Soldotna Municipal Airport

MASTER PLAN

DECEMBER 2017

Prepared for
The City Of Soldotna

Prepared By:

Aries Consultants Ltd.

Wince-Corthell-Bryson

SOLDOTNA MUNICIPAL AIRPORT
MASTER PLAN UPDATE
FINAL REPORT

Prepared for

CITY OF SOLDOTNA

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 view 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 is environmentally acceptable in accordance with appropriate laws.

Prepared by

WINCE-CORTHELL-BRYSON

in association with

ARIES CONSULTANTS LTD.

December 2017

Introduced By:	Interim City Manager
Date:	January 10, 2018
Public Hearing:	January 24, 2018
Action:	Enacted
Vote:	6 Yes, 0 No

CITY OF SOLDOTNA
ORDINANCE 2018-003

AN ORDINANCE ADOPTING THE AIRPORT MASTER PLAN AND INCORPORATING IT INTO ENVISION SOLDOTNA 2030, THE COMPREHENSIVE PLAN

WHEREAS, the City received a Federal Aviation Administration grant to renew our Airport Master Plan; and

WHEREAS, the Soldotna Public Works Department has overseen the development of the Airport Master Plan which was recently completed in December 2017; and

WHEREAS, the Soldotna Airport Commission voted unanimously to recommend adoption of the final draft of the Airport Master Plan; and

WHEREAS, Alaska Statutes 29.40.030(a) describes a comprehensive plan as a compilation of policy statements, goals, standards and maps that may include but is not limited to a land use plan, community facilities plan, and transportation plans; and

WHEREAS, incorporating this plan into the Comprehensive Plan gives it more weight and helps coordinate disparate planning activities; and

WHEREAS, the aforementioned plan is consistent with and furthers the goals, policies and objectives of the City's Comprehensive Plan; and

WHEREAS, it is necessary for the City to adopt and incorporate these plans by ordinance;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF SOLDOTNA, ALASKA:

Section 1. That the City of Soldotna Airport Master Plan prepared by Wince Corthell Bryson and Aries Consultants LTD is hereby adopted as the Airport Master Plan for the City of Soldotna, and is incorporated as an element of Envision Soldotna 2030, the City's comprehensive plan.

Section 2. That a copy of this ordinance will be forwarded to the Kenai Peninsula Borough.

Section 3. This ordinance shall become effective immediately upon its enactment.

ENACTED BY THE CITY COUNCIL THIS 24TH DAY OF JANUARY, 2018.

Nels Anderson, Mayor

ATTEST:

Michelle M. Saner, MMC, City Clerk

Yes: Murphy, Parker, Whitney, Baxter, Cox, Cashman
No: None

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EXECUTIVE SUMMARY

1.1 INTRODUCTION

The Soldotna Municipal Airport (referred to as the "Airport" throughout this report) is geographically located approximately 1 mile southeast of downtown Soldotna and situated along the south side of the Kenai River on Funny River Road. The Airport is approximately 1.3 miles southeast of the main highway intersection entering Soldotna. The location of the City with respect to other Alaska communities and the Airport within the community are illustrated on Figure 1-1.

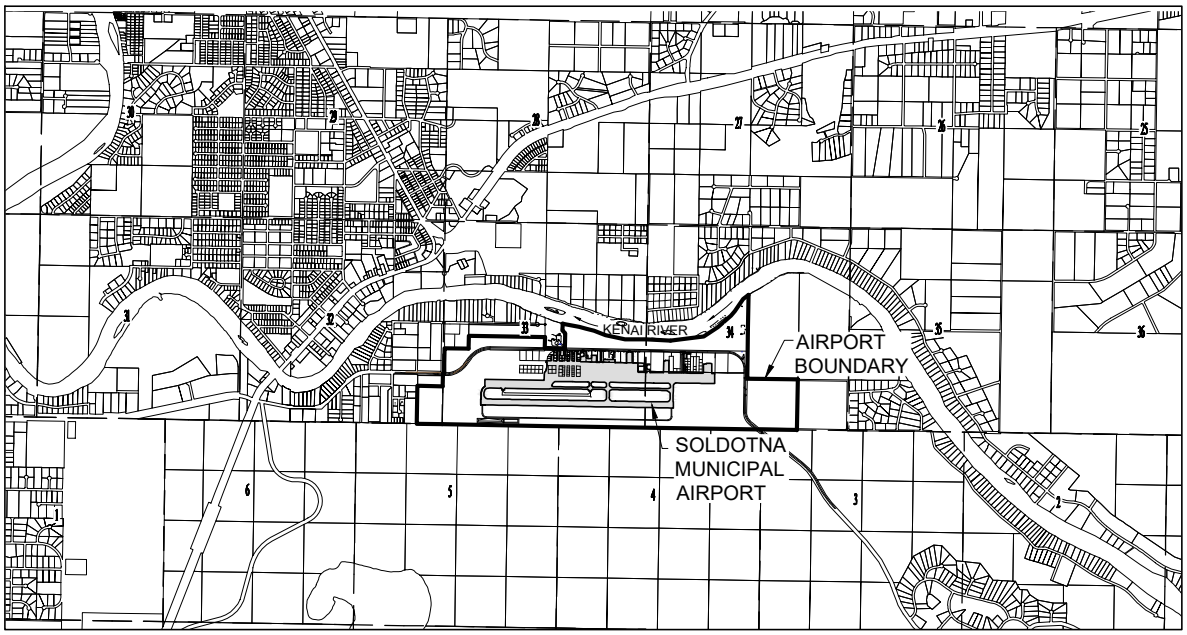
The Airport is owned and operated by the City of Soldotna. The City Public Works Department is responsible for the management and development of the Airport. An Airport Commission serves as an advisory board to make recommendations to the City on the development and use of the Airport and airport operations.

The Soldotna Municipal Airport is included in the Federal Aviation Administration's (FAA) *National Plan of Integrated Airport Systems* (NPIAS). The NPIAS defines the role and future development of public-use airports throughout the United States. The Airport is classified as a General Aviation Airport in the FAA's overall national system of airports. General Aviation Airports are further defined in FAA's *General Aviation Airports: A National Asset* wherein the FAA documented the important airport roles and aeronautical functions General Aviation Airports provide to their communities and the national airport system. The Soldotna Municipal Airport is classified as a "General Aviation Local" Airport. The local airport supplements local communities by providing access to local and regional markets.

The Soldotna Municipal Airport is included in the 2011 *Alaska Aviation System Plan* (AASP) prepared for the State of Alaska, Department of Transportation and Public Facilities. The AASP classifies the Airport as one of over 400 public airports in the State. The Airport is classified as a Local Airport in the AASP. A Local Airport accommodates mostly general aviation activity. They supplement International, Regional and Community airports by providing additional general aviation capacity in the more densely populated parts of the State, and they serve low population areas where a Community Airport is not warranted.

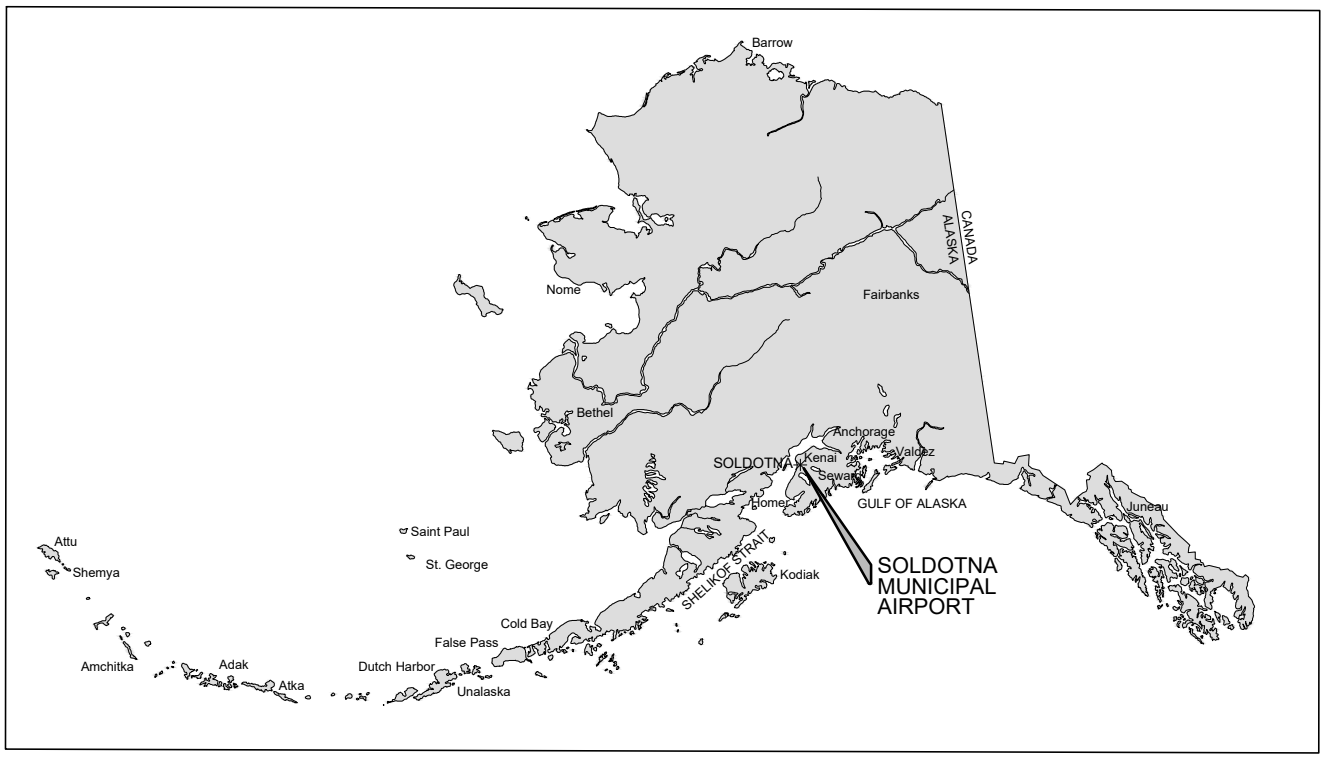
The general objective of the Airport Master Plan Update is to provide a long-range plan to guide development of the Airport. This will maintain the Airport as a valued transportation facility for the City of Soldotna and those parts of the surrounding Kenai Peninsula Borough for which the Airport is the most convenient aviation facility.

The Airport Master Plan Update was prepared in three phases. The Phase I Report documented the Aviation Activity Forecasts and Existing Airport Facilities. The Phase 2 Report documented the Airport Facility Requirements, Alternative Airport Development



VICINITY MAP

SCALE: 1"=5000'



LOCATION MAP

WINCE-CORTHELL-BRYSON
ARIES CONSULTANTS LTD.

DRAWN BY: Vicki Coleman DWG: Figure 1-1
CHECKED BY: Mark Blanning DATE: 1-15-19

SOLDOTNA MUNICIPAL AIRPORT
LOCATION AND VICINITY MAP
SOLDOTNA, ALASKA

FIGURE
1-1

Concepts and an Environmental Overview. The Phase 3 report documented the Recommended Airport Master Plan, Airport Layout Plan, Facilities Implementation Plan and Financial Feasibility Analysis.

The Phase Reports, plus the Sustainability Plan, have been combined into the Airport Master Plan Update Final Report.

At their January 24, 2018 public hearing, the City Council enacted City of Soldotna Ordinance 2018-003 adopting the Airport Master Plan and incorporating it into *Envision Soldotna 2030*, the City's Comprehensive Plan. (A copy of the Ordinance is included earlier in this report.)

Since the Airport Master Plan Update was initiated in 2015, several events relevant to the Plan have occurred as noted below.

- In 2015, FAA issued updated FAA Order 1050.1F, *Environmental Impacts: Policy and Procedures*.

- In 2015, the State of Alaska notified the City that the State Department of Transportation and Public Facilities will be unable to continue providing a 3.125 percent matching share grant to local sponsors for FAA Airport Improvement Program grants.

The Phase Reports incorporated the implications of these events after they occurred as noted in the text.

1.2 FINDINGS AND RECOMMENDATIONS

The principal findings and recommendations of the study are presented below.

1.2.1 Aviation Activity Forecasts

The aviation activity forecasts were formally approved by the FAA on January 28, 2016 for use in proceeding with the airport master planning activities and are summarized below.

- The Soldotna Municipal Airport serves the City of Soldotna and those surrounding communities for which it is the most convenient airport. Since the majority of the people served by, and using, the Airport reside in the City of Soldotna and surrounding communities of Kasilof/Kalifornsky and Sterling, the area generally within zip codes 99669, 99610 and 99672, was designated as the Air Service Area.

- Based aircraft are forecast to increase from 163 aircraft in 2015 to 190 aircraft by 2035. This represents an average annual increase of 0.8 percent. The increases in based aircraft are primarily in the single-engine aircraft from 152 aircraft in 2015 to 177 aircraft by 2035 while the multiengine aircraft are forecast to increase slightly

from 9 aircraft in 2015 to 11 aircraft by 2035. Business jets and helicopters are forecast to remain at one aircraft each in 2015 through 2035. Tundra-tire aircraft are forecast to increase from about 70 aircraft in 2015 to about 80 aircraft by 2035.

- Annual aircraft operations are forecast to increase from 19,800 operations in 2015 to 27,000 operations by 2035.

- Annual air taxi operations are forecast to increase from 2,900 operations in 2015 to 4,100 operations by 2035.

- General aviation operations are forecast to increase from an estimated 16,800 operations in 2015 to 22,800 operations by 2035. Itinerant operations are forecast to increase from 6,600 operations in 2015 to 9,100 operations by 2035 and local operations are forecast to increase from 10,200 operations in 2015 to 13,700 operations by 2035.

- Military operations are estimated to be about 100 aircraft operations in 2015 and are forecast to remain at 100 operations through 2035.

- Operations per based aircraft are forecast to increase from an estimated 103 annual operations in 2015 to 120 annual operations by 2035 reflecting a greater utilization of existing aircraft.

- Peak hour aircraft operations are forecast to increase from 12 operations in 2015 to 16 operations by 2035.

- Based on discussions with representatives of commuter airlines, they have no plans to provide scheduled service at the Soldotna Municipal Airport because of the lack of demand, lack of commuter airline facilities and the proximity of the Kenai Municipal Airport.

- Based on discussions with representatives of small package/air cargo carriers, they have no plans to provide service to the Soldotna Municipal Airport. They will occasionally use the Airport because of weather or other reasons.

- The largest and highest performing civil aircraft currently using the Airport and expected to use the Airport in the future, with at least 500 annual operations, are as follows:

Aircraft	FAA Airport Reference Code
Beech King Air B-200	B-II
CASA 212	A-II
Britten-Norman Islander BN-2A	A-II

1.2.2 Airport Property

Acquire approximately 49 acres of land for future Airport development and protection and land-use compatibility. The property includes one private parcel of approximately 40 acres and 9 acres of Salamatof Native Association property.

1.2.3 Airfield

Retain and extend Runway 7-25 by 1,000 feet to a 6,000-foot runway with a retained width of 132 feet to handle business jet and other large aircraft.

Retain the tundra-tire/ski gravel Runway 7S-25S located between Runway 7-25 and the parallel Taxiway B and between Taxiways D and E.

Runway 7-25 is designated as the helicopter touchdown and liftoff area to comply with FAA design criteria.

Provide a full-length parallel taxiway for the future extension of Runway 7-25, with one additional entry/exit taxiway at the new east end of Runway 7-25.

Extend Taxiway C to the north to serve the new lease lot development at the northwest end of the Airport.

1.2.4 Airspace and Navigational Aids

Nonprecision area navigation (RNAV) global positioning system (GPS) instrument flight rules (IFR) approach procedures to Runways 7 and 25, with lower minimums than presently exist, would enhance the capabilities of the Airport.

A nonprecision localizer performance with vertical guidance (LPV) approach to Runways 7 or 25 with lower minimums would allow the Airport to remain open longer.

However, because of the significant impacts associated with trying to reduce the minimums, primarily on the Kenai National Wildlife Refuge to the south, the City has decided to retain the existing minimums, of approximately 500 feet minimum descent altitude and one statute mile visibility to Runway 25, for the Airport Master Plan Update.

Additional navigational landing aids, the relocation of some navigational aids and the extension of other navigational aids are provided for in the Plan.

The capability of installing medium intensity approach lighting systems with sequenced flashers (MALSF) for both ends of Runway 7-25 is provided.

Medium intensity runway lighting (MIRL) is provided for the Runway 7-25 extension.

Runway end identifier lights (REIL) are planned for each end of Runway 7-25.

Replace existing visual approach slope indicators (VASI) with precision approach path indicators (PAPI).

Medium intensity taxiway lighting (MITL) is provided for the parallel taxiway extension and new entry/exit taxiway.

1.2.5 General Aviation

Retain the existing commercial aviation/fixed base operator lease lot facilities on the north side of the Airport.

Provide for 24 new lease lots to the northwest of Runway 7-25 and south of Funny River Road for additional commercial aviation/fixed base operator facilities. This is in addition to the 20 newly platted lease lots on the west apron. There are also some vacant lease lots that are available for commercial aviation/fixed base operator uses north of the central and east aprons. Space for additional lease lots and apron is also reserved at the east end of the Airport.

FAA has recently determined that aircraft parking apron areas, fronting lease lots, will no longer be eligible for FAA Airport Improvement Program grant funds due to the exclusive use of the apron areas for accessing the lease lots.

Provide tiedown spaces for a total of 103 aircraft. At present there is an excess of year round aircraft tiedown spaces on the Airport.

Apron space is needed for at least 25 year-round itinerant aircraft tiedowns through 2035.

There is a current shortage of itinerant tiedown aircraft parking positions required for the peak summer activity.

The east aircraft parking apron and apron taxiway should be extended to the east to serve currently undeveloped lease lot areas at the east end of the Airport.

Provide up to 115 hangar spaces (T-hangars, shelters, executive or conventional hangars) by 2035.

Apron lighting, mounted on existing buildings and poles, is recommended in the central apron area.

A helicopter parking position should be identified on the east aircraft parking apron for use by medevac helicopters. Ambulance access would be provided through the east automatic access gate for direct access to the east apron.

1.2.6 Air Taxi/Terminal Area

There may be a need for a public terminal in the future that could accommodate itinerant air taxi operators and possibly other uses; e.g., pilots' lounge, small snack bar/café/coffee shop, telephones, restrooms, direct line phone service to rental cars, hotels and motels, and computers for weather data and flight planning. One site for a public terminal would be on the north side of the Airport on the lease lot reserved for City use (Lot B).

There is no short-term vehicular parking provided for passengers or transient pilots utilizing Soldotna for medical, shopping, recreational and/or business visits. Short- and long-term parking facilities should be provided, strategically located on the west, central and east apron areas for local and transient users.

1.2.7 Airport Access and Parking

Ultimately, Funny River Road should be relocated to the east of the Airport property to allow for the extension of Runway 7-25. This relocation will require property acquisition.

Additional vehicular parking is proposed on the north side of the Airport to serve a future public terminal and/or pilots' lounge.

Three new service roads are provided. One at the end of the west apron to provide access to the proposed lease lots and for future expansion of the apron to the west; a second with an automated gate should be provided to serve the public terminal area; and a third to provide gravel access to the south side of the airfield to facilitate fence maintenance, animal control and removal, as well as providing separate access to agricultural activities in this area.

1.2.8 Airport Support

In the long term, the Airport Administration offices could be relocated from the City Maintenance Facility on Arbor Street to a new public terminal on the north side of the Airport. An area is reserved at the west end of the Airport, north of Funny River Road, for future relocation of the maintenance facility and other facilities. This would allow the existing Airport Maintenance Facility area to be redeveloped for other uses between the Kenai River and Funny River Road.

A new snow removal equipment (SRE) and sand storage building is planned at the west end, north of Funny River Road. Some minor maintenance and de minimus airport administration is also planned for the proposed SRE and sand storage building.

A prioritized snow removal plan should be established that addresses safety, commercial, private and maintenance aspects of efficient airport operations.

Space is reserved for a 60-foot by 60-foot aircraft wash pad/deicing facility at the east edge of Lot B, behind the building restriction line, that would be developed to comply with current water quality standards.

Electric, telephone and natural gas utilities should be provided to all new lease lots to provide the basic infrastructure to encourage development.

The installation of security cameras is recommended at the three main access gate locations off Funny River Road. In addition, security cameras are recommended to cover the runways and main aircraft parking apron areas.

Additional or realigned 8-foot high chain link perimeter/security fencing with barbed wire on top will be required in several locations on the Airport to accommodate proposed development.

1.2.9 Nonaviation Uses

There is Airport property north of Funny River Road, and south of the Kenai River, that could be developed for nonaviation uses if not required for aviation-related uses. There is a 52-acre parcel along the Kenai River, east of the Kenai River Center, and a 21-acre parcel west of the Kenai River Center.

All lands within the Airport property boundary that are within the City limits are zoned Industrial. The City's Comprehensive Plan, *Envision Soldotna 2030*, recommends evaluating the potential to rezone the riverfront portion of the industrial zoned lands on the north side of the Airport, and south of the Kenai River, to a mixed use zone to protect the river from intensive industrial uses.

The City should consider establishing an airport overlay zone, which governs use of airport lands and is specific to the needs of aviation-related properties.

The Soldotna Municipal Code, Code of Ordinances, Zoning Map and Land Use Code should be updated to include reference to

- Federal Aviation Regulations (FAR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace;*
- FAA Order 8260.3D, *United States Standard for Terminal Airspace Procedures* (TERPS);
- FAA Form 7460-1, *Notice of Proposed Construction or Alteration;*
- FAA Order 5190.6B, *Airport Compliance Manual;* and FAA Advisory Circular (AC) 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports.*

- Title 17, Zoning, Section 17.10.280 Industrial District (IND) is in need of update as most of the existing Industrial District land within the City is within the Airport property boundary.

1.2.10 Environmental Documentation

Environmental considerations which may impact the Airport and consequently require further study are identified below.

- Department of Transportation Act, Section 4(f)

  Clearing of forest and excavation of topographically obstructing ground would be necessary on the Kenai National Wildlife Refuge and Salamatof Native Association property, or by marking, lighting or otherwise mitigating, in order to fully provide for projected FAR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, 34 to 1 approach surface slopes and FAA Order 8260.3D, *United States Standard for Terminal Instrument Procedures* (TERPS), 40 to 1 departure surface slopes for both the existing and extended Runway 7-25.

  Airport improvement projects that may need to be evaluated with respect to constructive use of the Kenai National Wildlife Refuge include obstruction tree clearing associated with lower approach and departure surface minimums and the future extension of Runway 7-25 to accommodate larger aircraft.

- Noise and Noise-Compatible Land Use

  Future 65 decibel (dB) Day-Night Level (DNL) noise exposure contour will be contained within the Airport property and will not impact any noise-sensitive land use.

- Wetlands

  Three wetland areas have been previously identified within the Airport boundary. The wetland area northwest of Runway 7-25 has been noted as a bird attractant by several pilots and they have informally requested that it be filled in for safety reasons. The City and U.S. Army Corps of Engineers (USACOE) need to resolve if this area is actually wetland or manmade and the USACOE has no jurisdiction. The two wetland areas to the east of Runway 7-25 would potentially be impacted if the runway is extended and if Funny River Road is relocated to the east.

1.2.11 Facilities Implementation Plan

Implement a three-phase Capital Improvement Program for the recommended Airport Master Plan. Phase I (through 2020) projects, which are considered the highest priority, are estimated to cost $12.4 million. Over one-half of the total costs, about $7.6 million, will be required for the airfield including the modification of the runway profile, on-Airport obstruction removal, navigational and landing aids and airfield maintenance.

Phase I projects that are eligible for FAA Airport Improvement Program (AIP) grants total $11.6 million. The City's local match for these grant funds are estimated to total $728,438. An additional $750,000 will be required from other sources to fund projects that are not eligible for FAA grants, e.g., hangars and shelters.

Finance the City's financial obligation of $728,438 which is estimated based on current eligibility criteria and funding participation from the FAA Airport Improvement Program. The implementation of the Capital Improvement Program is highly dependent on the funds available from FAA Airport Improvement Program grants and the City's Airport Fund.

Schedule Phases II and III projects as the needs arise and also consistent with the financial resources of the City.

1.2.12 Financial Feasibility Analysis

Historically, the Airport Fund has operated with an average annual surplus of $42,600 over the most-recent five-year period. Based on information provided in the Fiscal Year 2017 Budget, transfers from the General Fund have been required to balance the Airport Fund in years prior to Fiscal Year 2015, however, over time the Airport is becoming more and more self-sufficient.

Based on the forecast revenues and expenses, the Airport Fund will not operate with sufficient revenues to fund Phase I of the Capital Improvement Program. If FAA Airport Improvement Program grants are awarded as presented in the Capital Improvement Program, the City will need to identify additional sources of funds to provide the local matching share for these grants. Alternatively, some projects may be delayed to later phases until the City identifies sources of funds to fund the local matching share of FAA grants.

A rates and charges analysis was made to assess the reasonableness of the existing rates and charges at the Soldotna Municipal Airport. The Airport was compared with airports identified as potentially competing with, or comparable to, the Airport based on location and/or airports of similar size and/or role in terms of based aircraft and annual aircraft operations. It should be noted that no two airports are identical in terms of what can be considered reasonable rates and charges. There are always a number of variables that apply to rates and charges at individual airports including services available, runway and taxiway system, land area available and size of leaseholds, the economic characteristics of the area in which an airport is located, market demand and numerous other considerations. Rates and charges for use of an airport are established based on all of these considerations, including the fair market value of the airport and its facilities, and therefore are not directly comparable to rates and charges for use of the Soldotna Municipal Airport.

Rates and charges for lease rates for real property, aircraft tiedown fees, fuel flowage fees, vehicle parking fees, and other fees, e.g., the City's use of the Airport land for nonaviation purposes were analyzed. Rates and charges for use of the Soldotna Municipal Airport

were considered reasonable when compared to rates and charges for other comparable and or competing airports.

Methodologies for establishing rates and charges for future use of the Airport were established to provide a sound, consistent basis on which the City can attract financially responsible tenants to the Airport, administer tenant leaseholds in a fair and uniform manner, and develop and manage the Airport consistent with its long-range public service and financial objectives.

About 172 acres of Airport property are available for aviation-related uses, including lease lots for aviation uses, e.g., commercial aviation/fixed base operators and noncommercial aviation. There are 21 acres on the northwest side of the Airport and another 52 acres, north of Funny River Road along the Kenai River, and other properties north and east of a realigned Funny River Road to the east that could be available for nonaviation uses in the future.

A Recommended Airport Development Program was prepared for the City's consideration in the future development and administration of the Airport. The Program recommended the preparation of a lease review and appraisal and preparation of lease policy guidelines; preparation of minimum standards to promote safety in all airport activities, protect airport users from unlicensed and unauthorized products and services, maintain and enhance the availability of adequate services for all airport users, promote the orderly development of airport land and ensure efficiency of operations. Prepare a Strategic Business Plan for the 52 acres of Airport property along the Kenai River north of Funny River Road. Marketing tools include a web site; Airport lease map; and an Airport Lease Package.

Chapter 2

AVIATION ACTIVITY FORECASTS

2.1 INTRODUCTION

The aviation activity forecasts presented in this chapter were developed based on processes and guidance presented in Federal Aviation Administration (FAA) Advisory Circular 150/5070-6B *Airport Master Plans* and FAA 2001 *Forecasting Aviation Activity by Airport.*

Forecasts of future levels of aviation activity form the basis for effective decisions for future airport planning and development in determining the need for new or expanded facilities. Forecasts of aviation activity should be realistic and based upon the latest available data to provide adequate justification for future planning and development.

This Chapter defines the air service area of the Soldotna Municipal Airport and the historical air traffic activity at the Airport, including the type and level of based aircraft and aircraft operations, air taxi activity and military aircraft operations. The aviation activity forecasts for the Airport through 2035 are presented including:

- Based Aircraft and Type (single-engine, multiengine, jet, helicopter, tundra tire)
- Annual Aircraft Operations by Type (commuter/air taxi, general aviation and military)
- Potential Demand for Commuter Airline Service and Small Package/Air Cargo Service
- Future Airport Reference Code and Design Aircraft

2.2 AIR SERVICE AREA

The geographic area served by an airport is designated as the air service area. Typically, the air service area includes a densely-populated urban area (such as a city and its environs) within a larger, less-densely populated area that is usually defined (or limited) by the existence of other airports.

The air service area can seldom be precisely identified in terms of political boundaries. Therefore, usually a city, borough or political region (such as a Standard Metropolitan Statistical Area) is selected to represent the air service area because relevant population and economic data are readily available for such areas. Furthermore, trends in aviation activity typically correspond closely with general growth trends in the major economic regions containing the main concentration of population served by a given airport.

The Kenai Peninsula Borough encompasses a total of 25,600 square miles which includes the Kenai Peninsula, Cook Inlet and portions of sparsely populated areas to the west of

the Inlet. Because of the size, distance and population centers, the Borough is often divided into four geographic locations with the Central Kenai Peninsula, the industrial and business heart of the Borough, containing the largest cities of Soldotna and Kenai.

The Soldotna Municipal Airport serves the City of Soldotna and those surrounding communities for which it is the most convenient airport. Since the majority of the people served by, and using, the Airport reside in the City of Soldotna and surrounding communities of Kasilof/Kalifornsky and Sterling, the area generally within zip codes 99669, 99610 and 99672, were designated as the Air Service Area. Approximately 69 percent of the based aircraft owners have addresses within these three zip codes as discussed later in Section 2.3.1.3. Of the other 31 percent, 10 percent have Kenai addresses and other locations have less than 4 percent each.

Available population and socioeconomic information were provided by the State of Alaska, Department of Labor and Workforce Development, Research and Analysis Section (DOLWD), the Kenai Peninsula Borough and the Soldotna Chamber of Commerce and Visitor Center. The *Comprehensive Plan 2011, Envision Soldotna 2030 (Envision Soldotna 2030)* and the 2004 *Soldotna Municipal Airport Master Plan Update* were also reviewed. In addition, discussions with persons knowledgeable of the City provided additional information.

2.2.1 Population

The historical and forecast population trends for the City of Soldotna, the Kenai Peninsula Borough, the State of Alaska and the United States as a whole are presented in Table 2-1.

Historically, since 1990 the City of Soldotna has experienced a growth rate relatively consistent with the Kenai Peninsula Borough and the State of Alaska. The City increased from a population of 3,482 in 1990 to a population of 4,311 in 2014, an average annual increase of 0.9 percent. This rate of increase was lower than the increase in population in the Borough that increased from a population of 40,486 in 1990 to 57,212 in 2014, an average annual increase of 1.5 percent. The population in the Borough has increased faster than the population increase in the State that increased from a population of 550,043 in 1990 to a population of 735,601 in 2014, an average annual increase of 1.2 percent. These increases in population have generally exceeded population growth on the national level that averaged an annual rate of 1.0 percent over the 34-year historical period.

The population of the City of Soldotna increased from 4,163 in 2010 to 4,311 in 2014, an average annual increase of 0.9 percent. However, the population of the surrounding communities of Funny River, Kalifornsky, Kasilof, Ridgeway and Sterling increased from 16,915 in 2010 to 17,948 in 2014, an average annual increase of 1.5 percent. The combined population of Soldotna and these surrounding communities increased from 21,078 in 2010 to 22,259 in 2014, an average annual increase of 1.4 percent.

Table 2-1

HISTORICAL AND FORECAST POPULATION TRENDS
City of Soldotna, Kenai Peninsula Borough, State of Alaska and United States
1990-2035

	Historical			Base Year	Forecast		
	1990	2000	2010	2014	2025	2030	2035
City of Soldotna	3,482[1]	3,759[1]	4,163[2]	4,311[2]	4,557[3]	4,674[3]	4,800[3]
Kenai Peninsula Borough	40,486[1]	49,691[1]	55,400[1]	57,212[2]	62,420[4]	63,836[4]	64,800[4]
State of Alaska	550,043[2]	626,932[2]	710,231[2]	735,601[2]	826,515[2]	857,326[2]	885,846[2]
United States	249,439,000[1]	281,421,906[1]	309,300,000[1]	318,900,000[1]	347,385,000[1]	359,402,000[1]	370,338,000[1]

	Average Annual Percentage Change				
	1990-2000	2000-2014	2014-2025	2025-2030	2030-2035
City of Soldotna	0.8	1.0	0.6	0.3	0.5
Kenai Peninsula Borough	2.1	1.0	0.8	0.4	0.3
State of Alaska	1.3	1.1	1.1	0.7	0.7
United States	1.2	0.9	0.8	0.7	0.6

SOURCES:

1. U. S. Department of Commerce, Bureau of the Census
2. State of Alaska, Department of Labor and Workforce Development, Research and Analysis Section
3. Based on growth rates in *The Comprehensive Plan 2011, Envision Soldotna 2030*
4. Forecast population estimates for the Kenai Peninsula Borough were developed based on population projections prepared by the State of Alaska, Department of Labor and Workforce Development, Research and Analysis Section. The estimates were interpolated to the year 2035.

Current population forecasts for the City, Borough, State and the nation are also presented in Table 2-1. Based on *Envision Soldotna 2030*, the City of Soldotna is likely to increase at an average annual rate of less than one percent reaching a projected population of 4,674 by 2030. These population increases were extrapolated to a population of 4,800 by 2035. Based on population projections prepared by the State of Alaska (DOLWD), population in the Borough is projected to increase from 57,212 in 2014 to 64,800 by 2035, an average annual increase of 0.6 percent while population in the State is projected to increase from 735,601 in 2014 to 885,846 in 2035, an average annual increase of 0.9 percent. The national population is forecast to continue growing at a similar rate as the City, the Peninsula and the State with an average annual increase of 0.7 percent over the 20-year forecast period.

Based on *Envision Soldotna 2030*, the City's population is aging with greater increases in the percentage of the population over 65 years of age, consistent with the overall aging of the population in the Borough and the State as a whole. In addition, the slower population growth rate in the City, when compared to the Borough, indicates a greater increase in population in the unincorporated areas of the Borough.

2.2.2 Economic Indicators

Soldotna is considered a residential and service-oriented community and the center for trade and services, local government and health care for the central Peninsula. Many residents work outside the City in oil, gas, mining and commercial fishing industries and, while these industries are not major sources of employment within the City itself, these industries affect the economy of the City. Major employers in the City include the Kenai Peninsula Borough, Central Peninsula General Hospital, Kenai Peninsula School District, Kenai Peninsula College and Fred Meyer.

Information on economic indicators and demographic trends was obtained from the *April 2015 Kenai Peninsula Situations & Prospects*, published by the Kenai Peninsula Economic Development District.

The gross sales-by-industry provides an indicator of economic performance. The latest gross sales by industry published by the Kenai Peninsula Borough for 2008 to 2013 for the City of Soldotna are presented in Table 2-2. The most significant percentage increases in gross sales occurred in the construction contracting and wholesale trade sectors, increasing by close to 100 percent and slightly over 100 percent, respectively. Slight increases occurred in the arts and entertainment, mining/quarrying (including oil and gas sales), rental of commercial and non-residential properties, rental of personal and residential properties, telecommunications and utilities sectors; slight decreases occurred in the other sectors, with the educational services, technical services, public administration and restaurant/bar categories remaining the same over the five-years from 2008 to 2013.

Table 2-2

GROSS BUSINESS SALES IN CITY OF SOLDOTNA (thousands)
City of Soldotna
2008-2013

	2008		2009		2010		2011		2012		2013	
Industry	**City of Soldotna**	**Percent of Total**	**City of Soldotna**	**Percent of Total**	**City of Soldotna**	**Percent of Total**	**City of Soldotna**	**Percent of Total**	**City of Soldotna**	**Percent of Total**	**City of Soldotna**	**Percent of Total**
Admin, Waste Management	6,678	1.4	3,224	0.8	2,437	0.6	2,824	0.7	3,144	0.7	3,656	0.7
Agriculture, Forestry, Fishing, Hunting	144	0.0	30	0.0	45	0.0	107	0.0	84	0.0	88	0.0
Arts and Entertainment	1,515	0.3	1,433	0.3	1,392	0.3	1,570	0.4	1,633	0.4	4,046	0.8
Construction Contracting	35,627	7.6	24,769	5.9	21,223	5.0	25,989	6.0	39,160	8.6	73,914	14.8
Educational Services	629	0.1	601	0.1	588	0.1	721	0.2	712	0.2	716	0.1
Finance and Insurance	940	0.2	701	0.2	835	0.2	376	0.1	385	0.1	442	0.1
Guiding Land	**	n.a.	**	n.a.	**	n.a.	**	n.a.	**	n.a.	**	n.a.
Guiding Water	1,694	0.4	988	0.2	678	0.2	908	0.2	777	0.2	605	0.1
Health Care, Social Asst	9,388	2.0	9,050	2.2	11,460	2.7	12,002	2.8	10,657	2.3	9,101	1.8
Hotel/Motel/B&B	5,404	1.2	4,617	1.1	4,264	1.0	4,794	1.1	4,811	1.1	4,971	1.0
Information	11,828	2.5	11,316	2.7	10,753	2.5	10,526	2.4	10,472	2.3	10,090	2.0
Management of Companies	**	n.a.	**	n.a.	-0-	n.a.	-0-	**	**	n.a.	- 0 -	n.a.
Manufacturing	10,118	2.2	11,048	2.6	10,592	2.5	9,329	2.2	15,010	3.3	7,551	1.5
Mining/Quarrying	127	0.0	79	0.0	61	0.0	79	0.0	56	0.0	3,125	0.6
Professional, Scientific and Technical Services	10,263	2.2	9,542	2.3	9,612	2.2	10,621	2.5	10,531	2.3	10,883	2.2
Public Administration	1,189	0.3	1,320	0.3	1,358	0.3	1,394	0.3	1,634	0.4	1,612	0.3
Rental Commercial Prop	1,445	0.3	1,637	0.4	1,781	0.4	1,815	0.4	2,000	0.4	2,219	0.4
Rental Non-Residential Prop	5,748	1.2	4,793	1.1	4,862	1.1	4,678	1.1	4,354	1.0	6,712	1.3
Rental Self-storage and Miniwarehouses	**	n.a.	**	n.a.	- 0 -	n.a.	- 0 -	.n.a.	- 0 -	n.a.	**	n.a.
Rental Personal Property	374	0.1	603	0.1	727	0.2	759	0.2	849	0.2	856	0.2
Rental Residential Property	9,491	2.0	8,704	2.1	9,276	2.2	9,331	2.2	9,827	2.2	11,112	2.2
Restaurant/Bar	23,987	5.1	22,575	5.4	22,414	5.2	23,378	5.4	25,489	5.6	25,678	5.1
Retail Trade	286,385	61.2	251,821	59.8	246,262	57.5	243,332	56.5	255,400	56.1	261,132	52.2
Services	8,275	1.8	8,943	2.1	9,094	2.1	8,998	2.1	9,095	2.0	9,760	1.9
Telecommunications	536	0.1	2,113	0.5	2,811	0.7	2,436	0.6	2,705	0.6	3,071	0.6
Timbering	**	n.a.	**	n.a.	- 0 -	n.a.	- 0 -	n.a.	- 0 -	n.a.	- 0 -	n.a.
Transportation, Warehousing	10,779	2.3	8,272	2.0	10,815	2.5	13,801	3.2	13,741	3.0	3,451	0.7
Utilities	12,420	2.7	14,543	3.5	27,099	6.3	22,768	5.3	14,142	3.1	14,103	2.8
Wholesale Trade	13,244	2.8	18,119	4.3	18,189	4.2	18,202	4.2	18,960	4.2	31,766	6.3
Total Gross Sales	**468,228**	**100.0**	**420,841**	**100.0**	**428,628**	**100.0**	**430,738**	**100.0**	**455,628**	**100.0**	**500,660**	**100.0**

** Confidential
n.a. = not available
SOURCE: Kenai Peninsula Borough Economic Development District, *2015 Kenai Peninsula Situations & Prospects* , April 2015

Overall, gross sales by industry for the City increased by close to 7 percent from $468.2 million in 2009 to $500.7 million in 2013. Retail trade accounted for 52.2 percent of the total gross business sales and construction contracting accounted for 14.8 percent of the total gross business sales in 2013.

The City has many visitor attractions including Swiftwater and Centennial Parks and campgrounds with access to the Kenai River, the Kenai River, many river-oriented recreational activities, private lodges and guide services, the Kenai National Wildlife Refuge and several State recreational facilities located in the Soldotna vicinity. The tourism industry experienced a recession in 2008-2009, causing a reduction in visitor travel and related discretionary spending activities. In addition, the closing of the King Salmon fishery on the Kenai River during the past few years further impacted tourism in the water guide-related business activities. The Soldotna Visitors Center maintains visitor counts and, while the visitor count has not quite reached the pre-recession numbers of 49,913 visitors in 2008, the visitor counts are gradually increasing and reached 40,071 visitors in 2014.

2.2.3 Economic Outlook

The City of Soldotna has experienced a moderate but steady growth over the past several years, and there is every reason to expect steady growth to continue. Based on *Envision Soldotna 2030,* the City has consolidated its position as a center for trade and services and for local government and health care for the Central Kenai Peninsula. The City enjoys a diversified economy and provides a safe and friendly home to its residents. A combination of a well-educated and highly-skilled work force, value-added production, commercial and sport fishing, export-based industries, a stable government and health care employment base, excellent schools and housing, a full array of public utilities and services, and a well-rounded retail and service sector provide the City with a strong and resilient economic profile.

The Kenai River flows through the City and is regarded as its most important natural resource. The City, with its scenery, outdoor recreational attractions and sport fishing on the Kenai River, is located in the heart of the Kenai Peninsula nicknamed “Alaska’s Playground,” ensures that tourism will continue to play an increasingly larger role in the economy in the future.

The general outlook for the City of Soldotna is a continuation of moderate growth in the population combined with the continued diversification of the economic base, particularly in health care and social services which are projected to experience the highest growth in the number of jobs in the State with retail trade the second highest. Health care has been one of the fastest growing economic sectors in the State, and this trend is expected to continue. The Central Peninsula General Hospital and its 85,000 square foot state-of-the-art expansion and renovation project provide all types of medical services and health care for the entire region. A new specialty medical office building

was opened in 2016. With the projected increasing senior population on the Kenai Peninsula, health care is expected to continue to be an important economic sector for the region.

Another activity that would have an impact on the region within the 20-year forecast period is the construction of a gas pipeline from the North Slope through Alaska to Nikiski where a large plant and marine terminal for liquefaction and export would be built. A positive decision on the construction of this pipeline in 2018-2019 could add 2,000 to 5,000 more residents to the region during the five to seven years of construction and the projected 40 years of export beginning in 2026. This population increase would increase the demand for goods and services, housing, schools, health care and more. The Kenai Peninsula Borough Economic Development District advises the Kenai Peninsula Borough and its communities to begin considering the demand for these additional services.

The *Envision Soldotna 2030* notes "the Airport contributes to the City's economic strength through businesses associated with flightseeing guided trips to other areas, medical-related transport and private air transportation."

2.3 HISTORICAL AIR TRAFFIC ACTIVITY

This section presents an analysis of the historical air traffic activity at the Airport through 2015. The historical aviation activity is presented including based aircraft and aircraft operations. The data presented are based on FAA records at the National and local levels. Additional information was obtained from the City and the Kenai Peninsula Borough. Other data were obtained based on site visits to the Airport and discussions with persons knowledgeable of the Airport.

2.3.1 General Aviation

General aviation is defined as all civil aviation not classified as air carrier, commuter/air taxi or military. It includes a multitude of diverse and growing uses of aircraft, ranging from flying for enjoyment and the transportation of personnel or cargo by business firms and individuals in privately-owned aircraft, to highly-specialized uses such as pipeline patrol, aerial advertising and agricultural applications. It includes agricultural, industrial and business/corporate aviation; using an aircraft for flight training; the aviation of Federal, State and local governments; and miscellaneous other aviation uses.

The number of aircraft based at an airport is a function of many factors, including the number of active aircraft registered in the airport's Air Service Area, aircraft registered elsewhere but used in the area, aircraft of parties visiting the area for several days or longer, and the existence and location of other general aviation airports in the area.

The following presents a review and analysis of historical general aviation activity at the Airport and includes the historical growth of general aviation aircraft on a national, State and local level. Historical based aircraft at the Airport are discussed and the geographic distribution of based aircraft owners at the Airport is also presented.

2.3.1.1 Growth of General Aviation Aircraft Fleet

Table 2-3 presents the historical growth of the registered general aviation aircraft fleet for the United States, State of Alaska, the Kenai Peninsula Borough and the Soldotna Municipal Airport from 2000 to 2015. The *FAA Aerospace Forecast Fiscal Years 2015-2035* indicates that the total U. S. registered general aviation aircraft fleet decreased by an average annual rate of 0.4 percent from 211,446 aircraft in 2000 to 198,780 aircraft in 2015 while the State of Alaska has decreased by an average annual rate of 1.8 percent from 10,231 aircraft in 2000 to 9,357 aircraft in 2015. Aircraft in the Kenai Peninsula Borough decreased by an average annual rate of 5.6 percent from 895 aircraft in 2000 to 672 aircraft in 2015. The number of aircraft at the Soldotna Municipal Airport increased from 136 aircraft in 2000 to 163 aircraft in 2015, an average annual increase of 1.2 percent.

Table 2-3
Growth of General Aviation Aircraft Fleet

Year	United States	State of Alaska	Kenai Peninsula Borough	Soldotna Municipal Airport
2000	211,446[1]	10,231[2]	895[2]	136[5]
2007	231,606[1]	n.a.	600[4]	165[4]
2010	223,370[1]	n.a.	686[4]	155[4]
2015	198,780[1]	9,357[3]	672[4]	163[4]

n.a. = not available
SOURCES:
1. *FAA Aerospace Forecast Fiscal Years 2015-2035*
2. Software Innovations (Gold Mine)
3. FAA *Aircraft Registry*
4. Kenai Peninsula Borough
5. *Soldotna Municipal Airport Master Plan Update*, June 2004

2.3.1.2 Based Aircraft

The number of aircraft based at an airport is a function of many factors, including the number of active aircraft registered in the airport's air service area, aircraft registered elsewhere, but used in the area, aircraft of parties visiting the area for several days or longer and the existence and location of other airports in the area that accommodate general aviation aircraft and activities. Based aircraft are those aircraft that are hangared or on tiedowns at the Soldotna Municipal Airport or belong to one of the individual leaseholders. Several sources were reviewed to identify the number and types of based aircraft at the Airport.

The number of based aircraft at the Soldotna Municipal Airport increased from 136 aircraft in 2000 to 163 aircraft in 2015 as shown in Table 2-4.

Table 2-4
Historical Based Aircraft

Year	Single Engine	Multiengine Propeller	Jet	Helicopter	Other	Total
2000[1]	**130**	**6**	**0**	**0**	**0**	**136**
2007[2]						**165**
2010[2]						**155**
2015[2]	**152**	**9**	**1**	**1**	**0**	**163**

SOURCES:
1. City of Soldotna and Airport Site Visits (2004 *Soldotna Municipal Airport Master Plan Update*)
2. Kenai Peninsula Borough Tax Assessor Data and Airport Site Visits

Of the 163 total aircraft based at the Airport in 2015, 152 (or 93 percent) are single-engine and 9 (or 6 percent) are multiengine. There is one business jet and one helicopter based at the Airport. It should be noted that only 43 single-engine based aircraft and three ultralights are listed on the latest FAA Form 5010-1, *Airport Master Record*. The City has provided FAA updated information on based aircraft to Basedaircraft.com that will be included in the FAA Form 5010-1 *Airport Master Record*.

There are an estimated 70 tundra-tired aircraft, or about 45 percent, based at the Airport.

Some of the air taxi operators who use nearby lakes in the summer park their aircraft at the Airport in the winter.

Based on information provided by persons knowledgeable of the Airport, there are three ultralight aircraft on the Airport. It should also be noted that ultralight aircraft are not included in either the FAA registered aircraft data base or the data from the Kenai Peninsula Borough.

2.3.1.3 Distribution of Based Aircraft Owners

A review of the Kenai Peninsula Borough records of aircraft located at Soldotna Municipal Airport, cross-referenced with the FAA *Aircraft Registry* to obtain address (zip codes) information on based aircraft owners, was made based on the information provided by the Borough and is summarized in Table 2-5. It should be noted that a total of 163 aircraft are based at the Airport. The zip codes analyzed provide a reasonable basis for identifying the Air Service Area.

Based on the data, about 89 percent of the based aircraft are registered to owners in the State of Alaska and about 58 percent of the registered aircraft owners are listed within the City of Soldotna. About 11 percent are registered to owners in Sterling and Kasilof / Kalfornisky, another 15 percent are registered to owners within other Kenai Peninsula

Table 2-5

DISTRIBUTION OF BASED AIRCRAFT OWNERS
Soldotna Municipal Airport
2015

Location	Aircraft 2015	Location	Aircraft 2015
Kenai Peninsula Borough		Other Alaska Locations	
Soldotna	95	Kodiak	1
Kenai	17	Nenana	1
Sterling	11	Palmer	1
Kasilof	7	Port Alsworth	1
Anchor Point	1	Port Heiden	1
Nikiski	5	Suibtotal	5
Seward	1		
Subtotal	137	Other States	
		North Carolina	6
Municipality of Anchorage		Colorado	2
Anchorage	2	Illinois	2
Eagle River	1	Arizona	1
Subtotal	3	California	1
		Kentucky	1
		Minnesota	1
		New Mexico	1
		Oklahoma	1
		Utah	1
		Washington	1
			18
		TOTAL	163

SOURCE: Kenai Peninsula Borough and FAA Aircraft Registry

Borough communities and 5 percent are registered to owners in other parts of the State. About 11 percent of the total aircraft are registered to owners outside the State of Alaska. (For example, the Samaritan's Purse-owned aircraft are registered to addresses in North Carolina.)

2.3.2 Aircraft Operations

Historical data on aircraft operations at nontowered airports are limited. Based on the latest FAA *Form 5010-1, Airport Master Record*, there were an estimated 15,050 annual aircraft operations at the Airport based on the latest inspection in 2015. However, based on discussions with persons knowledgeable of the Airport, there are an estimated 19,800 annual aircraft operations at the Airport. There appear to be more general aviation itinerant aircraft operations than estimated on the FAA *Form 5010-1, Airport Master Record.* The aircraft operations are described in three categories: air taxi, general aviation and military. These categories are used by the FAA to record and report aircraft operations at airports in the United States. Discussions with persons knowledgeable of the Airport and its operations provided information on the category of aircraft operations that occur at the Airport.

2.3.2.1 Air Taxi

Of the total estimated 19,800 annual aircraft operations, 2,900 (15 percent) are estimated to be by air taxis based on discussions with persons knowledgeable of the Airport. Air taxi operations are the unscheduled operations of "for hire" air taxis carrying passengers and cargo to and from Soldotna and other areas in the State. These operations are primarily by air taxi operators based at the Airport, Natron Air and North Air Service. These flights are flown using light-twin Britten-Norman Islander and single-engine GippsAero GA-8 Airvan aircraft. Air taxi operations also include medevac flights, primarily from Soldotna to Anchorage using Learjet 35/31 and Beech King Air-200 aircraft. There are also some medevac flights using AStar 200 helicopters. There are also some flights by non-Soldotna based air taxis.

There is limited historical data available for air taxi activity at the Airport. Table 2-6 presents the data available from the U.S. Department of Transportation (USDOT), Bureau of Transportation Statistics for 2010 through 2014 for passengers, freight and mail. This data is only for non-Soldotna based air taxis that file data with the USDOT. It does not include any data for the air taxis based at the Airport. Some of the passengers are flown in to fight wild fires.

These air taxis, though infrequent, use predominantly large aircraft over 12,500 pounds (e.g., Lockheed L100-30/L382E, DeHavilland DHC 8-100, Shorts 330 and Beech 1900 A/B/C/D aircraft. There are also some small air taxi aircraft (Cessna 208 Caravan and Piper PA-31 Navajo) flights. The flights were flown by Artic Transportation, Frontier Flying Service, Tanana Air Service, Wright Air Service, Hageland Aviation Service, ERA Aviation, Grant Aviation, Lynden Air Cargo and Alaska Central Express. (ERA, Hageland and Frontier are now part of RAVN Alaska).

Table 2-6
Air Taxi Data

	Passengers		Freight (pounds)		Mail (pounds)	
Year	**Enplaned**	**Deplaned**	**Enplaned**	**Deplaned**	**Enplaned**	**Deplaned**
2010	8	0	0	0	0	0
2011	0	0	0	0	0	0
2012	48	43	0	0	0	0
2013	43	19	7,394	7,394	0	0
2014[a.]	156	274	3,530	10,332	2,763	0

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics
a. Through October 2014

2.3.2.2 General Aviation

Of the total estimated 19,800 annual aircraft operations, 16,800 (85 percent) of the aircraft operations are by general aviation. The general aviation operations are further categorized by itinerant and local operations.

Local Operations. Of the 16,800 general aviation operations, an estimated 10,200 (60 percent) are estimated to be local operations. Local operations are performed by aircraft operating in the local traffic pattern and aircraft departing for, or arriving from, local practice areas. These operations include training operations (referred to as touch-and-goes) by both aircraft based at the Airport and aircraft from other airports in nearby areas and as far away as Anchorage.

Itinerant Operations. Of the total 16,800 general aviation operations, an estimated 6,600 (40 percent) are itinerant operations. Itinerant operations are conducted by aircraft that take off at one airport and land at another airport. They include the operations of aircraft based at the Airport and flights of other aircraft to and from the Airport. These operations include flights across the Cook Inlet and to other parts of Alaska as well as some international flights by Samaritan's Purse. They include flights by CASA C212 aircraft. They also include flights by government aircraft such as the U.S. Fish and Wildlife Service and the Alaska State Troopers.

2.3.2.3 Military

Military operations are estimated to be fewer than 100 annual aircraft operations, or less than one percent, of the total annual aircraft operations. These occasional operations are by C-130 fixed wing aircraft and HH-60 helicopters.

2.4 REVIEW OF RECENT AVIATION ACTIVITY TRENDS AND FORECASTS

A review of historical and forecast trends in aviation activity on the National, State and local levels was made. This review includes historical data and forecast trends on the

National level prepared by the FAA and the 2011 *Alaska Aviation System Plan* prepared by the State of Alaska, Department of Transportation and Public Facilities (DOT&PF). In addition, the aviation demand forecasts prepared for the 2004 *Soldotna Municipal Airport Master Plan Update* are also discussed in this section.

2.4.1 Federal Aviation Administration

Historical and forecast general aviation trends on a National level are published annually by the FAA to meet the budget and planning needs of the FAA and to provide information that can be used by state and local entities, the aviation industry and the general public. The most recent edition was published in March 2015 and is entitled *FAA Aerospace Forecast, Fiscal Years 2015-2035*.

The forecasts are prepared annually based on national trends in the general aviation industry based on a variety of economic assumptions nationwide. The FAA forecasts the active general aviation fleet to increase from 198,860 aircraft in 2014 to 214,260 aircraft by 2035, an average annual rate of 0.4 percent over the 21-year forecast period. The forecast increases in general aviation aircraft are primarily in the higher-performance turbine-powered fleet which is forecast to increase at an average annual rate of 2.4 percent over the forecast period, while the piston-powered single-engine aircraft are forecast to decrease by an average annual rate of 0.6 percent and multiengine aircraft are forecast to decrease by an average annual rate of 0.4 percent.

FAA's *Terminal Area Forecasts* (TAF) are prepared for over 3,300 airports that are included in the FAA's *National Plan of Integrated Airport Systems* (NPIAS). The TAF is designed to assist the FAA in meeting its planning, budgeting and staffing requirements. In addition, state and aviation planners use the TAF as the basis for planning airport improvements.

The latest FAA forecasts of based aircraft and annual aircraft operations for the Soldotna Municipal Airport are included in the *Terminal Area Forecasts 2013-2040* report. Based aircraft are forecast to remain flat with 44 aircraft in 2015 through 2035. (For some reason, according to the FAA *Terminal Area Forecasts*, the number of based single-engine aircraft dropped from 143 in 2007 to 43 in 2008 and multiengine aircraft dropped from 11 in 2007 to one in 2008.) Of the 44 based aircraft, 41 are single engine and three are included in the "other" category. (Note: The FAA data in Basedaircraft.com has since been updated to reflect the latest based aircraft data from the Kenai Peninsula Borough.) Annual aircraft operations are also forecast to remain flat with 15,050 annual aircraft operations in 2015 through 2035. Of the 15,050 annual aircraft operations, 3,000 operations are air taxi, 2,000 operations are itinerant general aviation, 50 operations are itinerant military and 10,000 operations are local general aviation operations. In addition, the forecasts include 16 annual air taxi passenger enplanements and 67 annual commuter passenger enplanements.

2.4.2 Alaska Aviation System Plan

The *Alaska Aviation System Plan* forecasts were published in June 2011 for the State system of airports. Total based aircraft in the State were forecast to account for 4 percent of the U.S. Active Aircraft Fleet accounting for 7,271 aircraft in 2030. Total based aircraft in the Kenai Peninsula Borough were forecast to increase from 314 aircraft in 2008 to 356 aircraft by 2030 and account for 5 percent of the total aircraft in the State. The forecasts for the State represent an average annual increase of 0.8 percent, and the forecasts for the Kenai Peninsula Borough represent an average annual increase of 0.6 percent.

The *Alaska Aviation System Plan* also forecast the mix of aircraft for the Alaska fleet in 2030. Single-engine aircraft are forecast to account for 86 percent of total aircraft; multiengine aircraft are forecast to account for 7 percent of total aircraft; jet aircraft are forecast to account for less than 1 percent of total aircraft, helicopters are forecast to account for 5 percent of total aircraft; and other (experimental and light sport aircraft) are forecast to account for 2 percent of the total aircraft in the State by 2030.

Total annual aircraft operations in the Kenai Peninsula Borough were forecast to increase from 56,790 annual operations in 2008 to 87,518 annual operations in 2030, an average annual increase of 2.0 percent.

Based aircraft at the Soldotna Municipal Airport were forecast to increase from 47 aircraft in 2008 to 53 aircraft by 2030, an average annual increase of 0.5 percent. Annual aircraft operations for the Soldotna Municipal Airport were forecast to increase from 12,000 annual operations in 2008 to 14,267 annual operations by 2030, an average annual increase of 0.8 percent.

2.4.3 2004 Soldotna Municipal Airport Master Plan Update

Aviation demand forecasts were prepared for the 2004 Soldotna Municipal Airport Master Plan Update. Based aircraft at the Airport were forecast to increase from 136 aircraft in base year 2000 to 170 aircraft by 2020, an average annual increase of 1.1 percent. Aircraft operations were forecast to increase from 15,050 annual operations in base year 2000 to 22,100 annual operations by 2020, an average annual increase of 1.9 percent.

2.5 AVIATION ACTIVITY FORECASTS

To assess existing facilities and determine future requirements at the Soldotna Municipal Airport, it is necessary to forecast the demand for facilities expected to be generated by future air traffic activity. Such demand is created by air taxi, general aviation and military air traffic and may be stated in terms of aircraft operations, aircraft basing demand and related components. In turn, the air traffic generated at the Soldotna Municipal Airport relates directly to the population and economy of the City and the surrounding areas; to general aviation trends and forecasts on the National, State and

local levels; and the aviation demand and airport facilities and services provided at other airports in the area.

The aviation activity forecasts presented in this section have been developed based on a review of the population and economic trends for the City of Soldotna; an analysis of the historical air traffic activity at the Soldotna Municipal Airport; and an assessment of aviation trends on the National, State and local levels that have, or may have, a potential effect on aviation activity at the Airport. Discussions with persons knowledgeable of the Airport, including representatives of the City and airport tenants and aircraft owners, have provided valuable insight into the preparation of the aviation demand forecasts. The aviation demand forecasts for the Soldotna Municipal Airport are presented in Table 2-7 and discussed in the following sections.

2.5.1 General Assumptions

The following general assumptions were used in the preparation of the aviation demand forecasts.

- The population and socioeconomic data presented in Section 2.2 are satisfactory for purposes of aviation demand forecasts.

- No policies that would constrain aviation activity will be imposed on the Airport by any governmental entity.

2.5.2 Based Aircraft

The forecasts of based aircraft at the Airport are presented in Table 2-7. Based aircraft are forecast to increase from 163 aircraft in 2015 to 190 aircraft by 2035. This represents an average annual increase of 0.8 percent. The increases in based aircraft are primarily in the single-engine aircraft from 152 aircraft in 2015 to 177 aircraft by 2035 while the multiengine aircraft are forecast to increase slightly from 9 aircraft in 2015 to 11 aircraft by 2035. Business jets and helicopters are forecast to remain at one aircraft each in 2015 through 2035. Tundra-tire aircraft are forecast to increase from about 70 aircraft in 2015 to about 80 aircraft by 2035.

Based on conversations with persons knowledgeable of the Soldotna-Kenai area, it is anticipated that increases in the single-engine aircraft category are more likely to occur at the Soldotna Municipal Airport while the multiengine aircraft and helicopters are more likely to base at the Kenai Municipal Airport located 12 miles northwest of the Airport. Several reasons were cited for locating single-engine aircraft at the Soldotna Municipal Airport including the fact that fueling and maintenance facilities are available at the Airport, the cost of basing facilities are less than at the Kenai Municipal Airport, and some aircraft owners and pilots prefer to operate in the non-air traffic control tower environment at the Soldotna Municipal Airport. In addition, there are also several privately-owned landing strips and lakes in the Soldotna-Kenai area that provide competitive aircraft basing facilities.

Table 2-7

AVIATION ACTIVITY FORECASTS

Soldotna Municipal Airport

2015 - 2035

	Base Year	Forecast			
	2015	**2020**	**2025**	**2030**	**2035**
BASED AIRCRAFT					
Single-engine	152	158	164	171	177
Multiengine-propeller	9	9	10	10	11
Business Jet	1	1	1	1	1
Helicopter	1	1	1	1	1
TOTAL BASED AIRCRAFT	163	169	176	183	190
AIRCRAFT OPERATIONS					
Air Taxi	2,900	3,300	3,500	3,800	4,100
General Aviation					
- Itinerant	6,600	7,100	7,800	8,400	9,100
- Local	10,200	10,600	11,600	12,700	13,700
Subtotal	16,800	17,700	19,400	21,100	22,800
Military	100	100	100	100	100
TOTAL AIRCRAFT OPERATIONS	19,800	21,100	23,000	25,000	27,000
OPERATIONS PER BASED AIRCRAFT	103	105	110	115	120

SOURCE: Aries Consultants Ltd.

2.5.3 Aircraft Operations

Total aircraft operations, presented in Table 2-7, are forecast to increase from 19,800 operations in 2015 to 21,100 operations in 2020; to 23,000 operations in 2025; to 25,000 operations in 2030; and to 27,000 operations by 2035.

2.5.3.1 Air Taxi

Air taxi operations include the unscheduled operations of "for hire" air taxis providing sightseeing tours and carrying passengers and cargo to outlying areas for fishing, hunting and other activities. Air taxi operations also include the medevac flights for the Central Peninsula General Hospital in Soldotna and to other hospitals in Anchorage and the lower 48 states.

Total air taxi operations accounted for an estimated 15 percent of the total aircraft operations at the Airport in 2015 with 2,900 annual aircraft operations. These operations are forecast to continue to account for about 15 percent of the total aircraft operations increasing to 3,300 operations in 2020; 3,500 operations in 2025; to 3,800 operations in 2030; and reach 4,100 annual operations by 2035.

2.5.3.2 General Aviation

General aviation operations are forecast to increase from an estimated 16,800 operations in 2015 to 22,800 operations by 2035. Itinerant operations are forecast to increase from 6,600 operations in 2015 to 9,100 operations by 2035 and continue to account for about 40 percent of total general aviation operations throughout the forecast period. Local operations are forecast to increase from 10,200 operations in 2015 to 13,700 operations by 2035 and continue to account for about 60 percent of total general aviation operations throughout the forecast period.

2.5.3.3 Military

Military operations are estimated to be about 100 aircraft operations in 2015. It is assumed that they will continue to account for a small share of the operations in the future. A constant level of 100 military operations per year has been assumed throughout the forecast period.

2.5.3.4 Operations per Based Aircraft

Operations per based aircraft is a useful guide to estimate the number and types of aircraft operations at a nontowered airport. Operations per based aircraft include the number of operations by visiting itinerant aircraft as well as those based at the facility. The numbers also include training operations. Operations per based aircraft are forecast to increase from an estimated 103 annual operations in 2015 to 120 annual operations by 2035 reflecting a greater utilization of existing aircraft.

2.5.3.5 Peak Hour Aviation Activity

Key forecasts that affect airfield planning are those indicating the levels of activity during the peak hour of the average day of the peak month. The peak hour forecasts are intended for use in the demand-capacity analysis and in determining requirements for future airport facilities.

Based on air traffic control tower (ATCT) records and conversations with ATCT personnel at the Kenai Municipal Airport, 12 percent of annual aircraft operations occur in the peak month (typically July). Peak hour operations are estimated to be 15 percent of the average day in the peak month during the hours the air traffic control tower is open. Based on this analysis, and assuming similar percentages for the Soldotna Municipal Airport, peak hour aircraft operations will increase from 12 operations in 2015 to 13 operations in 2020; to 14 operations in 2025 to 15 operations in 2030; and to 16 operations by 2035.

2.5.4 Potential Demand for Commuter Airline Service

The Soldotna Municipal Airport was provided passenger service by several air carrier and commuter airlines from the 1960s through the late 1980s. Based on FAA historical data, passenger enplanements during the 1980s averaged 6,000 passengers on an annual basis. Regularly scheduled commuter service has not been successful for extended periods at the Airport since the 1980s. There are, however, a number of charter and on-demand air taxi operators at the Airport providing sightseeing tours, access to outlying fishing and hunting areas and other services for recreational and business uses. There are also infrequent flights by air taxi operators not based at the Airport as described earlier.

The activity levels that can be reasonably expected to occur at the Soldotna Municipal Airport are somewhat dependent on the facilities that are provided at the Airport (level of service) and the availability of similar services at other locations in the area (competition). The Kenai Municipal Airport already has a passenger terminal, aircraft parking apron and vehicular parking for commuter airline service plus a longer runway, air traffic control tower, navigational aids and lower instrument approach procedure minimums. Approximately 28 commuter flights are provided on weekdays from the Kenai Municipal Airport to Ted Stevens Anchorage International Airport providing connecting service to virtually any destination worldwide. The Kenai Municipal Airport is a 12-mile, 15-minute drive from Soldotna, and it would appear that at present the drive to Kenai offers the most significant competition to scheduled commuter airline service at the Soldotna Municipal Airport.

Based on discussions with representatives of commuter airlines, they have no plans to provide scheduled service at the Soldotna Municipal Airport because of the lack of demand, lack of commuter airline facilities and the proximity of the Kenai Municipal Airport.

2.5.5 Potential Demand for Small Package/Air Cargo Service

An evaluation of the potential for air cargo/small package/mail service at the Airport was made based on discussions with existing and potential air cargo/small package carriers and knowledge of these types of operations at airports comparable to the Soldotna Municipal Airport in terms of population and geographic location. The express air cargo small package carriers have stringent requirements for their operation centers and distribution networks. Small packages are typically delivered overnight to a centrally-located airport from which the highest density of population in an area can be reached within the shortest period of time (e.g., the Ted Stevens Anchorage International Airport). Pick up and delivery to and from the central airport is primarily by truck, as access to and from the cargo aircraft and the outlying areas is critical to the successful delivery of time-sensitive packages. Small packages going to other areas are transferred to contract carriers, e.g., fixed base operators or air taxis to local airports (e.g., Kenai Municipal Airport) and then to trucks. The Kenai Municipal Airport has existing small package/air cargo facilities plus a longer runway, air traffic control tower, navigational aids and lower instrument approach procedure minimums.

Air cargo/small package/mail are carried either as belly cargo on passenger aircraft or on small aircraft providing small package service at the Kenai Municipal Airport. If the demand warranted, additional services could be provided by an increase in the frequency of service and the use of larger aircraft to the Kenai Municipal Airport. The Soldotna Municipal Airport is not located within a geographic area with a high concentration of population and employment base required to attract the attention of multiple all-cargo air carriers to multiple airports. The Kenai Municipal Airport is better located to serve more of the Kenai-Soldotna market than the Soldotna Municipal Airport.

Based on discussions with representatives of small package/air cargo carriers, they have no plans to provide service to the Soldotna Municipal Airport. They will occasionally use the Airport because of weather or other reasons.

2.6 COMPARISON OF AVIATION ACTIVITY FORECASTS

Forecasts of based aircraft prepared for the 2015 *Soldotna Municipal Airport Master Plan*, 2011 *Alaska Aviation System Plan*, 2004 *Soldotna Municipal Airport Master Plan Update* FAA *Terminal Area Forecasts*, and the FAA *Aerospace Forecasts, Fiscal Years 2015-2035* are graphically illustrated on Figure 2-1. Forecasts of annual aircraft operations are graphically illustrated on Figure 2-2. It should be noted that the forecasts were prepared at different times based on variations in both economic and aviation activity conditions.

2.7 AIRPORT REFERENCE CODE AND DESIGN AIRCRAFT

The FAA definition of the critical aircraft for an airport is used to determine runway requirements for the largest and highest-performing aircraft, based on wingspan/tail height and approach speed, that accounts for at least 500 annual operations. Touch and go

Figure 2-1

COMPARISON OF BASED AIRCRAFT FORECASTS
Soldotna Municipal Airport

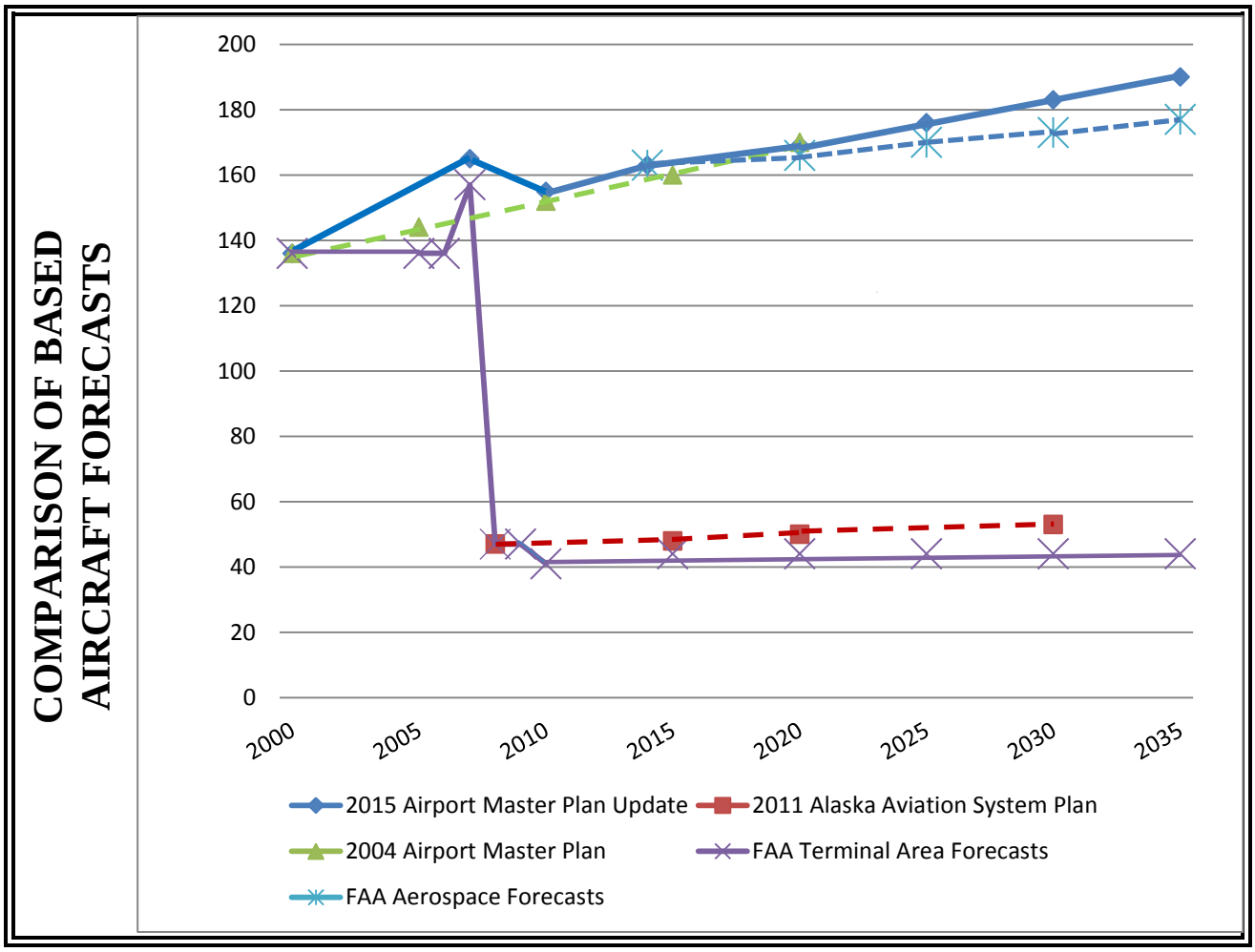
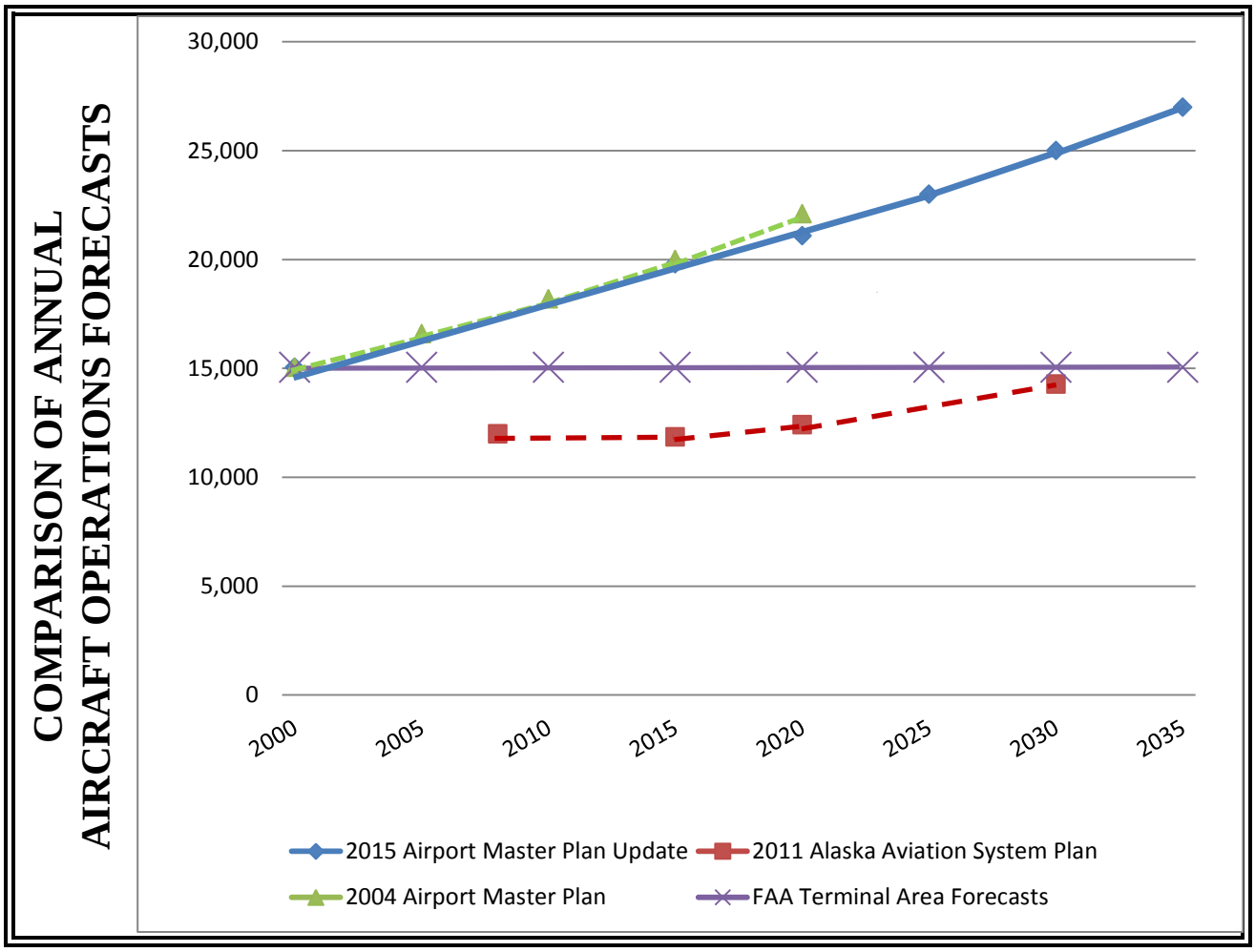


Figure 2-2

COMPARISON OF ANNUAL AIRCRAFT OPERATIONS FORECASTS
Soldotna Municipal Airport



operations do not count toward determination of the critical aircraft. The largest civil aircraft currently using the Airport and expected to use the Airport in the future, with at least 500 annual operations, are as follows:

Aircraft	FAA Airport Reference Code
▪ Beech King Air B-200	B-II
▪ CASA 212	A-II
▪ Britten-Norman Islander BN-2A	A-II

The largest and highest-performing aircraft is a B-II aircraft, therefore, future airport development will be consistent with the requirements of B-II aircraft and the Airport Reference Code is B-II.

Chapter 3

EXISTING AIRPORT FACILITIES

3.1 INTRODUCTION

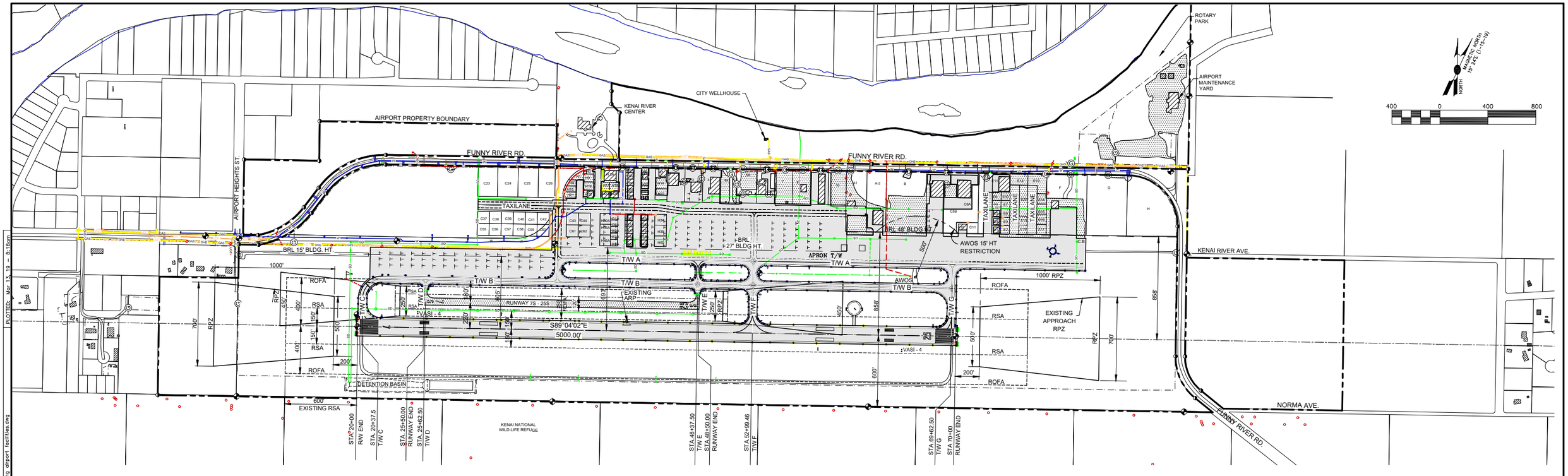
This Chapter presents the existing facilities and conditions at the Airport that are important in the master planning process including the airfield, airspace and navigational aids, general aviation, terminal area/air taxi, airport access and parking, airport support and other areas. The existing airport facilities are illustrated on Figure 3-1 and Figure 3-2 and are listed in Table 3-1.

3.2 AIRPORT PROPERTY

The Airport property encompasses the airfield, aircraft basing facilities and some undeveloped areas. The Airport reference point (ARP) is latitude 60° 28'29.85" and longitude 151°02'17.66". The Airport is situated on 486 acres of land at an elevation of 113 feet above mean sea level (MSL). Of the 486 acres, 15 acres at the west end and 48 acres to the northwest are not within the corporate boundary of the City of Soldotna.

Originally 426.4 acres (Parcel 1) were patented by the U.S. Government to the City for the Airport in 1963. An additional 15.0 acres (Parcel 2) were patented at the west end in 1975. A 37.1-acre Parcel 3 was warranty deeded to the City at the east end in 1984 but was released from being part of the Airport property in 2008. Another 8.3 acres (Parcel 4) were released by the City to the Kenai Peninsula Borough (KPB) in 1995 for the Kenai River Center. Another 49.5 acres (Parcel 5), between the old Funny River Road alignment, Airport Heights Street and Oehler Road, at the northwest end, were warranty deeded to the City in 2007. The 2.7-acre (Parcel 6) at the west end was warranty deeded to the City in 2009. Parcels 7 and 8 were swapped, by quitclaim deed, in 2012 between the City and Kenai Peninsula Borough. In 2014, the old Funny River Road alignment (Parcel 9) was swapped by the State of Alaska to the City in exchange for the new Funny River Road alignment (Parcel 10).

The Airport is in basically a rectangular shape except that part of the northern boundary that is curved along the Kenai River. The existing airport facilities presented in this Chapter are generally used for aviation or aviation-related functions, although several nonaviation uses are permitted. The Airport is bordered by Funny River Road, the Kenai River, the Airport property line and Kenai River Avenue to the north; the Airport property line and Marcus Street to the east; Kenai National Wildlife Refuge and Norma Avenue to the south; and the Airport property line at Airport Heights Drive to the west.



PLOTTED: Mar. 13, 19 - 8:18am

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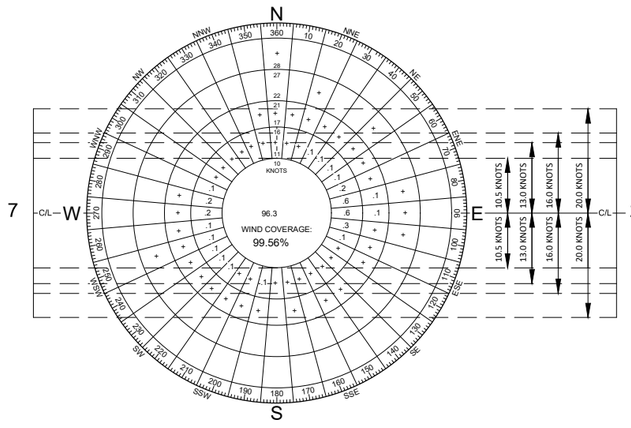
LOT	LESSEE	AREA
H-1	Vacant	7,470
H- 2	Vacant	5,199
H3-A	Bart Bias	19,980
H-5A	Brown Construction	3,416
H-6	Roger Murray	3,000
H-7	Justin Moore	8,910
H-8	David Wartinbee	3,942
H-9	High Adventure Air-Greg Bell	5,873
H-12A	Ron L. Davis	3,675
H-13	William and Connie Green	3,240
H-14	David Petersen	8,910
H-15	Ron Davis	4,986
H-16	High Adventure Air	5,873
H-17	Bart Bias	4,995
H-18	Bart Bias	4,995
H-19A	Ron Davis Jr.	3,675
H-20	Joe Kashi	3,240
H-21	Ron Davis	5,501
H-22	Kurt Eriksson	5,873
H-23	James Stenga	4,995
H-24	Stenga Brothers Development Inc	4,995
H-25A	James Stenga	3,675
H-26	James Stenga	3,240
H-27	Vacant	8,910
H-28A	James Stenga	3,937
H-29	James Stenga	3,480
H-30-A	Robert Bauder	8,010
H-31-A	Chuck Osmond	3,240
H-32-A	Norman H. Guth and S. Kaye Guth Trust	3,672
H-33-A	Peter & Bonnie Ross	3,240
H-34	John Davis	8,910
H-35-A	Vacant	8,010
H-36-A	Bobby McCown	3,240
H-37-A	Kurt Eriksson	3,672
H-38-A	John R. Hughes and Roy I. Whitford	3,240
H-39	Mike Taurianen	8,910
H-40-A	Vacant	3,240
H-41-A	Brad Adams	3,672
H-42-A	Norman H. Guth and S. Kaye Guth Trust	3,240
H-43-A	Russell J. Taylor	3,240
H-44-A	Ron Davis Jr.	3,672
H-45-A	Norman H. Guth and S. Kaye Guth Trust	3,240
H-46-A	Mark and Doug Weathers	8,010
H-47-A	Rick Kraxberger	3,240

LOT	LESSEE	AREA
H-48-A	Norman H. Guth and S. Kaye Guth Trust	3,672
H-49-A	Norman H. Guth and S. Kaye Guth Trust	3,240
H-50	John Davis	8,910
1	Samaritan's Purse	43,330
2	MARC	43,330
3	MARC	43,330
4A	City of Soldotna	37,662
5A	Natron Air	49,045
6	Gary L. and/or Nancy R. Eoff	43,330
7	Clearwater Air	43,330
8	Talon Air Service Inc	43,330
9	Alex Russell, Soldotna Airport Hangar Assoc.	43,330
10	Bill Bryant and Shawn Holly	43,330
A-1	Steve Ippisch	88,492
A-2	Nor-Generations	83,410
B	Vacant - held for City	170,850
C5-B	Samaritan's Purse	158,720
C10	Bart Bias	8,145
C11	Bart Bias	8,145
E1	Gregg & Amanda Motonaga	5,180
E2	Northern Aero Development	5,180
E3	Northern Aero Development	5,180
E4	Northern Aero Development	5,180
E5	Northern Aero Development	5,180
E6	Northern Aero Development	5,180
E7	Vacant	5,180
E8	Vacant	5,180
E9	Vacant	5,180
E10	Vacant	5,180
E11	John Walker, Estate of	23,480
E12	Vacant	14,700
E13	Vacant	21,500
E14	Vacant	6,800
E15	Vacant	6,800
E16	Vacant	6,800
E17	William Booth	6,800
E18	Vacant	5,100
E19	Vacant	5,100
E20	Vacant	17,680
F	Kenai National Wildlife Refuge(USF & WS, Division of Realty)	170,850
G	Vacant	170,850
H	Vacant	178,340
C 23	Vacant	42,900

LOT	LESSEE	AREA
C 24	Vacant	44,200
C 25	Vacant	44,200
C 26	Vacant	69,478
C 37	Vacant	10,000
C 38	Vacant	10,000
C 39	Vacant	10,000
C 40	Vacant	10,000
C 41	Vacant	10,000
C 42	Vacant	10,000
C 43	Vacant	10,000
C 44	Vacant	10,000
C 55	Vacant	10,000
C 56	Vacant	10,000
C 57	Vacant	10,000
C 58	Brian and Tracy Real	10,000
C 59	Vacant	10,000
C 60	Vacant	10,000
C 61	Vacant	10,000
C 62	Vacant	10,000

LEGEND	
EXISTING	
	AIRPORT PROPERTY LINE
	PROPERTY LINE
	BOUNDARY MONUMENTS
	1 1/2" CAP
	PRIMARY SURVEY MONUMENTS
	RUNWAY SAFETY AREA (RSA)
	RUNWAY OBJECT FREE AREA (ROFA)
	BUILDING RESTRICTION LINE (BRL)
	SECURITY FENCING
	AIRPORT REFERENCE POINT (ARP)
	SEGMENTED CIRCLE
	COMPASS ROSE
	ROADWAYS
	PAVEMENT
	GRAVEL SURFACE
	TIEDOWNS
	BUILDINGS
	RUNWAY, APRON, TAXIWAY LIGHTING
	WINDSOCK
	LIGHTPOLE
	POWER POLE
G	GAS
SD	STORM DRAIN
W	WATER
S	SEWER
E	ELECTRIC
T	TELEPHONE
VASI	VISUAL APPROACH SLOPE INDICATOR
GATE	FENCE GATE
F	FUEL ISLAND
33 | 34	SECTION CORNERS
	RUNWAY PROTECTION ZONE (RPZ)



WIND COVERAGE

WIND INFORMATION TAKEN FROM:
AWOS-3 AT SOLDOTNA MUNICIPAL AIRPORT
JANUARY 2006 TO APRIL 2015

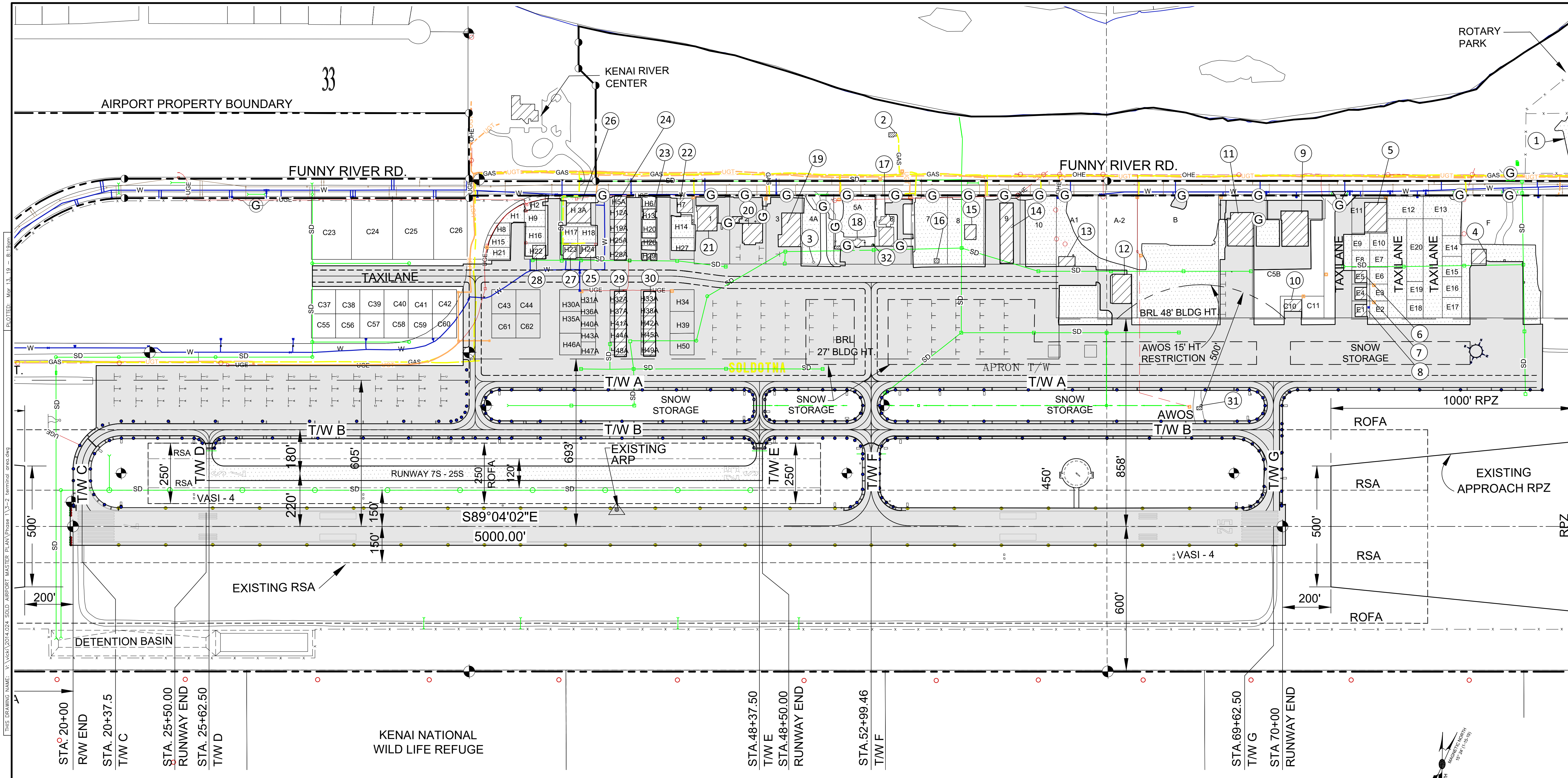
10.5 KNOT CROSSWIND COVERAGE = 99.56%
13.0 KNOT CROSSWIND COVERAGE = 99.81%
16.0 KNOT CROSSWIND COVERAGE = 99.97%
20.0 KNOT CROSSWIND COVERAGE = 100.0%

WINCE-CORTHELL-BRYSON
ARIES CONSULTANTS LTD.

DRAWN BY: VICKI COLEMAN
CHECKED BY: MARK BLANNING DATE: Mar 13,2019

SOLDOTNA MUNICIPAL AIRPORT
EXISTING AIRPORT FACILITIES
SOLDOTNA, ALASKA

FIGURE 3-1



LEGEND	
EXISTING	
	AIRPORT PROPERTY LINE
	PROPERTY LINE
	BOUNDARY MONUMENTS
	1 1/2" CAP
	PRIMARY SURVEY MONUMENTS
	RUNWAY SAFETY AREA (RSA)
	RUNWAY OBJECT FREE AREA (ROFA)
	BUILDING RESTRICTION LINE (BRL)
	SECURITY FENCING
	AIRPORT REFERENCE POINT (ARP)
	SEGMENTED CIRCLE
	COMPASS ROSE
	ROADWAYS
	PAVEMENT
	GRAVEL SURFACE
	TIEDOWNS
	BUILDINGS

LEGEND	
EXISTING	
	RUNWAY, APRON, TAXIWAY LIGHTING
	WINDSOCK
	LIGHTPOLE
	POWER POLE
G	GAS
SD	STORM DRAIN
W	WATER
S	SEWER
E	ELECTRIC
T	TELEPHONE
VASI	VISUAL APPROACH SLOPE INDICATOR
G	FENCE GATE
F	FUEL ISLAND
33 | 34	SECTION CORNERS
	RUNWAY PROTECTION ZONE (RPZ)

NO.	FACILITY	* ELEVATION
1	AIRPORT MAINTENANCE, CITY	123.83'
2	WELL HOUSE "E", CITY	109.05'
3	WEATHER VANE	123.74'
4	HANGAR, US FISH AND WILDLIFE SERVICE	118.84'
5	HANGAR, WALKER	130.57
6	HANGAR, NORTHERN AERO DEVELOPMENT	118.19'
7	HANGAR, NORTHERN AERO DEVELOPMENT	118.19'
8	HANGAR, MOTONAGA	118.84
9	HANGAR, SAMARITAN'S PURSE	140.89'
10	HANGAR, BIAS	127.59
11	HANGAR, SAMARITAN'S PURSE	138.51'
12	HANGAR, NOR-GENERATIONS	135.30'
13	HANGAR, IPPISCH	122.10'
14	HANGAR, SOLDOTNA AIRPORT HANGAR ASSOCIATION	113.02'
15	HANGAR, TALON AIR	113.02'
16	OFFICE, CLEARWATER AIR	115.44'
17	HANGAR AND OFFICE, EOFF	123.80'

NO.	FACILITY	* ELEVATION
18	OFFICE, NATRON AIR	113.71'
19	HANGAR AND PILOTS LOUNGE, MARC	136.03'
20	HANGAR, MARC	121.72'
21	HANGAR, SAMARITAN'S PURSE	126.07'
22	HANGAR, MOORE	123.22
23	HANGAR, GREEN	118.25
24	OPEN HANGAR, BROWN/DAVIS/STENGA	115.79
25	HANGAR, STENGA BROTHERS DEVELOPMENT	120.91
26	HANGAR, BIAS	124.43
27	HANGAR, STENGA	115.76'
28	HANGAR, ERIKSSON	117.44
29	OPEN HANGAR, GUTH/ERIKSSON/ADAMS/DAVIS	113.29
30	OPEN HANGAR, ROSS/HUGHES/WHITFORD/GUTH	113.29
31	AWOS BUILDING, CITY/FAA	111.46'
32	BEACON, CITY	117.68'

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DRAWN BY: VICKI COLEMAN DRAWING:
CHECKED BY: MARK BLANNING DATE: Mar 13,2019

SOLDOTNA MUNICIPAL AIRPORT
EXISTING TERMINAL AREA FACILITIES
SOLDOTNA, ALASKA

FIGURE 3-2

Table 3-1

AIRPORT FACILITIES

Facility Number	Facilities/Owner
1	Airport Maintenance, City
2	Well House "E", City
3	Weather Vane/Private
4	Hangar, US Fish and Wildlife Service
5	Hangar, Walker
6	Hangar, Northern Aero Development
7	Hangar, Northern Aero Development
8	Hangar, Motonaga
9	Hangar, Samaritan's Purse
10	Hangar, Bias
11	Hangar, Samaritan's Purse
12	Hangar, Nor-Generations
13	Hangar, Ippisch
14	Hangar, Soldotna Airport Hangar Association
15	Hangar, Talon Air
16	Office, Clearwater Air
17	Hangar and Office, Eoff
18	Office, Natron Air
19	Hangar and Pilots' Lounge, MARC
20	Hangar, MARC
21	Hangar, Samaritan's Purse
22	Hangar, Moore
23	Hangar, Green
24	Open Hangar, Brown/Davis/Stenga
25	Hangar, Stenga Brothers Development
26	Hangar, Bias
27	Hangar, Stenga
28	Hangar, Eriksson
29	Open Hangar, Guth/Eriksson/Adams/Davis
30	Open Hangar, Ross/Hughes/Whitford/Guth
31	AWOS Building, City/FAA
32	Beacon, City

SOURCE: City of Soldotna

3.3 AIRFIELD

The existing airfield consists of two runways (Runway 7-25 and Runway 7S-25S) that are asphalt-paved and gravel, respectfully. There is a full-length parallel taxiway for Runway 7-25 with three exit/entry taxiways. There are two exit/entry taxiways for Runway 7S-25S. The runways, taxiways, aircraft parking aprons, pavement conditions, runway markings, lighting and navigational aids of the Airport are described below.

3.3.1 Runways and Taxiways

The orientation, physical dimensions and effective gradient of the runways are as follows:

Runway	Orientation	Physical Dimensions (Feet)	Effective Gradient (%)
7-25	East-West	5,000 by 132	0.35
7S-25S	East-West	2,300 by 60	0.22

Runway 7-25 is asphalt paved in fair condition, painted with nonprecision instrument runway markings and equipped with medium intensity runway lights (MIRL). The runway orientation is South 89 degrees, 04 minutes, 09 seconds, East, true.

Runway 7S-25S is gravel in fair condition, with reflectors and cones and no runway edge lighting. The runway orientation is the same as the main runway. The runway centerline is 220 feet north of the centerline of Runway 7-25. Runway 7S-25S is not maintained in the winter but it is used by ski-equipped aircraft.

There is a full-length parallel taxiway for Runway 7-25 provided by Taxiway B. There is an entry/exit taxiway at each end of Runway 7-25 (Taxiways C and G). There is an additional exit Taxiway F along the runway. Additionally, there is a full-length apron taxiway provided by Taxiway A which leads to the main aircraft parking apron. All of these taxiways are 50 feet wide, asphalt surfaced and in fair condition, except Taxiway B which is in poor condition.

3.3.2 Pavement Strength

In June 1995, nondestructive load-deflection testing on Runway 7-25, Taxiways C, F and G, and the apron area was performed in order to determine overlay requirements for 155,000-pound design aircraft (i.e., C-130 and Lockheed L-382 aircraft). Subsurface testing was also performed.

In 1996, as a result of the testing, Runway 7-25, Taxiways C, F and G and a portion of the central apron were overlayed with 2 ½ inches of asphalt. Base reconstruction was also performed on the central apron area.

According to the latest FAA Form 5010-1, *Airport Master Record*, last inspected in July 2014, Runway 7-25 is of asphalt construction and considered by the FAA to be in fair condition. Runway 7S-25S is of gravel construction and considered by the FAA to be in fair condition. The current estimated runway pavement strengths, according to the Airport Layout Plan (last revised January 2014), by aircraft landing gear configurations, are as follows:

Aircraft Maximum Gross Weight (Pounds)		
Runway	Single-Wheel	Dual-Wheel
7-25	75,000	155,000
7S-25S	------	------

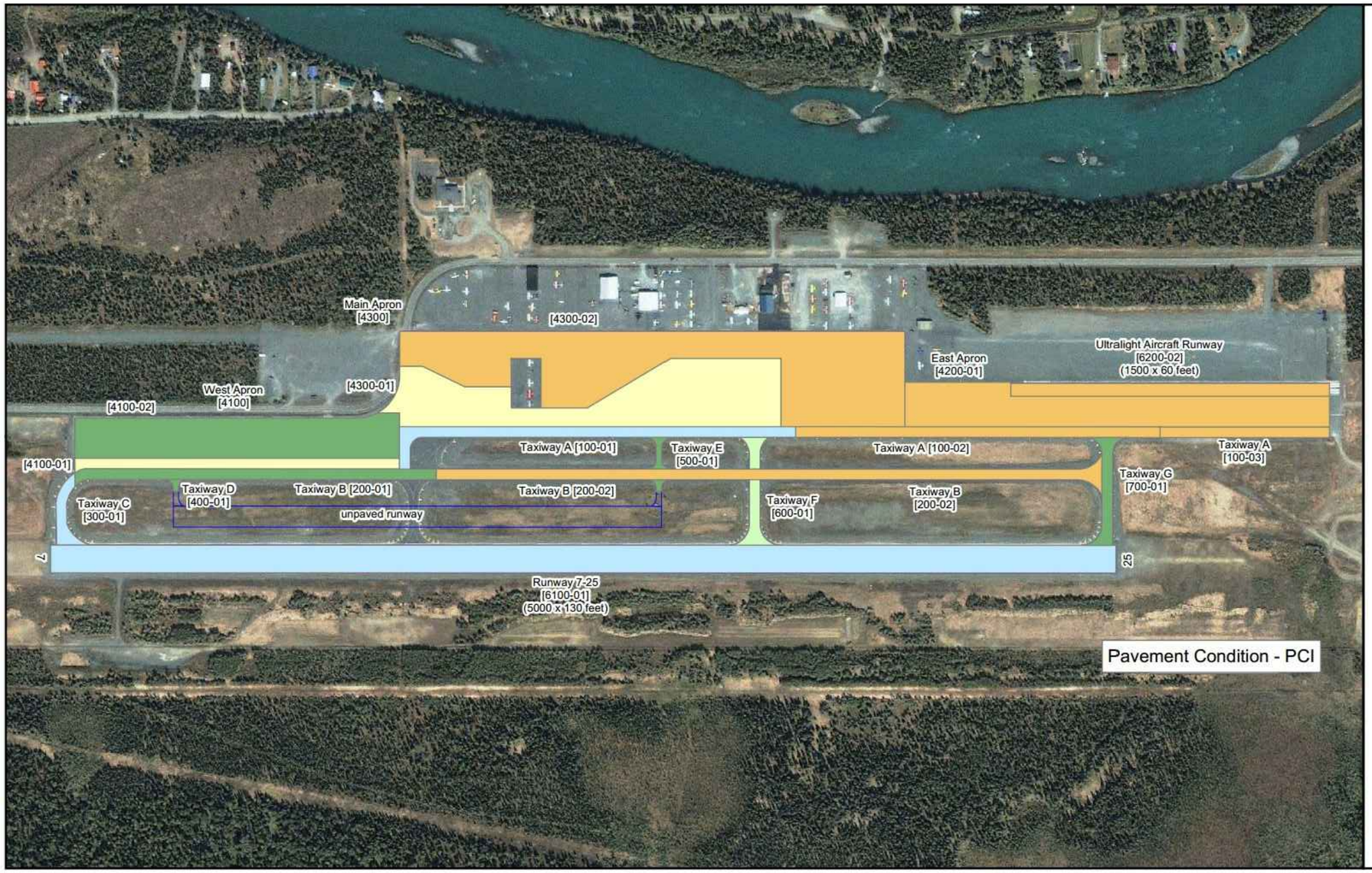
Approximately every three years, the State of Alaska Department of Transportation and Public Facilities performs pavement condition surveys on airports around the State. The conditions are rated according to the U.S. Army Corps of Engineers Pavement Condition Index (PCI) methods as described in FAA Advisory Circular (AC) 150/5380-6B, *Guidelines and Procedures for Maintenance of Airport Pavements*. This method gives a PCI of 100 for a perfect, new pavement. Deductions are made for measured pavement distresses so that a completely failed pavement would have a PCI of 0. Pavement at the Soldotna Municipal Airport was last inspected in 2014 and the results are shown on Figure 3-3.

FAA AC 150/5335-5B, *Standardized Method of Reporting Airport Pavement Strength*, provides updated guidance and design software for evaluating existing pavement section performance under known and/or projected aircraft fleet mix annual operations. This Advisory Circular provides for establishing and reporting the standardized International Civil Aviation Organization (ICAO) airport runway, taxiway and apron pavement strengths. Following the establishment and approval of the Aviation Activity Forecasts and aircraft fleet mix in Chapter 2, the procedure will be run and the values presented on the new Airport Layout Plan and on the FAA Form 5010-1.

3.3.3 Runway Safety Areas, Runway Object Free Areas and Runway Obstacle Free Zones

The runway safety area (RSA) is 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 identified on the current Airport Layout Plan for Runway 7-25 is 6,200 feet long and 300 feet wide and meets FAA design criteria for Airplane Design Group III (wingspans up to, but not including, 118 feet). The RSA for Runway 7S-25S is 2,780 feet long and 120 feet wide and meets FAA design criteria for Airplane Design Group I (wingspans up to, but not including, 49 feet).

The runway object free area (ROFA) is an area on the ground centered on a runway provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the ROFA for air navigation or aircraft ground maneuvering purposes. The ROFA identified on the current Airport Layout Plan



Soldotna Municipal Airport

Airport Code: SXQ
Site Number: 50713.2*.A

2014 Pavement Inspection Results

Map Compiled by Central Region Materials, AK DOT&PF

Pavement Condition Index (PCI)

Target PCI Range for Runways: 70 to 100
Target PCI Range for Taxiways and Aprons: 60 to 100

PCI Values	General Pavement Recommendations
85 - 100	Do Nothing or Preventative Maintenance
70 - 84	Preventative Maintenance
60 - 69	Corrective Maintenance
55 - 59	Rehabilitate
40 - 54	Rehabilitate
25 - 39	Reconstruct
10 - 24	Reconstruct
0 - 9	Reconstruct

[ ] Branch-Section Identifier

Aerial Image: July 2005, GeoEye's IKONOS Satellite

N
S

0 250 500 1,000
Feet

WINCE-CORTHELL-BRYSON
ARIES CONSULTANTS LTD.

DRAWN BY: VICKI COLEMAN
CHECKED BY: MARK BLANNING DATE: Mar 13,2019

SOLDOTNA MUNICIPAL AIRPORT
2014 PAVEMENT INSPECTION RESULTS
SOLDOTNA, ALASKA

FIGURE
3-3

(ALP) for Runway 7-25 is 6,200 feet long and 800 feet wide and meets FAA design criteria for Airplane Design Group III.

The ROFA for Runway 7S-25S is 2,780 feet long and 250 feet wide and meets FAA design criteria for Airplane Design Group I.

The runway obstacle free zone (ROFZ) is the airspace above a surface centered on the runway centerline. The ROFZ for Runway 7-25 is 5,400 feet long and 400 feet wide and meets FAA design criteria that require the width to be 250 feet for small aircraft of less than 12,500 pounds maximum gross take off weight in Airplane Design Group III.

The ROFZ for Runway 7S-25S is 2,700 feet long and 250 feet wide and meets FAA design criteria for small aircraft in Airplane Design Group I.

3.3.4 Runway Utilization

Based on discussions with persons knowledgeable of the Airport, it is estimated that Runway 7 is used approximately 70 percent of the time and Runway 25 is used approximately 30 percent of the time. Runway 7 is designated as the calm wind runway when winds are less than 5 miles per hour. It is estimated that the gravel Runway 7S-25S is used approximately 40 percent of the time.

No simultaneous/parallel aircraft operations are allowed on the two runways.

3.4 AIRSPACE AND NAVIGATIONAL AIDS

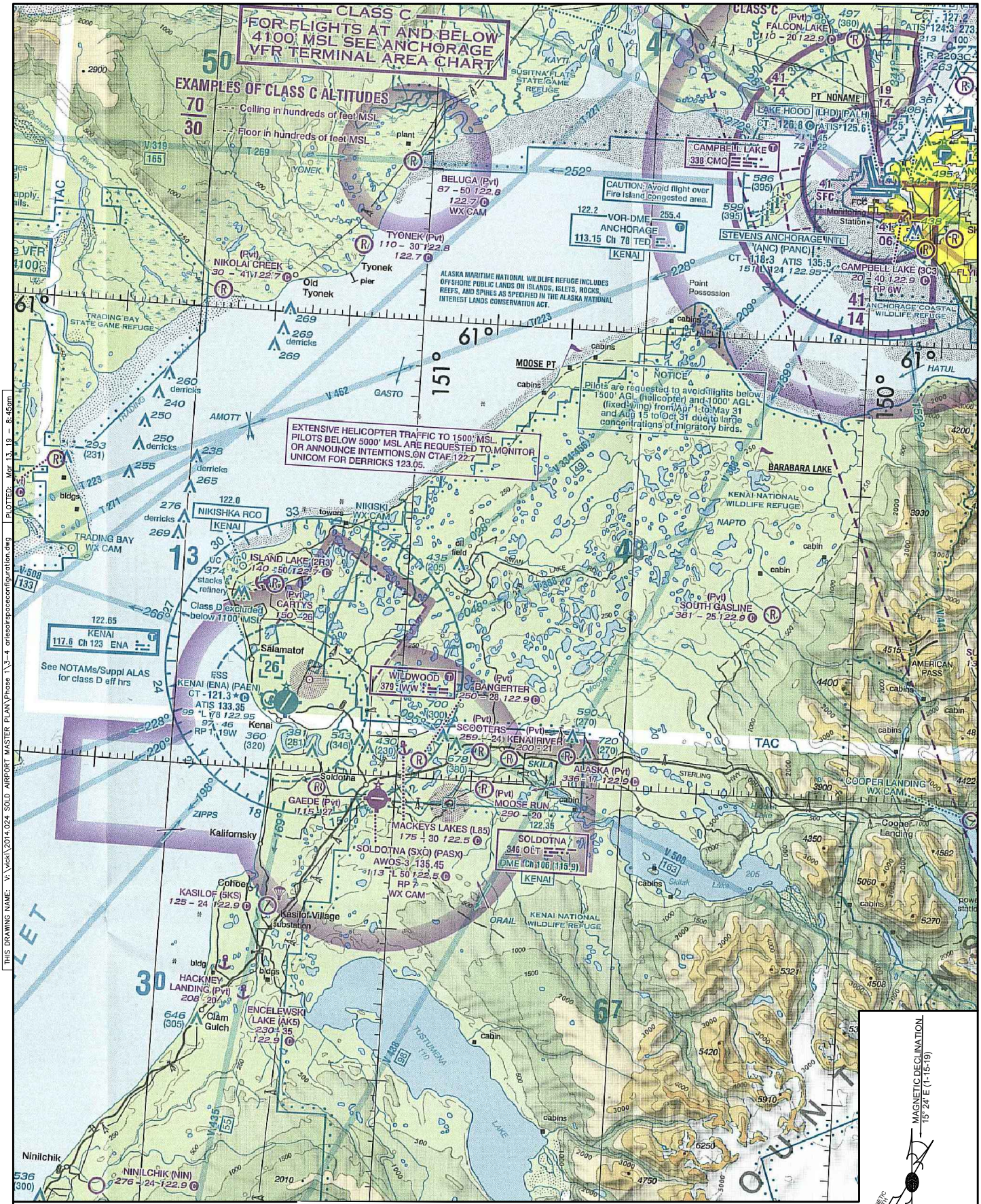
Airspace and navigation aid considerations include airspace and air traffic control, approach areas and obstructions, runway protection zones and navigational and landing aids. Meteorological conditions are also presented.

3.4.1 Airspace and Air Traffic Control

Figure 3-4 shows the Soldotna Municipal Airport in relation to the major navigational aids, low altitude airways, instrument flight rules (IFR) approaches and other airports. There are several other private airstrips and lakes (e.g., Alaska Airpark, Bangerter Field, Gaede, Kenai River Airpark, Mackeys Lakes, Moose Run Airstrip and Scooter's Landing Strip) in the Soldotna area and these are also shown on Figure 3-4 from the Seward Sectional Aeronautical Chart published by the FAA.

There are several navigational aids (NAVAIDS) that provide the basis of the low altitude airway structure in the area. The nearest, shown on Figure 3-4, are the Kenai VOR/DME, the Anchorage (TED) VOR/DME and the Homer VOR/DME. A VOR is a very high frequency omnidirectional radio range. DME is distance measuring equipment.

The above NAVAIDS are presented below with the approximate distance in nautical miles (NM) and general direction from the Airport.



NOT FOR NAVIGATIONAL PURPOSES
SOURCE: SEWARD SECTIONAL AERONAUTICAL CHART, FAA

THIS DRAWING NAME: V:\vicki\2014.024 SOLD AIRPORT MASTER PLAN\Phase 1\3-4 ariesairspaceconfiguration.dwg PLOTTED: Mar 13, 19 – 8:45am

WINCE-CORTHELL-BRYSON
ARIES CONSULTANTS LTD.

DRAWN BY: VICKI COLEMAN DWG: AIRSPACECONFIG
CHECKED BY: MARK BLANNING DATE: 3/13/19

SOLDOTNA MUNICIPAL AIRPORT
MASTER PLAN
AIRSPACE CONFIGURATION
SOLDOTNA, ALASKA

FIGURE
3-4

Name	Location Relative to Soldotna Municipal Airport	
Kenai VOR/DME	9	NM northwest
Anchorage (TED) VOR/DME	47	NM north northeast
Homer VOR/DME	47	NM south southwest

The Soldotna nondirectional radio beacon (NDB) with collocated distance measuring equipment (DME) is located 4 NM east of the Runway 25 threshold. It is primarily a navigational aid for the Soldotna Municipal Airport. However, this NDB is also used to identify navigational fixes along the low altitude airway system near both the Soldotna Municipal and Kenai Municipal Airports, including fixes associated with IFR approach procedures to both airports.

3.4.1.1 Published IFR Procedures

There are five published nonprecision IFR approaches for the Airport. Two are based on the satellite global positioning system (GPS) and have straight-in minimums to each end of the main Runway 7-25. Two are based on the Soldotna NDB/DME and have straight-in minimums to each end of the main Runway 7-25. One is based on the Kenai VOR/DME and is to the Airport with circling minimums only. These approach procedures are identified as RNAV(GPS) RWY7 and RNAV(GPS) RWY25, NDB RWY7, NDB RWY25 and VOR/DME-A, respectively.

Two IFR procedures, localizer performance (LP) and lateral navigation (LNAV), of a new class of GPS/WAAS (Wide Area Augmentation System) are now available at the Airport for properly equipped aircraft. The LP and LNAV procedures do not provide vertical guidance and are considered nonprecision approaches.

The IFR minimums for these approach procedures vary from approximately 500 feet above ground level (AGL) with 1 statute mile visibility to approximately 900 feet AGL with 2-3/4 miles visibility, depending on the procedure and approach category of the aircraft flying the procedure. In general, the RNAV (GPS) LP approach to Runway 25 has the lowest minimums at 520 feet MSL (i.e., 407 feet AGL) and 1 statute mile visibility.

3.4.1.2 Air Traffic Control

The air traffic control (ATC) facility that serves the Soldotna Municipal Airport is the Anchorage Air Route Traffic Control Center (ARTCC). The ARTCC, commonly known as Center, provides ATC for en route IFR aircraft, and for approach and departure IFR aircraft for the Soldotna Municipal Airport. The common traffic advisory frequency (CTAF) for Soldotna is 122.5 designed for the purpose of traffic advisories by broadcasting location and intentions.

3.4.1.3 FAA Flight Service Station

A Flight Service Station (FSS) is an air traffic facility that provides pilot weather briefings, en route communications, visual flight rules (VFR) search and rescue services, assistance to lost aircraft and aircraft in emergency situations. They also relay ATC clearances, originate Notices to Airmen (NOTAM), broadcast aviation weather and National Airspace System (NAS) information, receive and process flight plans and monitor navigational aids.

The Kenai FSS provides these services on a 24-hour basis to a large area of Alaska, including Soldotna and the surrounding area. There is a remote communications outlet (RCO) at the Soldotna Municipal Airport that permits radio communications with the Kenai FSS. Kenai FSS can relay IFR clearances and departure releases from Anchorage Center directly to aircraft on the ground at the Soldotna Municipal Airport, providing a more effective and efficient operation. This RCO is listed as the Soldotna RCO with a radio frequency of 122.35 in the *Supplement Alaska*, published by the FAA Aeronautical Information Services.

3.4.1.4 Airspace Usage

The use of airspace in the Soldotna area is influenced by mountainous terrain. The terrain keeps minimum en route altitudes (MEA) relatively high over the mountainous areas. Mountain peaks rise to over 5,000 feet MSL within 25 nautical miles (NM) southeast of the Airport, and over 6,000 feet MSL to the west-northwest of the Airport. MEAs on V508, one of the low altitude airways that pass near the Airport, are 9,000 feet MSL at 12 NM to the southeast and 12,000 feet MSL at 35 NM to the west-northwest. Additionally, mountain peaks rise to over 10,000 feet within 35 NM to the west of the Airport and within 70 NM to the southwest of the Airport. These peaks affect the MEAs on V462 and V456. The MEA on V462 is 14,000 feet MSL at 28 NM and on V456 is 13,000 feet MSL at 44 NM from the Kenai VOR/DME.

New GPS/WAAS airways, requiring GPS enhanced by WAAS, are being established in Alaska, including three airways that pass near Soldotna. These airways are denoted by the letter T preceding the airway number. The T227 passes through the Amott Intersection, located north-northwest of Soldotna and continues in a southwesterly direction. The T223 originates at the Anchorage VOR/DME, overlying the V462 airway, passing through the Amott Intersection and continues in a southwesterly direction. The T271 originates at the Amott Intersection and also continues in a southwesterly direction between T227 and T223.

The significance of these emerging new airways is the enhanced accuracy allowing lower minimum en route altitudes by avoiding some mountainous terrain. More of these GPS/WAAS airways can be expected in the future.

The Soldotna terminal area airspace serves a wide range of civil and military aircraft operations, both IFR and VFR. The main difference between IFR and VFR is that the pilot maintains spatial orientation by reference to instruments for IFR operations and by visual reference to the ground for VFR operations. VFR activity requires good visibility whereas IFR activity can be accomplished in poor visibility. Meteorological conditions that permit flight under VFR are prescribed in the Federal Aviation Regulations (FAR) Part 91, *General Operating and Flight Rules*, Paragraph 155, *Basic VFR Weather Minimums,* in terms of visibility and distance from clouds.

The Soldotna Municipal Airport is bordered on the south side by the Kenai National Wildlife Refuge. Limited portions of the Kenai National Wildlife Refuge are seasonally open to aircraft operations, except for most wilderness areas and lakes adjacent to recreation sites such as campgrounds and hiking trails connected to roads. Emergency events are excluded from landing restrictions. The FAA advises pilots to make every effort to fly at not less than 2,000 feet above a national wildlife refuge.

3.4.1.5 IFR Operations

The Soldotna Municipal Airport is within the Anchorage ARTCC area of jurisdiction. Centers may delegate airspace to local ATC facilities for IFR approach and departure control. However, Anchorage ARTCC has retained Approach/Departure control for Soldotna Municipal Airport.

As IFR aircraft near the Soldotna terminal area airspace, Anchorage Center clears them to descend from en route altitudes and transfers control to an approach controller within the Center who has the responsibility for controlling aircraft from this point to the final approach course to the runway of intended landing while maintaining prescribed separation from other aircraft. As aircraft near the final approach course, they are instructed to descend further and cleared for the approach. At this time, or shortly after, the pilots are instructed to switch to the Soldotna CTAF of 122.5.

The three IFR procedures to and from the Soldotna Municipal Airport interact to a limited degree with IFR procedures at the Kenai Municipal Airport but do not seriously affect the capacity for either existing or forecast air traffic demand. However, when wind is basically from the northeast and IFR approaches are to Runway 7 at Soldotna Municipal and Runway 1L at Kenai Municipal, the Kenai approaches are designed to pass over the Soldotna approaches by at least 1,000 feet, the minimum required vertical separation.

For any IFR departures from these airports, pilots must be in contact with the Anchorage Center Approach/Department Control or the Kenai Air Traffic Control Tower. There is a floor of Class E controlled airspace at 700 feet above ground level surrounding both airports. There are Class E airspace surface area extensions with floor at 700 feet above the surface that laterally abuts 1,200 feet, or higher, Class E airspace to the east and west

to provide controlled airspace for instrument approaches. Only Soldotna and Kenai Municipal Airports have IFR approach procedures and pilots are in contact with the Anchorage Center Approach Control until released prior to landing.

3.4.1.6 VFR Operations

Unlike IFR flights, VFR flights in the Soldotna terminal area airspace are not controlled by the air traffic control system except in the Class D airspace surrounding the Kenai Municipal Airport. All airports contribute to VFR traffic, and the Soldotna Municipal Airport underlies a relatively busy northeast-southwest VFR flyway to and from the Ted Stevens Anchorage International Airport. For some of the traffic using this northeast-southwest VFR flyway, Soldotna Municipal Airport is the origin or destination airport.

During the summer months there is significant VFR traffic through the local airspace consisting of small aircraft flying east-west primarily from nearby lakes.

Airport traffic patterns related to the main runway and gravel runway are separated by not allowing simultaneous parallel operations. Pilots are to sequence on the CTAF. Right turn rectangular traffic patterns have been established for Runways 7 and 7S, to avoid overflights of development areas, whereas Runways 25 and 25S have standard left turn rectangular traffic patterns. The traffic pattern altitudes are established at 906 feet MSL.

3.4.2 Approach Areas and Obstructions

The FAA Form 5010-1, *Airport Master Record* (last inspected in July 2014), other charts and documents and an obstruction survey conducted during the 2004 *Airport Master Plan Update*, were reviewed to identify obstructions as defined by FAR Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace.* FAR Part 77 establishes imaginary surfaces, related to airports and their runways, which are used to identify obstructions.

The following tabular data shows the FAR Part 77 approach surface slopes, compared with existing obstacle/obstruction controlled approach slopes and other information relative to the controlling obstacle/obstructions:

SOLDOTNA MUNICIPAL AIRPORT CURRENT CONTROLLING OBSTACLES/OBSTRUCTIONS						
				Controlling Obstacle/Obstruction Location from Runway Threshold, Related to Extended Runway Centerline		
Runway Number	Runway Elevation (Feet)	FAR Part 77 Slope	Actual Slope	Controlling Obstruction Type	Height Above Threshold (Feet)	Obstruction Location from Runway Threshold, Related to Extended Runway Centerline.
7	96	34:1	28:1	Trees	45	1,470 feet from end of runway and 390 feet to the south of the extended runway centerline
25	113	34:1	41:1	Trees	50	2,265 feet from end of runway and 118 feet to the south of the extended runway centerline
7S	95	20:1	50:1	None		
25S	100	20:1	50:1	None		

The trees referred to above as controlling obstructions are on airport property but are not yet scheduled to be removed.

The existing building restriction lines (BRL) meet FAA design standards for the main runway and have no penetrations. The BRL is 858 feet (48-foot building height) from the centerline on the north side of Runway 7-25 at the east end; 693 feet (27-foot building height) in the center and 605 feet (15-foot building height) at the west end. It should be noted that the BRL is 473 feet north of the centerline of Runway 7S-25S at the east end and 385 feet at the west end.

3.4.3 Runway Protection Zones

Runway protection zone dimensions are no longer based on FAR Part 77 approach surface dimensions. The dimensions are now established in the FAA AC 150/ 5300-13A, *Airport Design,* for each individual runway, by approach visibility minimum for, and by, category of aircraft that the individual runway will serve.

The following tabular data shows the type of existing runway protection zone and dimensions established for each runway approach end:

Runway	Runway Protection Zone	Length in Feet	Inner Width in Feet	Outer Width in Feet
7	Nonprecision	1,000	500	700
25	Nonprecision	1,000	500	700
7S	Visual	1,000	250	450
25S	Visual	1,000	250	450

The runway protection zones (RPZ) are all entirely within the Airport property line.

3.4.4 Navigational and Landing Aids

The Soldotna Municipal Airport underlies the 126-degree radial of the Kenai VOR/DME at a distance of 9.6 NM. The Airport also underlies a 66-degree bearing to the Soldotna NDB at a distance of 4.3 NM. Both of these NAVAIDS are the basis of published IFR procedures to the Airport and Runways 7 and 25, respectively.

Runway 7-25 is equipped with medium intensity runway lights (MIRL). Runways 7 and 25 both have a visual approach slope indicator (VASI-4) and both have 3-degree approach slopes.

There is an Airport rotating beacon located approximately 1,200 feet north of Runway 7-25. There is a lighted wind indicator and segmented circle with traffic pattern indicators on the north side that was relocated to near the east end of Runway 7-25 in 2008. There is a wind sock near the end of Runway 7.

There is an automated weather observing system (AWOS-3) that was relocated to north of the end of Runway 25 in 2008. Airport and area weather forecasts, along with en route forecasts are recorded for transcribed weather broadcasts (TWEB) over the Kenai VOR frequency of 117.6 megahertz (MHz). There is a compass rose painted on the apron that needs to be calibrated periodically.

A weather camera is available on the internet.

3.4.5 Meteorological Conditions

Data for January 2006 to April 2015 collected by the AWOS-3 located at the Airport has been obtained from the FAA. Based on the wind rose calculated from the latest data provided by the FAA, Runway 7-25 provides 99.6 percent coverage for 10.5 knot crosswinds 99.8 percent coverage for 13.0 knot crosswinds, 100.0 percent for 16.0 knot crosswinds and 100.0 percent for 20.0 knot crosswinds.

However, based on conversations with persons knowledgeable of the Airport and, as noted in the *Supplement Alaska*, this data may be unrepresentative of runway wind conditions because of the hilly terrain to the south of the Airport.

Based on the 2006 to 2015 data, the ceiling and visibility conditions are less than 1,000 feet ceiling and 3 miles visibility 7.0 percent of the time.

According to the University of Alaska Arctic Environmental Information and Data Center, Soldotna experiences mild summers and relatively warm winters. The summer months of long days and a temperate climate make the area rich for outdoor activities. Winter temperatures remain more maritime relative to inland Alaska communities.

Soldotna experiences the following climatological averages:

Precipitation	Mean Annual	17.4 inches
	Maximum Day	1.5 inches
	Annual Snowfall	41.1 inches
Temperature	January Mean High	19.2 degrees
	January Mean Low	-2.5 degrees
	July Mean High	65.8 degrees
	July Mean Low	46.7 degrees
Daylight	Summer Maximum	19.21 hours
	Winter Maximum	5.28 hours

3.5 GENERAL AVIATION

General aviation facilities at the Soldotna Municipal Airport are located on the north side of the airfield.

3.5.1 Commercial and Noncommercial Aviation

The Airport has different sized lots that are leased for several general aviation uses. The lease lots are shown on Figure 3-1. Forty-seven small H lots (from 3,000 square feet up to 19,980 square feet) are provided at the west end of the existing airport development. Ten small commercial lots (from 37,662 square feet up to 49,045 square feet) are located in the center of the Airport. Eight large commercial lots (from 77,150 square feet up to 178,340 square feet) are located at the east end of the Airport, of which two lots are currently available for lease. Another of the large lots is planned as a future City terminal area. In addition, at the east end there are 22 smaller lease lots varying in size from 5,100 square feet up to 23,480 square feet.

A new gravel aircraft parking apron was built in 2011 at the northwest end of the Airport between the old and new alignments of Funny River Road. The new gravel apron will initially have 20 lease lots, four of which will be over 42,900 square feet while the other

16 will be 10,000 square-foot lease lots. There are two new access gates and roadways into this area. A construction project began in May 2015 that will further expand the new northwest gravel apron.

The Missionary Aviation Repair Center (MARC) provides flight instruction, aircraft maintenance, aircraft parts and FAR Part 91, *General Operating and Flight Rules*, flights within Alaska. They have two hangars, one for aircraft storage and one for maintenance, and also long-term tiedowns. They provide aircraft fueling for 100 low lead and Jet A with a 24-hour card lock system at a fuel island as well as Jet A refueling from trucks.

Samaritan's Purse flies FAR Part 91 flights to villages in the Bush and to Russia as well as international relief and disaster relief flights. They have three hangars and long-term tiedowns. They also provide fueling for their own aircraft.

Natron Air provides both passenger and cargo FAR Part 135, *Operating Requirements: Commuter and On-Demand Operations*, fishing, hunting and sightseeing charter flights from the passenger and cargo terminal building located on their lease lot. Natron Air has tiedown facilities and fueling for their own aircraft. Clearwater Air has an office building and tiedowns and provides FAR Part 135 charter flights for fishing, hunting and sightseeing trips and fueling for their own aircraft.

Soldotna Aircraft Repair provides aircraft maintenance services from a hangar they lease from Stenga Brothers Development.

The Soldotna Airport Hangar Association has a 10-unit hangar building on a 43,330 square-foot commercial lot. Gary and Nancy Eoff have a hangar and tiedown spaces and an attached office on a 43,330 square-foot commercial lot. Ippisch has a hangar on a 88,492 square-foot commercial lot.

Nor-Generations has a hangar on a 83,410 square foot lease lot.

On the H lots, Ron Davis/Brown Construction/James Stenga have an open five-unit 13,200-square foot hangar. Guth/Eriksson/Adams/Davis/Kelley also have an open five-unit hangar on the H lots. Ross/Hughes/Whitford/Guth also have an open five-unit hangar on the H lots. Bart Bias has a hangar on a 19,980 square foot H lot. Stenga, Eriksson, Moore and Green each have hangars on H lots.

At the east end, Northern Aero Development has two hangars on two of the five 5,180 square-foot lease lots they have. Motonaga has a hangar on a 5,180 square-foot lease lot. Walker has a hangar on a 23,480 square-foot lease lot. Bart Bias has a hangar on a 8,145 square-foot lease lot.

The U. S. Fish and Wildlife Service leases a 4-acre large commercial lot at the east end and has a hangar. They also provide 100 low-lead and Jet A refueling for their own aircraft and helicopter. They keep two aircraft on the Airport for wildlife surveying and field support purposes. The lot is also used by other Federal and State agencies; e.g.,

Alaska Department of Natural Resources Division of Forestry, U.S. Forest Service, Alaska State Troopers and other law enforcement agencies.

3.5.2 Aircraft Parking

The City currently maintains 93 permanent tiedown spaces of which 48 are located on the west apron and 45 are located on the center apron as shown on Figure 3-2. No set number of spaces are set aside for itinerant parking, however, of the 93 total spaces, itinerant aircraft are generally guided to the 15 tiedowns on the center apron. There is also space for based aircraft parking on private leaseholds including the small commercial lots and H lots at the west end of the Airport.

Large cargo aircraft use the east apron for parking and loading and unloading. A landing fee is supposed to be charged by the City for aircraft 12,500 pounds and over but the fees are not collected by the City as there are infrequent operations by these large aircraft.

3.6 AIR TAXI/TERMINAL AREA

The Soldotna Municipal Airport presently does not have a passenger terminal building. A portion of Lot 4 of the Airport Lease Lot Subdivision has been replatted to a lot designation as Lot 4A of Soldotna Airport Lease Lot Replat No. 3. This lot contains the existing traffic-activated access gate, a short-term gravel surfaced vehicular parking area, paved driveway connecting Funny River Road to the aircraft apron area, and an information board showing the location of itinerant aircraft parking and reference telephone number. Lot 4A is situated in close proximity to the designated itinerant aircraft parking area.

Unscheduled FAR Part 135 air taxi services are provided by Natron Air and Clearwater Air, who are based at the Airport, from their own terminals. These flights are primarily for fishing, sightseeing and hunting trips using twin-engine and single-engine aircraft. There are also some unscheduled FAR Part 135 air taxi services provided by other air taxi companies not based at the Airport.

FAR Part 135 Medevac flights also use the Airport with small business jets, turboprop aircraft (e.g., Lear Jet, Beech King Air) and helicopters (Astar).

A pilots lounge is located in the MARC hangar located on Lot 3 that is available for public use by pilots.

Some of the commercial air taxi operators, who use nearby lakes in the summer, park their aircraft on the Airport in the winter.

3.7 AIRPORT ACCESS AND PARKING

This section describes the airport access road and vehicular parking facilities serving the Soldotna Municipal Airport and on-Airport service roads.

3.7.1 Access Roads

Public access to Soldotna Municipal Airport is on the south side of Funny River Road, about 1.9 miles east from its intersection with the Sterling Highway just south of the Kenai River. Both the Sterling Highway and Funny River Road are paved, two-lane rural routes. The Sterling Highway has two 12-foot lanes with 2-foot shoulders. Funny River Road has two 12-foot lanes without shoulders west of the Airport. Funny River Road was realigned to the north in 2011, between Airport Heights Road and the Kenai River Center, with two 12-foot lanes and 3-foot shoulders.

The Alaska Department of Transportation and Public Facilities (DOT&PF) annual average daily traffic (AADT) counts on Funny River Road are as follows:

	2011	2012	2013	2014
At Sterling Highway west of the Airport	3,180	2,567	2,802	2,806
Airport Heights Street immediately west of the Airport	3,211	3,082	1,786	1,788
Kenai River Center, immediately north of the Airport	1,618	1,625	1,670	1,690
Pioneer Access Road, east of the Airport	1,287	1,114	998	1,018

3.7.2 Vehicular Parking Facilities

Secured off-apron vehicle parking is available on a gravel-surfaced area inside the traffic-activated public access gate off Funny River Road. Parking for approximately 16 vehicles is available along the easterly fence line and for approximately another 20 vehicles on the west side of the access lane.

Secured parking is provided by leaseholders on their lease lots. Development of parking, and the amount of internal security provided, is the responsibility of the leaseholders. Aircraft owners generally park their vehicles on, or adjacent to, the spaces vacated by their aircraft when flying.

3.7.3 Airport Service Roads

Within the fenced Airport area, access to points along the aprons are provided by a loosely defined, partially delineated route, situated generally 1,050 feet north of the runway centerline through the central apron. Through the west and east aprons, vehicular traffic generally is routed 700 feet and 800 feet north, respectively, of the runway centerline. There is a gravel service road along the south side of the Airport and the fence line. The service road connects to both ends of Runway 7-25.

3.8 AIRPORT SUPPORT

This section describes the support facilities serving the Airport including administration and maintenance, aircraft rescue and fire fighting, Federal Aviation Administration, fuel, utilities and fencing.

3.8.1 Airport Administration and Maintenance

The Soldotna Municipal Airport Administration Office is located at the City maintenance facility on Arbor Street while the Airport Maintenance Yard is located at Mile Post 2.6 of Funny River Road, north side, near the east end of the Airport area. Maintenance equipment kept at the City Yard is not dedicated exclusively to Airport use. Airport maintenance and airfield snow removal is carried out by City of Soldotna employees as a priority part of their regular duties. City leased tiedown areas are snowplowed on a "workload permitting" basis. The snow storage areas are shown on Figure 3-2.

Commercial aviation/fixed based operators are required to provide their own snow removal, or store their own snow, with Airport Field Maintenance crews removing these piles on a "work load permitting" basis.

3.8.2 Aircraft Rescue and Fire Fighting

Aircraft rescue and fire fighting capabilities are not currently required to be provided at the Airport. The City of Soldotna provides aircraft rescue and fire fighting (ARFF) facilities and services through its participation in the Central Emergency Services. The nearest response fire station is located in Soldotna at the intersection of Binkley Street and the Sterling Highway, approximately 4.5 miles by road from the Airport. There is no dedicated equipment, or crew, to respond only to ARFF emergencies.

3.8.3 Federal Aviation Administration

Weather information and flight services are provided through the Kenai FAA Flight Service Station Facility.

There is no air traffic control tower.

3.8.4 Fuel

Both 100 low lead aviation fuel and Jet A fuels are available to the public at MARC on Lease Lot 2. MARC has a 6,000-gallon underground 100 low-lead fuel storage tank and a 6,000-gallon underground Jet A fuel storage tank. There is a 24-hour credit card lock system for the 100 low-lead and Jet A fuel. MARC also provides Jet A refueling by truck.

Several operators have their own fuel storage tanks. Samaritan's Purse has 6,000-gallon and 12,000-gallon Jet A above-ground fuel tanks. US Fish and Wildlife Service has both 500-gallon 100 low-lead and 500-gallon Jet A above-ground storage tanks. Clearwater Air has a 1,500-gallon 100 low-lead above-ground tank. Natron Air has a refueling truck.

3.8.5 Utilities

Utilities serving Soldotna Municipal Airport include water, sanitary wastewater, stormwater, electrical power, telephone and natural gas.

3.8.5.1 Water

Water service for the Airport is provided by the City of Soldotna Utility Department's public water system. A 10-inch water main extends from Mile Post 0.0 to Mile Post 2.5 of Funny River Road with services stubbed out to all lots within the airport property that front on Funny River Road. Fire hydrants are located at a maximum spacing of 500 feet and adequate volume is available for fire fighting flows and fire sprinkler systems. The water main has a loop along the old Funny River Road alignment through the current west apron. This main is also 10-inch with fire hydrants located at a maximum spacing of 500 feet.

A Class A well, with well-house, is located on airport property on the north side of Funny River Road, near Mile Post 1.9. The well is tied into the City's public water system.

In 2013, a private developer extended a 8-inch water main from the City water main along Funny River Road to serve ten lease lots at the east end of the airport.

3.8.5.2 Sanitary Wastewater

A new 6-, 8-, 10- and 12-inch combination pressure and gravity sewer main was constructed in 2011 along the relocated Funny River Road from Airport Heights Street on the west to lease lot H, approximate Mile Post 2.5 of Funny River Road, at the east end of the Airport. This sewer main connects the Airport to the City of Soldotna Utility Department's public sewer system and the Waste Water Treatment Plant on South Kobuk in Soldotna. Sewer services were stubbed out to all of the lots within the airport property that front along Funny River Road.

In 2013, a private developer extended an 8-inch sewer main from the City sewer main along Funny River Road to serve ten lease lots at the east end of the airport.

3.8.5.3 Stormwater

The Soldotna Municipal Airport drainage system consists of four discrete systems described as follows:

Far West. This system consists of 18-, 24-, 30- and 36-inch corrugated plastic pipe draining the newly constructed west apron and the runway infield between Runways 7-25 and 7S-25S. Runoff from the west apron is routed through a treatment structure before it and the runway infield line discharge into an existing basin near the southwest corner of the airport property.

West. This system consists of 18-inch to 24-inch corrugated metal piping draining the west H-Lots and adjacent City tiedowns. After crossing Funny River Road, at approximate Mile Post 1.7, runoff is routed to treatment facilities servicing the larger Central drainage system.

Central. This system consists of 18-inch to 36-inch corrugated metal pipe draining the major portion of the runoff leaving the fenced Airport area, including the majority of the commercial aviation/fixed-base operator (FBO) operations, and most of the paved aprons between the middle of the H-Lot area east to the middle of the east apron.

Drainage from this area crosses Funny River Road at Mile Post 2.0, picks up the west drainage system, and passes through sedimentation and detention basins, an energy dissipater, then is discharged at the edge of the Kenai River.

During spring snowmelt, when ditches and culverts are full of ice and snow, ponding occasionally occurs along the asphalt concrete pavement at the west half of the infield areas between Runway 7S-25S and Taxiways A and B.

East. This system consists of 18-inch to 30-inch corrugated metal pipe draining the extreme easterly paved apron area and adjacent gravel apron areas.

Runoff passes under Funny River Road at Mile Post 2.4, closely parallels the existing westerly fence line around the City Maintenance Yard, and discharges onto a rock apron at a natural swale approximately 25 feet above, and 150 feet away from, the Kenai River.

3.8.5.4 Electrical Power

Homer Electric Association (HEA) provides electrical utility service to the Soldotna Municipal Airport. HEA belongs to an inter-tie power pool, which can be accessed during temporary plant shut downs or emergency situations. Member power companies include Chugach Electric Association and Anchorage Municipal Light and Power.

HEA power is purchased from Chugach Electric Association and transmitted by overhead lines from Anchorage. A 40-megawatt gas-fired generator near Soldotna serves as a backup power source in case of disruption. Other Kenai Peninsula based power sources include the Bernice Lake Power Plant at Nikiski, Cooper Lake Hydroelectric Plant near Cooper Landing, and the Bradley Lake Hydroelectric Project near Kachemak Bay.

3.8.5.5 Telephone

Telephone service to Soldotna Municipal Airport is provided by Alaska Communication Systems (ACS). Service connections are available along Funny River Road. Service through the ACS system is available by numerous other providers.

3.8.5.6 Natural Gas

Natural gas service is provided to the Airport by Enstar Natural Gas Company. A 2-inch main serving the area runs along the old Funny River Road alignment through the west apron area then along the north side of Funny River Road to the east end of the airport property.

3.8.6 Fencing

Not all of the Airport property is fenced. However, all areas in which active Airport and aircraft operations take place are fenced.

The area encompassed by fencing lies along the south and west sides of Funny River Road and extends 175 feet north of the south Township 5 line, along the south side of the Airport, and is situated between points 1,000 feet west and 1,800 feet east of the west and east ends of Runway 7-25, respectively.

Two automated vehicle gates are installed, one each at public access points at Mile Posts 1.9 and 2.3, Funny River Road. In addition, 22 manual vehicle gates are installed with 20 fronting along Funny River Road. Two of the manual gates are located at public access points that have been built to serve the future lease lots at the west end of the Airport.

3.9 NONAVIATION USES

There are several nonaviation uses that occur at the Airport at various times during the year.

The Eoff leased parcel includes a residence.

A City of Soldotna Water Well and the City of Soldotna Maintenance Yard are located north of Funny River Road. There is also Airport land north of the realigned Funny River Road that has not been subdivided.

The Rotary Park is a recreational use park located at the northeast corner of the Airport along the Kenai River.

The Central Emergency Services conduct fire and emergency training at the Airport.

The Peninsula Sled Dog Racing Association uses the west end of the Airport as a trail head for the Kenai National Wildlife Refuge trails.

Agricultural operations, hay, are conducted in the areas between Runway 7-25 and the taxiways and off the ends of the ends of Runway 7-25 under a maintenance agreement with Dean Robinson.

3.10 OFF-AIRPORT LAND USES

The land uses surrounding the Airport are illustrated on Figure 3-5. The Kenai National Wildlife Refuge abuts the Airport to the south. The land to the west, northwest, northeast and east of the Airport is outside the Soldotna City limits and under the development jurisdiction of the Kenai Peninsula Borough. The Kenai River abuts the Airport to the north. There are no existing avigation easements over properties abutting the Airport.

3.10.1 Land Uses Inside Corporate Boundary of City of Soldotna

Land uses inside the Soldotna corporate boundary are controlled by zoning districts as shown on Figure 3-5. There are three separate areas south of the Kenai River and east of the Sterling Highway that are within the City and zoned for allowed uses as shown on Figure 3-5.

All lands within the Airport property boundary, that are within the City limits, along with the Kenai Peninsula Borough Kenai River Center property, are zoned Industrial. The 8 acre Parcel 4 Kenai River Center is no longer within the Airport property boundary and is now owned by the Kenai Peninsula Borough.

An area to the west between Mile Posts 0.5 and 0.8 of Funny River Road and adjacent to the Kenai River is zoned Limited Commercial. Actual land uses in the area include residential, lodging, guide services and river-oriented recreational activities.

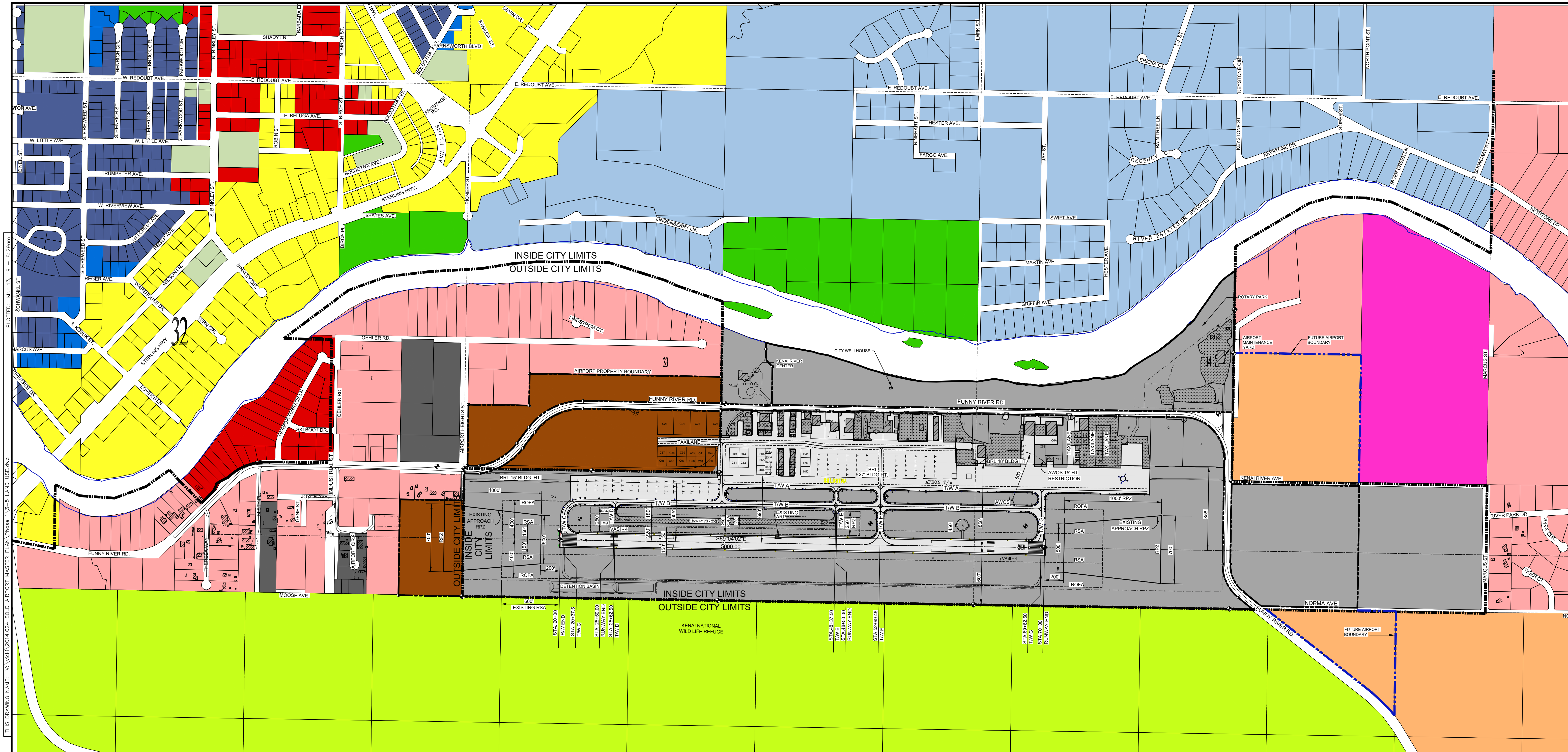
A small area to the west and south of the Kenai River, north and south of Funny River Road and adjacent to the Sterling Highway, is zoned Commercial. Land uses in this area are of a general commercial nature.

North of the Kenai River, lands abutting the Airport property to the northwest are zoned for Parks and Recreational activities, and to the northeast are zoned Rural Residential.

The 37-acre Parcel 3, east of the Airport, is no longer within the Airport property boundary but is still owned by the City and zoned Industrial.

3.10.2 Land Uses Outside Corporate Boundary of City of Soldotna

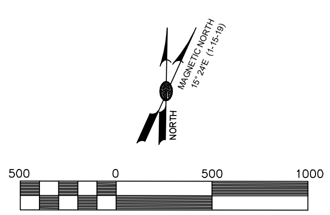
The Soldotna Municipal Airport is bordered on three sides by areas outside the Soldotna corporate boundary. Within the Kenai Peninsula Borough, and outside the corporate limits of Soldotna, there are very few restrictions placed on building practices by the Kenai Peninsula Borough. There is no zoning. Notable exceptions include permitting requirements prior to construction in close proximity (50 feet) to the Kenai River and new borrow pit development.



ZONING INSIDE CITY	
HATCH	DESCRIPTION
(red)	LIMITED COMMERICAL
(yellow)	COMMERCIAL
(green)	PARKS AND RECREATIONAL
(light blue)	RURAL RESIDENTIAL
(blue)	MULTI-FAMILY RESIDENTIAL
(dark blue)	SINGLE-FAMILY RESIDENTIAL
(gray)	INDUSTRIAL
(light green)	INSTITUTIONAL
(white)	RIGHTS-OF-WAY OR RIVER

LAND USE OUTSIDE CITY	
HATCH	DESCRIPTION
(lime)	KENAI NATIONAL WILDLIFE REFUGE
(orange)	GENERALLY UNPLATTED OR UNDEVELOPED
(dark gray)	LIGHT INDUSTRIAL
(pink)	MIXED COMMERICAL/RESIDENTIAL
(magenta)	STATE OF ALASKA - DNR
(brown)	INDUSTRIAL
(white)	RIGHTS-OF-WAY OR RIVER

EXISTING	FUTURE
— - — -	AIRPORT PROPERTY LINE



WINCE-CORTHELL-BRYSON
ARIES CONSULTANTS LTD.

DRAWN BY: VICKI COLEMAN
CHECKED BY: MARK BLANNING DATE: Mar 13,2019

SOLDOTNA MUNICIPAL AIRPORT
OFF - AIRPORT LAND USES
SOLDOTNA, ALASKA

FIGURE 3-5

THIS DRAWING NAME: V:\vicki\2014-024 SOLD AIRPORT MASTER PLAN\Phase 1\3-5 LAND USE.dwg PLOTTED: Mar 13, 19 - 8:29am

At the west end of the Airport, there is a 15-acre tract owned by the City, and within the Airport property boundary, but it is not within the corporate boundary of the City. This area was originally acquired as an avigation easement from the State of Alaska in 1972 but was later acquired by Warranty Deed in 1975. This land is designated for Industrial use. The area is not presently fenced.

The area north of the old alignment of Funny River Road, containing approximately 48 acres, is owned by the City and within the Airport Property Boundary, but is not within the corporate boundary of the City. This land is designated for Industrial use. The south half of this property, the portion south of the newly realigned Funny River Road, is within the airport fence. The north half of the property, the portion north of the newly realigned Funny River Road, is not presently fenced.

West of the Airport, and along Funny River Road, a loosely-defined Mixed Commercial and Residential area has developed that includes retail construction materials sales, automotive services, lodges, guide services, craft work sales, residences and several Light Industrial uses.

East of the Airport, and City property, there is a Mixed Commercial and Residential area.

To the northwest and northeast of the Airport, there are Generally Unplatted or Undeveloped private and government parcels, respectively, abutting the Airport.

South of the Airport, the Kenai National Wildlife Refuge is used for refuge purposes and goals only.

3.10.3 Comprehensive Plan

The City of Soldotna's Comprehensive Plan, *Envision Soldotna 2030*, was adopted in 2011. One of the General Land Use Goals of the Plan is to "Evaluate the need for an airport overlay zone to encourage airport compatible development on or near the Airport." The intent is that land located at the Airport, including lease lots and aircraft tiedown spaces within the secure area, have different requirements and restrictions than lands outside the Airport.

Implementation of the Comprehensive Plan includes continuing to implement the goals of the 2004 Airport Master Plan. Also to evaluate the potential to rezone the riverfront portion of the industrial-zoned lands on the north side of the Airport, and south of the Kenai River, to a mixed use zone to protect the river from intensive industrial uses.