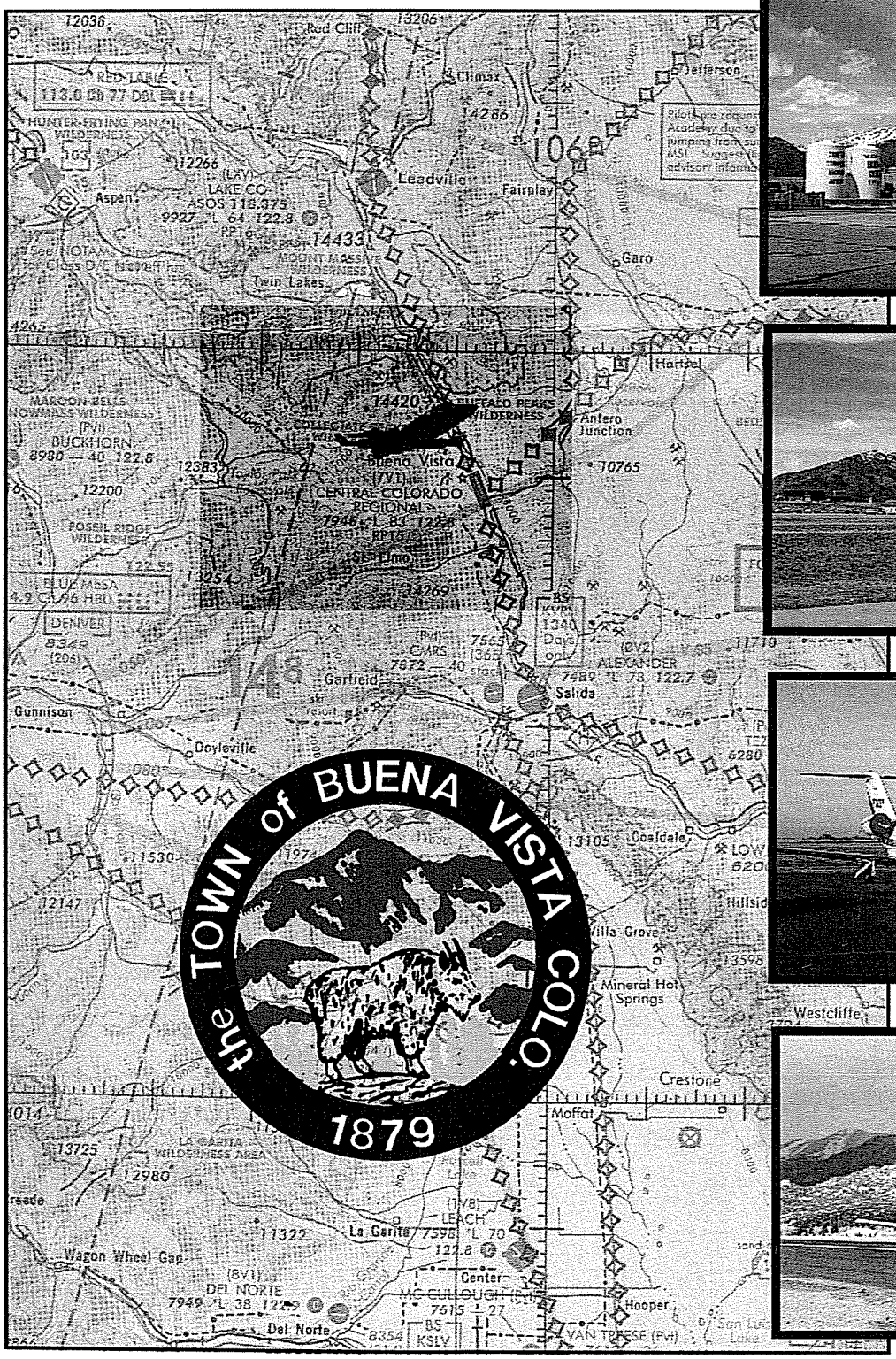
CENTRAL COLORADO REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE



Washington
Infrastructure Services, Inc.

FINAL DRAFT REPORT
September 2003

Central Colorado Regional Airport

AIRPORT MASTER PLAN UPDATE

Final Draft Report
September 2003

Prepared for the Town of Buena Vista

The following statement is provided as required by Paragraph 429.a of Federal Aviation Administration Order 5100.38, *Airport Improvement Program (AIP) Handbook:*

"The preparation of this document was financed in part through a planning grant from the Federal Aviation Administration as provided under Section 505 of the Airport and Airway Improvement Act of 1982, as amended. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development in environmentally acceptable in accordance with appropriate public laws."

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1.0 INTRODUCTION

1.1 Introduction

Central Colorado Regional Airport is owned by the Town of Buena Vista, Colorado. The airport is located just south of the central business district and just west of Colorado Highway 24 in Chaffee County. The airport is classified as a general aviation airport and serves principally piston aircraft, but also handles occasional turbine powered corporate jets and helicopters. Currently there is no commercial airline service at the airport and there are no immediate plans by any airline to initiate service.

This Airport Master Plan updates the previous Airport Master Plan Update completed in 1993. Existing conditions surrounding the Central Colorado Regional Airport have also been analyzed and updated. This Master Plan update is concerned with the anticipated growth of airport facilities necessary to accommodate future demands for a planning period utilizing historic aviation data, dating back to 1995, and projects activity through to 2021. Requirements for future facilities will be evaluated not only from the standpoint of aviation needs, but will also consider the relationship of airport operations to the surrounding land uses and the community as a whole.

Runway 15/33 is the only runway at Central Colorado Regional Airport, measuring 8,300 feet long and 75 feet wide. The runway orientation follows the natural valley alignment, which is north/south. Although aligned with the valley, the runway is subject to significant crosswinds during various times during the day and arriving aircraft often need to divert to other airports. Departing aircraft may also need to delay departure until winds diminish or change direction. A crosswind runway has been considered but has not been constructed. A full parallel taxiway, which was the original runway, provides access to each runway end.

1.2 Objectives and Need for Assistance

The Town of Buena Vista, the sponsor for this update, is continuing its efforts to plan for future development of the Central Colorado Regional Airport. Further development of the airport will enhance the safety and efficiency of both air and ground operations as well as improve the services provided to its users.

Concurrently, the sponsor wishes to study the existing use of the airport site and the land surrounding it to develop recommendations for establishing and maintaining compatibility. It is also the intent of the sponsor to evaluate existing facilities at the airport and to identify improvements that will attract additional users, including the potential for small and medium sized business jets.

Another objective of the sponsor is to enhance the productivity of the entire airport operation in order to generate the revenues necessary for funding recommended capital improvements and for recurring maintenance and repair of the airfield, roadways, utilities, and support facilities.

In order to fulfill all of these objectives, the Central Colorado Regional Airport Master Plan Update Study includes, but is not limited to, a review and evaluation of the following:

- An update of inventory of airport facilities includes airfield lighting, fixed base operations, fuel facilities, aprons, utility systems, pavement condition, navigation aids, temporary weather station and airport maintenance equipment. Also included is a review of published socioeconomic data, existing published land use and zoning documents, and airport financial data. Wind rose data, has been gathered from available sources to evaluate crosswind runway feasibility.

- An update of the forecast for aviation activity includes the number of based aircraft, number of annual general aviation operations, the mix of local, and itinerant general aviation operations and mix of general aviation aircraft.

- Identification of facility requirements for runways, taxiways, aprons, hangars, fuel facilities, general aviation terminal facilities, access roads, equipment, weather station, instrument landing systems, real estate acquisition, and land use controls.

- Evaluation of emerging aircraft and airport user needs and opportunities, along with the developing technology and capabilities in aircraft maintenance and upgrades, flight planning, weather data access, in-flight and executive jet catering food service, ground transportation, flight and new aircraft systems instruction and rental aircraft have been identified and analyzed.

- Correlation of the value of Central Colorado Regional Airport to the Town as a gateway to the community. The update details the positive economic impact to the business community and area residents considering tourism, employment, business development, Government support, tax base and new construction.

- Identification of a phasing plan, preliminary engineering analysis and cost estimates for proposed airport facility development.

- Preparation of Airport Layout Plan (ALP) drawings including an Airport Layout Plan; Terminal Area Layout Plan; FAR Part 77 drawings; Inner Portion of the Approaches Plan & Profile; Land Use Plan; and an Exhibit "A" Property Map.

- Preparation of a financial implementation program that provides the airport development requirements necessary to meet projected aviation activity demands, and prepare an Airport Capital Improvement Program (ACIP).

Federal assistance was used by the Town of Buena Vista to fund this Airport Master Plan Update Study for the Central Colorado Regional Airport. The assistance was necessary to identify, evaluate, and determine Airport requirements and development in addition to identification of improvements required to guide the Airport safely and efficiently into the future, as an integral part of the National Airports and Airways System.

The Master Plan Process includes use of information contained in the *National Plan of Integrated Airport Systems (NPIAS), Terminal Area Forecast FY 2002-2005, and The 2000 Colorado Statewide Airport Inventory and Implementation Plan,* as well as the appropriate FAA Advisory Circulars including:

AC 150/5050-6, Airport Land Use Compatibility Planning

AC 150/5060-5, Airport Capacity and Delay

AC 15/5070-6A, Airport Master Plans

AC 150/5300-13, Airport Design, Including Changes

2.0 INVENTORY

2.1 Introduction

Central Colorado Regional Airport is located in Chaffee County, Colorado, approximately two miles south of the Town of Buena Vista. The location of the Central Colorado Regional Airport is shown on **Figure 2-1**. Chaffee County is on the eastern slope of the Rocky Mountains in central Colorado. The County is bordered on the west by the Sawatch Range and to the east by the Mosquito Range. Located high in the Upper Arkansas Valley, the Arkansas River flows toward the southeast, between the two mountain ranges. Buena Vista is approximately 125 miles southwest of Denver, the state capital. The geographic coordinates of the Airport Reference Point (ARP) are 38°40'50.983"N latitude and 106°07'14.498"W longitude. The established airport elevation is 7,946 feet above Mean Sea Level (MSL).

The ***National Plan of Integrated Airport Systems*** defines the airport as a General Aviation airport. **Figure 2-1**, details the location of Central Colorado Regional Airport and surrounding airports in the region. In addition to the Central Colorado Regional Airport, Chaffee County is home to another general aviation airport, Harriet Alexander Field twenty-seven miles south of Buena Vista in Salida. A third general aviation airport, Lake County Airport, is located thirty-seven miles away in the town of Leadville. The closest airport providing scheduled passenger service is Gunnison County Airport in Gunnison, CO, which is approximately seventy miles to the Southwest by automobile

The Central Colorado Regional Airport encompasses approximately 184 acres of land located within Sections 21 and 28 of Township 14 South, Range 78 West of the 6th Principal Meridian. Major highways providing access to the airport include U.S. Highways 285 and 24.

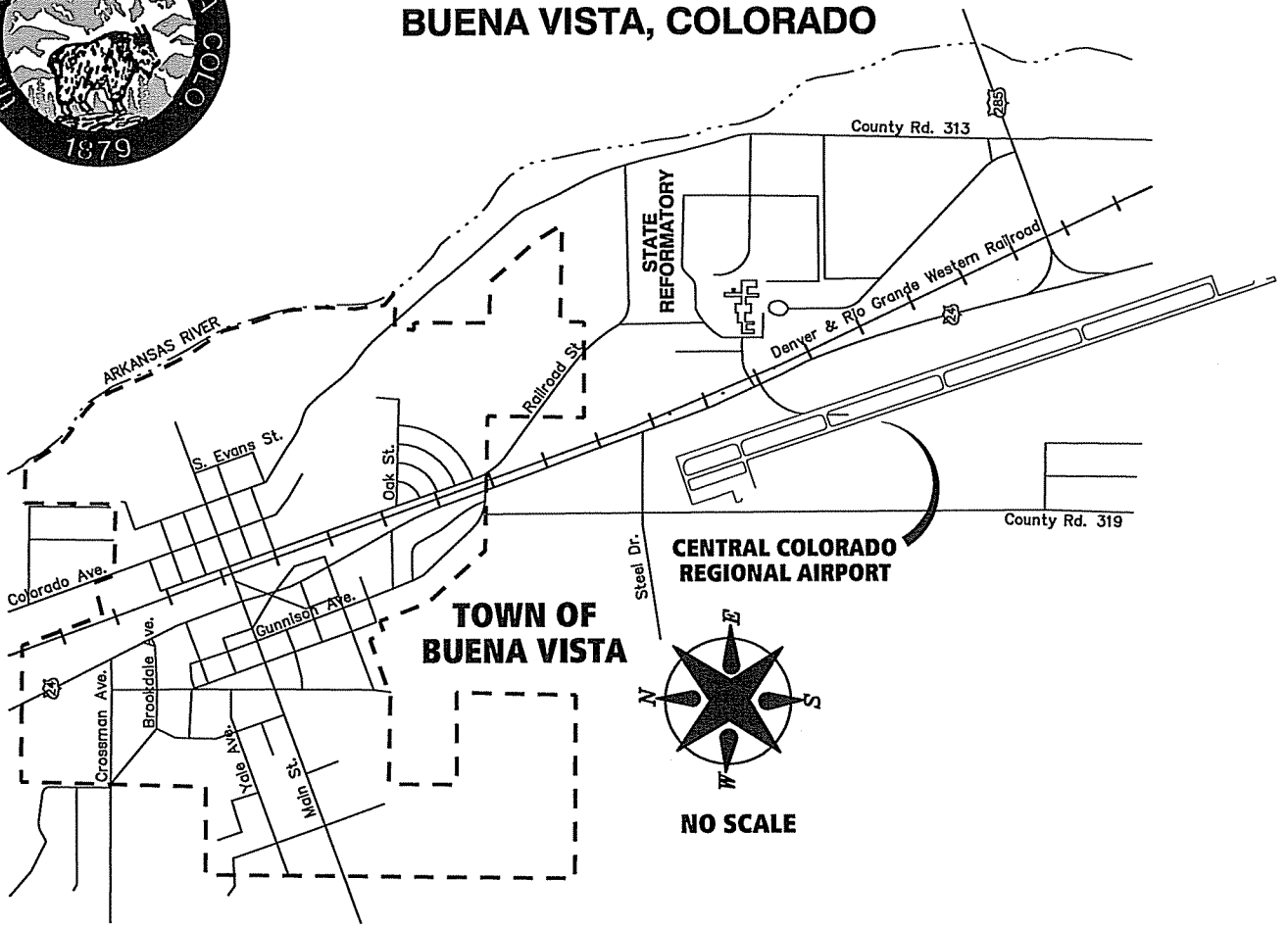
2.2 Airport Facilities

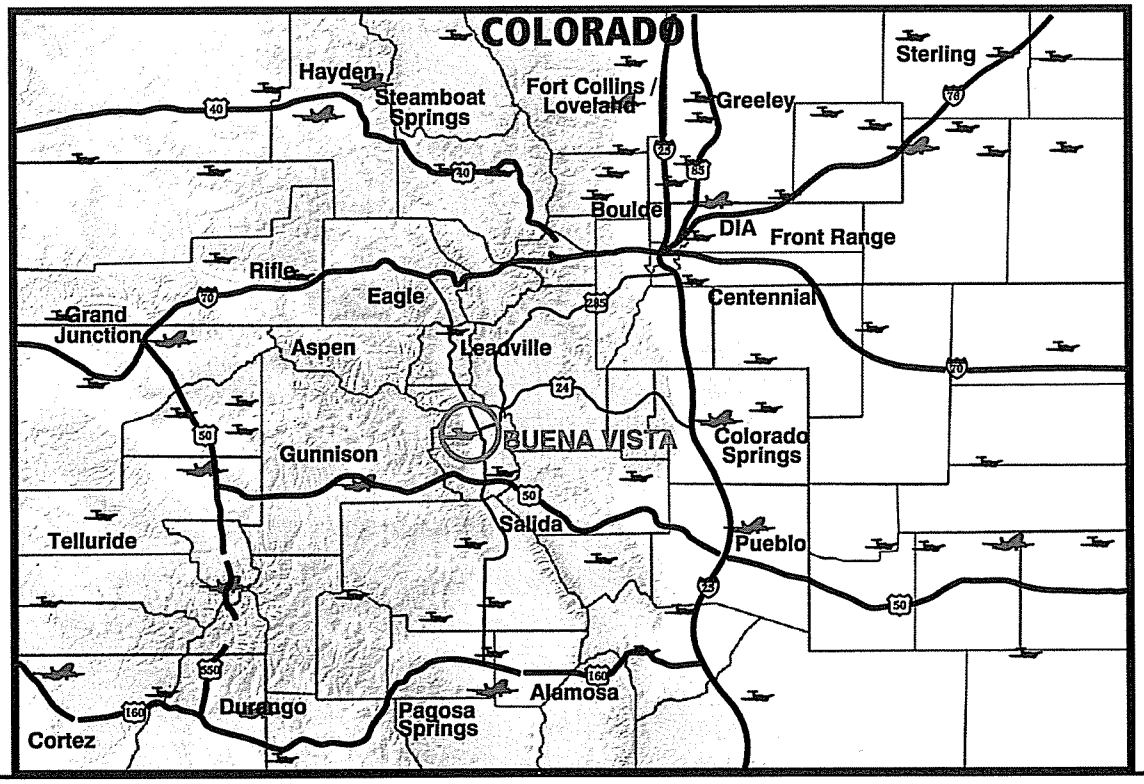
The following section describes existing airport facilities and land use adjacent to the airport. **Figure 2-2** depicts existing airport facilities.

2.2.1 Runways and Taxiways

Central Colorado Regional Airport has one non-precision instrument runway, Runway 15/33, oriented northwest/southeast. The runway was relocated 300 feet to the east in 1996 in order to provide for a full-length parallel taxiway. The runway is constructed of asphalt and its dimensions are 8,300 feet long by 75 feet wide. The pavement strength is rated at 12,500 lbs. (gross takeoff weight) for aircraft with Single Wheel Gear (SWG).

CENTRAL COLORADO REGIONAL AIRPORT
BUENA VISTA, COLORADO





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AIRPORT VICINITY MAP

FIGURE 2-1

STATE REFORMATORY

WEATHER STATION

ROTATING BEACON

TIEDOWN APRON

POND

DENVER AND RIO GRANDE WESTERN RAILROAD

U.S. HIGHWAY 24/285

TO JOHNSON VILLAGE 1/2 MILE

ARKANSAS RIVER

CDOT–DISTRICT 5 MAINTENANCE BUILDINGS

U.S. HIGHWAY 24

U.S. HIGHWAY 285

TO BUENA VISTA 1.2 MILES

SEGMENTED CIRCLE AND LIGHTED WINDCONE

RUNWAY 15/33

8300' X 75' RUNWAY (ASPHALT)

A6 A5 A4 A3 A2 A1

TAXIWAY "A"

FBO

STEELE DR.

GREGG DR.

FUEL FARM

EXECUTIVE HANGAR

AIRPORT DEVELOPMENT AREA

COUNTY ROAD 319

PRIVATE HANGAR

PAPI

AIRPORT PERIMETER ROAD

FORMER RUNWAY 15/33 (ABANDONED)

11°24' E
FEB.,1992

MAGNETIC NORTH

ANNUAL RATE OF CHANGE
Δ=4.2' W

NO SCALE

CENTRAL COLORADO REGIONAL AIRPORT
BUENA VISTA, COLORADO

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EXISTING FACILITIES
FIGURE 2-2

Full Parallel Taxiway "A", along with six connector taxiways, serves Runway 15/33. The taxiway is located 300 feet from the runway centerline and is 50 feet wide. Connector Taxiways "A-5" and "A-6" connect Runway 15/33 to the apron area. All connector taxiways are 35 feet in width.

2.2.2 FBO Terminal and Apron Area

Arkansas Valley Aviation is a full service Fixed Base Operator (FBO) and the only one on the airport. They are located in the apron area on the north end of the airport, west of Runway 15/33. They provide aircraft maintenance, aircraft storage and tiedown, fueling, sales, and service. Arkansas Valley Aviation operates the airport through a lease agreement with the Town of Buena Vista. The terminal/administration building consists of 5,900 square feet of space, including a public lobby, FBO line shack, customer service counter, FBO offices, vending machines, conference room, and pilot's lounge.

The FBO hangar, constructed in 1985, is adjacent to the terminal/administrative building and is approximately 12,900 square feet in size. The hangar provides for aircraft storage and maintenance.

The apron consists of approximately 14,000 square yards of asphalt pavement, except for the fueling apron, which is concrete. Approximately 4,700 square yards of apron and 20 tiedown positions are available for based aircraft. The remainder of the apron is available for itinerant aircraft parking, taxiing, and aircraft fueling.

There is one existing hangar located south of the FBO building. This executive hangar is 8,800 square feet in size and provides space for six aircraft storage units. There is also a private executive hangar located just north of Connector Taxiway "A-2".

2.2.3 Airfield Lighting

Runway 15/33 is equipped with a Medium Intensity Runway Lighting (MIRL) system. Pilots can activate the system on Common Traffic Advisory Frequency (CTAF) 122.8. Each runway end is equipped with Precision Approach Path Indicator's (PAPI). There is also a rotating beacon to assist pilots in locating the airport facility during nighttime operations or periods of inclement weather. Taxiway A and all associated connector taxiways do not currently posses a taxiway lighting system. All taxiway pavement edges are marked with blue and yellow reflectors.

2.2.4 Navigational Aids / Instrument Approaches

Navigational Aids are defined as any facility used by pilots to assist in the navigation of an aircraft while in flight, taking-off or landing. The airport rotating beacon is white and green and indicates a lighted land airport during the hours of dusk to dawn. The rotating beacon helps pilots to identify the airport's location and is located 650 feet west of Runway End 15.

A segmented circle and lighted wind cone is located approximately 3,780 feet south of Runway End 15 and 255 feet east of the runway centerline. The wind cone provides a visual indication of wind direction and velocity and is located in the center of the segmented circle. The segmented circle has landing runway indicators which, installed in pairs, indicate the alignment of the runway. Traffic pattern indicators are also arranged in pairs in conjunction with the landing runway indicators and indicate the direction of turns for aircraft making a landing approach.

Precision Approach Path Indicators are installed on each end of Runway 15/33. The PAPIs provide the pilot with a safe and accurate slope on final approach to the runway. PAPI Light Housing Assemblies (LHA's) are located fifty feet off runway centerline and perpendicular to the approach path approximately 900 and 700 feet off of Runway Ends 15 and 33 respectively. PAPIs are seen by an approaching pilot in combinations of red and white lights, which indicate a path that is too high, too low, or correctly on slope.

Flights into Central Colorado Regional Airport are conducted using both Non-Precision Instrument Approach and Visual Flight Rules (VFR). A Non-Precision Instrument Approach is governed by procedures which permit aircraft to approach the airport under minimum visual distance during final decent. Visual Flight Rules govern the procedures for flight under visual conditions. Published procedures for non-precision instrument approaches outline the aircraft's required flight path and altitude.

There is one non-precision approach into the airport. **Table 2-1** shows the available approaches to Central Colorado Regional Airport in addition to neighboring airports in the region. Runway 33 has a non-precision Global Positioning System (GPS) approach, which allows aircraft to descend to as low as 1,619 feet Above Ground Level (AGL) before visual contact must be established with the airport at a distance of 1½ miles. The GPS system uses a number of earth-orbiting satellites to provide position information to the pilot. Runway 15 is a Visual Approach runway only.

Table 2-1
Instrument Approaches and Departures

Airport	Runway End	Approach Type	Visibility Minimum	Decision Height MSL	Decision Height AGL
Central Colorado Regional	15	GPS	Departure Procedure		
	33	GPS	>1 ½ Mile	9,540'	1,619'
Lake County	16	GPS	> 1 ¼ Mile	11,360	1,433'
Harriet Alexander Field	No instrument approaches are currently available				

Source: Jeppesen, April 4, 2002

In comparison to other airports in the region Central Colorado Regional Airport holds a distinct advantage over Harriet Alexander Field and is comparable to Lake County Airport. The absence of an instrument approach at Harriet Alexander Field would essentially close the airport during periods of inclement weather and require inbound traffic to divert to an alternative airport. Central Colorado Regional and Lake County Airports both have a published GPS instrument approaches with similar visibility minimums.

2.3 Air Traffic Control and Airspace

Central Colorado Regional Airport is located in the FAA's Northwest Mountain Region headquartered in Renton, Washington. The National Airspace System covers the common network of U.S. airspace, including air navigation facilities; airport and landing area; aeronautical charts; associated rules, regulations, and procedures; technical information; personnel and material. The system also includes components shared jointly with the military.

2.3.1 Air Route Traffic Control Center (ARTCC)

The FAA has established 21 Air Route Traffic Control Centers (ARTCC) in the continental United States to control aircraft operating under Instrument Flight Rules (IFR) within controlled airspace and during the enroute phase of flight. An ARTCC assigns specific routes and altitudes along federal airways to maintain separation and orderly air traffic flow. Centers use radio communication and long-range radar with automatic tracking capability to provide enroute air traffic services. Typically, the ARTCC splits its airspace into sectors and assigns a controller or team of controllers to each sector. As an aircraft travels through the ARTCC, one hands off control to another. Each sector guides the aircraft using discrete radio frequencies.

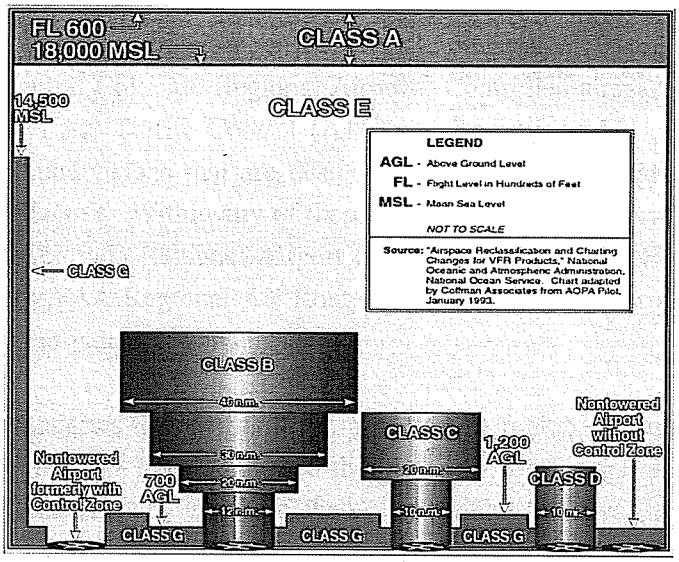
The Longmont ARTCC located in Longmont, Colorado controls IFR aircraft entering and leaving the Central Colorado Regional Airport airspace. The area of jurisdiction for the Longmont Center

includes western Nebraska, southwest South Dakota, eastern Wyoming, eastern Utah, northeast Arizona, northeast New Mexico and the entire state of Colorado.

2.3.2 Airspace Structure

Airspace structure currently falls into two primary categories: Controlled and Uncontrolled. Ground to air communications, navigation aids and air traffic services govern controlled airspace. **Figure 2-3** is reproduced from the FAA Aeronautical Information Manual and illustrates airspace structure for the contiguous United States.

Figure 2-3
Airspace Structure for The United States



Source: FAA Aeronautical Information Manual (AIM)

2.3.2.1 Class E Airspace

This classification designates at broad area of airspace with upper realms at and above 14,500 MSL, terminating at the base of Class A Airspace, and lower realms terminating at various levels.

Class E Airspace extends upward from the surface at non-towered airports with control zones to the overlying or floor of adjacent controlled airspace. It also includes controlled airspace designed to contain IFR operations during portions of the terminal operation and while transitioning between the terminal and enroute environments. Class E Airspace also extends upward from 700 feet above the surface of a non-towered airport that has an instrument approach procedure, or from 1,200 feet above the surface when established in conjunction with airway route structures or segments. This airspace

terminates at the base of the overlying airspace. Airspace converts from Class D to Class E at a towered airport when the air traffic control tower is closed.

2.3.2.2 Class G Airspace

Uncontrolled Airspace is designated as Class G Airspace. Air Traffic Control does not have the authority or responsibility to exercise control over aircraft within this airspace. Class G airspace exists to the south and west of Central Colorado Regional Airport. (see **Figure 2-4**)

2.3.3 Airspace Central Colorado Regional Airport

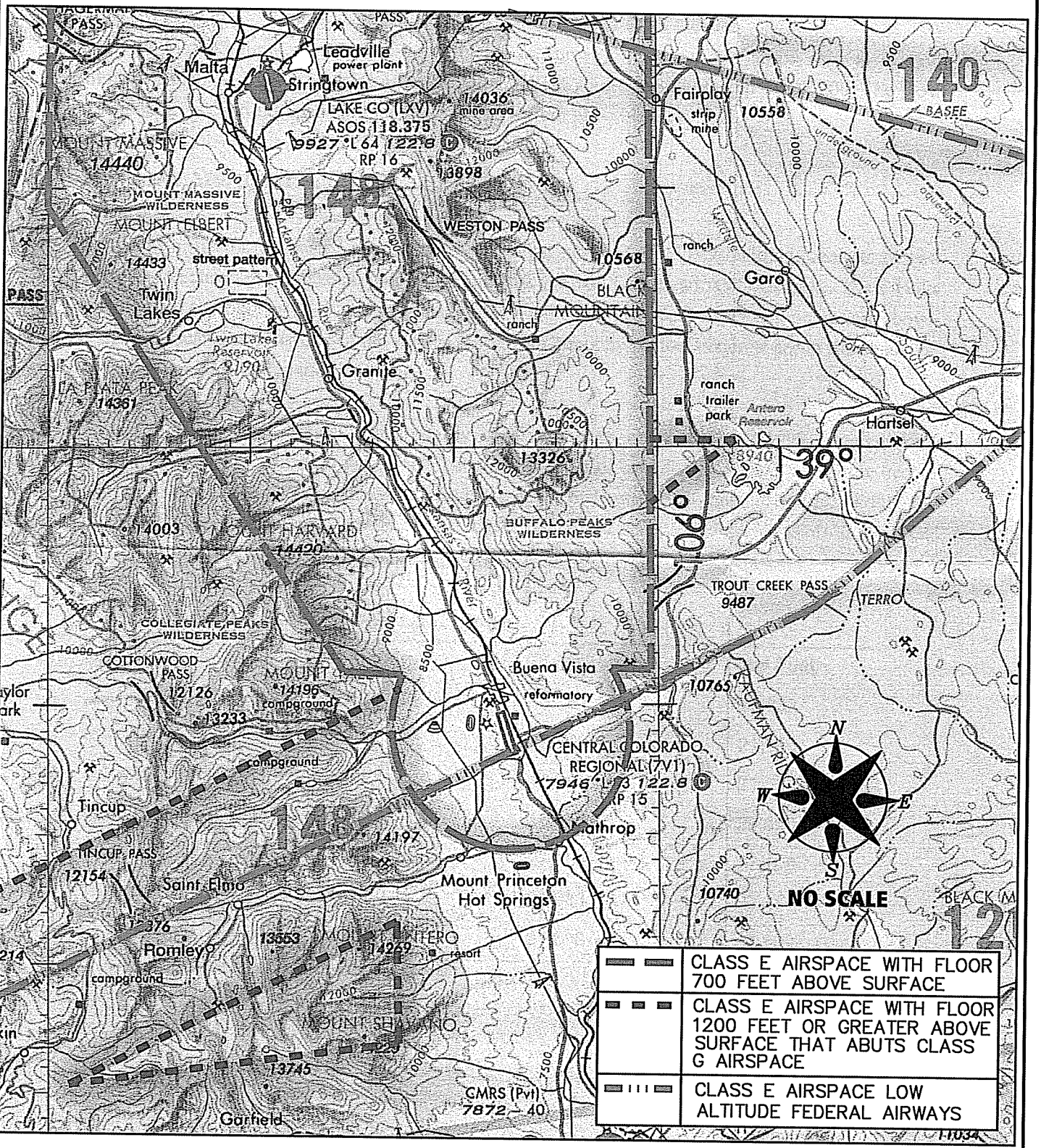
Figure 2-4 is reproduced from the Denver Sectional Aeronautical Chart and details controlled airspace surrounding Central Colorado Regional Airport. Controlled airspace is airspace of defined dimensions within which Air Traffic Control (ATC) service is provided to controlled flights. It includes the following subdivisions that are designated by regulation: Class A, Class B, Class C, Class D, Class E, and Class G. Within any of these areas, some or all aircraft may be subject to air traffic control. Central Colorado Regional Airport is surrounded by Class E airspace. Participating aircraft are controlled by FAA Regional Air Route Traffic Control Center (ARTCC) in lieu of air traffic control towers at individual airports.

Figure 2-4 identifies boundaries for operational airspace in the region surrounding Central Colorado Regional Airport. The magenta line established the boundary for Class E surface area airspace for Central Colorado Regional Airport, which is shared with Lake County Airport. The floor of the surface area airspace is located at 700 feet Above Ground Level (AGL), and is configured to contain all instrument approach procedures for both airports. The blue line represents boundaries for Class E low altitude Federal airways and green lines represent vectors for air travel within the airways. These airways extend upward from 1,200 feet AGL to an altitude of 18,000 feet mean sea level.

2.3.4 Airspace Conflicts

There are no airspace conflicts in the area surrounding Central Colorado Regional Airport. However, Central Colorado Regional Airport is centered in the Rocky Mountain Range at an elevation of 7,946 feet above Mean Sea Level (MSL). Within a 20-mile radius of Central Colorado Regional Airport, terrain elevations rise quickly ranging between 12,100 feet MSL to the southeast to 14,800 feet MSL to the north and northwest.

CENTRAL COLORADO REGIONAL AIRPORT
BUENA VISTA, COLORADO



Washington

AIRPORT AIRSPACE MAP

FIGURE 2-4

2.4 Support Facilities

2.4.1 Snow Removal Equipment

Snow Removal Equipment (SRE) used to clear the runway, taxiway, and apron area at Central Colorado Regional Airport consists of one city owned 1987 Ford L-8000 Dump Truck 200. The plow truck is in good condition and equipped with an eight-foot plow blade.

2.4.2 Fuel Storage Facilities

The airport's fuel farm, located approximately 150 feet north of the FBO building, consists of two 15,000-gallon above-ground tanks; one Jet A tank and one 100 Low Lead AVGAS tank. These tanks were installed approximately 17 years ago and are in good condition. Fuel dispensing pumps are above-ground and located directly east of the storage tanks. A 72-foot by 66-foot concrete apron surrounds the fuel pumps where aircraft park for fueling.

The airport has seen fuel sales remain fairly consistent from about 1988 to 1998, ranging from approximately 20,000 to 25,000 gallons of fuel sold. Fuel sales over the past three years have seen a large jump from previous years due to the increase in jet fuel sales from itinerant traffic. **Table 2-2** provides a fuel flowage summary for the airport for the last six years.

Table 2-2
Central Colorado Regional Airport Fuel Sales

Year	Jet Fuel (gallons)	AVGAS (gallons)	Total Fuel
1996	7,781	19,051	26,832
1997	5,253	16,126	21,379
1998	5,625	15,904	21,530
1999	8,403	19,652	28,055
2000	14,350	22,758	37,108
2001	9,471	20,983	30,454
2002	32,981	21,508	54,509

Source: Central Colorado Regional Airport records

2.4.3 Utilities

All utility lines serving the airport are buried underground and provide service to the building area and airfield facilities. A four-inch sanitary sewer line provides wastewater discharge into the airport's wastewater treatment facilities, which consist of a 1,500-gallon septic tank and associated leach field. The septic tank and leach fields are located directly east of the building area, between the apron and Runway 15/33.

Electricity is provided by the Sangre de Cristo Electric Association. Water lines serving the airport from the Buena Vista Municipal Water Plant provide potable water and fire protection. Two fire hydrants are located on the east edge of the apron edge taxiway opposite the northeast corner of the FBO administration building and west of the building along the edge of the auto parking lot. Comfurt Gas, Inc. provides natural gas for heating fuel. Qwest provides telephone service.

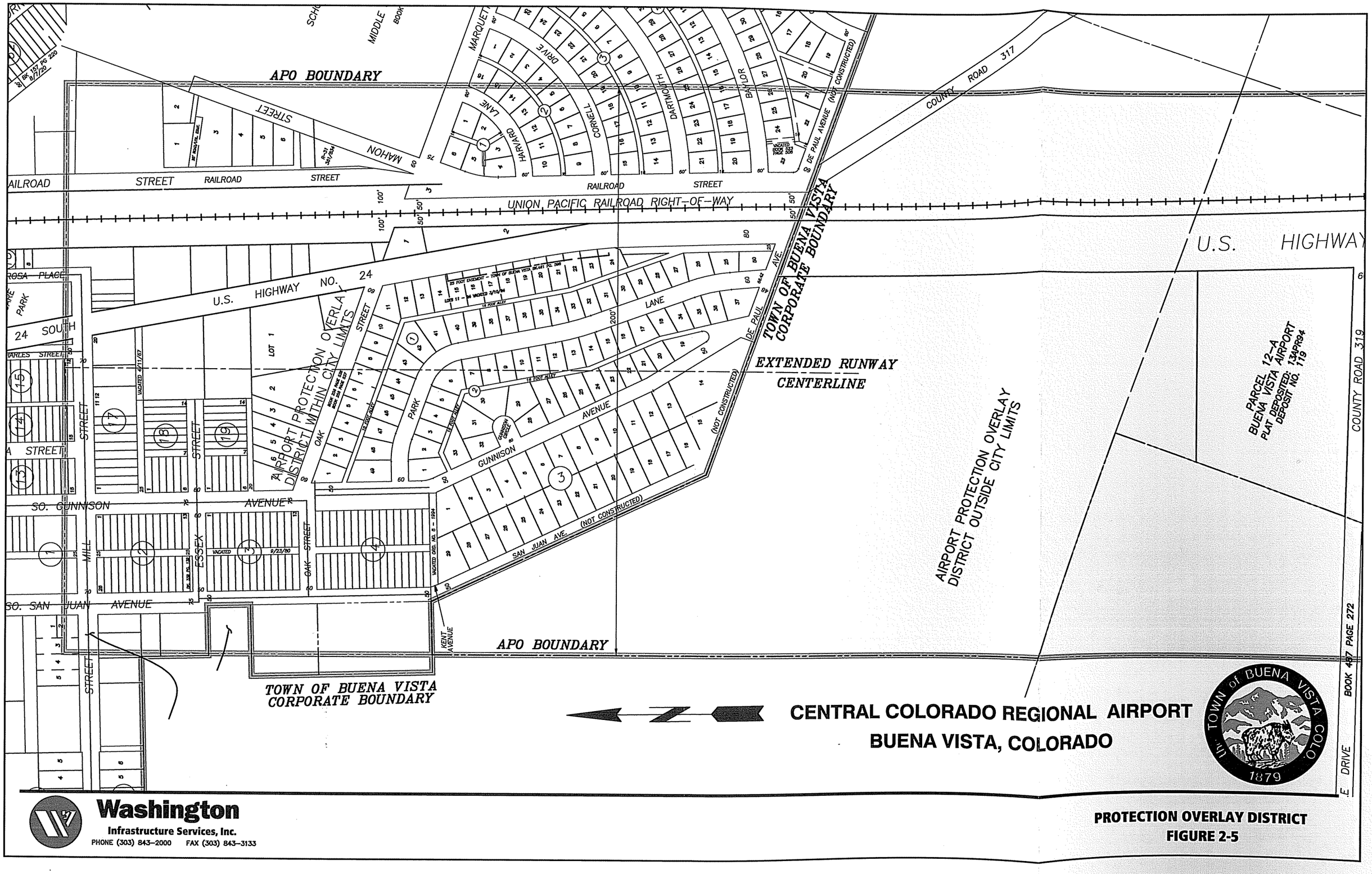
2.5 Land Use

The existing airport site encompasses 184 acres of land owned in fee simple and through long-term leases with the State of Colorado Departments of Corrections and Natural Resources Division of Wildlife. Eighty-three acres of this land was donated to the Town in 1983 for airport purposes. In addition, both the Colorado Department of Corrections and Natural Resources have provided long-term land leases for 73.6 and 27.2 acres of land respectively for airport purposes. The Town of Buena Vista owns in fee simple a total of 83 acres of land for the airport.

The Town of Buena Vista and Chaffee County have adopted zoning ordinances that control the type and placement of development within their jurisdictions. The Town of Buena Vista controls the incorporated areas of the Town and the actual airport property on which the building area is situated. The remaining areas are controlled by Chaffee County.

The airport property has been zoned as industrial use. The land west, south, and east of the airport are zoned as Rural, and the land north of the airport has been zoned as Rural Residential. A zoning ordinance was amended in 1991 by the Town to establish an Airport Protection Overlay (APO) district detailed in **Figure 2-5**. The description of the APO is detailed in Municipal Code Sections 17.60.100-17.60.103. This district was created in order to minimize exposure of sensitive land uses to aircraft noise area; avoid danger from aircraft accidents; reduce the possibility of such accidents; discourage traffic congestion within the area of the district; and restrict noncompatable land uses in the proximity of and within the APO.

The APO includes areas within the existing airport properties in addition to privately owned land adjacent to airport property up to 1,250 feet from the runway centerline. The APO also extends 5,000 feet beyond each end of the primary surface.


APO BOUNDARY
UNION PACIFIC RAILROAD RIGHT-OF-WAY
U.S. HIGHWAY NO. 24
TOWN OF BUENA VISTA CORPORATE BOUNDARY
EXTENDED RUNWAY CENTERLINE
AIRPORT PROTECTION OVERLAY DISTRICT OUTSIDE CITY LIMITS
AIRPORT PROTECTION OVERLAY DISTRICT WITHIN CITY LIMITS
MARQUETTE DRIVE
HARVARD LANE
CORNELL DRIVE
DARTMOUTH
BAYLOR
DE PAUL AVENUE (NOT CONSTRUCTED)
COUNTY ROAD 317
COUNTY ROAD 319
MAHON STREET
RAILROAD STREET
U.S. HIGHWAY
PARCEL 12-A
BUENA VISTA AIRPORT
PLAT DEPOSITED: 13APR94
DEPOSIT NO. 119
BOOK 457 PAGE 272
CENTRAL COLORADO REGIONAL AIRPORT
BUENA VISTA, COLORADO
TOWN of BUENA VISTA COLO 1879
PROTECTION OVERLAY DISTRICT
FIGURE 2-5
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There has been interest expressed during public involvement meetings in re-evaluating the dimensions of the APO. Noise contours depicting forecast activity are discussed in subsequent sections of this report. Should noise contours for forecast activity extend beyond the current boundaries of the APO, the airport protection zone should be reconstituted to insure the safety of both the general community and Central Colorado Regional Airport.

2.6 Community Profile

Chaffee County is located in the central mountains of Colorado and is the forty-third (43rd) largest county by area with the twenty-sixth (26th) largest population in the state. Salida is the county seat of Chaffee County.

2.6.1 Climate

The mountains that surround the area can have a dramatic effect on the climate. Average snowfall in the valley is 43 inches, while the surrounding mountains and ski areas can see snowfall of 400 inches or more. Annual rainfall in the valley is 9 to 10 inches and there are approximately 330 days of sunshine per year with humidity ranging between 20 to 30 percent. The average mean monthly temperature for Chaffee County is 42.8 Degrees F., while the mean maximum temperature of the hottest month, July, is 80.1 degrees F.

2.6.2 Population

The most recent U.S. Census count completed in 2000 indicated Chaffee County's population to be 16,331 people, compared to 12,864 people in 1991. This is a dramatic turnaround from the previous 10 years when the County saw population decrease from 13,277 in 1980 to 12,684 in 1990. The most recent estimates for 2001 indicate a population of 16,599 according to **Table 2-3**, which represents a 2.54-percent average annual growth rate from 1991 to 2001. This compares to a 2.92-percent average annual growth rate for the State of Colorado over the same period. According to the Colorado Department of Local Affairs, Chaffee County is projected to have a growth rate for the next 20 years of approximately 1.43-percent per year totaling nearly 22,000 residents.

The Town of Buena Vista has seen population grow from 1,725 in 1991 to an estimated 2,245 in 2001, a 2.28-percent average annual growth rate. Table 2-3 presents historical and projected population figures for the State of Colorado, Chaffee County and the Town of Buena Vista.

Table 2-3

Population Estimates and Forecasts

Year	Colorado	Chaffee County	Buena Vista
Historical			
1991	3,830,952	12,864	1,725
1992	3,489,830	13,121	1,792
1993	3,605,038	13,700	1,833
1994	3,712,063	14,107	1,875
1995	3,811,074	14656	1,917
1996	3,902,450	15,125	1,961
1997	3,995,923	15,406	2,006
1997	4,102,491	15,526	2,051
1999	4,215,984	15,936	2,098
2000 (census)	4,324,920	16,331	2,195
2001	4,407,305	16,599	2,245
Forecast			
2002	*4,487,727*	*16,882*	*2,176*
2003	*4,567,642*	*17,153*	*2,207*
2004	*4,647,072*	*17,418*	*2,238*
2005	*4,731,144*	*17,682*	*2,270*
2006	*4,815,842*	*17,940*	*2,303*
2011	*5,242,838*	*19,258*	*2,472*
2016	*5,681,334*	*20,627*	*2,654*
2021	*6,125,033*	*21,999*	*2,849*

Source: Colorado Department of Local Affairs

2.6.3 Employment

The services industry provides the largest percentage (27.1 %) of the total employment within Chaffee County, according to 1999 statistics. This is followed by the retail trade sector (22.3%), Government sector (17.3%), and the Construction sector (10.9%). The County has a total labor force of 7,528 with 7,318 persons employed, which results in an unemployment rate of 2.8-percent for Fiscal Year 2001.

The unemployment rate has seen a dramatic turnaround since the 1980's when unemployment rates ranged from 5.8- to 15.6-percent. Much of this turnaround can be attributed to increased tourism to the area and an increase in housing construction.

2.6.4 Income

Chaffee County has enjoyed very strong and steady growth in both personal income and industry earnings. Between 1992 and 1999, total personal income grew at an average rate of 7.8-percent, which was slightly lower than the State average of 9.2-percent. Per Capita income increased steadily to an average of $20,474, an average growth of 5.0-percent per year over the same period. Industry earnings grew at an average rate of 8.1 percent per year with the finance and construction sectors showing the most growth. **Table 2-4** shows personal income and industry earnings growth from 1992 to 1999.

Table 2-4
Personal Income & Industry Earnings
Chaffee County

Year	Total Personal Income (Thousands)	Per Capita Income (Dollars)	Industry Earnings (Thousands)
1992	$189,251	$14,584	$103,627
1993	$201,323	$14,954	$110,018
1994	$216,616	$15,690	$121,593
1995	$243,627	$17,101	$132,020
1996	$258,464	$17,571	$138,358
1997	$277,854	$18,546	$148,956
1998	$298,225	$19,654	$162,171
1999	$319,418	$20,754	$178,949
Average Annual Growth Rate	7.80%	5.00%	8.10%

Source: U.S. Department of Commerce, Bureau of Economic Analysis (BEA); Regional Economic Analysis Division

2.7 Summary

The Town of Buena Vista and the surrounding region has maintained consistent socioeconomic growth during the past ten years with a 2.28 percent average annual increase in population and 5.0 percent average annual increase in per capita income. Historic socioeconomic data and the discussion of existing facilities detailed in this section, serves as the basis for *Chapter III - Forecast of Aviation Demand.* **Table 2-5** summarizes existing facilities at Central Colorado Regional Airport.

Table 2-5

Existing Airport Facilities

Main Runway	
Direction	15/33 (Northwest/Southeast)
Length	8,300 Feet
Width	75 Feet
Surface	Asphalt
Departure Procedure	Visual on Rwy End 33 & GPS on Rwy End 15
Approaches	Visual on Rwy end 15 & GPS on Rwy End 33
Marking	Basic
Lighting	MIRL
Pavement Strength	12,500 Lbs. Single Wheel Gear
Hangar & Apron Area	
General Aviation Apron Area	14,000 Sq. Yd.
Tie Down Spaces	20
Executive Hangars	1
Fuel Storage Facilities	
Tanks	2 Above Ground Tanks
AvGas Capacity	(1) 15,000 Gallons
Jet-A Capacity	(1) 15,000 Gallons

Source: Arkansas Valley Aviation

3.0 FORECAST

3.1 Introduction

Forecasts of aviation demand are among the most vital factors considered in the Master Planning process. The purpose of this chapter is to present aviation activity forecasts that will help formulate a plan to accommodate future aviation demand at the Central Colorado Regional Airport through 2021. These estimates of projected activity were used to determine the adequacy of existing facilities, the need for additional airport improvements and, in many instances, identify impacts the development would pose upon the local community. Forecasts are the primary sources for formulation of the Airport Capital Improvement Plan, which will be detailed in Chapter 5.

This chapter examines historical aviation activity trends and the socioeconomic factors affecting aeronautical growth in Chaffee County and the Town of Buena Vista. This analysis is utilized to prepare forecasts of aviation demand such as based aircraft, aircraft operations fleet mix, and annual operations. Identifications of the existing and future critical aircraft expected to use the airport during the planning period will be made to ascertain ultimate airport design standards. This forecast further defines the airport's continuing role in the FAA's ***National Plan of Integrated Airport Systems (NPIAS)*** and the ***Colorado State Aviation System Plan (CASP).***

3.2 Forecast Methodology and Assumptions

This Master Plan Study for Central Colorado Regional Airport details the expansion capability of the airport and its ability to accommodate higher levels of demand. A number of factors are examined in developing the forecasts for the Central Colorado Regional Airport. These factors include the following:

- Historic aviation activity to determine past growth patterns.
- Correlation between past growth patterns in based aircraft with regional and state aircraft growth and countywide population growth.
- Correlation between past growth patterns in aircraft operations with based aircraft.
- Projections of growth patterns for the next twenty years.
- Purpose and use for which the forecast is developed.
- Relationship to other area airports
- Existing airport facilities and operations.
- FAA Terminal Area Forecast (TAF)

The methodology employed to complete the forecast of aviation activity at Central Colorado Regional Airport is a Share Analysis. This methodology is a "top down" approach to forecasting since forecasts of larger aggregates, such as based aircraft nationwide, are used to derive forecast for smaller areas such as individual airports. Historical shares or ratios for indicators of aviation activity at Central Colorado Regional Airport, compared to State and Regional totals are calculated and used as a basis for projecting future shares of the State and Regional totals for the Central Colorado Regional Airport. The basic assumption of this methodology is that the same factors will influence aviation demand as have affected it in the past.

3.3 Based Aircraft Projection

Based aircraft are defined as aircraft stationed at an airport during a period of inactivity, stored in hangars or on the apron utilizing tie-downs. Total based aircraft at an airport is one good measure of general aviation demand. Preparation of a based aircraft forecast is a critical element in forecasting future aviation demand for the Central Colorado Regional Airport. Several factors influence where an aircraft owner chooses to base their aircraft. These include geographic location and convenience, adequate runway length, width, and strength, availability of tie-downs and hangar space.

The market share of aircraft based at the Central Colorado Regional Airport in comparison to historical total active aircraft in the FAA's Northwest Mountain Region (ANM) and the State of Colorado was determined. The ratio was then applied to the FAA Terminal Area Forecast (TAF) for the ANM to determine projected based aircraft at Central Colorado Regional Airport. Historical data was provided by both FAA 5010-1 Forms and records supplied by Arkansas Valley Aviation FBO.

Table 3-1 presents the historical information for 1991-2002. The table details total active aircraft in the United States, the FAA Northwest Mountain Region (ANM), the State of Colorado, and based aircraft at the Central Colorado Regional Airport. The ANM encompasses the States of Colorado, Idaho, Montana, Oregon, Utah, Washington, and Wyoming.

The State of Colorado's market share of the FAA's ANM active aircraft has averaged approximately 21.49 percent over the past ten years. In 2001, 19.73 percent or 4,212 of the based aircraft in the FAA ANM were located in Colorado. The market share of based aircraft at Central Colorado Regional Airport, as a ratio of the based aircraft in the State of Colorado and the FAA ANM, has shown a modest increase over the eleven-year period.

In 1991, Central Colorado Regional Airport maintained 0.40 percent share of based aircraft in the State of Colorado and 0.086 percent share of based aircraft in the ANM. By 2002, the market share increased to 0.49 in the state and to 0.1 percent of the ANM. In 1998, Central Colorado Regional Airport experienced its highest market shares of based aircraft in the state and at 0.48. During the

1991 through 2002 time frame based aircraft in Colorado increased from 3,711 in 1991, to 4,670 in 2001, representing average annual growth of 1.2 percent. Based aircraft at Central Colorado Regional Airport increased from 15 in 1991 to 23 in 2002, representing an average annual growth rate of 2.5 percent.

Table 3-1
Historical Based Aircraft
Market Share

	U.S. Total	ANM Total	Colorado Total	Buena Vista Total	BV Share of Colorado Total	BV Share of ANM Total	Colorado Share of ANM
1991	168,781	17,532	3,711	15	0.40%	0.086%	21.17%
1992	167,964	17,778	3,777	16	0.42%	0.090%	21.25%
1993	163,498	17,778	3,777	16	0.42%	0.090%	21.25%
1994	164,698	17,984	3,722	15	0.40%	0.083%	20.70%
1995	167,492	18,011	3,755	17	0.45%	0.094%	20.85%
1996	169,153	12,262	3,739	16	0.43%	0.130%	30.49%
1997	177,509	18,574	3,828	17	0.44%	0.09%	20.61%
1998	184,097	19,872	3,986	19	0.48%	0.10%	20.06%
1999	185,714	20,712	4,169	19	0.46%	0.09%	20.13%
2000	190,080	20,980	4,184	18	0.43%	0.09%	19.94%
2001	190,961	22,010	4,615	20	0.43%	0.09%	20.97%
2002	196,441	22,099	4,670	23	0.49%	0.10%	21.13%

Source: FAA Terminal Area Forecast

Forecasts of projected based aircraft growth at Central Colorado Regional Airport are presented in **Table 3-2.** The 2000 CASP forecast a 1.35 percent average annual growth in based aircraft in Colorado through 2018. The CASP forecast based aircraft at Central Colorado Regional Airport to increase at an average annual rate of 2.4 percent. The forecast of based aircraft over the next 20 years was projected by analyzing the historic market share of based aircraft at Central Colorado Regional Airport to the State of Colorado and ANM totals. Historic market shares have been relatively consistent during the past eleven years, and are forecast to continue moderate growth.

Total based aircraft at Central Colorado Regional Airport are forecast to increase to 48 by 2021. Forecast average annual growth rate for based aircraft at Central Colorado Regional Airport, is equal to historic growth rates during the period of 1991 to 2002, although there will be a significant spike expected due to the construction of additional hangar capacity.

The FAA TAF projects based aircraft in the State of Colorado to increasing by 1,248 based aircraft over the next twenty years, representing an average annual increase of 0.70 percent. The market share of aircraft in the State of Colorado based at Central Colorado Regional Airport is expected to

increase to 0.99 percent in 2021. This represents a significant jump due to the fact that the FBO expects to have as many as 36 based aircraft by the end of 2003 as a result of a hangar project along with other latent demand. Growth will resume a stable 1% increase through the end of the forecast period.

This forecast of based aircraft at Central Colorado Regional Airport was used as the base line for determination of an operations forecast based upon operations per based aircraft. The methodology is explained in the following section.

Table 3-2
Based Aircraft Projection

	U.S. Total**	ANM Total**	Colorado Total**	Buena Vista Total***	BV Share of Colorado Total	BV Share of ANM Total	Colorado Share of ANM Total
2003	193,253	21,689	4,273	36	0.84%	0.17%	19.70%
2004	194,413	21,855	4,303	36	0.84%	0.16%	19.69%
2005	195,671	22,038	4,335	36	0.83%	0.16%	19.67%
2006	196,758	22,201	4,365	37	0.85%	0.17%	19.66%
2007	197,850	22,360	4,394	37	0.84%	0.17%	19.65%
2008	199,109	22,542	4,428	38	0.86%	0.17%	19.64%
2009	200,288	22,720	4,458	38	0.85%	0.17%	19.62%
2010	201,484	22,894	4,491	39	0.87%	0.17%	19.62%
2011	202,511	23,046	4,519	40	0.89%	0.17%	19.61%
2016*	211,358	24,340	4,759	44	0.92%	0.18%	19.55%
2021*	215,121	24,899	4,863	48	0.99%	0.19%	19.53%

Source: FAA Terminal Area Forecast; Washington Infrastructure Services, Inc.
** Extrapolated growth based upon average annual growth rate for the last 10 years of the TAF.*
*** Data derived from the FAA TAF*
****According to AVA, 36 Aircraft are expected by the end of 2003.*

3.4 Aircraft Operations Projection

Aircraft activity is measured in operations, where a takeoff or landing is considered an operation. Each operation is categorized as either local or itinerant. A local operation is conducted by an aircraft flying in the local traffic pattern or within sight of the airport, or within local practice areas located inside a twenty-mile radius of the airport. "Touch-and-Go" training operations are also considered local operations. Itinerant operations are those performed by an aircraft with a specific origin and destination.

Table 3-3 details historic totals of based aircraft and operations per based aircraft for the past seven years. During that time period Central Colorado Regional Airport has averaged 206.3 operations per based aircraft.

Table 3-3
Historic Operations per Based Aircraft

	Operations per Based Aircraft		
	Based Aircraft	**Operations**	**OPBA**
1995	17	2,788	164.0
1996	16	3,559	222.4
1997	17	3,286	193.3
1998	19	4,045	212.9
1999	19	3,766	198.2
2000	18	3,095	171.9
2001	20	5,630	281.5
Average 1995-2001	**18**	**3,738**	**206.3**

Source: FAA Terminal Area Forecast; 2000 Colorado System Plan

2002 ?

Projecting annual operations by the number of operations per based aircraft is a methodology frequently used to forecast activity for general aviation airports. **Table 3-4** details indicators of historic activity and projections of future demand, which were used to develop forecasts of future activity for the Central Colorado Regional Airport.

The projected forecast for the 2000 CASP was developed utilizing the historic average of operations per based aircraft for the Central Colorado Regional Airport. The CASP calculated a ratio of operations per based aircraft of 181.5 per year. A similar ratio of operations per based aircraft at Central Colorado Regional Airport was adopted by the FAA Terminal Area Forecast (TAF) to serve as the ratio of annual operations per based aircraft from 1999 through 2015.

The FAA TAF illustrates a "no growth" scenario for Central Colorado Regional Airport where based aircraft and annual operations are unchanged since 1999. The TAF applies a ratio of operations per based aircraft of 181.5. This scenario was not selected as the "Preferred" forecast as a result of the "no growth" approach to future analysis of airport activity. The average ratio of OPBA during the past seven years at Central Colorado Regional Airport exceeds the FAA TAF by more than 12 percent. This level of historic activity is too high to be excluded from forecast of future aviation activity.

Figure 3-1
Historic Operations At
Central Colorado Regional Airport
1995-2001

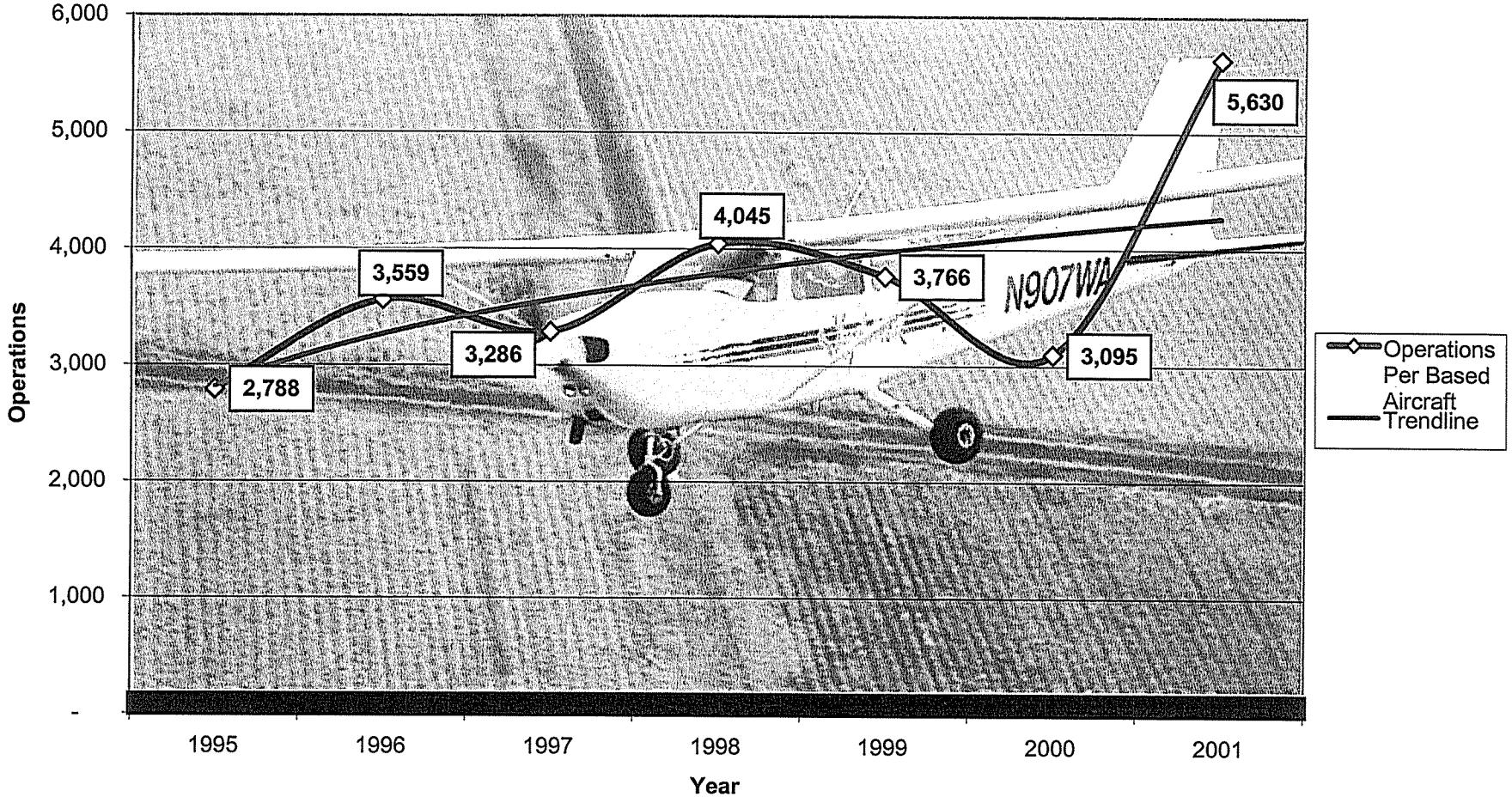
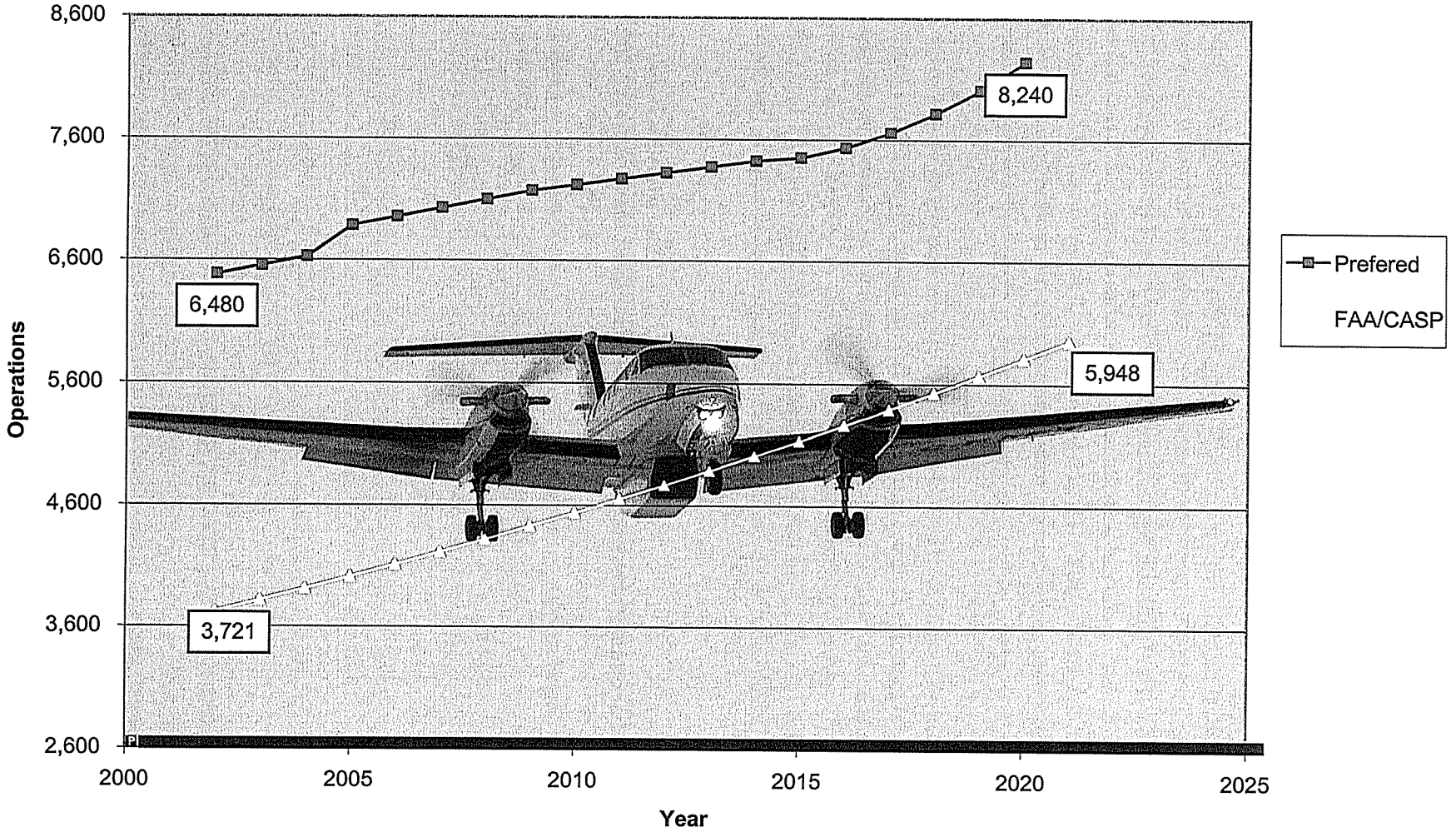


Figure 3-2
Forecast Annual Operations
Central Colorado Regional Airport
2003-2021



Forecast scenarios presented in **Table 3-4** project a range of operations activity at Central Colorado Regional Airport that is likely to occur over the planning period. The "Preferred" forecast was developed utilizing a combination of previously identified operations per based aircraft. Therefore, this projection is based on average operations per based aircraft for the past seven years at Central Colorado Regional Airport, which equates to 206.3 operations per based aircraft. Utilization of the median figure is based on the fact that 2001 was the busiest year for operations at the airport since 1994, and the annual averages have been inconsistent. Due to the fluctuation in annual operations over the past seven years a linear trendline was developed to identify the general direction of growth in operations. The trendline reaches approximately 4,200 annual operations in 2001, which serves as the baseline for annual operations forecast through the planning period and is consistent with the ratio of 206.3 annual operations per based aircraft. Considering the large jump in based aircraft expected in 2003, the OPBA was scaled back in the near term and then gradually rises back to 206 OPBA at the end of the forecast period.

Forecast totals for operations per based aircraft at Central Colorado Regional Airport were held constant. The ratio of operations per based aircraft could increase with the development of a flight school or increased ratio of itinerant to local traffic. Development of a flight school would combine "touch-and-go" flight training activity to annual operations and ultimately increase operations per based aircraft. Increased itinerant traffic provides additional operations to annual totals, which are not flown by based aircraft, ultimately increasing the ratio of operations per based aircraft.

Table 3-4
Operations Projection (OPBA Method)

	2000 Colorado State Aviation System Plan			Preferred Operations Forecast		
	Based Aircraft	Operations	OPBA	Based Aircraft	Operations	OPBA
2003	20	3,696	184.8	36	6,480	180
2004				36	6,552	182
2005				36	6,624	184
2006				37	6,882	186
2008	23	4,182	181.8	37	6,956	188
2011				40	7,220	190
2016				44	7,448	196
2018	29	5,353	184.6	46	7,839	201
2021				48	8,240	206

Source: OPBA for preferred forecast extrapolated by Washington Infrastructure Services; 2000 Colorado Aviation System Plan

Table 3-5 presents the preferred forecast of operations including local, itinerant, military, and total operations. Military aircraft accounted for 539 itinerant operations in 2002, historically Central Colorado Regional Airport has not hosted itinerant military operations, with the majority of these operations being attributed to refueling the aircraft. Central Colorado Regional Airport has been

utilized as a high altitude helicopter testing facility for military helicopters. The testing of these helicopters is sporadic and varies in schedule and intensity for each testing period. Forecasting military operations is a difficult task. Military priorities and budgets can change at any time and create significant increases or decrease in operations. Construction of facilities to accommodate high altitude helicopter testing could increase demand and encourage a more regular schedule of helicopter testing.

According to the historic ratio of local to itinerant operations at Central Colorado Regional Airport has translated to a 69 to 31 percent share of local to itinerant traffic. The same ratio of local to itinerant traffic was applied to the forecast of future operations.

Table 3-5
Operations Projection by Type

	Itinerant Operations				Local Operations			Total
	Air Taxi & Commercial	GA	Military	Total	GA	Military	Total	
2003	0	1,959	50	2,009	4,021	450	4,471	6,480
2004	0	1,981	50	2,031	4,071	450	4,521	6,552
2005	0	2,003	50	2,053	4,121	450	4,571	6,624
2006	0	2,083	50	2,133	4,299	450	4,749	6,882
2011	0	2,188	50	2,238	4,532	450	4,982	7,220
2016	0	2,259	50	2,309	4,689	450	5,139	7,448
2021	0	2,504	50	2,554	5,236	450	5,686	8,240

Source: Washington Infrastructure Services; Arkansas Valley Aviation

3.5 Fleet Mix Projection

The forecast of operations by aircraft type is critical in determining the needs of the airport in accordance with FAA design standards for future airport development. The current aircraft fleet mix primarily consists of single engine aircraft and helicopters, although the considerable percentage of itinerant traffic is comprised of twin engine turboprop and a limited number of jet aircraft. ***FAA Advisory Circular 150/5300-13, Airport Design***, defines aircraft by approach category and design group. These components form the Airport Reference Code (ARC). The ARC is a coding system used to relate airport design criteria to the aircraft intended to operate at the airport.

The ARC consists of two components relating to the airport design aircraft. The first component represented by capital letters A through E, is the aircraft approach category and relates to the speed of the aircraft during a landing approach. The second component is represented by a Roman Numeral, is the airplane design group, which relates to the wingspan of the airplane. Generally, aircraft approach speed applies to runways and runway-related facilities. Airplane wingspan primarily relates to separation criteria involving taxiways and taxilanes.

Aircraft approach category is a grouping of aircraft based on 1.3 times their stall speed in their landing configuration at their maximum certified landing weight. The categories are as follows:

Approach Category	Approach Speed Range
Category A	Speed less than 91 knots
Category B	91 knots or more but less than 121 knots
Category C	121 knots or more but less than 141 knots
Category D	141 knots or more but less than 166 knots
Category E	Speed 166 knots or more

Note: One knot (nautical miles per hour) equals approximately 1.15 statute miles per hour.

Airplane Design Group	Wingspan Range
Group I	Up to but not including 49 feet
Group II	49 feet up to but not including 79 feet
Group III	79 feet up to but not including 118 feet
Group IV	118 feet up to but not including 171 feet
Group V	171 feet up to but not including 214 feet
Group VI	214 feet up to but not including 262 feet

The 1992 Master Plan identified the ARC as B-II, with a critical aircraft being the Beech King Air C90-1. The Airport Manager/ FBO has maintained records of total operations from 1995 through 2001. The historical data is presented in **Table 3-6**, along with the estimated fleet mix for 2002 through 2021.

The 1995–2000 General Aviation Activity and Avionics Survey (GAAAS) conducted by the FAA stated that the average annual growth rate for single engine piston driven aircraft equaled 1.4 percent, multi-engine piston driven aircraft 5.0 percent, turboprop aircraft 2.5 percent, and jet aircraft 7.4 percent during the study period. Single engine aircraft accounted for more than 78 percent of the national general aviation fleet in 2000. Jet aircraft in the general aviation fleet is growing at an average annual rate, which is 6 percent greater than single engine aircraft.

As the national general aviation fleet acquires additional jet aircraft the fleet mix of aircraft operating at Central Colorado Regional Airport will also evolve. Addition of jet aircraft to the general aviation fleet mix over the next twenty years will likely result in increased jet operations at Central Colorado Regional Airport. However, it is not anticipated that the fleet mix at Central Colorado Regional Airport will change as rapidly as national projections. Table 3-6 shows forecast operations by aircraft type. Forecast operations for 2021 show single engine aircraft totaling 5,341 operations, multi-engine aircraft accounting for 1,200 operations, turboprop aircraft reaching 118 operations, and jet aircraft equaling 102 operations. Comparative average annual growth rates forecast by aircraft type for Central Colorado Regional Airport and the GAAAS are detailed in **Table 3-7.** This forecast projects an average annual growth rate of 1.9 percent for single engine aircraft is greater than the GAAAS growth rate of 1.4 percent. Multi engine aircraft are anticipated to average 3.1 percent growth annually, turboprop aircraft 2.3 percent, helicopter operations to hold steady at present levels, and jet

aircraft 7.1 percent. Except for single engine aircraft, forecast growth rate for these types of aircraft are below national average annual growth rates.

Table 3-6
Annual Operations by Fleet Mix

	Single Engine	Multi Engine	Turboprop	Helicopter	Jet	Total
Historical						
1995	2,203	494	56	*	8	2,788
1996	2,847	644	59	*	9	3,559
1997	2,629	585	61	*	11	3,286
1998	3,236	732	64	*	13	4,045
1999	3,013	671	67	*	15	3,766
2000	2,476	531	70	*	18	3,095
2001	4,898	634	74	*	24	5,630
2002	3,679	652	76	609	24	6,124
Forecast						
2003	5,094	681	73	609	23	6,480
2004	5,134	702	75	609	32	6,552
2005	5,152	742	77	609	44	6,624
2006	5,344	786	79	609	64	6,882
2011	5,595	816	92	609	108	7,220
2016	5,694	904	103	609	138	7,448
2021	6,106	1,245	118	609	162	8,240

*Source: Washington Infrastructure Services; Arkansas Valley Aviation; *=data not available*

Based upon the forecast operational data jet aircraft are not forecast to exceed 500 annual operations during the planning period. Multi engine and turboprop aircraft combine to total more than 500 annual operations in 2002, the majority of these aircraft are within the B-II ARC classification. The current critical aircraft ARC is B-II, this classification should remain B-II although the critical aircraft should be changed to the Citation CJ2. **Table 3-8** details historical and forecast, based aircraft by type through 2021.

Table 3-7
Growth Rate Comparison
General Aviation Activity & Avionics Survey

	2003 Airport Master Plan Update	GAAAS
Single Engine Piston	1.4%	1.4%
Multi Engine Piston	3.1%	5.0%
Turboprop	2.3%	2.5%
Helicopter	Maintain Current Level	Not Reported
Jet	7.4%	7.4%
All Aircraft	2.8%	2.5%

Source: Washington Infrastructure Services; GAAAS 1995-2000

Table 3-8
Based Aircraft by Type

	Single Engine	Multi Engine	Turboprop	Helicopter	Jet	Total
Historical						
1996	12	4				**16**
1997	14	3				**17**
1998	16	3				**19**
1999	17	2				**19**
2000	16	2				**18**
2001	18	2				**20**
2002	18	2			1	**23**
Forecast						
2003	31	3			2	**36**
2004	31	3			2	**36**
2005	31	3			2	**36**
2006	31	3			3	**37**
2011	32	4	1		3	**40**
2016	32	5	3		4	**44**
2021	33	7	4		4	**48**

Source: Washington Infrastructure Services

3.6 Summary

Recommendations for facility improvements presented in *Chapter 4, Facility Requirements* are based upon the preferred forecast growth in aviation activity presented in this chapter. Forecasts of future aviation activity were developed using the Share Analysis methodology, which analyzes historic growth patterns, relationship of based aircraft and operations per based aircraft (OPBA) with local and State aviation growth. This forecast concluded that based aircraft will increase from 23 in 2002 to 48 in 2021. General aviation operations are projected to increase from 6,124 in 2002 to 8,252 in 2021. The ARC of B-II will remain during the planning period with the Citation CJ2 as the critical aircraft. Should business jet activity exceed forecast activity levels, the airport ARC classification should be reviewed. Forecast activity levels for Central Colorado Regional Airport are incorporated into analysis of future facility requirements in the following chapter.

4.0 FACILITY REQUIREMENTS

4.1 General

The primary objective of an Airport Layout Plan is to graphically depict the airport's existing facilities and those required to meet FAA standards and the airport's requirements based on growth in demand. This drawing then updates the agreement with the FAA as to how the airport will be developed, as well as satisfying the sponsor's requirement to maintain an up-to-date Airport Layout Plan at all times.

In the Forecast chapter, projections were made relative to the type and frequency of aircraft that will utilize Central Colorado Regional Airport over the next twenty years. The objective of the Facility Requirements chapter is to quantify the required facilities to meet the projected demand. Examples of parameters for facilities are Runway Length, Runway Width, Runway Safety Area dimensions, Separation between facilities and obstructions, Apron Area, Hangars, etc. These requirements will establish the foundation for the Capital Improvement Program presented in Chapter Five.

4.2 FAA Design Standards

As mentioned in the introductory section of this chapter, one of the key considerations of any airport planning effort is to evaluate the dimensional standards for airfield layout established by the FAA. **Table 4-1** presents a summary of significant FAA design standards that need to be compared with existing conditions to evaluate whether Central Colorado Regional Airport meets criteria for the aircraft currently being served. The application of these design standards establishes airport geometry. The "critical" or "design" aircraft for airfield geometry during the planning period was identified in Chapter Three of this report to be the Cessna CJ2 business jet. Therefore, the Airport Reference Code for Central Colorado Regional Airport for planning purposes will be B-II. This is a departure from the Master Plan that this plan replaces.

Prior planning forecasted the introduction of commercial service by airlines utilizing the ATR-42 aircraft, which are ARC B-III. However, considering the airline industry is in a general state of contraction, and considering the airlines are moving away from turboprop aircraft in favor of regional jets, the likelihood of airline service to Buena Vista is in doubt. Consequently, the existing ARC of B-II is projected to be adequate for the duration of the planning period, although the airport is well situated to quickly upgrade the facility should future needs warrant.

TABLE 4-1
FAA DESIGN STANDARDS

	Existing R/W 15/33	FAA Standards for ARC B-II w/ Approach Visibility not lower than ¾ mile
Runway Object Free Area		
Width	500'	Same
Length Beyond Runway End	300'	Same
Runway Safety Area		
Width	150'	Same
Length Beyond Runway End	300'	Same
Runway Obstacle Free Zone		
Width	400'	Same
Length Beyond Runway End	200'	Same
Taxiway Object Free Area		
Width	131'	Same
Taxiway Safety Area		
Width	79'	Same
Design Criteria		
Runway Width	75'	Same
Taxiway Width	50' & 35'	35'
Runway Centerline to Parallel T/W Centerline	300'	240'
Runway Centerline to Edge of Aircraft Parking	500'	250'
Taxiway Centerline to Fixed or Moveable Object	65.5'	65.5'

Source: Airport Records, FAA AC 150/5300-13 Thru Change 7, October 1, 2002

4.2.1 Runway Object Free Area (OFA)- A two dimensional ground area surrounding the runway. The runway OFA clearing standard precludes parked airplanes and objects except those whose location is fixed by function such as a navigational aid. In order to meet the standard for the Airport Reference Code (ARC) B-II with approach visibility not lower than ¾ of a mile, the OFA for Runway 15/33 must be 500 feet wide and extend 300 feet beyond each runway end.

The existing OFA for Runway 15/33 does meet the FAA design standards for ARC B-II with approach visibility not lower than ¾ of a mile, measuring 500 feet wide and at least 300 feet beyond the runway end.

4.2.2 Runway Safety Area (RSA)- A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. The RSA should be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations. The RSA associated with ARC B-II with approach visibility not lower than ¾ of a mile, is 150 feet wide and extends 300 feet beyond each runway end.

The existing RSA for Runway 15/33 does meet the FAA design standards for ARC B-II with approach visibility not lower than ¾ of a mile, measuring 150 feet wide and 300 feet beyond the runway end.

4.2.3 Runway Obstacle Free Zone (OFZ)- The runway OFZ is a defined volume of airspace centered above the runway centerline. The runway OFZ is the airspace above a surface whose elevation at any point is the same as the elevation of the nearest point on the runway centerline. The standard OFZ for ARC B-II with approach visibility not lower than ¾ of a mile, is 400 feet wide and extends 200 feet beyond the runway end.

The OFZ for Runway 15/33 meets the FAA design standards for B-II with approach visibility not lower than ¾ of a mile, measures 400 feet wide and extends 200 feet beyond each runway end.

4.2.4 Taxiway Object Free Area (TOFA)- A two dimensional ground area adjacent to taxiways. The taxiway OFA clearing standard precludes vehicle service roads, parked airplanes, and objects except those whose location is fixed by function such as a navigational aid. The FAA standard for ARC B-II TOFA with approach visibility not lower than ¾ of a mile, is 131 feet wide centered on the taxiway centerline. This indicates that parked aircraft need to be at least 65.5 feet from the centerline of the nearest taxiway.

The provided TOFA is 131 feet wide and meets required FAA design standards.

4.2.5 Taxiway Safety Area (TSA)- A defined surface alongside the taxiway prepared or suitable for reducing risk of damage to an airplane unintentionally departing the taxiway. The minimum standard TSA for ARC B-II is 79 feet wide.

The provided TSA is 79 feet wide and meets required FAA design standards.

4.3 Design Criteria

4.3.1 Runway Width- The design standards for runway width take into account not only aircraft approach category, but also considers operations conducted during reduced visibility. The FAA design standard for runway width for ARC B-II with approach visibility not lower than ¾ of a mile, is 75 feet. VIS @ 1¼ or 1½ WITH C-II OR AVAILABLE

Runway 15/33 is 75 feet wide and meets FAA ARC B-II standards for runway width.

4.3.2 Line of Sight- FAA Line of Sight standards requires that two points five feet above the centerline of a runway without a parallel taxiway be mutually visible for the entire runway length. For runways with a full parallel taxiway, the standard requires that two points five feet above the centerline be mutually visible for one half of the runway length. Further, there is a requirement that for intersecting runways, points five feet above the centerline must be mutually visible within the Runway Visibility Zone (RVZ). – ? WHAT IS THIS ZONE

Line of sight requirements are currently met, however, care must be taken not to create a problem should the runway profile be changed or the runway lengthened in the course of development. Also, if a crosswind runway were to be constructed such that the runways intersected, the RVZ standard would need to be met. WHAT IS THE STANDARD?

4.3.3 Taxiway Width- Taxiway width is correlated to the physical characteristics of the aircraft design group without respect to the operational characteristics of the airport approach category.

Parallel Taxiway "A", which was the former runway, retains its width at 50 feet wide. Connecting Taxiways "A1" through "A6" were designed for Group II aircraft and measure 35 feet wide. OK

4.3.4 Runway Centerline to Parallel Taxiway Centerline- this design criterion establishes the minimum separation between the centerline of the runway and the centerline of a parallel taxiway. This separation is determined based upon the ARC. The separation standard for Runways and Parallel Taxiways with an ARC of B-II is 240 feet. CAT "C" A/C ?

The separation distance between Runway 15/33 and Taxiway "A" is 300 feet and exceeds FAA design standards for ARC B-II.

4.3.5 Runway Centerline to Holdline- This standard provides for marking on pavement and placing signs at locations on taxiways where aircraft hold prior to receiving a clearance to enter the runway. These locations are chosen to ensure that aircraft are clear of the RSA and OFZ during operations by other aircraft on the runway. The standard holding positions for ARC B-II are located 250 feet from the centerline.

The standard holdline position measuring 250 feet is provided for Runway 15/33.

4.3.6 ***Runway Centerline to Edge of Parking Area-*** This standard is designed to allow additional clearance between aircraft parking areas and aircraft operations on the runway, while protecting space between these areas for a parallel taxiway. The FAA design standard for ARC B-II is 250 feet.

Separation between the aircraft parking area and centerline of Runway 15/33 measures 500 feet, exceeding FAA minimum design standards.

4.3.7 Taxiway Centerlines to Fixed or Movable Object- This standard is defined as half of the Taxiway OFA, or portion of the OFA on one side of the taxiway centerline. Therefore, the standard for Group II is one half of 131 feet, or 65.5 feet.

The distance for taxiway centerlines to fixed or moveable objects measures 65.5 feet, and meets FAA design standards for Group II aircraft.

4.4 Far Part 77 – Objects Affecting Navigable Airspace

The Federal Aviation Regulation (FAR) Part 77 defines airport imaginary surfaces. Although not specifically "design standards", these surfaces are geometric shapes which surround every airport. These surfaces determine, in part, the approach minima and compliance to standards for each airport. The imaginary surfaces are defined relative to the runway, the established airport elevation, elevation of the approach end runways, and type of existing or planned approaches for each runway end. Any object, whether natural or man made, penetrating these imaginary surfaces is defined by the FAA to be an obstruction. All natural or man made obstructions, which penetrate FAA Part 77 surfaces should be recommended for marking, lighting, or removal.

Runway 33 at Central Colorado Regional Airport corresponds to dimensional standards for a runway with non-precision instrument approach and visibility minimums greater than one mile. Runway 15 utilizes a visual approach with visibility minimums not lower than one mile.

GPS
CIRCLE TO LAND

4.4.1 Primary Surfaces- A surface longitudinally centered on a runway. When the runway has a paved surface, the primary surface extends 200 feet beyond each end of the runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of the primary surface is 500 feet for Runway 15/33.

4.4.2 Approach Surfaces- A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each runway end based on the existing or planned approach. The inner edge of the approach surface for Runway 15/33, is the same width the as the primary surface, 500 feet. The approach surface for Runway End 15 expands uniformly at an upward slope of 20:1, to a width of 1,500 feet at a distance of 5,000. The approach surface for Runway End 33 extends uniformly at an upward slope of 34:1 to a width of 3,500 feet at a distance of 10,000 feet. WHY DIFFERENCE?

4.4.3 Horizontal Surface- The *horizontal surface* is defined as a horizontal plane 150 feet above the established airport elevation. Arcs set the plan dimensions of the horizontal surface from the runway end of the primary surfaces, which are connected by tangents. The radii of the arcs are determined by the runway type, the radius for visual runway measures 5,000 feet and for all other runways the radius is 10,000 feet. The established airport elevation is 7,945 feet MSL; therefore the elevation of the Horizontal surface is 8,095 feet MSL.

4.4.4 Conical Surface- An inclined surface at a slope of 20:1 extending upward and outward from the periphery of the horizontal surface for a horizontal distance of 4,000 feet. The elevation of the outer edge of the conical surface for Central Colorado Regional Airport is 8,295 feet.

4.4.5 Transitional Surface- These surfaces extend outward and upward at right angles to the runway centerline extended at a slope of 7:1 from the sides of the primary surface and approach surfaces until intersecting with the horizontal surface. For precision approach surfaces that extend beyond the limits of the conical surface, the transitional surfaces extend over a horizontal distance of 5,000 feet at right angles to the runway centerline.

The width of primary surface impacts the setback requirement for the Building Restriction Line (BRL), depicted on the Airport Layout Plan (see Exhibit I). The BRL provides the airport with the minimum setback from the runway centerline for permanent structures, such as hangars. Typically the BRL is located where the height of the Transitional surface reaches approximately 35 feet above ground level, or the planned maximum height of buildings closest to the runway.

Presently there are no obstructions located in the approach surfaces of Runway 15/33.

4.5 Airside Facility Requirements

4.5.1 Runway 15/33

In consideration of the forecast of future aviation activity, the existing runway was analyzed from several perspectives. These include airfield capacity, runway orientation, runway length, pavement strength, and compliance with applicable FAA design standards. The analysis for these various aspects pertaining to the runway system design provide the basis for recommendations pertaining to airside improvements.

4.5.1.1 Runway Length

The critical aircraft selection is the primary consideration for the length requirements for Runway 15/33. **Table 4-2** provides the results from the FAA Airport Design software program that was used for this analysis. Variables required by the program include the airport elevation, mean maximum temperature of the hottest month, the difference in feet between the high and low points of the runway, stage length for aircraft weighing more than 60,000 pounds, and the condition of the runway in terms of either dry or wet and slippery. Input variables for Central Colorado Regional Airport are:

Airport Elevation:	7945 Feet
Maximum Centerline Elevation Difference:	46.4 Feet
Mean Maximum Temperature:	79.6 Degrees F
Stage Length for Aircraft Weighing Greater Than 60,000 Pounds:	500 Miles*

* *The default minimum value is 500 miles.*

The software's output provides information for different classifications and percentages of aircraft that the runway will be designed to accommodate. The first distinction is between small and large aircraft. Small aircraft are defined as those weighing less than 12,500 pounds. Aircraft in the small category are almost exclusively piston driven propeller aircraft, although there are some small turboprop aircraft in this category as well. Large aircraft are those weighing in excess of 12,500 pounds, which comprise the remainder of the fleet. The critical aircraft for Central Colorado Regional Airport, the Cessna CJ2, is within the small aircraft classification.

An analysis of Table 4-2 indicates that the optimum runway length for Central Colorado Regional Airport is between 6,700 and 9,400 feet. This study recommends maintaining the existing length of 8,300 feet. Should larger aircraft begin to use the airport on a regular basis, the runway will have to be widened to 100 feet and the RSA graded to a width of 300 feet and to a length of 600 feet beyond each runway end to meet the ARC identified in the previous Airport Master Plan Update.

It is recognized that 8,300 feet is not the optimum runway length for the airport based on the results shown in Table 4-2. Close proximity to the Town of Buena Vista and wetlands located to the north of the airport limit expansion and compromise compatible land uses around the airport. Roads, both to the north and the south of the airport, also limit expansion due to the costs to acquire more land and relocate appropriate ground access routes. With a length of 8,300 feet, the runway will continue to be able to accommodate 75 percent of small aircraft with fewer than 10 seats and 75 percent of large aircraft of 60,000 pounds or less at a 60 percent useful load during the hottest summer months. During the remainder of the year when temperatures are moderate or cool and density altitude is lower, this runway length should be able to accommodate 95 to 100 percent of the utility fleet and additional turbojet and/or large turbine propeller aircraft on a year round basis.

Table 4-2

AIRPORT AND RUNWAY DATA	
Airport elevation	7946 feet
Mean daily maximum temperature of the hottest month	79.60 F.
Maximum difference in runway centerline elevation	46 feet
Length of haul for airplanes of more than 60,000 pounds	500 miles
Dry runways	
RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with approach speeds of less than 30 knots	470 feet
Small airplanes with approach speeds of less than 50 knots	1440 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	6740 feet
95 percent of these small airplanes	9410 feet
100 percent of these small airplanes	9410 feet
Small airplanes with 10 or more passenger seats	9410 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	8160 feet
75 percent of these large airplanes at 90 percent useful load	9060 feet
100 percent of these large airplanes at 60 percent useful load	11460 feet
100 percent of these large airplanes at 90 percent useful load	11460 feet
Airplanes of more than 60,000 pounds	Approximately 7800 feet
REFERENCE: Chapter 2 of AC 150/5325-4A, Runway Length Requirements for Airport Design, no Changes included.	

4.5.1.2 Runway Orientation, Additional Runways

To determine the proper orientation of a runway, a review of the available wind data for the airport is made. FAA guidance suggests that additional runway be planned if the wind coverage is less than 95 percent for the classification of aircraft being accommodated. Wind data is typically gathered at stations maintained by the National Climatic Data Center and acquired from them in a

format that is compatible with FAA guidance for the graphic representation in a wind rose. The required data includes hourly readings for wind speed and direction correlated to sky condition.

This information, however, has not been collected by the NCDC at a site close enough the airport to be representative of the wind conditions on the airport. However, volunteers at the airport collect wind data four times daily and this data was reviewed, along with anecdotal evidence of typical wind patterns at the airport. Being situated in a valley with the continental divide directly to the west and high terrain to the east, there are fairly predictable patterns that occur on a daily basis. The runway is situated parallel to the valley orientation, which is the alignment that lent itself to the most economical cost for construction and the least terrain obstructions. However, the diurnal patterns associated with the heating and subsequent cooling of the slopes by the sun cause a "sloshing" effect of the air in the valley and often the wind is blowing directly across the runway. A second runway oriented in an alignment that would offer a pilot a final approach heading better situated to the wind during these events would reduce the potential for either an accident or a diversion to another airport.

Using the available wind data, which was compiled and analyzed by Mal Sillars Weather Consultants, Inc., a series of monthly averages by wind speed and direction for the period 1998-2001 were produced. **Tables 4-3** and **4-4** present the results of the analysis. **Table 4-3** summarizes monthly wind direction and speed in the second and third columns. The fourth and fifth columns relate the direction and speed to the true north alignment of the existing runway, in this case 342 degrees. Utilizing vector analysis, the columns show the component speeds for headwind (directly down the runway centerline) and crosswind (perpendicular to the runway centerline). This crosswind component is the key indicator of whether the runway is properly aligned for the prevailing winds. The lower the crosswinds, the better oriented the runway is.

Table 4-3

Average headwind and crosswind velocities for Runway 33							
	Resultant	Average	Average Speed		Average	Average High Wind	
Month	Direction	Speed	Headwind	Crosswind	High Wind	Headwind	Crosswind
January	298	9.0	6.5	-6.3	21.3	15.3	-14.8
February	278	9.4	4.1	-8.4	23.5	10.3	-21.1
March	271	8.3	2.7	-7.8	20.2	6.6	-19.1
April	260	9.5	1.3	-9.4	22.7	3.2	-22.5
May	276	9.1	3.7	-8.3	22.4	9.1	-20.5
June	250	9.0	-0.3	-9.0	22.4	-0.8	-22.4
July	257	7.3	0.6	-7.3	18.5	1.6	-18.4
August	324	8.5	8.1	-2.6	20.2	19.2	-6.2
September	293	8.6	5.6	-6.5	21.4	14.0	-16.2
October	262	8.3	1.4	-8.2	19.9	3.5	-19.6
November	317	8.5	7.7	-3.6	19.8	17.9	-8.4
December	305	9.1	7.3	-5.5	21.0	16.8	-12.6
ANNUAL	**280**	**8.7**	**4.1**	**-7.7**	**21.1**	**9.9**	**-18.6**
	-Crosswind from West			-Headwind from South			

Referring to the Average Speed for the headwind and crosswind columns in **Table 4-3**, the average crosswind speed on an annual basis is 7.7 knots blowing from the west. The strongest crosswinds occur in April, where the average wind blows almost perpendicular to the runway at 9.4 knots. The three columns on the right side of **Table 4-3** show the speeds for high winds. This refers to the maximum wind speed, sometimes referred to as "gusts", observed while the data was being collected. As shown, the high winds are a significant jump up in speed from the steady winds. Observed crosswinds peak in April at 22.5 knots and average 18.6 knots annually. Aircraft most common to Central Colorado Regional Airport that encounter crosswind components of greater than 13 knots will consider landing at a different airport. Most pilots that attempt to land in crosswinds of 18 to 22 knots will be exceeding the limits of the aircraft's controllability in the conditions and this has been the cause of numerous accidents over the years, a summary of which are shown in **Table 4-5.**

Table 4-4 is identical to the layout of **Table 4-3**, except the runway direction used in the analysis is oriented on a true bearing of 302 degrees. Therefore, the only difference is in the Average Speed and Average High Wind columns. Looking at the Annual crosswinds, it is clear that this orientation places much more of the wind on the headwind component and far less on the crosswind component. In fact the 40-degree rotation of the runway resulted in reducing the average crosswinds by half. In the High Wind condition, the occurrence of average crosswinds exceeding 13 knots only occurs in two months compared to the nine months exceeded in **Table 4-3**. So the likelihood of a pilot facing a crosswind that exceeds the aircraft's crosswind limitation is greatly reduced with the addition of another runway. This is strong evidence that another runway at Central Colorado Regional Airport should be depicted on the Airport Layout Plan and further wind data collected an analyzed to justify the priority of this runway to the FAA.

Table 4-4

Average headwind and crosswind velocities for Runway 29							
	Resultant	Average	Average Speed		Average	Average High Wind	
Month	Direction	Speed	Headwind	Crosswind	High Wind	Headwind	Crosswind
January	298	9.0	9.0	-0.6	21.3	21.2	-1.5
February	278	9.4	8.6	-3.8	23.5	21.5	-9.6
March	271	8.3	7.1	-4.3	20.2	17.3	-10.4
April	260	9.5	7.1	-6.4	22.7	16.9	-15.2
May	276	9.1	8.2	-4.0	22.4	20.1	-9.8
June	250	9.0	5.5	-7.1	22.4	13.8	-17.7
July	257	7.3	5.2	-5.2	18.5	13.1	-13.1
August	324	8.5	7.9	3.2	20.2	18.7	7.6
September	293	8.6	8.5	-1.3	21.4	21.1	-3.3
October	262	8.3	6.4	-5.3	19.9	15.2	-12.8
November	317	8.5	8.2	2.2	19.8	19.1	5.1
December	305	9.1	9.1	0.5	21.0	21.0	1.1
ANNUAL	**280**	**8.7**	**8.1**	**-3.3**	**21.1**	**19.6**	**-7.9**
	-Crosswind from West			-Headwind from South			

Table 4-5

Date	Probable Cause Released	Location	Make / Model	Regist. Number	Severity	Type of Air Carrier Operation and Carrier Name (Doing Business As)	Circumstances
3/11/03		Buena Vista, CO	Piper PA-12	N78559	Nonfatal	Part 91: General Aviation	Crosswind, variable 210 to 270 15G21
3/28/02	4/29/03	Buena Vista, CO	Cessna 210-M	N29795	Nonfatal	Part 91: General Aviation	Adverse weather, downdraft
5/26/00	9/19/01	BUENA VISTA, CO	Cessna T210K	N9457M	Fatal(3)	Part 91: General Aviation	Enroute accident, departed Jeffco - crashed on Cottonwood Pass
7/18/99	5/12/00	BUENA VISTA, CO	Rader LONG EZ	N6577C	Nonfatal	Part 91: General Aviation	Student pilot's first solo, failure to maintain control
1/28/98	5/4/98	BUENA VISTA, CO	AVIAT A-1	N503MZ	Nonfatal	Part 91: General Aviation	Crosswind changed to tailwind, 230/10kts
1/20/96	5/9/96	BUENA VISTA, CO	CESSNA 180	N6502A	Nonfatal	Part 91: General Aviation	Crosswind, 260 at 20G25
3/18/94	11/14/94	BUENA VISTA, CO	CESSNA 172L	N7876G	Nonfatal	Part 91: General Aviation	Improper supervision by instructor pilot
5/30/93	11/3/93	BUENA VISTA, CO	SCHEMPP-HIRTH NIMBUS II	N173	Nonfatal	Part 91: General Aviation	(Glider) Pilot's improper use of flaps
5/23/93	11/3/93	BUENA VISTA,CO	CESSNA 172N	N4881G	Nonfatal	Part 91: General Aviation	Crosswind to Quartering tailwind (wind shear), improper use of flaps
10/28/90	11/9/92	BUENA VISTA, CO	CESSNA T-210-M	N621BD	Nonfatal	Part 91: General Aviation	Fuel exhaustion
10/23/90	10/2/92	BUENA VISTA, CO	CESSNA 172H	N2665L	Nonfatal	Part 91: General Aviation	Student pilot's improper flare
9/15/89	12/10/90	BUENA VISTA, CO	LET L-13	N3458	Fatal(1)	Part 91: General Aviation	(Glider) Pilot's failure to maintain sufficient airspeed during low maneuver
1/20/89	1/22/91	BUENA VISTA, CO	CONVAIR 580	N73160	Nonfatal	SCHD Part 121: Air Carrier	Pilot cut fuel to wrong engine while feathering an overheating engine
9/5/87	8/2/88	BUENA VISTA, CO	LET L-13	N38924	Nonfatal	Part 91: General Aviation	Unsuitable landing area selected by pilot
5/31/86		BUENA VISTA, CO	PIPER PA-20-160	N5394Z	Fatal(1)	Part 91: General Aviation	Strong crosswind, thunderstorm in area
7/25/85		BUENA VISTA, CO	Beech 58P	N6039S	Nonfatal	Part 91: General Aviation	Engine failure on takeoff resulting in stall
8/4/82	8/4/83	BUENA VISTA, CO	BELL HELICOPTER TEXTRON	N23DW	Nonfatal	Part 91: General Aviation	(Helicopter) Crashed at 14,000 feet (off airport)
12/24/81		BUENA VISTA, CO	PIPER PA-32	N32916	Fatal(1)	Part 91 General Aviation	Crashed at 11,900 feet (off airport)

Another reason to have a second runway is to reduce the concentration of noise and overflights that occur over the Town of Buena Vista just to the north of Runway 15. In fact, during a public meeting, it was suggested that another runway be constructed as the *main* runway, thereby alleviating the restrictions to land uses within the Airport Protection Overlay district.

While this study finds merit in the case for a crosswind runway, there are several challenges to be overcome in the actual planning and construction of a new runway:

- Funding – A significant cost is associated with the acquisition of land, relocation of roads, grading of the airfield, lighting, environmental remediation, paving and lighting of a new runway. The project would need to be eligible for FAA funding, as the Town of Buena Vista would not likely have the resources to undertake the project alone.

- FAA/CDOT support for the Project – To determine eligibility, it would need to be demonstrated that Runway 15/33 does not provide 95 percent wind coverage at 13 knots. This data is not yet available, but with the recent installation of a wind instrument maintained by CDOT, this data should be available within the next 12 months. FAA and CDOT also consider crosswind runway projects to be a lower priority than primary runway projects on a statewide basis.

- Land Use Compatibility - There are other considerations for land use compatibility and overflight with a crosswind runway, including potential impacts to the correctional facility and Johnson Village.

Considering these issues, the likelihood of having funding support for a full-length paved crosswind runway is low. However, the Town of Buena Vista should not feel discouraged about this since there are other ways to initiate the project. There is every possibility that the FAA could participate in the development at a later stage if the project is started through a local effort. To protect the possibility of the FAA supporting the project, a number of steps should be taken:

- Prepare an Environmental Assessment or justify a Categorical Exclusion.

- Complete the wind collection and a runway siting study.

- File a Form 7480 with the Denver Airports District Office – this will give the FAA the opportunity to review the airspace changes associated with the new runway.

- Follow the procedures in 49 CFR Part 24 (the Uniform Relocation Assistance and Real Property Acquisition Act) for all land acquisition – if this is not done, the FAA will not be able to participate in development on any acquired land.

- Maintain a safe and secure airport during construction phases.

- Allow the FAA to comment on construction plans and specifications – having the FAA involved, even if they are not participating will increase their comfort level in the project and make it easier for them to justify participation at a later time.

- Maintain all Design Criteria and Separation for the selected ARC.

The recommended strategy is to get a prepared landing area established, even if it is a short gravel strip. If this can be done with local effort and money, it may be possible to get a grant at some point in the future to make improvements to it such as paving, lengthening, lighting, etc. In the mean time, there will be a landing area available for those conditions when crosswinds are strong enough to warrant the use of the gravel strip. **Figure 4-1** shows the runway alignment that **Table 4-4** analysis is based upon.

4.5.1.3 Runway Longitudinal Profile

Runway 15/33 was reconstructed in mid 1990s and meets the gradient criteria for Approach Category A & B aircraft. This criterion only requires that the gradient not exceed 2.0 percent over the entire length of the runway. At a grade ranging of 0.57 percent, Runway 15/33 is in compliance with this criteria.

4.5.1.4 Runway Pavement Strength

According to airport records, Runway 15/33 is rated as having an existing runway pavement strength of 12,500 pounds for Single Wheel Gear. The critical aircraft which dictates the Airport Reference Code is the Cessna CJ2, which weighs 10,100 pounds and has Single Wheel Gear. Additionally, although there are not enough operations to warrant naming any larger or heavier aircraft as the critical aircraft, heavier planes such as the Gulfstream V, the Canadair Global Express, and the Boeing Business Jet do operate at the airport.

In light of the operation of these aircraft on the runway and taxiway system, it is recommended that the pavement be maintained at its current strength until such time as a new critical aircraft is identified as a result of new or increased activity by larger aircraft.

800 0 800 1600 2400
SCALE IN FEET

TOWN BOUNDARY

CORRECTIONAL FACILITY

JOHNSON VILLAGE

STATE HWY. 24

FUTURE APPROACH SURFACE

RELOCATE C.R. 319

C.R. 319

6000' X 75'

FUTURE PROPERTY BOUNDARY (MINIMUM)

FUTURE APPROACH SURFACE

TOWN BOUNDARY

FINAL DRAFT

REV.	DATE	DESCRIPTION	APP.

BVA-CON1-P.dwg
CADD FILE NO.

FINAL DRAFT
STAGE OF PLANS

Washington
Infrastructure Services, Inc.
PHONE (303) 843-2000 FAX (303) 843-3131

CENTRAL COLORADO
REGIONAL AIRPORT
BUENA VISTA, COLORADO

CONCEPTUAL CROSSWIND RUNWAY

DESIGNER K.O.C. PROJ. LEAD J.F.S. APPROVED N.E.R.
CADD TECH. D.C.C. CHECKED C.M.G.

FIGURE 4-1

4.5.1.5 Runway Safety Area and Runway Object Free Area

As discussed in a prior section, the Runway Safety Area (RSA) and the Runway Object Free Area (ROFA) are defined areas surrounding the paved portion of the runway that enhance the safety of aircraft operations. The dimensions of these areas are tied to the Airport Reference Code (ARC) of the airport. The existing RSA and ROFA currently meet the requirements for ARC B-II. Please see Table 4-1 for a discussion on design criteria.

4.5.2 Parallel Taxiway

There is one taxiway that parallels Runway 15/33. Taxiway "A" is a full parallel taxiway measuring 50 feet wide by with six connector taxiways, each 35 feet wide. The 35-foot width is consistent with the criteria for Airplane Design Group II, which is the most demanding group that could be justified in light of existing traffic at the airport.

The taxiway, which was the former runway, is in need of rehabilitation and a project to repair cracks and overlay the surface will be included in the Capital Improvement Program. This project is recommended for completion within the first five years.

4.5.3 Instrumentation and Lighting

An instrument approach is currently available for Runway 33. Navigational signals are provided through the Global Positioning System, which provides airborne equipment position information that is suitable for executing a non-precision approach. The availability of this approach makes the installation of the Non Directional Beacon (NDB) that was recommended in the previous Airport Master Plan Update unnecessary. No other electronic navigational facilities are recommended by this study.

There are Medium Intensity Runway Lights and Taxiway Lights (MIRL and MITL) for Runway 15/33 and Taxiway "A" respectively. No additional lighting is necessary during the planning period.

4.5.4 Automated Weather Observation System

To provide accurate, 24-hour airport weather information for pilots and air traffic control system personnel, this study recommends the installation of an AWOS at Central Colorado Regional Airport. This system will provide efficient and low-cost surface observation data critical to airport operations including continuous, updated, minute-by-minute broadcasts of touchdown-zone weather conditions. The observation will be broadcast by voice directly to pilots in the air on a

discrete VHF frequency. During flight planning, pilots can alternatively call a local telephone number to receive the most current weather information. This information includes temperature, wind speed/direction, visibility, cloud height, and dewpoint.

This system will also aid in the collection of wind data that will be crucial in assembling data that will potentially identify the need for a crosswind runway.

4.6 Landside Facility Requirements

Landside facilities are those facilities that support the airside facilities, but are not actually a part of the aircraft operating areas. These consist of such facilities as terminal buildings, aprons, access roads, hangars, and support facilities.

4.6.1 Buildings

Buildings at Central Colorado Regional Airport are primarily private hangars and offices constructed by a Fixed Base Operator. Arkansas River Valley Aviation, the primary FBO on the airport, owns and operates one large hangar for storage and maintenance. They also have plans for several more hangars.

Hangars and buildings required to support the functions of an FBO are generally constructed with private funds and are not the responsibility of the county. Land is leased to the individual or business for their use. Recommendations for buildings of this type will be limited to reserving land for the purpose of leasing to FBOs or hangar developers. Land for this purpose is available on the South of Runway End 15.

The construction of a Snow Removal Equipment storage building would provide a protected environment for all airport equipment, as well as an area suitable for maintenance of airport vehicles. The appropriate size for this building is recommended in ***FAA Advisory Circular 150/5220-18, Buildings for Storage and Maintenance of Airport Snow and Ice Control Equipment and Materials.*** Based on calculations provided in this circular, a 6,000 to 8,000 square-foot building is recommended to house existing equipment, provide area for storage of materials, a maintenance area, an office, and storage of spare parts. This will also provide adequate room for growth as needed.

4.6.2 Apron Areas

With nearly 13,500 square yards of apron area and 20 tiedown spaces for based aircraft, there are adequate apron areas on the airport to accommodate existing demand for based and transient tiedown needs. There will be requirements for apron and taxilanes in support of new hangar

development. The ability to develop new hangars is one of the key market advantages that Central Colorado Regional Airport enjoys over many of the competing airports in the region. Land has been identified for this purpose on the south end of the terminal area.

Future construction of T-hangars has been planned for the area southwest of Taxiway A-5. The proposed development is located outside of the BRL approximately 575 feet from the runway centerline.

4.6.3 Access and Auto Parking

There is excellent access to the airport from the east on U.S Highway 24/285. Access to the airport from the Town of Buena Vista from the north, is provided via County Road 319 and exist off of U.S. Highway 24.

There is ample auto parking for the airport's administrative and terminal functions. Periodic maintenance projects will be required, the timing of which will be dictated by monitoring pavement condition. Parking to support new buildings for visitors and employees will be made a part of development approvals as provided in development guidelines. The airport will not be required to provide parking to support private airport development.

4.7 Utility Systems

All utility lines serving the airport are buried underground and provide service to the Administration/FBO building and executive hangar. A four-inch sanitary sewer line provides wastewater discharge into the airport's wastewater treatment facilities, which consist of a 1,500-gallon septic tank and associated leach field. The septic tank and leach filed are located directly east of the building area, between the paved apron and Taxiway "A". The Sangre de Cristo Electric Association provides electricity. Water lines serving the airport from the Buena Vista Municipal Water Plan provide potable water and fire protection. Two fire hydrants are located on the east edge of the apron edge taxiway opposite the northeast corner of the Administration/FBO building and just west of the building along the edge of the auto parking lot. Natural gas provides heating fuel for the airport and is supplied by Comfurt Gas, Inc. The airport has a public telephone with service provided by Qwest Communications.

4.8 Rules and Regulations, Standards for Commercial Activities at the Airport

The sponsors of airports developed or improved with federal funding assistance administered by the FAA assume the obligation to make the airport's facilities and services available to any and all users of the airport, as well as the general public. Where federal funds have been expended on an airport the opportunity to engage in any activity which involves, makes possible, or is required for the operation of aircraft, or which contributes to or is required for the safety of such an operation should be made available to any person, firm or corporation meeting rules and regulations established by the sponsor. The rules and regulations must be relevant to the proposed activity, reasonable, and in the public interest.

An airport sponsor may restrict the commercial use of the airport, or the solicitation of business thereon, base again on nondiscriminatory standards established by the airport sponsor governing the quality and level of services that are offered to the public on connection with the conduct of a particular aeronautical activity on the airport.

The FAA defines aeronautical activity in Advisory Circular 150/5190-1A, Minimum Standards for Commercial Aeronautical Activities on Public Airports as follows:

> "...charter operations, pilot training, aircraft rental and sightseeing, aerial photography, crop spraying, aerial advertising and surveying, air carrier operations, aircraft sales and service, sale of aviation petroleum products whether or not conducted in conjunction with other included activities, repair and maintenance of aircraft, sale of aircraft parts and any other activities which because of their direct relationship to the operation of aircraft can be appropriately be regarded as an aeronautical activity."

This study recommends that the Town of Buena Vista adopt rules and regulations for airport users and minimum standards for commercial tenants and airport businesses.

4.9 Land Use

A zoning ordinance was amended in January 1991 by the Town of Buena Vista that established an Airport Protection Overlay (APO) district. This district was created to protect the Town's investment in the airport and to limit the development of new land uses that are incompatible with the airport. This was done for the welfare of the citizens as well as the protection of the airport. The district minimizes exposure of sensitive land uses to aircraft noise areas, to minimize the

danger from potential aircraft accidents, to reduce the possibility of such accidents, to discourage traffic congestion within the district, and to restrict non-compatible land uses within the APO.

After living with the ordinance for over ten years, it is apparent that some of the language is ambiguous and, under strict interpretation, can be construed as overly burdensome to property owners within the APO. Under this strict interpretation, it departs from the intent of the APO district. In addition, since the APO is situated in relation to the runway, it does not provide an easily definable boundary and can divide individual properties. This becomes problematic to define what property is in the APO and what property is outside. In order to attempt to clarify the intent of the APO district, and also to clarify the boundary of the areas of special concern, two modifications are recommended by this study, which are summarized below.

1. The definition of a Flight Hazard Area. This area, established in the APO ordinance but not defined, is created with a boundary that is defined by physical features, in this case roads. This Flight Hazard Area has three main features:
   a. Height limitation is the same as the underlying zone
   b. New development must be below that specified in FAR Part 77, otherwise an FAA Aeronautical Study must determine that the proposed project is not a hazard to the navigable airspace.
   c. No new noise-sensitive uses including, but not limited to schools, churches, hospitals, and libraries.

2. The addition of language that clarifies the disposition of non-conforming uses. Currently, if a non-conforming use is destroyed, the replacement would be deemed a new use and would be subject to the restrictions under the APO. Also, additions to non-conforming uses are currently not permitted without an FAA determination on its effect on the navigable airspace. This study recommends the addition of language that allows for the reconstruction of grandfathered non-conforming uses that are damaged or destroyed and also to allow additions to these uses, subject to requirements of the underlying zone, FAA determination on the proposal's effect on navigable airspace, and not exceeding a ratio of seating capacity to floor space as existed prior to expansion. This would be limited to the expansion of public assembly areas in structures used for public assembly purposes.

Proposed language for inclusion and/or amendment to the APO district will be provided to the Town of Buena Vista and included as an appendix in the Final Airport Master Plan Narrative Report.

4.10 SUMMARY

The airport has many excellent characteristics that are desirable for an airport. There is ample space for buildings and apron areas, excellent access, recently reconstructed runway pavement, and public utilities. However, facility requirements center on the need to change classification to meet the needs of those who are wanting to bring corporate jets to the airport. This demand is already demonstrated and forecasted to grow.

5.0 CAPITAL IMPROVEMENT PROGRAM

5.1 General

The analysis conducted in previous chapters has evaluated airport development needs based upon forecast activity FAA Airport Design Standards, input from airport users, and the desires of the sponsor. One of the most important elements of the master planning process, however, is the application of basic economic, financial and management rationale so that the feasibility of implementation can be assured. This chapter will concentrate on those factors that will help make the plan successful. The program outlined on the following pages has been evaluated from a variety of perspectives. Several sources for development funding exist which will provide decision-makers with the tools necessary for implementing the program.

As will be outlined in this chapter, the primary source for airport development funds will be the aviation user. The process of collecting and distributing aviation user funds is quite variable, but follows basic guidelines. Services are provided for a fee and part of that fee is used to fund additional development. Congress and the FAA manage allocation of the fees, which are collected in the Aviation Trust Fund, with the former providing the authorization and the latter establishing priorities for all funds other than entitlement funds.

Funding from the Aviation Trust Fund can provide up to 90 percent of the necessary development costs for eligible improvements, per Congress' instructions in the authorization bill. Since grants obtained by the airport from this source must always be matched by local funds, it is important to act expeditiously in securing the local matching share for these grants.

5.2 Federal Grants

In order to promote the development of a system of airports to meet the nation's aviation needs, the Federal government embarked on a grants-in-aid program for state and local governments shortly after the end of World War II. The current grant program, known as the ***Wendell H. Ford Aviation Investment and Reform Act for the 21ST Century***, was passed in March 2000. This bill authorized Airport Improvement Program funding for fiscal years 1999 through 2003.

5.2.1 General Aviation

The Fiscal Year 2001 AIP funding level was $3.2 billion, and the scheduled authorization for FY 2002 is $3.3 billion. This is significant since there is a special provision that states that if in any fiscal year in which the total amount made available under section 48103 is $3,200,000,000 or more, each airport, excluding primary airports but including reliever and non-primary commercial service airport, in states the lesser of $150,000 or 1/5 of the most recently published estimate of the 5-year costs for

airport improvement for the airport, as listed in the national plan of integrated airport systems developed by the Federal Aviation Administration.

This is relevant to Central Colorado Regional Airport since the airport will be included in the entitlement program and will receive $150,000. This money can also be used for eligible maintenance activities, which previous AIP legislation typically did not authorize.

5.2.2 Discretionary Funds

In addition to the entitlement program, a discretionary funding program is used to disburse the remainder of the Airport Improvement Program funds. Discretionary funds can be used at any eligible airport to fund improvements that meet AIP project eligibility requirements. Discretionary funds are apportioned to commercial service airports from the amount authorized for the discretionary use by the Secretary of Transportation.

Specific set-asides are established for the discretionary program. Among these set-asides are 18.5% of the total AIP for the State Apportionment. This set-aside is used by the states to fund airports in the General Aviation, Reliever, and Non-Primary Commercial Service categories. Also included are set-asides for planning and implementing noise compatibility programs (31% of discretionary), and the Military Airports Program (4% of discretionary).

Discretionary funds for airports like Central Colorado Regional Airport are generally sought for large projects. The discretionary money is programmed out of the money set aside for the State of Colorado to fund projects at General Aviation, Reliever, and Non-primary airports. Therefore, close cooperation between the Colorado Department of Transportation, Division of Aeronautics, The Town of Buena Vista and the FAA is vital to successfully implement the proposed development program detailed in this master plan.

5.2.3 State Grants

State grants for airport development projects are also available through a program funded by a state excise tax on aviation fuel. The program is administered by the Colorado Aeronautical Board and is an excellent source of funding for airport sponsors with limited ability to match federal grants or to undertake projects that do not necessarily rank highly enough to successfully compete for limited discretionary federal funds. The Town of Buena Vista should consider making application for matching funds assistance from this program as part of the implementation strategy for this master plan.

5.2.4 Private Sector Financing

This source of development funds is frequently overlooked and often does not receive adequate credit for its investment. For example, T-hangars, corporate hangars and air cargo buildings are sometimes built using private funds, thereby eliminating the need for the airport to serve as financier and rental manager for these facilities. The advantage to a third-party development is that the airport can provide an expanded service to the community for very little investment, leases repay the developer's investment and the leasing companies can expand their corporate services without major capital expenditures. By utilizing third party financing, the airport not only avoids unnecessary debt service, but is often relieved of many maintenance costs associated with the upkeep of these facilities. Therefore, the airport may want to consider this type of funding in the future and derive revenue by land lease rather than from building rental. In the Capital Improvement Program shown in Table V-1, this funding source is shown as local share, which includes the local matching funds, private sector financing, and/or other funding sources.

5.2.5 Other Funding Sources

Sources other than Federal AIP grants and the various local revenue sources discussed above fund certain facilities involved in airport operation. For example, air traffic control towers and installation of certain essential aviation equipment are considered a Federal responsibility, and therefore are funded under a separate section of the current ***FAA Funding Legislation***. This separate section, the Facilities and Equipment program, requires no local matching funds, but is not a source of funds for runway extensions, land acquisition, or many other typical airport improvements. Certain navigational aids that are required to be relocated may fall under this category, but timing can be an issue. It may be necessary to expend AIP money under a reimbursable agreement to ensure the relocations are accomplished in a timely manner. WHAT ABOUT ARTRANSPORT OP PRIVATE HANGARS

The last two forms of capital revenue, are interest income and the occasional sale of assets. Airports usually consider interest income as miscellaneous operating revenue; its capital origin notwithstanding. Therefore, such income is included in the balancing of operating surpluses described earlier. Regarding the sale of assets, airports find this to be an almost inconsequential revenue source. Worn out maintenance vehicles, outdated navigational aids and salvaged ARFF equipment and vehicles are examples of such assets.

5.3 Airport Development Schedule and Cost Summary

Figure V-1 depicts the proposed development sequence for the six-year capital improvement program.

Before summarizing staged capital costs, one key point needs to be emphasized. The staging of

development projects is based upon projected activity at the airport. Projections of aviation demand, which were presented in **Chapter Three** of this study, are one of the most important factors considered by any planning effort. These estimates of future activity are used to determine the need for additional airport facilities and, in many instances, to determine the effects associated with development of these facilities. In the event airport activity varies from projected levels, implementation of projects should occur when demand actually warrants, rather than according to the estimated staging presented herein.

The cost estimates presented in **Table 5-1** should be viewed as such - *an estimate* - and subject to subsequent refinement and final design. Nevertheless, these estimates are considered sufficiently accurate for performing the feasibility analysis in this chapter. The cost estimates presented in **Table 5-1** are in current dollars, with no inflationary factor applied to future dollars or to future years.

LONG RANGE CAPITAL IMPROVEMENT PROGRAM (CIP) WORKSHEET

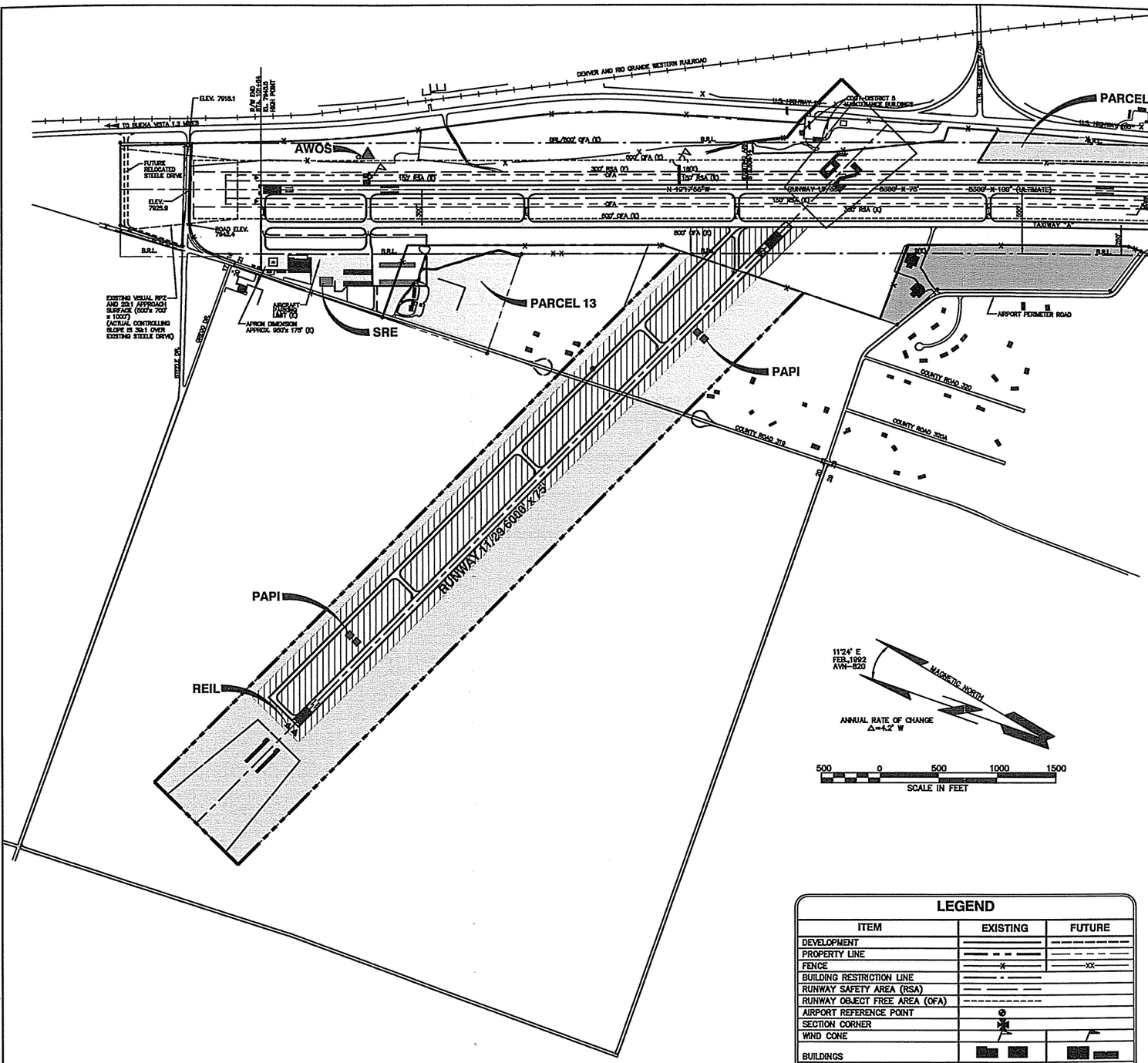
Airport Name	Central Colorado Regional Airport							
Airport Manager	Jerry L'Estrange							
Project Description	*Fed. Appor.*	*Fed. Disc.*	*GA Entitlement*	*State*	*Local*	*Private*	*Unfunded Needs*	*Total*
Year - 2003								
Seal Coat All Surfaces			150,000	8,333	8,333			166,666
								0
								0
Total - Year 2003	0	0	150,000	8,333	8,333	0	0	166,666
Year - 2004								
Rehabilitate Aircraft Parking Apron			150,000	8,333	8,333		283,334	450,000
								0
								0
Total - Year 2004	0	0	150,000	8,333	8,333	0	283,334	450,000
Year - 2005								
Acquire Land - Parcel 11			45,000	2,500	2,500			50,000
Acquire and Install AWOS			105,000	5,833	5,833			116,666
								0
Total - Year 2005	0	0	150,000	8,333	8,333	0	0	166,666
Year - 2006								
Acquire Land - Parcel 13			150,000	8,333	8,333		8,334	175,000
								0
								0
Total - Year 2006	0	0	150,000	8,333	8,333	0	8,334	175,000
Year - 2007								
Seal Coat All Surfaces			150,000	8,333	8,333			166,666
								0
								0
Total - Year 2007	0	0	150,000	8,333	8,333	0	0	166,666
Total FY 2003-2007	*0*	*0*	*750,000*	*41,665*	*41,665*	*0*	*291,668*	*1,124,998*

LONG RANGE CAPITAL IMPROVEMENT PROGRAM (CIP) WORKSHEET

Airport Name	Central Colorado Regional Airport							
Airport Manager	Jerry L'Estrange							
Project Description	*Fed. Appor.*	*Fed. Disc.*	*GA Entitlement*	*State*	*Local*	*Private*	*Unfunded Needs*	*Total*
Year - 2008								
Expand GA Building Area			150,000	8,333	8,333		633,334	800,000
Construct 2 T-Hangars						200,000		200,000
								0
Total - Year 2008	0	0	150,000	8,333	8,333	200,000	633,334	1,000,000
Year - 2009								
Expand Tiedown Area			150,000	8,333	8,333		433,334	600,000
								0
								0
Total - Year 2009	0	0	150,000	8,333	8,333	0	433,334	600,000
Year - 2010								
Rehabilitate Taxiway "A"		1,110,000	150,000	70,000	70,000			1,400,000
								0
								0
Total - Year 2010	0	1,110,000	150,000	70,000	70,000	0	0	1,400,000
Year - 2011								
Rehabilitate Runway 15/33		1,470,000	150,000	90,000	90,000			1,800,000
								0
								0
Total - Year 2011	0	1,470,000	150,000	90,000	90,000	0	0	1,800,000
Year - 2012								
Conduct Master Plan and EA			150,000	91,667	8,333			250,000
Construct SRE Building							400,000	400,000
								0
Total - Year 2012	0	0	150,000	91,667	8,333	0	400,000	650,000
Total FY 2008-2012	*0*	*2,580,000*	*750,000*	*268,333*	*184,999*	*200,000*	*1,466,668*	*5,450,000*

LONG RANGE CAPITAL IMPROVEMENT PROGRAM (CIP) WORKSHEET

Airport Name	Central Colorado Regional Airport							
Airport Manager	Jerry L'Estrange							
Project Description	*Fed. Appor.*	*Fed. Disc.*	*GA Entitlement*	*State*	*Local*	*Private*	*Unfunded Needs*	*Total*
Year - 2013								
Acquire Land for Runway 11/29							800,000	800,000
Phase I								0
								0
Total - Year 2013	0	0	0	0	0	0	800,000	800,000
Year - 2014								
Acquire Land for Runway 11/29								0
Phase II							800,000	800,000
Acquire Land for Approach Protection			*300,000*	16,667	16,667		66,666	400,000
Total - Year 2014	0	0	300,000	16,667	16,667	0	866,666	1,200,000
Year - 2015								
Close CR 319 / Improve Alternate Access							200,000	200,000
Seal Coat All Surfaces			150,000	8,333	8,333			166,666
								0
Total - Year 2015	0	0	150,000	8,333	8,333	0	200,000	366,666
Year - 2016								
Construct Runway 11/29 Phase I								0
Grading and Drainage							1,750,000	1,750,000
Security Improvments			150,000	8,333	8,333			166,666
Total - Year 2016	0	0	150,000	8,333	8,333	0	1,750,000	1,916,666
Year - 2017								
Construct Runway 11/29 Phase II								0
Paving and Lighting							3,500,000	3,500,000
								0
Total - Year 2017	0	0	0	0	0	0	3,500,000	3,500,000
Year - 2018								
Install PAPI and REIL for R/W 11/29			300,000	16,667	16,667			333,334
								0
								0
Total - Year 2018	0	0	300,000	16,667	16,667	0	0	333,334
Year - 2019								
Construct Taxiway "B" Phase I							500,000	500,000
Grading								0
Seal Coat R/W 15/33 and T/W "A"			*150,000*	8,333	8,333			166,666
Total - Year 2019	0	0	150,000	8,333	8,333	0	500,000	666,666
Year - 2020								
Construct Taxiway "B" Phase II							1,400,000	1,400,000
Acquire SRE			150,000	147,000	33,000			330,000
								0
Total - Year 2020	0	0	150,000	147,000	33,000	0	1,400,000	1,730,000
Year - 2021								
Rehabilitate Aircraft Parking Apron			150,000	8,333	8,333		283,334	450,000
								0
								0
Total - Year 2021	0	0	150,000	8,333	8,333	0	283,334	450,000
Year - 2022								
Seal Coat R/W 15/33 and T/W "A"			150,000	8,333	8,333			166,666
								0
								0
Total - Year 2022	0	0	150,000	8,333	8,333	0	0	166,666
TOTAL - FY 2013-2022	*0*	*0*	*1,500,000*	*221,999*	*107,999*	*0*	*9,300,000*	*11,129,998*
TOTAL - 20-Year CIP	*0*	*2,580,000*	*3,000,000*	*531,997*	*334,663*	*200,000*	*11,058,336*	*17,704,996*



LEGEND

ITEM	EXISTING	FUTURE
DEVELOPMENT		
PROPERTY LINE		
FENCE	-X-	-XX-
BUILDING RESTRICTION LINE		
RUNWAY SAFETY AREA (RSA)		
RUNWAY OBJECT FREE AREA (OFA)		
AIRPORT REFERENCE POINT		
SECTION CORNER		
WIND CONE		
BUILDINGS		
EASEMENT		
RUNWAY PROTECTION ZONE (RPZ)		

NEAR TERM DEVELOPMENT

PROJECT	APPROXIMATE CONSTRUCTION COST
SEAL COAT ALL SURFACES	$ 166,666
REHABILITATE AIRCRAFT PARKING APRON	$ 450,000
ACQUIRE LAND - PARCEL 11	$ 50,000
ACQUIRE AND INSTALL AWOS	$ 116,666
ACQUIRE LAND - PARCEL 13	$ 175,000
SEAL COAT ALL SURFACES	$ 166,666

MID TERM DEVELOPMENT

PROJECT	APPROXIMATE CONSTRUCTION COST
EXPAND GA BUILDING AREA	$ 800,000
CONSTRUCT 2 T-HANGARS	$ 200,000
EXPAND TIEDOWN AREA	$ 600,000
REHABILITATE TAXIWAY "A"	$ 1,400,000
REHABILITATE RUNWAY 15/33	$ 1,800,000
CONDUCT MASTER PLAN AND EA	$ 250,000
CONSTRUCT SRE BUILDING	$ 400,000

LONG RANGE DEVELOPMENT

PROJECT	APPROXIMATE CONSTRUCTION COST
ACQUIRE LAND FOR RUNWAY 11/29 - PHASE I	$ 800,000
ACQUIRE LAND FOR RUNWAY 11/29 - PHASE II	$ 800,000
ACQUIRE LAND FOR APPROACH PROTECTION	$ 400,000
CLOSE CR 319 / IMPROVE ALTERNATE ACCESS	$ 200,000
SEAL COAT ALL SURFACES	$ 166,666
CONSTRUCT RUNWAY 11/29 PHASE I- GRADING AND DRAINAGE	$ 1,750,000
SECURITY IMPROVEMENTS	$ 166,666
CONSTRUCT RUNWAY 11/29 PHASE II- PAVING AND LIGHTING	$ 3,500,000
INSTALL PAPI AND REIL FOR RUNWAY 11/29	$ 333,334
CONSTRUCT TAXIWAY "B" PHASE I- GRADING	$ 500,000
SEAL COAT RUNWAY 15/33 AND TAXIWAY "A"	$ 166,666
CONSTRUCT TAXIWAY "B" PHASE II- PAVING AND LIGHTING	$ 1,400,000
ACQUIRE SRE	$ 330,000
REHABILITATE AIRCRAFT PARKING APRON	$ 450,000
SEAL COAT RUNWAY 15/33 AND TAXIWAY "A"	$ 166,666

FINAL DRAFT

FINAL DRAFT
STAGE OF PLANS

BVA-CIP-P.dwg
CADD FILE NO.

REV.	DATE	DESCRIPTION	APP.

Washington
Infrastructure Services, Inc.
PHONE (303) 843-2000 FAX (303) 843-3131

CENTRAL COLORADO
REGIONAL AIRPORT
BUENA VISTA, COLORADO

CAPITAL IMPROVEMENT PLAN

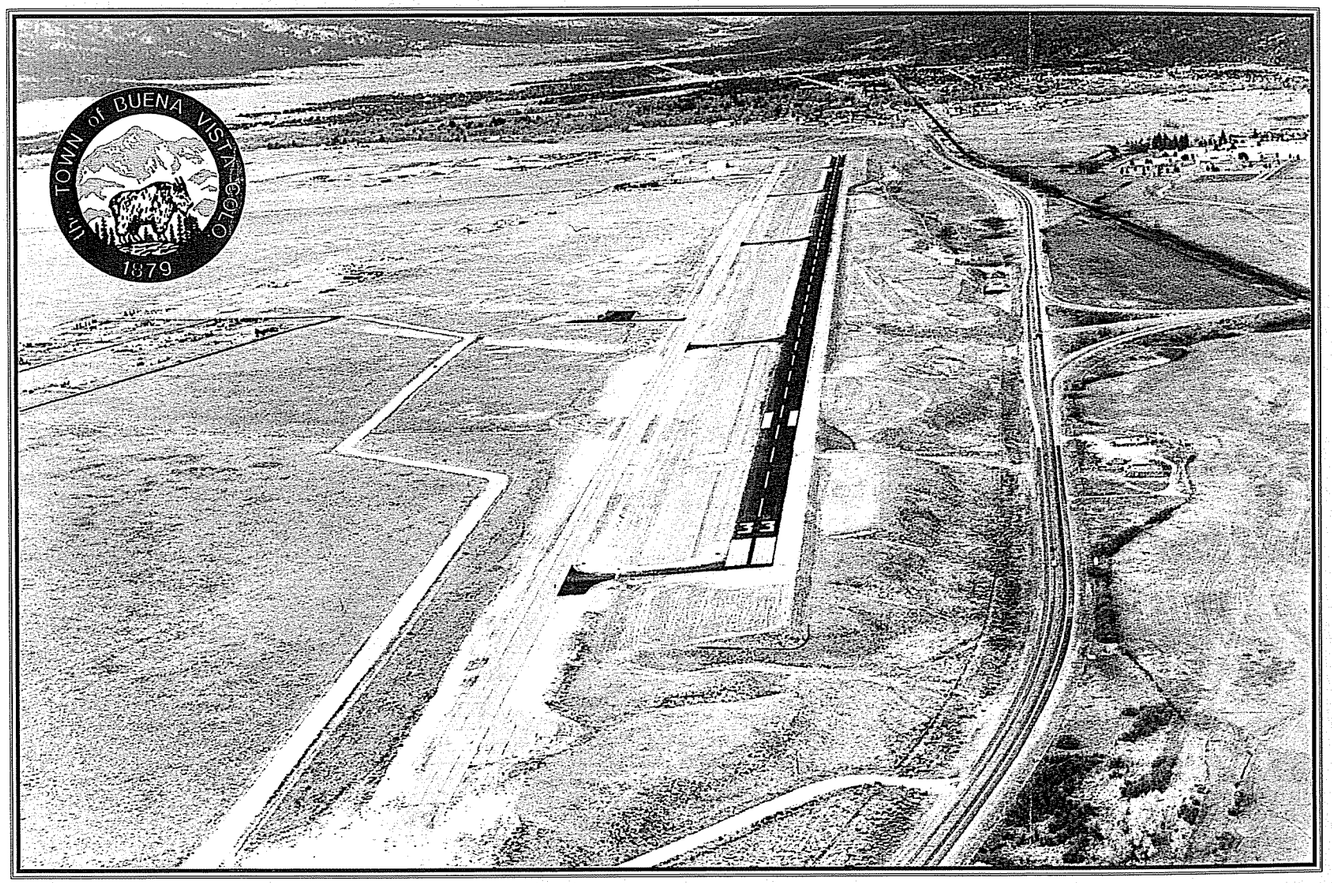
DESIGNER K.O.C. PROJ. LEAD J.F.S. APPROVED N.E.R.
CADD TECH. D.C.C. CHECKED C.M.G.

FIGURE 5-1

CENTRAL COLORADO REGIONAL AIRPORT

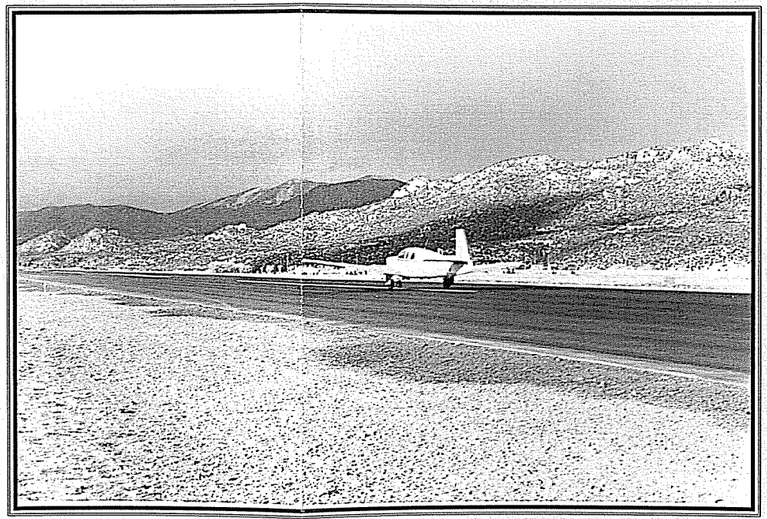
BUENA VISTA, COLORADO

AIRPORT MASTER PLAN



AIRPORT LAYOUT PLAN EXHIBITS

EXHIBIT	TITLE
I	AIRPORT LAYOUT PLAN
II	BUILDING AREA LAYOUT
III	FAR PART 77 AIRPORT AIRSPACE DRAWING /
IV	RUNWAY 15/33 APPROACH PLAN AND PROFILE INNER PORTION OF THE APPROACH PLAN AND PROFILE RUNWAY 15/33
V	LAND USE PLAN
VI	EXHIBIT "A" AIRPORT PROPERTY MAP
VII	NARRATIVE



SPONSORED BY:

FEDERAL AVIATION ADMINISTRATION _____

TOWN OF BUENA VISTA COLORADO _____

PREPARED BY:

Washington
Infrastructure Services, Inc.
PHONE (303) 843-2000 FAX (303) 843-3133

FINAL DRAFT

DATE: SEPTEMBER, 2003

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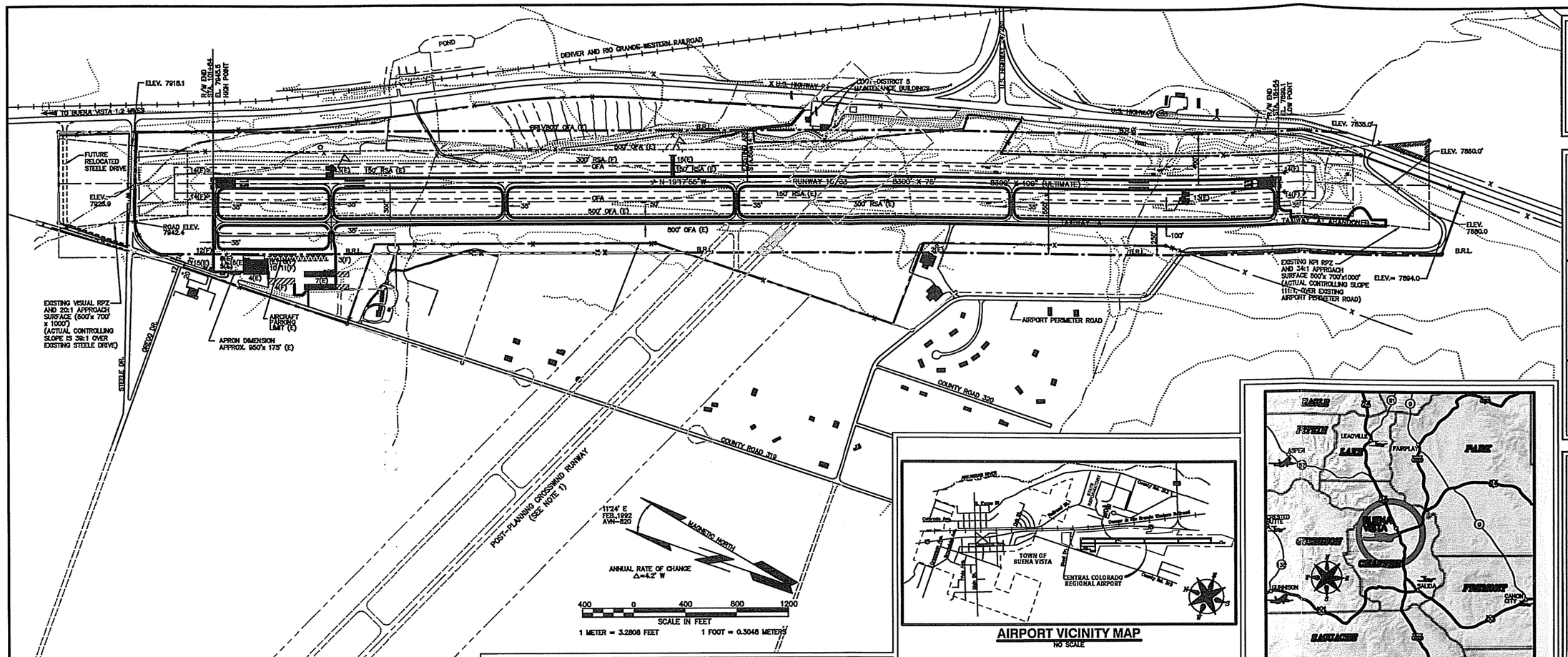


FINAL DRAFT

REV.	DATE	DESCRIPTION	APP.

BVA-ALP-P1.dwg — CADD FILE NO.

FINAL DRAFT — STAGE OF PLANS

AIRPORT VICINITY MAP
NO SCALE

LOCATION MAP
NO SCALE

RUNWAY DATA

	RUNWAY - 15		RUNWAY - 33	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUM	VISUAL ONLY	SAME	1 MILE	SAME
APPROACH SURFACE	20:1	--	34:1	SAME
RUNWAY WIDTH (FT.)	75'	SAME	75'	SAME
RUNWAY LENGTH (FT.)	8300'	SAME	8300'	SAME
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT	SAME
PAVEMENT DESIGN STRENGTH (LBS)				
-- SINGLE WHEEL GEAR (SWG)	12,500	12,500	12,500	12,500
-- DUAL WHEEL GEAR (DWG)	12,500	12,500	12,500	12,500
RUNWAY LIGHTING	MIRL	SAME	MIRL	--
RUNWAY MARKING	NPI	SAME	NPI	SAME
PERCENT GRADIENT	0.57%	0.57%	0.57%	0.57%
MAXIMUM GRADE WITHIN R/W LENGTH	0.6%	SAME	0.6%	SAME
LINE-OF-SIGHT REQUIREMENTS	MEETS STANDARDS	SAME	MEETS STANDARDS	SAME
VISUAL APPROACH AIDS	PAPI	SAME	PAPI	SAME
INSTRUMENT APPROACH AIDS	GPS	SAME	GPS	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME	B-II	SAME
CRITICAL AIRCRAFT	BEECH C-90	CITATION CJ2	BEECH C-90	CITATION CJ2
-- APPROACH SPEED (KTS)	100	118	100	118
-- WINGSPAN (FEET)	56.2'	49.5'	56.2'	49.5'
-- WEIGHT (LBS)	9,550	12,375	9,550	12,375
SAFETY AREA DIMENSIONS (FT)				
-- WIDTH	150'	SAME	150'	SAME
-- LENGTH BEYOND END	300'	SAME	300'	SAME
OBJECT FREE AREA DIMENSIONS (FT)				
-- WIDTH	500'	SAME	500'	SAME
-- LENGTH BEYOND R/W END	600'	SAME	600'	SAME
RUNWAY ELEVATIONS (FT.)				
RUNWAY END	7,945.5	SAME	7,899.1	SAME

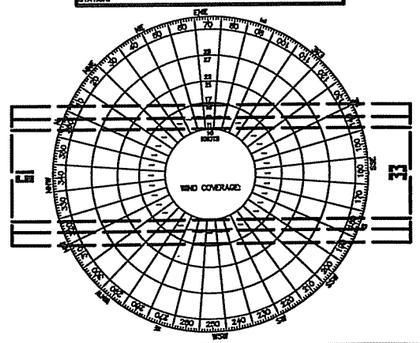
AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION (FT)	7945.5'	7945.5'
AIRPORT REFERENCE POINT		
LATITUDE	38° 48' 50.6" N	SAME
LONGITUDE	106° 07' 11.5" W	SAME
MEAN MAX DAILY TEMPERATURE	79.6° F	SAME
AIRPORT REFERENCE CODE	B-II	SAME
NPIAS SERVICE LEVEL	GENERAL AVIATION	SAME
TAXIWAY LIGHTING	MITL	SAME
AIRPORT AND TERMINAL NAVAIDS	ROTATING BEACON WIND SOCK, GPS	SAME

ALL WEATHER WIND ROSE

RUNWAYS	10.5K	13.0K	16.0K
--	--	--	--
--	--	--	--
--	--	--	--

SOURCE: PERIOD: STATION: SEE NOTE 2



RUNWAY END COORDINATES

RUNWAY	LATITUDE	LONGITUDE
15(E)	38° 48' 28.08" N	106° 07' 32.33" W
33(E)	38° 48' 12.38" N	106° 06' 57.23" W

AIRPORT FACILITY LIST

(E) EXISTING (F) FUTURE (R) TO BE REMOVED

1. FBO HANGAR (E)(F)
2. PRIVATE HANGAR (E)(F)
3. T-HANGAR (E)(F)
4. AUTO PARKING (E)(F)
5. FUEL FARM (E)
6. ADMINISTRATIVE OFFICE (E)
7. EXECUTIVE HANGAR (E)(F)
8. AIRCRAFT PARKING (E)(F)
9. COMMUTER TERMINAL BUILDING (F)
10. ARFF BUILDING (F)
11. SNOW REMOVAL EQUIPMENT BUILDING (F)
12. AUTOMATED WEATHER OBSERVATION EQUIPMENT (F)
13. PRECISION APPROACH PATH INDICATOR (PAPI) SYSTEMS (E)
14. RUNWAY END IDENTIFIER (REIL) LIGHTS (F)
15. AIRPORT ROTATING BEACON (E)
16. WIND CONE AND SEGMENTED CIRCLE (E)

NOTES:

1. CROSSWIND RUNWAY IS DEPICTED FOR ULTIMATE DEVELOPMENT FINAL ALIGNMENT TO BE DETERMINED FOLLOWING THE WIND ANALYSIS.
2. WIND DATA WILL BE COLLECTED BY CDOT FOR A PERIOD OF AT LEAST 12 MONTHS. A FUTURE ALP UPDATE WILL TABULATE WIND DATA FOLLOWING COLLECTION PERIOD.

LEGEND

ITEM	EXISTING	FUTURE
DEVELOPMENT		
PROPERTY LINE		
FENCE		
BUILDING RESTRICTION LINE		
RUNWAY SAFETY AREA (RSA)		
RUNWAY OBJECT FREE AREA (OFA)		
CONTOUR	4800	
AIRPORT REFERENCE POINT		
SECTION CORNER		
WIND CONE		
BUILDINGS		
EASEMENT		
RUNWAY PROTECTION ZONE (RPZ)		
NAVIGATIONAL AID CRITICAL AREA		
POST PLANNING DEVELOPMENT		

FAA APPROVAL

SUBJECT TO LETTER DATED: _____

FEDERAL AVIATION ADMINISTRATION DENVER AIRPORTS DISTRICT OFFICE

DATED: _____

CASE NO: _____

ACCEPTED: TOWN OF BUENA VISTA

DATE

AIRPORT LAYOUT PLAN

DESIGNER K.A.C. CADD TECH. D.A.C. — PROJ. LEAD J.F.S. CHECKED C.M.G. — APPROVED N.E.R.

DATE: SEPTEMBER, 2003

EXHIBIT 1

Washington
Infrastructure Services, Inc.
PHONE (303) 840-2000 FAX (303) 825-3131

CENTRAL COLORADO REGIONAL AIRPORT
BUENA VISTA, COLORADO

I:\BVA\PLANNING\BVA-ALP-P1.dwg Sep 12, 2003 - 2:49pm Eloy.Trujillo

U.S. HIGHWAY 285

BUILDING RESTRICTION LINE (E)

EXISTING RPZ

STEELE DR.

500' OBJECT FREE AREA (E)(F)

WIND SOCK

PAPI (E)

150' RUNWAY SAFETY AREA (E)(F)

REIL (E)

REIL (E)

RUNWAY 15/33

T/W "A6"

T/W "A5"

150' RUNWAY SAFETY AREA (E)(F)

500' OBJECT FREE AREA (E)(F)

TAXIWAY "A"

TRANSIENT PARKING

APRON CONNECTOR

BUILDING RESTRICTION LINE

AIRCRAFT TIEDOWN APRON

GREGG ST.

COUNTY ROAD 319

LEGEND

ITEM	EXISTING	FUTURE
DEVELOPMENT		
PROPERTY LINE		
FENCE	-X-	XX
BUILDING RESTRICTION LINE		
RUNWAY SAFETY AREA (RSA)		
RUNWAY OBJECT FREE AREA (OFA)		
AIRPORT REFERENCE POINT		
SECTION CORNER		
WIND CONE		
BUILDINGS		
EASEMENT		
RUNWAY PROTECTION ZONE (RPZ)		
TIEDOWN		

BUILDING LIST

BLDG. NO.	DESCRIPTION	TOP ELEV.
1	AMMINISTRATION OFFICE (E)	7972'
2	FBO HANGAR/BUILDING (E)	7983'
3	ELECTRICAL VAULT (E)	7957'
4	FUEL PUMP (E)	7953'
5	FUEL FARM (E)	7969'
6	ROTATING BEACON (E)	7977'
7	EXECUTIVE HANGAR (E)(F)	7981'
8	T-HANGAR (E)(F)	---
9	AWOS (F)	---

(R)-TO BE REMOVED/RELOCATED
(E)-EXISTING (F)-FUTURE

11°24' E
FEB.1992
AVN-820

MAGNETIC NORTH

ANNUAL RATE OF CHANGE
=4.2' W

100 0 100 200 300
SCALE IN FEET

1 METER = 3.2808 FEET 1 FOOT = 0.3048 METERS

FINAL DRAFT

APP.	DESCRIPTION	DATE	REV.
	FINAL DRAFT STAGE OF PLANS		
	BVA-BLD-P.dwg CADD FILE NO.		

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CENTRAL COLORADO
REGIONAL AIRPORT
BUENA VISTA, COLORADO

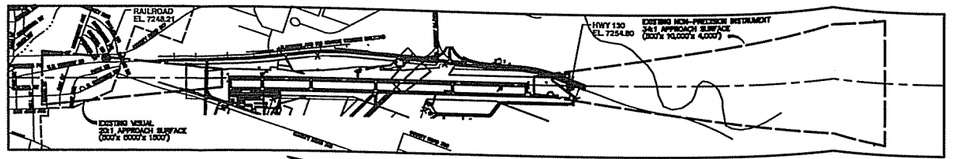
BUILDING LAYOUT PLAN

DESIGNER	K.O.C.	PROJ. LEAD	J.F.S.	APPROVED	N.E.R.
CADD TECH.	D.C.C.	CHECKED	C.M.G.		

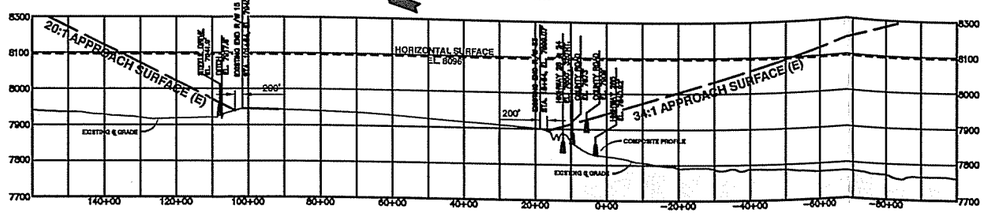
DATE: SEPTEMBER, 2003
EXHIBIT II

t:\BVA\PLANNING\BVA-BLD-P.dwg Sep 12, 2003 - 2:51pm Eloy.Trujillo

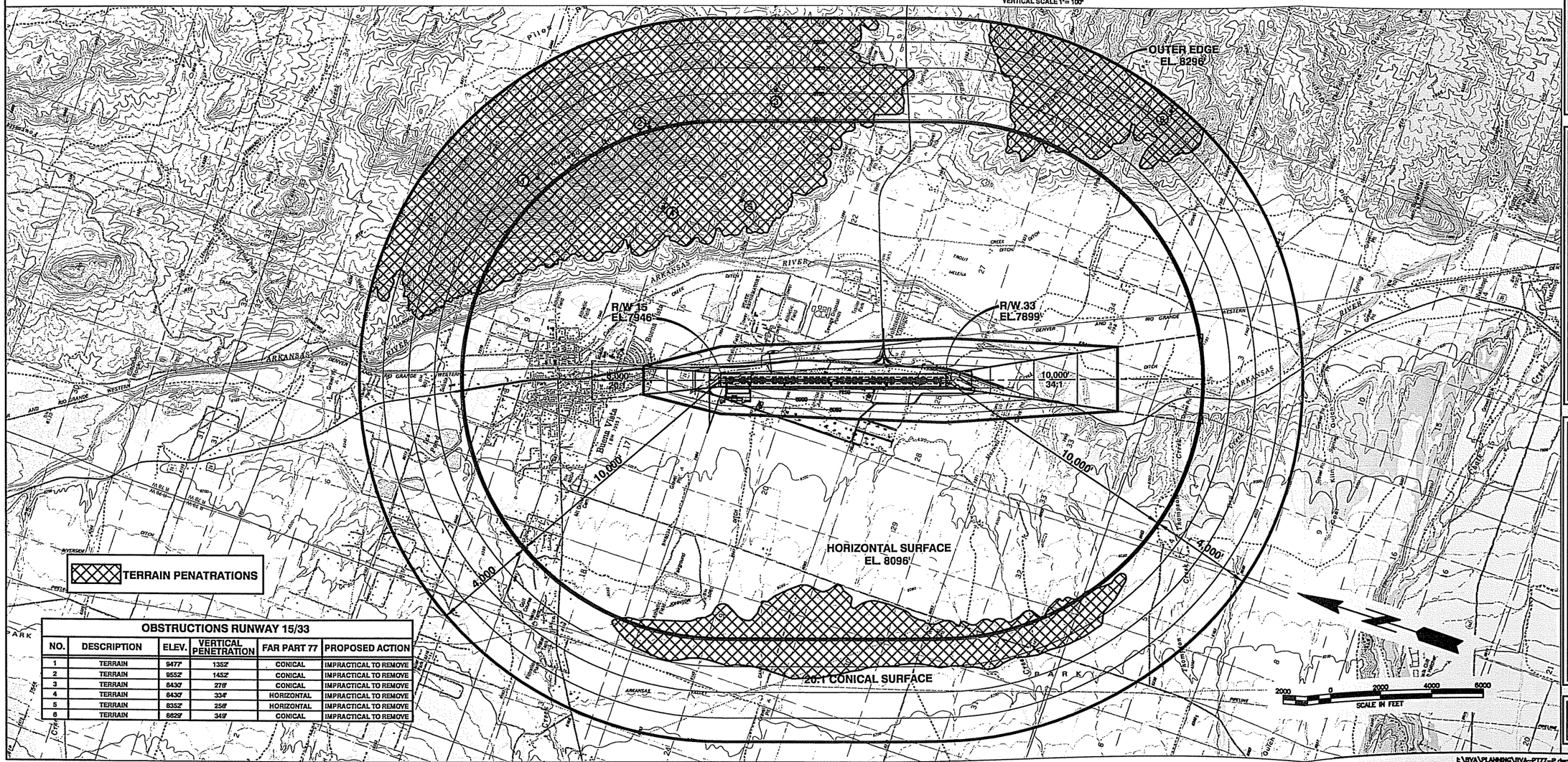
OBSTRUCTIONS RUNWAY 15/33					
NO.	DESCRIPTION	ELEVATION	PENETRATION	SURFACE	DISPOSITION
NO CLOSE IN OBSTRUCTIONS					



RUNWAY 15/33 APPROACH PLAN
SCALE 1"= 1000'



RUNWAY 15/33 APPROACH PROFILE
HORIZONTAL SCALE 1"= 1000'
VERTICAL SCALE 1"= 100'



OBSTRUCTIONS RUNWAY 15/33						
NO.	DESCRIPTION	ELEV.	VERTICAL PENETRATION	FAR PART 77	PROPOSED ACTION
1	TERRAIN	9477'	1352'	CONICAL	IMPRACTICAL TO REMOVE
2	TERRAIN	9552'	1452'	CONICAL	IMPRACTICAL TO REMOVE
3	TERRAIN	8430'	276'	CONICAL	IMPRACTICAL TO REMOVE
4	TERRAIN	8430'	334'	HORIZONTAL	IMPRACTICAL TO REMOVE
5	TERRAIN	8352'	256'	HORIZONTAL	IMPRACTICAL TO REMOVE
6	TERRAIN	8829'	349'	CONICAL	IMPRACTICAL TO REMOVE

FINAL DRAFT

BVA-PT77-P.dwg CADD FILE NO.	FINAL DRAFT STAGE OF PLANS

REV.	DATE	DESCRIPTION	APP.

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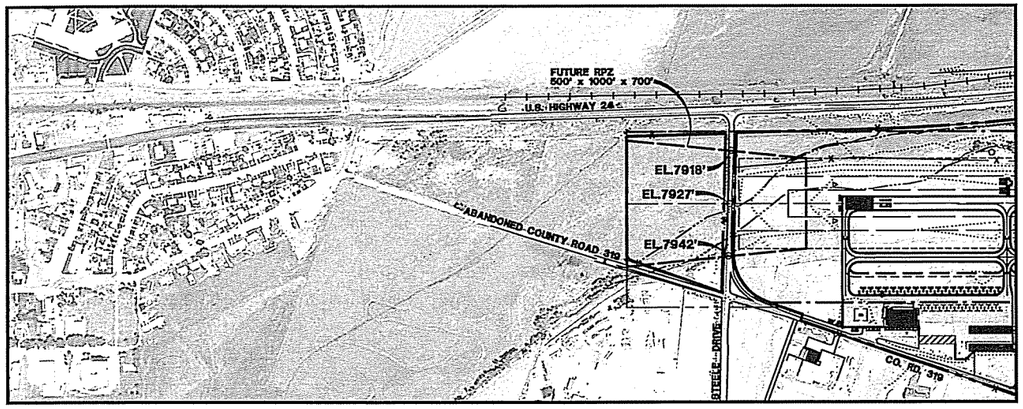
CENTRAL COLORADO
REGIONAL AIRPORT
BUENA VISTA, COLORADO

AIRPORT AIRSPACE DRAWING
(FAR PART 77 SURFACES)

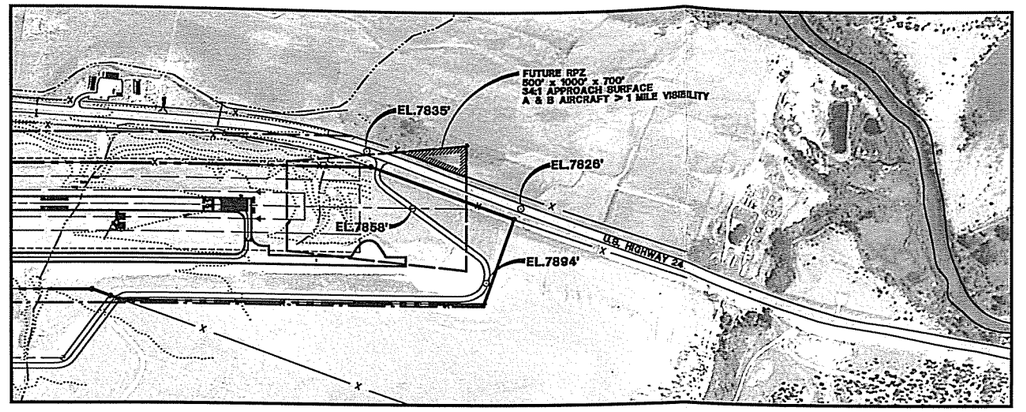
DESIGNER	K.G.C.	PROJ. LEAD	J.F.S.	APPROVED	N.E.R.
CADD TECH.	D.C.C.	CHECKED	C.M.G.		

DATE: SEPTEMBER, 2003
EXHIBIT III

E:\BVA\PLANNING\BVA-PT77-P.dwg Sep 12, 2003 - 2:55pm Eloy.TruJillo

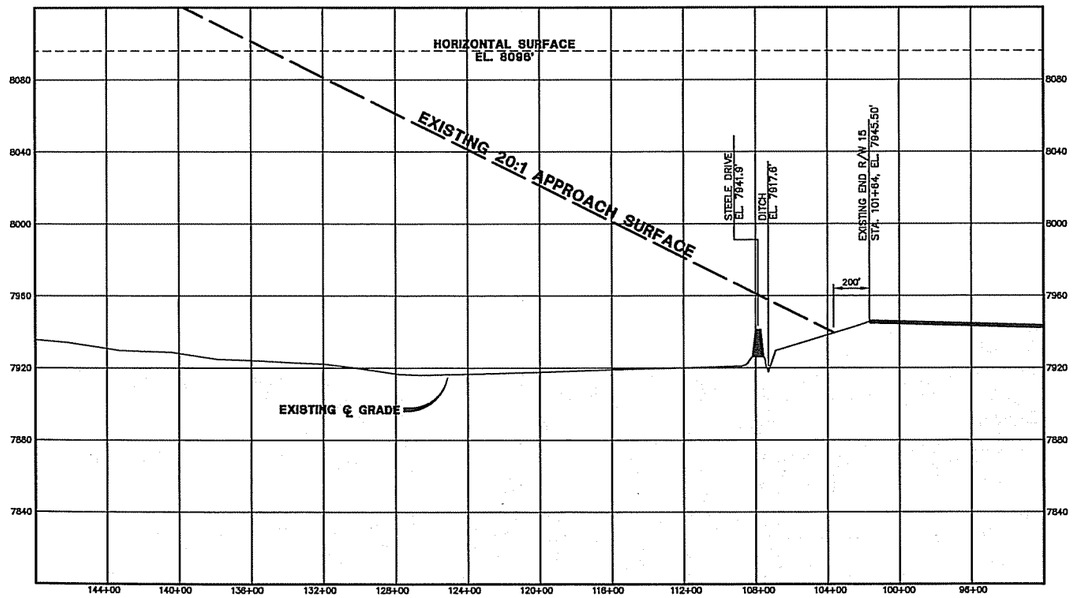


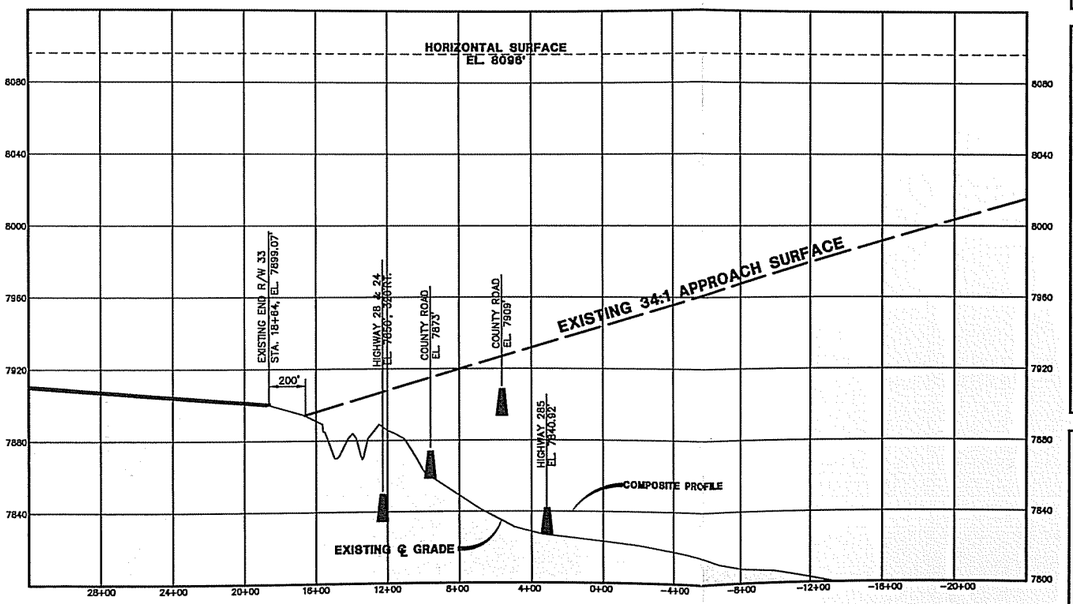
RUNWAY 15 PLAN



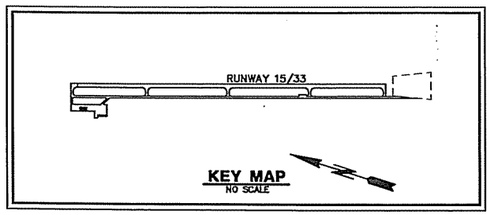
RUNWAY 33 PLAN

400 0 400 800 1200
SCALE IN FEET





RUNWAY 15/33 PROFILE
HORIZONTAL SCALE 1" = 400'
VERTICAL SCALE 1" = 40'



KEY MAP
NO SCALE

OBSTRUCTIONS RUNWAY 15/33

NUMBER	DESCRIPTION	ELEVATION	PENETRATION	PART 77 SURFACE	PROPOSED ACTION
	NO OBSTRUCTIONS				

FINAL DRAFT

BVA-PRO1-P.dwg CADD FILE NO.	FINAL DRAFT STAGE OF PLANS		
REV.	DATE	DESCRIPTION	APP.

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CENTRAL COLORADO REGIONAL AIRPORT
BUENA VISTA, COLORADO

INNER PORTION OF THE APPROACH PLAN AND PROFILE RUNWAY 15/33

DESIGNER K.O.C. PROJ. LEAD J.F.S. APPROVED N.E.R.
CADD TECH. D.C.C. CHECKED C.M.G.

DATE: SEPTEMBER, 2003
EXHIBIT IV

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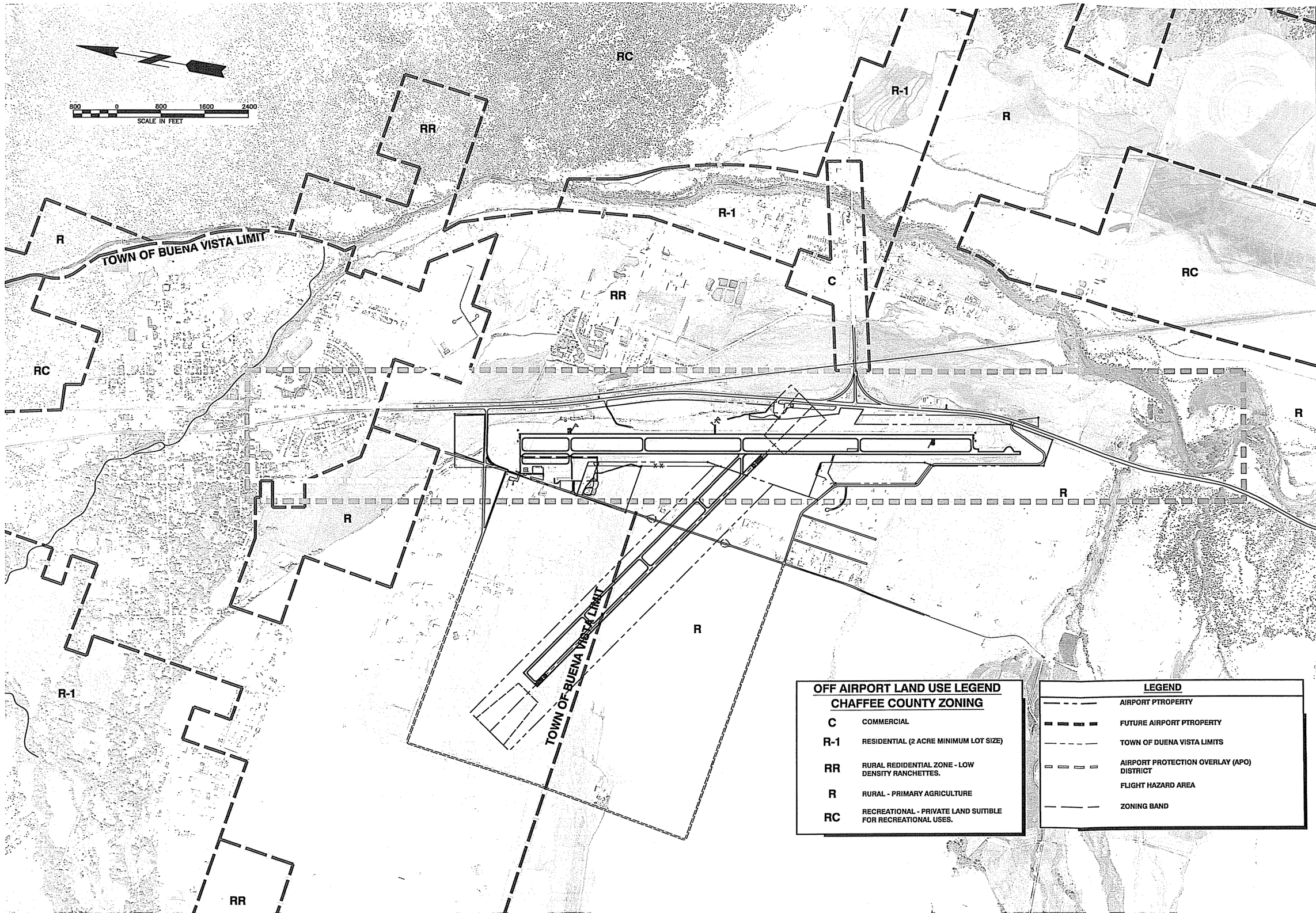

FINAL DRAFT

REV.	DATE	DESCRIPTION	APP.

BVA-LAND-P.dwg CADD FILE NO.
FINAL DRAFT STAGE OF PLANS

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Infrastructure Services, Inc.
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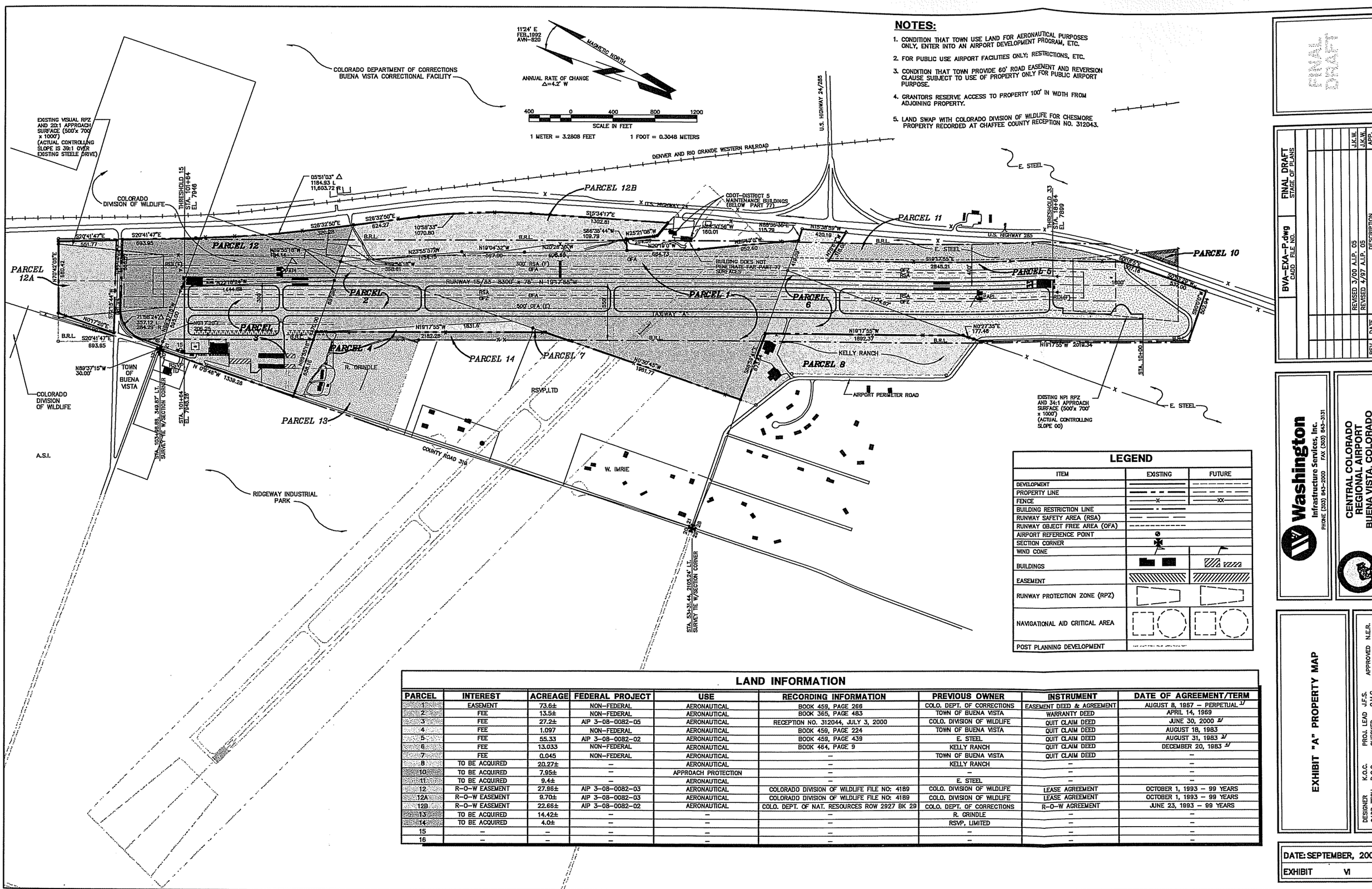
CENTRAL COLORADO REGIONAL AIRPORT
BUENA VISTA, COLORADO

LAND USE PLAN

DESIGNER K.O.C. PROJ. LEAD J.F.S. APPROVED N.E.R.
CADD TECH. D.C.C. CHECKED C.M.G.

DATE: SEPTEMBER, 2003
EXHIBIT V



NOTES:

1. CONDITION THAT TOWN USE LAND FOR AERONAUTICAL PURPOSES ONLY, ENTER INTO AN AIRPORT DEVELOPMENT PROGRAM, ETC.
2. FOR PUBLIC USE AIRPORT FACILITIES ONLY; RESTRICTIONS, ETC.
3. CONDITION THAT TOWN PROVIDE 60' ROAD EASEMENT AND REVERSION CLAUSE SUBJECT TO USE OF PROPERTY ONLY FOR PUBLIC AIRPORT PURPOSE.
4. GRANTORS RESERVE ACCESS TO PROPERTY 100' IN WIDTH FROM ADJOINING PROPERTY.
5. LAND SWAP WITH COLORADO DIVISION OF WILDLIFE FOR CHESMORE PROPERTY RECORDED AT CHAFFEE COUNTY RECEPTION NO. 312043.

LEGEND

ITEM	EXISTING	FUTURE
DEVELOPMENT		
PROPERTY LINE		
FENCE	-X-	-XX-
BUILDING RESTRICTION LINE		
RUNWAY SAFETY AREA (RSA)		
RUNWAY OBJECT FREE AREA (OFA)		
AIRPORT REFERENCE POINT		
SECTION CORNER		
WIND CONE		
BUILDINGS		
EASEMENT		
RUNWAY PROTECTION ZONE (RPZ)		
NAVIGATIONAL AID CRITICAL AREA		
POST PLANNING DEVELOPMENT		

LAND INFORMATION

PARCEL	INTEREST	ACREAGE	FEDERAL PROJECT	USE	RECORDING INFORMATION	PREVIOUS OWNER	INSTRUMENT	DATE OF AGREEMENT/TERM
1	EASEMENT	73.6±	NON-FEDERAL	AERONAUTICAL	BOOK 459, PAGE 266	COLO. DEPT. OF CORRECTIONS	EASEMENT DEED & AGREEMENT	AUGUST 8, 1957 – PERPETUAL 1/
2	FEE	13.5±	NON-FEDERAL	AERONAUTICAL	BOOK 365, PAGE 483	TOWN OF BUENA VISTA	WARRANTY DEED	APRIL 14, 1969
3	FEE	27.2±	AIP 3-08-0082-05	AERONAUTICAL	RECEPTION NO. 312044, JULY 3, 2000	COLO. DIVISION OF WILDLIFE	QUIT CLAIM DEED	JUNE 30, 2000 2/
4	FEE	1.097	NON-FEDERAL	AERONAUTICAL	BOOK 459, PAGE 224	TOWN OF BUENA VISTA	QUIT CLAIM DEED	AUGUST 18, 1983
5	FEE	55.33	AIP 3-08-0082-02	AERONAUTICAL	BOOK 459, PAGE 439	E. STEEL	QUIT CLAIM DEED	AUGUST 31, 1983 3/
6	FEE	13.033	NON-FEDERAL	AERONAUTICAL	BOOK 464, PAGE 9	KELLY RANCH	QUIT CLAIM DEED	DECEMBER 20, 1983 4/
7	FEE	0.045	NON-FEDERAL	AERONAUTICAL	–	TOWN OF BUENA VISTA	QUIT CLAIM DEED	–
8	TO BE ACQUIRED	20.27±	–	AERONAUTICAL	–	KELLY RANCH	–	–
10	TO BE ACQUIRED	7.95±	–	APPROACH PROTECTION	–	–	–	–
11	TO BE ACQUIRED	9.4±	–	AERONAUTICAL	–	E. STEEL	–	–
12	R-O-W EASEMENT	27.96±	AIP 3-08-0082-03	AERONAUTICAL	COLORADO DIVISION OF WILDLIFE FILE NO: 4189	COLO. DIVISION OF WILDLIFE	LEASE AGREEMENT	OCTOBER 1, 1993 – 99 YEARS
12A	R-O-W EASEMENT	9.70±	AIP 3-08-0082-03	AERONAUTICAL	COLORADO DIVISION OF WILDLIFE FILE NO: 4189	COLO. DIVISION OF WILDLIFE	LEASE AGREEMENT	OCTOBER 1, 1993 – 99 YEARS
12B	R-O-W EASEMENT	22.66±	AIP 3-08-0082-02	AERONAUTICAL	COLO. DEPT. OF NAT. RESOURCES ROW 2927 BK 29	COLO. DEPT. OF CORRECTIONS	R-O-W AGREEMENT	JUNE 23, 1993 – 99 YEARS
13	TO BE ACQUIRED	14.42±	–	–	–	R. GRINDLE	–	–
14	TO BE ACQUIRED	4.0±	–	–	–	RSVP, LIMITED	–	–
15	–	–	–	–	–	–	–	–
16	–	–	–	–	–	–	–	–

FINAL DRAFT

REV.	DATE	DESCRIPTION	J.K.W.	J.A.W.	APP.
		BVA-EXA-P.dwg CADD FILE NO.	FINAL DRAFT STAGE OF PLANS		
		REVISED 3/00 A.I.P. 05			
		REVISED 4/97 A.I.P. 05			

Washington
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CENTRAL COLORADO REGIONAL AIRPORT
BUENA VISTA, COLORADO

EXHIBIT "A" PROPERTY MAP

DESIGNER K.O.C. PROJ. LEAD J.F.S. APPROVED N.E.R.
CADD TECH. D.C.C. CHECKED C.M.G.

DATE: SEPTEMBER, 2003
EXHIBIT VI

APPENDIX A:
Glossary of Terms

A

AC-Advisory Circular

AFB-Air Force Base

AGL-Above Ground Level

AIA-Annual Instruments Approach

AICUZ-Air Installation Compatible Use Zone Study

AIP-Airport Improvement Program

AIR CARRIER- Aircraft operating under certificates of public convenience and necessity issued by the CAB authorizing the performance of scheduled air transportation over specified routes and a limited amount of non-scheduled operations.

AIRCRAFT TYPES-An classification system which identifies and groups aircraft having similar operational characteristics for the purpose of computing runway capacity.

AIR NAVIGATIONAL FACILITY- Any facility used for guiding or controlling flight in the air or during the landing or takeoff of aircraft.

AIR ROUTE SURVEILLANCE RADAR (ARSR)-Long-range radar which increases the capability of air traffic control for handling heavy enroute traffic. An ARSR site is usually located at some distance from the ARTCC it serves. Its range is approximately 200 nautical miles. Also called ATC Center Radar.

AIR TAXI-Aircraft operated by a company or individual that performs air transportation on a non-scheduled basis over unspecified routes usually with light aircraft.

AIRPORT SURVEILLANCE RADAR (ASR)-Radar providing position of aircraft by azimuth and range data without elevation data. It is designed for a range of 50 miles. Also called ATC Terminal Radar.

AIRPORT TRAFFIC AREA-Unless otherwise specifically designated, that airspace within a horizontal radius of five statue miles from the geographical center of any airport at which a control tower is operating, extending from the surface up to but not including 3,000 feet above the surface.

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC) – A facility established to provide air traffic control service to aircraft operating on an IFR flight plan within controlled airspace and principally during the enroute phase of flight.

AIRSPACE – The space lying above the earth or above a certain area of land or water which is necessary to conduct aerodynamic operations.

ALP – Airport Layout Plan

ALS – Approach Light System

ALSFI – Approach Lighting System with Sequenced Flashing Lights

ANAP – Aviation Noise Abatement Policy

ANCLUC – Airport Noise Control and Land Use Compatibility Study

ACI – Airport Council International

APPROACH FIX – The point from or over which final approach (IFR) to an airport is expected.

ARFF – Airport Rescue and Firefighting Forces

ARTS – Automated Radar Terminal Station

ASNA – Aviation Safety and Noise Abatement Act of 1979

ASR – Airport Surveillance Radar

ATC – Air Traffic Control

ATCT – Air Traffic Control Tower

B

BASED AIRCRAFT – An aircraft permanently stationed at an airport, usually by some form of agreement between the aircraft owner and airport management or the Fixed Base Operator.

BASIC TRANSPORT AIRPORT – An airport designed to serve operations by business jet aircraft.

BIT – Bituminous Asphalt Pavement

BRL – Building Restriction Line. The closest point to a runway or taxiway at which a structure may be erected.

C

CAT II – Category II Instrument Landing System

CBD – Central Business District

CIRCLING APPROACH – A descent in an approved procedure to an airport followed by a circle-to-land maneuver.

CL – Centerline, or Centerline Lighting

CLEAR ZONE – Inner portion of runway approach zone.

COMMUTER AIRLINE – Aircraft operated by an airline that performs scheduled air transportation service over specified routes using light aircraft in accordance with FAR Parts 121 and or 135. Light aircraft means an aircraft having 30 seats or less and a maximum payload capacity of 7,500 pounds or less.

CONC – Portland Cements Concrete Pavement

CONTINENTAL CONTROL AREA – This includes the airspace at an above 14,500 feet nsl of the 48 contiguous states, the District of Columbia, and Alaska, excluding the Alaskan peninsula west of longitude 160 degrees west. It does not include the airspace less than 1,500 feet above the surface of the earth nor most prohibited or restricted areas.

CONTROL AREAS – These consist of the airspace designated as VOR Federal Airways, additional Control Areas, and Control Areas Extensions but do not include the Continental Control Area. Control zones that do not underlie the Continental Control Areas have no upper limit. A control zone may include one or more airports and is normally a circular area with a radius of 5 statute miles and any extensions necessary to include instruments departure and arrival paths.

CONTROL TOWER – A central operations facility in the terminal air traffic control system consisting of a tower cab structure (including an associated IFR room if radar-equipped) using air/ground communications and/or radar, visual signaling, and other devices to provide safe and expeditious movement of terminal air traffic.

CONTROL ZONES – These are areas of controlled airspace which extend upward from the surface and terminate at the base of the Continental Control Area. Control zones that do not underlie the Continental Control Area have no upper limit. A control zone may include one or more airports and is normally a circular area with a radius of five statute miles and any extensions necessary to include instruments departure and arrival paths.

CONTROLLED AIRSPACE – Airspace designated as Continental Control Area, control area, control zone, or transition area within which some or all aircraft may be subjected to air traffic control.

D

Db- Decibel

DBA – A weighted Decibel

DECISION HEIGHT (DH) – with respect to the operation of aircraft, this means the height at which a decision must be made, using an ILS or PAR instrument approach, to either continue the approach or to execute a missed approach.

DISTANCE MEASURING EQUIPMENT (DME) – An electronic installation established with either a

VOR or ILS to provide distance information from the facility to pilots by reception of electronic signals. It measures, in nautical miles, the distance of an aircraft from a NAVAID.

DOD – Department of Defense

DTW – Dual Tandem Wheel

E

EBI – Effective Buying Income; a bulk measurement of market potential of people in an area, that indicates the general ability to buy products.

ENROUTE – The route of flight from the point of departure to point of destination, including intermediate stops (excludes local operations).

ENROUTE AIRSPACE – Controlled airspace above and/or adjacent to terminal airspace.

F

FAA – Federal Aviation Administration

FAR – Federal Aviation Regulation

FBO – Fixed Base Operator

FINAL APPROACH IFR – The flight path of an aircraft which is inbound to the airport on an approved final instrument approach course, beginning at the point of interception of that course and extending to the airport or the point where circling for landing or missed approach is executed.

FINAL APPROACH VFR – The proportion of aircraft types or models expected to operate at an airport.

FLEET MIX – The proportion of aircraft types or models excepted to operate at an airport.

FSDO – Flight Standards District Office, FAA

FY – Fiscal Year

G

GENERAL AVIATION (GA) – Refers to all civil aircraft and operations, which are not classified as air carrier.

GENERAL UTILITY (GU) – An airport which is designed to accommodate substantially all propeller-driven aircraft of less than 12,500 pounds.

GENERAL TRANSPORT (GT) AIRPORT – This airport designation is used when an airport is forecast to support general aviation transport aircraft between 60,000 and 175,000 pounds MGW.

GLIDE SLOPE (GS) – The vertical guidance component of an ILS.

GPS – Global Positioning System. An enroute and approach navigation system providing horizontal and vertical information from a constellation of satellites in earth orbit.

H

HGRS – Hangers

HIGH ALTITUDE AIRWAYS – Air routes above 18,000 feet MSL. These are referred to as Jet Routes.

HIRL – High Intensity Runway Lighting

HOLDING – A pre-determined maneuver which keeps an aircraft within a specified airspace while awaiting further clearance.

HUD – Department of Housing and Urban Development

I

IMC – Instrument Meteorological Conditions

INSTRUMENT APPROACH – An approach conducted while the final approach fix is below VFR minimums.

IFR – Instrument Flight Rules that govern flight procedures under IFR conditions (limited visibility or other operational constraints).

INM 6.1 – Integrated Noise Model Version 6.1

INSTRUMENT LANDING SYSTEM (ILS) – A precision landing aid consisting of localizer (azimuth guidance), glide slope (vertical guidance), outer marker (final approach fix), and approach light system.

INSTRUMENT OPERATION – All aircraft arrivals and departures other than local operations.

ITINERANT OPERATION – All aircraft arrivals and departures other than local operations.

J

JET ROUTES – See High Altitude Airways

L

LANDING DIRECTION INDICATOR – A device, which visually indicates the direction in which landings and takeoffs, should be made.

LANDING MINIMUMS/IFR LANDING MINIMUMS – The minimum visibility and cloud ceiling prescribed for landing while using an instrument approach procedure.

LAT – Latitude

LDA – Localizer Type Directional Aid – A NAVAID used for non-precision instrument approaches with utility and accuracy comparable to a localizer but which is not a part of a complete ILS and is not aligned with the runway.

Ldn – Day-Night Average Sound Level

Leq – Equivalent Sound Level

Lmax – Maximum A-weighted Sound Level

LOC – Localizer – Part of ILS that provides course guidance to the runway.

LOM – Compass locator at an outer marker (part of an ILS). Also called COMLO.

LOCAL OPERATION – Operations performed by aircraft which: (a) operate in the local traffic pattern or within sight of the tower; (b) are known to be departing for, or arriving from, flight in local practice areas located within a 20 mile radius of the control tower; or (c) execute simulated instrument approaches or low passes at the airport.

LOW ALTITUDE AIRWAYS – Air routes below 18,000 feet msl. These are referred to as Victor Airways.

LONG – Longitude

M

MALS – Medium (intensity) Approach Light System

MALSF – MALS with sequenced flashing lights

MALSR –MALS with runway alignment indicator lights (RAILS).

MARKER BEACON – A VFR navigational aid, which transmits a narrow beam. It is associated with an airway or an instrument approach.

MASTER PLAN – Long-range plan of airport development requirements.

MGW – Maximum Gross Weight

MICROWAVE LANDING SYSTEM (MLS) – An instrument system operating in the microwave spectrum which provides lateral and vertical guidance to aircraft having compatible avionics equipment.

MILITARY OPERATIONS – An operation by military aircraft.

MINIMUM DESCENT ALTITUDE (MDA) – The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circling-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide is provided.

MIRL – Medium Intensity Runway Lighting

MISSED APPROACH – A prescribed procedure to be followed by aircraft that cannot complete an attempted landing at an airport.

MITL – Medium Intensity Taxiway Lighting

MM – Middle Marker – Part of an ILS that defines a point along the glide slope normally located at or near the point of decision height (DH).

MOA – Military Operating Area

MOVEMENT – Synonymous with the term operation, i.e., a takeoff.

MSL – mean sea level

N

NAS – NATIONAL AIRSPACE SYSTEM – The common system of air navigation and air traffic control encompassing communications facilities, air navigation facilities, airways, controlled airspace, special use airspace, and flight procedures authorized by Federal Aviation Regulations for domestic and international aviation.

NAVAID – Navigational aid (see Air Navigation Facility).

NCP – see Noise Compatibility Program

NDB – NON-DIRECTIONAL BEACON – An electronic ground station transmitting in all directions in the L/MF frequency spectrum; provides azimuth guidance to aircraft equipped with direction finder receivers. These facilities are often established with ILS outer markers to provide transition guidance to the ILS system.

NEM – see Noise Exposure Map

NEPA – National Environmental Policy Act

NLR – Noise Level Reduction

NM – Nautical Mile

NOISE ABATEMENT – A procedure for the operation of aircraft at an airport which minimizes the impact of noise on the environs of the airport.

NOISE COMPATIBLILITY PROGRAM (NCP) – List of actions the airport proprietor proposes to undertake to minimize noise/land use incompatibilities.

NON-PRECISION APPROACH PROCEDURE/NON-PRECISION APPROACH – A standard instrument approach procedure in which no electronic glide slope is provided.

NOTICE TO AIRMEN/NOTAM – A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment of, or change in any component (facility, service, or procedure or hazard on the National Airspace System) the timely knowledge of which is essential to personnel concerned with flight operations.

NPI – Non-precision Instrument runway marking

NPIAS – National Plan of Integrated Airport Systems

O

OBSTRUCTION – Any object/obstacle exceeding the obstruction standards specified by FAR Part 77.

OBSTRUCTION LIGHT – A light, or one of a group of lights, usually red or whit, frequently mounted on a surface structure or natural terrain to warn pilots of the presence of an obstruction.

OM – Outer Marker – A marker beacon, which is part of an ILS, located at or near the glide slope intercept altitude of an ILS approach.

OPERATION – An aircraft arrival at (landing) or departure from (takeoff) an airport.

OPNS – Operations

OUTER FIX – A point in the destination terminal area from which aircraft are cleared to the approach fix or final approach course.

P

PAC – Public Advisory Committee

PAL – Planning Activity Level

PAPI – Precision Approach Path Indicator, providing visual vertical guidance information.

PAR – Precision Approach Radar

PI – Precision Instrument Runway Marking

POSITIVE CONTROL AREAS- Airspace wherein aircraft are required to be operated under Instrument Flight Rules, and in contact with Air Traffic Control.

PRECISION APPROACH – A Standard instrument approach in which an electronic glide slope is provided.

PROHIBITED AREA – Airspace of defined dimensions identified by an area on the surface of the earth within which flight is prohibited.

PU – Publicly owned airport

PVT – Privately owned airport

R

RAIL – Runway Alignment Indicator Lights

RAPCON – Radar Approach Control Center

RASP – Regional Airport System Plan

REIL – Runway End Identifier Lights

RELIEVER AIRPORT – An airport which, when certain criteria are met, relieves the aeronautical demands on a high-density air carrier airport.

RESTRICTED AREAS – Airspace of defined dimensions identified by an area on the surface of the earth within which the flight of aircraft, while not wholly prohibited is subjected to restrictions.

ROTATING BEACON – A visual NAVAID displayingflashes of white and/or colored light used to indicate location of an airport.

RUNWAY PROTECTION ZONE (RPZ) – The inner portion of the runway approach zone.

RUNWAY SAFETY AREA – An area symmetrical about the runway centerline and extending beyond the ends of the runway which shall be free of obstacles as specified.

RVR – Runway Visual Range

RW and R/W – Runway

S

SALS – Short Approach Light System

SDF – Simplified Directional Facility landing aid providing pattern direction.

SEGMENTED CIRCLE – An airport aid identifying the traffic pattern direction.

SEL – Sound Exposure Level (see Section 6.1.3)

SEPARATION MINIMA – The minimum longitudinal, lateral, or vertical distances by which aircraft are spaced through the application of air traffic control procedures.

SLANT DISTANCE – The distance from the measurement location to the aircraft at the point of closest approach.

SLUCM – Standard Land Use Coding Manual

(S)SALS –Short Approach Light System

SMSA – Standard Metropolitan Statistical Area

SOP – Standard Operating Procedures

SSALF – Simplified Short Approach Light System with Sequence Flashing lights.

STOL – Short Takeoff and Landing

STRAIGHT-IN APPROACH – A descent in an approved procedure in which the final approach course alignment and descent gradient permit authorization of straight-in landing minimums.

SYSTEM PLAN – A representation of the aviation facilities required to meet the immediate and future air transportation needs and to achieve the overall goals.

T

TAC – Technical Advisory Committee

TAF – FAA's Terminal Area Forecast

TACAN – Tactical Air Navigation

TDZ – Touchdown Zone Lights

TERMINAL AIRSPACE – The controlled airspace normally associated with aircraft departure and arrival patterns to/from airports within a terminal system and between adjacent terminal systems in which tower enroute air traffic control service is provided.

TERMINAL RADAR SERVICE AREA (TRSA) – This area identifies the airspace wherein Air Traffic Control provides radar vectoring, sequencing, and separation on a full-time basis for all IFR and participating VFR aircraft. Although pilot participation is urged, it is not mandatory as within a TCA.

TERPS – Terminal Instrument Procedures

T-HANGAR – A T-shaped aircraft hangar which provides shelter for a single airplane.

THRESHOLD – The physical end of runway pavement, useable for aircraft takeoffs and landings.

TOUCH-AND-GO-OPERATION – An operation in which the aircraft lands and begins takeoff roll without stopping.

TRACON – Terminal Radar Approach Control

TRAFFIC PATTERN – The traffic flow that is prescribed for aircraft landing at, taxiing on, and taking off from an airport. The usual components of a traffic pattern are upwind leg, crosswind leg, downwind leg, and final approach.

TRANSIENT OPERATION – An operation performed at an airport by an aircraft that is based at another airport.

TVOR – Terminal Very Frequency Omnirange Radio Station

TW and T/W – Taxiway

U

UHF – Ultra High Frequency

UNCONTROLLED AIRSPACE – That portion of the airspace that has not been designated as Continental Control Area, control area, control zone, terminal control area, or terminal control area, or transition area and within which ATC has neither the authority nor the responsibility for exercising control over air traffic.

UNICOM – Radio communications station which provides pilots with pertinent airport information (winds, weather, etc.) at specific airports. Frequently operated by the FBO.

USGS – United States Geological Survey

USWB – United States Weather Bureau

V

VASI – Visual Approach Slope Indicator (providing visual glide path).

VASI-2 - Two-Box Visual Approach Slope Indicator

VASI-4 – Four-Box Visual Approach Slope Indicator

VASI-12 – Twelve-Box Visual Approach Slope Indicator

VECTOR – A heading issued to an aircraft to provide navigational guidance by radar.

VFR – Visual flight Rules that govern flight procedures in good weather.

VFR AIRCRAFT – An aircraft conducting flight in accordance with Visual Flight Rules.

VHF – Very High Frequency

VICTOR AIRWAYS – See Low Altitude Airways

VOR – Very High Frequency Omni-directional Radio Station, the promary facilities for aircraft navigation and establishment of airways.

V/STOL – Vertical/Short Takeoff and Landing

VTOL – Vertical Takeoff and Landing (includes, but is not limited to, helicopters).

W

WARNING AREA – Airspace which may contain hazards to non-participating aircraft

WIND-CONE (WIND SOCK) – Conical wind direction indicator.

WIND TEE – A visual device used to advise pilots about wind direction at an airport

APPENDIX B

AN ORDINANCE AMENDING TITLE 17 OF THE BUENA VISTA MUNICIPAL CODE CONCERNING ZONING BY THE AMENDMENT OF PROVISIONS PERTAINING TO AN AIRPORT OVERLAY ZONE

TOWN OF BUENA VISTA, COLORADO

ORDINANCE NO. ____

Series of 2003

AN ORDINANCE AMENDING TITLE 17 OF THE BUENA VISTA MUNICIPAL CODE CONCERNING ZONING BY THE AMENDMENT OF PROVISIONS PERTAINING TO AN AIRPORT OVERLAY ZONE

BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE TOWN OF BUENA VISTA, COLORADO:

Section 1. Section 17.03.010 of the Buena Vista Municipal Code is hereby amended so as to read in its entirety as follows:

17.03.010 Use Districts: For the purpose of this title the Town is divided into nine zone districts, designated as follows:

R-1	Low-density residential district;
R-2	General residential district;
R-3	High density residential district;
PUD	Planned unit development district;
B-1	General business district;
B-2	Highway business district;
I-1	Light industrial district;
S-1	Special recreational district;
APO	Airport Protection Overlay district;

Section 2. The Buena Vista Municipal Code is amended for the purpose of replacing Sections 17.06.100 through 17.06.103 inclusive, which shall read in their entirety as follows:

17.06.100 Airport Protection Overlay District. This overlay district, which is established as a supplemental district superimposed on part of all of an underlying district, is created for the purpose of providing for the safety and convenience of airport users and the general public by preventing the creation of incompatible land uses and the erection of obstructing structures in the vicinity of airports within the Town. The Airport Protection Overlay District shall be depicted on the official APO map, which will be available for inspection at Town Hall.

Minimum district size: none	
Minimum lot area:	same as the underlying district
Minimum lot width;	same as the underlying district
Front setback	same as the underlying district
Side setback	same as the underlying district
Rear setback	same as the underlying district
Maximum building height:	in no case may it exceed that of the underlying district
Minimum dwelling size:	same as the underlying district
Maximum lot coverage	same as the underlying district

17.06.101 Intent: The Airport Protection Overlay ("APO") district is a supplemental district that may overlay any standard zoning district. Contained within the APO is another district whose boundaries are considered subject to Flight Hazards. These areas together shall be referred to as the APO. Any use by right or conditional use permitted in the underlying district is also permitted in an APO district so long as that use meets the special conditions required in an APO district.

The APO district is established to minimize exposure of residential and other sensitive land uses to aircraft noise areas, to avoid danger from aircraft accidents, to reduce the possibility of such accidents, to discourage traffic congestion within the area of the district, and to restrict noncompatible land uses in proximity to and within airport influence areas.

The APO zoning district shall be applied in the vicinity of all general aviation airports, which would be significantly affected by air traffic, noise or any hazard related to the establishment, operation or maintenance of an airport.

The degree of protection provided by this overlay district is considered reasonable and prudent for land use regulatory purposes and is based on established parameters of control. Establishment of this district, however, does not imply that areas outside of the district will be totally free from airport and aircraft related hazards, nor that all hazards within the APO district will be completely mitigated. Establishment of this district shall not create a liability on the part of or create or cause action against the Town or any officer employee or contractor thereof for any damages that may result directly or indirectly from reliance on the provisions contained herein.

17.06.102 Permitted Uses Within An APO District. No building or land shall be used and no building or other structure shall hereafter be erected, converted or structurally altered, except as provided for herein, and the following use provisions shall apply within an APO district:

A. No use may be made of land within the APO district in such a manner as to create electrical interference with radio and navigation communication between an airport and aircraft or make it difficult for pilots to distinguish between airport lights and other lights, cause glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport or otherwise endanger the safe taking off, landing or maneuvering of aircraft in the vicinity of the airport. Noise attenuation in building design shall be encouraged and may be required for structures to be erected within the APO district.

B. Nothing contained within these APO regulations shall be constructed to require the removal, lowering or other change or alteration of any structure or object of natural growth not conforming to the provisions contained herein, or to otherwise interfere with the continuance of any nonconforming use, except as specifically set forth herein.

C. Nothing contained within these APO district regulations shall require any change in the construction, alteration or intended use of any structure, the construction or alteration of which was begun prior to the effective date of adoption of these APO regulations and which is diligently prosecuted, provided, however, that when the nonconforming structure or nonconforming use is destroyed or damaged to the extent provided in Chapter 17.05 of this Code, reconstruction or replacement shall be subject to the applicable provisions contained in Section 17.06.103 of this code.

D. The owner of any nonconforming structure or object of natural growth is hereby required to permit the installation, operation or maintenance thereon of such markers or lights as shall be deemed necessary by the Board of Trustees or any other appropriate authority to indicate to the operators of aircraft in the vicinity of the airport the presence of such nonconforming structures or objects

of natural growth. Such markers and lights shall be installed, operated and maintained at the expense of the owners and/or operators.

E. Avigation easements may be required at the discretion of the Board of Trustees, within a designated APO district.

17.06.103 Limitations Within An APO District

A. Height Limitation. Height limitations within an APO district, except as otherwise provided for herein, are subject to the limitations of the underlying district within which the property is located. No structure or object of natural growth shall be constructed erected, altered, allowed to grow or be maintained in excess of height limits of the underlying zoning district.

B. Surface Limitations Surface limitations within an APO district include all land and air space within the APO district that would be hazardous to air navigation if infringed upon. Surface limitations include areas above imaginary surfaces and in the clear zone and are established to regulate the height of structures and natural objects in the vicinity of an airport. These surface limitations are set forth by the Federal Aviation Administration in the Federal Aviation Regulations, Part 77, as amended, and any successor Federal Aviation Regulations, which are hereby adopted by the Town by reference, as minimum standards that the Board of Trustees may, upon due determination, amend to incorporate differing or more stringent provisions to accommodate the needs of airports within the Town.

In addition, for any proposed structure or natural object THAT WOULD PENETRATE IMAGINARY SURFACES AS DESCRIBED IN FAR PART 77, before any permit is issued, Notice of Construction or Alteration (FAA Form 7460-1) shall be filed within the Federal Aviation Administration for a determination of the impact the navigable airspace. The Board of Trustees, Planning Commission and Board of Adjustment shall not approve any such development until after receiving and considering the Federal Aviation Administration determination on the matter.

C. Land Use Limitations Within APO districts land use patterns will be encouraged that avoid danger to public health and safety or to property due to aircraft operations.

1. Flight Hazard Area. Uses such as schools, churches, hospitals and libraries are prohibited. Open space, recreational and agricultural uses shall be encouraged. Any other proposed use shall be accomplished by written evidence that the proposed development poses no significant threat to public health and safety or to property. Approval of the proposed use by the Board of Trustees shall be required before the proposed use may be conducted and such use may be contingent on the applicant granting an avigation easement.

Such uses shall be considered as special uses and shall be processed in accordance with Section 17.10.041 of this Code.

2. Nonconformities. Those existing structures and uses, which are legally established prior to the effective date of this ordinance, shall be considered

legally nonconforming and shall be allowed to continue. Legally nonconforming structures may be restored or rebuilt if damaged or destroyed. Legally nonconforming uses and structures may be expanded as provided in this subsection.

(a) Prohibited expansions. Expansion of the following legally nonconforming land uses and structures is prohibited.

(i) Uses and structures that could create hazards to flight, such as those that include distracting lights, glare, smoke, or electronic interference; and

(ii) Noise sensitive uses, including hospitals, nursing homes, schools, and other uses where people of significant numbers may gather.

(b) Permitted expansions. Structures used for public assembly purposes may be expanded, provided that the maximum allowable occupancy level (persons per square foot of floor space) of the principal public assembly areas of such structure after the expansion shall not exceed the ratio of (i) the seating capacity of the principal public assembly areas as existing prior to expansion to (ii) the square footage of such principal public assembly areas prior to expansion. The restrictions in this subparagraph shall apply only to expansion of public assembly areas in the structures used for public assembly purposes.

D. Submittal Requirements In An APO District In addition to the submittal requirements otherwise contained within this Title, the Planning Commission and Board of Trustees may, at their discretion, require additional materials regarding any proposed land use change or development project in an APO district. These additional materials may include, but need not be limited to, any or all of the following items:

1. A map or graphic description of existing and proposed airport facilities including towers lights, terminals, hangars, aprons, parking areas, taxiways and runways.

2. A map showing the height of all existing and proposed structures within the contemplated development.

Section 3. Except as specifically amended hereby, the Buena Vista Municipal Code, and the various secondary codes adopted by reference therein, shall continue to full force and effect.

Section 4. The Board of Trustees hereby finds determines and declares that this Ordinance is necessary and proper to provide for the safety, preserve the health, promote the prosperity improve the morals, order, comfort and convenience of the Town of Buena Vista and the inhabitants thereof.

Section 5. The Board of Trustees hereby finds determines and declares that it has the power to adopt this Ordinance under the provisions of Section 41-4-204, C.R. S., as amended, and the general powers granted to municipalities in Colorado.

Section 6. If any section, subsection, sentence clause or phrase of this Ordinance is for any reason held be invalid, such decision shall not affect the validity of the remaining portions of this Ordinance. The Board of Trustees hereby declares that it would have passed this Ordinance, and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that anyone or more sections subsections, sentences, clauses or phrases had been declared invalid.

Section 7. This Ordinance shall be published and become effective as provided by law.

INTRODUCED, READ, ADOPTED AND ORDERED PUBLISHED this____day of _____, 2003.

TOWN OF BUENA VISTA, COLORADO

By_____
Mayor

ATTEST:

_____
Town Clerk

PUBLISHED in full following adoption in_____ _____, a newspaper of general circulation in the Town on _____

Overlay Zone Ord/BV11