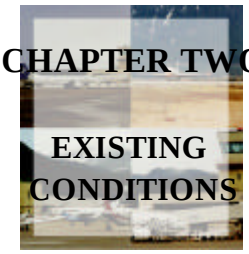

CHAPTER TWO

EXISTING CONDITIONS

INTRODUCTION

This chapter provides an inventory of the existing conditions at the JIA and an overview of the facility and its relationship to the community as of the date of this Master Plan.

To prepare this chapter, the first task involved collecting data pertinent to the Airport including the area it serves. The data collected related to airspace, navigational aids (NAVAIDs), air traffic control, airport facilities, and current and historical aircraft operations and enplanements as well as maps, land use regulations, and zoning for the CBJ.

An initial site visit was conducted December 4 through 7, 1996, and was followed by a verification visit on January 27 and 28, 1997. During the initial site visit, members of the consultant team conducted a physical inspection of the Airport and surrounding neighborhoods, reviewed existing Airport records, and obtained copies of pertinent studies. At the beginning of the study process, on the evening of December 5, 1996, a public informational workshop was held to allow residents an opportunity to meet the consultant team and to provide information and comments concerning the Airport.

The information that was collected in this phase of the study was subsequently used in the preparation of aviation forecasts and the determination of facility requirements. This information has also been integrated into the *Juneau International Airport Part 150 Noise Compatibility Plan* to ensure the two studies are consistent in their baseline information.

AIRPORT SETTING

Location

Juneau is located 570 air miles southeast of Anchorage, Alaska, and (approximately) 970 air miles northwest of Seattle, Washington. The Airport is situated nine miles northwest of downtown Juneau and is entirely within the CBJ. Juneau is accessible only by sea and/or air, as there is no road or railroad access. (The location of Juneau is depicted on **Figure 2-1**.)

The JIA is situated at an elevation of 19.0 feet Mean Sea Level (MSL), according to the FAA Alaska *En Route Supplement Publication*. The Airport Reference Point (ARP) coordinates are latitude 58E21' 17.81"N and longitude 134E35'00"W.

Classification

The JIA is classified in the AASP as a Regional Center Airport (RCA). RCAs are defined as primary intrastate access points to a region of Alaska and to a population center with a population of over 1,000. An RCA serves as a significant transfer or transhipment point to the rest of the region.

The FAA *National Plan for Integrated Airport Systems* (NPIAS) designates the JIA as a Commercial Service — Primary Airport. This is the highest level of service recognized in the plan. Service levels reflect the type of services an airport provides its community, as well as representing funding categories set up by Congress to assist in airport development. Primary airports are those designated to have at least 10,000 annual enplanements.

The NPIAS further identifies JIA's role as a medium haul airport, generally accommodating routes and markets within 500 to 1,500 miles. This designation corresponds with air carrier non-stop service from Juneau to Anchorage or Seattle.

JIA is Federal Aviation Regulation (FAR) Part 139 certified. This identifies that the Airport is capable of accommodating both FAR Part 121 Air Carrier and FAR Part 135 Commuter and Air Taxi operations. The Federal Identifier for the Airport is JNU and the Site Number is 50412.03*A. The Airport has been designated an International Airport, based on the availability of the U.S. Customs Service and the U.S. Immigration and Naturalization Service (INS). The Airport is classified as Airport Design Group C and Airport Approach Category III on the existing ALP.

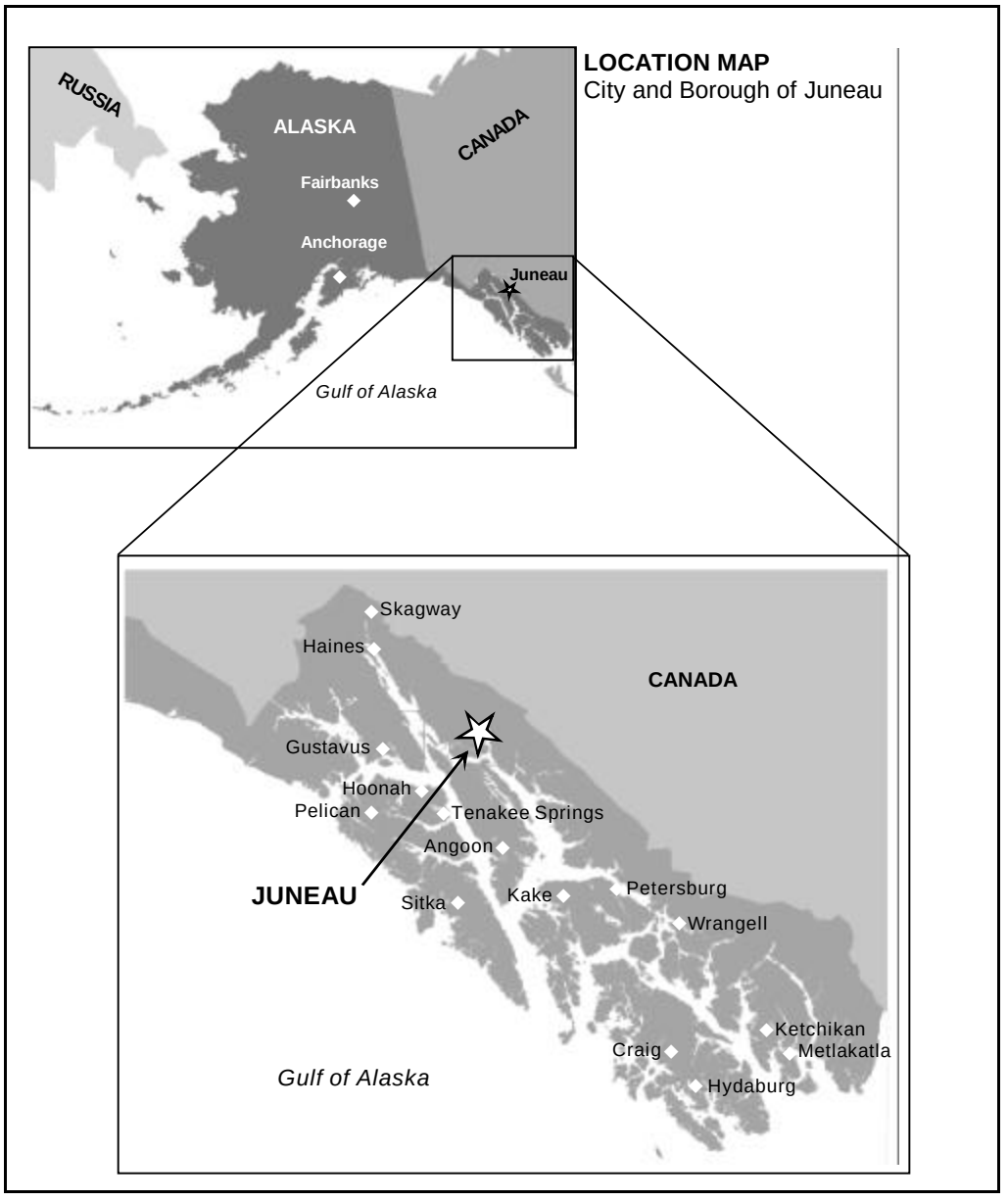

Figure 2-1

HISTORICAL BACKGROUND

Juneau was first inhabited by the Tlingit Indians of the Auke and Taku tribes. According to the *Juneau Comprehensive Plan*, 1996, the area was first explored by the Spanish and English in the late 18th century, but the first European inhabitants were Russian fur traders. Russian settlements were established, and Sitka was designated the capital of Russian Alaska. In 1867 the United States purchased Alaska from Russia. The capital was moved from Sitka to Juneau in 1906.

In 1880 gold was discovered by Richard Harris and Joe Juneau. The discovery was in a stream called Gold Creek, which was located in Silver Bow Basin in the town site originally named Harrisburg. By the end of 1880, the town site of Juneau had been established. Large scale mining activity followed on Douglas Island and in the Juneau area.

Juneau became a unified home rule municipality in June 1970 with the merger of the city and borough governments. Government, tourism, and natural resources development have been the primary industries influencing Juneau in the past few decades. Juneau has also established itself as the commercial center for communities in Southeast Alaska.

The Juneau Airport was developed by the U.S. government to support military Air Corps operations in Alaska. Prior to World War II, the area was served by limited, small aircraft which were mostly floatplanes. Following the war, Pan American Airlines and Pacific Northern Airlines established service to Juneau from Seattle and Anchorage. The paved runway was constructed in 1942. In 1953 the Airport was transferred from federal control to the City of Juneau.

In 1961 the Juneau Airport runway was extended to accommodate jet aircraft operations in Alaska. In 1962 jet service was initiated at JIA. In 1989 a full length parallel taxiway was constructed to connect both ends of the runway to the aircraft parking apron and passenger terminal area.

The original terminal was constructed in 1948, expanded in 1957, and expanded again in 1984.

COMMUNITY PROFILE

Size

The CBJ consists of 3,250 square miles of land. This includes 928 square miles of ice cap and 704 square miles of water. Juneau has one of the largest geographical areas of any city in the United States.

Population

Juneau is the third largest city in Alaska, with a 1996 population estimated at 29,588, according to the CBJ Department of Community Development. In 1960 the population of Juneau was 9,745 and by 1970 it increased to 13,556. The 1980 population for Juneau was reported at 19,528, increasing to 28,560 by 1985 (see **Figure 2-2**).

Following a dramatic decline in the price of North Slope Crude, a statewide recession resulted and the Juneau population decreased over the next two years. It slowly increased back to 26,754 by 1990. The 1995

CBJ population count was 29,755. During the 1990s, the population increased, as the economic base of Juneau strengthened and the price of North Slope Crude stabilized.

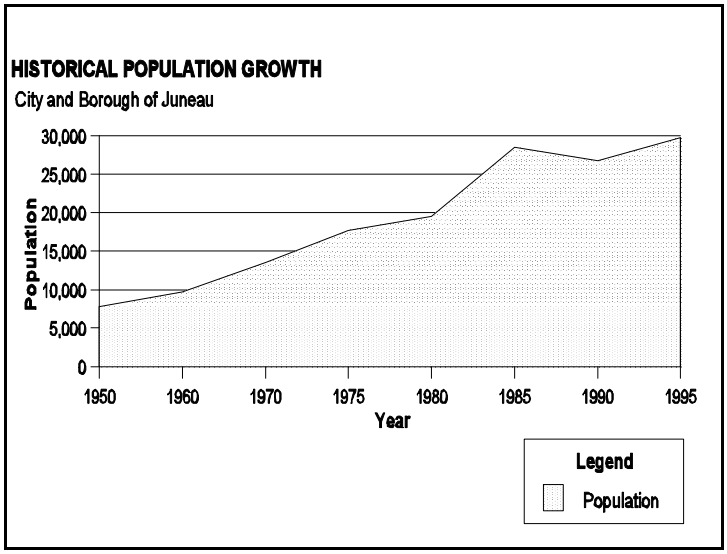

Figure 2-2

Climate

Juneau is a coastal community that is influenced by a mild maritime climate. The Airport lies in an area that is influenced by the Japanese current, which creates a significant amount of precipitation and overcast conditions. The wettest year for Juneau was 1991 when the city recorded 85.15 inches of rain. The average rainfall in the Airport area is 56 inches with the wettest season being fall.

While the Airport is impacted by coastal clouds and fog, Visual Flight Rule (VFR) weather conditions occur at the Airport 92.6 percent of the time. The remaining 5.6 percent of the time, weather conditions necessitate the use of Instrument Flight Rules (IFR). The Airport is below landing minimums 1.8 percent of the time.

The average coldest month is February when temperatures fluctuate around 26E Fahrenheit (F). The coldest temperature recorded for Juneau was -22EF, recorded in both 1968 and 1972. The winter of 1964-1965 had a record snowfall of 194.1 inches. Average annual snowfall is 92 inches. June is the warmest month and April is the driest month. The average summer temperature is around 55EF. The record high temperature for Juneau was recorded at 90EF in 1975. The mean maximum temperature of the hottest month is 63EF.

A wind analysis was conducted using historical wind information collected by the U. S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) for the period 1948 to 1979. The JIA runway is aligned with the prevailing winds 99.3 percent of the time when winds are at or below 10.5 knots, increasing to 99.9 percent of the time when winds are at or below 13 knots. Winds are calm at the Airport 27.1 percent of the time.

Economy

Juneau has developed into the commercial and business center of northern Southeast Alaska. In the mid 1980s the economy of Alaska was declining, as world oil prices declined. At that time, the Juneau economy was very closely tied to state government. With approximately 85 percent of state revenues coming from the oil industry, the drop in oil prices resulted in an economic recession in Alaska and Juneau which caused the loss of many jobs in the private and public sectors.

Over the course of two years, the state lost nearly 20 percent of the 1985 population as people moved away in search of employment. Concurrently, property values declined an average of 40 percent from 1985 to 1989, resulting in numerous commercial and personal bankruptcies and residential foreclosures. Beginning in 1989, Alaska's economy started to improve and so did the local Juneau economy.

From 1991 to 1995, according to the Juneau Economic Development Council, Juneau bank deposits increased 40 percent as the local economy strengthened and the job market improved. This paralleled an

increase in gross business sales which went from $700 million at the end of 1991 to just under $1.0 billion by 1996. In 1996 the housing market was considered very strong with an approximate 2 percent vacancy factor. Assessed taxable property was valued at $1,676,580,000 in 1995.

In 1995 Juneau had a total workforce of 15,727, up from 13,270 in 1985. Federal, state, and local governments employ 6,886 people for an annual payroll of over $290 million. According to the Alaska Department of Labor, 5.8 percent of the workforce are federal government employees, while 27.4 percent are state employees, and 10.6 percent are local government employees. Private employment accounts for 8,841 jobs with an annual payroll of $214.5 million. In 1995 Juneau had an unemployment rate of 5.6 percent, one of the lowest in the nation.

The Alaska Marine Highway System serves Juneau from points north and south. The Alaska Marine Highway System is a vital link for the community because there is no direct access to road systems. In 1995, 71,752 residents and visitors arrived in Juneau aboard the Alaska Marine Highway System.

In 1995 Juneau was visited by 380,529 cruise ship passengers. This was the highest number of annual cruise ship visitors the city ever experienced which has continued the trend toward more tourism development. In 1995 there were 487 port calls in Juneau by cruise ships, up from 474 the previous year. Overall, Juneau had nearly 500,000 visitors in 1995, according to the Convention and Visitors Bureau.

The Juneau Economic Development Council reports that JIA contributed 869 jobs to the local economy and an additional 435 induced impact jobs. This accounted for a total payroll impact of $25,825,000 in 1995. **Figure 2-3** shows per capita income for the CBJ from 1990 to 1995.

Conversely, Juneau has experienced some negative economic conditions, including the recent decision not to reactivate the AJ Mine and the declining timber activities in Southeast Alaska.

According to the Juneau Chamber of Commerce, Juneau Economic Development Council, Juneau Convention and Visitors Bureau, and the CBJ, the Juneau economy has diversified in the past decade from a government-oriented base to a broader government, tourism, retail sales, mining, fishing, and education institutional base. All projections are that slow, steady growth in Juneau will continue over the next decade.

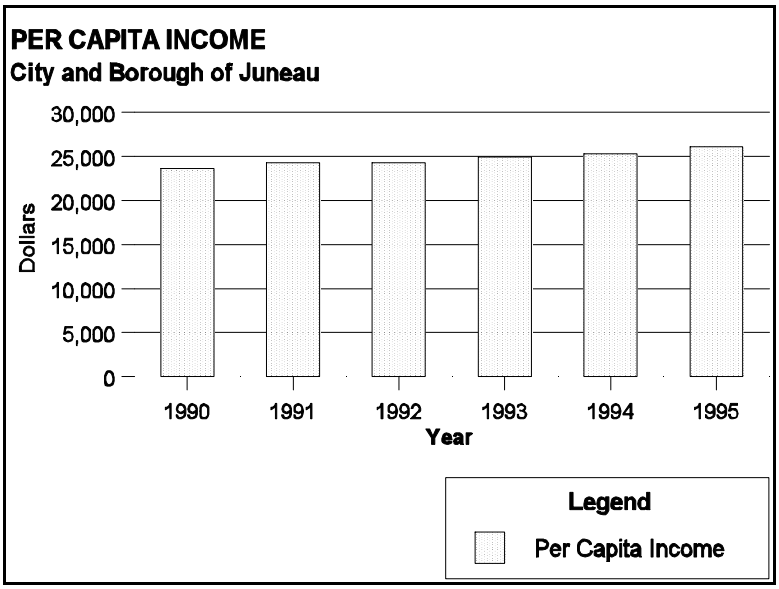

Figure 2-3

AIR TRAFFIC ACTIVITIES

Air Traffic

Air traffic activity information for the Airport was acquired from the FAA, air carriers, local commercial operators, and the DOT&PF. This information was compared to other data to verify the air traffic operations. This information presents a picture of the historical air traffic at the Airport and is the basis for air traffic forecasts.

Local Air Service

JIA is served by two passenger service air carriers, Alaska Airlines and AirONE, which are certified in accordance with FAR Part 121. A single air cargo carrier, Evergreen, and 11 air taxi operators certified in accordance with FAR Part 135, serve the JIA. These include: Air Excursions, Coastal Helicopters, Haines Airways, LAB Flying Service, ERA Aviation, Tal-Air, Loken Aviation, Skagway Air, Summit Air, TEMSCO Helicopters, Ward Air Service, and Wings of Alaska. Recently, Ketchikan Air Service terminated service at JIA. ERA Aviation operates helicopter operations from a separate helipad on Douglas Island, not under the jurisdiction of the JIA.

Since 1985, Juneau has also received scheduled passenger service for limited periods of time from Wien Air Alaska, MarkAir, and until 1996, Delta Air Lines. In addition, JIA receives scheduled international service by Air North from Whitehorse, Canada. Summit Air also provides summer service to Canada from Juneau.

According to the JIA Control Tower, air carrier operations increased from 6,388 in 1986 to 7,814 in 1995. Even more significant was the increase in air taxi operations. Air taxi operations in 1986 accounted for 58,653 operations, more than doubling to 127,371 by 1995.

Table 2-A summarizes air traffic activity at the JIA over the past two decades.

AIR TRAFFIC ACTIVITY, 1976 - 1996
Juneau International Airport

Annual Operations	***1976***	***1981***	***1986***	***1991***	***1995***
Air Carrier	5,889	6,251	6,388	6,544	7,814
Air Taxi (Fixed Wing and Helicopter)	4,177	34,922	58,653	72,406	127,371
General Aviation	43,550	51,053	44,482	35,629	34,774
Military	399	1,192	1,744	1,107	1,103
TOTAL	54,015	93,418	111,267	115,686	171,062
Instrument Operations	N/A	7,917	8,769	6,172	9,798

Source: Federal Aviation Administration, Juneau Control Tower 1976 - 1995 and operator statistics.
(Helicopter operations are doubled from ATCT counts, based on counting practices. This assumes that about 50% of actual helicopter operations are counted by the ATCT.)

Table 2-A

Passenger Enplanements

Passenger enplanements for JIA have significantly increased over the past 20 years as a result of two influences. The first is the local population. Since Juneau does not have a direct road connection to any other location, residents are very dependent on air transportation for travel needs. Therefore, the local population use of air transportation in Juneau is much higher per capita than in most other cities.

The second influence is the high number of tourists that visit the city each summer. Juneau is one of the destination cities where passengers change their mode of transportation from cruise ship to airplane. This creates a significant summer peak for Juneau.

Table 2-B depicts the passenger enplanement activity since 1976.

PASSENGER ENPLANEMENTS, 1976 - 1995
Juneau International Airport

Year	*Enplaned Passengers*
1976	121,678
1981	159,195
1986	198,278
1991	294,658
1995	368,395

Source: *Airport Management Records (1980-1996) and FAA Terminal Area Forecasts (1976-1979).*

Table 2-B

Cargo Activities

Cargo activities have been increasing at the Airport in recent years. Although the majority of cargo is carried as freight on scheduled passenger flights, Alaska Airlines has added all-cargo Boeing 737-200 flights to Juneau, and Evergreen serves the city under a U.S. Postal Service agreement with daily McDonnell Douglas DC-9 service from Seattle. This service increases by two flights per week during the peak holiday season (Christmas and New Year). Part 135 carriers provide freight and mail service between Juneau and many of the rural communities in Southeast Alaska.

The air cargo facilities are housed in two buildings with a small apron area located on the west side of the air taxi apron. In 1991 the Airport handled 20,013,116 pounds of cargo and mail. According to the carriers and Airport management records, this increased to 21,808,060 by 1995.

Based Aircraft

The 1995 JIA FAA Form 5010 reports that there are 358 aircraft based at the Airport. Of these, 302 are single-engine, 19 are multi-engine, 2 are turbo-props, 31 are helicopters, and 3 are military aircraft assigned to the Army National Guard. In addition, there is a Cessna Citation jet used to provide medical evacuation service from Juneau**.**

AIRSPACE AND AIR TRAFFIC CONTROL

The Airport is situated in a mountainous region of Southeast Alaska, which creates limitations on flight operations. Air traffic control has been constantly improving facilities and seeking system improvements to increase the Airport's ability to serve the region.

The FAA, which has airspace and air traffic control jurisdiction, has established a central control facility in Anchorage to control aircraft operating under IFR within controlled airspace across Alaska. The facility is designated the Anchorage Air Route Traffic Control Center (ARTCC). All instrument approaches and departures at the JIA require approval from the Anchorage ARTCC.

The FAA has established an ATCT at JIA. ATCT controllers provide landing and departure instructions to both IFR and VFR aircraft operating at the Airport. The controllers also provide other services such as current weather information, issuing en route flight clearances, and assisting aircraft taxiing at the Airport.

The existing control tower is located on top of the Airport passenger terminal facility. It was built in 1988 by the CBJ, and is leased back to the FAA. The previous tower, also attached to the Airport passenger terminal, is now used by Alaska Airlines for base services and as a crew lounge. The Juneau ATCT operates from 6 a.m. to 10 p.m. during the summer and from 7 a.m. to 8 p.m. the remainder of the year. The ATCT operates on frequency 118.7 megahertz (MHz). Ground control operates on frequency 121.9 MHz. The ATCT provides continuous weather and airport condition updates using the Automatic Terminal Information Service (ATIS) on frequency 126.4 MHz during normal tower operating hours.

The Juneau ATCT does not have radar service, due to the mountainous terrain that surrounds the Airport. Aircraft arriving and departing Juneau on an IFR flight plan must be handled in a non-radar environment. This increases separation requirements and results in a much slower flow of operations during peak periods.

The Airport, Alaska Airlines, and FAA implemented GPS operations in 1997. This system reduced the minimums for Runway 26 to a 337-foot ceiling and one-mile visibility. Further reductions of minimums are possible, but would require topping trees on a portion of Douglas Island and removing a stand of trees on the north side of Gastineau Channel. FAA Flight Standards has indicated that if these obstructions were removed the minimums might be as low as a 200-foot ceiling and one-half mile visibility. Alaska Airlines is equipping all of their Boeing 737-400 aircraft with GPS receivers for use at JIA.

Ground-Based Navigational Aids and Instrument Approach Procedures

JIA is supported by numerous NAVAIDs. The Sisters Island Very High Frequency Omni-Directional Range (VOR) is located 24 miles southwest of the Airport. A VOR is a ground-based facility which provides course guidance to aircraft by means of the VHF radio frequency. The Sisters Island VOR operates on frequency 114.0 MHz and uses the identifier SSR. This facility is used for both en route operations in Southeast Alaska and for arrival and departure procedures at the Airport.

The Sisters Island VOR is also co-located with a Tactical Air Navigation (TACAN) facility which provides course guidance using an ultra-high radio frequency (UHF). The Sisters Island TACAN operates on Channel 87. Since the VOR and TACAN are co-located, the Sisters Island facility is identified as the Sisters Island VORTAC.

There are two Non-Directional Beacon (NDB) facilities in the Juneau area used for approaches to the Airport. The Elephant NDB is located on Sisters Island and transmits on frequency 391 Kilohertz (KHz). It is used as the initial approach fix for the NDB-1 approach to the Airport. The Elephant NDB designator is EEF. The Coghlan Island NDB is located on Coghlan Island, 3.2 miles west of the Airport. It transmits on frequency 212 KHz and is designated CGL. The Coghlan Island NDB establishes the final approach bearing for the NDB-1 approach and the missed approach procedure for the NDB-1 and LDA-1 approaches.

The Mendenhall NDB is located on the Mendenhall Peninsula, approximately one mile west of the Airport. The Mendenhall NDB operates on frequency 332 KHz and is used primarily for westbound departures, to provide course direction for aircraft west bound when departing on Runway 8.

The FAA has established three reporting points along the initial and intermediate approach segments for instrument approaches to Runway 8. Eighteen miles west of the Airport is DIBOL Intersection. Aircraft

approaching JIA on an instrument approach must cross this intersection at a minimum altitude of 6,100 feet MSL. Fourteen miles west is LYNNS Intersection. Aircraft must cross LYNNS at or above 5,200 feet MSL. Eight miles west is BARLO Intersection. Aircraft must cross BARLO at or above 3,400 feet MSL.

At JIA, the FAA has installed a Localizer Directional Aid (LDA). The LDA provides the approach path for exact alignment of an aircraft on the final approach to an Airport. The Juneau LDA is located in a non-standard configuration, one mile west of the Airport at Engineer's Cut-off Road of the Mendenhall Peninsula. It is also off-set from the runway orientation by 20 degrees to allow proper alignment with the final approach course from the west, and to direct traffic away from the mountains on the northwest side of the Airport. The Juneau LDA operates on frequency 109.9 MHz and is identified as JDL. The FAA operates and maintains an approach lighting system for Runway 8.

The Juneau LDA is co-located with Distance Measuring Equipment (DME). DME provide accurate distance from the LDA to the aircraft and is used to assist pilot orientation. The Juneau LDA/DME operates on Channel 36.

Flight Service Station

The FAA operates an AFSS for Southeast Alaska from leased land on the JIA. The facility is located at the corner of Shell Simmons Drive and the Glacier Highway. The CBJ entered into a long-term lease agreement with the FAA in 1989 to construct and operate the facility.

AVIATION FACILITIES

The Airport has a large variety of aviation facilities. **Exhibit 2-1** depicts the existing Airport layout. Data and information on the Airport's existing facilities and their use is described in the following sections.

Runways

Runway Length and Width: The Airport has a single, asphalt concrete paved runway 8,456 feet long and 150 feet wide.

Runway Orientation: The runway is oriented east/west and provides wind coverage 99.3 percent of the time. Under IFR conditions, the runway alignment provides 100 percent wind coverage.

Runway Pavement: The runway is constructed to support aircraft with a weight-bearing capacity no greater than 75,000 pounds for single wheel equipped aircraft, 175,000 pounds for single tandem wheel equipped aircraft, 300,000 pounds for twin wheel equipped aircraft, 340,000 pounds for twin tandem wheel equipped aircraft, and 500,000 pounds for double dual tandem wheeled aircraft. It has an asphalt surface which is in excellent condition. The Airport completed a runway reconstruction project in 1997. A Pavement Maintenance Management Program was published for JIA which provides current runway strength information and a plan for maintaining the paved surfaces.

Runway Lighting and Marking: The runway is lighted with High Intensity Runway Lights (HIRLs). HIRLs have a variable lighting intensity that can be adjusted by the ATCT. All airport lighting can be adjusted and controlled by the ATCT or AFSS. The runway edge lights are white with yellow lights the last 2,000 feet to form a caution zone for landing pilots. Runway centerline lights were installed during the 1997 runway

reconstruction project. Runway centerline lights assist the pilot in runway orientation during landings at night and in poor visibility conditions.

The ends of the runway are lighted with threshold lighting. Threshold identification lights use a two-color system. The side facing departing aircraft has a red lens to indicate the location of the far end of the runway. The side facing arriving aircraft has a green lens to indicate to pilots the location of the runway landing threshold.

JIA also has Runway End Identifier Lights (REILs). These lights are white strobe lights, with one placed at the outer corner of the runway threshold. Only Runway 26 is equipped with a REIL.

The Airport also has the Visual Approach Slope Indicator (VASI) lighting installed at both ends of Runway 8/26. The VASI provides safe obstruction clearance within ten degrees of the runway centerline out to a distance of six miles. The Juneau VASI consists of a two-bar (4-box) lighting system using a three-degree approach slope. According to the FAA Form 5010-1, dated August 2, 1993, the Runway 26 VASI is only usable within two miles of the runway end. Airport lighting is controlled by the ATCT when the tower is operational. The Juneau AFSS operates the lighting when the ATCT is closed. Both Runway 8 and Runway 26 have non-precision markings in conformance with FAA AC 150/5340-1G, *Airport Design*.

Runway Safety Area (RSA): According to FAA AC 150/5300-13, *Airport Design*, a Runway Safety Area (RSA) is a defined surface surrounding the runway which is prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. It also provides greater accessibility for firefighting and rescue equipment during such incidents. The Runway 8/26 RSA varies in width. The JIA RSA starts 250 feet from the Runway 8 threshold and extends the entire length of the runway to 230 feet beyond the opposite threshold. The west end of the runway has an RSA width of 480 feet, decreasing to 200 feet approximately 5,000 feet from the Runway 8 threshold. The Airport RSA does not meet FAA design criteria. The RSA should extend 1,000 feet beyond each runway threshold and the width should be 500 feet.

Runway Object Free Area (OFA): Runway 8/26 also has an established runway Object Free Area (OFA). The OFA provides a clear area around the runway to protect aircraft during landing and take-off. The OFA should be clear of all aboveground objects protruding above the RSA edge elevation. Objects not precluded by other clearing standards and required for air navigation or aircraft maneuvering may be placed in the OFA, provided the equipment is constructed on frangible mounted supports. The JIA OFA starts 200 feet beyond the runway end, extending the length of the runway with a width of 330 feet. This is not in compliance with FAA AC 150/5300-13 design criteria, which requires a width of 800 feet.

Runway Obstacle Free Zone (OFZ): The Obstacle Free Zone (OFZ) is designed to provide protection to aircraft landing and departing from an airport. It is a volume of airspace centered above the runway centerline whose elevation at any point is the same as the elevation of the nearest point on the runway. The OFZ extends 200 feet beyond each end of the runway with a width of 400 feet which extends the length of the runway. The JIA OFZ has a length of 8,936 feet and a width of 330 feet. The width should be 400 feet. **Table 2-C** summarizes the information about the runway system at the JIA.

Waterlane

The floatplane basin has a waterlane measuring 4,800 feet in length and 450 feet in width. The waterlane has an elevation of 14 feet, but varies depending on the amount of precipitation, evaporation, and leakage from the dike. Along the south shore of the floatplane basin, aircraft can rub against the bottom of the lake when the water level drops. The fluctuating water level makes maintaining docks and slips difficult.

Taxiways

A paved taxiway measuring 75 feet wide extends the full length of Runway 8/26. The taxiway is lighted with blue lens covered lights. Construction of this taxiway was completed in 1989. Five runway exit taxiways connect the runway to the parallel taxiway. Each of the exit taxiways is lighted. Other existing taxiways and taxilanes provide circulation and access to hangar areas.

EXISTING RUNWAY DATA
Juneau International Airport

Runway	***Runway 8/26***
Length	8,456
Width	150
Waterlane Length	4,800
Waterlane Width	450
Runway Safety Area Length	8,936*
Runway Safety Area Width	480/228*
Runway Object Free Area Length	8,856
Runway Object Free Area Width	330*
Runway Obstacle Free Zone Length	8,936
Runway Obstacle Free Zone Width	330*
Pavement Material	Asphalt
Approach Slope Ratio	34:1
Rotating Beacon	Yes
Approach Aids:	
Instrument Landing System	No
Localizer Approach	Yes
Non-Directional Beacon/Distance Measuring Equipment	Yes
VHF Omni-Directional Range	Yes
Runway End Identifier Lights	Yes (Runway 26 only)
Visual Approach Slope Indicators	Yes
Approach Lights	MALSR to Runway 8
Lighting	HIRL
Marking	Non-Precision

*Note: * Identifies as non-standard*

Table 2-C

Aircraft Parking Apron

JIA has six main aircraft parking areas. These include the GA apron on the northwest side of the Airport, the air carrier/air taxi apron surrounding the passenger terminal, the GA apron east of the passenger terminal, the military apron east of the Airport fire station, the helicopter area at the east end of the Airport, and the floatplane area surrounding the floatplane basin on the south side of the runway. There are approximately 360,000 square yards of apron designated for air carrier operations, 330,000 square yards designated for air taxi and cargo operations, and 370,000 square yards of parking designated for GA aircraft.

Air Carrier/Air Taxi Apron: This apron is located on the north side of the runway, approximately mid-field. It extends from the east end of the passenger terminal facility, west to the air cargo lease lots, and north to the existing Airport equipment storage facility and FedEx Building. The apron is designated for air carrier operations on the south end and air taxi operators on the north end. The apron is paved and can accommodate four air carrier aircraft at the passenger terminal facility. The air taxi apron is designated to accommodate 35 Part 135 aircraft, with additional space to accommodate 16 transient aircraft.

The designated air cargo aircraft and large transient aircraft parking positions are on the west side of the air taxi apron. Alaska Airlines has their air cargo facilities located on the west side of the air taxi apron and uses this area for Boeing 737-200 cargo aircraft parking. Just to the south of the Alaska facilities is the designated transient large aircraft parking position which is used by Evergreen to park their McDonnell Douglas DC-9

freighter. Often, during the peak season, this area reaches capacity with transient large aircraft and cargo aircraft. Transient use of this area conflicts with use of the compass rose.

Recently, Wings of Alaska purchased a Turbine-Powered Cessna Caravan aircraft. This aircraft has a larger wingspan than the typical Part 135 aircraft currently operating at JIA. Due to the current aircraft parking configuration of the Part 135 apron, parking the Caravan has resulted in the need to resize a portion of the apron, thus reducing the number of aircraft that can be safely parked on this apron. As Part 135 operators purchase additional large aircraft, the air taxi parking situation will become worse. Aircraft parking positions on the air taxi apron will have to be realigned and additional parking space identified.

West End General Aviation Apron: The west end GA apron extends from the west end of the air carrier/air taxi apron to the access road on the west end of the Airport. The apron is not paved, but rather has small paved pads in the aircraft tiedown locations and a small paved apron in front of some Fixed Base Operator (FBO) lease lots. The apron has 75 designated aircraft tiedown positions. All are currently occupied.

East End General Aviation Apron: Starting directly east of the air carrier/air taxi apron is an unpaved apron for GA tiedowns and hangars. On the east end of the Airport rental vehicle parking lot, the CBJ has an old and deteriorating facility that is used for sand storage. It is attached to another facility which is privately owned and operated. The land on which this facility is situated is also privately owned by Loken Aviation. Next to this building is a hangar, leased by Ward Air. The east apron is not paved. There is currently one T-hangar located on this apron which has 14 separate bays. There are also two executive hangars on this apron: One with five bays that can accommodate up to 15 aircraft and one with nine bays that can accommodate up to 27 aircraft. In addition, there is additional space for 97 individual aircraft tiedowns on unpaved areas surrounding the apron on the east.

Military Apron**:** East of the Juneau Glacier Valley Fire Station and ARFF facility is an apron that was constructed in 1989. It is paved and can accommodate aircraft up to the size of C-130 aircraft. The Alaska Army National Guard operates an aviation function from this apron. The Alaska Army National Guard has constructed a large aircraft hangar at this location to support both fixed and rotor winged aircraft. Directly to the east of the Alaska Army National Guard facility is the Wings of Alaska hangar. This apron is connected to the runway and taxiway system by a paved connection taxiway which measures 75 feet in width.

Helicopter Apron: The public use helicopter apron is located just east of the passenger terminal area. Coastal Helicopters also operates a helipad on the east apron and has parking south of their fueling facility for helicopters. Silver Bay Logging operates helicopters from their apron east of the ARFF facility and the Alaska Army National Guard conducts helicopter operations from the apron located adjacent to Silver Bay Logging along the same apron. The National Guard has two Blackhawk helicopters assigned to Juneau as well as, on a transient basis, C-123 Sherpas, C-130s, C-12s, and other executive transport type aircraft. At the far east end of the Airport is an apron used exclusively by TEMSCO Helicopters. NorthStar Trekking operates two helicopters from the west ramp in front of the Aero Services ramp area. The apron is paved and has one taxiway access to the main runway and taxiway system.

Floatplane Parking: The JIA has 70 leased slips around the floatplane basin and five transient slips. Slips have been provided for both commercial and private users. At the end of the 1996 summer flying season, all slips at the floatplane basin were occupied. For the 1998 summer flying season, 68 slips were rented. In addition to these slips, there is a small gravel parking apron located on the northwest corner of the floatplane basin for aircraft pull-out. There is a small gravel apron for the short-term storage of aircraft on the southwest side of the floatplane basin. The Airport does not lease this apron for long-term usage.

Terminal Area Facilities

The passenger terminal is situated on the north side of the runway approximately two-thirds of the way down the runway from the east. The original facility was constructed in 1948 and expanded in the late 1950s. A major renovation and expansion project was completed in 1984 which more than doubled the size of the terminal facility.

The old section of the terminal has approximately 25,000 square feet of space while the new section provided an additional 50,000 square feet of space.

Airline and air taxi ticket counters, baggage claim, car rental facilities, a gift shop, espresso beverage cart, vending machines, video game room, the shared offices of the U.S. Customs Service and the INS, and restrooms are located on the first floor of the terminal facility.

The baggage claim area is served by a single baggage claim conveyor belt device. It is a floor mounted belt which has approximately 75 feet of linear frontage for retrieval of baggage. It is often unable to fully accommodate the number of bags arriving during peak periods. Circulation of passengers and visitors is often constrained by the single entrance/exit door located in this area.

The car rental agencies are located on the opposite side of the baggage claim area. There is space for four car rental agencies, although the counter space is limited and the office space for each operator is inadequate in size.

With the termination of service by Delta Air Lines, their ticket counter, baggage make-up, and office space may become available for air carrier lease in the future. Directly adjacent to the Delta Air Lines ticket counter is the counter for Alaska Airlines. Alaska Airlines has sufficient space to accommodate existing passenger demands from the current location.

The air taxi ticket counters are in the northwest end of the terminal which is in the old terminal section. This area is the ticket counter location of the original terminal and is separated from the air carrier ticket counters. Currently, the air taxi ticket counters are fully utilized, especially during peak summer periods.

Two U.S. Customs Service and the INS offices are on the airport property. The first office is located between the Part 121 and Part 135 carriers on the first floor of the terminal. The office space is small and situated in an area that creates security problems when large numbers of passengers must clear Customs. This office houses staff that provide international passenger and cargo clearance at JIA. The second office is located at 1910 Alex Holden Way.

The second floor of the terminal has the aircraft boarding gates and security area, restaurant facility and office, in-flight catering facility, lounge, restrooms, Airport offices, security offices, access to the FAA ATCT, and offices of the FAA Flights Standards District Office. An escalator is available for access from the first to the second floor and an elevator is available for moving between floors.

The passenger boarding area on the second floor has a single entrance and an exit doorway with doors opening to allow exit only. There are no concessions or restroom facilities beyond the security gate. Those desiring refreshments or in need of restroom facilities must leave the area and re-enter through the security gate. There are three gates supported by enclosed passenger loading bridges that are handicapped accessible. Two gates require passengers to exit the building and board the aircraft using stairs. The

passenger boarding area can become congested during summer activity, winter holidays, and during periods of poor weather conditions when aircraft are delayed.

The existing terminal has nearly reached capacity. **Table 2-D** shows the area occupied by existing terminal uses.

EXISTING TERMINAL DIMENSIONS
Juneau International Airport

Terminal Use	*Square Footage*
Air Carrier	10,580
Air Taxi	7,340
Baggage Handling	8,085
Public	18,598
Concession	12,742
Other Space (Administration, etc.)	15,199
Total Existing Space	72,544

Table 2-D

Airport Access

Access to the JIA is primarily from Yandukin Drive which extends from the Egan Expressway to the Airport. The Egan Expressway is a four-lane divided highway which provides access from downtown Juneau to the Airport and Mendenhall Valley area. The Egan Expressway has a daily traffic volume of 25,000 vehicles per day.

A secondary access road, Shell Simmons Drive, extends from Glacier Highway to the Airport terminal and joins with Yandukin Drive. Shell Simmons Drive is used as both an access road to the passenger terminal and as a bypass road between the residential areas on the northwest of the Airport and Egan Expressway. This often causes significant congestion along the passenger terminal curbside as through traffic mixes with airport traffic which is often stopped to load and unload passengers and baggage.

Juneau is served by private taxi companies, airport shuttle vans, hotel courtesy vans, and the Capital Transit Service which provides hourly scheduled bus service from the Airport to all major commercial areas and downtown Juneau. No accessible Capital Transit buses run to the airport. In addition, no taxis, shuttles, or hotel courtesy vans are currently equipped with a lift for wheelchairs. However, Care A Van is available on an appointment basis only to serve disabled individuals. There is no rail service to, or in, Juneau.

The Airport is also served by a number of tour buses, especially during the peak summer season. The Airport has a bus queuing area on the north side of the passenger terminal area adjacent to the air taxi aircraft parking apron. The area has one queue, approximately 140 feet long, which can accommodate three buses at any given time. During the peak period, this area often reaches capacity. Congestion occurs when buses queue in front of the terminal facility and block access to the curbside for private vehicles.

Vehicle Parking

Existing vehicle parking facilities at the JIA include the vehicle parking lot in front of the passenger terminal, the rental car parking area on the east end of the passenger terminal, the terminal manager's parking area on the north end of the passenger terminal, and the employee vehicle parking area.

The current public parking lot is managed under contract to CBJ by Republic Parking Systems. The lot consists of 90 short-term and 260 long-term parking spaces. Both the short-term and long-term lots are paid parking facilities with revenues collected by Republic Parking Systems. These lots nearly reach capacity during the peak summer season and during other seasonal periods, such as over the Christmas and New Year holidays.

The rental car parking lot has 130 designated parking spaces, with 112 currently being utilized. Presently, Hertz occupies 52 vehicles parking spaces, Avis occupies 30, and National occupies the remaining 30. According to the car rental agents, this area is often full during the summer months for short periods of time. The operators often have as many as 250 vehicles in the Juneau area, which more than exceeds the parking lot capability during peak periods. A rental car service area at the corner of Shell Simmons Drive and Cessna Drive provides additional parking.

Employee parking is located at the eastern end of the public parking lot. The employee parking lot can accommodate up to 90 vehicles. The terminal manager's lot can accommodate up to 11 vehicles. The lot is also used as queuing for taxicabs and buses.

AIRPORT SUPPORT FACILITIES

Airfield support facilities include the Airport Rescue and Fire Fighting (ARFF) Facility, airport maintenance, airport security, FBOs, and fueling facilities.

Airport Rescue and Fire Fighting (ARFF) Facility

The JIA has a shared ARFF capability with the CBJ Fire Department. The Glacier Valley Fire Station serves both the Mendenhall Valley and the Airport. Firefighters assigned to that station are trained in both residential and commercial structural fires and in aircraft crash response. The building is constructed with access doors on both the landside and airside of the facility. This facilitates the use of vehicles for either airport or community service. The Glacier Valley Fire Station, however, is the only station in Juneau that is equipped with ARFF vehicles.

As a 14 Code of Federal Regulations (CFR), Part 139 International Airport, the Airport must have a minimum number and type of vehicles available. Fourteen (14) CFR, Part 139 specifies several categorical levels of ARFF response necessary for the various operational levels of airports receiving Part 121 air carrier service with aircraft that have at least 30 seats. The size of the aircraft defines the amount and type of ARFF vehicles required at an airport. The JIA is designated as an Index C airport which means the airport serves Boeing 737-400, McDonnell Douglas MD-80, McDonnell Douglas DC-9, and Boeing 727 sized aircraft on a routine basis.

To meet ARFF requirements, the Airport operates two Oshkosh units (1,500-gallon water capacity, 35-gallon AFFF capacity, and 700 pounds of dry chemical) and one Walter's unit (1,500-gallon capacity and 150-gallon AFFF).

Airport Maintenance Equipment Facilities

Airport maintenance facilities house equipment and provide office space for field maintenance personnel. The facility is located in a building at the north end of the air taxi apron, along Bonnett Way. At the Airport, all terminal facilities, public building structures and their associated heating and plumbing systems, aircraft parking aprons, public automobile parking, access roads, and airport infrastructure are maintained by airport maintenance staff. This includes the responsibility of snow removal during the winter and grounds maintenance during the summer. The Airport uses contractor services for most large construction or repair projects.

The existing maintenance facility is deteriorating and is not of adequate size. It is located in an area that has better aviation use potential and does not accommodate the amount of equipment owned and operated by the Airport. This results in many pieces of the airport maintenance equipment being left unprotected from the weather and harsh climatic elements associated with Southeast Alaska.

Airport Security

Airport security is handled by a private contractor to the Airport. The security area consists of office space and holding cells for prisoner transfers. The office space and one holding cell are behind the unused portion of the airline ticket counter (formerly Delta Airlines operations/office). The second holding cell is in the administration office space on the second level of the terminal. Officers assigned to the Airport are responsible for maintaining security of the terminal, the terminal curbside area, the vehicle parking lot, and all aviation areas (runways, taxiways, and aprons). The CBJ Police Department is also responsible for patrolling the Airport and responding to calls from the airport security agents.

The Airport has perimeter fencing along the commercial lease areas, starting along the Wings of Alaska hangar apron, extending to the west past the terminal area and west end GA apron to the floatplane basin. There is no fencing along the southern side of the floatplane basin around the east end of the runway; however, there is a small fence located on the south side of the runway at the east end of the floatplane basin where the dike connects to the main Airport.

Fuel Facilities and Aircraft Services

There are a variety of fueling sources at JIA. Bulk aviation fuel storage facilities are located northwest of the airport maintenance facility, across Alex Holden Way. Fuel is distributed through a commercial service vendor who also maintains a fuel storage facility downtown. The commercial operator sells fuel to both air carrier and GA users at the Airport and from the downtown dock area. The on-airport storage facilities have a capacity for 50,000 gallons of Jet-A fuel and 25,000 gallons of AVGAS 100LL fuel. In addition, the downtown facility has three multi-tank farms for storing aviation fuel. Fuel services are provided by Aero Services of Juneau and Coastal Helicopters.

Air Cargo Operators

Alaska Airlines maintains a cargo facility at JIA to support processing of freight for both passenger and air cargo-only flights. The facility is located on the west side of the air carrier apron on the far southern end of the apron. Wings of Alaska has moved to a new facility at the east end of the airport, adjacent to the National Guard hangar.

Evergreen provides air cargo service under contract to the U.S. Postal Service. The daily DC-9 parks in the vicinity of the Airport compass rose, just south of the Alaska Airlines cargo facility. Evergreen is serviced by Aero Services of Juneau.

FedEx operates a small freight center at the Airport. Located adjacent to the CBJ Airport Maintenance facility on Bonnett Way, the FedEx facility handles both arriving and departing freight and cargo. FedEx does not operate FedEx aircraft at JIA. Service is provided by contract aboard other carrier's flights.

United Parcel Service (UPS) operates a cargo center on the west GA area. The building is immediately north of the Aero Services facilities. UPS does not operate dedicated aircraft operations at JIA. Rather, their cargo is carried aboard other carriers.

Juneau also receives air cargo and mail from a variety of overnight carriers such as DHL, Air Data, and Airborne Express. None of these carriers operates its own aircraft at JIA, instead, they purchase space aboard scheduled passenger carrier flights.

Fixed Base Operators (FBO)

The largest FBO at JIA is Aero Services. Located on the west side of the Airport along the transient aircraft parking apron, Aero Services provides a full range of services from aircraft parking to refueling, de-icing, and flightline maintenance for transient aircraft. Aero Services provides a pilot lounge for flight preparation and relaxation.

Silver Bay Logging provides limited FBO services at JIA. Silver Bay Logging is located on the aircraft parking apron, just east of the Glacier Valley Fire and ARFF Station. Silver Bay Logging is a certified Cessna service center and provides services to transient aircraft.

Coastal Helicopters and Coastal Fuel provide limited FBO services from their facilities located directly east of the passenger terminal. They offer refueling, aircraft deicing, and expediter service. Coastal Helicopters owned five helicopters in 1997 and acquired a sixth helicopter in 1998.

TEMSCO Helicopters provides limited FBO services at JIA. TEMSCO is located at 1650 Maplesden Way, east of the terminal near the end of Runway 26. TEMSCO Helicopters offers repair services to American Eurocopter, Bell, and Boeing transient aircraft.

Other operators at the Airport also provide limited services to transient aircraft. Ward Air and Loken Aviation offer aircraft services from their locations east of the passenger terminal.

Hangar Facilities

Large Hangar Facilities: The CBJ maintains a sand storage facility along Yandukin Drive, east of the passenger facility. It is attached to the adjacent hangar owned by Loken Aviation. Next to the Loken Aviation facility is another hangar owned by Ward Air on leased land. This hangar is the primary maintenance center for Ward Air.

On the west side of the air taxi apron, just south of the Airport maintenance facility, LAB Flying Service maintains a hangar. Aero Services also operates a hangar on the west side of the air taxi apron, adjacent to the Alaska Airlines cargo facility.

West of the Alaska Airlines cargo facility, Aero Services plans on providing full, corporate FBO aviation services from their existing facilities and the facility purchased from Wings of Alaska. The facility is directly adjacent to an existing hangar which is also owned by Aero Services and is being retained to provide a consolidated FBO area for transient aircraft.

East of the Glacier Valley Fire Station, along Yandukin Drive, Silver Bay Logging operates a large aircraft hangar. Directly east of the Silver Bay hangar is the Alaska Army National Guard hangar and storage area. On the east side of the Army National Guard facility, Wings of Alaska constructed a large aircraft hangar and maintenance facility. This hangar facility provides 24,000 square feet of corporate office, cargo, and maintenance space.

At the far east end of the Airport, TEMSCO Helicopters has a conventional hangar facility for helicopter maintenance and storage.

At the western end of the west GA apron, the Civil Air Patrol (CAP) has a hangar facility to support CAP operations at JIA. In this area, the U.S. Fish and Wildlife Service (USFWS) also maintains a hangar facility for government aircraft.

Private Hangar Facilities: The Airport has a number of T-hangar facilities. Directly in front of the Ward Air Center are two rows of T-hangars. The facility closest to Ward Air has five executive hangars for private use. The other facility, closest to the runway, is configured to accommodate 14 nested hangars. A row of executive hangars west of Taxiway C-2 can accommodate between 9 and 27 aircraft. Four newly constructed units east of Taxiway C-2 can accommodate between 4 and 12 aircraft.

On the west side of the Airport, along the GA apron, there are two T-hangars. There is also a series of executive aircraft hangars aligned directly south of the T-hangars which can accommodate one to three aircraft each.

Airport Utilities

The Airport is served by water and waste water systems that are connected to the CBJ public system. Utility service is insufficient because it is undersized in some areas and has not been installed in other areas. Water service at the Airport is provided by the area-wide Juneau Water Service Area. This provides a water supply to portions of the Airport and the Glacier Valley Fire Station. There is no water service to GA tiedown areas, nor is water service provided to many hangars at the Airport.

Waste water is carried by the public sanitary sewer system to the Mendenhall Waste Water Treatment Plant, which is located at the west end of the Airport. The waste water system is also undersized in some areas and

does not always meet the demand, especially during summer peak periods. Many tenants use septic systems for waste water disposal.

Electrical power to the Airport is supplied by the private electric company, Alaska Electric Light and Power Company. In the event of airport power failure, the Airport has several back-up generators to support the Glacier Valley Fire Station, passenger terminal, ATCT, and airport lighting system. The FAA also has back-up generators for NAVAIDs, radios, and airport lighting. Some tenants also provide individual back-up power units.

Local telephone service is provided by Pacific Telecom, Inc. (PTI), while long-distance service is provided on a competitive basis by General Communications, Inc. (GCI), and ATT/Alascom. ATT/Alascom has a switching facility located on airport property, just south of the AFSS on Cessna Drive.

AIRPORT ENVIRONS AND LAND USE

Comprehensive Plan

In 1984 the CBJ Assembly adopted a Comprehensive Plan to replace the previous plan. In 1995 a Comprehensive Plan Update was approved by the Assembly. The Comprehensive Plan and Update contain the information and guidelines necessary to implement land use planning and zoning decisions within the CBJ. Chapter Four of the Comprehensive Plan addresses the transportation needs of Juneau. Chapter Five addresses Juneau's land use issues. Concerning the transportation issues, the Comprehensive Plan states that Juneau depends on air transportation and also identifies multi-modal transportation improvements as a goal of the community. There are two implementing actions identified in the Comprehensive Plan that are directly related to airport operations:

C *Encourage development of a GPS to allow increased weather-limited operations at the Airport.*

C *Protect all designated Airport properties from land use conflict and/or displacement.*

C *Improve transportation facilities that accommodate air and marine links between the CBJ and outlying communities.*

Land Use Plan

As the Comprehensive Plan was updated, the CBJ Assembly reviewed and adopted an ordinance repealing Title 49 of the CBJ code, entitled, "Planning and Zoning," and reenacted a new Title 49 called "Land Use." The new program established a comprehensive program for land use, planning, zoning, and platting within the community. The new Land Use code prescribes 13 zoning districts. These will be presented in greater detail in the Analysis Section of this Master Plan.

Parks and Recreation

According to the *Juneau Parks and Recreation Comprehensive Plan*, April 1996, the Airport is an important recreation site, because of the existing dike trail on the west and south sides of the Airport. It is the intent of the Parks and Recreation Department that the trail remain available to residents as it provides an excellent location for viewing wildlife along Gastineau Channel and in the Mendenhall Wetlands State Game Refuge (MWSGR). The trail is supported by the Airport Enterprise Fund.

The Parks and Recreation Department has also identified Jordan Creek as an area that is used for recreation. Although it has not been dedicated, the Airport has developed a trail along the creek for visitor use. The trail includes two small bridges and viewing areas in this vicinity.

On the west side of the Airport, Duck Creek has been identified as another area for recreational use that has not been dedicated. The area is currently under a special study for rehabilitation of the creek.

CONCLUSION

The information on the previous pages provides the foundation upon which the remaining elements of the master planning process were developed. Information collected about current Airport facilities and their utilization was used to develop aviation demand forecasts and a facility requirements evaluation for the Airport. That information, in turn, provided guidance for the development of both short- and long-term goals for airport development and the plans necessary to achieve those goals.