs that aggressively promote the benefits of general aviation and learning to fly.

On a more recent note, since the 9/11 terrorist attacks, Temporary Flight Restrictions (TFRs) and the lingering concerns of some regarding the use of general aviation aircraft in potential future acts of terrorism, have had an added short-term negative impact on the industry. On the positive side for GA, heightened airport security has had a dramatic impact on the "nuisance factor" of commercial air travel; as a result, some travelers have turned to general aviation as a more efficient means of air travel.

Historical Airport Activity Summary

A tabulation of Gunnison-Crested Butte Regional Airport's historical aviation activity since 1992 is presented in Table B1, entitled *HISTORICAL AVIATION ACTIVITY, 1992-2002*. This table presents a summary of historic aviation activity at the Airport, which includes four categories of aircraft operations, as well as total operations.

Table B1 **HISTORICAL AVIATION ACTIVITY, 1992-2002** *Gunnison-Crested Butte Regional Airport Master Plan Update*

Year	Passenger Enplanements	Air Carrier Operations	Air Taxi Operations	General Aviation Operations	Military Operations ⁽¹⁾	Total Operations
1992(1)	62,120(3)	2,607	638	15,132	100	18,477
1993(1)	65,632(3)	600	2,607	15,132	100	18,439
1994(2)	64,632(3)	440	6,672	24,148	150	31,410
1995(2)	58,615 ⁽³⁾	492	7,602	28,824	150	37,068
1996(2)	49,129(3)	472	4,152	25,730	150	30,504
1997(3)	57,382	458	4,424	6,725	150	11,757
1998(3)	62,961	512	3,024	8,446	150	12,132
1999(3)	59,928	486	3,104	8,972	150	12,712
2000(3)	57,172	496	3,300	10,109	150	14,055
2001(3)	43,888	470	2,564	8,809	150	11,993
2002(3)	41,843	438	2,418	11,666 ⁽⁴⁾	150	14,672

Source: (1)FAA APO Terminal Area Forecasts, 1985-2020.

As can be seen, total aircraft operations (an operation is defined as either a takeoff or a landing) at Gunnison-Crested Butte Regional Airport have remained relatively flat through the last six (6) years. Estimated annual counts have ranged from a low of 11,757 operations in 1997 to a high of approximately 37,068 operations in 1994.

- Passenger Enplanements. There has been a fluctuation in the number of passengers boarding since 1992. This trend will likely continue based on national consumer and airline economic uncertainties since the terrorist attacks of September 11, 2001.
- Commercial Service Aircraft Operations. As provided by Gunnison-Crested Butte
 Regional personnel, air carrier operations totaled 438 for the year 2002. United
 Express is currently providing commercial passenger service on a daily basis, while
 Continental, Delta, and United Airlines offer service on a seasonal basis.
- General Aviation Operations. General aviation operations are typically more directly tied to economic conditions than commercial passenger operations, and this trend is often reflected in the historical operations data for a particular airport. The amount

⁽²⁾Colorado Statewide Airport Inventory and Implementation Plan.

⁽³⁾ Gunnison-Crested Butte Regional Airport Personnel.

⁽⁴⁾Includes contract cargo operations for UPS.

of general aviation activity at many airports around the country has remained flat or declined since the early 1980's. The data available for Gunnison-Crested Butte Regional Airport illustrates fluctuations in general aviation activity since 1992. As economic conditions in the region change in the future, fluctuations in the number of general aviation operations at the Airport will likely continue, although an increasing trend is expected over the long-term.

- Air Taxi Operations. During the past decade, the number of air taxi operations has fluctuated, with a high of 6,672 annual operations in 1994 and a low of 638 in 1992. Recently revised by the FAA, "Air Taxis include a company or individual performing transportation service on a non-scheduled basis over unspecified routes, which operate using a three-letter company designator, or operate under the approved FAA call sign "TANGO" and usually accommodate less than sixty seats". Currently, those operations conducted on a contract basis for United Parcel Service (UPS) are also included in this category. Operations for UPS operate twice per day, Monday through Friday, using Swearingen/Metroliner aircraft. For purposes of this study, air taxi operations will be included in the general aviation operations category.
- *Military Operations*. Historically, military operations at Gunnison-Crested Butte Regional Airport are insignificant. The majority of operations that do occur are associated with helicopters. Military operations during the 20-year time frame are expected to remain the same throughout the planning period.

Passenger Enplanement Forecast

Passenger enplanement forecasts are an important part of the forecasting effort, as they form the cornerstone of formulating air carrier and commuter operational projections. However, enplanement forecasting within the Colorado Rocky Mountain region, and at Gunnison-Crested Butte Regional Airport, in particular, is unique due in part to the distribution of the service area population, the types of commercial passenger service that are provided at the Airport, and the influence of the extraordinary number of passengers associated with resort/vacation travel.

A variety of commercial passenger service types, consisting of both air carrier jet and commuter turboprop aircraft, has been provided at Gunnison-Crested Butte Regional Airport. Typically, commuter carriers (i.e., United Express) have provided year round, scheduled service with turboprop aircraft capable of seating between nineteen (19) and fifty (50) individuals, while supplemental seasonal air carrier jet service, including both scheduled and chartered, have been provided during the winter ski season. As can be seen in the following table, entitled COMMUTER AND AIR CARRIER ENPLANEMENT DISTRIBUTION, 1992-2002, the air carrier/commuter enplanements split has varied only

slightly during the period of 1997 through 2002, demonstrating a consistent level of service being provided by the various carriers and a steady demand of seasonal passengers being generated during the winter ski season.

Table B2 COMMUTER AND AIR CARRIER ENPLANEMENT DISTRIBBUTION, 1992-2002

Gunnison-Crested Butte Regional Airport Master Plan Update

Year	Commuter Enplanements ⁽¹⁾	Air Carrier Enplanements ⁽²⁾	Total Enplanements
1992	25,973 (42%)	36,147 (58%)	62,120
1993	31,028 (47%)	34,604 (53%)	65,632
1994	32,054 (50%)	32,578 (50%)	64,632
1995	21,025 (36%)	37,590 (64%)	58,615
1996	21,626 (44%)	27,503 (56%)	49,129
1997	27,335 (47%)	30,047 (53%)	57,382
1998	28,124 (45%)	34,837 (55%)	62,961
1999	29,444 (49%)	30,484 (51%)	59,928
2000	27,430 (48%)	29,742 (52%)	57,172
2001	20,293 (46%)	23,595 (54%)	43,888
2002	21,292 (51%)	20,551 (49%)	41,843

Source: Gunnison-Crested Butte Regional Airport Personnel.

- (1) Commercial service aircraft seating sixty (60) passengers or less
- (2) Commercial service aircraft seating more than sixty (60) passengers.

In addition to the annual commuter/air carrier enplanement distribution at Gunnison-Crested Butte Regional Airport, the seasonal distribution of passengers provides a unique perspective into the utilization of the airport's facilities throughout the year. As can be seen in the following table, entitled SEASONAL COMMERCIAL SERVICE ENPLANEMENT DISTRIBUTION, 1992-2002, approximately 68% of the airport's annual enplanements are generated during the approximate four (4) month ski season (i.e., December through March). This unusual concentration of commercial service passenger demand is common at many resort destination areas across the country, and presents some unique challenges when projecting future enplanement activity.

Table B3
SEASONAL COMMERCIAL SERVICE ENPLANEMENT
DISTRIBUTION, 1992-2002

Gunnison-Crested Butte Regional Airport Master Plan Update

Year	Winter Season Enplanements ⁽¹⁾	Spring-Fall Enplanements ⁽²⁾	Total Enplanements
1992	47,779 (77%)	14,341 (33%)	62,120
1993	47,759 (73%)	17,873 (37%)	65,632
1994	45,919 (71%)	18,713 (29%)	64,632
1995	42,520 (73%)	16,095 (27%)	58,615
1996	35,969 (73%)	13,160 (27%)	49,129
1997	40,830 (71%)	16,552 (29%)	57,382
1998	46,401 (74%)	16,560 (26%)	62,961
1999	43,030 (72%)	16,898 (28%)	59,928
2000	40,768 (71%)	16,404 (29%)	57,172
2001	32,038 (73%)	11,850 (27%)	43,888
2002	28,287 (68%)	13,556 (32%)	41,843

Source: Gunnison-Crested Butte Regional Airport Personnel.

- (1) Enplanements recorded during the four month period, December March.
- (2) Enplanements recorded during the eight month period, April November.

Historical enplanements at Gunnison-Crested Butte Regional Airport have fluctuated over the past decade. As can be seen from the historical data, the relationship between enplanements and operations has varied somewhat; however, in general, changes in the number of enplanements usually correspond to changes in the number of air carrier and air taxi aircraft operations. The variations in these numbers are often indicative of larger aircraft with greater seating capacity and/or more efficient scheduling. These variations also make the forecasting of enplanements and commercial aircraft operations more challenging.

Commuter and Winter Season Enplanements

As previously mentioned, Gunnison County recently created a Gunnison Valley Transportation Authority to provide revenue guarantees for airlines operating at the Airport during the winter ski season. While it is not uncommon for airlines operating seasonally at mountain resort airports to be locally subsidized, it does reflect a challenge in forecasting. Thus, enplanement forecasts have been split into two arenas: those entailing year round commuter service enplanements and those entailing winter ski season enplanements.

Commuter Enplanements. Typically, commuter enplanements are those conducted on commuter aircraft accommodating less than 60 passengers on a year-round basis, which include the Dash-8, Dornier-328, CRJ-200, EMB-135/145, etc. Currently, the Dash-8 is utilized by United Express to and from Denver. Various commuter enplanement forecast scenarios are presented in the following table, entitled COMMUTER SERVICE ENPLANEMENTS FORECAST, 2002-2022.

Scenario One. Through the 1990's, enplanement levels have fluctuated at Gunnison-Crested Butte Regional Airport. According to the Colorado Department of Local Affairs, the population in Gunnison County is expected to grow by an average annual growth rate of 1.6% over the next twenty (20) years. The low-range enplanement forecast is partially based on the number of enplanements growing at a rate similar to the population growth forecast (1.6% per year). In addition, this forecast is reflective of a continuation of the trend that the number of enplanements at Gunnison-Crested Butte Regional Airport is increasing at a slower rate than the rate of increase for enplanements nationally.

Scenario Two. This forecast scenario is based on the assumption that enplanements at Gunnison-Crested Butte Regional Airport will grow at the same rate as that which is forecast nationally. Strong growth is expected in airline passenger activity throughout the next decade and beyond. The FAA indicates in their forecasts, FAA Aviation Forecasts Fiscal Years 2003-2014, that domestic passenger enplanements are expected to increase at an approximate 3.5% average annual rate through the year 2014.

Scenario Three. This forecast scenario is based on the assumption that commuter enplanements will grow at a faster rate than the population growth rate, but not as quickly, or optimistic, as that projected by the FAA. Therefore, an average annual growth rate of 2.5% has been utilized to forecast passenger commuter enplanements. This is the selected forecast scenario for the commuter enplanement category.

Table B4

COMMUTER SERVICE ENPLANEMENTS FORECAST, 2002-2022

Gunnison-Crested Butte Regional Airport Master Plan Update

Year	Scenario One	Scenario Two	Scenario Three ⁽¹⁾
2002	21,292	21,292	21,292
2003	21,633	22,037	21,835
2004	21,979	22,809	22,392
2005	22,330	23,607	22,963
2006	22,688	24,433	23,548
2007	23,051	25,288	24,149
2012	24,955	30,034	27,389
2017	27,016	35,672	31,064
2022	29,248	42,367	35,231

Source: Barnard Dunkelberg & Company.

Winter Ski Season Enplanements. Winter ski season enplanements are those enplanements conducted on an aircraft capable of accommodating any number of seats during the winter ski season – November through early April – and can be seen in the following table, entitled Winter Ski Season Enplanements, 2002-2022. According to County personnel, the allocated number of seats to be subsidized for the 2003-2004 winter season is 42,000 and projected to increase to 53,000 by the 2007-2008 winter ski season. Based on historic information gleaned from other Colorado Revenue Guarantee programs, similar to Gunnison-Crested Butte Regional Airport, the facility can be expected to achieve a maximum passenger load factor of approximately seventy percent (70%). Therefore, a thirty percent (30%) reduction in passenger enplanements must be factored in the establishment of the base line enplanement figure of 29,400.

Scenario One. Assuming that the County retains and continues the implementation of the Gunnison Valley Transportation Authority, this scenario postulates that subsidies will continue to be in place and an integral part of bringing tourists to the Gunnison area. Similar to that of Scenario Three in the commuter service enplanements section, growth is predicated on a 2.5% average annual rate. This reflects a rate of growth likely to exceed that forecasted for the county's population (1.6%), but not as great as that projected by the FAA (i.e., 3.5%) for nation-wide enplanements.

Scenario Two. Like Scenario One, activity is based on the assumption of the retention of the Gunnison Valley Transportation Authority. According to *Colorado Ski Country*

⁽¹⁾Selected Forecast.

USA, the average annual growth rate for skier visits to Colorado over the past ten years equals less than one percent. This scenario assumes that the growth in enplanements will coincide with the growth in skier visits. Thus, an approximate one percent (1%) average annual growth rate is utilized. This is the selected forecast scenario for the winter season enplanement category.

Scenario Three. This scenario assumes that the GVTA would not be renewed after the 2007 time frame and enplanements would revert back to approximate 2002 levels for the remainder of the planning period.

Table B5
WINTER SKI SEASON ENPLANEMENTS FORECAST, 2002-2022
Gunnison-Crested Butte Regional Airport Master Plan Update

Year	Scenario One	Scenario Two ⁽¹⁾	Scenario Three
2002	20,551	20,551	20,551
2003	29,400	29,400	29,400
2004	31,325	31,325	31,325
2005	33,250	33,250	33,250
2006	35,175	35,175	35,175
2007	37,100	37,100	37,100
2012	42,078	38,992	20,500
2017	47,723	40,981	20,500
2022	54,126	43,072	20,500

Source: Barnard Dunkelberg & Company.

(1)Selected Forecast.

Use of Various Forecasts

The recommended/selected forecast for passenger enplanements is Scenario Three of the *Commuter Service Enplanements* and Scenario Two of the *Winter Ski Season Enplanements Forecast*. Therefore, these projections will be submitted for FAA approval, and if approved, will be utilized throughout the remainder of this Master Plan Update as the basis for facility needs documentation. However, the low-range forecast and the high-range also have value that is recognized. Under almost any set of circumstances, the low-range forecast is expected to represent the minimum passenger growth rate anticipated at Gunnison-Crested Butte Regional Airport. In other words, at a minimum, passenger enplanements should grow at the same rate anticipated for population growth.

The high forecast is expected to represent the maximum passenger growth that can reasonably be expected at the Airport.

The high- and low- forecast numbers can be utilized to help test Master Plan recommendations for feasibility and flexibility. For example, the low-end forecast is often utilized to test for financial feasibility. The question, "If activity is lower than anticipated, can the development plan be funded?", can only be answered if low-end forecast numbers are known. The high forecast numbers are required to answer the question, "Will programmed facilities be adequate in capacity if aviation activity grows at the maximum reasonably anticipated rate?"

A summary of the various passenger enplanement forecast scenarios is presented in the following table, entitled SUMMARY OF PASSENGER ENPLANEMENTS FORECAST, 2002-2022. Enplanement forecasts presented in the Colorado Statewide Airport Inventory and Implementation Plan, 2000, and those developed as part of the FAA's Terminal Area Forecasts, are included for comparison purposes. A trend projection is usually also included for comparison purposes; however, this trend shows a negative progression and has not been included.

Table B6 **SUMMARY OF PASSENGER ENPLANEMENTS FORECAST, 2002-2022** *Gunnison-Crested Butte Regional Airport Master Plan Update*

Year	Colorado Statewide Plan, 2000	FAA Terminal Forecasts ⁽¹⁾	Commuter Passenger Scenario Forecast	Winter Ski Season Scenario Forecast	Total Enplanements Forecast
2002		53,149	21,292	20,551	41,843
2003	74,369	54,323	21,835	29,400	51,235
2004		55,518	22,392	31,325	53,717
2005		56,714	22,963	33,250	56,213
2006		57,910	23,548	35,175	58,723
2007		59,107	24,149	37,100	61,249
2008	90,572	60,303	24,765	37,471	62,236
2012		65,089	27,389	38,992	66,381
2017			31,064	40,981	72,045
2018	129,001		31,856	41,391	73,247
2022			35,231	43,072	78,303

Source: Barnard Dunkelberg & Company.

(1)FAA APO Terminal Area Forecasts, 1985-2020.

Commercial Service Operations Forecast

Currently, Gunnison-Crested Butte Regional Airport's seasonal air carrier service is offered from December through March, utilizing various aircraft by two (2) different carriers. At present, the regional commuter service is provided by United Express, operating De Havilland Dash-8 turboprop aircraft. Air carrier service is provided by various narrow-body jet aircraft ranging from the Airbus A-319/320 and Boeing B-737-700/800 to the Boeing B-757. The following table, entitled AIR CARRIER AND COMMUTER AIRLINE OPERATORS, 2002, provides detailed information on the existing air carrier and commuter carriers that are presently serving Gunnison-Crested Butte Regional Airport and those operating during 2002.

Table B7 **AIR CARRIER AND COMMUTER AIRLINE OPERATORS, 2002** *Gunnison-Crested Butte Regional Airport Master Plan Update*

Airline	Aircraft Type	Seating Capacity	City/ Destination	Stage Length (Nautical Miles)
Air Carrier/ Commuter Jets				
American	B-757	176	Dallas, TX	679 NM
Continental	B-737-700	124	Houston, TX	889 NM
Continental ⁽²⁾	B-737	183	Houston, TX	889 NM
Continental(1, 2, 4)	B-737-700	124	Newark, NJ	1,512 NM
United	A-319	120	Denver, CO	152 NM
United	A-320	138	Denver, CO	152 NM
Charter				
Delta	B-757	180	N/A	N/A
North American	B-757	215	N/A	N/A
Planet Airways	B-727	150	N/A	N/A
Miami Air	B-737-800/727-200	173/172	N/A	N/A
Commuter/ Turboprops				
Continental Express ⁽³⁾	Embraer 145	50	Houston, TX	679 NM
Delta Connections ⁽²⁾	Embraer 135	37	Dallas, TX	889 NM
United Express	Dash-8	32	Denver, CO	152 NM

Source: Gunnison-Crested Butte Regional Airport Personnel.

⁽¹⁾ Scheduled for Saturdays only.

⁽²⁾ Service to commence the winter of 2003.

⁽³⁾ Service to commence in June 2003.

⁽⁴⁾ Weight restricted to 117 passengers.

Operations. The establishment of projected passenger enplanements, in addition to identifying fleet mix, is required to properly project commercial service operations. The Boarding Load Factor (BLF) of the airlines serving an airport is one method of determining the forecast of commercial service operations. The BLF is the ratio of seats available for passenger boarding on a particular aircraft to the number of passengers actually boarding (for example, if an aircraft has fifty seats available and twenty-five passengers board, the BLF is 50%). According to 2003 FAA estimates, average load factors of approximately 72.5% are presently being achieved by the air carrier industry, which compares to 60.3% for the regional commuter carriers. The following table presents the commercial service operational forecasts, as well as enplanements, average seats per departure, and the projected BLFs. Due to the inability of knowing exactly what size and types of aircraft airlines might utilize in the future to satisfy demand, a range of aircraft sizes, with variable seating arrangements, has been assumed. Additionally, due to the altitude and warm temperatures during the summer season, some aircraft may be precluded from operating at the Airport on a regular basis. As can be seen in the forecast table, it is projected that a combination of additional flights and larger seating capacity aircraft will be utilized to accommodate additional passenger demand.

Table B8

COMMERCIAL SERVICE OPERATIONS FORECAST, 2002-2022

Gunnison-Crested Butte Regional Airport Master Plan Update

	Seats	2002 ⁽¹⁾	2003	2007	2012	2017	2022
Narrow Body Jets	124-180	438	268	400	456	496	576
Regional Jets	37-70		302	1,320	1,384	1,394	1,400
Turboprops	9-37	2,418	2,086	2,500	2,500	2,500	2,500
Total		2,856	2,656	4,220	4,340	4,390	4,476
Average Seats per Departure		50.21	45.81	48.01	49.65	52.06	53.60
Enplanements		41,843	38,562	61,249	66,381	72,045	78,303
Boarding Load Factor (BLF)		58.4%	72.1%	60.5%	62.9%	63.6%	65.3%

Source: Barnard Dunkelberg & Company.

(1)Actual

General Aviation Operations Forecast

As discussed earlier, recessions and growth periods in the country's economic cycle have historically affected aviation operations overall. However, with more of the general aviation aircraft fleet being utilized for business purposes than it was in the past, the economy should have somewhat less of an effect upon the overall general aviation activity. Because of the economic conditions that prevail in Gunnison and the surrounding area, it is anticipated that itinerant traffic and business activity will increase at the Airport. These factors, combined with the previously mentioned legislative action, limiting general aviation aircraft and parts manufacturers liability, should have a positive impact on general aviation activity.

Existing general aviation activity within west central Colorado (i.e., Gunnison, Chafee, and Montrose Counties) is primarily accommodated by Gunnison-Crested Butte Regional Airport and two additional aviation facilities. Montrose Regional Airport, located approximately sixty-five (65) miles west of Gunnison, is a publicly-owned, public-use regional commercial service facility. Harriet Alexander Field, located approximately sixty (60) miles east of Gunnison in Salida, is a publicly-owned, public-use general aviation facility. Due to Gunnison's relative geographic isolation from the larger metropolitan areas of the state, much of the region's existing general aviation activity is associated with business-related use as opposed to pleasure flying. This operational assumption is supported by the airport's based aircraft ownership data and the limited amount of flight training that is conducted at the facility.

Gunnison-Crested Butte Regional Airport primarily accommodates the existing general aviation activity within Gunnison-Crested Butte Regional and west-central Colorado. Gunnison-Crested Butte Regional Airport, located within Gunnison, is a designated primary commercial service airport. Large business jet aircraft are not severely restricted and/or prohibited from operating at Gunnison-Crested Butte Regional Airport. However, general aviation activity at the Airport is somewhat restricted by the existing mountainous terrain that surrounds the facility. Additionally, per Resolution No. 2001-21 of the Board of County Commissioners of Gunnison County, "no take-off or landing utilizing runway lights shall be permitted later than 10:30 p.m. or earlier than 6:00 a.m. local time". This curfew not only has an effect on the ability of the Airport to accommodate operations on an hourly basis, it serves to limit the amount of adverse noise and light glare effects on residential neighborhoods.

In developing the general aviation activity projections, several existing general aviation forecasts were reviewed. As presented in the following table, entitled *GENERAL AVIATION OPERATIONS FORECAST*, 2002-2022, this assessment has included an evaluation as presented by the *Colorado Statewide Airport Inventory and Implementation Plan, 2000* and the FAA's *Terminal Area Forecasts*. In addition, three sets of forecasts (i.e., Low, Moderate,

and High) were developed to address varying levels of growth within the sector. The "Low" forecast reflects the national average annual growth rate of 1.25%, at both FAA and contract towered airports, through the year 2014, as presented in the FAA Aviation Forecasts Fiscal Years, 2001-2014. The "Moderate" forecast reflects the average annual growth rate of 1.6%, which corresponds to the average annual population growth rate for Gunnison-Crested Butte Regional Airport, and the "High" forecast applies the nationwide average annual growth rate for turbine aircraft of 2.5%, which is the selected forecast for this study.

Table B9 **GENERAL AVIATION OPERATIONS FORECAST, 2002-2022** *Gunnison-Crested Butte Regional Airport Master Plan Update*

Year	Colorado Statewide Plan, 2000	FAA Terminal Area Forecasts ⁽¹⁾	Low-Range Forecast (1.25%)	Moderate-Range Forecast (1.6%)	High-Range Forecast ⁽²⁾ (2.5%)
2002		22,565	11,666	11,666	11,666
2003	26,951	22,958	11,817	11,853	11,958
2004		23,352	11,959	12,042	12,257
2005		23,745	12,109	12,235	12,563
2006		24,138	12,260	12,431	12,877
2007		24,532	12,414	12,630	13,199
2008	30,971	24,925			
2012		26,498	13,209	13,673	14,933
2017			14,056	14,802	16,896
2018	35,590			· 	
2022			14,956	16,025	19,116

Source: Barnard Dunkelberg & Company.

Military Operations Forecast

There are generally three components in determining military aircraft use at an airport. The first is Department of Defense (DOD) funding, which has been declining in recent years. The second is a fueling contract the airport or FBO may have with the DOD. The third is the location, or proximity of the airport with adjacent aviation-related military bases or training areas. Currently, Gunnison-Crested Butte Regional Airport does not accommodate military facilities. The FBO at Gunnison-Crested Butte Regional Airport

⁽¹⁾FAA APO Terminal Area Forecasts, 1985-2020.

⁽²⁾Selected Forecast.

does not have a fueling contract with the DOD and none is anticipated in the future. Therefore, military operations are projected to remain relatively low over the 20-year planning period of this document.

Table B10

MILITARY OPERATIONS FORECAST, 2002-2022

Gunnison-Crested Butte Regional Airport Master Plan Update

Year	Colorado Statewide Plan, 2000	FAA Terminal Area Forecast ⁽¹⁾	Selected Forecast
2002	150	150	150
2003	150	150	150
2004	150	150	150
2005	150	150	150
2006	150	150	150
2007	150	150	150
2012	150	150	150
2017	150	150	150
2022	150	150	150

Source: Barnard Dunkelberg & Company.

(1)FAA APO Terminal Area Forecasts, 1985-2015.

Operations Forecast By Aircraft Type

As can be noted, total annual operations are anticipated to increase by 63% through the planning period. Overall, operations are expected to increase from the current level of 14,672 to approximately 23,742 by the year 2022. It is projected that general aviation aircraft operations will continue to represent the majority percentage of airport activity through the planning period, totaling near 78% by the year 2022.

Table B11
SUMMARY OF OPERATIONS BY AIRCRAFT TYPE, 2002-2022
Gunnison-Crested Butte Regional Airport Master Plan Update

Operations By Type	2002 ⁽¹⁾	2003	2007	2012	2017	2022
Commercial Service	2,856	2,656	4,220	4,340	4,390	4,476
Air Carrier	438	268	400	456	496	576
Regional Jet		302	1,320	1,384	1,394	1,400
Turboprop	2,418	2,086	2,500	2,500	2,500	2,500
General Aviation ⁽²⁾	11,666	13,094	13,199	14,933	16,896	19,116
Single Engine Piston	6,396	7,024	6,999	7,763	8,606	9,556
Multi-Engine Piston	1,750	1,980	1,850	1,940	2,030	2,100
Turboprop	1,170	1,320	1,450	1,790	2,200	2,680
Business Jet	2,330	2,640	2,770	3,290	3,890	4,590
Helicopter	120	130	130	150	170	190
Military	150	150	150	150	150	150
Various Aircraft	150	150	150	150	150	150
TOTAL OPERATIONS	14,672	15,900	17,569	19,423	21,436	23,742

Source: Barnard Dunkelberg & Company.

The Airport currently experiences a large number of single and multi-engine operations, approximately 56%, when compared with turboprop and business jet operations, approximately 24%. Currently, operations conducted by single engine aircraft represent approximately 44% of the general aviation activity, while approximately 12% are multi-engine piston operations, 8% are turboprop operations, 16% are business jet operations, and 1% are helicopter operations. It is estimated that, through the planning period, the distribution percentage of operations for single and multi-engine aircraft will decrease, while the distribution percentage of turboprop and business jet aircraft will increase.

⁽¹⁾ Actual.

⁽²⁾Includes general aviation-related air taxi operations.

Local and Itinerant Operations Forecast

The Air Traffic Control Handbook defines a local operation as any operation performed by an aircraft operating in the local traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the Airport. According to current FAA Form 5010-1 records, itinerant operations constituted 58% of the total operations at the Airport. This existing percentage of itinerant activity can be attributed to the fact that, with respect to general aviation, the Airport accommodates a significant number of business and tourist-related aircraft operations and currently experiences a limited amount of general aviation flight training activity.

It is forecast that the level of itinerant aviation activity will likely remain high. As can be seen in the following table, entitled *SUMMARY OF LOCAL AND ITINERANT OPERATIONS*, 2000-2022, Gunnison-Crested Butte Regional Airport will remain primarily a center for leisure and business-related general aviation operations with the percentage of itinerant operational activity increasing only slightly, to 60%, through the planning period.

Table B12 **SUMMARY OF LOCAL AND ITINERANT OPERATIONS, 2002-2022** *Gunnison-Crested Butte Regional Airport Master Plan Update*

Year	Local Operations	Itinerant Operations	Total Operations
2002(1)	6,162	8,510	14,672
2003	6,678	9,222	15,900
2007	7,291	10,278	17,569
2012	7,963	11,460	19,423
2017	8,682	12,754	21,436
2022	9,497	14,245	23,742

Source: Barnard Dunkelberg & Company.

(1) The existing local/itinerant operations breakdown was obtained from FAA Form 5010-1.

Peak Period Forecast

An additional element of assessing airport usage and determining various requirements necessitated by capacity and demand considerations is the determination of peak period activities. Although specific operational data for Gunnison-Crested Butte Regional Airport was unavailable to project peak period trends, some flying activity information

was available to compare with generalized FAA operational statistics for airports with similar activity and peaking characteristics. This information was then utilized to formulate peak period forecasts. The peak period operation projections are depicted in the following table, entitled PEAK PERIOD AIRCRAFT OPERATIONS, 2002-2022.

Table B13 **PEAK PERIOD AIRCRAFT OPERATIONS, 2002-2022**Gunnison-Crested Butte Regional Airport Master Plan Update

Year	Annual	Peak Month	Average Day of Peak Month	Peak Hour/ Average Day Ratio	Average Peak Hour
2002	14,672	1,467	47	21%	10
2003	15,900	1,590	51	21%	11
2007	17,569	1,757	57	20%	11
2012	19,423	1,942	63	18%	11
2017	21,436	2,144	69	16%	11
2022	23,742	2,374	77	16%	12

Source: Barnard Dunkelberg & Company.

Operation counts were tabulated based on methodology from FAA AC 150/5070-6A Airport Master Plans and FAA AC 150/5060-5 Airport Capacity and Delay.

General Aviation Based Aircraft Forecast

The number of general aviation aircraft, which can be expected to base at an airport facility, is dependent on several factors, such as: airport radio communications, available facilities, airport operator services, airport proximity and access, aircraft basing capacity available at adjacent airports, and similar considerations. General aviation operators are particularly sensitive to both the quality and location of their basing facilities, with proximity of home and work often being identified as the primary consideration in the selection of an aircraft basing location. Gunnison-Crested Butte Regional Airport will likely continue to be attractive to single and twin-engine aircraft owners due to the airport's proximity to the larger population base and adjacent ski area. However, the Airport is well suited to accommodate the basing requirements of the larger corporate and business jet aircraft fleet. The Airport currently has thirty based aircraft, twenty are stored in hangars and ten are stored on the general aviation apron. Based aircraft currently consist of twenty-six (26) single engine, three (3) multi-engine, and one (1) turboprop. It should also be noted that much of the existing demand for the basing business jet aircraft at Gunnison-Crested Butte Regional Airport is seasonal and concentrated during either the winter or summer months of the year.

Generally, there is a relationship between aviation activity and based aircraft, stated in terms of operations per based aircraft (OPBA). Sometimes, a trend can be established from historical information of operations and based aircraft. The national trend has been changing with more aircraft being used for business purposes and less for pleasure flying. This impacts the OPBA in that business aircraft are usually flown more often than pleasure aircraft. In 2002, the OPBA at Gunnison-Crested Butte Regional Airport was approximately 354, below the average OPBA of 515 for the past ten years. It is expected that the number of operations per based aircraft will increase at the Airport as more aircraft based there are used for business purposes. It is important to note that an additional element, used to prepare forecasts for based aircraft, is the number of registered aircraft within a region or county surrounding an airport. For purposes of this forecast, information gleaned from the Federal Aviation Administration referencing the number of registered aircraft within Gunnison County (currently documented at 36 aircraft) has been considered and taken into account. The following table, entitled GENERAL AVIATION BASED AIRCRAFT FORECAST, 2002-2022, presents the forecasts for the twenty-year planning period.

Table B14 **GENERAL AVIATION BASED AIRCRAFT FORECAST, 2002-2022** *Gunnison-Crested Butte Regional Airport Master Plan Update*

Year	$\mathbf{TAF}^{(1)}$	Colorado Statewide Plan, 2000	Selected Forecast
2002	30		30
2003	28	29	30
2004	29		31
2005	30		31
2006	30		31
2007	30		33
2008	30	29	33
2012	33		36
2017	35		40
2018	36	29	41
2022			44

Sources: Barnard Dunkelberg & Company.

(1)FAA APO Terminal Area Forecasts, 1985-2020.

⁽²⁾Gunnison-Crested Butte Regional Airport Personnel.

The mix of based aircraft for incremental periods throughout the planning period is illustrated in the following table, entitled *GENERAL AVIATION BASED AIRCRAFT FLEET MIX, 2002-2022*. With an existing high percentage of single engine aircraft based at the Airport, the percentage of turboprop and business jet aircraft are expected to increase as a part of the total based aircraft population. This is in line, first of all, with overall trends in general aviation, but even more importantly, parallels the economic development and growth expectations and projections characteristic of the region. By the end of the planning period, single engine aircraft are anticipated to comprise 80% of the total based aircraft at the Airport, with approximately 9% being multi-engine piston aircraft, 6% turboprops, and 5% business jets.

Table B15

GENERAL AVIATION BASED AIRCRAFT FLEET MIX, 2002-2022

Gunnison-Crested Butte Regional Airport Master Plan Update

Aircraft Type	2002(1)	2003	2007	2012	2017	2022
Single Engine	26	26	28	30	32	35
Multi-Engine	3	3	3	3	4	4
Turboprop	1	1	1	2	2	3
Business Jet	0	0	1	1	2	2
TOTAL	30	30	33	36	40	44

Source: Barnard Dunkelberg & Company.

(1)Actual

Airport Reference Code (ARC) Analysis

The types of aircraft presently utilizing an airport and those projected to utilize the facility in the future are important considerations for planning airport facilities. An airport should be designed in accordance with the Airport Reference Code (ARC) standards that are described in AC 150/5300-13 "Airport Design". The ARC is a coding system used to relate and compare airport design criteria to the operational and physical characteristics of the aircraft intended to operate at the airport. The ARC has two components that relate to the airport's "Design Aircraft". The first component, depicted by a letter (i.e., A, B, C, D, or E), is the aircraft approach category and relates to aircraft approach speed based upon operational characteristics. The second component, depicted by a roman numeral (i.e., I, II, III, IV, V, or VI), is the aircraft design group and relates to aircraft wingspan (physical characteristic). Generally speaking, aircraft

approach speed applies to runways and runway-related facilities, while aircraft wingspan is primarily related to separation criteria associated with taxiways and taxilanes. The following table, entitled *SUMMARY OF OPERATIONS BY AIRPORT REFERENCE CODE*, 2000-2022, presents an estimated operations breakdown at the Airport, by ARC, for the twenty-year planning period.

It should be noted that, because the Airport is designed to a specific ARC, it does not preclude the use of certain aircraft. The design criteria, mandated by the FAA, indicate that at least 500 annual operations (either a takeoff or landing) by an aircraft, or group of aircraft, are required to include the Airport in the representative Airport Reference Code. Under this methodology, safety margins are provided in the physical design of airport facilities. Based on an examination of the current operation information and Airport Layout Plan (ALP), it has been determined that the existing ARC for Runway 06/24 is C-IV, and, A-I, small aircraft only, for Runway 17/35. However, the anticipated increase in the number of operations by Approach Category D business jets through the planning period would trigger the future implementation of ARC D-IV dimensional standards for Runway 06/24 at the Airport.

Table B16 **SUMMARY OF OPERATIONS BY AIRPORT REFERENCE CODE, 2002-2022** *Gunnison-Crested Butte Regional Airport Master Plan Update*

Operations by ARC	2002	2003	2007	2012	2017	2022
A-I through B-I	11,151	12,084	13,352	14,762	16,291	18,044
A-III, B-III and C-I through C-IV D-I and D-IV ⁽¹⁾	3,081 440	3,339 477	3,689 527	4,079 583	4,502 643	4,986 712
TOTAL	14,672	15,900	17,569	19,423	21,436	23,742

Source: Barnard Dunkelberg & Company.

Summary

The following tables summarize the forecasts of aviation activity, which have been presented in this chapter. This information will be utilized in the following chapter to document and analyze both airside and landside facility requirements. Therefore, the forecasts of aviation activity are an important part of the information base, which will be used to develop future plans for the Airport and formulate implementation decisions relating to airport development.

⁽¹⁾ Indicative of large business jet aircraft (Gulfstream II/IV, Gates Learjet 35A/36A).

Overall, total aircraft operations at Gunnison-Crested Butte Regional Airport are anticipated to increase over the course of the twenty-year planning period.

Table B17 **SUMMARY OF AVIATION ACTIVITY FORECASTS, 2002-2022** *Gunnison-Crested Butte Regional Airport Master Plan Update*

Operations	2002 ⁽¹⁾	2003 ⁽¹⁾	2007	2012	2017	2022
Commercial Service	2,856	2,656	3,490	3,834	4,240	4,716
Narrow Body	438	286	400	456	496	576
Regional Jet		302	1,320	1,384	1,394	1,400
Turboprop	2,418	2,086	2,500	2,500	2,500	2,500
General Aviation	11,666	13,094	13,199	14,933	16,896	19,116
Single Engine	6,300	7,024	6,999	7,763	8,606	9,556
Multi-Engine	1,750	1,980	1,850	1,940	2,030	2,100
Turboprop	1,170	1,320	1,450	1,790	2,200	2,680
Business Jet	2,330	2,640	2,770	3,290	3,890	4,5 90
Helicopter	120	130	130	150	170	190
Military	150	150	150	150	150	150
Various Aircraft	150	150	150	150	150	150
TOTAL OPERATIONS	14,672	15,900	17,569	19,423	21,436	23,742
Local Operations	6,162	6,678	7,291	7,963	8,682	9,497
Itinerant Operations	8,510	9,222	10,278	11,460	12,754	14,245
Passenger Enplanements	41,843	38,562	61,249	66,381	72,045	78,303
Based Aircraft By Type						
Single Engine	26	26	28	30	32	35
Multi-Engine	3	3	3	3	4	4
Turboprop	1	1	1	2	2	3
Business Jet	0	0	1	1	2	2
TOTAL	30	30	33	36	40	44

Source: Barnard Dunkelberg & Company.

(1)Actual.

Table B18 **SUMMARY OF AVIATION ACTIVITY FORECASTS, 2002-2022 (FAA FORMAT)** *Gunnison-Crested Butte Regional Airport Master Plan Update*

Passenger Enplanements	2002 ⁽¹⁾	2003	2007	2012	2017	2022
Air Carrier/Commuter	41,843		61,249	66,381	72,045	78,303
Total Enplanements	41,843		61,249	66,381	72,045	78,303
Aircraft Operations	14,672		17,569	19,423	21,436	23,742
ITINERANT OPERATIONS						
Air Carrier	438		400	456	496	576
Air Taxi/Commuter	2,418		3,820	3,884	3,894	3,900
General Aviation	5,504		6,211	7,177	8,275	9,523
Military	150		150	150	150	150
TOTAL ITINERANT OPERATIONS	8,510		10,581	11,667	12,815	14,149
LOCAL OPERATIONS						
General Aviation TOTAL LOCAL	6,162		6,988	7,756	8,621	9,593
OPERATIONS	6,162		6,988	7,756	8,621	9,593
TOTAL OPERATIONS	14,672		17,569	19,423	21,436	23,742

Source: Barnard Dunkelberg & Company.

(1)Actual.