

Ted Stevens Anchorage International Airport

2014 MASTER PLAN UPDATE

CHAPTER 2 - INVENTORY OF EXISTING CONDITIONS

FINAL
DECEMBER 2014

RS&H

IN ASSOCIATION WITH:

HDR

DOWL HKM

RIM Architects

ATAC



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Prepared for:
Ted Stevens Anchorage International Airport
State of Alaska Department of Transportation & Public Facilities

Prepared by:



In association with:
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PREFACE

The Ted Stevens Anchorage International Airport (Airport) Master Plan Update (Master Plan Update) provides Airport management and the Alaska Department of Transportation & Public Facilities (DOT&PF) with a strategy to develop the Ted Stevens Anchorage International Airport. The intent of the Master Plan Update is to provide guidance that will enable Airport management to strategically position the Airport for the future by maximizing operational efficiency and business effectiveness, as well as by maximizing property availability for aeronautical development through efficient planning. While long-term development is considered in master planning efforts, the typical planning horizon for the Master Plan Update is 20 years.

The Federal Aviation Administration provides guidance for Master Plan development in *FAA Advisory Circular 150 / 5070-6B, Airport Master Plans*. Although not required, the Advisory Circular strongly recommends airports prepare a Master Plan. Funding for the Master Plan Update is provided primarily by the Federal Aviation Administration through an Airport Improvement Program grant.

A comprehensive Master Plan Update was last prepared in 2002 and a partial update was undertaken between 2006 and 2008. This Master Plan Update was initiated in June 2012 and concluded in December 2014. The DOT&PF entered into a contract with the firm RS&H to lead this effort. The Master Plan Update included a robust public and stakeholder involvement program.

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Acronyms and Abbreviations

AAAC	Airport Airline Affairs Committee
AAC	Aircraft Approach Category or Alaska Administrative Code
AACC	Anchorage Airport Communications Committee
AAD	Annual Average Day
AADT	Annual Average Daily Traffic
AAGR	Average Annual Growth Rate
AC	Advisory Circular
ACHP	Advisory Council on Historic Preservation
ACMI	Aircraft, Crew, Maintenance, and Insurance
ACMP	Anchorage Coastal Management Plan
ACRP	Airport Cooperative Research Program
ADAPT	Annual Delay and Activity Performance Times
ADEC	Alaska Department of Environmental Conservation
ADF	Aircraft Deicing Fluid
ADF&G	Alaska Department of Fish and Game
ADG	Airplane Design Group
ADNR, OHA	Alaska Department of Natural Resources, Office of History and Archaeology
ADOLWD	Alaska Department of Labor and Workforce Development
AEDC	Alaska Economic Development Corporation
AFSC	Anchorage Fueling and Service Company
AGL	Above Ground Line
AHPA	Alaska Historic Preservation Act
AHRS	Alaska Heritage Resource Survey
AIAS	Alaska International Airport System
AIDEA	Alaska Industrial Development and Export Authority
AIP	Airport Improvement Program
Airport	Ted Stevens Anchorage International Airport
AIT	Advanced Imaging Technology
AMATS	Anchorage Metropolitan Area Transportation Study
ANGB	Air National Guard Base
AOA	Air Operations Area
APDES	Alaska Pollutant Discharge Elimination System
APU	Auxiliary Power Units
ARC	Airport Reference Code
ARFF	Aircraft Rescue and Fire Fighting
AS	Alaska Statute

ASDA	Accelerate-Stop Distance Available
ASDE	Airport Surface Detection Equipment
ASIG	Aircraft Service International Group
ASPM	Aviation System Performance Metrics
ASR	Airport Surveillance Radar
ATCT	Airport Traffic Control Tower
AWMP	Anchorage Wetlands Management Plan
AWWU	Anchorage Water and Wastewater Utility
BAT	Best Available Technology
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
BRAC	Base Realignment and Closure
BRL	Building Restriction Line
CAA	Clean Air Act
CAD	Computer-aided Design
CATS	Compliance Activity Tracking System
CBIS	Checked Baggage Inspection System
CBP	Customs and Border Protection
CBRA	Checked Baggage Resolution Area
CCSF	Certified Cargo Screening Facility
CDS	Consolidated De-Icing Services
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
CFC	Customer Facility Charge
CFR	Code of Federal Regulations, or Crash / Fire / Rescue
CIP	Capital Improvement Plan
CO	Carbon Monoxide
Coastal Trail	Tony Knowles Coastal Trail
COD	Chemical Oxygen Demand
CONRAC	Consolidated Rental Car Facility
CUPPS	Common Use Passenger Processing Systems
CZMA	Coastal Zone Management Act
DHS	Department of Homeland Security
DME	Distance Measuring Equipment
DNL	Day-night Average Sound Level
DO	Dissolved Oxygen
DOT	U.S. Department of Transportation

DOT&PF	Alaska Department of Transportation and Public Facilities
EAS	Essential Air Service
EDS	Explosive Detection System
EMS	Environmental Management System
EOC	Emergency Operations Center
EQA	Equivalent Aircraft
ETD	Explosive Trace Detection
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FBO	Fixed Base Operator
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
FIS	Federal Inspection Service
FMRA	FAA Modernization and Reform Act of 2012
FY	Fiscal Year
GA	General Aviation
GPS	Global Positioning System
GRE	Ground Run-Up Enclosure
GSE	Ground Service Equipment
HLB	Heritage Land Bank
IAS	International Aviation Services, Inc.
IATA	International Air Transport Association
IBC	International Building Code
IFR	Instrument Flight Rules
IFT	International Freight Terminal
ILS	Instrument Landing System
INM	Integrated Noise Model
ISER	Institute of Social and Economic Research (at the University of Alaska Anchorage)
JBER	Joint Base Elmendorf-Richardson
LDA	Landing Distance Available
LOC	Localizer
LOS	Level of Service
LUST	Leaking Underground Storage Tank
Master Plan Update	Ted Stevens Anchorage International Airport Master Plan Update
MEP	Mechanical, Electrical, and Plumbing

MOA	Municipality of Anchorage
MSA	Metropolitan Statistical Area
MSGP	Multi-Sector General Permit
MSL	Mean Sea Level
MTOW	Maximum Takeoff Weight
NAAQS	National Ambient Air Quality Standards
NAC	Northern Air Cargo
NADP	Noise Abatement Departure Profiles
NAMS	Northern Air Maintenance Services
NAVAID	Navigational Aid
NCP	Noise Compatibility Program
NDB	Non-directional Beacon
NEMs	Noise Exposure Maps
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPIAS	National Plan of Integrated Airport System
NPL	National Priorities List
NRHP	National Register of Historic Places
O&D	Origin and Destination
O&M	Operations and Maintenance
OAIASS	Optimize AIAS Strategy
OER	Operating Expense Ratio
OFA	Object Free Area
OFZ	Obstacle Free Zone
OSR	On-Screen Resolution
PAL	Planning Activity Level
PAPI	Precision Approach Path Indicator
PCC	Portland Cement Concrete
PCI	Pavement Condition Index
PDARS	Performance Data Analysis and Reporting System
PFC	Passenger Facility Charges
PM-10	Particulate Matter with a Diameter of 10 Microns or Less
PM-2.5	Particulate Matter with a Diameter of 2.5 Microns or Less
QTF	Quick-Turnaround Facility
RCRA	Resource Conservation and Recovery Act

RDC	Runway Design Code
RNAV	Area Navigation
ROFA	Runway Object Free Area
RON	Remain Overnight
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RSIP	Residential Sound Insulation Program
RTR	Remote Transmitter Receiver
SCS	Sterile Corridor System
SHPO	State Historic Preservation Office(r)
SIDA	Security Identification Display Area
SIP	State Implementation Plan
SSCP	Security Screening Checkpoint
STEP	South Terminal Expansion Project
SWPPP	Stormwater Pollution Prevention Plan
TACAN	Tactical Air Navigation
TDG	Taxiway Design Group
TERPS	Terminal Instrument Procedures
TODA	Takeoff Distance Available
TORA	Takeoff Run Available
TRACON	Terminal Radar Approach Control
TSA	Transportation Security Administration
UPS	United Parcel Service
USDA-WS	U.S. Department of Agriculture - Wildlife Services
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USPS	United States Postal Service
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VOCs	Volatile Organic Compounds
VOR	Very High Frequency Omnidirectional Range
WAAS	Wide Area Augmentation Systems
WADP	West Anchorage District Plan
WBI	Whole Body Imaging
WHA	Wildlife Hazard Assessment
WHMP	Wildlife Hazard Management Plan

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CHAPTER 2

INVENTORY OF EXISTING CONDITIONS

SECTION 1

INTRODUCTION

In Chapter 2, Inventory of Existing Conditions, existing conditions and capabilities of land areas, facilities, infrastructure, and operations at Ted Stevens Anchorage International Airport (Airport) are documented. As is typical of a master plan, this includes the existing conditions and operations of the airside / airfield, passenger terminal and landside, cargo, general aviation, and airport / airline functional support areas. The general purpose of an inventory is to provide a baseline understanding of the facilities and operations for future planning considerations.

The last Ted Stevens Anchorage International Airport Master Plan Update (Master Plan Update) was completed in 2002, with an interim Master Plan Study Report completed in 2008. The inventory for these master planning efforts occurred in 1998 and 2006, respectively, at the outset of the 2002 Master Plan Update and 2008 Master Plan Study. Inventory efforts for the current Master Plan Update were completed in fall 2012 through spring 2013. For the current master planning effort, the Master Plan Update team, comprising RS&H and its subconsultants, completed a more comprehensive inventory than what was completed in prior master planning efforts. An effort was made to contact and interview as many Airport tenants as possible regarding their facilities and operational needs. Inventory information from the 2002 and 2008 master planning efforts were also reviewed, updated as necessary, and documented.

Since the 2002 Master Plan Update, the following infrastructure changes were made. These changes are documented in the current Master Plan Update.

- New Taxiway Z constructed
- New Taxiway Y constructed
- Taxiway R and K widened to accommodate Group VI aircraft
- New engine run-up pad on Taxiway J constructed
- New aircraft parking positions at FedEx, United Parcel Service (UPS), and the Alaska CargoPort leaseholds constructed
- New apron near Taxiway U constructed
- Runway 6L-24R designated as Runway 7L-25R
- Runway 6R-25L designated as Runway 7R-25L
- Runway 14-32 designated as Runway 15-33
- Non-precision instrumentation for Runways 25L, 25R, and 33 removed

- Touchdown zone lighting for Runway 13-33 added
- Touchdown zone lighting for Runways 25L and 25R removed
- Runway 7R end extended
- Modification of the high-speed exit Taxiway G
- Visual Approach Slope Indicator (VASI) replaced by Precision Approach Path Indicator (PAPI) for Runway 15 and 33
- “R” aircraft parking positions upgraded
- Taxiway L upgraded
- South Terminal, C Concourse constructed
- South Terminal, B Concourse remodeled
- Cell phone lot added
- Rental Car Center constructed
- New Airfield Maintenance Facility constructed
- Airport field maintenance Quick-Turnaround Facility (QTF) building constructed
- Deicing tanks next to QTF constructed
- Rail depot added
- North Terminal commercial vehicle lane constructed
- Water tank bays for Aircraft Rescue and Fire Fighting (ARFF) storage added
- Storm drain lift station K constructed
- Storm drain lift station West 50th Avenue constructed

Finally, it should be noted that for this Master Plan Update, an emphasis was placed on gathering inventory information pertaining to several key focus areas. These focus areas were identified by Airport staff at the onset of the current Master Plan Update. The focus areas include understanding the historical and cultural significance of the Airport site, having a robust public participation process and being cognizant of stakeholder issues, understanding the existing land uses of on-Airport property for future Airport development purposes, and exploring the potential of increasing cargo transfer operations. As a result, extra effort was made in the inventory process to document: 1) the history of the Airport site; 2) the regional setting and the Airport’s role regionally and globally; 3) Airport staff, tenant, and public stakeholder concerns where applicable; 4) existing land uses and restrictions; and 5) cargo facilities and operations to provide a base level of understanding for future discussions regarding the future of cargo operations at the Airport. In addition, for future project implementation and environmental documentation efforts that may follow the master plan process, the inventory also provides an overview of the Airport’s financial management practices and structure as well as the environmental setting. Further discussions pertaining to the above mentioned focus areas are carried forward in later efforts in the master planning process and documented accordingly in later chapters.

Chapter 2, Inventory of Existing Conditions, is organized as follows:

- Section 1, Introduction
- Section 2, Historic Context and Background of the Airport
- Section 3, Regional Setting
- Section 4, Airport Land Use
- Section 5, Existing Airport Facilities
- Section 6, Existing Airport Facilities by Geographic Area
- Section 7, Existing Airport Facilities by Functional Area
- Section 8, Financial Overview
- Section 9, Environmental Setting

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SECTION 2

HISTORIC CONTEXT AND BACKGROUND OF THE AIRPORT

Ted Stevens Anchorage International Airport (Airport) is located on the westernmost mainland point of the Municipality of Anchorage (MOA), the populated urban area known commonly as Anchorage, Alaska. The site where the Airport and Anchorage are located today has a rich history. One of the goals of the Ted Stevens Anchorage International Airport Master Plan Update (Master Plan Update) is to identify and provide insight into the historical and cultural significance of the area to increase awareness of the important issues that could impact or should be considered in Airport development plans.

2.1 HISTORIC CONTEXT OF AIRPORT SITE

The larger geographic region is known as the Upper Cook Inlet area. This area was likely inaccessible to humans until about 12,000 years ago due to the presence of glacial ice and water inundation. Glaciers blocked mountain passes, prohibiting access from the populated interior parts of Alaska.

Researchers believe it was not until 7,500 to 10,000 years ago, when glacial ice receded, that the Upper Cook Inlet area was first inhabited. Archaeological evidence of the Eskimo culture in this area dates back 3,000 years. Other archaeological and linguistic evidence suggests the Dena'ina (formerly "Tanaina") people, named after the Dena'ina language they spoke, occupied the Upper Cook Inlet area beginning 1,500 to 1,000 years ago. Dena'ina villages were clustered around lakes, rivers, and streams throughout the Upper Cook Inlet area. Fish camps, used in the spring and fall, were often located along the coast to take advantage of salmon runs.

Captain Cook's exploration of the Upper Cook Inlet area represented the first documented contact the Dena'ina had with Euro-Americans. Captain Vancouver, who explored Cook Inlet in 1794, found the Dena'ina firmly established in at least five major fishing villages in the Upper Cook Inlet area.

An influx of Euro-American gold miners came to Alaska in the 1870s and 1880s and to the Upper Cook Inlet area in the late 1890s. In 1898, Knik was a small outpost with a trading post and a resident population of Dena'ina living in the surrounding area.

Much of the evidence of prehistoric and historic Dena'ina habitation in the Anchorage area was destroyed or buried by public and private urban development. The ongoing development of Anchorage since its founding in 1915 resulted in the displacement of the Dena'ina from their traditional camps and harvest locations. Despite the historic trend of dislocation from traditional areas, there is a strong, continued cultural attachment to many of the traditional and historic places and activities.

Dena'ina Territorial Knowledge and Place Names

The lower Knik Arm area is rich in Dena'ina place names, fish camps, village sites, and other traditional places. There are several documented Dena'ina sites and place names associated with the Airport vicinity.¹ Perhaps the most revered Dena'ina location in the vicinity of the present-day Airport site is Point Woronzof. The Dena'ina name for this area is Nuch'ishtunt, which translates to "Place Protected from Wind." Historical accounts document this area was used as a fish camp for king and sockeye salmon for at least 100 years until about 1945. The photo shown in Figure 2.1 is an example of the Dena'ina fish camps. The photo shows the Dena'ina Chief Nikaly (Nikolai) and his family.

Figure 2.1
Dena'ina ("Chief Nikaly [Nikolai] and family") at a Fish Camp in Anchorage, 1918



Source: Alaska Pacific University, Alaska Digital Archives website, vilda.alaska.edu, 1918.

¹ Kari and Fall, *Shem Pete's Alaska: The Territory of the Upper Cook Inlet Dena'ina*, University of Alaska Press, 2003.

2.2 HISTORIC CONTEXT OF AIRPORT

The Alaska Railroad, constructed starting in 1903², paved the way for the mass migration of people to the interior of the Alaskan Territory to take advantage of the abundant minerals, timber, and agricultural land. As the population in the Alaskan Territory grew, aviation quickly became a necessary part of the transportation network. A number of aviation fields were constructed during the 1930s.³ Before that time, unimproved sites (e.g., flat areas of open terrain, water, or ice) were often used as aviation fields.

Merrill Field was constructed as the first aviation field in Anchorage. Merrill Field supported the operation of the United States military during much of the facility's early years. As larger and faster aircraft became more common, the modest Merrill Field facilities were quickly outgrown. Military operations eventually moved to the newly constructed Elmendorf Air Force Base. In 1948, the United States Congress authorized \$13 million for the construction of two "international type" airports in Alaska – one to be located in Fairbanks and the other in Anchorage.⁴ The results of a Civil Aeronautical Authority⁵ (predecessor of the present-day Federal Aviation Administration [FAA]) feasibility study demonstrated the practicability and necessity for constructing new airports in the two most populous Alaskan cities.

Airfield operations at Anchorage International Airport commenced in December 1951, and the first passenger terminal was constructed in 1952. A ceremony in 1953 marked the official opening of the Anchorage International Airport. It quickly demonstrated its vitality as 90% of Alaska's passenger traffic and 65% of its mail were transported by airlines based in Anchorage during the early 1950s. Figure 2.2 depicts an aerial image of the Anchorage International Airport in 1950.

In spring 1955, the Air National Guard was relocated to Anchorage International Airport from Elmendorf Air Force Base. The Squadron would go on to occupy the Kulis Air National Guard Base (ANGB) for nearly six decades.

² Alaska Railroad Corporation website, www.alaskarailroad.com, 2014.

³ Albert Minnick, *To Build a Suitable Airport: The Development of Anchorage's Merrill Field, 1929-1980*, (Alaska Historical Society, 1987).

⁴ Ted Stevens Anchorage International Airport History website, <http://dot.alaska.gov/anc/about/history.shtml>, 2012.

⁵ Alaska Department of Transportation and Public Facilities, *Anchorage International Airport Master Plan*, 1981.

Figure 2.2
1950 Aerial Image of Anchorage International Airport



Source: Airport staff, 1950.

The latter half of the 1950s was witness to an upswing in international travel through Anchorage. It was a common occurrence for commercial passenger flights between Europe and Asia to transit through Anchorage due to the inaccessibility of Chinese and Soviet Union airspace. This encouraged “over the pole” routes for trans-Pacific flights and stopovers in Anchorage because of the limited range of aircraft of the time.⁶

The Omnibus Act of June 25, 1959 allowed Alaska to achieve statehood and become the nation’s 49th State. Ownership and control of Anchorage International Airport was subsequently transferred to the State of Alaska on May 1, 1960.

⁶ Ted Stevens Anchorage International Airport History website, <http://dot.alaska.gov/anc/about/history.shtml>, 2012.

The Omnibus Act also granted federal transitional funds to the State of Alaska to be used for capital projects at the Anchorage International Airport.⁷

The 1960s brought a population and economic boom for Anchorage, encouraged in part by the expansion of oil and gas fields in the nearby Kenai Peninsula. The economic growth also translated to growth in aviation activity. Seven international air carriers used Anchorage as a regular stopover between Asia and the United States. Anchorage had established its identity as the “Air Crossroads of the World.” The new decade also introduced the Jet Age as airports scrambled to upgrade facilities to accommodate larger and faster aircraft. The original east / west runway was extended from 8,400 feet to its present-day length of 10,600 feet in 1960.⁸

A 1967 study concluded that a new runway should be constructed in the north / south direction. The recommendation was made primarily because it was deemed impractical to reconstruct the east / west runway without closing it for at least a year. Closing the east / west runway would have essentially required closure of the Anchorage International Airport because the 5,000-foot north / south runway was too short for the newer jet aircraft. The new plan proposed that the north / south runway would become the primary runway until the east / west runway could be reconstructed. However, the recommended north / south runway was not constructed at that time because of strong opposition from the United States military.

The military opposed constructing a new north / south runway because it would directly conflict with the approach procedures to the east / west runway at Elmendorf Air Force Base. As a result, a new parallel runway (present-day Runway 7R-25L) was constructed south of the existing east / west runway. The new runway, shown in **Figure 2.3**, was completed in 1970, in time for the arrival of the first Boeing 747.⁹

During the 1970s, aviation demand at Anchorage International Airport continued to increase as the State of Alaska approved construction of the \$8 billion Trans-Alaska Pipeline from the North Slope, the northernmost geographic area of the State. Additional aviation growth came in the form of significant increases in international passenger traffic.¹⁰

⁷ Alaska Department of Transportation and Public Facilities, *Anchorage International Airport Master Plan*, 1981.

⁸ Ted Stevens Anchorage International Airport History website, <http://dot.alaska.gov/anc/about/history.shtml>, 2012.

⁹ Alaska Department of Transportation and Public Facilities, *Anchorage International Airport Master Plan*, 1981.

¹⁰ Ted Stevens Anchorage International Airport History website, <http://dot.alaska.gov/anc/about/history.shtml>, 2012.

Figure 2.3
1970 Aerial Image of Anchorage International Airport



Source: Airport staff, 1970.

A new international satellite terminal was constructed in 1982 after several years of delays because of fears that Anchorage would no longer be a stopover point for international traffic due to rising fuel prices. The new terminal would later be called the North Terminal.¹¹

Years later, plans for a new or extended north / south runway were again introduced. New justifications reasoned that a north / south runway could allow for more efficient traffic patterns with different runway use configurations instead of just a crosswind runway. The runway was also justified as a method to reduce noise levels over the more populated residential areas. The idea of a new north / south runway was again met with opposition from the United States military. Despite the objection, the north / south runway project was approved. Construction of the new north / south runway began in 1978 and was completed in 1980. The new

¹¹ Ted Stevens Anchorage International Airport History website, <http://dot.alaska.gov/anc/about/history.shtml>, 2012.

runway, offset to the west of the old runway, was built to a length of 10,496 feet.¹² The original north / south runway was turned into a taxiway. The new 10,496-foot north / south runway is shown in Figure 2.4.

Figure 2.4
1982 Aerial Image of Anchorage International Airport



Source: Airport staff, 1982.

In 1987, a 1,200-space parking garage was built to support the South Terminal. Between 1989 and 1990, FedEx and United Parcel Service (UPS) established international cargo sorting operations at the Airport.¹³ The sorting facility for each airline serves as a key component in the international cargo transfer between the Americas and East Asia.

¹² Alaska Department of Transportation and Public Facilities, *Anchorage International Airport Master Plan*, 1981.

¹³ Ted Stevens Anchorage International Airport History website, <http://dot.alaska.gov/anc/about/history.shtml>, 2012.

Russian airspace opened in 1989, which allowed over-flights without the requirement of a stopover at Anchorage International Airport.¹⁴ This created alternate routes for international flights, ending decades of inefficient flight paths to avoid the restricted airspace. The airspace expansion significantly impacted the Anchorage International Airport's role as a stopover for international passenger aircraft. Passenger aircraft could now bypass Anchorage on trans-Pacific flights because of more efficient flight paths. As a result, transit operations decreased.

While international passenger traffic dropped off in the early 1990s due to alternative routes, other sectors flourished. Air cargo operators commenced or expanded operations in Anchorage, and domestic passenger traffic increased. However, it was not until 1994 that international passenger traffic at Anchorage International Airport again began to increase. The 1990s and early 2000s were witness to numerous expansion projects at the Anchorage International Airport for both the public and private sectors. The north / south runway was extended more than 1,000 feet to 11,584 feet between 1995 and 1996. Between 1999 and 2004, the South Terminal underwent major renovations. The main terminal and concourse, which was constructed in 1952, was demolished, and a new main terminal and the C Concourse were constructed. Terminal area parking lots and road access were also improved as a part of the terminal project.¹⁵

The new millennium brought many other changes for the Anchorage International Airport. In 2000, State legislators passed a bill to honor Alaska's United States Senator, Ted Stevens, by renaming the Airport in his honor. The Airport then became known as Ted Stevens Anchorage International Airport.

The passenger terminal area was the site of many capital improvement projects in the early 2000s. In 2000, the Airport began construction of the new 463,227-square-foot C Concourse in the South Terminal. Construction continued for four years, and the Airport celebrated the grand opening of the new world class terminal on June 30, 2004.

Following the recommendation of the 2005 Base Realignment and Closure Commission, the Air National Guard's 176th Wing vacated the Kulis ANGB at the Airport and relocated its operations to the renamed Joint Base Elmendorf-Richardson (JBER) in February 2011.¹⁶ The site of the former base, referred to as the Kulis Business Park, was transferred to the State of Alaska for reuse by the Airport. The 2012 aerial of the Airport is shown in Figure 2.5.

¹⁴ Ted Stevens Anchorage International Airport History website, <http://dot.alaska.gov/anc/about/history.shtml>, 2012.

¹⁵ Ted Stevens Anchorage International Airport History website, <http://dot.alaska.gov/anc/about/history.shtml>, 2012.

¹⁶ Alaska Air National Guard 176th Wing website, <http://www.176wg.ang.af.mil/>, n.d.

Figure 2.5
2012 Aerial Image for Ted Stevens Anchorage International Airport



Source: Airport staff, 2012.

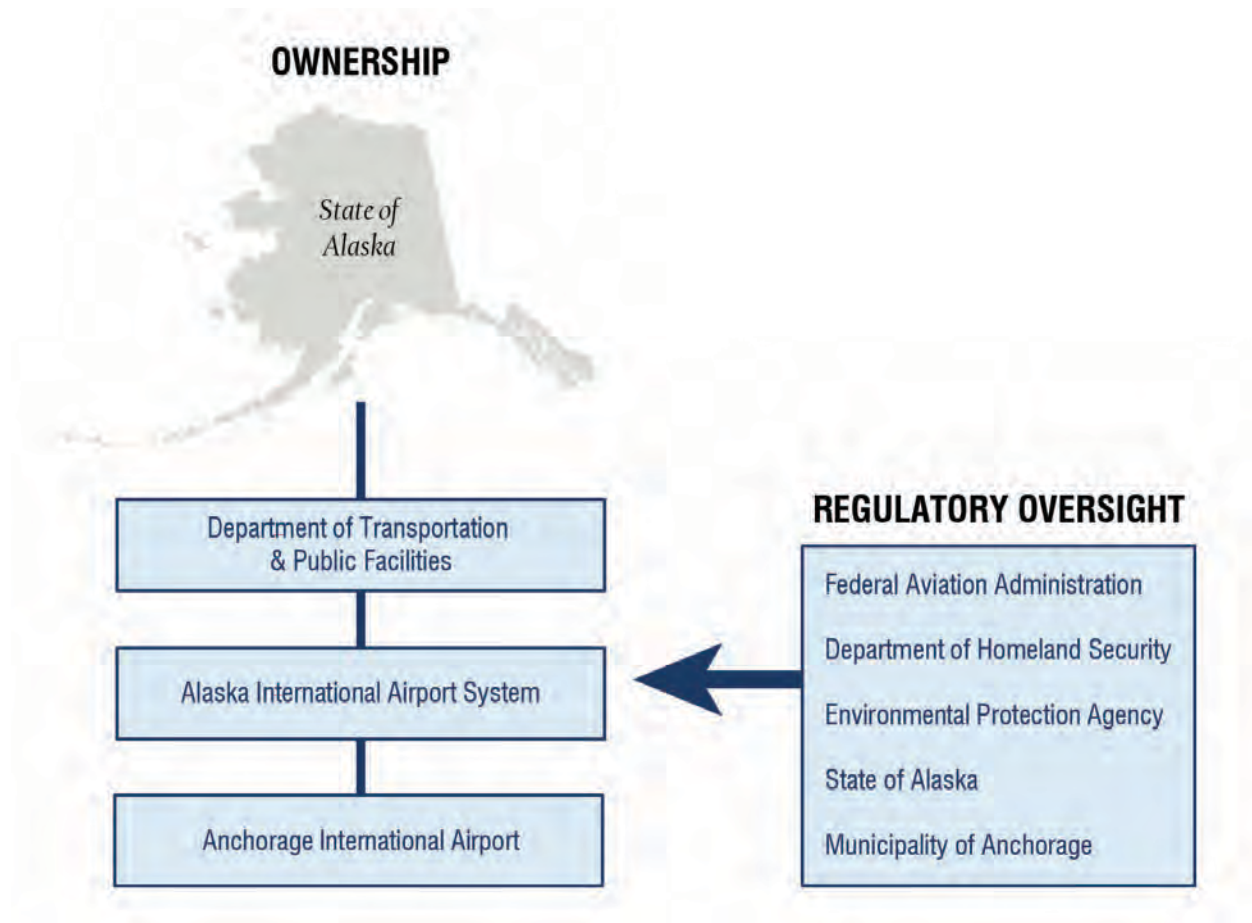
In summer 2014, during the Master Plan Update process, the Runway 33 end was decoupled from Runway 7L-25R, thereby shortening the Runway 15-33 length from 11,584 feet to 10,960 feet. The Runway 15-33 Runway Safety Area (RSA) no longer overlaps the Runway 7L-25R pavement as a result of the project. The Runway 15 end and threshold did not change. The Runway 33 end was moved 624 feet north. The Runway 33 end is now located just south of the southern edge of Taxiway K. Shifting the Runway 33 end north did not impact the normal departure procedures; aircraft continue to depart from Runway 33 via Taxiway K. The Runway 33 arrivals threshold did not change. The pavement south of the new Runway 33 end was converted to a blast pad.

2.3 AIRPORT OWNERSHIP, MANAGEMENT, AND OVERSIGHT

The Airport is owned and operated by the State of Alaska, regulated by local, federal, and state agencies, and occupies State land within the geographic confines of the MOA. The ownership and administrative structure for the Airport is unique when compared to other airports. The majority of publically owned airports in the nation are owned and operated by local or regional government agencies (i.e., city, county, or

regional governments). Only 7%¹⁷ of United States airports are owned and operated by state agencies. The Airport falls within this minority. These circumstances create unique challenges when coordinating between the Airport and the different governing bodies. The relationships between the various agencies and organizations with ownership, management, and oversight of the Airport are graphically summarized in Figure 2.6.

Figure 2.6
Airport Ownership and Oversight



Source: RS&H and HDR, 2014.

2.3.1 ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

The Alaska Department of Transportation and Public Facilities (DOT&PF) is a State government agency that “designs, constructs, operates and maintains the State’s transportation infrastructure systems, buildings, and other facilities used by Alaskans and visitors.”¹⁸ This

¹⁷ American Association of Airport Executives, *Finance and Administration Module*, 2012.

¹⁸ Department of Transportation and Public Facilities website, <http://dot.state.ak.us/>, 2011.

includes highways, airports, harbors, and a ferry system that serves coastal communities. The agency's mission is to "Get Alaska Moving" through service and infrastructure. The Airport is by far the largest of the 256 airports owned and operated by DOT&PF.

Following the creation of Anchorage International Airport and Fairbanks International Airport, the airports were owned and operated by the federal government. When Alaska became a state in 1959, ownership of the two airports was transferred from the federal government to the State of Alaska. The Alaska State Legislature created the Alaska International Airport System (AIAS) in 1961 to oversee both airports.

The AIAS operates under the purview of the DOT&PF as a state-owned enterprise fund, and the two airports share revenues and expenses in the International Airport Revenue Fund. The AIAS is funded by user fees and its operation is financially independent of the State's General Fund. However, the AIAS still requires approval from the State Legislature for expenditures. The AIAS is led by a Deputy Commissioner for Transportation who acts as the AIAS Executive Director. The AIAS staff consists of a Controller section, Transportation Planner and the Executive staffs of both international airports. The Aviation Advisory Board provides recommendations to the Commissioner of the DOT&PF and Deputy Commissioner of Aviation regarding public policy related to AIAS and other statewide aviation affairs.

The two AIAS airports operate as a unified system serving as each other's alternate landing site in the case of a closure. The system boasts 100% reliability. The two airports are separated by more than 260 miles with the Alaska Range and Talkeetna Mountains in between. Therefore, the airports are never simultaneously closed by the same severe weather system. This ensures operational certainty, especially for the large cargo aircraft that frequent the facilities. The AIAS recently sponsored a study as part of an overall strategic planning effort to enhance AIAS asset management and support long-term financial viability. The *2013 AIAS Planning Study* was conducted independently of this Master Plan Update.

2.3.2 FEDERAL AVIATION ADMINISTRATION

The DOT&PF owns the Airport and the land it occupies. However, the DOT&PF is not free to set policy with impunity. The FAA also exercises a degree of control over the Airport as the FAA executes its mission to "provide the safest, most efficient aerospace system in the world."¹⁹ In doing so, the FAA places numerous strict restrictions on the Airport. Requirements to abide by FAA regulations are applied to airports through a number of means. Airports certified for scheduled commercial service under Title 14, Code of Federal Regulations (CFR), Part 139 must, first and foremost, abide by FAA safety regulations to maintain

¹⁹ Federal Aviation Administration website, <http://www.faa.gov/>, 2012.

their certification. This regulation allows the FAA to object to and restrict certain types of development within safety areas on and off airport property. Additional information regarding these FAA obligations is presented in **Section 4, Airport Land Use**.

2.3.3 MUNICIPALITY OF ANCHORAGE

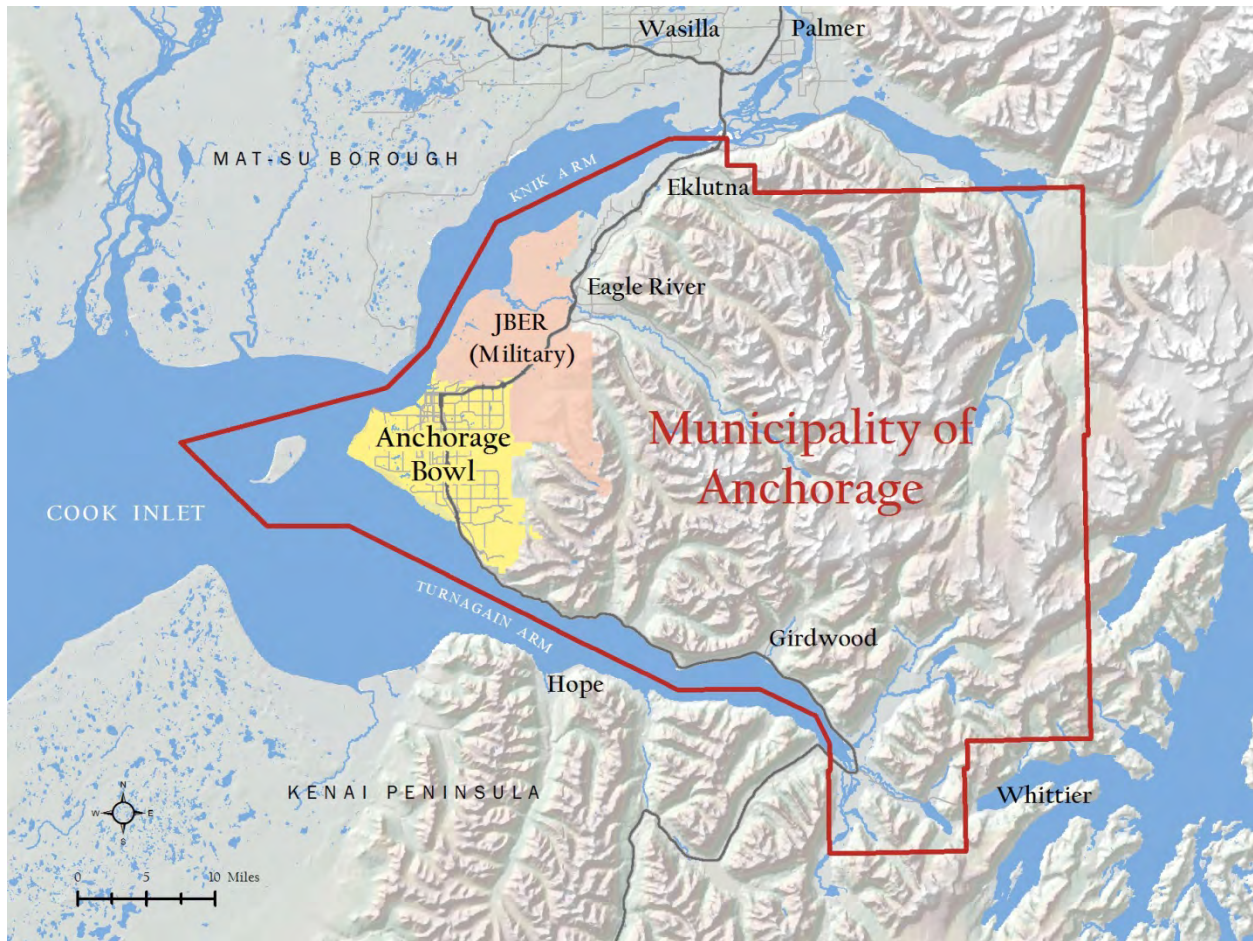
The MOA, as shown in **Figure 2.7**, is a 1,955-square-mile (approximately 1,251,200 acres) geographic and jurisdictional area located between Prince William Sound and the Upper Cook Inlet. The Anchorage Bowl, comprising 100-square miles (approximately 64,000 acres), is the urbanized area of the MOA and is where the Airport is located. Although geographically located in the MOA, the Airport is not jurisdictionally a part of the MOA because it is owned and operated by the DOT&PF. As a result, the MOA has limited control over Airport operations. However, the MOA does control the zoning and land use of adjacent, off-Airport properties and the urbanized areas around the Airport where most residents live.

The relationship between the MOA and the Airport is often a point of confusion. There is a common misconception that the MOA operates the Airport because it is located within its jurisdictional boundary. The Airport administration continues its efforts to clarify this misconception, as it recognizes its responsibility to be a good neighbor and work with the adjacent community and MOA to address concerns regarding Airport affairs.

The mayor of the MOA continues to make Anchorage a great place to live, work, and play by focusing the MOA's governmental efforts on improving public safety and welfare. Although the missions of the FAA and the MOA are different, they are not mutually exclusive. All involved agencies coordinate with each other to achieve both independent and shared goals.

The *West Anchorage District Plan* (WADP) is a recent product of the MOA's coordination efforts. The WADP, along with establishment of the West Anchorage Planning Area, was recommended by the MOA in the *Anchorage 2020: Anchorage Bowl Comprehensive Plan* (adopted February 2001). The West Anchorage Planning Area comprises approximately 13,200 acres of the Anchorage Bowl. The goal of the WADP was to establish general public policy that reflected the vision of residents, landowners, and public entities for future growth in West Anchorage. A number of issues not related to the Airport were addressed. However, since the Airport is by far, the most prominent feature of the West Anchorage Planning Area, extensive focus was placed on the Airport.

Figure 2.7
Municipality of Anchorage



Source: RS&H and HDR, 2014.

2.4 AIRPORT ROLE

The Mission of the Airport is to “develop, operate, and maintain the Airport for Anchorage, Alaska, and the World.” To fulfill this Mission, the Airport has a staff of employees within the DOT&PF to plan, develop, operate and maintain its facilities. In addition, the Airport receives support from other agencies such as the FAA, Transportation Security Administration, and U.S. Customs and Border Protection.

Airport employees are tasked with the safe and efficient operation of the Airport. Airport management staff is responsible for decision-making regarding the operation and future development of the Airport. Specifically, it is the responsibility of the Airport Manager to oversee Airport employees and ensure the safe and efficient operation of the Airport on a daily basis. The Airport Manager reports directly to the AIAS Executive Director. The Airport Manager must also ensure that the Airport continually meets the requirements set forth by the FAA. Major Airport construction efforts are overseen by DOT&PF management staff and the FAA for compliance and safety. Additionally, all construction

projects undergo review for impacts to the environment and community, in accordance with federal, state, and local laws.

To support the Airport Mission, it is important that the Master Plan Update process foster the role of the Airport as a vital transportation asset in the MOA, region, state, and world. The Airport is one of a handful of airports in the state built to accommodate large aircraft. With the Airport strategically located between Asia and the Lower 48 States, the Airport also plays an important role in the transport of passengers and cargo. As a result, economic growth in the United States and Asia typically translates into increased needs for aviation facilities at the Airport. The Airport needs to maintain its facilities to continue to attract international as well as intrastate passenger and cargo activity that may spur the economy by bringing in new residents and business.

2.4.1 AIRPORT ROLE ON THE GLOBAL LEVEL

The two airports that form the AIAS, the Airport and Fairbanks International Airport, play an important role on the global level. Both airports have long been midway stops for aircraft on intercontinental routes. That role is not a coincidence. Their location on the globe is a key reason that the airports have been an integral part of the global air transportation network. The airports are approximately 9.5 hours from 90% of the industrial world. The airports also offer double coverage, so that in the event of inclement weather, the other airport is still available to serve traffic. The AIAS is open 24 hours a day, 7 days a week, 365 days a year, significantly reducing financial risk for air carriers that might otherwise have to forego revenue producing flights because of weather. When intercontinental commercial aircraft began serving routes across the Pacific, the early generation jet aircraft of the time did not have the range to conduct a non-stop trans-Pacific flight. Therefore, Anchorage became a common midway stop for aircraft to refuel. Many aircraft heading to or from Southeast Asia stopped and refueled in Hawaii, while the majority of aircraft leaving the west coast of North America heading to Europe or Asia went through Anchorage.

Even as early jetliners were being replaced with more powerful and fuel efficient aircraft, the Airport remained a common stopover point. At the time, airspace over China and the Soviet Union was off-limits to transiting aircraft. Only commercial aircraft that planned to stop and serve passengers in China and the Soviet Union were allowed to transit over the respective countries. Therefore, most aircraft had to stop midway in Anchorage because of the high fuel consumption required to fly around the large countries.

After the fall of the Soviet Union in 1991, Soviet airspace opened to transiting passenger air traffic. After this time, the Airport was no longer an essential stopover for passenger aircraft, and international transit passenger activity declined. Despite this, the Airport's strategic location continues to play a prominent role in intercontinental air travel today. Large, lumbering cargo aircraft have taken the place of international

passenger aircraft at the Airport. In fact, the Airport consistently ranks near the top in the world in terms of landed cargo weight.

The Airport is conveniently located to serve transiting intercontinental cargo aircraft. With the advent of the “just-in-time” business concept, cargo and freight is loaded onto aircraft and shipped “just in time” to reach the customer. This requires a reliable air transportation system that works efficiently and effectively. The Airport’s location logistically makes sense because of the ability to reach 90% of the industrialized world in 9.5 hours. Today’s jet aircraft certainly have the range to make non-stop intercontinental routes, but cargo aircraft trade range for payload capacity.

An aircraft cannot safely operate heavier than its certified maximum takeoff weight. Aircraft are designed to fly with a maximum amount of fuel (which maximizes its range), maximum amount of goods and/or passengers (which maximizes its payload), or some combination of the two. In the case of cargo aircraft, airlines often choose to maximize the payload in order to transport as much revenue producing freight as possible. In this case, the aircraft can take only a limited amount of fuel before reaching its maximum takeoff weight. This significantly reduces the range of the aircraft and requires a midway stop to refuel.

For these reasons, the Airport has become one of the premier refueling locations for transiting cargo aircraft. Many cargo aircraft transiting between Asia and North America stop at the Airport to refuel and change crews. These activities are commonly referred to as technical stops and represent a significant portion of traffic at the Airport. Cargo airlines prefer to stop at the Airport not only because of its optimum location for refueling, but also because ground crews are efficient at preparing the aircraft to continue its flight. Ground crews typically refuel and service transiting aircraft within 60 minutes, allowing aircraft to quickly continue on their routes.

The Airport not only serves technical stops, but a number of airlines also transfer and sort cargo at the Airport. The two largest sorting facilities at the Airport belong to UPS and FedEx. Both airlines use the Airport as regional sorting hubs. Further liberalization of cargo transfer rules and the expansion of markets will likely encourage additional growth of cargo transfer operations at the Airport. This potential for growth is supported by the Airport’s ability to accommodate the largest cargo aircraft (Airplane Design Group VI) flying today.

Presently, the Airport serves 30 passenger destinations and 50 cargo destinations. The major destinations for the Airport and Fairbanks International Airport are shown in **Figure 2.8**.

Figure 2.8
Location of AIAS in a Global Context



Source: Alaska International Airport System website, <http://dot.alaska.gov/aias/index.shtml>, 2012.

2.4.2 AIRPORT ROLE ON A NATIONAL LEVEL

The Airport plays an integral role on the national level. The Airport is part of the National Plan of Integrated Airport Systems (NPIAS). The NPIAS identifies 3,355 airports deemed significant to the national air transportation system and are therefore eligible for federal grants under the Airport Improvement Program (AIP). The Airport is classified as a medium hub, commercial service airport within the NPIAS. According to the 2013 NPIAS report, medium hub airports enplane between 0.25-1% of all passengers in the nation. There are 33 medium hub airports in the country that account for 19% of all enplanements. The Airport ranked 30th in terms of passenger enplanements in calendar year 2012 (the most current data available). Medium hub airports usually have sufficient capacity to accommodate air carrier operations and also a substantial amount of general aviation activity.

Nationally, the Airport plays a key role in transporting passengers and cargo between Anchorage and the Lower 48 States (interstate travel). Currently, only one road exists between Anchorage and the Lower 48 States. The nearest major city, Seattle, Washington, is a distance of 2,400 driving miles away. As a result, almost all passenger transport and much of the cargo transport is handled through Anchorage and the airport system. Compared to other airports within Alaska, the Airport has the highest outbound passenger volume heading for interstate destinations. Additionally, the Airport has eight times more

enplanements per capita than any other state²⁰. With regards to cargo, both FedEx and UPS have a strong presence in Anchorage and play a large role in transporting cargo between Alaska and the Lower 48 States. The Airport also serves as a key transit stop for international cargo carriers such as Korean Air Cargo and Air China Air Cargo, who also have final destinations in the Lower 48 States.

2.4.3 AIRPORT ROLE ON A STATE LEVEL

The Airport plays a very important role in the transport of goods and people within the State of Alaska. As previously indicated, aviation is a required mode of transportation in Alaska. Only 2% of Alaska's land area is accessible by road, resulting in 82% of Alaska's communities being inaccessible by the road system. Since many communities do not have access to a roadway or rail network, the intra-Alaska transport of people, cargo, and mail is primarily achieved through air travel via regional air carriers and freight forwarders. For this reason, Alaska has the largest aviation system in the nation—there are six times more pilots per capita and 16 times more aircraft per capita in Alaska than any other state. Additionally, aviation accounts for approximately 8% of Alaska's Gross Domestic Product and 10% of all jobs.

With direct connections to 92 locations in the State, Anchorage serves as a major passenger hub for Alaska communities. In 2010, Airport passengers most frequently traveled to Fairbanks, with 244,545 enplanements on eight airline carriers (two of which carried the bulk of the passengers). Juneau was the next most frequent destination, with 94,807 enplanements. Kenai, Kodiak, Bethel, and King Salmon were also common destinations for Anchorage passengers.

Anchorage also serves as a cargo hub for communities connected by air throughout Alaska. Over 147.6 million pounds of cargo was transported from Anchorage to over 90 Alaska communities in 2010. The largest volume of cargo was transported to Bethel with 35.7 million pounds. Other Alaska communities that received substantial volumes of cargo from Anchorage include Nome with 18.7 million pounds, Kotzebue with 18.7 million pounds, and Dillingham with 12.5 million pounds.

Two federal programs that subsidize the movement of aircraft within the State are the Alaska Bypass Mail Program and the Essential Air Service (EAS). These two programs have specific criteria for subsidies that help connect 139 communities to Anchorage. Bypass mail is defined as bulk mail that is prepared to not require handling in a U.S. Post Office. Since Anchorage and Fairbanks are the only two locations where bypass mail originates, the two airports play a vital role in the transportation of the mail from originating points to final destinations. From Anchorage, bypass mail is distributed to 16 hubs, which in turn service a total of 100 destinations. In 2012, about 77 million pounds of bypass mail was distributed from Anchorage. This mail was carried

²⁰ Department of Transportation and Public Facilities, Alaska International Airport System 101 Presentation, 2012.

primarily by six Anchorage-based airlines whose aircraft were also carrying freight and / or passengers (less than 1% of these flights were mail-only).

Similar to the Alaska Bypass Mail Program, the EAS program is federally subsidized and was established to provide small communities, such as those in rural Alaska, with air transportation service. Anchorage is a primary or connecting hub for 23 of the 43 Alaska communities in the EAS program. In 2010, approximately 40 thousand passengers, 3.4 million pounds of mail, and over 500,000 pounds of cargo were transported from Anchorage to four EAS hubs, with a small percentage continuing on to 19 other EAS communities. None of the communities currently served by the EAS are also served in the Bypass Mail Program.

2.4.4 AIRPORT ROLE ON A REGIONAL / LOCAL LEVEL

The Airport also plays a role in the region and local area. The Airport has long been an economic engine for growing local and regional economies. In fact, promoting the Airport as an economic generator is one of the key AIAS goals. Generally, aviation activity growth at an airport is proportionally related to the growth of the locality, and vice versa.

One way of enhancing the economic benefits of the Airport is to promote activities intended to draw in potential businesses and residents. Already, the Airport is responsible for contributing approximately 15,577 Airport and community jobs, which equates to one in ten jobs in Anchorage, that earn a total of approximately \$1 billion.²¹ Economic growth for the MOA, region, and State can be achieved through activities such as cargo transfer operations and tourism. Cargo transfer operations have the potential of drawing in permanent businesses and residents with a direct benefit to the MOA and region. This was the case in 2007 when FedEx and UPS substantially increased cargo transfer operations in Anchorage.

As an indirect consequence, these cargo transfer operations have the ability to further draw in and stimulate growth in light manufacturing and high-tech assembly industries related to the air cargo industry. Finally, the Airport serves to transport tourists to Alaska, who enjoy the natural beauty, environment, and recreational and sporting events such as the Iditarod event held annually in March.

²¹ Ted Stevens Anchorage International Airport website, <http://dot.alaska.gov/anc/index.shtml>, 2012.

SECTION 3 REGIONAL SETTING

A discussion of the area surrounding the Ted Stevens Anchorage International Airport (Airport) is provided in this section for an understanding of the socioeconomic profile, businesses, transportation system, freight movement, and land uses, including recreation and open space. Compatibility issues such as noise and the interaction of the Airport with other nearby airports are also documented. The purpose is to provide a reference to aid in future development decisions both on- and off-Airport land.

In addition to describing the surrounding area and compatibility issues, future considerations for property decisions are also discussed. Considerations include 1) maintaining the safety of those who use the Airport and those who live and work near the Airport, 2) maximizing the efficiency of Airport operations to attract additional aviation businesses, 3) encouraging and maximizing a mutually beneficial relationship between Airport operations and activities within the region, and 4) knowing what potential opportunities and constraints exist for future land use development efforts.

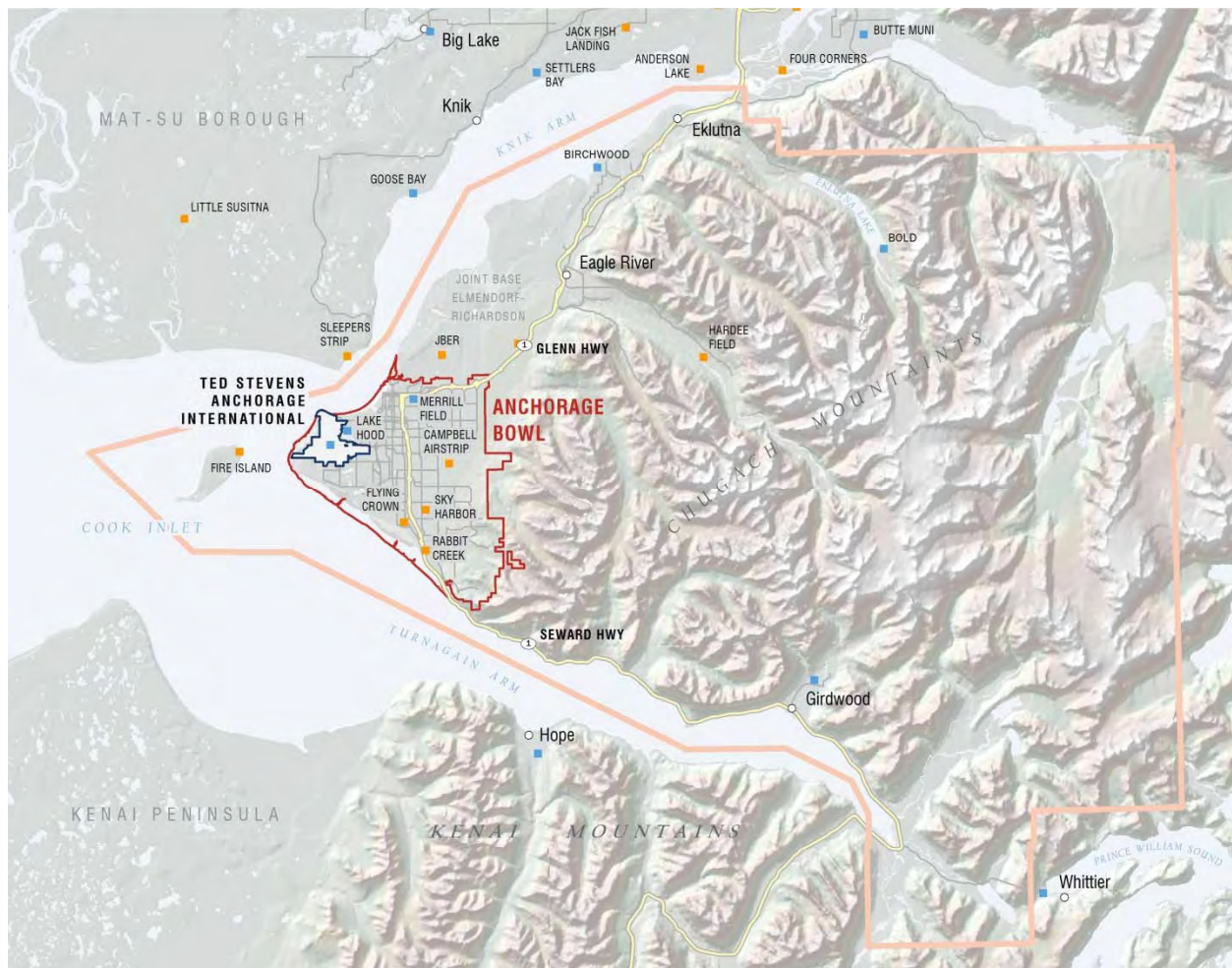
3.1 REGIONAL SETTING

The geographical boundary that defines the regional setting for the Ted Stevens Anchorage International Airport Master Plan Update (Master Plan Update) is the Anchorage Metropolitan Statistical Area (MSA), shown in **Figure 2.9**. As defined in the 2012 *Alaska International Airport System Forecast Technical Report*, the Anchorage MSA includes the Airport, the Municipality of Anchorage (MOA) and the Matanuska-Susitna Borough. The land area for the Airport, although owned by the State of Alaska, is located within the Anchorage Bowl and West Anchorage. The Anchorage Bowl exists within the MOA and includes the Airport (33% of the Anchorage Bowl) and the majority of the business areas of downtown Anchorage.

West Anchorage comprises 16% of the total Anchorage Bowl population²². The West Anchorage Planning Area consists of approximately 13,200-acres bounded by the Cook Inlet and Knik Arm to the west; Westchester Lagoon to the north; West Dimond Boulevard to the south; and Minnesota Boulevard, C Street, Arctic Boulevard, and Spenard Road to the east.

²² Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.

**Figure 2.9
Regional Setting**



Source: HDR, 2014.

3.1.1 SOCIOECONOMIC PROFILE

In 2012, the Alaska International Airport System (AIAS) completed the 2012 *Alaska International Airport System Forecast Technical Report* (AIAS Forecast). The forecast projects aviation activity beginning at the baseline year of 2010 and extends through the forecast year of 2030. The aviation activity forecasts contained in the AIAS Forecast are used as the basis for this Master Plan Update. Therefore, the socioeconomic profile (population, age, race, employment, income) used in the AIAS Forecast applies to the Master Plan Update. The socioeconomic profile provided in the AIAS Forecast is summarized herein.

Between 1990 and 2010, the population of the Anchorage MSA grew at an average annual rate of 1.8% from approximately 268,000 to 380,000. The population is anticipated to grow between 1.3% and 1.7% annually, from approximately 380,000 to a range of 500,000 to 530,000 between 2010 and 2030. In comparison, the population within the Anchorage

Bowl was approximately 240,000 in 2010 and is estimated to grow to approximately 284,000, reflecting a slower annual growth rate of 0.8% through 2030. The population growth rate for rural Alaska is also expected to grow more slowly with an annual growth rate of less than 1%.

With regard to age, the majority (approximately 63% to 70%) of the residents in the Anchorage Bowl and West Anchorage are between the ages of 15 to 64. The neighborhoods abutting the Airport, in order of youngest to oldest average resident, are Sand Lake, Spenard, and Turnagain. The racial or ethnic minority population represents approximately 10% to 15% of the total population.²³

Employment between 1990 and 2010 in the Anchorage MSA grew faster than in the United States. Major industries in Alaska include oil and gas production, tourism, mining, timber, and agricultural industries. Employment is anticipated to grow in the Anchorage MSA between 1.3% and 1.4%, from approximately 235,000 to a range of 305,000 to 310,000 employees between 2010 and 2030. Although this rate of growth is slower than that experienced during the 1990 to 2010 period, it is still higher than the rate of growth projected in rural areas. Future employment growth is expected in the trade, finance, and service industries.

Income (in 2010 dollars) is anticipated to increase in the Anchorage MSA between 1.5% and 2.4%, from approximately \$18 billion to a range of \$24 to \$29 billion between 2010 and 2030. This rate of growth is slower than during the 1990 to 2009 period. It is also expected to grow slower than the income growth in the United States due to the reduced stimulus from natural gas development and federal expenditures.

3.1.2 RESIDENTIAL AREAS

Although residential areas appear throughout the region, the residential areas discussed in this section are limited to those surrounding the Airport within the West Anchorage Planning Area. These residential areas include the Turnagain, Spenard, and Sand Lake neighborhoods, which are the communities most significantly impacted by aviation activities at the Airport. The Turnagain and Spenard neighborhoods are predominately planned subdivisions with mostly single-family housing, but also include multi-family dwellings. The Sand Lake neighborhood includes mostly single-family housing. All three neighborhoods have room for future residential growth. The Sand Lake gravel pits, located south of the South Airpark, is an area where large plats of homes continue to be developed.

Each neighborhood is well established. Although the neighborhoods have adequate infrastructure, it is aging in some areas. Several schools

²³ Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.

serve the area. The public schools closest to the Airport are the Kincaid Elementary School, located near Raspberry Road and Sand Lake Road, south of the Kulis Business Park; and the Lake Hood Elementary School, located just north of Spenard Lake on West 40th Avenue.

Each neighborhood has a community council that often works with the Airport to address community concerns. Many of the concerns are long-standing. They include noise from aircraft and road congestion caused by passenger vehicles and trucks along Northern Lights Boulevard and Raspberry Road.

3.1.3 SURROUNDING BUSINESS AREAS

The primary industries in Alaska are based on oil and gas production, tourism, mining, timber, and agriculture. Statewide, future employment is anticipated to increase in the trade, finance, and service industries. In the Anchorage Bowl, the Alaska Economic Development Corporation (AEDC) estimates an increase in the trade and health care industry.²⁴ Most of the employment opportunities in the Anchorage Bowl are located in the downtown and midtown business districts.

A commercial area called the Spenard Road Corridor exists immediately adjacent to the Airport, extending northeast towards the downtown business district along Spenard Road. The Spenard Corridor is planned to be revitalized in the future. Industrial areas are located southeast of the Airport from Minnesota Drive and International Airport Road and extend as far south as Raspberry Road.

The Airport generates employment for approximately 18,400 employees or 10,200 full-time equivalent jobs (2007 data). These jobs generate an annual payroll of \$562 million. Indirectly, a total of about one in 10 jobs are generated with an annual payroll of \$1 billion.²⁵

3.1.4 OTHER REGIONAL AIRPORTS

As part of the regional setting, it is important to consider the public regional airports whose activities may impact or be impacted by the Airport. These public regional airports include: the Lake Hood Airport, Joint Base Elmendorf-Richardson (JBER), Merrill Field, and Campbell Airstrip. Consideration of these airports is important, particularly with regards to the Airport, Lake Hood Airport, Merrill Airfield, and JBER, which are located within the Anchorage Terminal Area. The airspace interactions are detailed in **Section 7.2**. Descriptions of the airports surrounding the Airport are included in this section.

²⁴ Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.

²⁵ Ted Stevens Anchorage International Airport website, <http://dot.alaska.gov/anc/index.shtml>, 2012.

Lake Hood Airport

The Lake Hood Airport, located immediately east of the Airport passenger terminal complex, is a public-use general aviation facility. The Lake Hood Airport is touted as the largest and busiest seaplane base in the world. The Lake Hood Airport and the Airport are both owned and operated by the Alaska Department of Transportation and Public Facilities (DOT&PF). Air traffic at the Lake Hood Airport is also controlled by the controllers at the Airport.

The Lake Hood Airport is comprised of two aviation facilities – Lake Hood Seaplane Base and Lake Hood Strip. Lake Hood serves floatplanes in the warmer months and planes equipped with skis in the winter months. The facility operates under the Federal Aviation Administration (FAA) location identifier “LHD” and uses Lake Hood, Lake Spenard, and the connecting Hood Canal as the airfield surface. The facility has three water-lanes oriented in differing directions. The 1,930-foot-long north / south water lane and 1,370-foot-long northwest / southeast water lane are located within Lake Hood. The 4,540-foot-long east / west water lane spans from Lake Hood to Lake Spenard via the Hood Canal.

Aircraft equipped with wheels can operate at the Lake Hood Strip (FAA location identifier “LHD”). Runway 14-32 is a 2,200-foot-long, 75-foot-wide gravel surface runway located northeast of Lake Hood. Aircraft can easily traverse between the two facilities via a taxiway and set of dual-use aircraft and vehicle roads. It is worth noting that some aircraft based at the Lake Hood Airport use the facilities at the Airport.

Joint Base Elmendorf-Richardson

JBER is a United States military complex located five miles northeast of the Anchorage central business district and eight miles northeast of the Airport. The base (formally known as Elmendorf Air Force Base) was renamed after the unification of Elmendorf Air Force Base and Fort Richardson under the Base Realignment and Closure Commission. The 176th Wing of the Alaska Air National Guard also relocated to the base and vacated the Kulis Air National Guard Base (ANGB; now known as the Kulis Business Park) formerly found on the southern portion of the Airport property. JBER has three asphalt runways and a gravel strip as well as a water lane at Sixmile Lake. Two of the asphalt runways are located at Elmendorf: Runway 16-34, which is 7,505 feet long and 150 feet wide; and Runway 6-24, which is 10,000 feet long and 200 feet wide. In addition, there is one asphalt runway at Richardson (Bryant Army Air Field): Runway 17-35 is 4,088 feet long and 100 feet wide.

Merrill Field

Merrill Field is a general aviation towered airport located 1 mile east of the Anchorage central business district. Merrill Field has three runways. Runway 5-23 is a 2,000-foot-long by 60-foot-wide gravel and dirt surface runway. Runway 7-25 is a 4,000-foot-long by 100-foot-wide asphalt

runway. Runway 16-34 is a 2,640-foot-long by 75-foot-wide asphalt runway. Merrill Field has 844 based aircraft, 16 that are rotorcraft and one that is a glider.

Campbell Airstrip

Campbell Airstrip is a private-use, general aviation, non-towered airport located 4 miles southeast of the Anchorage central business district. Runway 2-20 is the airstrip's only runway; it is 5,000 feet long by 150 feet wide, with a gravel surface. There are no known airspace interactions with the Airport.

3.1.5 REGIONAL TRANSPORTATION AND TRAFFIC

The roadway system within the Anchorage MSA is well developed, with the major streets classified in the *Official Streets and Highways Plan* (2005 addendum). This plan complements the *Anchorage 2020: Anchorage Bowl Comprehensive Plan* (Anchorage 2020) and supports the Anchorage Metropolitan Area Transportation Study's (AMATS) *Anchorage Bowl 2025 Long-Range Transportation Plan* (December 2005). AMATS is the federally recognized Metropolitan Planning Organization for the Anchorage metropolitan area. Its focus is to work together with other agencies to plan and fund transportation systems in the Anchorage Bowl and Chugiak-Eagle River areas. The street classifications around the Airport are shown in Figure 2.10.

The main access roads to the Airport are West International Airport Road, Northern Lights Boulevard, Postmark Drive, Raspberry Road, and Jewel Lake Road. West International Airport Road is identified as an expressway (Class IV), with four to six lanes, minimum right-of-way width of 130 feet, and average daily traffic volumes of over 20,000 vehicles. Annual average daily traffic volumes in 2011 at the West International Airport Road and Minnesota Drive intersection totaled 22,600 in the eastbound direction and 21,800 in the westbound direction. Traffic volume at the Postmark Drive and West International Airport Road intersection averages 24,300 vehicles per day.²⁶ Jewel Lake Road is classified as a major arterial (Class III) just south of West International Airport Road, with four lanes, a minimum right-of-way of 100 feet, and average daily traffic volumes over 20,000 vehicles. Annual average daily traffic volumes in 2011 at the West International Airport Road and Jewel Lake Road intersection totaled 34,700.²⁷ Northern Lights Boulevard, Postmark Drive, and Raspberry Road are minor arterials (Class II). Each road has two to four lanes, minimum rights-of-way of 80 feet, and average daily traffic volumes between 10,000 and 20,000 vehicles. Annual average daily traffic volumes in 2011 at the Raspberry Road and Jewel Lake Road intersection totaled 20,600.²⁸

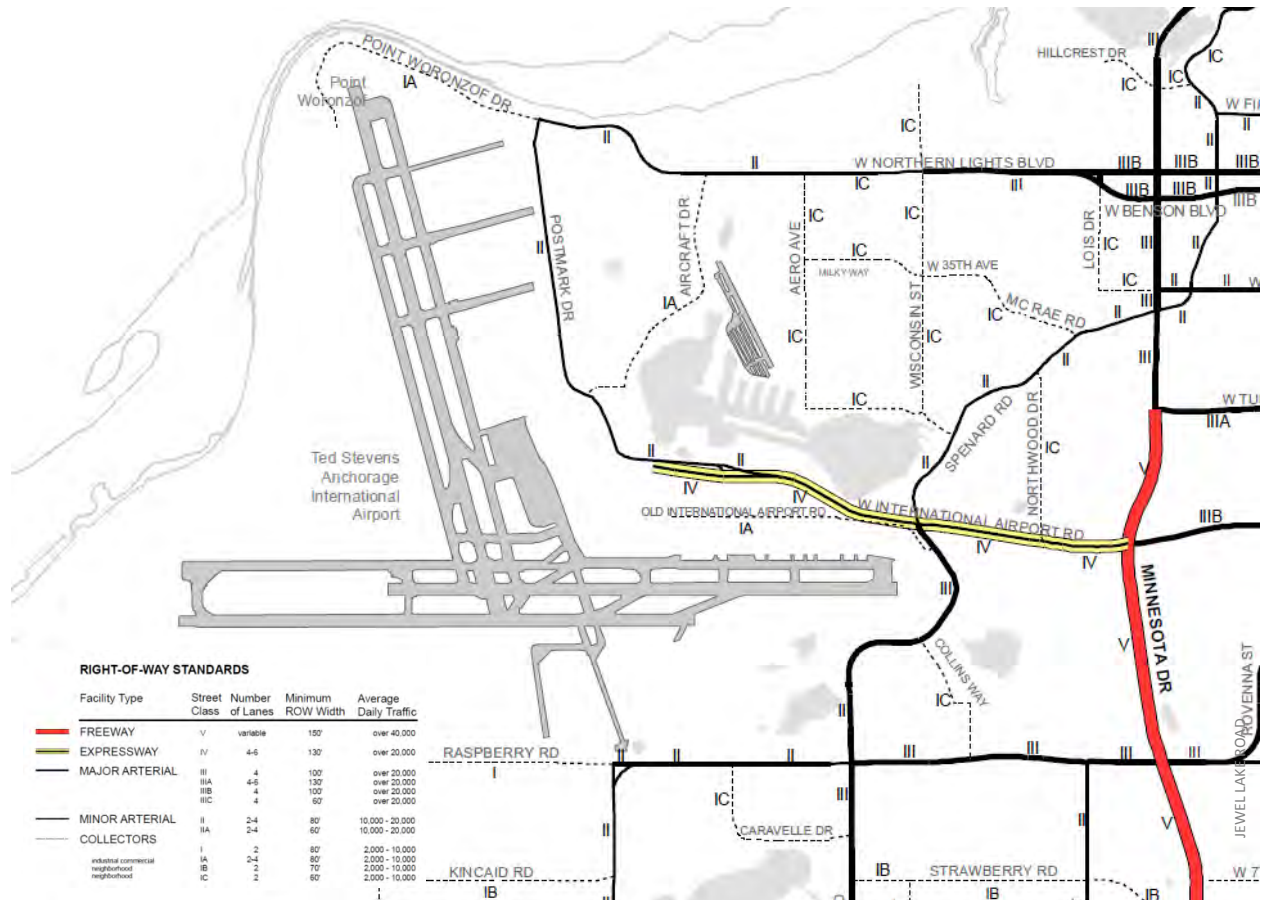
²⁶ Municipality of Anchorage, *Annual Traffic Report*, 2011.

²⁷ Ibid.

²⁸ Ibid.

Annual average daily traffic volumes in 2011 at the Postmark Road and Northern Lights Boulevard / Point Woronzof Drive intersection totaled 8,000 vehicles.

Figure 2.10
Anchorage Bowl Street Classifications



Source: Municipality of Anchorage, *Official Streets and Highways Plan*, 2005.

The Airport access roads are owned by the DOT&PF²⁹ except for Northern Lights Boulevard up to where the name changes to Point Woronzof at Postmark Drive. The posted speed limits³⁰ on each Airport access roads are listed below.

- West International Airport Road - 50 miles per hour (mph)
- Postmark Drive - 35 / 45 mph (note: the speed limit is 45 mph in the North Airpark area near Northern Lights Boulevard)
- Northern Lights Boulevard / Point Woronzof Drive - 35 mph
- Jewel Lake Road - 40 mph
- Raspberry Road - 40 / 45 mph

²⁹ Anchorage Metropolitan Area Transportation Study, *Anchorage Bowl 2025 Long-Range Transportation Plan*, 2005.

³⁰ Municipality of Anchorage, *Annual Traffic Report*, 2011.

Various traffic studies have been conducted to determine the Levels of Service for the traffic flows on the roadways based on their designs and lane capacities. AMATS has defined various Levels of Service ranging from Levels of Service A (free-flow) to Levels of Service F (congested conditions that severely impede traffic). The Level of Service of traffic near the Airport in 2010 is shown in Table 2.1.

Table 2.1
Roadway Intersection Level of Service (2010)

	Morning Peak Period Level of Service	Afternoon Peak Period Level of Service
West International Airport Road & Jewel Lake Road	A, B, or C (under capacity)	A, B, or C (under capacity)
Northern Lights Boulevard & Wisconsin Street	A, B, or C (under capacity)	A, B, or C (under capacity)

Source: Anchorage Metropolitan Area Transportation Study (AMATS), *Status of the System 2010, 2011*.

For future Airport planning efforts, the *Anchorage Bowl 2025 Long-Range Transportation Plan* recommended the following projects to improve traffic conditions on roadways near the Airport.

- Create an at-grade separation of West International Airport Road at Postmark Drive to improve circulation and access
- Construct an interchange at West International Airport Road and Jewel Lake Road incorporating grade separation of the railroad
- Construct a grade separation of West International Airport Road near Northwood Street with a realignment of the railroad to the south side of West International Airport Road to improve circulation, access, and freight movement

In addition, the MOA recommended that the Airport prepare an “Airport Street Master Plan” to address roadway conditions and traffic issues within Airport property. As part of the WADP, the MOA recommended that the following items be evaluated in the “Airport Street Master Plan”:

- Continued restriction of trucks on West Northern Lights Boulevard
- Maintain adequate capacity on Raspberry Road
- Maintain bicycle access on Postmark Drive
- Reconfigure the Sand Lake Road and Raspberry Road intersection after the South Airpark build-out

Public transit and bus service, which accounts for approximately 1% of all trips in the MOA, is provided by People Mover. The service is funded

by the MOA Department of Public Transportation. People Mover currently provides an hourly route (Route 7) to the Airport. The 2009 *People Mover Route Restructure Plan Update (Blueprint)* is the implementation plan for the People Mover bus system. The *Blueprint* recommends improvements such as increased frequency, extended operational hours, and improved shelters for Route 7 / 7A due to high Airport employee demand. With regard to transit, the MOA has adopted a policy to generally increase and promote transit use as a result of recommendations made in *Anchorage 2020* (refer to Policies 33 and 34).

As identified in the *Municipality of Anchorage Long-Range Transportation Plan*, the State of Alaska and MOA have been trying to encourage alternative, non-motorized modes of travel, but additional infrastructure improvements are necessary. Plans to encourage non-motorized modes of transportation, such as bicycling and walking, are documented in the *MOA Non-Motorized Transportation Plan*, which includes the 1997 *Area-wide Trails Plan* (adopted 1996), *Anchorage Pedestrian Plan* (adopted 2007), and the 2010 *Anchorage Bicycle Plan* (adopted 2010). In the vicinity of the Airport, Jewel Lake and Raspberry roads have been identified as part of the core bicycle network. Non-core roads have been identified on West International Airport Road between Northwood Drive and Spenard Road.

The recreational areas around the Airport contain a large network of paved and unpaved multi-use trails. The majority of these trails are located south of the Airport. Some of the more popular trails near the Airport include the Tony Knowles Coastal Trail (Coastal Trail), paved areas around Lake Hood, and the extensive network of trails at Kincaid Park. Popular trails on Airport property include portions of the Coastal Trail and trails near Kincaid Park and Connor's Bog. According to the 2011 *Annual Traffic Report*, weekly use of the Coastal Trail exceeds 3,000 trail users during the summer and about 400 trail users during the winter.

Passenger rail service is operated and managed by the Alaska Railroad Corporation. The rail line enters the Airport along West International Airport Road and terminates at the Bill Sheffield Alaska Railroad Depot located near the Rental Car Center and the public parking garage. The placement of the rail depot at the Airport offers unique opportunities to connect the air and rail transportation systems. The International Airport Road transportation corridor joins the main north-south rail line that connects the Intermodal Center in Ship Creek at the north end of the MOA to Seward, which is located approximately 130 miles south of Anchorage. Currently, the rail line is used primarily by passengers who arrive on seasonal cruise ship charters. This is most common during the summer months. Several trains operate during the day. Future passenger rail expansion plans include extensions north to the Matanuska-Susitna Valley and south to Girdwood. The proposed expansion is consistent with *Anchorage 2020*'s policy to tie Anchorage to outlying communities with commuter rail and intermodal transit (Policy 30a).

There are several concerns regarding the rail line, including safety issues with the at-grade rail crossings along West International Airport Road. Also, nearby residents expressed concerns about train noise and rail vibration.

3.1.6 FREIGHT MOVEMENT AREAS

Approximately 90% of freight entering the Anchorage MSA does so via ocean freighters at the Port of Anchorage located northeast of the Airport.³¹ Goods are then distributed primarily by truck along the Glenn and Seward highways as well as along West International Airport Road, Minnesota Drive, and Tudor Road. Regional truck traffic is anticipated to increase in the future commensurate with projected growth in freight activity. Freight is also transported via rail operated by the Alaska Railroad Corporation.

The remaining 10% of freight entering the Anchorage MSA occurs mostly at the Airport. Freight that enters at the Airport is typically express freight. Air freight is moved off aircraft and transported to distribution centers via trucks along dedicated truck routes. These routes include Postmark Drive, Lake Hood Drive, West International Airport Road, Old International Airport Road, Raspberry Drive, and Jewel Lake Drive. Northern Lights Boulevard is not identified as a truck route as it passes through residential communities.

3.2 COMPATIBILITY

Compatibility issues addressed in this section include land use / zoning, height restrictions, noise, and nearby recreational areas surrounding the Airport. These issues are frequently raised during discussions between the Airport and local residents and businesses surrounding the Airport. Many of the issues are voiced because they pertain to the safety of air navigation for pilots and the surrounding community. Other concerns include quality of life issues raised by residents and businesses, such as aircraft engine noise, or the preservation of recreational areas and natural buffer areas between the Airport and nearby homes and businesses.

3.2.1 LAND USE / ZONING SURROUNDING THE AIRPORT

The land area surrounding and containing the Airport is known as the West Anchorage area. Land uses within the Airport property are determined and controlled by the DOT&PF. Land uses and zoning surrounding Airport property are determined and controlled by the MOA. The last update to the West Anchorage land uses was completed and documented in the WADP. The WADP was produced in 2008 by the MOA to address land use compatibility concerns. The WADP is a formal element of *Anchorage 2020*. The WADP Land Use Plan Map is shown in **Figure 2.11**.

³¹ Municipality of Anchorage, Traffic Department and Anchorage Metropolitan Area Transportation Study, *Freight Mobility Study*, 2001.

Within the West Anchorage Planning Area, most of the land area owned by the MOA is set aside for the Airport (33%). The remaining land uses are: residential (22%), parks and open space (17%), railroad or other rights-of-way (11%), and vacant (6%).³² Other facilities in the Anchorage Bowl and West Anchorage include the Asplund Wastewater Treatment Facility to the northwest and FAA institutional lands to the south.

The zoning map dictates generally what can be built within the MOA per Title 21 of the Anchorage Land Use Planning Code. It is shown in **Figure 2.12**. Similar to the land use breakdown, residential uses within the West Anchorage Planning Area comprise the largest land use component with approximately 37%, followed by air-transportation related uses at 33%, and public and institutional lands at 19%.

The Airport is zoned as a Transition District (T). Per the Planning Code, the Transition District includes suburban and rural areas that are not developing and are not expected to develop in the immediate future along definite land use lines because of their location in relationship to other development, topography, or soil conditions. The Planning Code also contains a zoning overlay district that restricts the height of structures adjacent to the Airport for safety reasons. Future revisions of Title 21 should consider, in conjunction with the DOT&PF, establishing the Airport as a separately defined zoning district. This would allow potential development standards and Airport influence overlay zones (e.g., noise, height, and land uses) to be created. Influence zones relating to aviation development and development in areas surrounding the Airport would help to ensure compatibility between the Airport and the surrounding community.

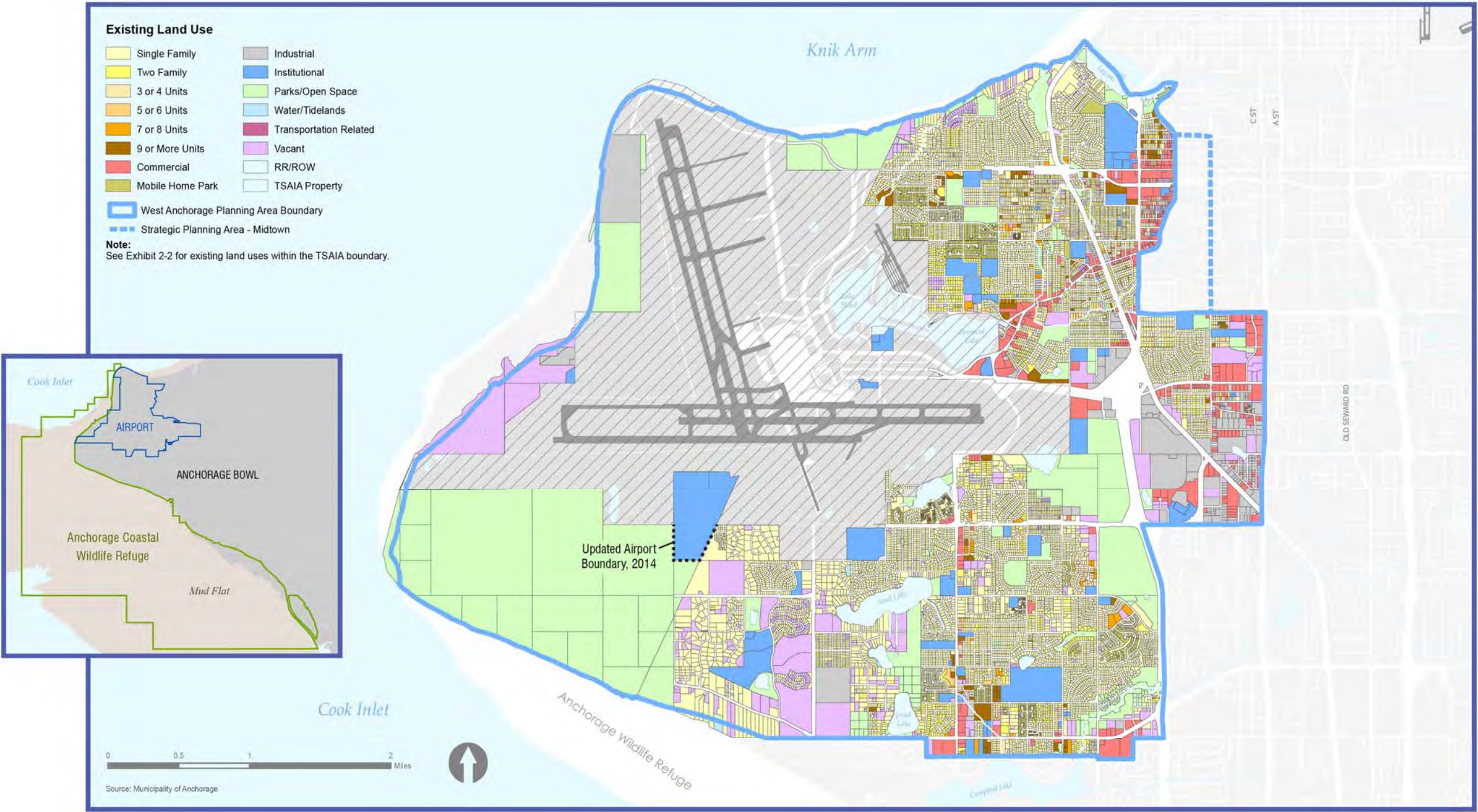
It should be noted that parts of the Anchorage District are designated as wetland areas. These areas are discussed in detail in **Section 9.19**.

As the Airport and region continue to grow, compatibility concerns related to land use and activities at the Airport and surrounding areas need to be considered. Prudent actions must be taken to ensure the continued safe and efficient operation of the Airport as well as to maintain the well-being of the residents and businesses within the MOA and State of Alaska.

³² Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.

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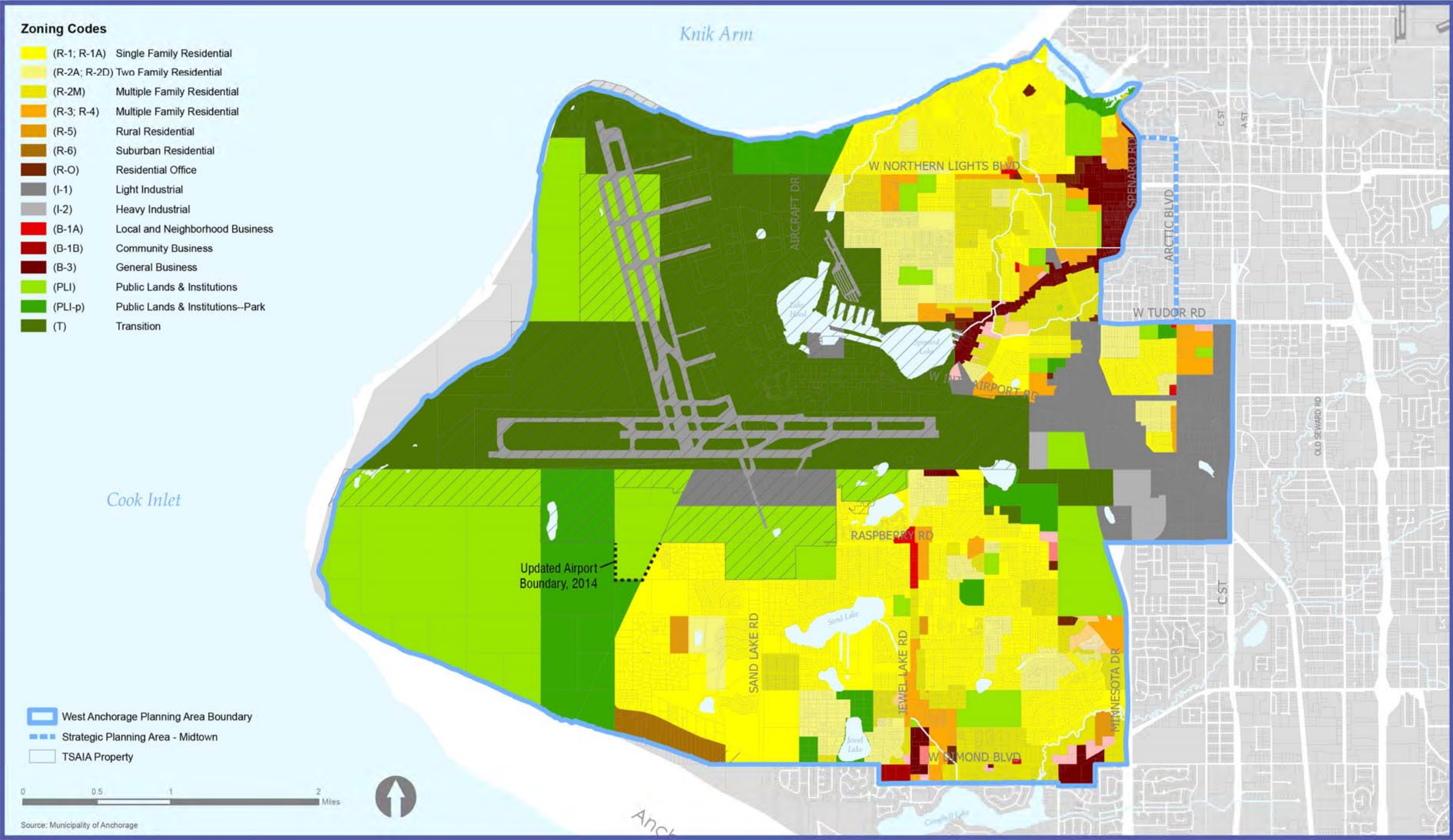
Figure 2.11 WADP Land Use Plan
Map



Source: Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.
Notes: ROW = Right-of-Way, TSAIA = Ted Stevens Anchorage International Airport.

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Figure 2.12 Zoning Map



Source: Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.
Note: TSAIA = Ted Stevens Anchorage International Airport.

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To address existing and potential future compatibility concerns, the MOA initiated efforts in 2008 to produce the WADP (adopted by the Anchorage Municipal Assembly on July 10, 2012). The purpose of the WADP effort was to develop a 20-year strategic implementation plan. The WADP is a formal element of *Anchorage 2020*. The WADP documents the zoning and land use of the West Anchorage Planning Area, the land development history, including land uses and ownership, as well as past measures taken to resolve potential land use conflicts. Through a series of workshops with community stakeholders, the WADP process developed a general public policy plan that reflects the vision of residents, landowners, and public entities for future growth in West Anchorage. The plan includes recommendation of a viable land transfer between the State of Alaska and MOA to address Airport and stakeholder concerns regarding land uses surrounding the Airport. The land transfer would effectively change the Airport property boundary.

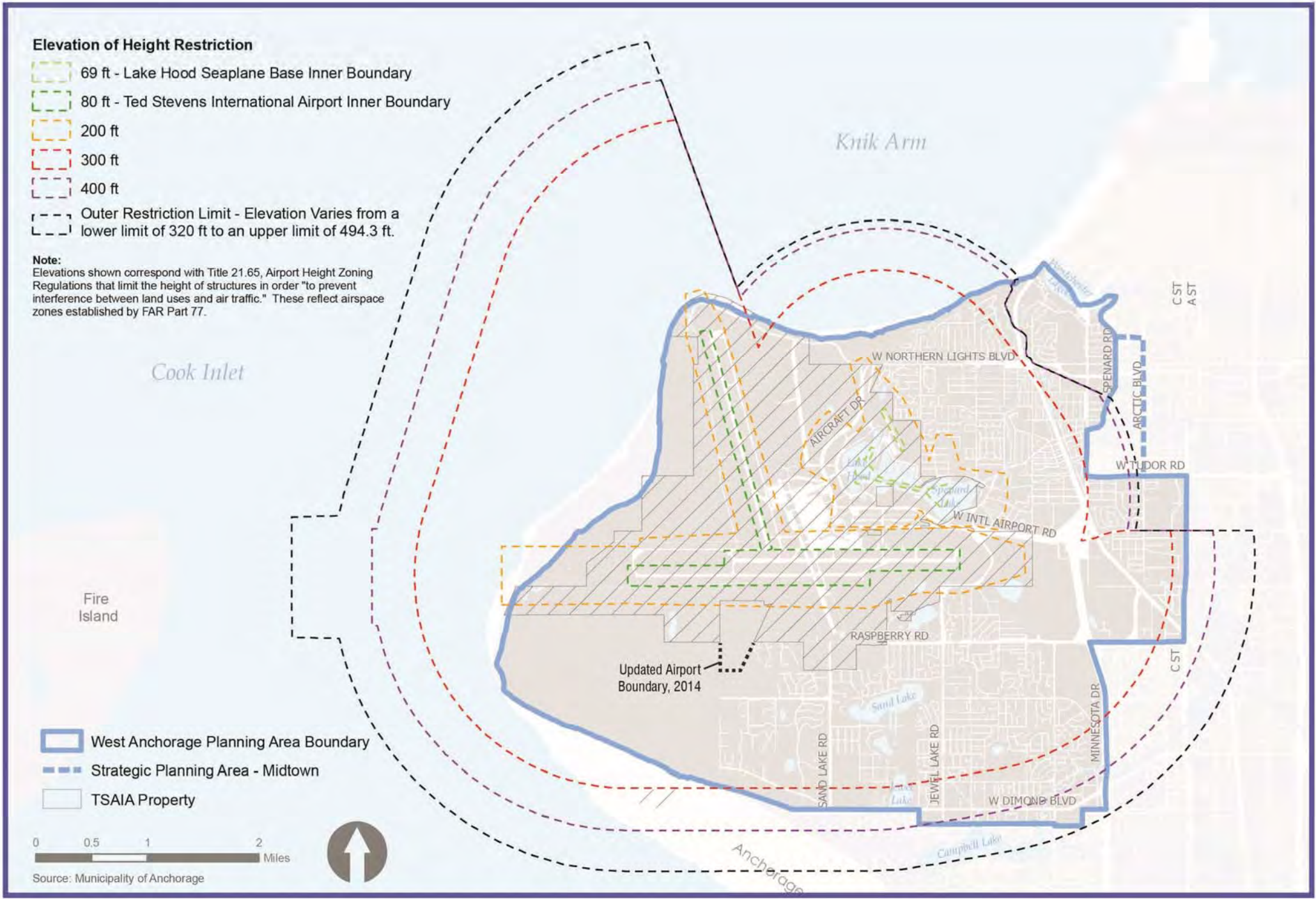
This section summarizes the research and findings of the WADP, *Anchorage 2020*, and other known related efforts to evaluate and promote compatibility between the Airport and its surrounding areas. Further discussions regarding the compatibility issues are addressed in subsequent sections of the Master Plan Update document. It should be noted that the purpose of the Master Plan Update is not to recommend an appropriate compatibility plan. Rather, it acknowledges the recommendations made in the WADP and ensures that those recommendations are carried forward into the master plan alternatives development efforts.

3.2.2 AIRPORT HEIGHT RESTRICTIONS

The MOA adopted the FAA Part 77 imaginary surfaces as its airspace zones in Title 21, Chapter 65, "Airport Height Zoning Regulations." These zones regulate the permitted heights of new development around the Airport. The purpose of these restrictions is to prohibit buildings from being built too high, which may pose an obstruction to air navigation. In general, building heights cannot exceed 35 feet or the height established on the airport height overlay map, whichever is greater. In addition, any building exceeding 200 feet above a federally established airport reference point requires FAA approval. The building height restrictions as established by the MOA for areas outside the Airport property boundary are shown in **Figure 2.13**. The Airport, MOA, and FAA are working continuously to evaluate and update the height restriction map.

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Figure 2.13 Height Restriction Map



Source: Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.
Note: TSAIA = Ted Stevens Anchorage International Airport.

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3.2.3 NOISE

One of the most commonly raised issues by residents living near the Airport, and by residents living near airports generally, is aircraft noise.

The DOT&PF is currently preparing an FAA Part 150 Noise Compatibility Study Update to assess the effects that aircraft noise has on the communities surrounding the Airport. The last Part 150 Study was completed in 1998. The Part 150 Study, as defined on the Part 150 Study website, is a “voluntary noise exposure and land use compatibility study prepared by an airport to identify existing noise exposure, identify potential future noise exposure, evaluate various alternatives, and to make recommendations as to viable noise abatement/mitigation measures.”³³ The Part 150 Study will be completed following the completion of the Master Plan Update.

As part of the Noise Compatibility Program for the Airport, the land use and noise abatement recommendations of the Part 150 Study and other related noise studies are implemented. The Airport conducted the 2002 *Ground Noise Study* in response to community requests to measure noise, identify noise sources, and determine noise control methods. Since 2002, the Airport has taken several actions to mitigate noise impacts. A Residential Sound Insulation Program (RSIP) was implemented using FAA and Airport funds to insulate over 700 homes built prior to 1998 within the 65 to 70 Day-Night-Average-Sound-Level (DNL) noise contour. In addition, the Airport installed a Flight Track & Noise Management System to monitor and measure aircraft flight tracks and noise. The Airport has also established a procedure to track and respond to noise complaints.

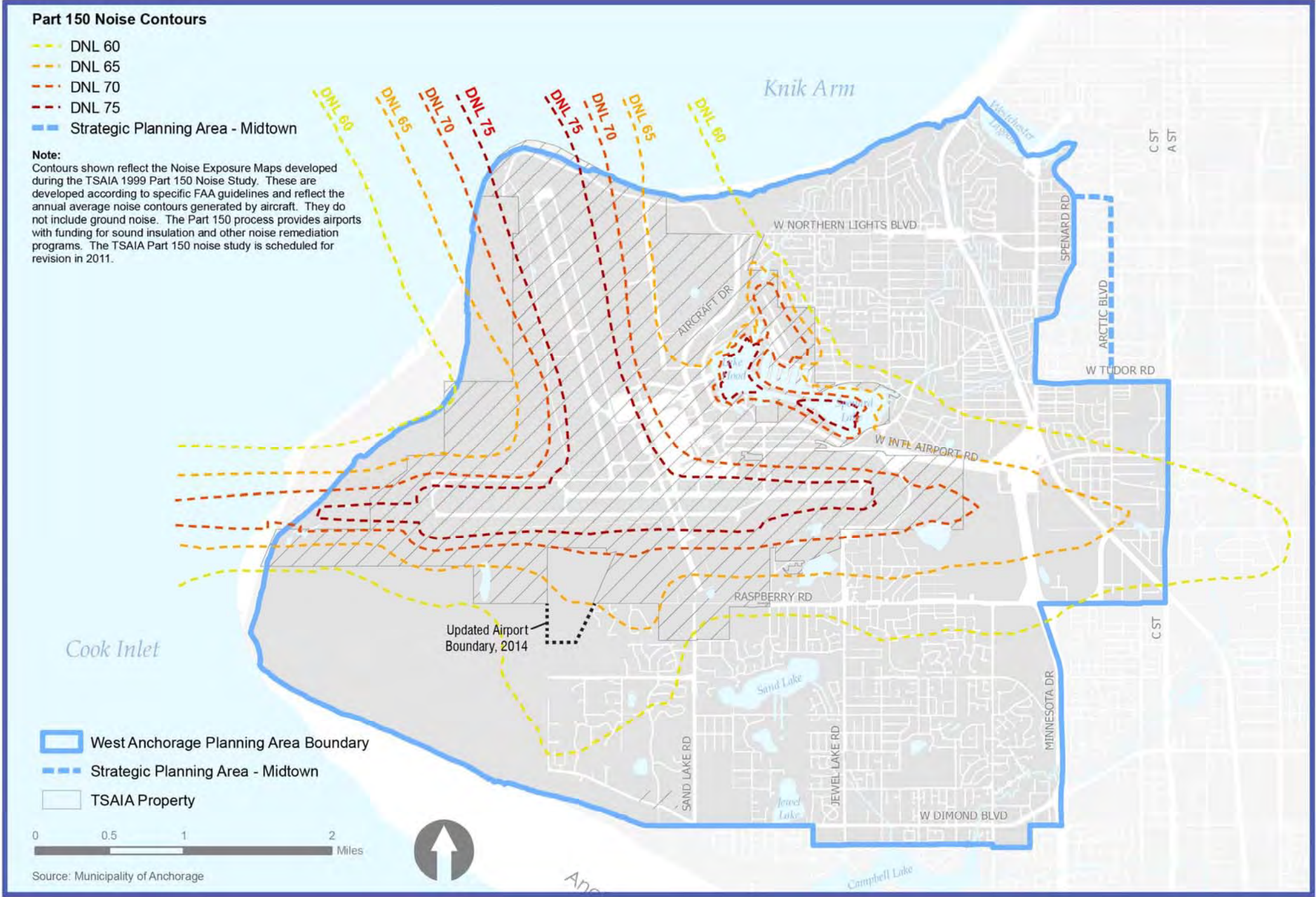
The noise exposure maps developed during the Part 150 studies show various contours based on the average annual DNL. The 1997 noise contours, developed as part of the 1998 Part 150 Noise Compatibility Study, were approved by the FAA in 1999. The 1997 contours are shown in **Figure 2.14** along with the land use map at the time the study was completed. The 2012 noise contours and future 2026 noise contours are currently being developed in the ongoing Part 150 Noise Compatibility Study.

Sound levels are generally highest during the summer months when aviation activity at the Airport, as well as at the Lake Hood Airport and the many airports within the metropolitan area, is highest.

³³ Ted Stevens Anchorage International Airport Noise Program website, <http://dot.alaska.gov/anc/business/noise/index.shtml>, n.d.

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Figure 2.14 1997 Noise Exposure
Map



Source: Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.
Notes: DNL = Day-night Average Sound Level, TSAIA = Ted Stevens Anchorage International Airport

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3.2.4 RECREATION AND OPEN SPACE

Various recreation and open space areas exist within and surrounding the Airport. Where recreational uses are allowed within Airport property, temporary maintenance agreements, which permit temporary recreational use, were entered into between the Airport and MOA. All but one of these agreements are now expired. However, the Airport continues to allow month-to-month use for recreational purposes until such future time that aviation demand necessitates the land be used for Airport development, or until a viable resolution to ensure long-term use can be achieved. The various recreation and open space areas on and surrounding the Airport are shown in Figure 2.15.

Tony Knowles Coastal Trail

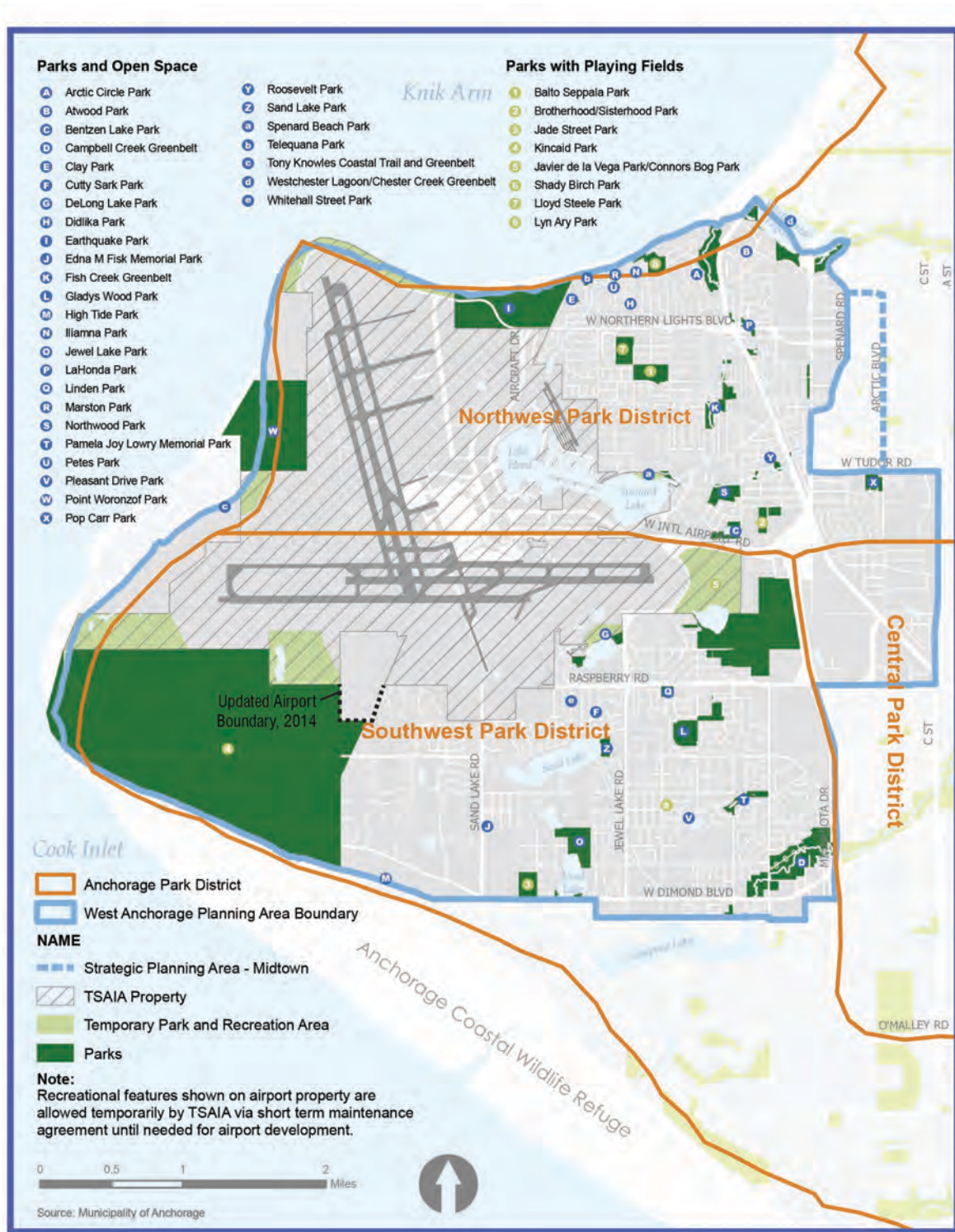
Access to the coast has always been a long-term community goal. It was first documented in the 1979 *Coastal Management Plan*. As a result, the Coastal Trail was developed in the early 1980s to provide coastline access from downtown Anchorage. The trail meanders through Anchorage neighborhoods, around the Airport, along the coastline, and finally to Kincaid Park, located south of the Airport. Trailheads are located along the trail at:

- Earthquake Park
- Near the intersection of Postmark Drive and Point Woronzof Drive
- Just north of the Point Woronzof Drive and Hutson Drive intersection
- Several locations within Kincaid Park

The Coastal Trail is used frequently by pedestrians, cross-country skiers, and bicyclists. It is maintained by the MOA.

Portions of the Coastal Trail run through Airport property. These portions are permitted through easements and Airport maintenance agreements, which were negotiated between the Airport and MOA. Some of these easements and agreements are not permanent. One maintenance agreement (contract ADA-30118) between the State and MOA allows for temporary use of Airport property for the public trail with an understanding that the property could be used for aviation purposes in the future. The contract has no expiration date, but can be terminated by either party with a 90-day notice. Some of these trails are shown on the latest FAA conditionally approved Airport Layout Plan as belonging to an Airport “buffer” area where a future use has not specifically been defined. Advocates of the Coastal Trail would like to see the temporary easement renegotiated to create a permanent easement or to transfer the trail lands and associated greenbelt from the State to the MOA.

Figure 2.15
Existing Parks and Open Space



Source: Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.
Note: TSAIA = Ted Stevens Anchorage International Airport

Earthquake Park

Earthquake Park is located north of the Airport along Northern Lights Boulevard and Aircraft Drive. The park is the site where the 1964 9.2-magnitude earthquake caused the landmass supporting the Turnagain neighborhood to slide into the ocean. Approximately 75 homes were destroyed in the earthquake. Park amenities include picnic areas, a walking trail, and various informative signs about the earthquake incident.

Kincaid Park

Kincaid Park is located south of the Airport and is one of the largest parks in the West Anchorage Planning Area. In addition to the abundant natural open space, amenities include recreational trails, various overlook areas, a stadium, archery field, and soccer fields. Trails adjacent to Kincaid Park are located on Airport property. Recreational uses in this area are allowed temporarily via a short term maintenance agreement. The Coastal Trail begins north along the coastline and passes through Airport property and Kincaid Park. Raspberry Road, which is located on the northeast portion of Kincaid Park, provides vehicle access to the park. Portions of the access road are located on Airport property. Vehicle access to Kincaid Park is not available from the west side of the park.

Point Campbell Park

Point Campbell Park is located north of the approach end of Runway 7R. It is accessible only by the Coastal Trail.

Point Woronzof

Point Woronzof is the geographical area located north of the Airport and includes a parking area and overlook. The Coastal Trail passes through Point Woronzof. Many people frequent Point Woronzof to photograph aircraft as well as the natural scenery.

Based on studies conducted by the University of Alaska Anchorage (UAA), Point Woronzof bluff is continually being eroded at varying rates from about 2 feet per year between 1959 and 1997, to 6 feet per year between 2006 and 2008. In the mid-1990s, the Coastal Trail actually ran along the bluff but later fell into the ocean due to erosion. The trail was reconstructed at its present location. As the bluff continues to erode, the trail may need to be moved further inland again unless a long-term solution to stabilize the bluff is implemented.

Point Woronzof is located on Airport property. Although the lease on the land to the MOA has expired, the Airport allows the land to be used for temporary recreational purposes. Should a desire arise to stabilize the bluff to prevent erosion, FAA grant assurances preclude the Airport from funding the project for recreational purposes.

Point Woronzof Park

Point Woronzof Park, not to be confused with Point Woronzof, is located west of the Airport and south of the Asplund Wastewater Treatment Facility which is operated by the Anchorage Water and Wastewater Utility (AWWU). Point Woronzof Park was originally owned by the Heritage Land Bank. The property was exchanged in 1995 as part of a land transfer agreement between the Heritage Land Bank, the Airport, and the Anchorage School District. In the arrangement approved by the Anchorage Assembly, the Airport agreed to convey 40 acres of Airport property at the southwest corner of Caravelle Drive and Raspberry Road to the Anchorage School District to build a new elementary school in the Sand Lake area. In exchange, 130-acres of land owned by the Heritage Land Bank west of the Airport were transferred to the Airport. In the same land exchange agreement, 191 acres of Heritage Land Bank land was transferred to the Parks and Recreation Department. The area that was transferred to the Parks and Recreation Department became Point Woronzof Park. The Coastal Trail goes through Point Woronzof Park as well as a portion of Airport land located just south of the park.

Connor's Bog / Lake Park

Connor's Bog / Lake Park is located near the east end of the Airport's parallel runways. Airport land adjacent to Connor's Bog / Lake Park is temporarily being used as a parking lot and for access to Connor's Bog.

Lake Hood Airport Public Walking Route

One of the more popular walks for residents living near the Airport is a public walking route around Lakes Hood and Spenard. Although members of the public are allowed access to the lakefront to view aircraft, safety concerns exist regarding the interaction of pedestrians, vehicles, and aircraft. Residents and visitors occasionally walk onto the active taxiways and access roads. To address pedestrian safety issues, a *Lake Hood Pedestrian Study* was completed in 2010 and a gateway / signage / pathway plan was implemented in 2011. The Airport currently maintains the walking route.

Spenard Lake Beach

Spenard Lake Beach is located on the north side of Spenard Lake at the Lake Hood Airport. Amenities include a picnic area and playground.

The beach area was originally used in the early 1900s as a resort and swimming area. The City of Anchorage purchased the beach area in August 1934 from the federal government (Patent No. 1071292). The beach was then passed to the State in October 1975 as part of the condemnation for the operation of Lake Hood Airport. The continued use of the area as a beach or recreational area was not a part of the transfer agreements. The MOA was compensated for the land in the final

judgment (Civil Action 73-2351, Book 4, Page 66, Anchorage Recording District). When the Lake Hood Airport was transferred to Airport ownership, the land area became subject to FAA grant assurances. At that time, the DOT&PF and MOA signed a maintenance agreement, which expired in 1992, to temporarily use Spenard Lake Beach as a public beach until it should be needed for aviation development. The maintenance agreement is now in a month-to-month holdover status.

The picnic area is the former Lions Club Picnic Area located at the northwest corner of Spenard Lake. The Anchorage Lions Club operated the picnic area between 1995 and 1998. The Airport currently maintains the picnic area.

DeLong Lake Park

DeLong Lake Park is located southeast of the Airport and is accessible by Jewel Lake Road. Amenities include picnic areas, toilet facilities, and a small boat dock. It is a popular location for lake fishing. Just north of DeLong Lake Park, within the Airport property, is the Meadow Lake area. It is considered a temporary park and recreation area.

Natural Buffers

The Airport is surrounded by natural, undeveloped land areas. Although not set in any formal agreement, many of these areas are considered by the MOA and local residents as natural buffers between the Airport and other residential, developed, or undeveloped areas. These natural buffers include Turnagain Bog and wooded areas along Point Woronzof Drive, Raspberry Road, and the Kulis Business Park. Many residents living near the Airport would like to see these natural buffers remain.

Although the Airport land area is State-owned, Turnagain Bog has specific limitations on its development. Section 5 of Anchorage Ordinance 2000-151 (S-2), adopted by the Anchorage Assembly, states any proposed development on natural portions of Turnagain Bog can occur only after a master plan is prepared jointly by the Airport and MOA and approved by the Anchorage Assembly after public hearing. Assembly Memorandum 928-2000 (A-2) indicates that the Airport will establish a 55-acre scenic easement area (or natural buffer) along its boundary with the Turnagain neighborhoods. There are differing opinions regarding whether the ordinance is legally binding upon the Airport, and this matter will need further determination.

Anchorage Coastal Zone

The MOA dedicated the Anchorage Coastal Zone / Designated Recreation Areas to preserve the coastal habitats and maintain public access to coastal areas. Areas within the Anchorage Coastal Zone include Kincaid Park and the Coastal Trail.

Anchorage Coastal Wildlife Refuge

The Anchorage Coastal Wildlife Refuge is located along the Cook Inlet coastline of the West Anchorage Planning Area, with the greatest expanse of the Wildlife Refuge located south of the Airport.

SECTION 4 AIRPORT LAND USE

A focus of the Ted Stevens Anchorage International Airport (Airport) Master Plan Update (Master Plan Update) identified at the outset of the master planning process by Airport management staff was a desire to better understand the on-Airport land area and uses. This understanding will help Airport management and planning staff be better equipped at managing Airport land assets, maximizing property availability for aviation development through efficient and compatible planning, and making appropriate strategic decisions to accommodate future growth demands. The ultimate purpose is to ensure adequate land is available to support air transportation requirements for the 20-year planning horizon and beyond.

Several events or reasons prompted the need for a more in-depth land use effort. In February 2011, the Kulis Air National Guard Base (ANGB) site was vacated and the 176th Wing of the Alaska Air National Guard moved to Joint Base Elmendorf-Richardson (JBER). Although a market assessment for potential development of the Kulis Business Park was completed, redevelopment potential of the site was intended to be further assessed in this Master Plan Update.

In July 2012, the Municipality of Anchorage (MOA) adopted the *West Anchorage District Plan* (WADP) as a formal element of the *Anchorage 2020: Anchorage Bowl Comprehensive Plan*. In the WADP, several land transfer options between the MOA and the Airport were explored in response to stakeholder requests to protect public recreational areas and accommodate future Airport growth. An inventory of the on-Airport land uses is the first step Airport management staff would need to take to directly respond to WADP efforts.

The Airport Layout Plan will be updated as part of the Master Plan Update. The Airport Layout Plan is a set of drawings that present a graphic representation of the existing facilities and planned development of an airport. Such a plan is required by the Federal Aviation Administration (FAA) for an Airport Sponsor to be awarded a grant and its associated funds for airport development. An understanding of airport land uses is necessary in order to update two of the drawings required in the Airport Layout Plan: the Land Use Drawing, and Exhibit “A” Property Map. The Land Use Drawing shows the existing and future on-Airport land uses. The Exhibit “A” Property Map shows the Airport parcels and includes information pertaining to the Airport Sponsor’s acquisition or release of Airport parcels, as well as details of any associated FAA obligations.

Section 4 includes an explanation of the FAA grant assurances or obligations the Airport must abide by to continue to receive federal funding for Airport development projects. In addition, the section includes an inventory of the various land use categories. Three land use categories are described and defined: 1) land uses by functional area, 2)

land uses by geographic area, and 3) land uses for the purpose of leasing agreements.

4.1 FAA GRANT ASSURANCES

FAA obligations occur in the form of grant assurances, which are placed on airports as a condition of receiving funds offered through FAA administered airport financial assistance programs. These include distribution of grants through programs such as the FAA Airport Improvement Program (AIP) and revenue generated from Passenger Facility Charges (PFC). Grant assurances are either included in AIP grants or specifically incorporated by reference. Grant assurances require that airports safeguard compatible land use surrounding the airport, pursue self-sustainability, and / or regulate how airport revenue is used. The obligations accepted under each grant program or conveyance document may vary.

Obligations are also attached to airport land that is acquired through federal property transfers. In these cases, restrictive covenants are placed on property deeds that require airport land to be used for specific aeronautical purposes. The covenants generally last for as long as the property is owned and operated as an airport. These obligations also regulate the sale or disposal of federally acquired property. If sale or disposal is approved by the FAA, fair-market value is generally required.

The FAA enforces grant assurance obligations to protect its investment in, and the integrity of, the national air transportation system. The goal is to protect the public interest in civil aviation and ensure compliance with applicable federal regulations. The FAA enforces these obligations through its Airport Compliance Program. Additional information about the Program can be obtained from the FAA website as well as in *FAA Order 5190.6B*, *FAA Airport Compliance Manual*, and *FAA Order 5100.38C*, *Airport Improvement Program Handbook*. An update to *FAA Order 5100.38C* is currently underway and a new *FAA Order 5100.38D*, *Airport Improvement Handbook* will eventually replace the existing *FAA Order 5100.38C*. A final completion date for *FAA Order 5100.38D* has not yet been set.

4.2 ON-AIRPORT FUNCTIONAL LAND USE CATEGORIES

The Airport also has a Land Use Plan for on-Airport property. Land use categories were identified and defined by functional area in the 2002 Master Plan Update. They were updated in the 2012 Airport Layout Plan. The land uses and their definitions are listed below.

- **Airfield** – Airport areas directly related to the landing, takeoff, and taxiing of aircraft, including runways, taxiways, Runway Protection Zones (RPZs), airfield approach zones, building and obstacle restriction areas, and certain navigational aids requiring unobstructed clearance areas.

- **General Aviation** – Airport areas related to the use, maneuvering, parking, and servicing of general aviation and air taxi aircraft, such as aircraft tie-down lots, taxiways specifically designated for general aviation use, and Fixed Base Operator (FBO) facilities for servicing and supporting these aircraft.
- **Government / Other** – Airport lands dedicated to the accommodation of facilities and operations of state and federal agencies and operations of state and federal agencies located on the Airport.
- **Buffer** – Airport lands for which no specific intermediate need has been identified and that can be used as a buffer from adjacent off-Airport land uses.
- **Passenger Terminal Complex** – Airport areas dedicated to facilities and services directly related to the accommodation of passengers, such as passenger terminal buildings, aircraft maneuvering and parking aprons, automobile parking (public, employee, tenant, and rental), and terminal roadways. Cargo aircraft refueling may occur in the terminal complex provided it does not interfere with essential passenger related activities.
- **Commercial Aviation** – Airport areas dedicated to commercial interests, such as FBOs, corporate aircraft operations, helicopters, and flight dependent businesses (e.g., aerial photography).
- **Air Cargo / Aircraft Maintenance** – Airport lands related to the accommodation of facilities for the handling of cargo scheduled to arrive or depart by air transport and to the maintenance and repair of aircraft. These facilities include aircraft aprons, buildings, and value-added manufacturing.
- **Terminal / Airline Support** – Land reserved for facilities providing a wide range of support services for the operations of the airlines, principal tenants in the terminal complex, and passengers, such as belly-cargo services, in-flight catering, minor aircraft and ground equipment maintenance, car rental service lots, ground transportation centers, and administrative services.
- **Airport Support** – Lands reserved for facilities used by Airport management in operating and maintaining Airport and airfield facilities, such as maintenance yards, material storage, equipment storage and maintenance, Aircraft Rescue and Fire Fighting (ARFF) facilities, snow storage areas, and facilities for personnel providing such work.
- **Aviation-Related Commercial** – Lands reserved for commercial and industrial users providing aviation related services to airline, air cargo, commercial aviation, or other principal Airport tenants and users, such as offices, warehouses, retail establishments, parts manufacturing / testing / assembly, and facilities for the storage and use of equipment used in the provision of services.
- **Future Airport Development** – Airport lands for which no specific immediate need has been identified but which need to

be reserved to provide flexibility for the Airport in responding to unforeseen events.

- **Mixed Use Aviation** – Aeronautical uses excluding 30-seat or higher scheduled passenger operations, ultra-light activities, and wide-body cargo operations (no Airport size restrictions for aircraft maintenance operations). Areas with taxiway / apron access will serve aeronautical uses requiring aircraft access to and from aircraft operating areas. Areas without existing taxiway / apron access may be used on an interim basis for aeronautical uses not requiring aircraft access to and from Airport operating areas until such time as taxiway / apron access is constructed. Aeronautical use is aeronautical activity as defined by *FAA Order 5190.6B*.
- **Interim Non-Aeronautical** – The base use in this area is “Mixed Use Aviation;” however, non-aeronautical uses are allowed in this area on an interim basis through 2042, until aeronautical demand justifies the major expense of site redevelopment necessary for most aeronautical uses. No significant new non-aeronautical use buildings are allowed.
- **Major Roads** – Airport lands identified as rights-of-way for the principal vehicular movements to, through, and from the primary land use areas of the Airport.

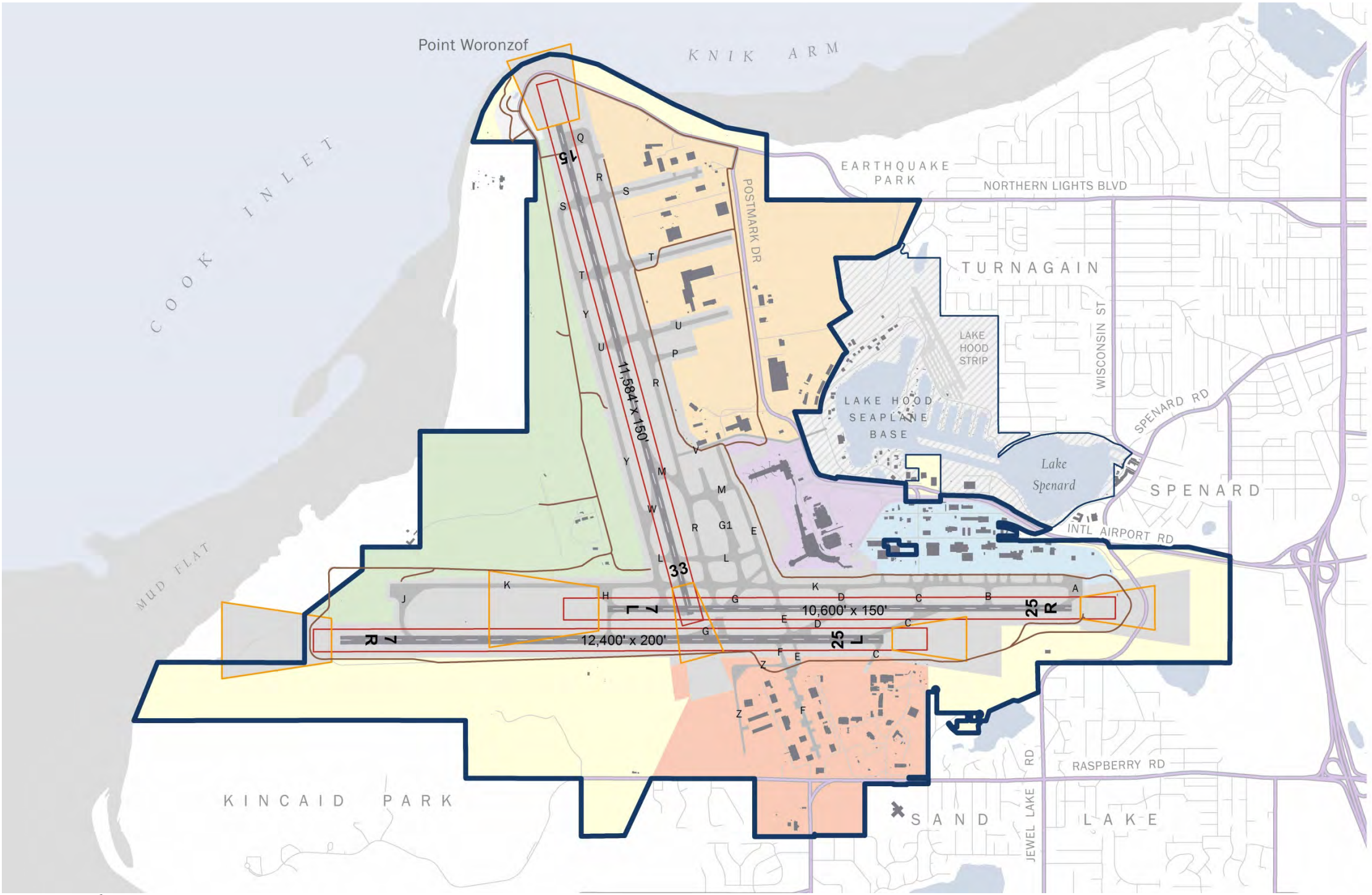
4.3 ON-AIRPORT GEOGRAPHIC LAND USE CATEGORIES

In addition to the functional land use categories, the Airport property area can be divided into several land use categories based on geographic areas. The Airport is made up of several geographic areas that are commonly known to Airport staff and tenants. These geographic areas, shown in **Figure 2.16**, are as follows:

- North Airpark
- East Airpark
- South Airpark
- West Airpark
- Airfield Area
- Passenger Terminal and Landside Area
- Other Areas

The “Passenger Terminal and Landside Area” is the area typically bounded by the Airport loop road pertaining to the passenger terminal building and landside facilities. It does not include other passenger and landside facilities that are situated in the airparks. Examples include the airline administrative offices and the rental car maintenance and storage lots located in the East Airpark.

Figure 2.16 On-Airport Geographic Land Uses



Source: RS&H and HDR, 2014.

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“Other Areas” pertain primarily to areas currently undeveloped for Airport use. They also include temporary recreational areas located within the Airport property boundary.

For the purposes of this Master Plan Update, the geographic land use categories are referenced through the planning process, but will not be shown on the Airport Land Use Map in the Airport Layout Plan.

4.4 ON-AIRPORT LEASING LAND USE CATEGORIES

A third land use category is used for the purposes of leasing Airport property out to the Airport’s various tenants and specifically the lease rates. This land use category is not necessarily directly correlated to the functional land use categories previously presented. However, in general, the majority of the functional land use categories, with the exception of facilities in the “Other” and “Undeveloped Airport Land” categories, are used for aeronautical purposes.

Land use categories based on leasing rates are based on defined land use classifications in Title 17, Chapter 45, Rural Airports of the *Alaska Administrative Code* (April 2009), which are based on FAA classifications on what airport property may be considered aeronautical (aviation-use) or non-aeronautical (non-aviation use). The Airport has identified three land use categories based on leasing rates: Aviation Use, Auxiliary Use, and Non-Aviation Use, listed in increasing order of their lease rates. Each of these land use categories based on leasing are defined below as included in the *Alaska Administrative Code*.

Aviation Use

(A) Means a business, service, or other function that directly involves, or is necessary for, the normal operation of aircraft that use an airport.

(B) Includes the following:

- (i) Aircraft loading, unloading, tie-down, parking, storage, sales, service, rental, maintenance, or repair
- (ii) Sale or storage of aviation fuel and aviation petroleum products
- (iii) Pilot flight training
- (iv) Air charter or air taxi service
- (v) Airport terminal building
- (vi) Air carrier operations
- (vii) Aircraft ground handling
- (viii) Aircraft parts sales
- (ix) Air traffic control tower, air navigation aid, and aviation weather instrumentation

Auxiliary Use

- (A) Means a business, service, or other function that is neither an aviation use nor a non-aviation use and is located and carried out on an airport for the convenience of the air traveling public, aviation businesses on the airport, or the employees necessary to the maintenance and operation of an airport.
- (B) Includes the following:
- (i) Air freight forwarding
 - (ii) Ground transportation services not operated by the department, such as a taxicab service, an airport limousine or shuttle service, a rental car agency, or a vehicle parking business
 - (iii) In-flight catering
 - (iv) Hotel accommodation
 - (v) In-terminal food service
 - (vi) In-terminal concessions

Non-Aviation Use

- (A) Means any business, service, or function that:
- (i) Is not an aviation or auxiliary use
 - (ii) Is not directly or indirectly related to aviation or to the air traveling public
 - (iii) Does not offer a product or service that is specifically related to aircraft operations or to air transportation
 - (iv) Is located or operated to derive revenue primarily from members of the public not using air transportation services
- (B) Includes a grocery store, a restaurant, cafe, food wagon, or other eating establishment not within a department-owned terminal, a liquor store, lumber yard, agricultural activity, golf course, automobile service station, shopping center, and bowling alley.

This inventory of existing conditions document does not go into further detail regarding the land uses based on lease rates. However, the information will be considered as part of the alternatives development process and particularly used to help develop a strategic approach in achieving future land use and development objectives.

4.4.1 NEXT STEPS

Particularly with regard to land use, as Airport demand increases it will be important to determine how best to develop and expand the Airport while addressing community concerns regarding the preservation of recreational areas. Many areas of Airport property that are used for recreational purposes today are granted on a temporary basis by the

State to the MOA. However, the agreements state these land areas can be used for aviation purposes should the need arise. Before any decisions are made regarding how Airport land and land surrounding the Airport is used, the rights and conditions of the temporary land agreements will need to be resolved. Such determinations will require input from multiple groups to assure there is a clear understanding regarding who has authority governing property development given the need to balance Airport and community interests.

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SECTION 5 EXISTING AIRPORT FACILITIES

The existing Ted Stevens Anchorage International Airport (Airport) facilities and operations are described in this section. The discussion is organized by geographic (Section 6) and functional (Section 7) land use area. The approximately 4,210-acre Airport property (excludes the Lake Hood Airport) can be divided into the following geographic and functional land use areas.

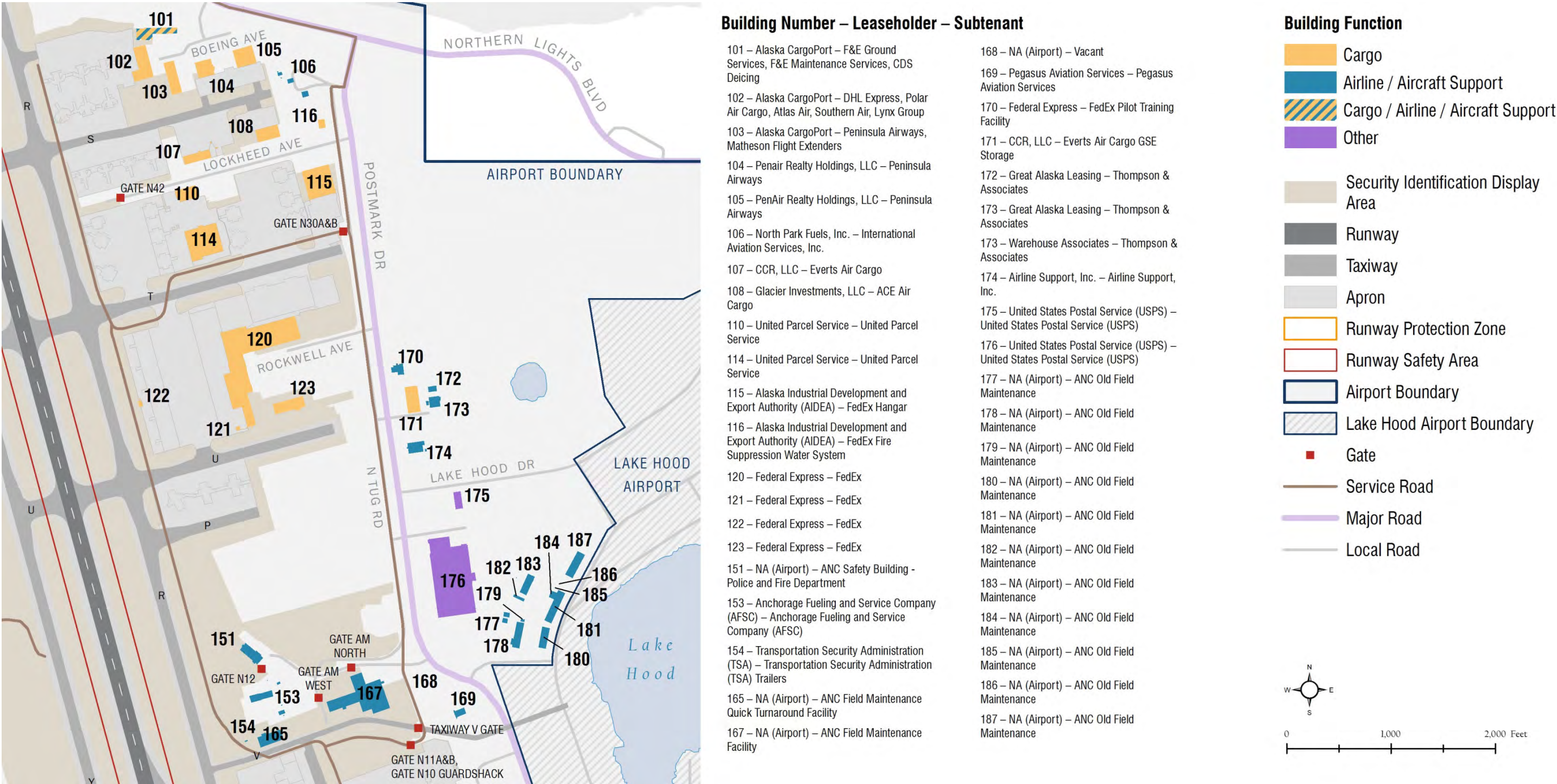
- Geographic Land Use Areas (acres)
 - North Airpark = 645
 - East Airpark = 150
 - South Airpark = 560
 - West Airpark = 570
 - Airfield = 1,475
 - Passenger Terminal and Landside = 155
 - Other = 655
- Functional Land Use Areas (acres)
 - Airfield = 1,550
 - Passenger Terminal and Landside = 220
 - Cargo = 265
 - General Aviation = 70
 - Airport / Airline Support = 195
 - FAA = 10
 - Other = 140
 - Undeveloped = 1,760

5.1 BUILDINGS / FACILITIES INDEX

For inventory efforts, a description of each airpark is presented. The facilities or buildings in the North, East, South, and West airparks are shown in Figure 2.17, 2.18, 2.19, and 2.20 respectively. The building numbers depicted in the above-referenced figures, along with the leaseholder and subtenant information, including lease expiration dates, are summarized in Table 2.2. This table also includes those tenants that were interviewed for the inventory of existing conditions. An attempt was made to reach out to as many tenants as possible for the inventory of existing conditions. The existing conditions data for cargo and general aviation tenants were summarized in the sections that follow.

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Figure 2.17 North Airpark Building Index



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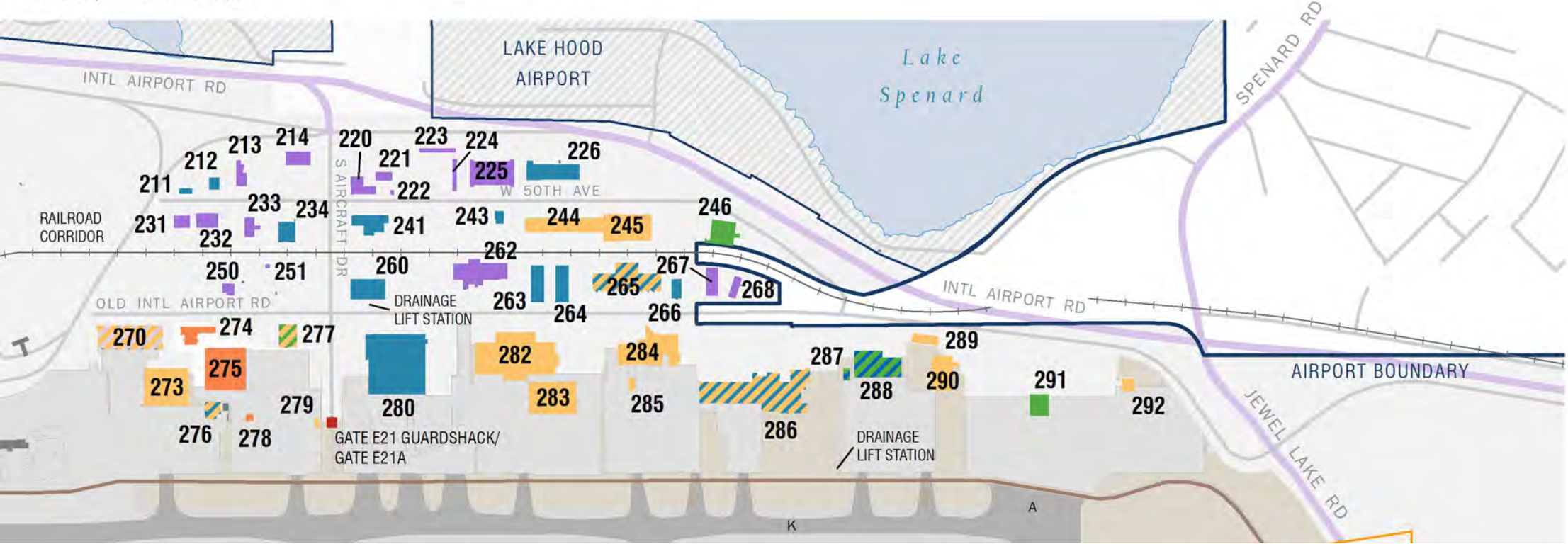
Figure 2.18 East Airpark Building Index

Building Number – Leaseholder – Subtenant

211 – NA (Airport) – DOT&PF Airport Construction	243 – International Aviation Services, Inc. – International Aviation Services, Inc.	268 – Air / Park Inc. – Fly-In Restaurant	284 – Northern Air Cargo – Northern Air Cargo
212 – NA (Airport) – DOT&PF Airport Construction	244 – L Metro & Nicolai-Alaska – GSA, Kalitta Air, AK Air Forwarders	270 – Alaska Airlines, Inc. – Alaska Airlines Corporate Offices, Alaska Airlines Cargo	285 – Northern Air Cargo – Northern Air Cargo
213 – Alaska Rent-A-Car – Avis Rent-A-Car	245 – L Metro & Nicolai-Alaska – Evergreen, Delta Airlines, NAC, Arctic Circle Enterprises, Kalitta Air, Pen Air, US Supply Chain	273 – Frontier Hangar Group – Corvus Airlines, Everts Air Cargo	286 – Aero Anchorage – Cargo: Evergreen, Delta Airlines, Northern Air Cargo, Arctic Circle Enterprises, Frontier Flying Service, Nippon Air Cargo; Airport / Airline Support: Equant, Aeronautical Radio
214 – Alaska Rent-A-Car – Avis Rent-A-Car	246 – Postmark Properties – LifeMed	274 – NA (FAA Property) – FAA Flight Check Building (Federal Property)	287 – Signature Flight Support – General Aviation: Iliamna Air Taxi; Other: Have Tools Will Travel, AK Freshwater Adventures, Rediske Air
220 – NA (Airport) – DOT&PF Materials Lab	250 – Hertz Corporation – Hertz Storage	275 – FAA – FAA Flight Check Building (Federal Property)	288 – Signature Flight Support – General Aviation: Iliamna Air Taxi; Other: Have Tools Will Travel, AK Freshwater Adventures, Rediske Air
221 – Harman's Repair Station – Harman's Repair Station	251 – Cell Tower – Cell Tower	276 – Frontier Hangar Group – Cargo: DesertAir; Airport / Airline Support: Pegasus, ACS Wireless, Hageland Aviation, Delta Airlines, Dobson Cellular Service, Arctic Circle Air	289 – Northern Air Cargo – Northern Air Cargo, Northern Aviation Services
222 – NA (Airport) – DOT&PF Materials Lab	260 – Troy Air – Swissport	277 – Flowers International, Inc. – Cargo: Northern Air Cargo; General Aviation: Guardian Flight	290 – Northern Air Cargo – Northern Air Cargo
223 – Quad Ventures – David Fritz Consultants	262 – Great Pacific Seafoods – Great Pacific Seafoods	278 – FAA – FAA	291 – Guardian Flight – Guardian Flight
224 – Quad Ventures – David Fritz Consultants	263 – Sam & Rebecca Krogstad – Perez Move Management	279 – DesertAir – DesertAir	292 – TransNorthern – TransNorthern
225 – Quad Ventures – David Fritz Consultants	264 – Dean Hilde – Dean Hilde	280 – Delta – LSG SkyChefs	
226 – William & Lorraine Brooks – FAA, Southern Air, Pegasus Aircraft Maintenance	265 – International Freight Terminal – Cargo: DesertAir; Airport / Airline Support: WPX Courier, S-Tec Corporation	282 – Alaska Airlines, Inc. – Alaska Airlines Cargo	
231 – Budget Rent-A-Car – Budget Rent-A-Car	266 – Pegasus Aviation Services – Pegasus	283 – Alaska Airlines, Inc. – Alaska Airlines Cargo Hangar	
232 – Alaska Sales and Services – Alamo / National Storage	267 – Air / Park Inc. – ABC RV Rentals		
233 – Donald R. Rogers – Alaska State Troopers			
234 – Airline Support, Inc. – Airline Support, Inc.			
241 – Swissport USA, Inc. – Swissport			

Building Function

- Cargo
- Airline / Aircraft Support
- General Aviation
- Cargo / Passenger
- Cargo / General Aviation
- Cargo / Airline / Aircraft Support
- General Aviation / Airline / Aircraft Support
- FAA
- Other



- Security Identification Display Area
- Taxiway
- Apron
- Airport Boundary
- Lake Hood Airport Boundary
- Gate
- Service Road
- Major Road
- Local Road



Source: RS&H and HDR, 2014.
Notes: Airport = Ted Stevens Anchorage International Airport, FAA = Federal Aviation Administration, NA = Not Applicable

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Figure 2.19 South Airpark Building Index

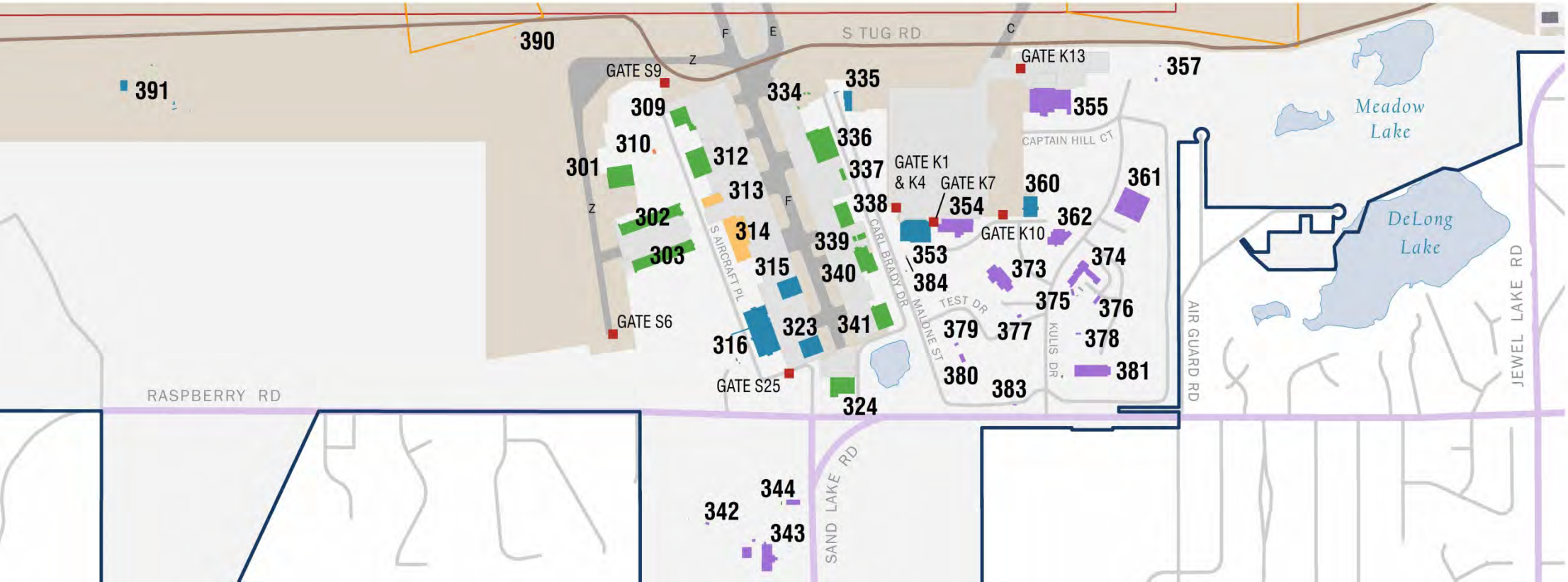
Building Number – Leaseholder – Subtenant

301 – Northern Holding, LLC – Alaska Frontier Constructors	324 – Global Rides – Global Rides	344 – U.S. Fish and Wildlife Services – U.S. Fish and Wildlife Services	376 – NA (Airport) – Vacant
302 – Anchorage Executive Airpark – Anchorage Executive Airpark	334 – ERA FBO LLC – Hydrant Fueling Station	353 – NA (Airport) – Hangar 46	377 – NA (Airport) – Vacant
303 – Anchorage Executive Airpark – Anchorage Executive Airpark	335 – NA (Airport) – ANC Fire Station, FAA Contract Weather Observer (CWO)	354 – NA (Airport) – Hangar 45	378 – NA (Airport) – Vacant
309 – Ross Anchorage, LLC – Great Circle Flight Services, Security Aviation Services	336 – ERA FBO LLC – Million Air	355 – NA (Airport) – Hangar 3	379 – NA (Airport) – Vacant
310 – FAA – FAA Equipment	337 – ERA FBO LLC – Million Air	357 – NA (Airport) – Water Meter Facility	380 – NA (Airport) – Vacant
312 – Signature Flight Support – Guardian Flight	338 – ERA FBO LLC – Bell Helicopters	360 – Northern Air Cargo – Northern Air Cargo / Shell (Building 22)	381 – Department of Military and Veteran Affairs (Interagency Land Management Agreement) – Army National Guard
313 – Lynden Air Cargo – Lynden Air Cargo	339 – ERA FBO LLC – ERA FBO LLC	361 – TFGC, LLC – Naniq, LLC (Building 23)	383 – NA (Airport) – Water Meter Facility
314 – Lynden Air Cargo – Lynden Air Cargo	340 – ERA FBO LLC – ERA FBO LLC	362 – NA (Airport) – Building 24	384 – NA (Airport) – Water Meter Facility
315 – Troy Air – Hangar	341 – ERA FBO LLC – ERA FBO LLC	373 – NA (Airport) – Building 37	390 – FAA – FAA Equipment Shelter
316 – Troy Air – Hangar	342 – U.S. Department of Commerce – NOAA	374 – NA (Airport) – Building 50	391 – NA (Airport) – ARFF Training Facility, Fire Pit, and Shooting Range
323 – Troy Air – Hangar	343 – U.S. Department of Commerce – NOAA	375 – NA (Airport) – Vacant	

Building Function

- Cargo
- Airline / Aircraft Support
- General Aviation
- FAA
- Other

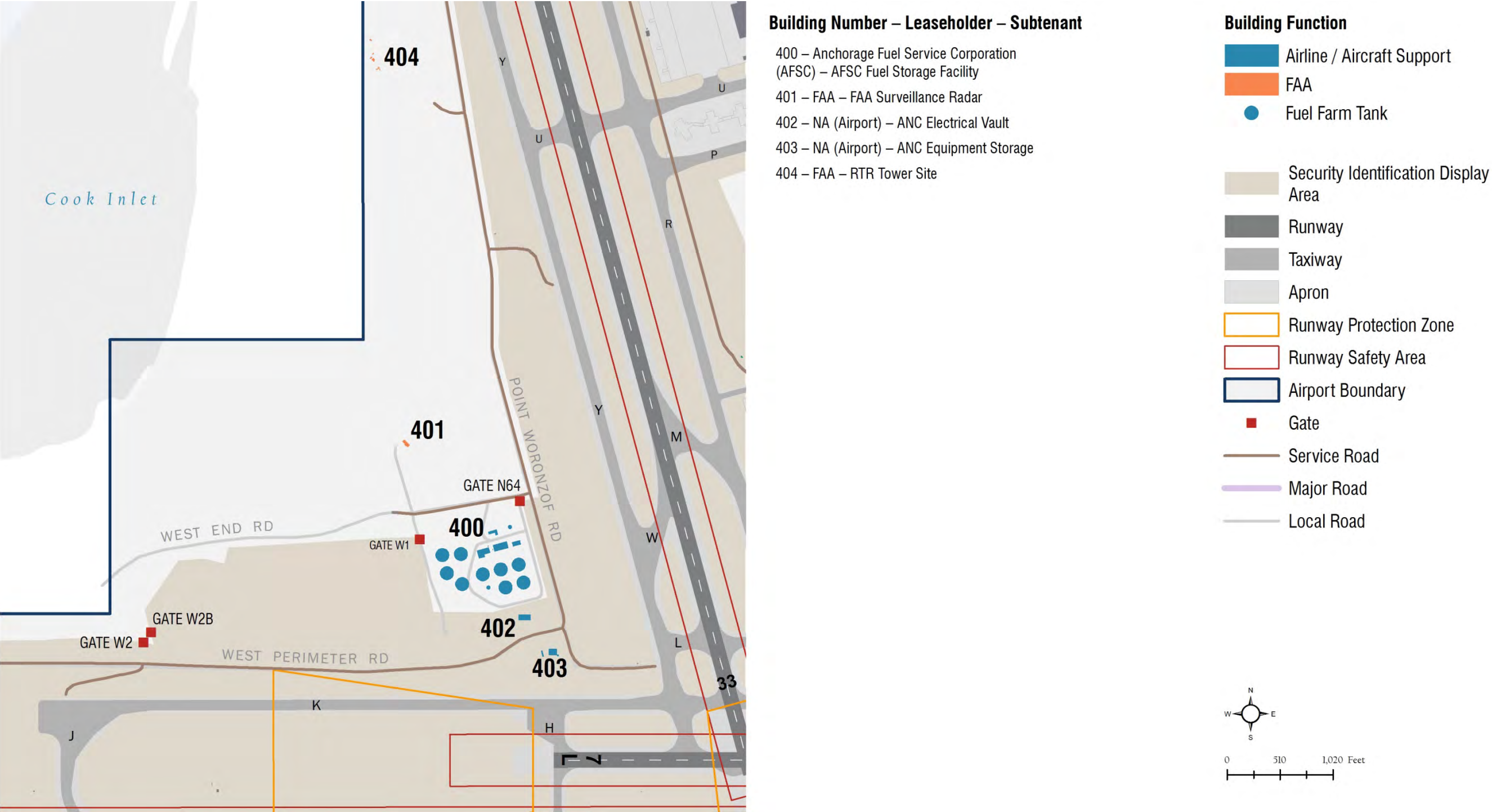
- Security Identification Display Area
- Taxiway
- Apron
- Runway Protection Zone
- Runway Safety Area
- Airport Boundary
- Gate
- Service Road
- Major Road
- Local Road



Source: RS&H and HDR, 2014.
Notes: Airport = Ted Stevens Anchorage International Airport, FAA = Federal Aviation Administration, NA = Not Applicable, NOAA = National Oceanic and Atmospheric Administration.

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Figure 2.20 West Airpark Building Index



Source: RS&H and HDR, 2014.
Notes: AFSC= Anchorage Fueling and Service Company, FAA = Federal Aviation Administration, NA = Not Applicable, RTR = Remote Transmitter Receiver.

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Table 2.2 Airport Building Index

Building Index No.	Tenant(s) Interviewed	Airpark	Leaseholder	Building / Facility	Number of Buildings	Number of Tanks	Building / Tank Footprint (Square Feet) - CAD
153	x	North	AFSC	AFSC	2	0	15,817
154		North	TSA	TSA	-10 trailers	0	341
165	x	North	NA (Airport)	Airport - Field Maintenance Quick-Turnaround-Facility	1	3	25,908
167	x	North	NA (Airport)	Airport - Field Maintenance Facility	1	0	115,609
168		North	NA (Airport)	Airport - Vacant	1	0	335
169	x	North	Pegasus Aviation Services	Pegasus Aviation Services	1	0	6,031
170		North	FedEx	FedEx	1	0	9,424
171	x	North	CCR, LLC	Everts Air Cargo GSE Storage	1	0	29,803
172		North	Great Alaska Leasing	Thompson and Associates	1	0	3,862
173		North	Great Alaska Leasing	Thompson and Associates	1	0	9,739
174		North	Airline Support, Inc.	Airline Support, Inc.	1	0	15,630
175		North	USPS	USPS	1	0	9,172
176		North	USPS	USPS	1	0	272,998
177		North	NA (Airport)	Airport - Old Field Maintenance	1	0	2,005
178		North	NA (Airport)	Airport - Old Field Maintenance	1	0	18,683
179		North	NA (Airport)	Airport - Old Field Maintenance	1	0	1,026
180		North	NA (Airport)	Airport - Old Field Maintenance	1	0	14,503
181		North	NA (Airport)	Airport - Old Field Maintenance	1	0	22,998

Table 2.2 Airport Building Index
(contd.)

Building Index No.	Tenant(s) Interviewed	Airpark	Leaseholder	Building / Facility	Number of Buildings	Number of Tanks	Building / Tank Footprint (Square Feet) - CAD
182		North	NA (Airport)	Airport - Old Field Maintenance	1	0	2,794
183		North	NA (Airport)	Airport - Old Field Maintenance	2	0	15,299
184		North	NA (Airport)	Airport - Old Field Maintenance	4	0	1,042
185		North	NA (Airport)	Airport - Old Field Maintenance	1	0	158
186		North	NA (Airport)	Airport - Old Field Maintenance	3	0	463
187		North	NA (Airport)	Airport - Old Field Maintenance	1	0	20,263
211		East	NA (Airport)	Airport - Airport Construction	1	0	1,969
212		East	NA (Airport)	Airport - Airport Construction	1	0	3,148
213	x	East	Alaska Rent-A-Car	Avis Rent-A-Car	1	0	5,405
214	x	East	Alaska Rent-A-Car	Avis Rent-A-Car	1	0	8,818
220		East	NA (Airport)	Airport - DOT&PF Materials Lab	1	0	8,207
221		East	Harman's Repair Station	Harman's Repair Station	1	0	3,452
222		East	NA (Airport)	Airport - DOT&PF Materials Lab	1	0	498
223		East	Quad Ventures	Quad Ventures	1	0	3,490
224		East	Quad Ventures	Quad Ventures	1	0	3,023
225		East	Quad Ventures	Quad Ventures	1	0	26,502
226	x	East	William & Lorraine Brooks	FAA, Southern Air, Pegasus Aircraft Maintenance	1	0	17,504
231		East	Budget Rent-A-Car	Budget Rent-A-Car	1	0	4,983

Table 2.2 Airport Building Index
 (contd.)

Building Index No.	Tenant(s) Interviewed	Airpark	Leaseholder	Building / Facility	Number of Buildings	Number of Tanks	Building / Tank Footprint (Square Feet) - CAD
232		East	Alaska Sales and Services	Alamo / National Rent-A-Car	1	0	7,789
233		East	Donald R. Rogers	Alaska State Troopers	1	0	5,361
234		East	Airline Support, Inc.	Airline Support, Inc.	1	0	8,467
241	x	East	Swissport USA, Inc	Swissport	1	0	13,683
243		East	International Aviation Services, Inc.	International Aviation Services, Inc.	1	0	2,401
244		East	L Metro & Nicolai-Alaska	GSA, Kalitta Air, AK Air Forwarders	1	0	29,974
245	x	East	L Metro & Nicolai / Nicolai Alaska, LLC	Evergreen, Delta Airlines, Northern Air Cargo, Artic Circle Enterprises, Kalitta Air, Pen Air, US Supply Chain Solutions	1	0	30,291
246	x	East	Postmark Properties	LifeMed	1	0	13,895
250		East	Hertz Corporation	Hertz Storage	1	0	3,330
260		East	Troy Air	Swissport	2	0	17,804
262	x	East	Great Pacific Seafoods	Great Pacific Seafoods	1	0	25,401
263		East	Sam & Rebecca Krogstad	Perez Move Management	1	0	11,529
264		East	Dean Hilde	Dean Hilde	1	0	11,529
265	x	East	International Freight Terminal	International Freight Terminal (Multiple Cargo / Support)	1	0	34,664
266	x	East	Pegasus Aviation Services	Pegasus Aviation Services	1	0	5,001
267		East	Air/Park, Inc.	ABC RV Rentals	1	0	9,394
268		East	Air/Park, Inc.	Fly-In Restaurant	1	0	3,804

Table 2.2 Airport Building Index
(contd.)

Building Index No.	Tenant(s) Interviewed	Airpark	Leaseholder	Building / Facility	Number of Buildings	Number of Tanks	Building / Tank Footprint (Square Feet) - CAD
270	x	East	Alaska Airlines, Inc.	Alaska Airlines, Inc. (Corporate Offices, Cargo)	2	0	39,618
273	x	East	Frontier Hangar Group	Frontier Hangar Group	1	0	41,759
274		East	NA (FAA Property)	FAA (Federal Property)	1	0	9,137
275		East	NA (FAA Property)	FAA (Federal Property)	1	0	43,255
276		East	Frontier Hangar Group	Frontier Hangar Group (Multiple Cargo / Support)	4	0	7,807
277		East	Flowers International, LLC	Flowers International (Multiple Cargo / General Aviation)	1	0	9,729
278		East	FAA	FAA	1	0	1,108
279		East	DesertAir	DesertAir	1	0	471
280	x	East	Delta	Delta (LSG SkyChefs)	1	0	87,711
282	x	East	Alaska Airlines, Inc.	Alaska Airlines, Inc. (Cargo)	1	0	78,345
283	x	East	Alaska Airlines, Inc.	Alaska Airlines, Inc. (Cargo Hangar)	1	0	44,920
284		East	Northern Air Cargo	Northern Air Cargo	1	0	44,647
285		East	Northern Air Cargo	Northern Air Cargo	1	0	1,958
286		East	Aero Anchorage	Aero Anchorage (Multiple Cargo / Support)	1	0	73,583
287	x	East	Signature Flight Support	Signature Flight Support (Multiple General Aviation / Other)	1	0	1,958
288	x	East	Signature Flight Support	Signature Flight Support (Multiple General Aviation / Other)	1	0	29,014
289		East	Northern Air Cargo	Northern Air Cargo	1	0	5,982

Table 2.2 Airport Building Index
(contd.)

Building Index No.	Tenant(s) Interviewed	Airpark	Leaseholder	Building / Facility	Number of Buildings	Number of Tanks	Building / Tank Footprint (Square Feet) - CAD
290		East	Northern Air Cargo	Northern Air Cargo	2	0	18,179
291	x	East	Guardian Flight	Guardian Flight	1	0	46,702
292	x	East	TransNorthern	TransNorthern	1	0	5,813
293		East	DesertAir	DesertAir	2	0	859
301		South	Northern Holdings, LLC	Alaska Frontier Constructors	1	0	29,137
302		South	Anchorage Executive Airpark	Anchorage Executive Airpark	1	0	39,356
303		South	Anchorage Executive Airpark	Anchorage Executive Airpark	1	0	38,933
309		South	Ross Anchorage, LLC.	Great Circle Flight Services, Security Aviation Services	1	0	15,993
310		South	FAA	FAA	2	0	1,103
312	x	South	Signature Flight Support	Signature Flight Support (Guardian Flight)	1	0	28,006
313		South	6441 S. Airpark	Lynden Air Cargo	1	0	10,640
314		South	6441 S. Airpark	Lynden Air Cargo	1	0	37,673
315		South	Troy Air	Troy Air	1	0	14,896
316		South	Troy Air	Troy Air	1	0	60,393
323		South	Troy Air	Troy Air	1	0	14,896
324		South	Global Rides	Global Rides	1	0	23,993
334		South	ERA FBO LLC	Era FBO (Hydrant Fueling System)	1	-4	1,217
335		South	NA (Airport)	Airport - Fire Station, FAA Contract Weather Observer	1	0	8,500

Table 2.2 Airport Building Index
(contd.)

Building Index No.	Tenant(s) Interviewed	Airpark	Leaseholder	Building / Facility	Number of Buildings	Number of Tanks	Building / Tank Footprint (Square Feet) - CAD
336		South	ERA FBO LLC	Era FBO (Million Air)	1	0	37,997
337		South	ERA FBO LLC	Era FBO (Million Air)	1	0	1,354
338		South	ERA FBO LLC	Era FBO (Bell Helicopters)	1	0	16,899
339		South	ERA FBO LLC	Era FBO	2	0	3,486
340		South	ERA FBO LLC	Era FBO	1	0	21,803
341		South	ERA FBO LLC	Era FBO	1	0	21,055
342		South	U.S. Department of Commerce	U.S. Department of Commerce (NOAA)	1	0	829
343		South	U.S. Department of Commerce	U.S. Department of Commerce (NOAA)	2	0	23,946
344		South	U.S. Fish and Wildlife Services	U.S. Fish and Wildlife Services	1	0	3,254
353		South	NA (Airport)	Airport - Vacant (Hangar 46)	1	0	36,531
354		South	NA (Airport)	Airport - Vacant (Hangar 45)	1	0	25,840
355		South	NA (Airport)	Airport - Vacant (Hangar 3)	1	0	33,855
357		South	NA (Airport)	Airport - Water Meter Facility	1	0	458
360		South	Northern Air Cargo	Northern Air Cargo / Shell (Building 22)	1	0	15,868
361		South	TFGC, LLC	Naniq, LLC (Building 23)	1	0	40,543
362		South	NA (Airport)	Airport - Vacant (Building 24)	1	0	15,682
373		South	NA (Airport)	Airport - Vacant (Building 37)	1	0	21,212
374		South	NA (Airport)	Airport - Vacant (Building 50)	1	0	18,369

Table 2.2 Airport Building Index
(contd.)

Building Index No.	Tenant(s) Interviewed	Airpark	Leaseholder	Building / Facility	Number of Buildings	Number of Tanks	Building / Tank Footprint (Square Feet) - CAD
375		South	NA (Airport)	Airport - Vacant	1	0	838
376		South	NA (Airport)	Airport - Vacant	1	0	1,625
377		South	NA (Airport)	Airport - Vacant	1	0	859
378		South	NA (Airport)	Airport - Vacant	1	0	583
379		South	NA (Airport)	Airport - Vacant	1	0	436
380		South	NA (Airport)	Airport - Vacant	1	0	1,814
381		South	Department of Military and Veterans Affairs	Department of Military and Veterans Affairs	2	0	23,573
383		South	NA (Airport)	Airport - Water Meter Facility	1	0	563
384		South	NA (Airport)	Airport - Water Meter Facility	1	0	251
390		South	FAA	FAA	1	0	138
391		South	NA (Airport)	Airport - ARFF Training Facility, Fire Pit, and Shooting Range	1	0	4,110
400	x	West	AFSC	AFSC (Fuel Farm)	4	11	149,435
401		West	FAA	FAA (Airport Surveillance Radar)	1	0	1,773
402		West	NA (Airport)	Airport - Electrical Vault	1	0	6,936
403		West	NA (Airport)	Airport - Equipment Storage	1	0	5,225
404		West	FAA	FAA (RTR Tower Site)	5	0	1,520
500		Terminal	Multiple	Airport - North Terminal (Multiple)	1	0	170,013
501		Terminal	NA (Airport)	Airport - Terminal Connector	1	0	13,750

Table 2.2 Airport Building Index
(contd.)

Building Index No.	Tenant(s) Interviewed	Airpark	Leaseholder	Building / Facility	Number of Buildings	Number of Tanks	Building / Tank Footprint (Square Feet) - CAD
502		Terminal	Multiple	Airport - South Terminal (Multiple)	1	0	348,176
503		Terminal	NA (Airport)	Airport - Taxicab Stand	1	0	5,012
504		Terminal	FAA	FAA (Airport Traffic Control Tower)	1	0	12,781
505		Terminal	Multiple	Airport - Rental Car (Multiple)	1	0	156,763
506		Terminal	Alaska Railroad Corporation	Alaska Railroad Corporation (Alaska Railroad Depot)	1	0	9,366
507		Terminal	NA (Airport)	Airport - Short-Term Parking Garage	1	0	120,217
508		Terminal	NA (Airport)	Airport - Parking Office	1	0	3,575

Source: RS&H, 2014.
Notes: AFSC = Anchorage Fueling and Service Company, AIDEA = Alaska Industrial Development and Export Authority, Airport = Ted Stevens Anchorage International Airport, ARFF = Aircraft Rescue and Fire Fighting , CAD = Computer-aided Design, DOT&PF = Alaska Department of Transportation and Public Facilities, FAA = Federal Aviation Administration, NA = Not Applicable, NOAA = National Oceanic and Atmospheric Administration, TSA = Transportation Security Administration, UPS = United Parcel Service, USPS = United States Postal Service

SECTION 6

EXISTING AIRPORT FACILITIES BY GEOGRAPHIC AREA

The Ted Stevens Anchorage International Airport (Airport) facilities are described in this section by geographic area or airpark.

6.1 NORTH AIRPARK

The North Airpark is a 646-acre geographic area located north of the passenger terminal complex and east of Taxiway R. The facilities in the North Airpark are shown in Figure 2.17.

6.1.1 FACILITIES

The majority of the buildings in the North Airpark are used for cargo purposes. Today, the North Airpark is developed with approximately 650,000 square yards (134 acres) of aircraft parking apron or ramp area; approximately 239 acres of developed buildings, leased space, and roads; and the remaining 273 acres currently undeveloped for aviation use. The largest facilities include the FedEx, United Parcel Service (UPS), and Alaska CargoPort cargo handling facilities. All buildings within the North Airpark are listed in Table 2.2. Also included are the building numbers identified in Figure 2.17. Ramp areas or lease lots without buildings are excluded. Each tenant is individually described in later sections.

Ground Access and Parking

The key roads in and around the North Airpark are Postmark Drive and Northern Lights Boulevard. Most of the North Airpark facilities can be accessed by way of Postmark Drive. Rockwell Avenue is a public use road that provides access to the FedEx facility from Postmark Drive. Lockheed Avenue is a public use road that provides access to the UPS, Everts Air Cargo, and ACE Air Cargo facilities from Postmark Drive. PenAir and the Alaska CargoPort complex are publically accessible from Northern Lights Boulevard via Boeing Lane and Boeing Avenue. The Field Maintenance Facility, Anchorage Fueling and Services Company (AFSC) offices, and the Police and Fire Station are accessible from Postmark Drive via De Havilland Avenue. On both the secure and non-secure side of the airfield, North Tug Road provides access between the North Airpark facilities and the passenger terminal area. This service road allows non-licensed airfield vehicles to bypass the secure service road along Taxiway R and also provides access to the U.S. Post Office. Several North Airpark tenants have raised concerns regarding the ease of crossing Postmark Drive and accessing the U.S. Post Office.

Each tenant typically provides space on its own leasehold to accommodate the vehicular parking needs for its own employees. The only case of common-use or shared parking is the Alaska CargoPort complex where the subtenants share a parking lot. Through interviews

conducted with the various tenants, tenants reported a lack of employee parking space, particularly along Lockheed Avenue where employees must park along the side of the road.

Airfield Access

Airfield access to the Security Identification Display Area (SIDA) and the Air Operations Area (AOA) where aircraft land, take off, or maneuver is provided via various tenant leaseholds as well as several gates along the Airport security fence. A typical security gate is shown in Figure 2.21. In the North Airpark, airfield access is provided at all facilities with the exception of the Fire Suppression Water System (Building 116). Airfield access to the SIDA is also provided via Gate N42 at the end of Lockheed Avenue as well as via Gate N30 A & B on the north side of Taxiway T where the service road meets North Tug Road alongside Postmark Drive. Finally, airfield access is provided via Gate N12 located near the Field Maintenance Facility located along De Havilland Avenue and North Tug Road.

Figure 2.21
Typical Security Gate



Source: HDR, 2014.

6.2 EAST AIRPARK

The East Airpark is a 150-acre geographic area located north of Taxiway K, east of the passenger terminal complex, south of International Airport Road, and west of Jewel Lake. The facilities in the East Airpark are shown in **Figure 2.18**.

6.2.1 FACILITIES

The East Airpark was the first area of the Airport to be developed for airline / air cargo support. By 1955, the East Airpark was the site of three large hangars and about 50,000 square yards of aircraft parking apron. Two of these hangars, currently owned by Alaska Airlines and Northern Air Cargo, remain in use.

Today, the East Airpark is fully developed with approximately 250,000 square yards of aircraft parking apron and a total of 600,000 square yards of leasable space. Approximately 417,000 square yards of this leasable space fronts the AOA. The remaining 183,000 square yards is only accessible to / from the AOA via the airpark's internal road system and airfield security gates.

A majority of buildings fronting the AOA and elsewhere in the airpark are 30 to 40 years old and have been repurposed—some, multiple times—in response to changes in the market and the aircraft fleet. Interviews with current airpark occupants indicate that conducting business in the airpark can be challenging due to access restrictions, relatively small lot sizes, limited apron space, and the expense of upgrading older buildings to meet current municipal building codes. Several businesses conduct operations from multiple locations in the airpark or from multiple airparks, in spite of the inefficiencies this creates, because no single location is available that meets all of their needs.

The East Airpark serves a large and diverse mix of aviation businesses including major and regional passenger airlines (Alaska Airlines and Corvus Airlines, respectively); regional all-cargo carrier (Northern Air Cargo); commuter and charter air carriers; air ambulance operators; an airline caterer; aircraft maintenance companies; and providers of passenger, ramp, and cargo services. Airpark occupants also include a restaurant, vehicle rentals, law enforcement, and technical support for state and federal transportation programs. The buildings within the East Airpark are listed in **Table 2.2**. Ramp areas or lease lots without buildings are excluded. Each tenant is individually described in later sections.

Ground Access and Parking

Between 1940 and 1980, what was then known as International Airport Road served as the main access to the Airport. In 1980, International Airport Road was realigned about 900 feet to the north and redesigned

as a controlled access arterial providing primary access to the passenger terminal area west of the airpark. The original road alignment, now known as Old International Airport Road, continues to provide internal access to the airpark from Jewel Lake Road and South Aircraft Drive.

A spur line connecting the East Airpark with the Alaska Railroad Corporation's mainline east of the Airport was constructed in the early 1950s to bring petroleum products to the Airport's bulk fuel storage facility, which was located at the west end of Old International Airport Road. The bulk fuel storage facility was removed in about 1995.

In 2003, the rail spur was elevated and connected to the passenger terminal complex. Although the spur line remains at-grade for approximately 1,200 feet at the eastern end of the East Airpark, there is currently no developed rail connection to / from any leased lot. During the summer, the east end of West 50th Avenue was blocked off to allow the unimpeded flow of passenger rail cars to and from the Airport passenger terminal. In 2012, the Alaska Railroad Corporation reported carrying nearly 45,000 passengers to / from the Airport terminal.

Although the rail line provides improved passenger access to the main terminal, it no longer serves a useful function for the East Airpark. In fact, its presence somewhat reduces the utility of the East Airpark to the Airport because it impedes the ability to redesign the East Airpark to address evolving market conditions, such as realigning the internal road network and expanding lease lots. For example, a few tenants on parcels north of the rail corridor require the use of ramp vehicles (e.g., tugs, deicing equipment, and cargo dollies) on the AOA. As traffic on the road network internal to the airpark grows, occupants of these lots will encounter increasing difficulty transiting the pinch point on South Aircraft Drive at the railroad overpass.

As with the North Airpark, vehicular parking is limited and tenants have been known to lease unused space from other tenants to accommodate their vehicular parking demand.

Airfield Access

Airfield access to the SIDA and AOA where aircraft land, take off, or maneuver is provided via various tenant leaseholds, as well as at several gates along the Airport security fence. In the East Airpark, airfield access is provided only at those facilities located alongside Taxiway K. Airfield access to the SIDA is also provided via the Gate E21 Guardshack and Gate E21A at the terminus of South Aircraft Drive.

6.3 SOUTH AIRPARK

The South Airpark is a 560-acre geographic area located north of Raspberry Road and south of Runway 7R-25L and the East / West Parallel Taxiway. The facilities in the South Airpark are shown in **Figure 2.19**.

6.3.1 FACILITIES

The original South Airpark is the area around Taxiway Z and Taxiway F. The Kulis Business Park was recently added to the South Airpark. In addition, in the future the South Airpark will likely include undeveloped areas west of Taxiway Z (identified as part of the “Other” geographic land use category shown in Figure 2.16). Including the undeveloped areas to the west, the South Airpark comprises approximately 748 acres. A total of approximately 151 acres are developed, with the remaining 597 acres undeveloped. Portions of the undeveloped land may not be developable due to its proximity to the runway. Part of the undeveloped land is temporarily publicly accessible and temporarily used for recreational purposes. In 2014, the Airport acquired 131 acres of additional land in the west portion of the South Airpark, formally occupied by the Federal Communications Commission through a land release by the U.S. General Services Administration.

The first structures in the South Airpark were developed within the Kulis Business Park (former Kulis Air National Guard Base [ANGB], which opened in the spring of 1955). Additional buildings were constructed to the west (in the area originally known as the South Airpark) and outside of the Kulis Business Park in the early 1980s. Taxiway F, formerly part of the original Runway 13-31, was established in 1980 when the runway was decommissioned. Taxiway Z was constructed in 2006 to accommodate additional growth and provide access to newly defined lease lots, located alongside the north / south running segment of Taxiway Z. In 2011, Kulis ANGB was relocated to nearby Joint Base Elmendorf-Richardson (JBER), adding 129 more acres to the South Airpark. The South Airpark continues to grow, with new facilities being constructed as recently as 2009. Public utilities, including water / sewer, electricity, natural gas, and fiber optic cable are available at various lease lots east of Taxiway Z. The water and sewer utilities within the Kulis Business Park are currently owned by the Airport but should be transferred to the Anchorage Water and Wastewater Utility (AWWU) by 2015.

The South Airpark’s aviation uses include corporate and general aviation, cargo, fixed base operators, charter passenger service, training, aircraft maintenance, and navigational aid. The buildings within the South Airpark are listed in Table 2.2. Ramp areas or lease lots without buildings are excluded. Each tenant is individually described in later sections. Not shown are buildings owned by the U.S. Fish and Wildlife Service (USFWS) and ACS of Anchorage, Inc. located south of the National Oceanic and Atmospheric Administration (NOAA) buildings (Buildings 342 and 343).

Ground Access and Parking

The South Airpark is accessible via Raspberry Road. Primary access roads within the South Airpark are South Tug Road, South Airpark Place, Carl Brady Drive, and Kulis Drive. Other roads in the South

Airpark include West Perimeter Road, Test Drive, Cicardo Court, Malone Street, Fox Run Way, Captain Hill Court, Freyholtz Lane, and Denali View Way. Maintenance of these roads, with the exception of Raspberry Road, is provided by the Airport.

Access to the AOA in the South Airpark is provided via the South Tug Road that connects to the tug road system at the East Airpark and extends around Runway 7R to connect to the West Airpark.

Parking in the South Airpark is located within each tenant's designated lease area. Tenants along the eastern side of South Airpark Place have limited parking and few options for additional parking. Most tenants, with the exception of Signature Flight Support, have adequate parking facilities for current use. There are two vacant lots along South Airpark Place. The Federal Aviation Administration (FAA) has determined that parking is incompatible on one lot because of potential conflicts with the Airport Surface Detection Equipment (ASDE). The other lot, while not adjacent to Signature, could be developed as additional parking for South Airpark tenants.

Airfield Access

Airfield access to the SIDA and AOA is provided via various tenant leaseholds, as well as at several doors and gates along the Airport security fence. Access to the Airport / apron through tenant lease areas is controlled by tenant lock and key or card reader programs. The doors and gates are controlled by locks and warning signs to prevent unauthorized entry to SIDA areas. In the Kulis Business Park, airfield access is provided at Gates K1, K4, K7, K10, and K13. In the original South Airpark area, airfield access is provided at Gates S6, S9, and S25.

6.4 WEST AIRPARK

The West Airpark is a 570-acre geographic area located north of Runway 7R-25L and west of Runway 15-33. The facilities in the West Airpark are shown in **Figure 2.20**.

6.4.1 FACILITIES

With the exception of AFSC facilities and FAA equipment, the majority of the West Airpark is undeveloped. The buildings within the West Airpark are listed in **Table 2.2** and described in later sections.

Ground Access and Parking / Airfield Access

The West Airpark is accessible from north of the Airport via Point Woronzof Drive and West Perimeter Road. West End Road and the SIDA access gate (Gates N63 and N64) are located at the terminus of Point Woronzof Drive. The public can access West End Road. The entrance to the AFSC fuel farm is located just past the intersection of Point Woronzof Drive and West End Road. The fuel farm is gated to

prevent trespassing. West End Road runs west and terminates near the Taxiway K and Runway 7R end just outside the Airport property boundary. At the terminus of West End Road at the Airport property boundary, a smaller road branches off to the south to an area that is temporarily used as a construction staging area. Access to this on-Airport area is restricted via Gates W2 and W2B. West End Road continues west and just past the Airport property line. The road branches off into service roads leading to a few facilities that are used by personnel who manage the Tony Knowles Coastal Trail.

Past the terminus of Point Woronzof Drive and the SIDA access Gate N63 and B64 heading south, Point Woronzof Drive turns into the West Access Road and then into the West Perimeter Road. The West Perimeter Road, or the service road, travels around the end of Runway 7L and 7R towards the South Airpark and around to the passenger terminal area and North Airpark. Secure access to the West Airpark will need to be considered in future development plans as there is currently no secure service road connecting the North Airpark to the West Airpark from the north. To access the West Airpark from the north, service vehicles currently use the publicly accessible Point Woronzof Drive.

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SECTION 7 EXISTING AIRPORT FACILITIES BY FUNCTIONAL AREA

The Ted Stevens Anchorage International Airport (Airport) facilities are described in this Section by functional area.

7.1 AIRFIELD

This section describes the Airport airfield environs, which include the runways, taxiways, aprons, aircraft parking areas, navigational aids and lighting within the airfield area as defined in **Section 7, On-Airport Functional Land Use Categories**. The airfield area consists of approximately 1,440 acres and is shown in **Figure 2.22**. Any deficiencies in airfield design standards per Federal Aviation Administration (FAA) *AC 150/5300-13a, Airport Design*, are also identified.

7.1.1 RUNWAYS

The Airport is comprised of three runways. Runway characteristics are summarized in **Table 2.3** and also described below.

Table 2.3
Existing Runway Characteristics

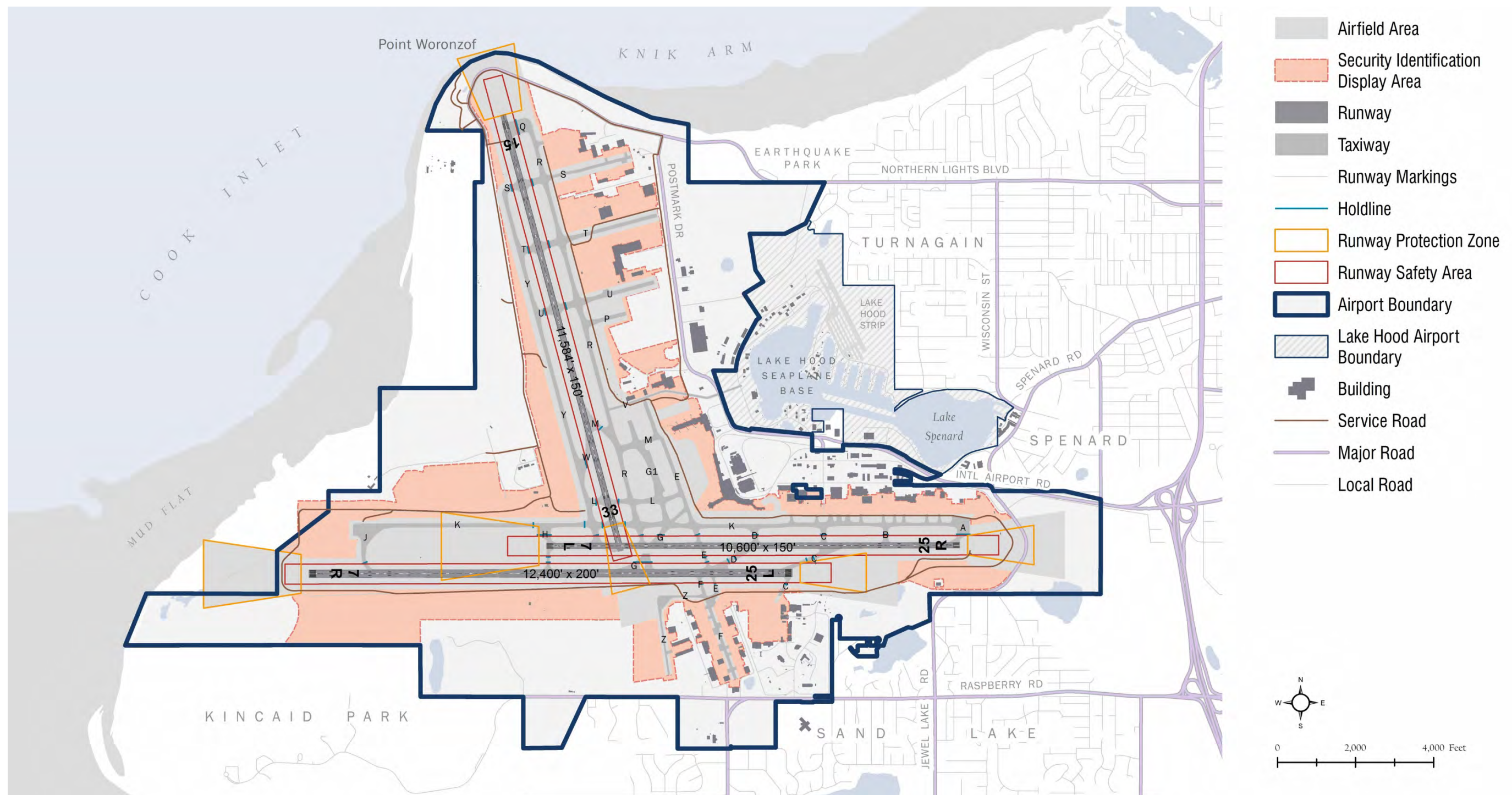
	Runway 7L-25R	Runway 7R-25L	Runway 15-33
Length (feet)	10,600	12,400	10,960
Width (feet)	150	200	150
Threshold Displacement	None	None	15–202 feet from runway end 33– 265 feet from runway end
Marking	Precision	Precision	Precision
Surface Material	Asphalt-Grooved	Asphalt-Grooved / Portland Cement Concrete	Asphalt-Grooved
Runway Design Code	D-V	D-VI	D-V
Design Aircraft	B747-400	B747-8	B747-400
Effective Gradient	0.3883%	0.2753%	0.2504%
Approach Visibility Minimum	7L: < ¼ mile 25R: visual	7R: < ¼ mile 25L: visual	15: ¾ mile 33: visual

Source: Airport staff, 2014.

The runways at the Airport consist of two parallel runways (7L-25R and 7R-25L) oriented in an east-west direction and a single runway (15-33) oriented in the north-south direction. Runway 7L-25R, the inboard runway, measures 10,600 feet by 150 feet. Runway 7R-25L, the outboard runway, measures 12,400 feet by 200 feet. The parallel runways are paved with asphalt except for the first 5,000 feet of Runway 7R, which is paved with Portland Cement Concrete (PCC). Runway 7L-25R is constructed on a 0.4 to 0.5% slope.

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Figure 2.22 Airfield Area



Source: RS&H and HDR, 2014.

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Runway 7R-25L is constructed on a 0.3% to 0.4% slope. Each runway is equipped with its own blast pad. The two east-west runways are separated, centerline to centerline, by a distance of 700 feet. This allows for simultaneous departures on both runways in Visual Meteorological Conditions. Runway 15-33 measures 10,960 feet by 150 feet and is paved with asphalt. The Runway 33 end was decoupled from Runway 7L-25R in summer 2014, resulting in a Runway 15-33 length of 10,960 feet. The Runway 33 end is located just south of the southern edge of Taxiway K, resulting in a 275-foot displaced threshold. The Runway 15 threshold is displaced 202 feet to the north to accommodate departures from Runway 33 by the Boeing 747-200, the design aircraft at the time the runway was extended. Runway 15-33 is constructed on a 0.4% to 0.5% slope. The runway has a blast pad on each end.

Declared distances are established for the runways and are summarized in Table 2.4. Runway 7L-25R does not have any declared distances other than the full length of the 10,600-foot runway.

Table 2.4
Declared Distances (in feet)

	Existing Runway Length	TORA	TODA	ASDA	LDA
Runway 7L-25R					
7L	10,600	10,600	10,600	10,600	10,600
25R		10,600	10,600	10,600	10,600
Runway 7R-25L					
7R	12,400	10,900	10,900	10,900	12,400
25L		12,400	12,400	12,000	12,000
Runway 15-33					
15	10,960	10,760	10,760	10,094	10,094
33		10,960	11,960	10,960	10,694

Source: Airport staff, 2014.

Notes: TORA = Takeoff Run Available - The runway length declared available and suitable for the ground run of an aircraft taking off.
TODA = Takeoff Distance Available - The TORA plus the length of any remaining runway or clearway beyond the far end of the TORA; the full length of TODA may need to be reduced because of obstacles in the departure area. ASDA = Accelerate-Stop Distance Available - The runway plus stopway length declared available and suitable for the acceleration and deceleration of an aircraft aborting a takeoff.
LDA = Landing Distance Available - The runway length declared available and suitable for landing an aircraft.

For Runway 7R-25L, the Takeoff Run Available (TORA), Takeoff Distance Available (TODA), and Accelerate Stop Distance Available (ASDA) for Runway 7R departures is 10,900 feet to account for the departure point being located not at the actual Runway 7R end, but at the point where aircraft are able to depart off Taxiway J. The Landing Distance Available (LDA) for Runway 7R is 12,400 feet. For Runway 25L departures, the TORA and TODA are both 12,400 feet. However, the ASDA and LDA are 12,000 feet to account for a compliant 1,000-foot Runway Safety Area (RSA) off the Runway 7R end. The current RSA is deficient due to the steep elevation drop-off off the Runway 7R end which prevents a fully graded RSA.

For Runway 15-33, the TORA and TODA for Runway 15 departures is 10,760 feet, which accounts for the displaced thresholds and safety areas for Runway 15-33. The ASDA and LDA for Runway 15 departures and arrivals are 10,094 feet. For Runway 33 departures, the TODA is 11,960 feet to account for a clearway extending beyond the Runway 15 end. The TORA and ASDA for Runway 33 departures and arrivals are 10,960 feet, which equals the length of the runway from end to end. The LDA for Runway 33 arrivals is 10,694 feet to account for the displaced threshold.

Runways are typically designed based on an Airport Reference Code (ARC), which is determined using a combination of aircraft approach speed category (AAC) and airplane design group (ADG) based on the wingspan or tail height of the critical aircraft using the runway. The AAC and ADG definitions are shown in Table 2.5 and Table 2.6. The ARC for Runway 7R-25L and Runway 15-33 is a D-VI and the ARC for Runway 7L-25R and Runway 15-33 is a D-V.

Table 2.5
Aircraft Approach Category (AAC)

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

Source: Federal Aviation Administration Advisory Circular (AC) 150/5300-13A, Airport Design

Table 2.6
Airplane Design Group (ADG)

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

Source: Federal Aviation Administration Advisory Circular (AC) 150/5300-13A, Airport Design

The RSA is a defined surface surrounding the runway specifically prepared to reduce the risk of damage to aircraft in the event of an under-shoot, overshoot, or excursion from the runway. The typical RSA extends 1,000 feet beyond the runway end (or 600 feet prior to the threshold where the runway end is equipped with vertical guidance) and is 500 feet wide centered on the runway centerline. The RSA on the Runway 7R end extends 600 feet from the runway end. Declared Distances are used to compensate for the remaining RSA distance

because the sharp elevation change west of the Runway 7R end does not allow for a fully graded RSA beyond the runway end.

The Runway Object Free Area (ROFA) is an area centered on the ground on a runway centerline provided to enhance the safety of aircraft operations by remaining clear of objects, except for objects that need to be located in the object free area for air navigation or aircraft ground maneuvering purposes. The ROFA typically extends 1,000 feet beyond the runway end and is 800 feet wide centered on the runway centerline.

The Runway Protection Zones (RPZ) are areas at ground level prior to the threshold and beyond the runway end to enhance the safety and protection of people and property on the ground. The RPZ dimensions for each runway are based on the visibility minimums, AAC, and ADG. For the 7L and 7R ends, the approach RPZ dimensions are 1,000 feet (inner width) by 1,750 feet (outer width) by 2,500 feet (length). For the 33, 25L, and 25R ends, the approach RPZ dimensions are 500 feet (inner width) by 1,010 feet (outer width) by 1,700 feet (length). For Runway 15, the approach RPZ dimensions 1,000 feet (inner width) by 1,510 feet (outer width) by 1,700 feet (length). The departure RPZ dimensions for all runway ends are 500 feet (inner width) by 1,010 feet (outer width) by 1,700 feet (length).

Runway pavement bearing strengths define the weight limit at or below which an aircraft may operate on the runways. The weight bearing capacity for a runway is determined by the configuration of the aircraft landing gear system and is shown in Table 2.7.

Table 2.7
Runway Pavement Bearing Strength / Weight (in thousands of pounds)

Landing Gear	7R-25L	7L-25R	15-33
SW	75	75	75
DW	175	175	175
DT	400	400	400
DDT	1,300	900	900

Source: Department of Transportation and Public Facilities, Form 5010 – Airport Master Record.

Notes: SW = Single-wheel landing gear (e.g., small general aviation aircraft), DW = Double-wheel landing gear (e.g., Boeing 737-700), DT = Double tandem wheel landing gear (e.g., Boeing 757-200), DDT = Dual double tandem wheel landing gear (e.g., Boeing 747-400).

7.1.2 TAXIWAYS

The Airport has an extensive taxiway system. Key taxiways and various issues associated with several of the taxiways are described below.

The main taxiway serving the parallel runways (Runway 7R-25L and Runway 7L-25R) is Taxiway K. The main taxiways serving Runway 15-33 are Taxiways R and Y.

Taxiway G1 was constructed four years ago, which alleviated congestion in the area where the Runway 33 end and south parallel runways

intersect. Most (99%) aircraft that arrive on Runway 7R are now able to make the high speed Taxiway G exit. From the Taxiway G exit, aircraft can either turn onto Taxiway R to access the North Airpark, turn onto Taxiway G1 to access the cargo technical stop apron area, or continue along Taxiway G to the passenger terminal building. One problem that presently exists is that both inbound and outbound traffic frequently meet at the five-way Taxiway G, G1, and K intersection.

Northbound traffic on Taxiway R continues to conflict with southbound traffic on Taxiway R between Taxiways M and U. These conflicts are sometimes alleviated by directing aircraft traffic as necessary via Taxiway Y.

Taxiway T, located between the FedEx and United Parcel Service (UPS) leaseholds, is heavily used and due for reconstruction. Generally, congestion due to runway crossing requirements is not a problem.

There are future plans to extend Taxiway Z in the South Airpark past the end of Runway 25L and connect to Taxiway B. The purpose is to create an end around the taxiway to reduce aircraft wait times and provide access to the South Airpark.

7.1.3 AIRFIELD HOT SPOTS

An airfield “Hot Spot” is defined by the FAA as “a location on an aerodrome movement area with a history or potential risk of collision or runway incursion.” Hot Spots are identified by the FAA with the intention of increasing awareness for pilots, airport staff, and ground vehicle operators who navigate the aircraft operations area.

Currently, the Airport has two established Hot Spots. Hot Spot 1 is located at the Taxiway G intersections with Taxiway E and K. This is a complex intersection where pilots sometimes make an incorrect turn. Aircraft taxiing to Runway 33 via Taxiway E, G, and K sometimes miss the turn from Taxiway G onto Taxiway K and continue on Taxiway G to cross Runway 7L-25R by mistake. The potential risk of collision or runway incursion at this location is especially high during conditions of restricted visibility.

Hot Spot 2 is located along Taxiway E between Runway 7L-25R and Runway 7R-25L. It involves aircraft pilots confusing hold short instructions for Runway 7L-25R and Runway 7R-25L when taxiing to Taxiway K via Taxiway E and Taxiway F. Taxiway D signage may not be visible from Taxiway E and Taxiway F hold positions.

7.1.4 AIRCRAFT PARKING POSITIONS

The Airport owns and manages a number of aircraft parking areas and positions. Aircraft parking positions R2-R4, R7-R11, and R12-R14 are located adjacent to Taxiway E and are used primarily for cargo technical stops. Parking positions R8-R14 are able to accommodate up to Boeing 747-8 aircraft. Parking positions R2-R4 are able to accommodate

ADG-V aircraft. Parking position R7 is able to accommodate aircraft up to Boeing 747-300. Parking for ground support equipment is located close to these spots. Aircraft parking positions R2-4, R7-R11, and R12-R14 have in-ground power capabilities and are currently served by 400-Hertz converter carts. Additional aircraft parking positions N2-N8 are located at the North Terminal. These parking positions serve cargo technical stops, charter traffic, aircraft diverted from other airports, and aircraft maintenance purposes.

North of the passenger terminal are aircraft parking positions P1-P3. In the future, three additional ADG-VI spots may be built in the undeveloped area south of Taxiway P. An additional taxiway will also be built south of the new spots.

Airport owned and managed parking spots are usually occupied about 10 times per week. Peak usage occurs on Saturday / Sunday, and the slowest time is on Monday.

In the North Airpark, UPS and FedEx both have their own ramp areas. Two parking positions within the UPS leasehold (R15 and R16) are owned by the Airport and used by UPS under a preferred user agreement with Airport operations. UPS facilities have relatively constrained access to the airfield, as access is provided solely via Taxiway T. Further to the north, the Alaska Cargo Port has a ramp area with parking positions to accommodate up to 12 aircraft. These spots are primarily used by cargo transfer aircraft.

In the East and South airparks, with the exception of the Kulis Business Park, the Airport does not own any aircraft parking areas. All parking areas are privately owned.

Several run-up areas are provided: Taxiway J near the Runway 7L and 7R end, Taxiway Q near the Runway 15 end, and Taxiway Y. Small aircraft perform run-ups between Taxiways E and F.

7.1.5 PAVEMENT MANAGEMENT

FAA requires all airports receiving federal funding to have a pavement management and maintenance program in place. FAA's *Advisory Circular 150/5380-6B Guidelines and Procedures for Maintenance of Airport Pavements* (dated September 28, 2007) governs how airport pavement management programs are to be managed.

The Airport has a pavement management program in place that serves as an aid in effective airport pavement maintenance effort. The Airport also conducts a Pavement Condition Index (PCI) inspection program.

As part of the PCI update at the Airport, a condition survey of all airfield pavements at the Airport, including runways, taxiways, taxilanes, and aprons along with their shoulders, is conducted. The PCI metric was developed by the U.S. Army Corps of Engineers, and is based on a visual

survey of the pavement. During the condition survey, a representative sample of all pavements are inspected, and distresses are carefully recorded and processed using a program called MicroPAVER, which generates an individual PCI for each pavement. Approximately one-third of all airfield pavements are inspected each year.

The PCI is a numerical index that ranges between zero and 100 and indicates the general condition of a pavement. The PCI value of 100 means the pavement is in excellent condition and a value of zero means the pavement is in very poor condition or has failed and is no longer usable. The PCI values are grouped as excellent (86-100), very good (71-85), good (56-70), fair (41-55), poor (26-40) and very poor or failed (0-25).

Following the inspection, a color coded PCI map is generated showing the PCI values of different pavement areas. The color code ranges from green (for pavements with higher PCI values) to red (pavements with lower PCI ratings).

Guidelines set by the Alaska State Legislature (Chapter 90 Session Laws of Alaska 01 Sec 150 Line 26) require the Airport to maintain a minimum PCI condition of 70 for all runways and 60 for taxiways and aprons.³⁴

Current Pavement Conditions

Per the 2012 pavement condition map, Runway 7R-25L and Runway 14-32 have high PCI values and are shown in green. However, the western half of Runway 7L-25R has poor PCI values and is shown in either yellow or red.

Runway 7R-25L is the most frequently used runway at the Airport and is widely used for cargo operations. Commuter aircraft typically depart on Runway 7L-25R. Due to the pavement design, the pavement deteriorates at a much faster pace than the rest of the airfield pavement. Runway 7R-25L was rehabilitated in 2011. However, the PCC pavement section on the runway is already showing signs of surface deterioration and spalling, possibly due to snow removal equipment / operations. The PCC pavement section is structurally sound but is being closely watched.

Per the guidelines established by Alaska State Legislature, the west portion of Runway 7L-25R is anticipated to be rehabilitated in the next few years. Runway 7L-25R is an asphalt runway that has at least 12 pavement sections (out of 20) exhibiting PCI values less than 70. Of those 12 sections, five have PCI values less than 55.

Runway 15-33 is also an asphalt runway with several portions overlaid. Most of the runway pavement sections have PCIs in the range of 71-100

³⁴ Chapter 90 SLAS 01 Sec 150 Line 26

according to the 2012 pavement condition map released by the Alaska Department of Transportation and Public Facilities (DOT&PF). However, three pavement sections and their associated shoulders near the end of Runway 33, adjacent to the intersection with the Runway 7L-25R, exhibit notably lower PCI values (35-58) compared to the rest of the runway. These pavement sections will require rehabilitation or reconstruction in the near future.

The majority of taxiway and apron pavements are in good condition, while a few areas exhibit poor PCI values. Taxiway R, south of Taxiway P and north of Taxiway M, exhibits PCI values less than 40. In addition, portions of Taxiways E2, L, M and V east of Runway 15-33 also have low PCI values. Those sections have PCI values less than 40. Of these taxiways, Taxiway L was reconstructed in the summer of 2013. Taxiway E2 and Taxiway M are scheduled for reconstruction in 2014. Taxiway T, connecting the UPS and FedEx facilities, is heavily traveled airfield pavement and is scheduled for reconstruction in 2016. Its PCI value is less than 55.

The next pavement condition inspection for the Airport is scheduled for 2014.

7.1.6 NAVIGATIONAL AIDS AND LIGHTING

The following navigational aids, or ground-based navigational facilities, located both on- and off-Airport, are used within the published approaches for the Airport:

- Airport surveillance radar (ASR)
- Non-directional beacon (NDB)
- Very high frequency omnidirectional range (VOR)
- Tactical air navigation (TACAN) equipment
- Distance measuring equipment (DME)
- Localizer (all runways)
- Glide Slope (all runways)
- Runway Visual Range Equipment (15-33, 7R-25L, 7L)
- Rotating beacon
- Remote transmitter receiver (RTR)

Visual

Runway visual range equipment provides a pilot with distance information over which runway surface markings or the centerline is visible. A rotating beacon is used to help pilots locate the airport airfield, especially at night. The RTR provide communications between air traffic controllers and pilots in the terminal airspace.

Electronic

The ASR is the radar system at an airport used to display the position of aircraft in the terminal area. The ASR for the Airport is located just north of the fuel farm in the West Airpark area.

A NDB is a general purpose, low-frequency radio beacon that helps pilots determine a bearing. The NDB for the Airport is the Campbell Lake NDB, located 0.5 nautical mile southwest of Runway 7L.

The VOR station is a ground-based facility that transmits high frequency radio signals 360 degrees in azimuth from the station. These signals help the pilot turn at a given point above the ground or fly along a radial to or from the station. There are two VOR stations within the Airport terminal radar approach control (TRACON), at the Airport and at Big Lake. The VOR at the Airport was relocated during the summer of 2012, resulting in a magnetic declination change. A third VOR is located outside the Airport TRACON airspace at Kenai.

DME allows pilots to determine their distance from a land-based transponder. TACAN also provides omnidirectional azimuth bearing information for military aircraft and distance information for all aircraft. TACANs are generally more accurate than a combined VOR / DME, but can also be used with VOR and DME facilities.

In an Instrument Landing System (ILS), an approach path is provided for exact alignment and descent of an aircraft on final approach. Guidance information is provided via a combination of localizer and glide slope. Localizers provide horizontal runway centerline guidance whereas glide slopes provide vertical guidance.

7.1.7 RUNWAY AND APPROACH LIGHTING

The three runways are equipped with a variety of lighting. High intensity runway lights and centerline lighting are installed on all runways. Touchdown zone lighting is installed on the Runways 7R and 7L. Runway end identifier lights are installed only on the Runway 33 end.

Approach lighting used at the Airport is summarized in Table 2.8. It should be noted that for Runway 7R, the approach lighting system with sequenced flashing lights (ALSF-II) has frequently experienced failures due to wiring issues.

The published approach procedures for precision and non-precision instrument approaches are summarized in the section on airspace.

Table 2.8
Approach Lighting

	Runway					
	7R	25L	7L	25R	15	33
ALSF-II	X					
MALSR			X			
ODALS					X	
VASI				X		
PAPI	X	X	X		X	X
RVR	X	X	X		X	X

Source: Airport staff, 2014.

Notes: ALSF-II = High intensity approach light system with sequenced flashers, Category II/III configuration (2,400 feet high), MALSR = Medium intensity approach light system with runway alignment indicator lights, ODALS = Omnidirectional approach light system, PAPI = Precision approach path indicator, RVR = Runway visual range, VASI = Visual approach slope indicator.

7.1.8 AIRPORT SERVICE ROADS

The Airport has a number of service roads located within the aircraft operations area. Airport service roads provide access for ground service vehicles to areas of the aircraft operations area. For large commercial airports like the Airport, service roads often cross, but are not collocated on, aircraft taxiways. This segregation of airport ground vehicles from aircraft taxiways increases safety since pilots are more familiar with seeing vehicle activity in specific locations on the airfield.

In addition to the service roads, a bypass Tug Road runs parallel to Postmark Drive and connects the North Airpark to the U.S. Post Office and terminal area. However, the Airport lacks a contiguous perimeter road. The west side of the Airport north of Runway 7L is not accessible by service road. A service road runs from the fuel farm west around the end of Runways 7L and 7R to connect with the south Tug Road. Ideally, a service road would run from the fuel farm north toward Point Woronzof and connect with the North Airpark. To overcome this deficiency, ground vehicles are forced to comeingle with aircraft on various taxiways and runways or use public roads to access certain areas of the Airport. It is important to note that most ground service vehicles are not licensed and are not legally allowed on public roadways because of liability issues.

7.1.9 AIRPORT ACCESS AND SECURITY

An Air Operations Area (AOA) comprises the majority of the airfield area and is where aircraft operate. Only permitted Airport, FAA, and Transportation Security Administration (TSA) personnel are allowed within the AOA. To prevent unwanted persons, animals, and vehicles from entering the AOA, and to protect the safety of air operations, the AOA is surrounded by an 8-foot tall security fence.

7.2 AIRSPACE

This section contains a brief summary of the airspace surrounding the Airport, the responsibilities of various air traffic control facilities, and limitations imposed on the flight paths of individual aircraft by the geography and airspace in the surrounding area. In addition, it describes the preferred runway uses, aircraft approaches and departures, special air traffic rules, and noise mitigation strategies.

7.2.1 AIRPORT TRAFFIC CONTROL PROCEDURES

The FAA controls airspace through several layers of air traffic control facilities. Generally speaking, the Air Route Traffic Control Center handles aircraft during the en-route phase of flight. The TRACON facility handles both arriving aircraft during their initial descent toward the airport, and departing traffic after they clear the airport traffic pattern. The Airport Traffic Control Tower (ATCT) is responsible for aircraft making their final approach before landing, ground operations, takeoff, and initial climb. Each type of air traffic control facility has its own staffing, equipment, and facilities, and they are generally not collocated.

Aircraft are also under the control of provisions contained in Subpart D of Special Federal Aviation Regulation Part 93, which outlines unique operational requirements for aircraft operating in the Anchorage area. The regulation essentially creates separate flight paths and altitudes for both large turbine-powered aircraft and smaller piston-powered aircraft as they approach and depart from the Airport, Lake Hood Airport, Joint Base Elmendorf-Richardson (JBER), and Merrill Field Airport. Part 93 stipulations create the rules for the general flow of traffic in and out of the Anchorage area, but Air Traffic Controllers take an active role in directing traffic. Thus, while Part 93 provides some information to pilots as to direction and altitude they might expect, specific instructions from Air Traffic Controllers take precedence over the Part 93 provisions.

The airspace around the Airport is somewhat complex. The Airport itself lies within Class C airspace. Class C airspace is defined by the FAA as airspace in which pilots must be in two-way communications with Air Traffic Controllers. Class C airspace is the second-busiest tier of airspace control contained within the FAA's hierarchy of airspace areas.

As shown in **Figure 2.23**, the Anchorage Class C airspace consists of several blocks of airspace. The core is a semicircular tract centered on the Airport and extending east, west and northwest of the Airport in the direction of the extended runway centerlines, and exists from the surface to 4,100 feet mean sea level (MSL). A second semicircle extends south of the Airport and includes the area from 600 feet MSL to 4,100 feet MSL. Outside of these areas is a band that runs from southeast of the Airport to north-northwest, and extends from an altitude of 1,400 feet MSL to 4,100 feet MSL. In addition, a trapezoidal area directly north

of the Airport and on the opposite side of the Knik Arm Inlet, contains Class C airspace from 1,400 feet MSL to 1,900 MSL.

Figure 2.23
FAA Anchorage Sectional Chart



Source: Federal Aviation Administration, n.d.

Aircraft arriving or departing the Airport must contend with potential traffic and conflicts with aircraft from JBER and Merrill Field Airport. To help manage traffic, the FAA has developed eight Standard Terminal Arrivals and five Departure Procedures that outline specific routes arriving and departing traffic should follow. As an aircraft makes contact with Air Traffic Controllers, the pilots are given instructions regarding which route to fly depending on weather conditions, local traffic, and traffic at nearby airports.

7.2.2 VFR AND IFR PROCEDURES

Air traffic operations fall within two categories—those flying under Visual Flight Rules (VFR) and those under Instrument Flight Rules (IFR). Under VFR, aircraft operating in good visibility weather do so under “see and avoid” practices with other aircraft. The pilots are given route instructions while inside the Class C airspace, but otherwise are relatively free to choose their own routes and altitudes. Many general aviation aircraft operate under VFR most of the time.

Transport category aircraft, as well as many charter aircraft and general aviation aircraft that are properly equipped and staffed, typically operate under IFR. Aircraft flying under IFR are required to comply with routes and altitudes given by Air Traffic Controllers during all phases of flight. The controllers are then responsible for ensuring adequate separation between aircraft, as they may be flying in clouds, snow or other conditions of poor visibility during which the view outside the aircraft is limited.

Aircraft approaching the Airport during periods of poor visibility fly through the Airport environment and to the runway using predetermined routes called Standardized Instrument Approach Procedures. The pilot’s ability to land without actually seeing the runway landing zone is determined by a number of factors, including approach lighting, navigational aids, aircraft equipment, and pilot qualifications. Table 2.9 summarizes the instrument approaches available at the Airport and the minimum visibility and heights associated with each approach. Note that not all aircraft can meet the minimums listed.

The complex interactions of international and VFR traffic heading to and from the Airport and military traffic heading to and from JBER are shown in Figure 2.24, which is an excerpt from the FAA Terminal Area Chart.

7.2.3 RUNWAY USE CONFIGURATION

The Preferential Runway Use Program identifies the preferred runways for arrivals and departures and ranks them in order of preference, as shown in Table 2.10. Runways 7R and 7L are listed higher in the departure priority during daytime hours in recognition of air traffic considerations. When air traffic conditions allow, Runways 25L and 25R are preferred.

Under the terms of the Preferential Runway Use Program, selecting the next preferential runway is allowed under any of the following conditions:

- If the runway is not clear and dry (i.e., it is adversely affected by snow, slush, ice or water, or by mud, rubber, oil or other substances)

- When winds, including gusts, as recorded by Airport wind sensors exceed:
 - Crosswind components of 28 kilometers / hour (15 knots)
 - Tailwind components of 9 kilometers / hour (5 knots)
- When wind shear has been reported or forecasted, or thunderstorms are expected to affect the departure or approach
- When the combined traffic levels at JBER and the Airport result in excessive airfield traffic congestion and cause unacceptable departure delays (delay alone does not constitute a reason for pilots to request a noise sensitive runway for departure)
- When a preferred runway is closed for snow removal, construction, maintenance, or other reasons

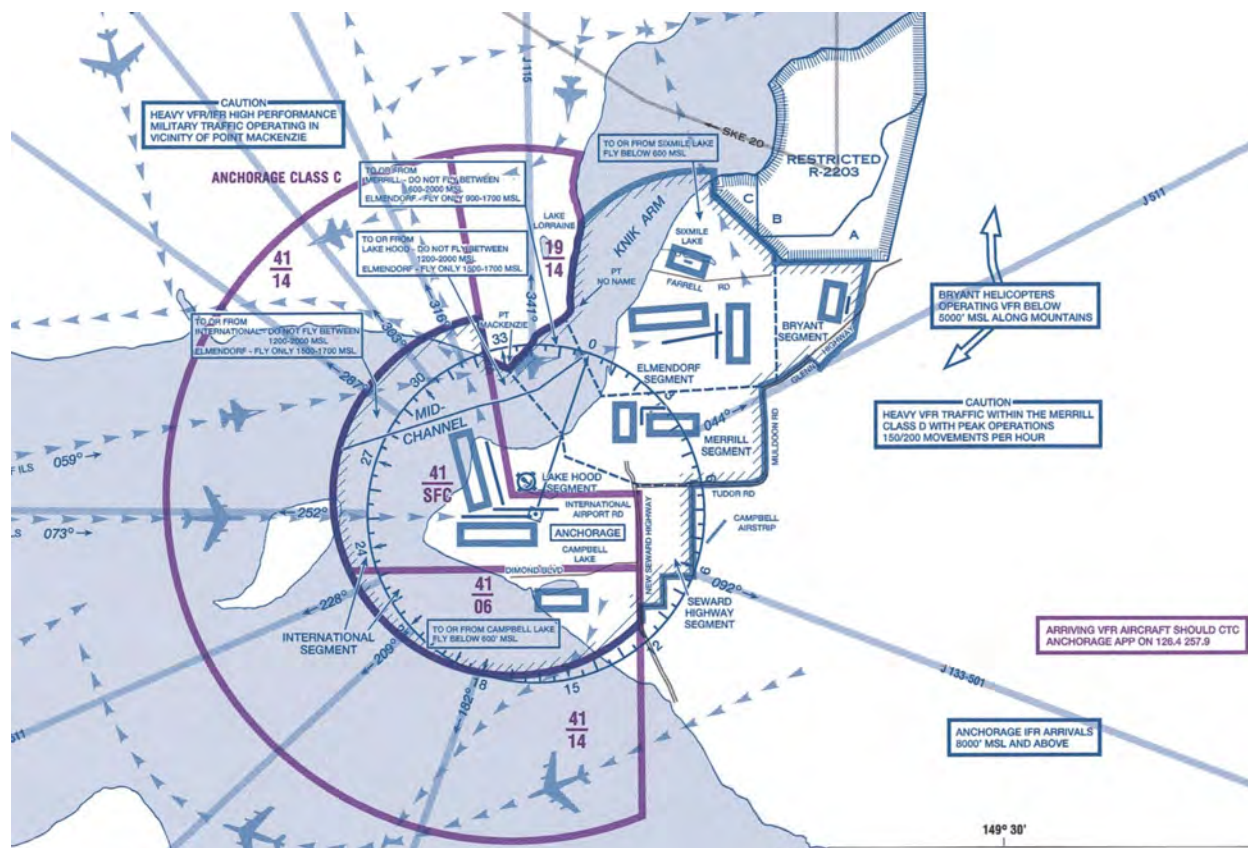
Table 2.9
Instrument Approach Types and Minima

	Instrument Approach Name	Minimum Visibility	Minimum Descent Altitude (AGL) (feet)
Runway 7R	ILS or LOC / DME	1/2 mile	200
	ILS (Special Authorization) Cat I	1,400 feet	245
	ILS Cat II	1,200 feet	115
	ILS Cat III	n/a	n/a
	RNAV / GPS	1/2 mile	200
Runway 7L	ILS or LOC / DME	1/2 mile	200
	ILS (Special Authorization) Cat I	1,400 feet	158
	ILS (Special Authorization) Cat II	1,200 feet	108
	RNAV / GPS	1/2 mile	200
Runway 33	None	-	-
Runway 15	ILS	3/4 mile	200
	RNAV / GPS	3/4 mile	300
Runway 25L	Seward Visual	3 miles	VFR conditions
Runway 25R	Highway Visual	3 miles	VFR conditions

Source: Airport staff, 2014.

Notes: AGL = Above Ground Level, DME = Distance Measuring Equipment, GPS = Global Positioning System, ILS = Instrument Landing System, LOC = Localizer, RNAV = Area Navigation, VFR = Visual Flight Rules.

Figure 2.24
 FAA Sectional Chart



Source: Federal Aviation Administration, Anchorage Terminal Area Chart, n.d.

Table 2.10
 Preferential Runway Use Program

	Priority	Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
Departures	1	Runway 33	Runway 33
	2	Runway 7R	Runway 25L
	3	Runway 7L	Runway 25R
	4	Runway 25L	Runway 7R
	5	Runway 25R	Runway 7L
	6	Runway 15	Runway 15
Arrivals	1	Runway 7R	Runway 7R
	2	Runway 7L / 15	Runway 7L / 15
	3	Runway 33	Runway 33
	4	Runway 25L / 25R	Runway 25L / 25R

Source: Airport staff, 2014.

7.2.4 NOISE MANAGEMENT

The Airport is noise sensitive, having residential development to the east and south of the Airport and ocean to the north and west. Noise-sensitive residential areas are directly adjacent to the Airport boundary on the east side, while on the south side there are homes within one-half-mile of the end of Runway 25L. The Airport's Preferential Runway Use Program described above defines the priorities for both arrivals and departures, depending on weather and air traffic considerations. However, compliance with the program is not mandatory, and under FAA regulations the pilot of an aircraft can deviate from these provisions if (s)he deems it necessary for the safe operation of the flight.

In addition, the Airport has in place Noise Abatement Departure Profiles (NADP) for departures from Runways 7R, 7L and 15. When safety permits, turbine-powered aircraft should use the FAA close-in NADP or the International Civil Aviation Organization Procedure 1 NADP on departure from any runway other than Runway 33. The NADPs call for pilots of aircraft weighing more than 75,000 pounds to reduce throttle and pitch down after passing 800 feet above ground level. While this practice reduces climb rate slightly and keeps the aircraft closer to the ground longer, the decrease in noise level compensates for the longer duration of the noise.

7.2.5 THRESHOLD SITING SURFACES / INSTRUMENT PROCEDURES (TERPS) DEPARTURE SURFACE

To protect the use of the runway in both visual and instrument meteorological conditions, an approach surface or threshold siting surface is required per *FAA Order 8260.3, United States Standard for Terminal Instrument Procedures (TERPS)* and as described in *FAA AC 150/5300-13a, Airport Design*. The threshold siting surface has a trapezoidal shape extending away from the runway along the centerline at a specific slope expressed in horizontal feet by vertical feet. The surface slope at each runway end depends on the visibility minimums and type of procedure associated with the runway end. The purpose of the approach surfaces is to ensure there are no penetrations beyond the designated approach surface for a runway end. Should penetrations exist, the threshold for the runway should be displaced. The threshold siting surface for Runways 7L, 7R, and 15 has a slope of 34:1. The threshold siting surface for Runway 25L, 25R, and 33 has a slope of 20:1. The Airport has no threshold siting penetrations. For departures, the TERPS departure surface for all instrument runways is 40:1.

7.2.6 PART 77 IMAGINARY SURFACES

To protect the airspace in the vicinity of the Airport, CFR Part 77 defines five imaginary surfaces for airports.

- **Primary surface** – A surface longitudinally centered on the runway and extending 200 feet from each runway end
- **Approach surface** – A surface longitudinally centered on the extended runway centerline and extending outward beyond the primary surface
- **Horizontal surface** – A horizontal plane 150 feet above the established airport elevation
- **Conical surface** – A 20:1 slope surface extending beyond the horizontal surface
- **Transitional surface** – A surface joining approach and horizontal or approach and transitional surfaces

The Part 77 approach surface is based on the type of aircraft using and instrumentation available for each runway. The slopes of the approach surfaces are 20:1 for Runways 25L, 25R, and 33; and 50:1 for Runways 7L, 7R, and 15.

7.3 PASSENGER TERMINAL AND LANDSIDE FACILITIES

The passenger terminal and landside facilities include the North and South terminals, Airport roadways, terminal curbsides, the various short- and long-term public parking facilities, employee parking facilities, commercial vehicle staging areas, and rental car facilities.

7.3.1 SOUTH TERMINAL

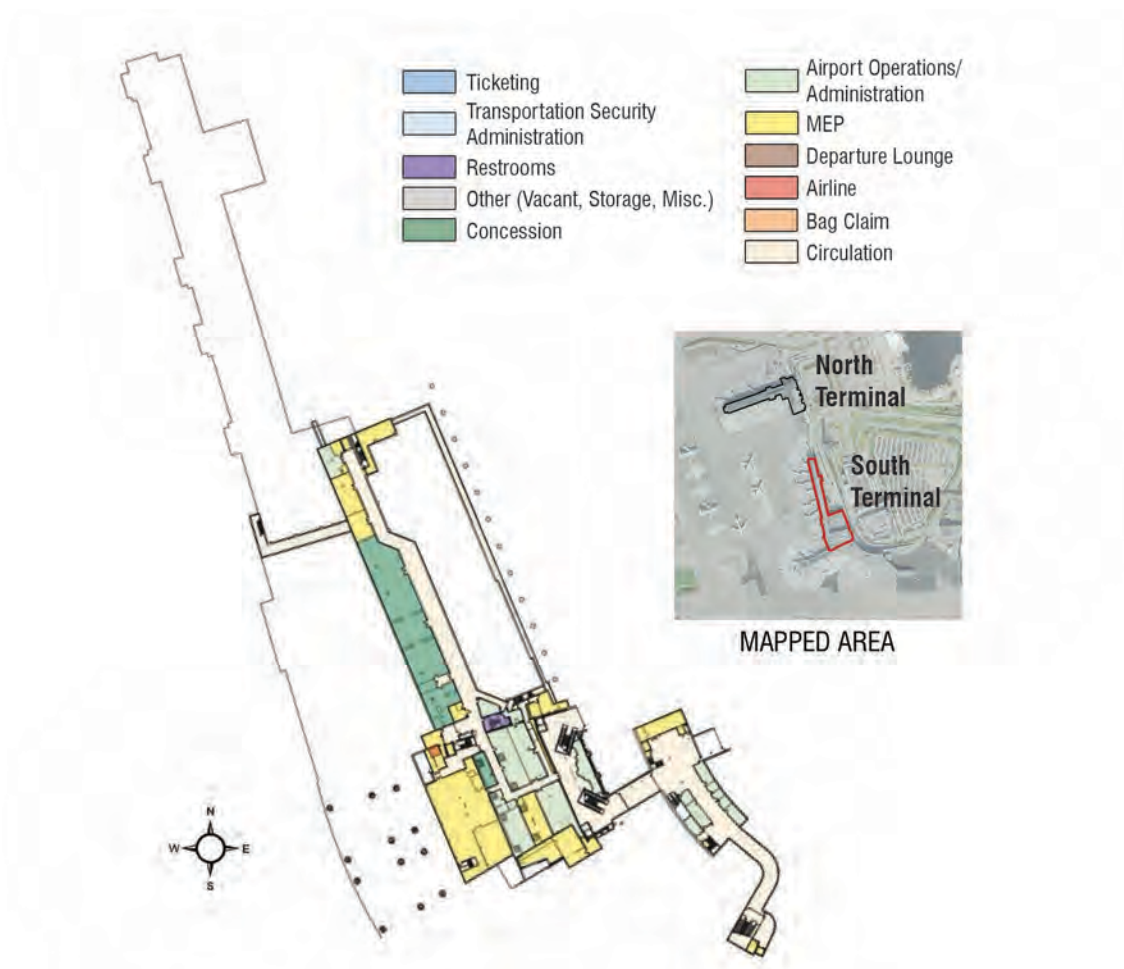
The South Terminal originally opened in 1953. Between 1965 and 1969 the original structure was expanded to include the hexagon, the B Concourse, the ticket lobby, and the baggage claim areas. The oldest remaining portion of the original building is the hexagon. The architecture firm of Manley & Mayer designed these portions of the building.

In 1984-1985, A Concourse was added to serve regional commuter traffic, and B Concourse was renovated. Between 1988 and 1990, the main terminal was remodeled. Between 1999 and 2004, the main terminal and concourse (constructed in 1952) was demolished, and a new main terminal and C Concourse was constructed. In 2010, a complete renovation and seismic upgrade of A Concourse and B Concourse was completed. After these latest renovations, the South Terminal was considered completely modernized and remains in good condition.

The approximately 832,700 square foot building is a composite floor plan. The landside portion of the A and B ticketing area is laid out in a curved configuration and straightens out at the new “Great Hall” and the

C Concourse. The concourses stemming off the main terminal building do so in various geometries. The A and B concourses are two-story structures, and the C Concourse is a three-story structure with a partial basement. Table 2.11 delineates the space allocation throughout the South Terminal, and Figures 2.25, 2.26, 2.27, 2.28, and 2.29 depict key plans for each level of the building.

Figure 2.25
South Terminal – Lower Level



Source: RS&H and HDR, 2014.

Note: MEP = Mechanical, Electrical, and Plumbing.

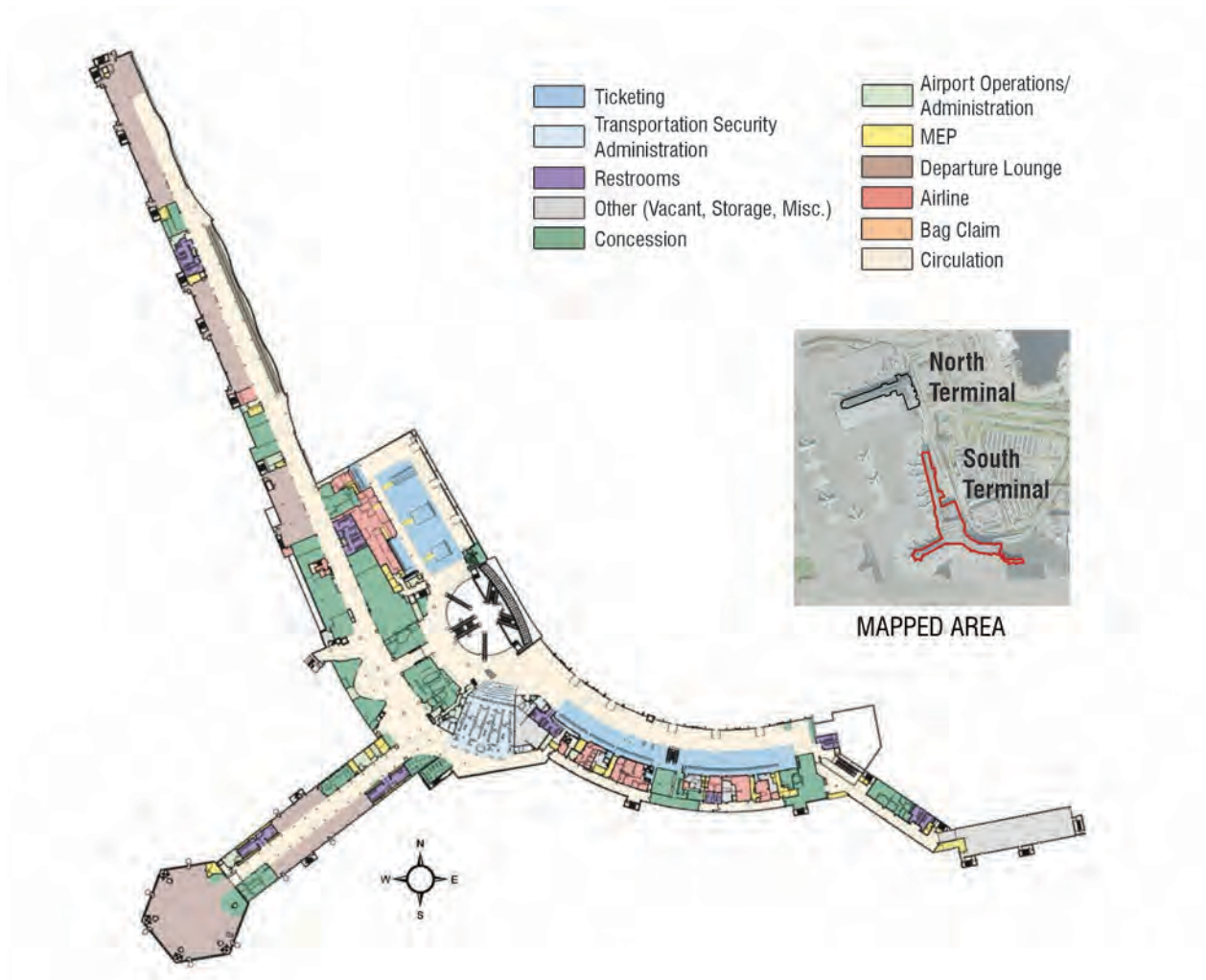
Figure 2.26
South Terminal – First Floor



Source: RS&H and HDR, 2014.

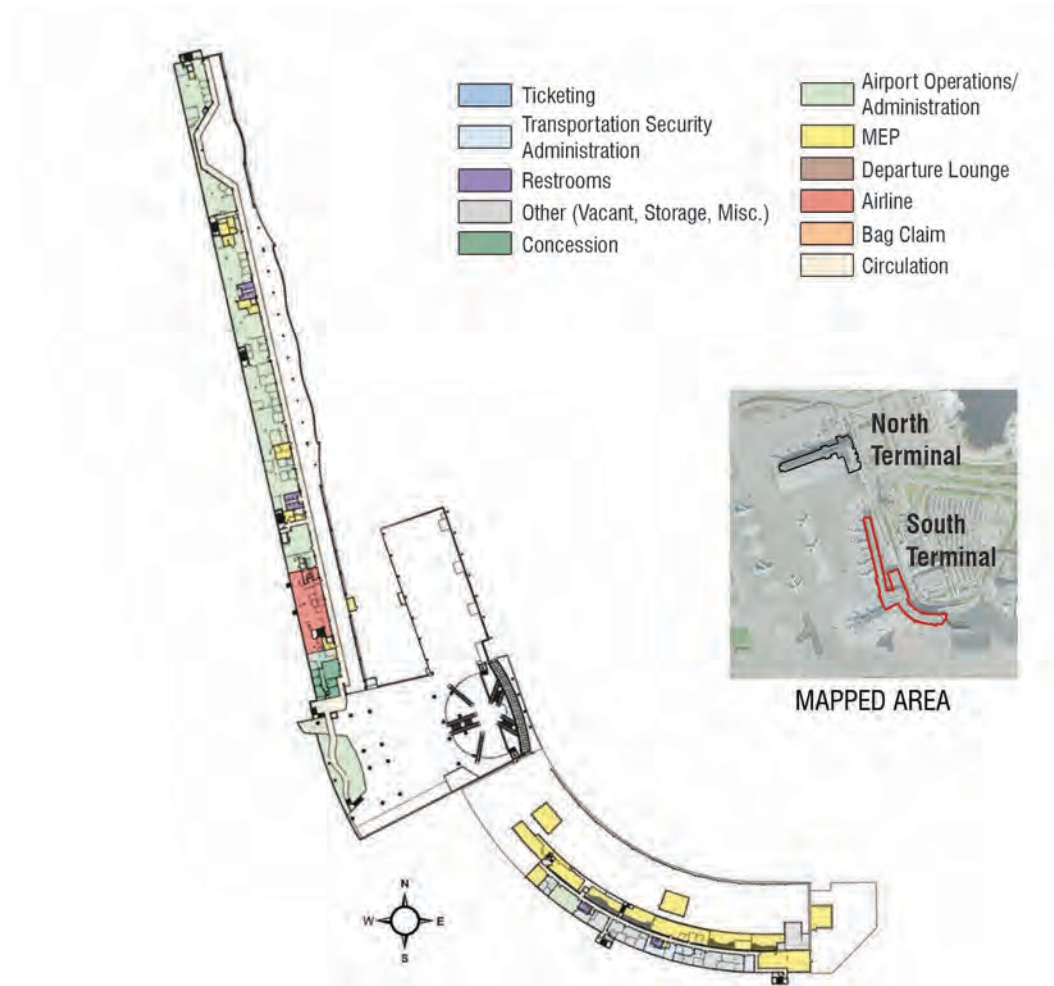
Note: MEP = Mechanical, Electrical, and Plumbing.

Figure 2.27
 South Terminal – Second Floor



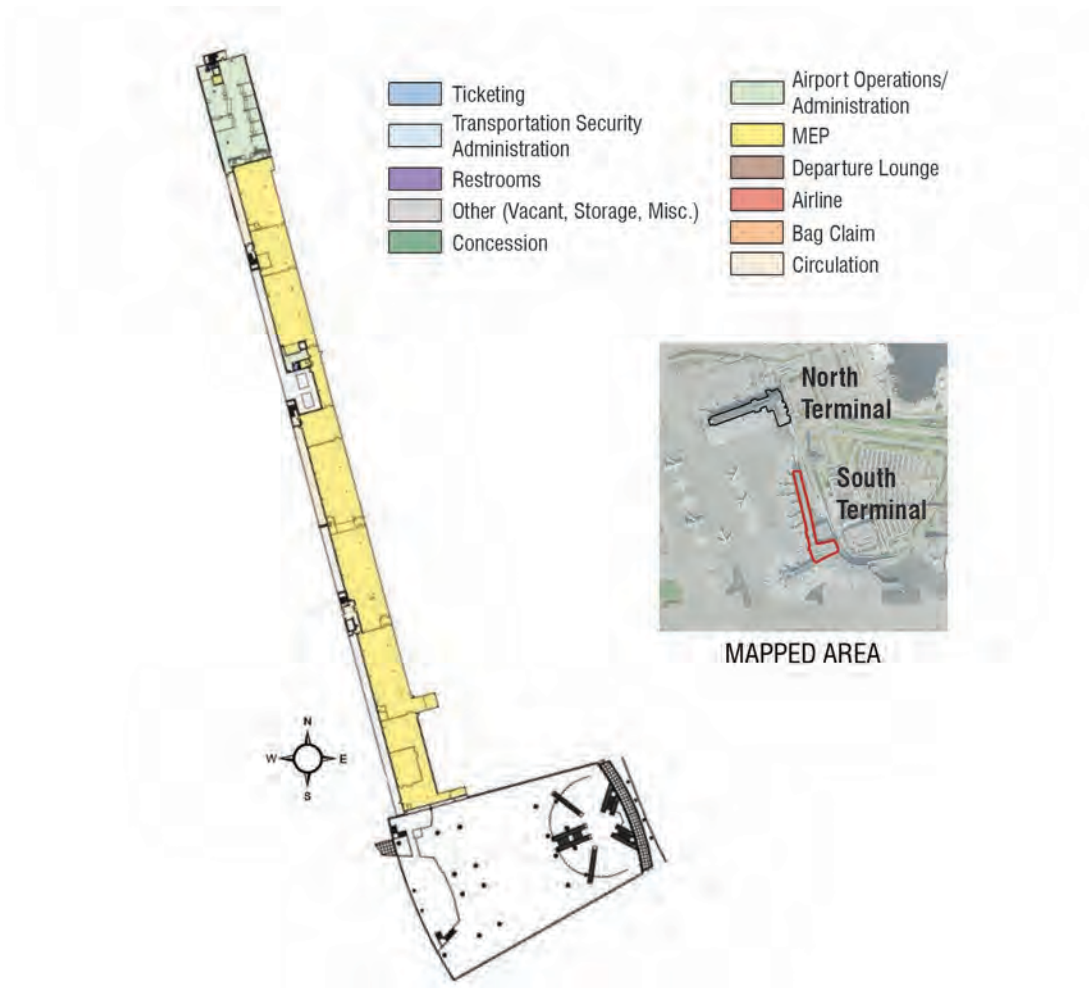
Source: RS&H and HDR, 2014.
 Note: MEP = Mechanical, Electrical, and Plumbing.

Figure 2.28
 South Terminal – Third Floor



Source: RS&H and HDR, 2014.
 Note: MEP = Mechanical, Electrical, and Plumbing.

Figure 2.29
 South Terminal – Fourth Floor



Source: RS&H and HDR, 2014.
 Note: MEP = Mechanical, Electrical, and Plumbing.

Table 2.II
South Terminal Floor Space Allocation

Functional Area	Area (square feet)
Airline	151,111
Ticketing	15,648
Passenger Security Screening Area	10,425
Departure Lounge	49,837
Concessions	61,461
Airport Operations / Administration	69,522
Restrooms	17,144
Baggage Make-up	47,172
Baggage Claim	17,585
Inbound Baggage Service	17,160
Baggage Screening / Inspection and Administration	24,610
Building Systems (mechanical, electrical, structure, etc.)	97,979
Other (vacant, storage, miscellaneous)	17,272
Circulation	321,952
Total	918,878

Source: Airport staff and RS&H, 2014.

A Concourse - Regional Operations

Alaska is a unique state when it comes to air travel. Due to the remoteness of a significant portion of the population, regional air travel comprises a large amount of air traffic at the Airport. The A Concourse accommodates the regional airlines at the Airport. As permitted in FAA and TSA regulations, regional passengers do not need to pass through TSA passenger screening, and their baggage does not need to be inspected. Therefore, the path of travel for regional passengers differs from others at the South Terminal. Regional passengers arrive in the main terminal via several locations: departure and arrival level drop-offs, the tunnels from the train, the rental car facility, or the parking garages. The regional carrier ticket counters are located on the south side of the “Great Hall.” After passengers check their bags, airline staff place the bags on take-away belts behind the counters. The bags are conveyed down to the first level into separate bag make-up areas. The regional carriers also maintain airline offices in the area behind the ticket counters.

After checking in at the ticket counter, regional passengers travel downstairs via stair, elevator, or escalator and depart via the A Concourse departure lounges. The A Concourse departure areas are

located directly under the ticket counters and airline offices and continue east onto the pier.

There are currently six food and beverage and two news and gift concessions available on the landside; however, the most concessions are located post security on the airside. Thus, they are less convenient for regional passengers who may use their boarding pass to obtain access to the airside concessions.

The concessions offered on the landside of the South Terminal are adequate and varied enough to provide a good level of service to regional passengers.

Through the South Terminal Seismic and Security Retrofit Project, the largest regional carrier's operations were relocated to the first floor of the A Concourse pier. As a result, the passenger boarding bridges and aircraft hardstands were removed making this area essentially inaccessible to jet aircraft and leaving the second floor boarding area unoccupied. The regional carriers board passengers via ground loading and, therefore, do not use the second-floor departure lounges. However, use of the second floor via ground loading or boarding bridges has been utilized in the past successfully.

Regional passengers arriving at the Airport enter A Concourse and retrieve their baggage at one of the two common baggage claim devices on the ground level. The claim devices are both flat-plate belts, one being a T-shaped belt and the second being a double-T composite shape. After retrieving their bags, passengers depart the Airport via public transportation from the commercial curb; the passenger pick-up area at the arrivals curbside; the tunnels to the parking garage, train, and rental car facility; domestic flights; or international flights.

The functionality and operations of the regional service at the Airport is good. There are adequate restrooms and amenities that offer a high level of service to passengers. However, discussions with Airport operations and maintenance (O&M) staff revealed three main issues with the A Concourse.

First, the baggage system does not have electronic sensors to monitor system status and notify the O&M staff of the location of a bag jam or belt issue, as does the latest baggage systems serving the B Concourse. According to O&M, the belts serving A Concourse were reconfigured from existing belts, and are not equipped with the latest baggage system technology. Therefore, longer wait times result as maintenance has to visually identify where issues are occurring on the lines. Besides these issues, the baggage system at A Concourse generally functions well and is adequate for the level of demand at the Airport.

The second issue with the regional service facilities is its close proximity to the adjacent taxiway. Because there is such a high volume of large aircraft constantly moving around the airfield at a rapid pace, the mixing

of small and large aircraft is a concern. Generally speaking, aircraft traffic at the Airport is maintained at a good Level of Service.

The third issue is the incursion of Jet A exhaust and fumes into the building's ventilation system. Generally speaking, however, passengers experience a good Level of Service.

Domestic Operations

Domestic passengers traveling through the Airport arrive in a similar manner as the regional passengers. The ticket counters for mainline domestic air carriers are located adjacent to the "Great Hall" on either side-Alaska Airlines occupies preferentially leased ticket counters to the north of the "Great Hall," while Delta Air Lines, United Airlines and US Airways occupy preferentially leased counters to the south and east. Seasonal carriers Air Canada, American Airlines, Frontier Airlines, Icelandair, and Virgin America share ticket counters to the north, and Condor, JetBlue, and Sun Country share ticket counters to the south.

Alaska Airlines operates "island" style ticket counters in addition to the traditional, front-facing counters common to most airports. Each ticket "island" is configured with a single, shared baggage take-away belt flanked by counters on either side. Self-service ticket kiosks are located at the end of each "island" closest to the roadway, in clusters next to the "Great Hall," and in the ground transportation lobby. Alaska Airlines also has traditional ticket counters along the west wall of the ticket area, with a baggage take-away belt behind. Airline ticket offices are located behind the belt. In both cases, checked baggage travels down to the ground level and proceeds through the TSA Checked Baggage Inspection System (CBIS) and out to the bag make-up area.

All other air carriers, located on the north and south sides of the "Great Hall," have traditional ticket counters with baggage take-away belts behind. Airlines ticket offices are located behind the counters. Checked baggage travels down to the ground level and proceeds out to the bag make-up areas. As noted previously, there are a few international air carriers that operate ticket counters in the South Terminal. Many of the international departures at the Airport leave from the South Terminal; however, international arrivals occur at the North Terminal (see Section 7.3.3).

The CBIS at the South Terminal is split into two systems: one serving the B Concourse, and one serving the C Concourse. The B Concourse CBIS is the newest system (installed in 2009). This fully automated in-line baggage system consists of six Explosive Detection System (EDS) machines. The CBIS automatically sorts baggage and diverts any alarmed bags to the TSA hand-screening area. Once the baggage is cleared, it travels to the B Concourse make-up belt.

Oversized bags are screened by TSA personnel in an area adjacent to the ticket counters. Passengers present their large baggage to the agent and, once cleared, it travels directly to the make-up belt.

The B Concourse make-up unit consists of a single, common-use, flat-plate belt that is used by all airlines. The Airport has two concerns with this make-up area. First, there is limited tug circulation space around the belt, which results in damage to the walls, bollards and equipment on the ceiling. Second, the belt does not have enough storage capacity. Therefore, during peak departure times, the belt becomes overloaded with baggage. The overloaded belt can cause all of the baggage lines to shut down, sometimes all the way up to the ticket counters. During peak demand times, a shutdown of the baggage system can result in many bags not being screened in sufficient time to make their flights. Consequently, passengers may arrive at their destinations without their luggage.

Also, when the baggage system is overloaded, bags on the belt can be pushed onto the floor. Airlines that fail to pick-up bags in a timely manner can contribute to bags missing their intended flight. Correcting the capacity problems of the B Concourse baggage belt system would improve the service at the Airport. **Figure 2.30** illustrates the baggage system from the ticket counter to the make-up area in B Concourse.

The C Concourse CBIS was installed in 2004. It lacks the multiple indexing feature that tracks bags at each step of the screening process. The TSA CBIS area is located at the west end of the “Great Hall” on the ground level. It consists of six EDS machines. Alarmed bags are diverted to the TSA secondary screening area and, after being cleared, travel to the make-up area. The C Concourse make-up area consists of two sloped-plate belts, and one flat-plate belt that is used for oversized bags. **Figure 2.31** illustrates the baggage system from the ticket counter to the make-up area in C Concourse. **Table 2.12** shows the frontage (outside perimeter) length of the belt system in the South Terminal.

After passengers check in at the ticket counters, they must pass through the TSA Passenger Security Screening Checkpoint (SSCP). The SSCP is located on the south side of the “Great Hall” and consists of six screening lanes. The SSCP is equipped with the latest TSA screening equipment, including Advanced Imaging Technology Whole Body Imaging machines. After passing through the checkpoint, passengers continue into the secure concourse area.

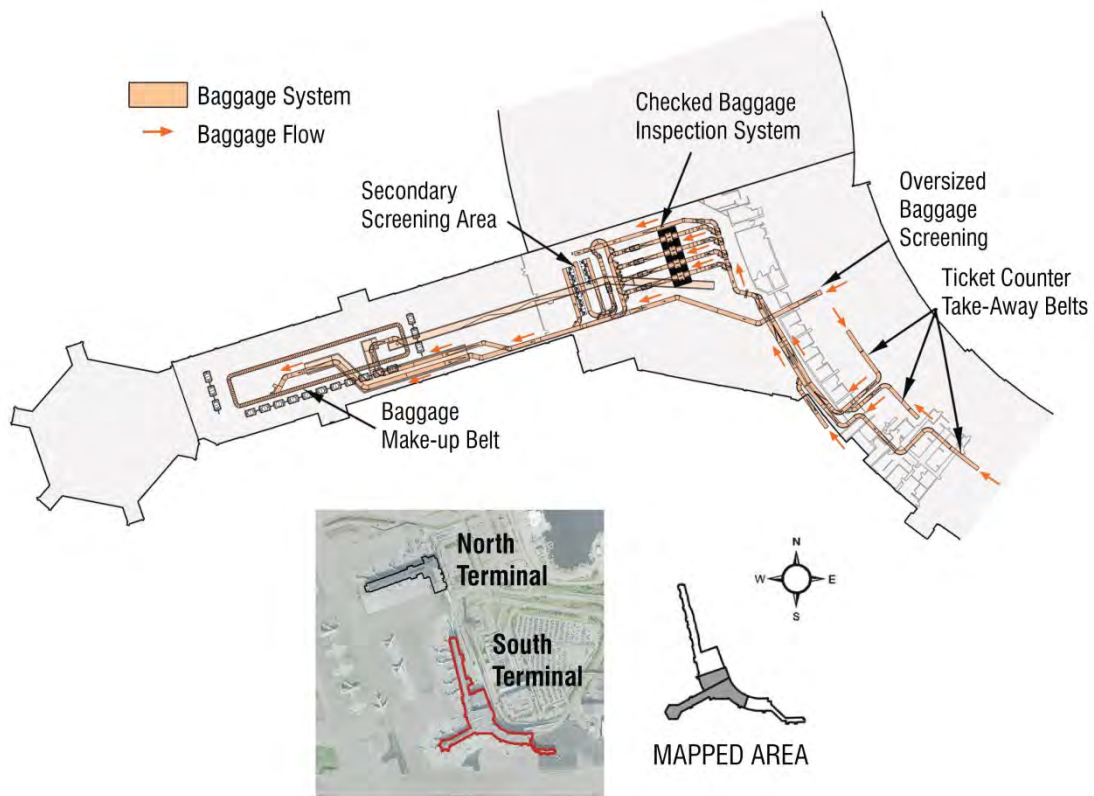
The secure portion of the B and C concourses has a variety of food and retail concessions. There is a variety of dining options ranging from fast food to sit-down restaurants, and numerous retailers offering various goods ranging from news and sundries to specialty merchandise.

Table 2.12
 South Terminal Baggage Belts

	Baggage Belt	Length (linear feet)
A Concourse	Bag Make-up	390
	Bag Claim	333
B Concourse	Bag Make-up	360
	Bag Claim	342
C Concourse	Bag Make-up	506
	Bag Claim	387

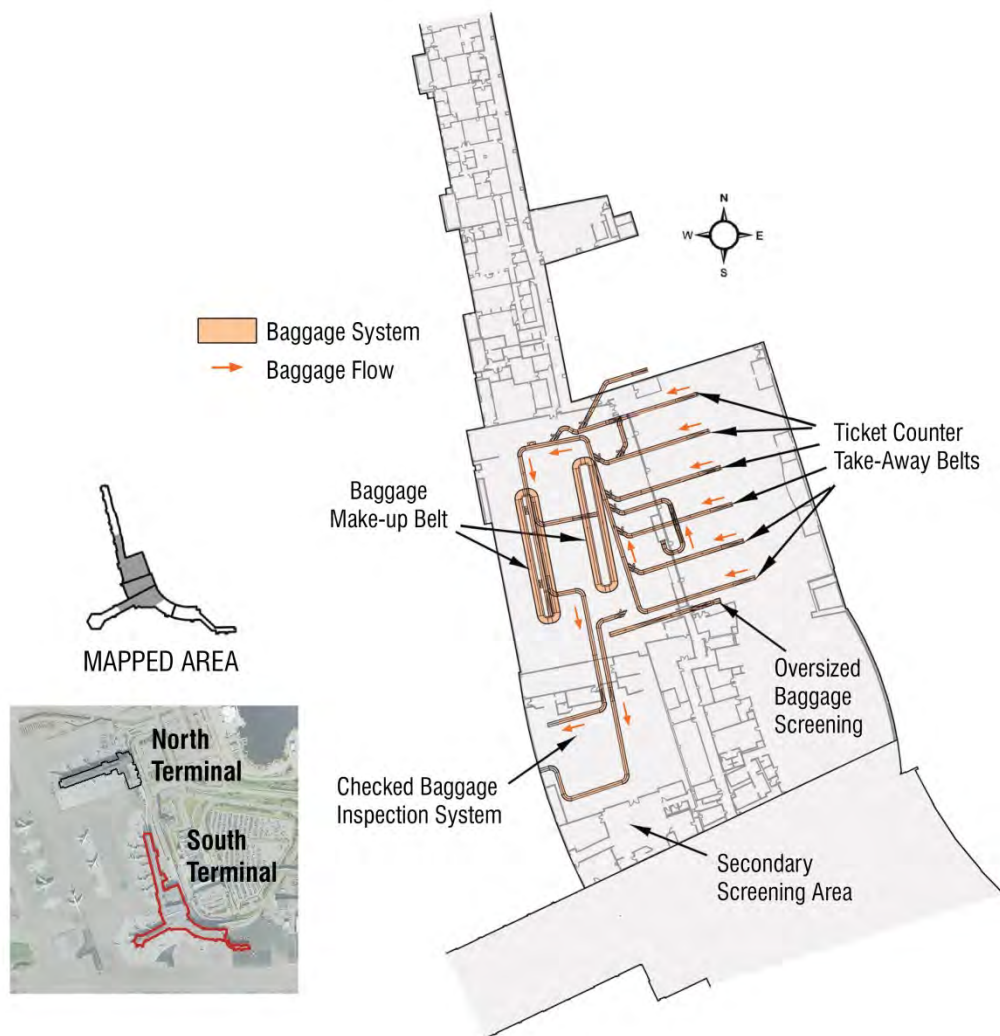
Source: Airport staff and RS&H, 2014.

Figure 2.30
 South Terminal – B Concourse Baggage Claim



Source: RS&H and HDR, 2014.

Figure 2.31
South Terminal – C Concourse Baggage Claim



Source: RS&H and HDR, 2014.

The B Concourse consists of eight departure gates: three along the pier and five at the end in the hexagonal space, all with passenger boarding bridges. The C Concourse consists of nine departure gates, eight of which have passenger boarding bridges. Table 2.13 summarizes the gate and bridge information for the South Terminal.

The B and C concourses have adequate restrooms to accommodate the existing demand. They are located conveniently and spaced throughout the terminal to ensure that passengers do not have to walk far to access them.

Table 2.13
South Terminal Gates

Concourse	Gate	Square Footage	Airline	Bridge Model	Length (linear feet)
A Concourse	L1	3,506	Pen Air	No Bridge	Ground Loading
	L2	3,624	Alaska Central Express/ TransNorthern	No Bridge	Ground Loading
	L2A	567	Grant	No Bridge	Ground Loading
	A10	562	Corvus Airlines	No Bridge	Ground Loading
	A12	467	Corvus Airlines	No Bridge	Ground Loading
	A13	692	Corvus Airlines	No Bridge	Ground Loading
	A14	567	Corvus Airlines	No Bridge	Ground Loading
	A15	691	Corvus Airlines	No Bridge	Ground Loading
	A16	546	Corvus Airlines	No Bridge	Ground Loading
B Concourse	B1	2,265	Shared Services / Virgin	A3-60 / 119	Turned into concessions space
	B2				
	B3	2,271	State Administered	A3-64 / 131-125R	
	B4	2,224	State Administered	A2-65 / 99	
	B5	2,049	United	A3-60 / 119	
	B6	2,396	Delta	A2-65 / 99	
	B7	2,428	State Administered	A2-65/99	
	B8	2,429	State Administered	A3-63 / 131-125R	
	B9	2,427	State Administered	A2-65/99	
C Concourse	C1	3,036	Alaska	A2-70 / 107-125L	
	C2	2,126	Alaska	A3-58 / 110	
	C3	1,700	Alaska	A3-58 / 110	

Table 2.13
South Terminal Gates (cont.)

Concourse	Gate	Square Footage	Airline	Bridge Model	Length (linear feet)
C Concourse (cont.)	C4	2,633	Alaska	A2-63 / 95-125R	
	C5	1,712	Alaska	A3-60 / 119-125R	
	C6	2,582	Alaska	A3-58 / 110	
	C7	2,148	Alaska	A3-58 / 110	
	C8	2,813	Alaska	No Bridge	
	C9	1,813	Airport CUPPS	A3-64 / 131-125R	

Source: Airport staff, 2014.

Note: CUPPS = Common Use Passenger Processing Systems.

Passengers arriving at the Airport travel from the arrival gate to the “Great Hall” area. They exit through a monitored corridor out into the meeter / greeter lobby, which offers benches for visitors waiting for arriving passengers. On either side of the exit corridor are landside concessions, serving visitors as they wait.

Passengers move down the central stair / escalator or via the elevators on either side of the “Great Hall” to access baggage claim. Baggage claim consists of five sloped-plate claim devices: three on the north side of the “Great Hall” and two on the south / east side. Passengers then proceed to the passenger pick-up areas or down the stairs / escalator / elevators to the rental car facility, the parking garage, the train, one of the other public transit services at the Airport, or the regional airlines for connecting flights.

In addition to the passenger movement areas, the South Terminal has auxiliary areas to ensure the Airport’s operation. The basement level connects the “Great Hall” to the rental car facility, the parking garages, and the train, but it also houses mechanical space, concession storage, and Airport O&M space. Similarly, the ground and second levels have miscellaneous office and storage areas, as well as Airport O&M spaces. There is also an Armed Services Young Men’s Christian Association Military Lounge and visitor information booths.

The third level of the terminal accommodates the Airport administration offices and conference rooms over the C Concourse departure areas as well as miscellaneous office space, a conference room, and mechanical space over A and B concourses’ ticketing areas. Administrative areas are also located on the third level of the B Concourse ticketing area. TSA occupies a portion of this space, and the remaining space is vacant. The

fourth level is primarily mechanical space, with a small area over C Concourse for additional administration space.

The South Terminal was constructed under the most current building codes. In fact, the renovation of A and B concourses in 2009 involved a significant seismic upgrade of the building to comply with the most recent regulations.

As previously stated, the South Terminal is in good condition. The exterior envelope includes a fully adhered, single-ply roof membrane. The roof membrane is in good condition. The building skin consists of a metal panel system, and aluminum framed doors and windows include double-pane glazing. Airport staff provides annual visual surveys and repairs any issues.

The mechanical and electrical systems are fully functional. According to the Airport staff, there is adequate generator power to provide for the building's emergency demand.

The vertical circulation throughout the building-including stairs, elevators, and escalators-all appear to be functioning and in good condition. There are stair towers throughout the building to allow emergency evacuation of all floors to the ground level. Overall, there are no known life safety code issues; however, an exhaustive code analysis was not conducted.

7.3.2 CONNECTOR CORRIDOR

In 2009, a corridor connecting the North and South terminals was completed. The corridor is a steel structure with a single-ply membrane roof. The exterior skin consists of masonry units on the airside and metal panel construction and double-pane, aluminum-framed glazing on the public side. The corridor is temperature controlled and has its own mechanical equipment. It was constructed under the most recent building codes and satisfies all accessibility requirements. Although the walking distance between the two terminals is great, the connector corridor offers passengers and staff a weather-protected route between the two buildings.

7.3.3 NORTH TERMINAL

The North Terminal was constructed in 1982. Changes to the original building include a restroom addition in 1988, a baggage claim addition in 1993, alterations supporting relocations during the South Terminal renovations, and a renovation to provide a new Badge Office in 2001. Aside from these changes, the building mostly maintains its 1982 configuration.

The approximately 310,000 square-foot building has an L-shaped footprint and was originally designed to accommodate international service at Anchorage. Flights traveling to Asia along the polar route stop in Anchorage to refuel and change crews. During that process, the

terminal provides duty-free shopping, airline club lounges, and other amenities for passengers. The building is sized for a Boeing-747 aircraft population, and it is not uncommon that all eight gates to be active at the same time. For that purpose, it was primarily designed as an airside facility, with hold rooms and other facilities to service the in-transit population. Changes in aircraft capability and the opening of Russian airspace in 1989 eliminated the need to hub international flights in Anchorage. Passengers prefer the non-stop flights in lieu of a layover.

Cargo, in contrast, has increased at Anchorage. It is cost effective for cargo planes to maximize their cargo load and decrease the fuel load. Refueling at the Airport optimizes the amount of cargo the planes can carry. Arriving international cargo flights that change crews in the Airport use the North Terminal to process through U.S. Customs and Border Protection (CBP).

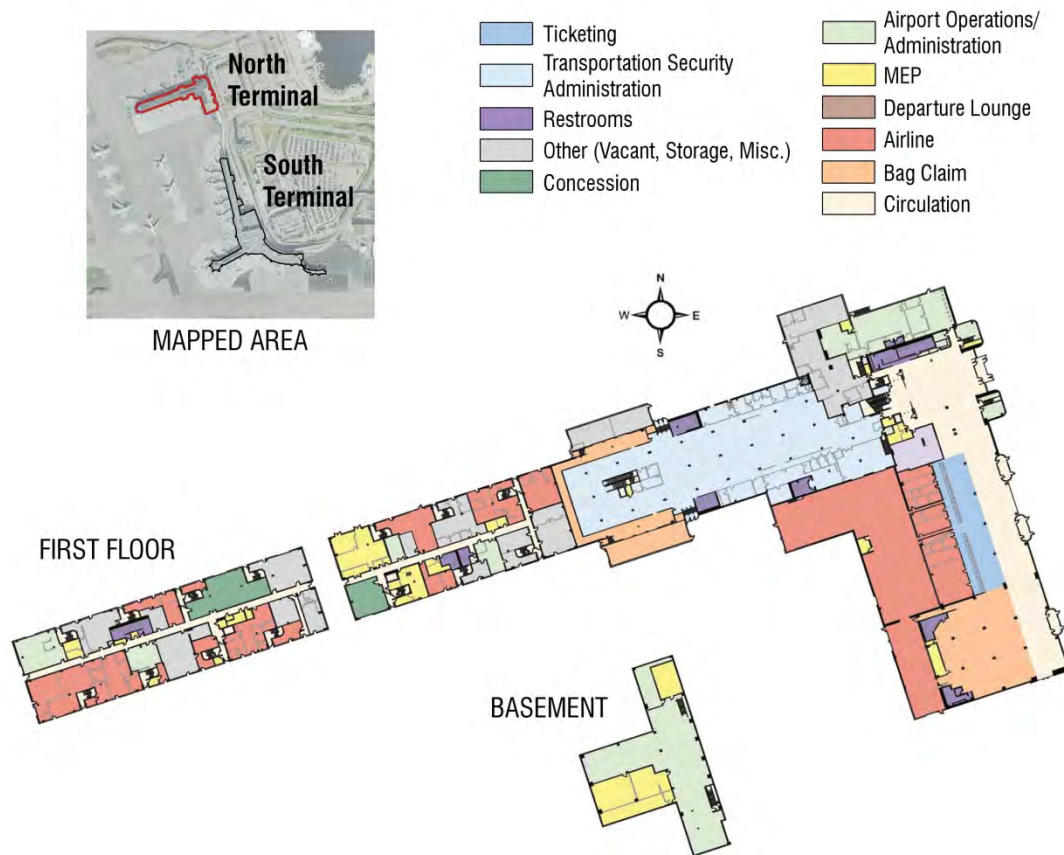
In addition to cargo technical stops, the North Terminal serves unscheduled military and chartered flights. Modifications have been made to accommodate the security issues that occur when various types of flights share the same terminal. For example, CBP and TSA procedures prevent international passengers from mixing with domestic passengers who haven't gone through the required security screening. A series of dividing walls separate the gate lounges in the North Terminal to keep the passengers segregated. The walls were constructed to allow the North Terminal to handle international arrivals, charter flights, military flights, and displaced domestic flights during the remodel of A and B concourses at the South Terminal. Table 2.14 breaks down the square footage of the North Terminal by the various functions. Figure 2.32 and Figure 2.33 depict key plans for each level of the building.

Table 2.14
North Terminal Floor Space Allocation

Functional Area	Area (square feet)
Airline Ticketing	113,241
TSA	7,046
Concessions	17,442
Customs and Border Protection	39,772
Airport Operations / Administration	36,055
Restrooms	11,969
Building Systems (mechanical, electrical, structure, etc.)	20,145
Circulation	64,195
Total	309,865

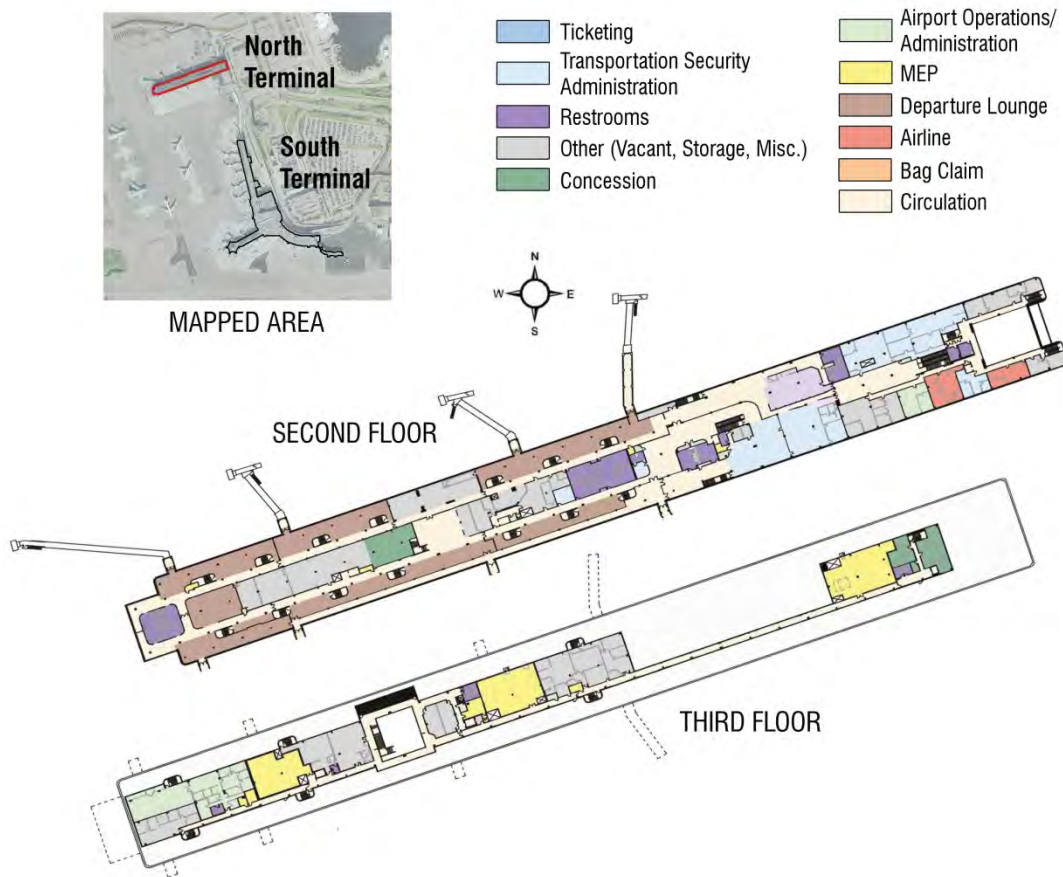
Source: Airport staff and RS&H, 2014.

Figure 2.32
North Terminal – Basement and First Floors



Source: RS&H and HDR, 2014.
Note: MEP = Mechanical, Electrical, and Plumbing.

Figure 2.33
 North Terminal – Second and Third Floors



Source: RS&H and HDR, 2014.
 Note: MEP = Mechanical, Electrical, and Plumbing.

The North Terminal is configured similarly to most standard terminal buildings with ticketing and baggage processing on the ground floor and passenger boarding on the second floor. Passengers and visitors enter through a series of vestibules spaced along the front curb. On the north side of the building is the main lobby, with ticketing in the center and domestic baggage claim on the south end. Adjacent to these public spaces are restrooms, checked baggage screening areas, stairs/escalators/elevators leading up to passenger screening on the boarding level, the Airport badging and dispatch office, as well as various offices and spaces for Airport operations.

Behind the ticket counters are airline offices. Few airlines currently operate counters out of the North Terminal, leaving the majority of this space vacant. In addition to Airport offices, there are bag handling belts. The bag make-up area is located directly behind the airline offices where

tugs can drive into one end of the building, pick-up bags, and exit out the other end to load the aircraft.

Bags that must be screened by TSA are hand-delivered to the CBIS area between the ticket counters and the central escalators. The CBIS consists of a single screening EDS machine as well as several positions for hand screening. The baggage then travels out to the take-away belts.

At the top of the stair / escalators / elevators, is the queuing area for the passenger screening checkpoint. There are many offices accessible to the public on the second floor above the lobby. The current office occupants include the CBP, U.S. Fish and Wildlife Service (USFWS), the Center for Disease Control, and cargo operator offices. Approximately 30% of the available office space is currently vacant.

The TSA passenger screening checkpoint consists of two screening lanes and includes the latest in TSA equipment deployments, including a Whole Body Imaging machine. After processing through the checkpoint, passengers travel around the outer edge of the concourse. Departure lounges flank the north and south walls of the building, with concessions spaces, offices, and restrooms primarily in the center.

CBP is in the process of adding automated screening kiosks for frequent flyers. These kiosks are expected to expedite international passenger processing.

As previously mentioned, the modifications made to segregate the various passenger groups has resulted in long, narrow, gate lounge areas that feel restricted. The majority of the concession spaces are vacant because the low enplanement counts at the North Terminal result in insufficient passenger activity to warrant full-time concessions service.

The condition of the North Terminal is good considering the age of the building. Generally speaking, the finishes are dated, but for the most part, they are in good condition.

There were originally eight gates at the North Terminal. Gates N1 and N3 have boarding bridges, but they are not operational. The bridge at Gate N2 was removed because the segregation of the gates rendered the area too small to be used as a holdroom, and the newer bridge was relocated to another gate. Of the five remaining gates, three have fairly new bridges in good condition. Table 2.15 delineates the gate and bridge information.

Table 2.15
North Terminal Gates

Gate	Bridge Model	Status
N1	Wallard WS 750T	Not in use
N2	-	Bridge removed
N3	Wallard WS 750T	Not in use
N4	AS-64 / 131-125R	
N5	Wallard WS 750T	
N6	AS-64 / 131-125R	
N7	Wallard WS 750T	Retrofitted with air conditioning, drive, lift, and extension
N8	ABEX ABT 147 / 100	

Source: Airport staff, 2014.

Arriving international flights disembark primarily from Gates N4 and N6. These gates exit into a long corridor leading passengers to the passport inspection area. Next to this space, there is a training room and offices to support CBP operations. After passport inspection, passengers travel down to the ground floor baggage claim area to retrieve their luggage.

The baggage claim area within the CBP space consists of a single belt that wraps around the south, west, and north walls. There were originally two tug tunnels for baggage claim: one on the north side of the building and one on the south. The north tug room has been divided into leasable space and is no longer used as a bag drop. In addition to the claim belt, there is a bag slide for oversized luggage.

Once passengers claim their luggage, they proceed to the CBP screening area. Flanking both sides of the inspection area are CBP offices, restrooms and locker rooms, conference areas, suspect holding rooms, and other CBP spaces. After clearing the CBP process, international passengers exit into the main lobby, just south of the main escalators / stair.

Arriving domestic passengers exit the concourse via a corridor just south of the TSA passenger screening checkpoint. They exit through a set of double doors and into the checkpoint queue space. Afterwards, customers descend the escalators / stair / elevators into the main lobby.

Passengers proceed to the baggage claim lobby, which is located south of the ticket counters. The domestic baggage claim device is a single belt that is served by two drop belts. It is a sloped metal plate, for optimal capacity, and is in good functioning condition. Tugs delivering domestic baggage can drop them at the belt inside the enclosed tug area, or at the second belt on the west exterior wall of the enclosed tug area. This second belt was added during the South Terminal renovations due to the increased loads of arriving domestic flights. Table 2.16 shows the lengths, in linear feet, of the baggage belts in the North Terminal.

Table 2.16
North Terminal Baggage Belts

Baggage Belt	Length (linear feet)
Bag Make-up	390
Customs and Border Protection Bag Claim	370
Domestic Bag Claim	316

Source: Airport staff and RS&H, 2014.

The remainder of the ground level consists of offices for airlines and ground service operators, mechanical rooms, concessions storage, vacant spaces, and the Airport badging and dispatch office. There is a vehicle pass-through roughly in the middle of this office area, to allow tugs and service vehicles quicker access to the other side of the concourse.

The Airport badging and dispatch office is the most recent improvement to the North Terminal. It was completed in 2011 and consists of approximately 5,500 square feet of space.

Adjacent to the badging office is the space formally occupied by the Airport administration. With the completion of the South Terminal C Concourse expansion, the administration offices were relocated and this area is currently vacant. Of the approximately 150,000 square-foot ground floor, approximately 20,000 square feet of leasable space is vacant.

The third floor of the building is approximately 40,000 square feet in size. The majority of the space is dedicated to the mechanical equipment serving the building, but there are also spaces that function as V.I.P. lounges, concession offices, and Airport operations offices. The smoking lounge is located on this floor, just to the east of the large atrium that opens up to the concourse below. There was once an observation deck on the third floor, but modern regulations have eliminated the ability for passengers to use it. Approximately 9,000 square feet of leasable space on the third floor of the building is currently vacant.

The North Terminal was constructed under the applicable building codes of the time. However, the Airport staff had concerns about the seismic performance of the building. In 2011, Schneider Structural Engineers performed a Structural Condition Assessment for the North Terminal. Schneider followed a Tier 3 evaluation outlined by ASCE 31-03 Seismic Evaluation of Existing Structures, complying with the 2009 International Building Code. The assessment revealed that the existing structure was separated by ten seismic joints. The 1982 building consists of steel moment-resisting frames, and the 1993 baggage claim addition consists of steel columns and beams with reinforced masonry shear walls. The results of the assessment were that the North Terminal does not satisfy the 2009 International Building Code requirements for a design seismic or snow load event.

Generally speaking, the North Terminal is in good condition for the age of the facility. The exterior envelop consists of a single-ply roof membrane that is both mechanically fastened and fully adhered to the substrate. It is in good condition, and Airport staff performs annual visual surveys to repair any issues. The building skin consists of a combination of masonry bearing walls, a metal panel system, and aluminum framed doors and windows with double-pane glazing. The metal panels are showing their age and some wear at the joints, but overall appear to be in fair condition. Similarly, the doors and windows appear to be functioning. Some areas observed, specifically on the exterior of the glass storefront portion of the west end of the concourse, had window sealant falling out. Inside the building, there are signs of water leaking into the building and dripping down the sides of the window mullions.

The mechanical and electrical systems are fully functional. The three large mechanical rooms on the third floor provide heating and air conditioning throughout the building. The system has three distinct zones. The main boiler room is located on the ground level, approximately in the center of the concourse. It houses four boilers that feed a loop serving the building. The system is also supplied by two additional boilers on the third floor to assist with the hot water supply in the building. Over the years, the hot water line has become restricted; however, no successful solution to improve the system has been found.

Emergency power is provided by two generators. According to Airport staff, the service is ample for the building's emergency demand.

The vertical circulation through the building—including stairs, elevators, and escalators—all appear to be functioning and in good condition. However, Airport staff believe some of the older escalators will no longer restart if they are ever turned off. There are stair towers throughout the concourse to allow emergency evacuation of all floors onto the apron level.

The recent seismic evaluation documents some significant structural deficiencies with respect to current building codes. Otherwise, there did not appear to be significant life safety code issues overall; however, an exhaustive code analysis was not conducted.

As stated, the condition of the North Terminal is good; however, the major concern for the building is its marginal utilization. A large percentage of the building is currently unoccupied, and the departure lounges are so rarely used that they could be considered unoccupied as well. Considering the current volume of international service at the Airport, the North Terminal is too large. However, the building does provide the only CBP facility at the Airport. Therefore, it is a critical function for Airport operations.

The North Terminal utilities include natural gas, electric, and water. Table 2.17 summarizes the utility consumption and costs for the years 2009-2012.

On average, the annual cost of all utilities for operating the North Terminal is around \$870,000. In addition to utilities, there are ongoing maintenance costs. From 2007-2009, Airport staff spent around 2,500 hours responding to work orders to maintain the North Terminal. As the building ages, the Airport administration has decided to continue to perform basic maintenance to keep the building functional, but not invest more money for improvements until a decision is made regarding its future use and / or operation. In 2012, as a result of the reduced attention to the North Terminal, Airport staff only spent 1,500 hours responding to work orders for the building.

Table 2.17
North Terminal Utilities

Year	Utility	Consumption ¹	Cost
2009	Gas	234,034	\$223,102
2010	Gas	262,227	\$232,386
2011	Gas	264,041	\$212,006
2012	Gas	310,406	\$240,796
Average		267,677	\$227,073
2009	Electric	6,234,000	\$739,368
2010	Electric	5,673,600	\$583,629
2011	Electric	5,108,400	\$500,851
2012	Electric	5,557,800	\$642,645
Average		5,643,450	\$616,623
2009	Water	4,637,000	\$38,073
2010	Water	3,606,000	\$31,038
2011	Water	2,366,000	\$21,068
2012	Water	2,875,000	\$29,947
Average		3,371,000	\$30,031

Source: Airport staff, 2014.

Note:

1 - Gas in cubic feet, electricity in kilowatts, water in gallons.

7.3.4 AIRPORT ADMINISTRATION

Airport administration functions are located in the South Terminal building with the exception of Operations, which remains on the first and third floor of the North Terminal, and Field Maintenance, which has a separate facility. South Terminal administration offices occupy space on the third floor of C Concourse above the departure areas. Mechanical

space is located on the third floor above A and B concourses ticketing areas and on the fourth floor above the C Concourse departure area. Airport Operations and Administration combined occupy a total area of 69,552 square feet of terminal space.

7.3.5 OFF-AIRPORT ACCESS SYSTEM

The Airport is part of a complex network of roadways providing vehicle access throughout the surrounding municipality and the Airport. Described below are the Airport roadways, their general characteristics, number of lanes, roadway type (classification, off-Airport / on-Airport, secure, etc.), and secured Airport access gate locations. This information is summarized in Table 2.18.

Table 2.18
On-Airport Roadways

On-Airport Roadway	Number of Lanes	Classification / Notes
Postmark Drive	2, one center turn lane	Connects International Airport Road and Northern Lights Boulevard; minor arterial; provides access to North Airpark, North Terminal, U.S. Post Office
Lockheed Avenue, Rockwell Avenue, Hughes Avenue, N. Tug Road / De Havilland Avenue	2	Provides access to North Airpark leaseholds
Lake Hood Drive	2	Connects Northern Lights Boulevard and Postmark Drive; provides access to snow storage facility and northern edge of Lake Hood Airport
South Aircraft Drive / Apron Road (secure) / S. Tug Road (secure)	2	South Aircraft Drive begins at Aircraft Drive and continues south across Postmark Drive and International Airport Road. There is an access gate at the terminus of South Aircraft Drive northwest of the Runway 25R end Beyond access gate E21, South Aircraft Drive turns into Apron Road (perimeter road), goes around the eastern end of the runways, and turns into S. Tug Road, which accesses the Kulis Business Park, the South Airpark, and goes around the western end of the runways before terminating at the fuel farm
Old International Airport Road	2	Provides access to East Airpark via Jewel Lake Road; acts as a service road for airfield and aircraft related vehicles that operate in the AOA
W. 50 th Avenue	2	Provides access to East Airpark leaseholds from Old International Airport Road

Source: Airport staff, 2014.

Note: AOA = Air Operations Area.

The primary Airport access road from the east and south is West International Airport Road. West International Airport Road is used to access the East Airpark, passenger terminals, Lake Hood Airport, and the North Airpark via Postmark Drive. Access from the north is provided via Northern Lights Boulevard, which is also used to access areas on the west side of the Airport such as Point Woronzof and the Asplund Wastewater Treatment Facility. From Northern Lights Boulevard, access is also provided via Lake Hood Drive and Postmark Drive to the North Airpark, Lake Hood Airport, and the passenger terminals. Access from the south is provided via Jewel Lake Road and Raspberry Road. These roads are used to access the Kulis Business Park and the rest of the South Airpark. Raspberry Road is also used to access Kincaid Park, which is located off Airport property.

As part of the public outreach process, several residents raised concerns about commercial traffic congestion along Northern Lights Boulevard and Raspberry Road, particularly during employee shift changes. A desire was expressed to shift traffic away from Northern Lights Boulevard and onto International Airport Road to the extent possible. Both Northern Lights Boulevard and Raspberry Road are owned and managed by the Municipality of Anchorage (MOA). MOA partners with DOT&PF in a transportation planning process called the Anchorage Metro Area Transportation Solutions (AMATS). AMATS published an *Official Streets and Highways Plan* which assigns functional classifications to roadways within the MOA. This classification scheme prohibits freight traffic on Northern Lights Boulevard west of Wisconsin Avenue unless it is for delivery or business in the area.

A potential replacement road called Logistics Drive, which runs parallel to Postmark Drive between Northern Lights Boulevard and De Havilland Avenue, was recommended in previous Airport planning efforts. Logistics Drive will allow for additional development in the North Airpark, which includes the FedEx and UPS leaseholds.

There have also been discussions to expand the South Airpark and redevelop the Kulis Business Park. Potential traffic impacts of these future developments will be considered preliminarily within the Ted Stevens Anchorage International Airport Master Plan Update (Master Plan Update) process and in more detail within further planning and potential environmental analyses efforts for the South Airpark and Kulis Business Park.

7.3.6 ON-AIRPORT ACCESS AND CIRCULATION ROADS

The on-Airport access and circulation roadways are shown in **Figure 2.34**. Heading west toward the Airport, International Airport Road becomes a one-way Airport loop road that is used to access the South Terminal, where the majority of commercial passenger flights operate. The Airport loop road begins where the Airport return road connects into the loop road. The Airport return road creates a third lane on the left that turns into the entrance lanes for rental car return and public

parking facilities. The Airport loop road expands into four lanes just after the rental car and parking entrance lanes as it curves toward the terminal curbside. Prior to reaching the terminal curb, an access road splits off from the loop road to the left and leads to the FAA ATCT, commercial vehicle hold lot, and the lower level commercial vehicle curb.

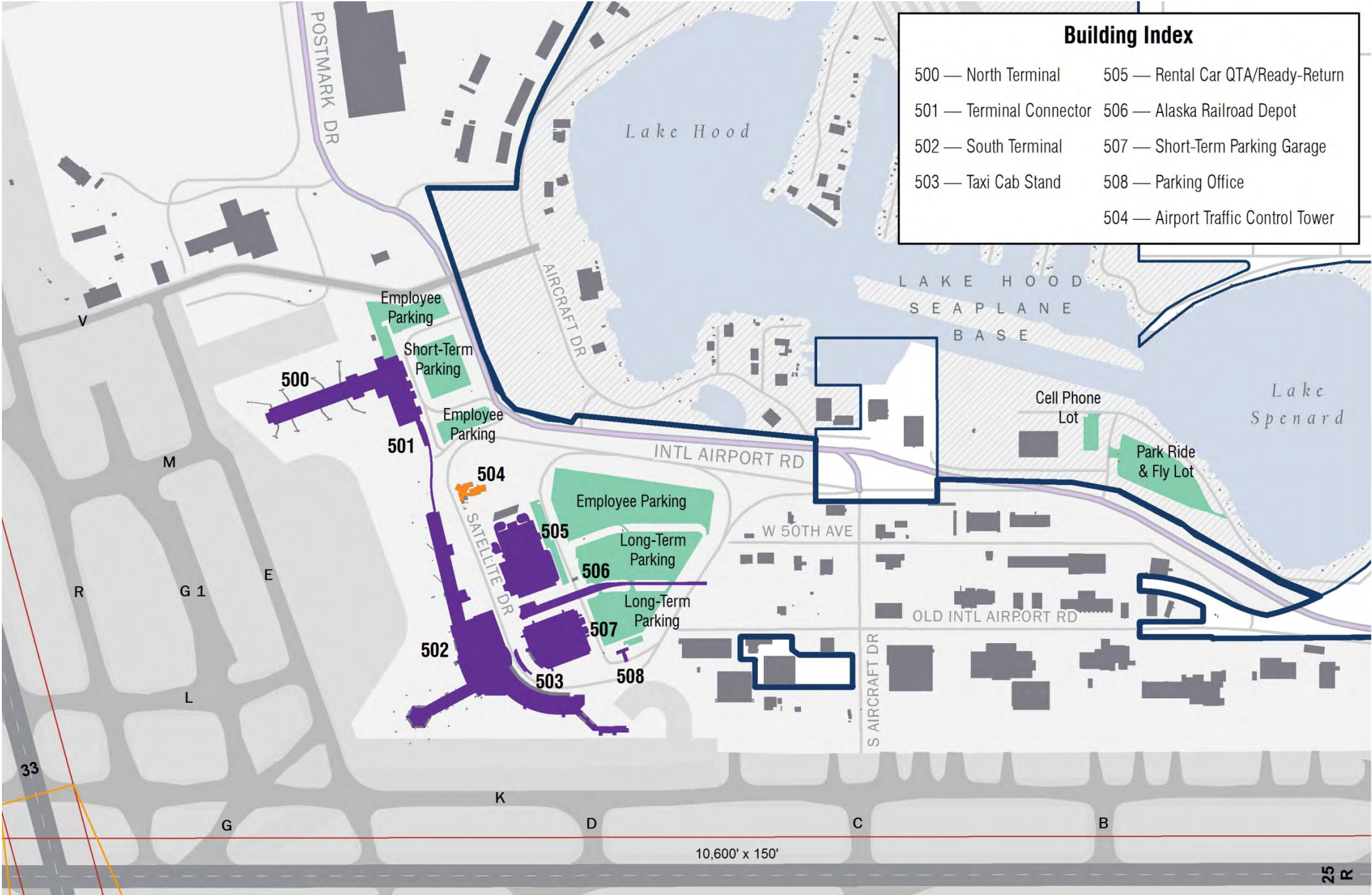
The four-lane loop road splits into the two-lane upper departure and two-lane lower arrival level roadways. The upper departure level roadway widens into four lanes, with the right-most lane used for vehicle unloading. The next lane to the left is used for maneuvering, and the remaining two lanes serve as bypass lanes. The lower arrival level roadway widens into three lanes, with the right-most lane used for vehicle loading. The center lane is used for maneuvering, and the left-most lane is used as a bypass lane. Adjacent to the lower arrival level roadway is a four-lane commercial vehicle curb. Separating the lower arrival level roadway and commercial vehicle curb is the ground transportation island used for commercial vehicle loading and unloading. Passengers waiting for ground transportation can wait either outside on the island curb or inside the enclosed passenger waiting areas on the island. The ground transportation island is connected to the Transportation Lobby on the arrival level.

At the end of the terminal curb, the roadways merge back into a three-lane roadway. The public parking and rental car exit lanes adds a fourth lane on the left, which turns into the Airport return road. The remaining three lanes direct traffic eastward away from the Airport. After the International Airport Road and Postmark Road intersection, the three lanes are reduced to two lanes heading east.

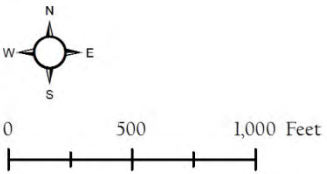
Access to the North Terminal is provided via the two-lane Postmark Drive from International Airport Road. From Postmark Drive, heading north, the entrance to the North Terminal Airport loop road is on the left just prior to Taxiway V and Tom Wardleigh Drive. The Airport loop road widens to five lanes. Two of these lanes turn into the entrance for the public parking area. One lane turns into the commercial vehicle curbside roadway, and the remaining two lanes curve towards the single level terminal curbside roadway. At the terminal curbside, one additional lane is added for vehicle unloading and loading. At the end of the terminal curbside, the right-most lane goes to the terminal curbside at the South Terminal and the left-most two lanes merge back with the two commercial vehicle curb lanes and exit at Postmark Drive. No dedicated Airport return lane exists at the North Terminal.

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Figure 2.34 Passenger Terminal and
Landside Facilities



Source: RS&H and HDR, 2014.



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Curbside dimensions, number of lanes, and the private and ground transportation vehicle allocations at the curbside are summarized in **Table 2.19**. Ground transportation vehicle curbside allocations are shown in **Figure 2.35**.

The Airport shuttle is a free service to Airport users and operates 24 hours a day, 7 days a week, with a frequency of every 15 minutes. The Airport shuttle transports passengers, employees, and other Airport users between the terminals and various parking lots on the Airport. The shuttle serves the North Terminal (southern end of the curbside), South Terminal (lower departures level curbside), and parking lots serving public long-term, employee, and rental car areas.

People Mover Bus Route 7, owned and operated by the MOA, transports passengers from the Airport to downtown Anchorage and the Dimond Mall Transit Center. The bus operates Monday through Friday from 6:40 a.m. to 11:20 p.m. at a frequency of 30 minutes. The bus drop-off / pick-up location is at the southeast end of the commercial vehicle curb at the South Terminal and the southern end of the North Terminal.

A commercial vehicle staging area is also located at the South Terminal. Charter buses and taxicabs queue at this location before being released to pick up passengers at the commercial vehicle curbside. The commercial vehicle hold lot consists of six lanes. The commercial vehicle hold lot is split almost evenly between charter buses and taxicabs. Charter buses in the commercial vehicle hold lot serve mainly the A and B Concourses.

Charter and tour buses drop off and pick up at various South Terminal locations, as presented in **Table 2.19**. At the North Terminal, drop-off and pick-up areas are located along the inner and outer curbsides.

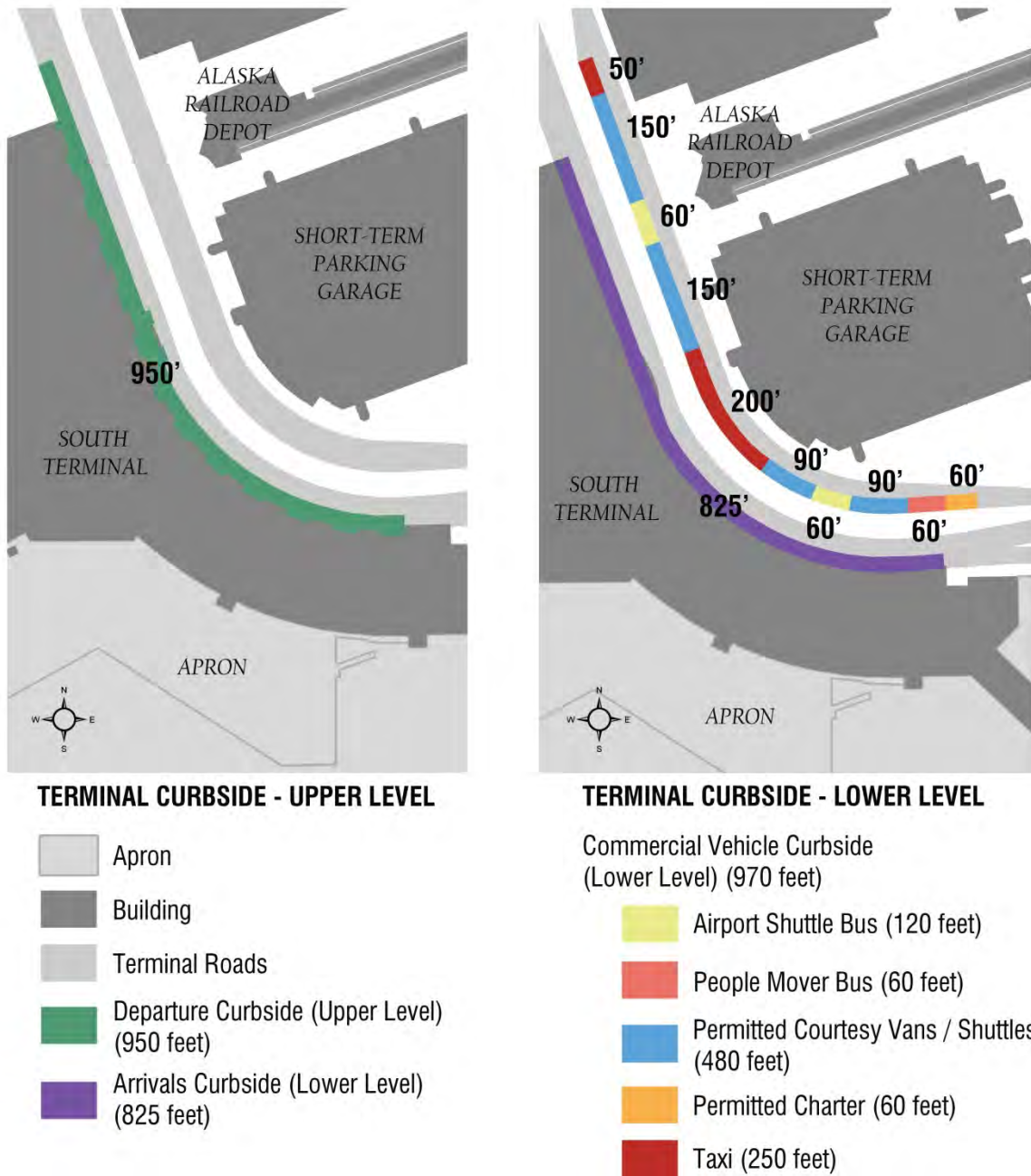
Table 2.19
Terminal Curbside and Charter Bus Staging Area Inventory

Concourse / Curb / Area	Number and Type of Lanes	Curbside Length / Stalls	Vehicle Usage
Terminal Curbside			
South Terminal			
Upper Departures Level	4 (1 drop-off, 1 maneuvering, 2 bypass)	950 feet	Private vehicle drop-offs, commercial vehicle drop-offs
Lower Arrivals Level	3 (1 pick-up, 1 maneuvering, 1 bypass)	825 feet	Private vehicle pick-ups
Commercial Vehicle Curb	4 (1 pick-up / drop-off, 1 maneuvering, 2 bypass)	970 feet	Airport shuttle (drop-offs and pick-ups, 120 feet) MOA People Mover bus (drop-offs and pick-ups, 60 feet) Permitted courtesy vans / shuttles, off-Airport shuttles, and limos (pick-ups only, 480 feet) Charter buses (drop-offs and pick-ups, 4 dedicated stalls, but only 1 along the curb, 60 feet) Taxicabs (pick-ups only, 9 dedicated stalls, 200 feet) Taxicab staging (1 dedicated stall, 50 feet)
North Terminal			
Inner Curb	2 (1 drop-off, 1 bypass)	400 feet	Private vehicle (drop-offs and pick-ups) Commercial vehicle (drop-offs only; includes 2 charter bus stalls)
Outer Curb	2 (1 drop-off, 1 bypass)	330 feet	Commercial vehicle (pick-ups only) MOA People Mover bus (drop-offs and pick-ups; includes 2 charter bus stalls)
Connector between North and South Terminal	2 (1 drop-off, pick-up, 1 bypass)	2 stalls	Charter bus stall
Commercial Vehicle Staging			
South Terminal		≈70 stalls	Primarily taxicabs and airport shuttles
Commercial Vehicle Hold Lot			
South Terminal		9 stalls	Charter bus
Charter Bus Staging			
North Terminal		3 stalls	Charter bus
Charter Bus Staging			

Source: Airport staff, 2014.

Note: MOA = Municipality of Anchorage.

Figure 2.35
 Passenger Terminal Curbside Allocation



Source: DOT&PF, RS&H, and HDR, 2014.

7.3.7 PARKING

Public parking facilities are available at the North and South terminals. At the South Terminal, short-term parking is available in the parking garage, and long-term parking is available in the surface lot. There are 30- and 90-day maximum stays at the South Terminal short-term garage and long-term lot, respectively. At the North Terminal, short-term parking is available with a maximum stay of 10 days. In addition, a free cell phone lot is available at the North Terminal for drivers awaiting deplaned passengers. The cell phone lot is located in the area where DOT&PF employees also park. During the work day, 15 stalls are available. At night and on weekends, 30 stalls are available. The number of stalls in each public parking lot is summarized in Table 2.20. Public parking lot rates are summarized in Table 2.21. Employee parking stalls counts are summarized in Table 2.22.

Table 2.20
Public Parking Stalls

Public Parking Facilities	Stalls
South Terminal	
Short-Term Garage	1,200
Short-Term Oversize Vehicle	85
Long-Term	893
North Terminal	
Short-Term	140
Park, Ride & Fly Parking Lot (Economy)	300
Cell Phone Lot	15

Source: Airport staff, 2014.

Table 2.21
Public Parking Rates

	South Terminal (Short-Term Garage)	South Terminal (Long-Term Lot)	North Terminal (Short-Term Lot)
First 30 minutes	Free	Free	Free
31 minutes to 1 hour	\$3.00	\$2.00	\$2.50
1 to 2 hours	\$6.00	\$5.00	\$5.00
2 to 3 hours	\$9.50	\$8.00	\$7.50
3 to 4 hours	\$12.00	\$10.00	\$10.00
4 to 5 hours	\$13.00	\$12.00	\$12.00
5 to 24 hours	\$15.00	\$12.00	\$12.00
Maximum per week	\$90.00	\$72.00	\$74.00
Maximum Stay	30 days	90 days	10 days

Source: Airport staff, 2014.

Table 2.22
Employee Parking Stalls

Employee Parking Facilities	Stalls
South Terminal	
Employee	894
Airport Administrative Offices	20
North Terminal	
Employee	185
Auxiliary	80
FAA Tower	72
Parking Revenue Gate	11

Source: Airport staff, 2014.

Note: FAA = Federal Aviation Administration.

7.3.8 RENTAL CAR FACILITIES

The rental car facilities are located in a parking structure directly to the east of the South Terminal. With the exception of a few satellite parking surface lots, the entire rental car operation is located within the parking garage. The rental car facilities operate in a co-located parking garage in a semi consolidated rental car operation. The rental car counter areas are located on the first floor of the building directly across from the South Terminal. Each rental car company operates their ready return areas on a dedicated floor of the building. The top floor of the parking structure is dedicated to storage and overflow for all of the rental car companies. The

quick turn-around and fueling facility servicing the rentals cars are both located within the rental car structure as well. The parking structure also contains the rental car company offices.

Vehicle Rental Facilities

The consolidated rental car facility in the Passenger Terminal Complex is home to all of the on-Airport rental car customer service centers and quick-turn-around facilities. However, prior to its construction in 2007, rental car companies operated out of a number of locations around the Airport. Some of these companies still retain these facilities for use as car maintenance and storage facilities.

Avis Car Rental, Alamo Car Rental, and Budget Car Rental occupy three separate facilities in the East Airpark, all on lots leased by Alaska Sales and Service. In total, the three lots occupy 180,000 square feet where between 600 and 700 cars are maintained and stored by the three companies. For more information regarding the facilities in the East Airpark, refer to **Section 6.2**.

7.4 AIR CARGO FACILITIES

As part of the master planning process, an attempt was made to obtain the most current information available on all air cargo tenants. This section includes information on the existing cargo parking positions, as well as a summary of the cargo carriers. This information is also shown in **Table 2.2** and illustrated in **Figures 2.17, 2.18, 2.19, and 2.20**. Air cargo tenants / subtenants are described by geographic area.

7.4.1 CARGO PARKING POSITIONS

Air cargo parking positions are summarized in **Table 2.23** and depicted in **Figure 2.36**.

Table 2.23
Air Cargo Aircraft Parking Position Accommodations

Location	Parking Position / Tenant (total #)	Design Aircraft Accommodated
Terminal Apron	R2, R3, R4 (3)	ADG- V (e.g., B747-400)
Terminal Apron	R7 (1)	ADG- V (e.g., B747-300)
Terminal Apron	R8, R9, R10, R11 (4)	B747-8 specific
Terminal Apron	R12, R13, R14 (3)	B747-8 specific
Terminal Apron	R15, R16 (2)	ADG- V (e.g., B747-400)
North Airpark	P1 (1)	ADG- V (e.g., B747-400)
North Airpark	P2, P3 (2)	ADG-VI (e.g., A380)
North Airpark	Alaska CargoPort (6 or 4) ¹	ADG-V (e.g., B747-200 or B747-400)
North Airpark	Alaska CargoPort (4) ²	ADG-V (e.g., B747-400)
North Airpark	Everts (6)	ADG-III (e.g., DC-6, DC-9)
North Airpark	Ace (6)	ADG-II (e.g., Beech 1900C)
North Airpark	UPS (9)	ADG-V (e.g., B747-400)
North Airpark	FedEx (10)	ADG-V (e.g., B777-200F), ADG-IV (e.g., MD-11)
North Airpark	FedEx (2)	ADG-VI (e.g., A380)
East Airpark	Everts / Era (1)	ADG-III
East Airpark	Alaska (5)	ADG-III
East Airpark	Northern Air Cargo (3)	ADG-III
East Airpark	Evergreen / Delta / Northern Air Cargo / Arctic Circle / Enterprise / Frontier Flying Services / Nippon Air Cargo (1)	ADG-III
East Airpark	Northern Air Cargo (3)	ADG-III
East Airpark	TransNorthern Aviation (3)	ADG-II
South Airpark	Lynden (2)	ADG-III

Source: Airport staff, 2014.

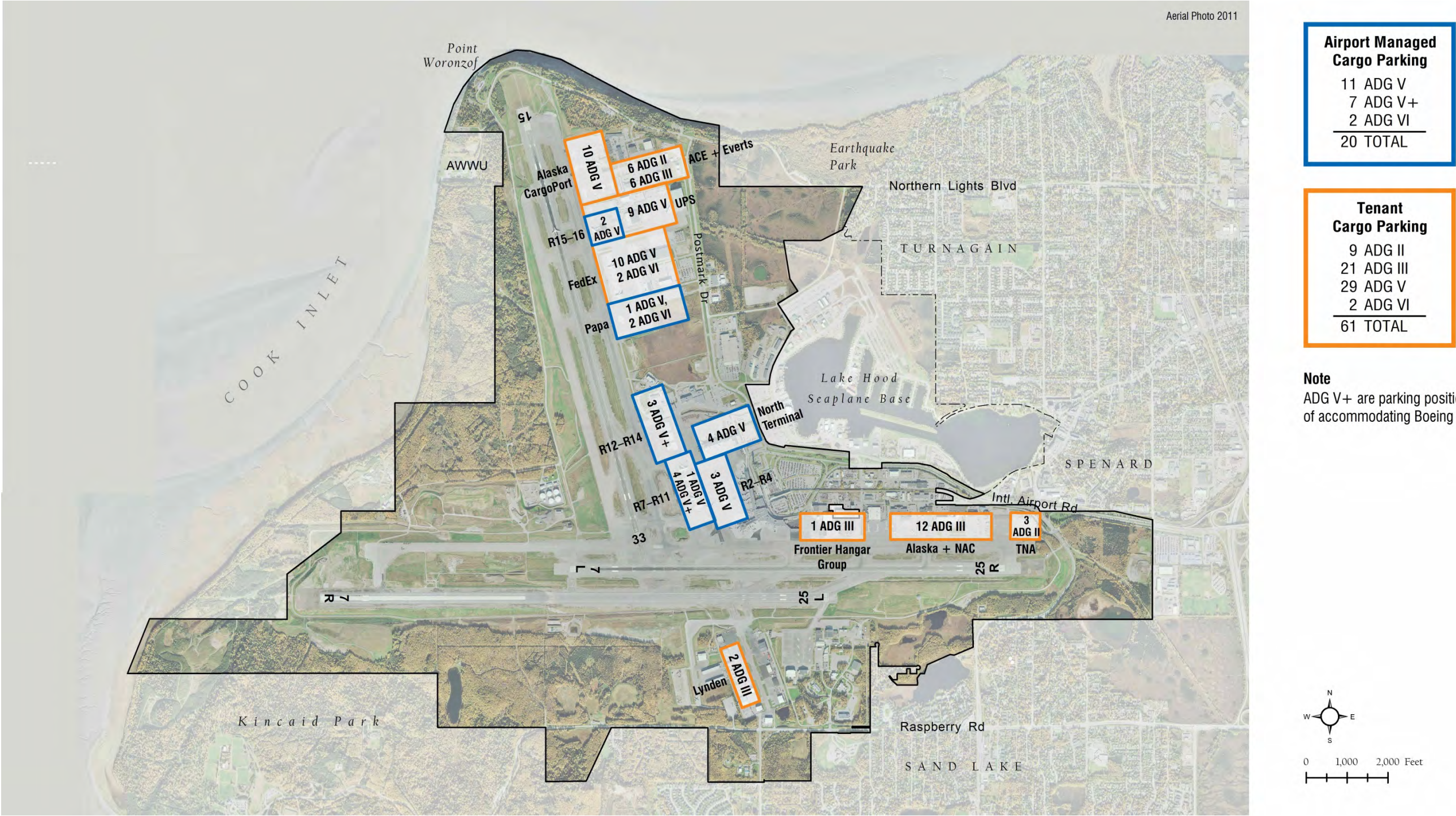
Notes: ADG = Air Design Group.

1 - Six ADG-V positions were designed to accommodate Boeing 747-200, but are used today to accommodate four Boeing 747-400, with the remaining space used to store ground service equipment. These parking positions are leased exclusively by Atlas Air Cargo.

2 - Three of the parking positions are leased on an as-needed basis. One of the parking positions is currently leased to Everts Air Cargo.

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Figure 2.36 Existing Cargo Aircraft
Parking Positions



Source: RS&H and HDR, 2014.
Note: ADG = Airplane Design Group.

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7.4.2 CARGO CARRIERS

Listed below are some of the major Airport cargo carriers that currently provide cargo and mail services to approximately 29 destinations.³⁵ An asterisk indicates those cargo carriers the Master Plan Update team were successful in contacting and interviewing. Each cargo carrier is briefly described below.

- Alaska CargoPort* (cargo complex; North Airpark)
- Alaska Airlines Cargo* (East Airpark)
- Alaska Central Express (ACE) Air Cargo (North Airpark)
- Atlas Air / Polar Air Cargo* (North Airpark)³⁶
- Corvus Aviation (formerly Era Aviation; East Airpark)
- Desert Air* (East Airpark)³⁷
- Evergreen (East Airpark)
- Everts Air Cargo* (North Airpark, East Airpark)
- FedEx* (North Airpark)
- Kalitta Air (East Airpark)
- Lynden Air Cargo (South Airpark)
- Northern Air Cargo* (East Airpark)
- PenAir (North Airpark, East Airpark)
- Southern Air (North Airpark, East Airpark)
- TransNorthern* (East Airpark)
- UPS* (North Airpark)

Alaska Cargo Port (North Airpark - Buildings 101, 102, & 103)

Alaska CargoPort is a land development company that manages property in the North Airpark. Alaska CargoPort is located east of Taxiway R along Taxiway S. Alaska CargoPort was envisioned as a full-service cargo transfer complex when it was established in 2000.

Except for a small management office, Alaska CargoPort subleases its three buildings, which provide access to aircraft apron areas. Subtenants currently include several cargo airlines (e.g., Atlas Air Cargo / Polar Air Cargo (international cargo), Southern Air, DHL Express, Peninsula Airways (PenAir), and Everts Air Cargo) and airport / airline support companies (CDS Deicing, F&E Ground Services, F&E Maintenance Services, and Matheson Flight Extenders).

³⁵ Ted Stevens Anchorage International Airport website, <http://www.dot.state.ak.us/anc/>, 2014.

³⁶ The leaseholder, Alaska CargoPort, was interviewed and provided information on Atlas Air / Polar Air Cargo.

³⁷ The leaseholder, International Freight Terminal, was interviewed and provided information on Desert Air.

Alaska CargoPort has 10 wide-body aircraft parking positions, each of which has its own hardstand and fueling hydrant pit. Six positions were originally designed to accommodate the Boeing 747-200, but these positions are now used to accommodate four of the larger Boeing 747-400 aircraft owned by Atlas Air Cargo. The remaining apron area is used to store ground service equipment (GSE) and for cargo staging. The remaining four parking positions can accommodate the Boeing 747-400 and three of the four are available for use by transient aircraft on an as-needed basis. The remaining parking position is leased to Everts Air Cargo.

Directly to the east of the aircraft parking positions is an approximately 150-stall vehicle parking lot, which is currently used by UPS employees. Another parking lot closer to Taxiway R at the end of Lockheed Avenue, which used to be apron space, was also converted for vehicular parking.

Alaska Airlines Cargo / Hangar (East Airpark - Buildings 282 & 283)

Alaska Airlines is a Seattle-based airline offering both passenger and cargo service to and from its hub at the Airport. In addition to their corporate offices, Alaska Airline's cargo terminal facility is used for customer service, warehousing, sortation, aircraft storage, and vehicular parking. Apron space is the chief limiting factor with this site. Their cargo fleet consists of one Boeing 737-400F freighter and five Boeing 737-400C combi (passenger + freight) aircraft.

Alaska Central Express (ACE) Air Cargo (North Airpark - Building 108)

Alaska Central Express (ACE) Air Cargo is an intra-Alaska cargo carrier specializing in small package services. ACE Air Cargo's main operation hub is in Anchorage. Scheduled service is offered for destinations in south Alaska, and chartered passenger and cargo service is provided statewide. ACE Air Cargo also offers connecting service to the Lower 48 States. The airline owns and operates a small fleet of Beech 1900C, one of which is configured to transport both passengers and cargo.

The ACE Air Cargo building provides space for administrative offices, warehouse, and a hangar. The site also includes an aircraft parking apron that is connected to the airfield via Taxiway S.

Atlas Air / Polar Air Cargo (North Airpark - Building 102)

Atlas Air operates via a charter and long-term wet lease. A wet lease is when an airline provides the aircraft, crew, maintenance, and insurance (ACMI; also provide other applicable flight permits) to a lessee. Atlas Air is marketed as one of the largest airlines to offer ACMI services.

The parent company of Atlas Air, Atlas Air Worldwide Holdings, is also the majority-owner of Polar Air Cargo. As a result, Atlas Air is contracted to operate some aircraft on the behalf of Polar Air Cargo.

Polar Air Cargo is an international cargo airline that operates via charter and long-term ACMI lease. Atlas Air / Polar Air Cargo operates Boeing 747-400, 747 Dreamlifter, 747-8, 767-200, and 767-300 series aircraft.

Corvus Airlines (East Airpark - Building 273)

Formerly known as Era Alaska, Corvus Airlines has been in operation at the Airport since 2000. Corporate and cargo facilities are located in the East Airpark. The Corvus Airlines fleet based in Anchorage consists of seven Bombardier Dash 8 Series-100 aircraft and seven Beechcraft 1900s.

DesertAir (East Airpark - Buildings 265, 276, 279, & 293)

DesertAir started operating in Alaska in 2001, providing year-round charter cargo services to rural Alaska and Part 135 on-demand service. DesertAir currently serves over 200 locations with direct non-stop all cargo service from the Airport. DesertAir has operations in four facilities within the East Airpark that provide charter cargo services within Alaska. The fleet consists of Convair 240 and DC-3 aircraft.

Evergreen (East Airpark - Building 286)

Evergreen is an intercontinental (interstate / United States / international) “gas & go” operation with no or only nominal deplaned and / or enplaned cargo at the Airport.

Everts Air Cargo (North Airpark - Buildings 107 & 171)

Everts Air Cargo is an intra-Alaska cargo airline that has been serving Alaskans since 1996. The airline headquarters is in Fairbanks, but all scheduled flights originate in Anchorage. The airline primarily transports freight and mail, with the U.S. Postal Service (USPS) being the primary client. Everts Air Cargo is also contracted to fly supplies and workers to the North Slope for ConocoPhillips. Everts Air Cargo has six aircraft based at the Airport. The fleet consists of Douglas DC-6, Curtis Wright C-46, and McDonnell Douglas DC-9 aircraft.

Everts Air Cargo’s primary facility includes an office, warehouse, adjoining aircraft parking apron, and a vehicle parking lot. Everts Air Cargo’s secondary facility is located on Postmark Drive and includes GSE storage and maintenance. Everts Air Cargo also leases an aircraft parking hardstand from Alaska CargoPort. Everts Air Cargo also subleases a portion of the Frontier Hangar Group building in the East Airpark (Building 273).

FedEx (North Airpark - Buildings 115, 116, 120, 121, 122, & 123)

FedEx Corporation is an American global courier delivery service company headquartered in Memphis, Tennessee. The company operates a major air cargo handling facility at the Airport. The Airport facility is also FedEx’s primary courier delivery services processing center for the

State of Alaska including the local Anchorage market area. FedEx employs 1,100 people (including 400 based pilots) at its Anchorage hub. The hub is the origin or destination for 28 flights on a typical day.

The FedEx operations area consists of parking positions for 12 wide-body aircraft, a taxilane that extends from Taxiway U on the south to Taxiway T on the north, and various ground service equipment storage areas all located adjacent to the main cargo processing buildings. All 12 aircraft parking positions can accommodate aircraft as large as the Boeing MD-11, which is FedEx's primary air cargo aircraft. Since FedEx took delivery of the Boeing 777-200F in January 2010 it modified five of the 10 main aircraft parking positions to accommodate the Boeing 777-200F. The Boeing 777-200F is the largest aircraft FedEx currently operates.

The FedEx complex includes space for warehousing, equipment maintenance buildings, ground service equipment storage and maintenance, cargo processing and sortation, aircraft storage, office work, employee training, snow storage, and employee parking. FedEx also has a dedicated fire suppression water system. The sort facility processes about 9,000 packages per hour, and between 60,000 and 180,000 packages a day. FedEx is the single largest mail contractor in the United States, and it should be noted that FedEx reports mail as freight, rather than as mail.

Lynden Air Cargo (South Airpark - Buildings 313 & 314)

Lynden Air Cargo is a scheduled and charter air cargo airline that serves Alaska and the Pacific Northwest. Lynden Air Cargo is part of a larger family of transportation companies that provide shipping and logistics services. Lynden provides scheduled cargo service to Nome, Kotzebue, Bethel, and other airports with flag-stop service. Lynden operates under a TSA Full All-Cargo Aircraft Operator Standard Security Program and the Certified Cargo Screening Facilities (CCSF) plan that allows Lynden to accept freight from entities that are certified as a CCSF. Lynden currently operates one Lockheed-382 Hercules aircraft out of the facility, generating over 800 cargo operations each year. Lynden Air Cargo uses its facilities for cargo storage (including cold storage), maintenance, aircraft storage, deicing, and snow removal.

Northern Air Cargo (East Airpark - Buildings 277, 284, 285, 286, 289, & 290)

Northern Air Cargo is an intrastate all-cargo airline that has been in business since 1956. The airline provides scheduled and on-demand service to communities throughout Alaska. Mid-July through mid-September is the peak freight volume period for Northern Air Cargo-almost doubling the volumes during these months-mostly due to transportation of construction commodities and seafood.

The fleet has changed from a Douglas DC-6 aircraft to Boeing 737-200 and 300 series aircraft. This change has allowed Northern Air Cargo to transport nearly the same quantity of freight with two 737s as they used to with 12 DC-6s. This is due to less maintenance down time, better routing, quicker turns, and higher aircraft speeds. The airline has additional Boeing 737 aircraft that can be brought in for both short- and long-term increases in freight volumes.

Northern Air Cargo occupies multiple facilities in the East Airpark for cargo processing and sorting, maintenance, equipment storage, office, aircraft storage, and vehicular parking. Northern Air Cargo's sister company, Northern Air Maintenance Services, operates out of the South Airpark.

PenAir (North Airpark - Buildings 103, 104, & 105, East Airpark - Building 244)

PenAir is an intra-Alaska airline that serves destinations in the southcentral and southwest Alaska regions. The company was founded in 1955, and today it is one of the largest regional airlines in Alaska. PenAir operates scheduled passenger service out of the South Terminal and operates its cargo service out of facilities in the North Airpark.

The airline recently expanded its service to the northwest region of the Lower 48 States with the help of two Essential Air Service contracts. The company is headquartered in Anchorage with most of its aircraft based at the Airport. PenAir operates a fleet of Saab 340 and Piper Saratoga aircraft. A number of the Saab 340 aircraft are all-freighter versions.

PenAir's corporate office is located in Building 104. Buildings 104 and 105 are used as warehouse and hangar space. PenAir also subleases space from L Metro & Nicolai in the East Airpark (Building 244).

Southern Air (North Airpark - Building 102)

Southern Air is an international cargo airline that specializes in long-haul ACMI and government operations. The company is based in Connecticut and uses the Airport as one of its three hubs. Southern Air operates Boeing 747-200, 747-300, 747-400, and 777 aircraft. Southern Air also operates out of the East Airpark (Building 226).

UPS (North Airpark - Buildings 110 & 114)

UPS is an international, integrated cargo carrier. UPS has intercontinental hubbing operations at the Airport. Virtually all cargo is deplaned and re-enplaned at the Airport as transfer cargo.

UPS operates a large Regional Hub on a 36.5-acre site east of Taxiway R, between Lockheed Ave and Taxiway T. Building 110 is used as a warehouse and customer service center. Building 114 includes space for

customs clearance, operations, sorting, maintenance, warehouse storage, and a city station center. The UPS leasehold includes 10 widebody aircraft parking positions, two of which are preferentially leased from the Airport (R15 and R16).

The UPS employee parking lot overflows frequently onto both sides of Lockheed Avenue. Nearby tenants have voiced concerns with the overflow conditions because the presence of cars makes it difficult for trucks to maneuver safely in and out of parking lots. Airport staff are aware of the problem and have requested that UPS employees only park along the south side of Lockheed Avenue until a more permanent solution is developed.

TransNorthern Aviation (East Airpark - Building 292)

TransNorthern Aviation is an on-demand passenger and cargo airline that operates at the Airport. TransNorthern's Anchorage-based fleet consists of four Super DC-3s (two in passenger configuration and two in cargo configuration), two Metroliner IIIs, and one Beechcraft 99. TransNorthern currently provides weekday FedEx and UPS freight-delivery service to Kodiak, Kenai, and Homer.

7.5 GENERAL AVIATION FACILITIES

Listed below are some of the major Airport general aviation providers / facilities. An asterisk indicates those general aviation providers the Master Plan Update team were successful in contacting and interviewing. Each general aviation provider is briefly described below. General aviation facilities at the Lake Hood Airport are excluded.

- Alaska Frontier Constructors (South Airpark)
- Anchorage Executive Airpark (South Airpark)
- Era FBO, LLC – Million Air, Bell Helicopters (South Airpark)
- Great Circle Flight Services (South Airpark)
- Guardian Flight* (East Airpark)
- Iliamna Air Taxi (East Airpark)
- LifeMed* (East Airpark)
- Security Aviation (South Airpark)
- Signature Flight Support (South Airpark, East Airpark)
- State Administered General Aviation Facilities (North Airpark)

Alaska Frontier Constructors (South Airpark - Building 301)

Alaska Frontier Constructors is a construction firm. The company subleases a facility along South Aircraft Place (Building 301). The site is 4.9 acres and is leased by 6250 South Airpark, formerly Northern Holding, LLC. The building occupies a 29,137-square-foot footprint and provides AOA access. Their facility contains hangar and office space. The

building is in excellent condition. Alaska Frontier Constructors is the only tenant on the lot. The only aircraft that are stored within the facility are owned and operated by Alaska Frontier Constructors for their corporate purposes. Alaska Frontier Constructors owns and operates a Jet A fuel tank and contracts out deicing and snow removal services.

Anchorage Executive Airpark (South Airpark - Buildings 302 & 303)

Anchorage Executive Airpark occupies one of the largest general aviation tenant lots in the South Airpark with 10 conventional hangars, each vary in size but are approximately 80 feet by 80 feet. Each facility has a two-story section for office space on each end. An apron is located between the two hangars with access to Taxiway Z. Vehicle parking is located adjacent to the building and is adequate for current use.

The Anchorage Executive Airpark hangars are individually owned, with the exception of Hangars 1 and 2, which are jointly owned by the Providence Medical Center and the Yukon-Kuskokwim Health Corporation. Providence Medical Center uses its hangars for LifeMed operations, which provide emergency medical flights out of the Airport to rural Alaska using three Lear 35s and one King Air 200. They conduct approximately 2,400 operations per year statewide, the majority of which originate in Anchorage. A total of 21 corporate aircraft are currently based within the Anchorage Executive Airpark.

In 2007, Anchorage Executive Airpark Association constructed a 20,000 gallon Jet A underground fuel farm to allow self-serve fueling by Association members. The fuel farm has an annual flowage of 500,000 gallons.

Era FBO, LLC (South Airpark - Buildings 334, 336-341)

Era FBO, LLC is a general aviation firm that both land manages and provides general aviation services from several buildings in the South Airpark. Building 338 is subleased to Era Helicopters. Buildings 334, 336, 339, and 341 are subleased to Million Air, who operates as a fixed-base operator.

Million Air provides the following services: Jet A fuel, deicing, lavatory and oxygen services, aircraft storage, aircraft maintenance, a pilot's lounge, and flight planning to general aviation traffic. The facility includes two large buildings and several other support buildings. Building 334 is a cluster of fuel tanks and support facilities associated with Million Air's fuel tank facility. They have the capability to fuel aircraft via truck or dispenser.

Global Rides (South Airpark - Building 324)

Global Rides provides general aviation services in the South Airpark. The facility includes a multi-story building providing office and aircraft

storage with AOA access. Global Rides subleases to the following companies: RBG Bush, The Ride, Arctic Rides, Top Ride, McKinley Capital Management, and Pacific Diversified Investments. Global Rides hangars nine corporate aircraft and conducts an estimated 100 operations per year.

Great Circle Flight Services (South Airpark - Building 309)

Great Circle Flight Services is a full service, fixed-based operator providing fuel, ground handling, customs and immigration clearance, and a pilot's lounge for business aircraft. Great Circle staff has access to the adjacent apron through secured doors from their facilities to the ramp, as well as secured gates onto the apron adjacent to their facility.

Guardian Flight (East Airpark - Buildings 277 & 291; South Airpark - Building 312)

Guardian Flight is the largest air medevac provider in the State of Alaska with facilities at eight airports statewide. Guardian Flight transports medical, surgical, cardiac, trauma, pediatric, neonatal and pediatric Intensive Care Unit, and burn patients from rural facilities to tertiary care facilities. Guardian also provides non-urgent prearranged medical charters to or from any Alaskan community. Guardian expects to base six aircraft in Anchorage within the next five years. The Anchorage based fleet will include the Beechcraft King Air 200, the Learjet 35 and 36, and the A Star B3 (Eurocopter AS350 B3). They may have up to five aircraft on the apron during peak times.

Guardian Flight is moving their facilities to the East Airpark, near Taxiway A. Facilities include a hangar, administrative offices, and crew rest areas. The hangar will be able to accommodate up to 15 aircraft, allowing Guardian to move some of its scheduled aircraft maintenance from Fairbanks to Anchorage. Guardian Flight will vacate from Signature Flight Support (Building 312) in the South Airpark. This facility provides crew quarters, office space, and aircraft hangar space.

Iliamna Air Taxi (East Airpark - Building 288)

Iliamna Air Taxi is an on-demand charter service that operates out of the East Airpark. Iliamna subleases a portion of the Signature Flight Support facility (Building 288). The lot is composed of a multi-story building, apron area, and vehicle parking lot. The building occupies a 28,000-square-foot footprint along Old International Airport Road and provides AOA access to the adjoining apron area. Iliamna Air Taxi subleases about 2,000 square feet of space and shares the facility with several other subtenants.

Iliamna Air Taxi is based primarily in the small Alaskan community of Iliamna. Iliamna Air Taxi provides daily scheduled passenger service between Iliamna and Anchorage and charter passenger service statewide. The carrier has a fleet of 11 aircraft, but base only two Pilatus

PC-12s in Anchorage. Iliamna Air Taxi has no near-term plans to expand its Anchorage operation.

LifeMed (East Airpark - Building 246)

LifeMed provides air medevac services, providing patient services. LifeMed has four based aircraft (three Learjet 35s, and one King Air 200) in the South Airpark as well as facilities in the East Airpark. LifeMed conducts flight crew training in the subleased offices.

Security Aviation (South Airpark - Building 309)

Security Aviation provides on-demand, air charter passenger services and ground handling services for transient aircraft. They operate year-round but are busiest May through the end of October. They have contracts with the military and oil field companies. Security Aviation subleases space from Ross Anchorage, LLC and uses the facility as office space and aircraft storage for seven aircraft. The fleet includes an Astra Jet 1125, four Cessna 441 Conquest IIs, and two Piper PA-41 Navajo Chieftains. A total of 25 vehicular parking spots are available for employees and customers.

Signature Flight Support (South Airpark - Building 312; East Airpark - Buildings 287 & 288)

Signature Flight Support operates a full service, fixed-base operator in the South Airpark. The facility includes an executive terminal and hangar. Signature Flight Support subleases the facility to Flight Works, Guardian Flight, and GCI Communications.

The Signature Flight Support facility is located on a 240,370 square-foot lot with apron-frontage just north of Taxiway B. The main structure was constructed in 1972 and consists of approximately 23,000 square feet of hangar space and 5,000 square feet of office space. Signature is a wholly owned subsidiary of BBA Aviation, a worldwide provider of flight support services. Signature Flight Support provides a range of general aviation services including aircraft basing, airframe and engine repair and maintenance, ground handling, and aircraft charters. Ground handling for regional commercial traffic is done in this facility. Signature's aircraft fuel vending and ground handling for domestic and international traffic is accomplished in the South Airpark.

Some of the space in the East Airpark facility is subleased to the Alaska State Troopers (emergency rescue), Iliamna Air Taxi, and Just Plane Maintenance (aircraft maintenance). Signature is currently evaluating the building to determine if it would be cost-effective to remodel it to offer services to local general aviation air traffic.

State-Administered General Aviation Facilities

A general aviation parking area called “Charlie Parking” is located directly east of the Field Maintenance Facility, adjacent to Postmark Drive. The paved apron is intended for aircraft that primarily use the facilities at the Airport and seldom use the gravel runway within the Lake Hood Airport. The pavement is capable of supporting up to 30 wheeled aircraft that weigh less than 12,500 pounds.

Taxiway V connects with Taxiway R and allows general aviation aircraft to traverse between Lake Hood Airport and the Airport. An AOA security gate crosses Taxiway V near the Field Maintenance Facility in order to restrict unauthorized access to the Airport airfield. The gate is actuated via a specific aircraft radio frequency that allows pilots to easily taxi along Taxiway V. A small guard shack is located on the south side of the taxiway, near the gate, and houses controls for the guard to actuate the gate if necessary.

7.6 AIRPORT / AIRLINE SUPPORT FACILITIES

The term “Airport / Airline Support” refers to land uses that directly support the operation of airlines, such as airline administrative offices, aircraft maintenance facilities, air cargo warehouses, and buildings that house aircraft ground handling equipment. It also includes land uses that support the operation of the Airport, such as passenger terminals, police and fire stations, bulk fuel storage facilities, and Airport maintenance facilities.

Listed below are some of the major non-state-administered Airport / airline support facilities. State Administered Airport / airline support facilities are described in Section 7.7 through Section 7.9. An asterisk indicates those support facilities the Master Plan Update team were successful in contacting and interviewing. Each support facility is briefly described below.

- Airline Support (North Airpark, East Airpark)
- Alaska Airlines Corporate Offices (East Airpark)
- Anchorage Fuel Service Corporation (Airport-wide)
- Consolidated De-Icing Services (North Airpark)
- F&E Ground Services, F&E Maintenance Services* (North Airpark)
- Frontier Hangar Group (East Airpark)
- International Aviation Services, Inc. (North Airpark)
- LSG SkyChefs (East Airpark)
- Northern Air Cargo Passenger Facility (South Airpark)
- Northern Air Maintenance Services (NAMS) & ConocoPhillips / Shared Services Aviation (South Airpark)
- Pegasus Aviation Services* (North Airpark, East Airpark)

- Swissport Ground Handling (East Airpark)
- Thompson and Associates (North Airpark)
- Troy Air (South Airpark)
- UPS Flight Training Center (South Airpark)

Airline Support, Inc. (North Airpark - Building 174; East Airpark - Building 234)

Airline Support, Inc. provides airline ground support, in-flight catering, and crew transportation services at the Airport. Airline Support, Inc. is located east of Postmark Drive and north of Lake Hood Drive (Building 174) on a 4.82-acre site in a facility totaling approximately 16,170 square feet. The facility is equipped with approximately eight loading docks. With its location situated east of Postmark Drive, Airline Support, Inc. does not have AOA access.

Airline Support, Inc. (Building 234) is also located at the corner of West 50th Avenue and South Aircraft Drive and north of the railroad corridor on a 0.98-acre site. The building has a footprint totaling approximately 8,470 square feet. Airline Support, Inc. does not have AOA access from its East Airpark location.

Alaska Airlines Corporate Offices (East Airpark - Building 270)

The Alaska Airlines corporate office and employee parking is located at the far west end of the East Airpark just south of Old International Airport Road. The lot for Building 270 totals 2.84 acres and includes two buildings with a total footprint of 39,618 square feet. The other vehicular parking lots total 1.24 acres. Only Lots 8A, 9, and 14A provide direct AOA access.

Building 270 was constructed in the early 1980s. It contains the Alaska Airlines GSE maintenance facility (24,000 square feet) and administrative offices (16,000 square feet). The building is in good condition. Alaska Airlines is considering remodeling the administrative office portion to accommodate functions that are currently done in the South Airpark (flight attendant training) and elsewhere (hiring).

Anchorage Fueling and Service Company and Aircraft Service International Group (North Airpark - Building 153; West Airpark - Building 400)

Anchorage Fuel Service Corporation Administrative Facilities

Several commercial service companies provide aviation fueling services at the Airport. The primary fuel services provider is Anchorage Fueling and Service Company (AFSC). Located west of the Airport Field Maintenance Facility at 6000 De Havilland Road, are the primary administrative offices and operating headquarters for AFSC and Aircraft

Service International Group (ASIG), who operates the fueling infrastructure on behalf of the AFSC.

The AFSC and ASIG buildings (two buildings identified as Building 153) comprise a footprint area of 15,817 square feet on a lot totaling 6.53 acres. At this location, AFSC stores, maintains, and stages its fleet of 35 fueling pump trucks that are used to transfer fuel from the fuel pit hydrants to aircraft. There is also a small wash bay and a fuel load rack where mobile fuel trucks can be filled to deliver fuel to aircraft that are not parked near a fuel hydrant. The administration offices and operating headquarters have direct AOA access and provide ASIG with easy airfield access.

The most prominent feature in the West Airpark is the AFSC Fuel Storage Facility (Building 400), which occupies an approximately 19.5-acre lot near the intersection of Point Woronzof Drive and West End Road. The various facilities on the lot, totaling approximately 22,495 square feet, are owned by AFSC. This section provides a description of the Fuel Storage Facility and fueling infrastructure on Airport property.

The Airport has one of the largest fuel storage systems in the world, especially compared to the amount of aviation activity at the Airport. The Fuel Storage Facility was constructed between 1995 and 2000, with the four most recent tanks being added in 2012. The AFSC Fuel Storage Facility is comprised of a total of nine storage tanks with a combined capacity of 34.2 million gallons or 814,000 barrels of Jet A fuel. The smallest tank holds approximately 1.35 million gallons (or 32,000 barrels), and the largest tank holds approximately 4.40 million gallons (or 105,000 barrels). Stored within the tanks is refined Jet A fuel, rated to approximately 50 degrees Fahrenheit. At any given time, the storage tanks are up to about 80% full. Today, approximately 16 million gallons are stored on-site with approximately 10 million gallons of fuel used every seven days³⁸. ASIG estimates that there is approximately a 14-day supply of Jet A fuel at the Airport at all times. Fewer aircraft operations occur on Mondays and Tuesdays when only about 25,000 to 30,000 barrels (approximately 1.05 to 1.26 million gallons) of Jet A fuel is pumped each day into aircraft. On days of higher activity, which occurs on Wednesdays, Thursdays, and Saturdays, almost 50,000 barrels (approximately 2.1 million gallons) of Jet A fuel is pumped each day into aircraft.

In addition to the main storage tanks at the Airport, there is a smaller “breakout” tank that is used to store fuel removed from aircraft and unavailable for in-to-plane fueling. AFSC owns four tanker trucks (two 10,000 gallon trucks and two 7,000 gallon trucks) that remove fuel from planes or deliver fuel to aircraft parked in locations not served by the hydrant system.

³⁸ Ted Stevens Anchorage International Airport website, <http://www.dot.state.ak.us/anc/>, 2014.

Jet A fuel entering the Fuel Storage Facility is pumped southwest from the Port of Anchorage via a 12-inch underground fuel pipeline, called the Crosstown Pipeline. The fuel line crosses the north side of the Airport towards Point Woronzof and alongside Runway 15-33 before being pumped into the Fuel Storage Facility. From the Fuel Storage Facility, fuel is pumped through underground pipes to approximately 186 hydrant fuel pits located around the Airport. Whenever Jet A fuel is transferred either at the Port of Anchorage or the Airport, it must settle for at least 24 hours upon arrival before being introduced to the hydrant system.

The fuel hydrant system extends to the majority of aircraft parking positions at the North and South terminals, as well as various areas in the North, South, and East airparks. The fuel flowage fee at the Airport is \$0.06 per gallon.

The AFSC also leases land in the East Airpark, which was the previous site of the old fuel farm before the West Airpark facilities were constructed.

Anchorage Fueling and Service Company Operations

AFSC is an airline fuel consortium and corporate entity that owns the extensive fuel storage and delivery infrastructure at the Airport and provides fuel at lower cost to consortium members. AFSC holds an annual meeting in late summer to discuss the operation of the fuel consortium. AFSC is comprised of 18 airlines that operate at the Airport. Consortium members include the following airlines:

- Air China
- Alaska Airlines
- Asiana
- Atlas Air
- Cathay Pacific Cargo
- China Airlines
- China Cargo
- Delta
- Eva Air Cargo
- FedEx
- Kalitta
- Korean Air Cargo
- Nippon Cargo Airlines
- Polar Air Cargo
- Singapore Airlines Cargo
- US Airways

- United Parcel Service
- Yangtze River

In addition to consortium members, non-member airlines may choose to purchase fuel from AFSC, but they pay a premium price reflecting that they are not consortium members and are not servicing the consortium's debt.

The AFSC fuel supply handles approximately 90% of all fueling at the Airport. The other 10% of fueling is provided by private fuel service companies that are not a part of the consortium, such as International Aviation Services (8%), Million Air, Signature Flight Support, and Great Circle Flight Services. For these fuel providers, fuel is delivered to aircraft primarily through mobile tank trucks. This includes Jet A and AvGas (100LL) as well as automotive fuels. AFSC only handles Jet A fuel and does not provide any AvGas (100LL) fuel to piston aircraft operators at the Airport.

The consortium member airlines comprising the AFSC independently purchase Jet A fuel in bulk for their use. The Jet A fuel is partially refined oil that is either shipped by pipeline from Nikiski (located 70 miles southwest of Anchorage), by rail from Fairbanks, or arrives in oil tankers from Southeast Asia. To store this fuel, the AFSC has nine massive storage tanks at the Port of Anchorage that can hold approximately 21.0 million gallons (or 500,000 barrels) of fuel and nine storage tanks at the Fuel Storage Facility located in Airport's West Airpark that can hold approximately 34.2 million gallons (or 814,000 barrels) of fuel. An off-shore pipeline connects the two storage facilities.

The Airport has one of the largest fuel farms in the world. In comparison, the combined fuel storage capacity on-and off-airport at Los Angeles International Airport (LAX) totals 2.1 million barrels (compared to 1.3 million barrels at the Port of Anchorage and the Airport or just 0.81 million barrels at the Airport), even though it is the sixth busiest cargo airport in the world and has a fuel consortium of 60 member airlines.

From the West Airpark Fuel Storage Facility, Jet A fuel is distributed via an extensive pipeline network to multiple in-ground hydrants around the Airport. ASIG, the fueling infrastructure operator for AFSC, is responsible for operating and distributing the fuel to the 18 AFSC consortium members. ASIG is a commercial airline service provider offering aircraft ground handling, fueling, and airport facility services that operates in 80 cities on four continents. Although ASIG provides many other commercial airline services at other locations, ASIG provides only fueling services at the Airport.

Consolidated De-Icing Services (CDS) (North Airpark - Building 101)

Consolidated De-Icing Services (CDS) operates at more than 35 airports nationwide and at the Airport, providing deicing services for multiple

tenants. CDS subleases space within the Alaska CargoPort complex. Facilities include an equipment warehouse and administrative office.

F&E Ground Services and Aircraft Maintenance (North Airpark - Buildings 101 & 103)

F&E Ground Services and F&E Aircraft Maintenance Services provide ground handling and aircraft maintenance services, respectively. F&E subleases space within the Alaska CargoPort complex. Ground Service facilities include an aircraft maintenance shop, GSE equipment storage, and an administrative office. Maintenance facilities include aircraft parts and field vehicle storage.

Frontier Hangar Group (East Airpark - Buildings 273 & 276)

Frontier Hangar Group subleases building and land space to various cargo and airport / airline support companies. Space in Building 273 is subleased to Corvus Airlines Cargo and Everts Air Cargo. Building 276 is subleased to DesertAir, Pegasus, ACS Wireless, Hageland Aviation, Delta Airlines, Dobson Cellular Service, and Arctic Circle Air.

International Aviation Services, Inc. (IAS) (North Airpark - Building 106; East Airpark - Building 243)

International Aviation Services, Inc. (IAS) is an aviation fueling company exclusively serving the Airport. The fuel handled by IAS is trucked from the Port of Anchorage to one of two on-Airport storage facilities by IAS trucks. One storage area is located in the North Airpark (Building 106) and the other is located in the East Airpark (Building 243).

In the North Airpark, the North Fuel Tank and Delivery Facility includes four 20,000 gallon jet fuel tanks and two 12,000 gallon AvGas tanks. IAS fuel trucks and loading equipment are also stored at this location. In addition to the fuel storage tanks, this site includes a loading rack where fuel trucks can be refilled. IAS owns and operates 22 fuel trucks varying in capacity from 1,000 to 3,000 gallons for AvGas or 3,000 to 10,000 gallons for Jet A fuel. IAS does not have direct AOA access from its North Airpark location. However, fuel trucks can easily access North Tug Road or Postmark Drive to travel to other parts of the Airport.

IAS is the second-largest fuel service provider at the Airport. IAS provides fueling services to most (if not all) airlines operating at the Airport that are not members of the AFSC consortium. Their customers include:

- Trans Northern Cargo
- Alaska Central Express
- Northern Air Cargo
- Everts Air Alaska / Everts Air Cargo
- Lynden Air Cargo

- Corvus Airlines (including Frontier Flying Service and Hageland Aviation Services)
- Grant Aviation
- United Airlines (Continental Airlines)
- China Southern
- QANTAS
- Cargolux
- Omni International
- Ryan Air
- World Airways
- DHL (Kalitta Air)
- PenAir
- Sun Country (Seasonal)
- American Airlines (Seasonal)
- Air Canada (Seasonal)
- Condor (Thomas Cook; Seasonal Charter)
- Yakutia (Seasonal)
- Military (Defense Fuel Supply Center - DFSC)
- UPS Commuter Affiliates (not UPS jet services)

IAS serves both based and transient aircraft by taking delivery of, storing, and handling into-plane fueling needs. Unlike the AFSC, which only distributes Jet A aircraft fuel, IAS also distributes AvGas (100LL) and automotive fuels including gasoline and diesel. All fuel is trucked from the Port of Anchorage fuel storage facilities, which are owned by various Alaska petro-chemical companies such as Tesoro, Petro Star, Flint Hills Resources, and Global Fuel.

LSG Sky Chefs (East Airpark - Building 280)

LSG Sky Chefs is an airline caterer that occupies about 20,000 square feet in the northwest corner of Building 280, which they sublease from Delta. Building 280 is located at the southeast corner of the South Aircraft Drive and Old International Airport Road intersection on a lot that is 11.19 acres. The building, which has a footprint totaling 87,711 square feet, was constructed in the late 1960s. The eastern half of the building was added in the early 1970s. The facility is adequate for their current operation, and LSG Sky Chefs has no near-term plans to expand. Direct AOA access is provided.

Northern Air Maintenance Services (NAMS) & ConocoPhillips / Shared Services Aviation (South Airpark - Buildings 315, 316, & 323)

Northern Air Maintenance Services (NAMS) and ConocoPhillips / Shared Services Aviation both sublease space from Troy

Air in Building 316. NAMS subleases 25,808 square feet of building and land. ConocoPhillips / Shared Services Aviation subleases 9,033 square feet of building and land. Building 316 is used today as a repair station that is licensed to and operated by NAMS as a Part 145 repair station and services mostly ConocoPhillips / Shared Services aircraft including three Boeing 737-700 series aircraft, the Prudhoe Bay / Deadhorse-stationed Casa 212, and a twin otter aircraft. The facility includes hangar space to accommodate maintenance of one Boeing 737-700 aircraft at a time, and a second hangar that accommodates parts storage, offices, ground equipment and maintenance of smaller Prudhoe Bay / Deadhorse-based Shared Services aircraft. In 2010, ConocoPhillips / Shared Services Aviation constructed these two fabric shelter hangars (Building 315 and 323) on the ramp at their South Airpark facility to reduce snow removal and aircraft deicing requirements. The third aircraft, such as a Boeing 737-700 aircraft, could be stored in the NAMS repair hangar. Building 316 also provides for administrative functions, including reservations for the ConocoPhillips / Shared Services Aviation operation. Direct AOA access to this facility is provided via Taxiway T. Other current subtenants include UPS, ACS Cable Systems, Global Towers, and Alaska Digitel / GCI. The current NAMS sublease with Troy Air expires in July 2014. The current ConocoPhillips / Shared Services Aviation sublease with Troy Air expires in September 2014. The Troy Air lease expires in May 2033.

ConocoPhillips / Shared Services Aviation, originally ARCO, began in 1982 as a small corporate aircraft group operating under 14 CFR Part 91. The initial purpose of the operation was to ferry rotation-shift oil field workers from satellite locations around the greater Prudhoe Bay area to the Prudhoe Bay Airport (now closed), Kuparuk Airport and the Prudhoe Bay / Deadhorse Airport for transportation to Anchorage and Fairbanks. These flights were typically completed via company-owned Boeing 727-100 series aircraft with gravel kits installed to allow operation on the gravel Prudhoe Bay and Kuparuk runways. The operation was merged with BP during the early 1990s and now ConocoPhillips and BP jointly control the aircraft. ConocoPhillips / Shared Services Aviation is the designated operator of the aircraft. In approximately 1998, the Prudhoe Bay Airport was closed and all Prudhoe Bay flights were then routed to the Prudhoe Bay / Deadhorse Airport. By this time the aircraft had been changed to Boeing 737-200's, and the ARCO oil assets in Alaska had been sold to Phillips Oil Company. These aircraft were serviced through a contract with Alaska Airlines, who also provided supplemental and "loaner" aircraft for use during peak periods and while Shared Services Aviation aircraft were being serviced.

Over the years, the Shared Services Aviation operation has changed agents and is now serviced by NAMS. The service initially included using NAMS backup aircraft and a leased terminal at the Prudhoe Bay / Deadhorse Airport. NAMS has since sold their aircraft. As previously mentioned, ConocoPhillips / Shared Services Aviation has also changed their core aircraft fleet to include three Boeing 737-700 series aircraft. The Boeing 737-200 series aircraft are being removed from the fleet as they are no longer required since the Kuparuk Airport was paved.

Over the past five years, the total average annual enplanements for ConocoPhillips / Shared Services Aviation totaled 170,000 passengers, departing Anchorage on 24 weekly operations. This number does not include ConocoPhillips shuttle aircraft based at the Prudhoe Bay / Deadhorse Airport or over bookings that are transferred to Alaska Airlines and other carriers. All passenger flights for ConocoPhillips / Shared Services Aviation depart and arrive from the passenger terminal building.

During the summer and other periods of increased traffic, ConocoPhillips / Shared Services Aviation aircraft can experience air traffic control clearance delays before crossing Runways 7L and 7R. Arrivals go directly to the South Airpark facility. NAMS provides maintenance and ground handling services exclusively to ConocoPhillips / Shared Services Aviation.

Northern Air Cargo (South Airpark - Building 360)

Northern Air Cargo (NAC) leases Building 360 within the Kulis Business Park. Building 360 has a building footprint of 15,750 square feet. It was formerly used as a cafeteria for the Air National Guard. Only direct AOA access is provided for Building 460.

Today, Building 360 is used as a passenger facility for Shell Oil's North Slope operations. NAC provides ground handling and crew transport services for Shell Oil's Barrow and Deadhorse crew changes. NAC contracts maintenance services to Miami Air through an ACMI agreement. Snow removal services are contracted out.

Passengers depart from Building 360 and arrive at B Concourse of the South Terminal, where they have a dedicated gate (B1) and jet-bridge. Aircraft typically taxi from the South Airpark to the terminal and gate area via Taxiway F to Taxiway E and then across Runway 7L and 7R.

Pegasus Aviation Services (North Airpark - Building 169; East Airpark - Buildings 226, 266, & 276)

Pegasus Aviation Services provides a majority of the contract aircraft maintenance services at the Airport and a broad range of other services, including deicing, ground handling, flight operations, passenger operations and ticketing, and cargo handling. Their leasehold in the North Airpark (Building 169), located at the intersection of Postmark Drive and Taxiway V, is approximately 2.37 acres with a building footprint of approximately 6,030 square feet. Pegasus Aviation Services uses this location as a GSE maintenance and storage facility. The facility does not have direct AOA access.

In addition to Building 169, Pegasus Aviation Services also occupies about 3,000 square feet of space in the basement of the North Terminal

as an operations office as well as facilities in the East Airpark (Building 226, 266, and 276).

Swissport Ground Handling (East Airpark - Buildings 241 & 260)

Swissport currently provides passenger and aircraft ground services at over 125 airports worldwide. Swissport is the largest cargo ground handler at the Airport, servicing about 80% of the commercial passenger and cargo traffic. In addition to ground handling, Swissport also performs aircraft maintenance and GSE maintenance for various airlines.

Swissport Ground Handling (Swissport) facilities are located along the railroad corridor in the East Airpark between West 50th Avenue and Old International Airport Road. The three lots total 3.16 acres and comprise a total building footprint of 31,487 square feet.

Swissport's GSE facility is located on the north side of the railroad embankment, at the southeast corner of South Aircraft Drive and West 50th Avenue (Building 241). The GSE facility is situated on a lot totaling 1.19 acres. The 13,683-square-foot GSE warehouse building located on this lot was initially constructed in 1973 and was expanded in 1990. Swissport also stores deicing fluid in two 10,000 gallon (Type 4 fluid) and one 5,000 gallon (Type 1 fluid) tanks at this facility. Swissport reports occasional difficulty getting its deicing vehicles from this building to the AOA via South Aircraft Drive due to the restricted clearance (16'-7") of the railroad overpass. The only alternate route is nearly one mile long and involves driving east on West 50th Avenue to the Old International Airport Road intersection and then west to South Aircraft Drive. The lot does not have direct AOA access.

Swissport's administrative offices and warehouse facility for maintenance / storage needs are located at Building 260, south of the railroad corridor and north of Old International Airport Road. The lots comprise an area totaling 1.97 acres and a building footprint totaling 17,804 square feet. The larger of the two buildings was a converted hangar that was originally constructed in the late 1960s. Today, the building comprises approximately 8,000 square feet on two floors for offices and 14,000 square feet for maintenance and storage. The lots do not have direct AOA access.

Thompson and Associates Deicing (North Airpark - Buildings 172 & 173)

Thompson and Associates Deicing is a snow removal company occupying two lots in the North Airpark. Thompson and Associates Deicing currently have contracts in place to remove snow from the UPS and FedEx aircraft parking aprons. They also have snow melting equipment available and are pioneering glycol recovery efforts during the snow removal process. Thompson and Associates does not have direct AOA access from its North Airpark facility.

Troy Air (South Airpark - Building 316)

Troy Air subleases for a variety of airport / airline support and other uses. The building and land area leased by Troy Air is located at 6601 South Airpark Place and is a 7.46-acre site. Building 316 has a building footprint of 60,393 square feet and building size of approximately 100,000 square feet. The Troy Air facility was constructed in 1982 and is in good condition. Troy Air's facility has a 40,000 gallon underground water storage tank for its firefighting sprinkler system. There is a diesel fuel tank on the premises that fuels the sprinkler system pump engine. Each tenant is responsible for contracting out snow removal and apron maintenance for their portion of the facility. Subtenants include Northern Air Cargo / NAMS, UPS, ConocoPhillips Alaska, ACS Cable Systems, Global Towers, and Alaska Digitel / GCI. Direct AOA access is provided.

United Parcel Service (UPS) Flight Training Center (South Airpark - Building 316)

UPS subleases 26,555 square feet of building and land from Troy Air. This sublease is used as the northern hemisphere training center for UPS. The center comprises numerous training rooms, including two rooms with full-motion Boeing 747-400F model simulators.

7.7 AIRPORT FIELD MAINTENANCE FACILITY

The Airport Field Maintenance Department (Buildings 165, 167, and 177-187) is charged with the maintenance of Airport-owned and managed or common-use airside and landside facilities at the Airport and Lake Hood Airport. The Airport field maintenance facilities and equipment, as well as Field Maintenance Department operations such as snow removal and deicing operations, are described below.

7.7.1 AIRPORT FIELD MAINTENANCE FACILITIES

Field maintenance facilities occupy two general sites located in proximity to the U.S Post Office off Postmark Drive in the North Airpark. The first site is located west of Aircraft Drive and north of Tom Wardleigh Drive (Buildings 177-187). The second site is located west of Postmark Drive (Buildings 165 and 167). The buildings are shown in Figures 2.17, 2.18, 2.19, and 2.20 and listed in Table 2.2.

Buildings 177-187, shown in Figure 2.37, are located on the first site located east of Postmark Drive on land totaling approximately 17.65 acres. Building space for the five main buildings comprises a footprint of 96,185 square feet. The buildings are currently used to store back-up vehicles and other Airport maintenance equipment. The first site currently does not have immediate AOA access to the airfield. However, the site is in close proximity to the Lake Hood Airport and a short distance from the AOA.

Figure 2.37
Airport Field Maintenance Facility (Buildings 177-187)



Source: HDR, 2014.

The second site, located west of Postmark Drive and north of Taxiway V, totals approximately 12.50 acres with building space from two buildings (Buildings 165 and 167) comprising a footprint of approximately 139,690 square feet. The larger building is the primary facility (Building 167). The facility, shown in Figure 2.38, is approximately seven years old and houses administration, equipment maintenance, and storage for vehicles that serve a primary immediate response function. Building 167 was constructed to store modern equipment that is larger in size than the old equipment. It also includes a warm storage area that houses the minimum equipment and vehicles needed for immediate access to the airfield. Additional equipment remains stored at storage facilities east of Postmark Drive.

Figure 2.38
Airport Field Maintenance Facility (Building 167)



Source: HDR, 2014.

A second building (Building 165), located on the second site, is the Quick-Turnaround Facility (QTF), shown in **Figure 2.39**. This is where the primary snow and ice removal equipment is stored. The advantage of this facility is its centralized location on the airfield, which helps maintenance personnel achieve their goal of clearing snow and ice from the airfield in approximately 20 minutes. The QTF is also used to store most of the Airport's sand and deicing equipment and chemicals. A new liquid deicer storage tank was constructed in summer 2012, bringing the total number of liquid deicer storage tanks to three. This is sufficient to meet the requirements of the Airport for one average year. A vehicle fueling station, located adjacent to the QTF, provides fuel services to the Airport field maintenance vehicle fleet. Building 165 has adequate AOA access.

Figure 2.39
Airport Field Maintenance Quick-Turnaround Facility (Building 165)



Source: HDR, 2014.

The third site is located in the South Airpark within the Kulis Business Park. Because of space constraints present in the first site, back-up Airport maintenance equipment is stored in the Fire Station No. 2 building and vacant hangars within the Kulis Business Park.

A summary of all Airport field maintenance facilities is included in Table 2.24. In total, the Field Maintenance Department has about 385 pieces of equipment, of which about 175 are large, drivable vehicles.

Facilities for Airport maintenance equipment storage are currently at capacity. Additional storage is needed to accommodate future growth. Despite plans to replace the roofs on the old maintenance buildings in 2013, the old field maintenance buildings (Buildings 177–187) east of Postmark Drive are obsolete and undersized to fit equipment. In the future, these facilities may need to be improved to accommodate warm storage needs.

Additional warm storage is also needed to store snow removal and deicing materials. After facing a shortage of deicing materials in the 2011–2012 winter months, the Field Maintenance Department ordered extra sand for the following winter. However, this sand was stored outside. Warm storage or climate controlled storage areas are preferable to prevent the sand from freezing and the need to chip it apart prior to use. Currently, some of the snow removal and deicing materials are stored in a building located in the West Airpark, south of the fuel farm.

Table 2.24
 Airport Airfield Maintenance Facilities (in square feet)

Building	Administration & Shop	Vehicle Storage	Deicing Material Storage	Other Storage
Airfield Maintenance Facility	72,458	42,301	-	-
Quick-Turnaround Facility	-	-	23,864	-
4055 Aircraft Drive	-	16,202	6,461	-
4166 Aircraft Drive	-	14,271	-	-
4100 Aircraft Drive	2,709	7,348	-	5,638
Old Fire Station 2	-	6,240	-	-
Kulis Business Park Hangars	-	-	-	-
Total	75,167	86,362	30,325	5,638

Source: Airport staff, 2014.

7.7.2 AIRPORT FIELD MAINTENANCE OPERATIONS

Field Maintenance Department personnel provide and maintain safe aircraft movement surfaces, public roads, walkways, and other Airport infrastructure. This includes clearing snow and ice from common use airside and landside facilities. The Field Maintenance Department comprises approximately 110 personnel organized in three distinct sections: Field Maintenance, Equipment Maintenance, and Airfield Electricians.

The Field Maintenance section is responsible for daily airfield inspections, pavement maintenance, snow removal, drainage management, vegetation control, obstruction mitigation, and other required Airport maintenance. In addition, the section performs hazard mitigation and general maintenance for the Lake Hood Airport, including aquatic weed harvesting, slip maintenance, and dredging.

The Equipment Maintenance section services Airport-owned vehicles and equipment. In total, Equipment Maintenance maintains about 385 pieces of equipment, of which about 175 are large, drivable vehicles. These vehicles include snow removal equipment, heavy equipment, firefighting trucks, and light duty vehicles.

The Airfield Electricians section constructs, repairs, and replaces signs, lights, wind indicators, and other complex electrical systems on the airfield and in public use areas.

7.7.3 SNOW REMOVAL OPERATIONS

Snow removal is a major activity at the Airport. The Field Maintenance Department has designated multiple snow storage areas and snow disposal sites, and follows an *Annual Snow Removal Plan* to guide them in the temporary placement and ultimate storage of snow removed from pavements. The general rule of thumb for snow disposal is that snow removed from airfield surfaces within the AOA fence is moved to disposal sites within the AOA fence line. A similar rule applies for snow that is cleared outside the AOA fence line—snow cleared from areas outside the fence is taken to disposal areas outside the AOA fence. An example of snow removal equipment is shown in Figure 2.40.

Figure 2.40
Airport Airfield Maintenance Equipment Performing Snow Removal Operations



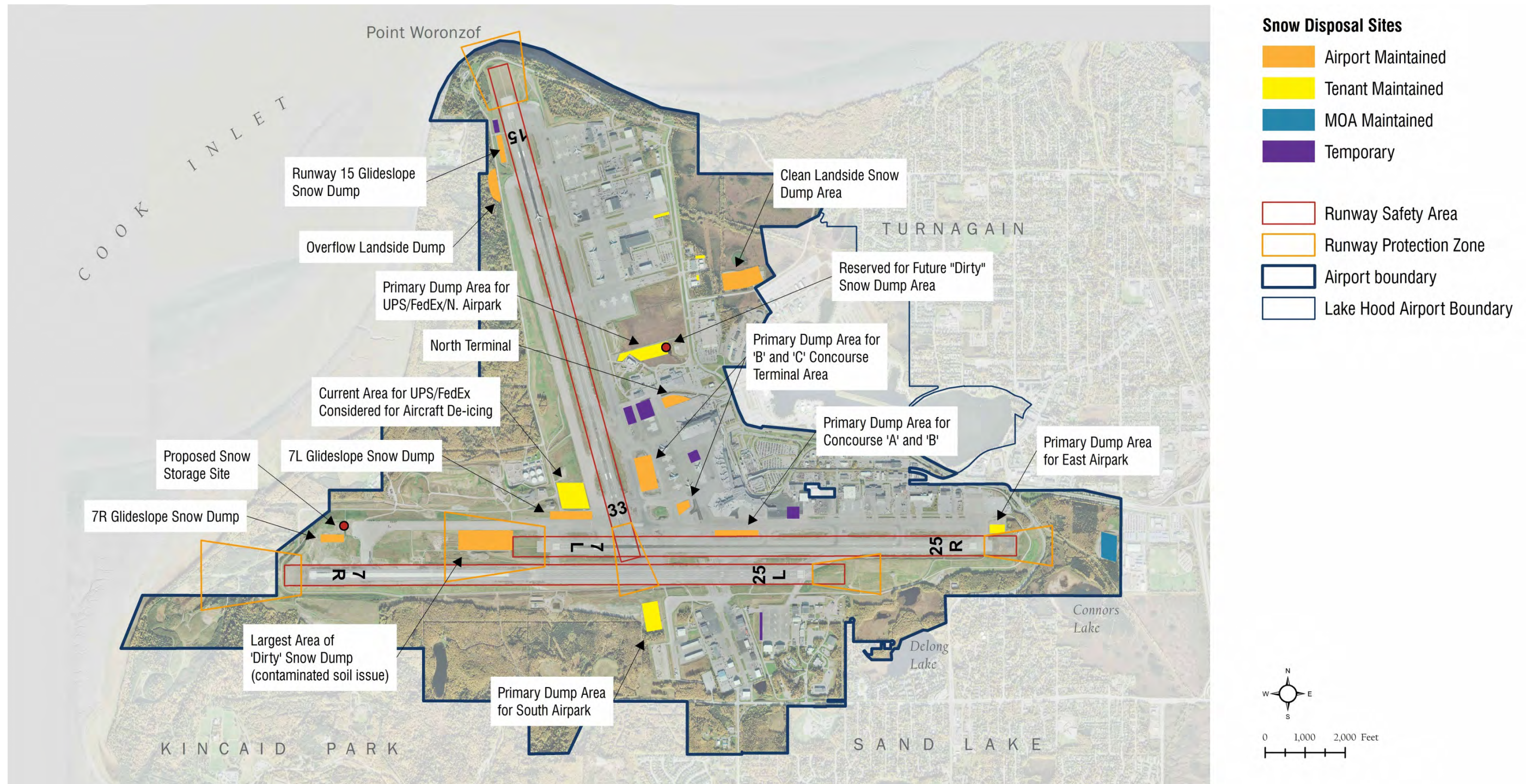
Source: Airport Airfield Maintenance website, 2014.

Snow Disposal Sites

Once snow is removed, it is moved by truck to various disposal sites, as shown in Figure 2.41. The various snow disposal sites are classified as either containing “dirty” or “clean” snow. Dirty snow is generally defined as snow that may contain pavement and / or aircraft deicing chemicals and usually includes snow from within the AOA. Clean snow is defined as snow that is free of deicing chemicals and may be disposed at designated clean snow disposal sites.

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Figure 2.41 Snow Dump Locations



Source: RS&H and HDR, 2014.
Note: MOA = Municipality of Anchorage.

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Within the AOA, snow disposal sites for the passenger terminal area (B and C Concourses) are located at the gravel island area surrounded by Taxiways M, R, L, and G (primary snow dump area), and a small area at the intersection of Taxiways L, E, and E1. The snow disposal site for the passenger terminal (A Concourse) is located at the island area surrounded by Taxiways K, D, E and Runway 7L-25R. The snow disposal sites for the North Terminal, including UPS, FedEx, and other North Airpark tenants, are located between the North Terminal and south of Taxiway V as well as northwest of the Field Maintenance Facility. The snow disposal site for UPS, FedEx, and other North Airpark tenants is located in the grassy area east of the fuel farm. The snow disposal site for the East Airpark is located off the end of Runway 25R and Taxiway K. Studies have shown that groundwater in this vicinity flows away from Lakes Hood and Spenard.³⁹ The snow disposal site for the South Airpark is located west of Taxiway Z.

Outside the AOA, the primary and largest snow disposal site is a 16.50-acre site located north of Lake Hood Drive. Other smaller snow disposal sites are scattered around the Airport property. The MOA uses the Connor's Lake snow storage site, which is located on Airport property that is leased to the MOA on a month-to-month basis.

As the Airport continues to be developed, a conscious effort should be made to maintain snow disposal sites.

7.7.4 DEICING OPERATIONS

The annual airfield and aircraft deicing activities at the Airport are a significant operation requiring a substantial logistical plan and large commitment of money by the Airport and tenants. Deicing operations can occur at any time of the year, but are generally conducted between October and April by various Airport staff, operators, and users. All parties involved must comply with numerous national, state, and local regulations in order to properly apply, recover, and monitor deicing fluids and stormwater runoff. The U.S. Environmental Protection Agency's (USEPA) issued a National Pollution Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) to the Airport in 2009 authorizing stormwater discharge. Subsequently, the Alaska Department of Environmental Conservation (ADEC) took primacy of the USEPA's NPDES permit program, now called the Alaska Pollutant Discharge Elimination System (APDES). The 2009 MSGP expired in 2013, but has been administratively extended by ADEC until a new MSGP is issued.

The USEPA Water Quality regulations governing deicing activities have changed recently, mainly eliminating the ability to use urea as a pavement deicer. These new regulations may require the Airport to make

³⁹ Limno-Tech Inc. *Deicing Management Program Plan*, 2004.

various operational and facility changes as part of the master plan recommendations.

As of 2012, Lakes Hood and Spenard meet or exceed the Water Quality Standards established by ADEC.

7.8 AIRPORT POLICE AND FIRE FACILITIES

7.8.1 FACILITIES

The Airport Police and Fire Department is located on a 12.00-acre site at the western end of De Havilland Avenue north of Taxiway V. The main building (Building 151), referred to as Station No. 1, was constructed in 1991. The building footprint totals approximately 19,330 square feet and with a second floor, totals 28,840 square feet. There is an additional 33,700 square feet available for landside parking. The facility, shown in Figure 2.42, is equipped with everything a normal police and fire station would have (e.g., offices, classrooms, evidence storage rooms, interrogation rooms, and an ammunition storage room). The vehicle bay is capable of storing three large “Striker” vehicles and a rapid Intervention Vehicle, with limited space remaining for police patrol vehicles.

Figure 2.42
Airport Police and Fire Department (Buildings 151 & 152)



Source: HDR, 2014.

Equipment and personnel from two vacated facilities were consolidated in the existing facility when it was built in 1991. The Police and Fire Department facility is currently space constrained as personnel for effectively two departments operate within a single facility. To offset space constraints, firefighting chemicals and vehicles are stored in other areas around the Airport, such as the old Field Maintenance Facility east of Postmark Drive and the former Aircraft Rescue and Fire Fighting (ARFF) station in the West Airpark. Some firefighting vehicles are stored in a hanger in the South Airpark (Hangar 46 as referenced in the

Kulis Land Use Plan). These facilities are described in other sections of this document.

The Police and Fire Department also uses Fire Station No. 2 (Building 335) for storage of out-of-service ARFF vehicles. The facility is located inside the fence adjacent to Carl Brady Drive in the South Airpark, within the Kulis Business Park.

Training facilities for the Police and Fire Department are also located in the South Airpark, west of Taxiway Z. This includes an ARFF training facility and a shooting range.

Finally, the Airport has an Emergency Operations Center, or Airport Communications Center, to coordinate emergency responses at the Airport.

7.8.2 OPERATIONS

The Police and Fire Department is unique because services are jointly operated within one department. Each service has a different mission, but relies on shared resources. The Police and Fire Department consists of 60 officers and four K-9 units. Typically, there are 10 operational personnel on a shift at any time, with three dedicated firefighters. All of the officers in the department are dual-certified to enable them to alternate between police and firefighting roles.

In its police role at the Airport, the Police and Fire Department is a self-contained, fully functional, independent law enforcement agency that completes its own cases, investigations, and arrests. It has the authority to remand to jail and follows up in court.

In its firefighting role at the Airport, the Police and Fire Department is required by the Airport's FAA FAR Part 139 Class I operating certificate to provide Index E requirements. This requires achieving a three-minute response time to the midpoint of the farthest runway, and the capability to respond to an incident with a minimum of three vehicles having a combined water / dry chemical agent capacity of 6,000 gallons. To meet these requirements the department typically responds to an alert with two Oshkosh 4500 "Striker" vehicles (**Figure 2.43**) and one Rapid Intervention Vehicle. To satisfy the response times, the department stores these vehicles in Station No. 1 as well as Station No. 2, which is the Old Fire Station No. 2 within the Kulis Business Park.

As part of the ARFF requirements under Part 139, the FAA also requires the ability to respond with ARFF support to a downed aircraft in the Knik Arm Inlet. To satisfy this requirement, the department contracts with a private agency (Cook Inlet Tug and Barge) and has other mutual aid agreements.

In addition to providing service for the Airport, the Police and Fire Department responds to all calls for police, fire, and medical intervention

for the Lake Hood Airport, as well as providing mutual aid to surrounding agencies upon request. The department has two small aluminum hull boats, shared with the Airport Field Maintenance Department, to perform water rescues on Lake Hood. For winter rescue, the Police and Fire Department maintains two snow machines equipped with patient / equipment sleds.

Table 2.25 summarizes major equipment and facilities of the Airport Fire and Police Department.

Figure 2.43
ARFF Engine 7 – Oshkosh “Striker” with High Extendable Turret



Source: Airport Fire website, 2014.

Table 2.25
Airport Fire and Police Department Facilities and Equipment

Facilities				
Building	Location	Square Feet	Parking Area	Equipment Capacity
Station 1	North Airpark	28,940	33,700	2 Oshkosh 4500 Vehicles, 1 RIV
Station 2	South Airpark	8,500	-	2 Oshkosh 1500 Vehicles
Hangar 46	South Airpark	-	-	2 Water Tender Vehicles
Vehicle Fleet				
Vehicle	Make	Specialized Equipment	Water/Foam (gal.)	Dry Chemical (lbs.)
Engine 1	Oshkosh	-	1500 / 205	-
Engine 4	Oshkosh	-	4500 / 630	500
Engine 5	Oshkosh	65-foot HRET ¹	4500 / 630	500
Engine 6	Oshkosh	-	4500 / 630	500
Old Engine 6	Oshkosh	-	1500 / 205	-
Engine 7	Oshkosh	65-foot HRET ¹	4500 / 630	500
Engine 8	Oshkosh	-	4500 / 630	500
RIV #1	Ford	EMS & Rescue	300 / 120	500
RIV #2	Ford	EMS & Rescue	300 / 120	500
Water Tender 1	-	-	6000 / -	-
Water Tender 2	-	-	6000 / -	-
Specialized Rescue				
Equipment	Purpose			
Vessel 1 (Rescue ¹)	Water Rescue			
Vessel 2 (Rescue 2)	Water Rescue			
Hovercraft 1 (Rescue 3)	Water Rescue			
Hovercraft 2 (Rescue 4)	Water Rescue			
Snow Machine 1	Snow / Ice Rescue			
Snow Machine 2	Snow / Ice Rescue			

Source: Airport staff, 2012.

Note:

1 - High Reach Extendable Turret.

Field Maintenance and Police and Fire Department Storage (South Airpark - Building 354)

As previously described, the majority of Field Maintenance Department facilities are located in the North Airpark in the proximity of the U.S. Post Office along Postmark Drive. However, due to storage space constraints, one of the hangars (referenced as Hangar 46 in the *Kulis Land Use Plan*) adjacent to the large apron area in the northwest quadrant of the Kulis Business Park is currently being used to store field maintenance equipment. Although this site has AOA access, to improve access, an additional airfield access gate is being constructed. The hangar is also used to store two Fire and Police Department 6,000-gallon water tenders.

Fire Station No. 2 (South Airpark - Building 335)

Fire Station No. 2, shown in **Figure 2.44**, is located inside the fence adjacent to Carl Brady Drive in the South Airpark within the Kulis Business Park. This building is approximately 8,500 square feet and currently stores two 1500 E-One vehicles. Fire Station No. 2 is being converted for Airport ARFF use as Station No. 2 by the Airport Police and Fire Department. In the future, up to two 1,500-gallon trucks and one firefighter may be stationed in the facility. This will provide faster ARFF response to the southern part of the airfield. In addition, police officers may operate out of the station for more rapid access to South Airpark tenants. AOA access is gained through secured public access doors at the end of Mallone Street. Access is currently adequate for current and future needs.

Airport Police and Fire Department – ARFF Training Facility (Building 391)

ARFF training facilities are located directly south of the Runway 7L threshold and west of Taxiway Z in the South Airpark. Training facilities include a 20-person classroom, training office, hydrocarbon fuel pit, and a Lockheed Electra training aircraft for snozzle penetration training. Finally, as the largest ARFF service in Alaska, the Police and Fire Department annually hosts three fire academies at the Airport. Airport facilities are used as a joint training site by firefighting personnel from the City of Anchorage and nearby airports. To accommodate future training needs, land for new training facilities are being examined by Airport staff. One ideal location is in the South Airpark near the Airport Police and Fire Department ARFF Fire Station No. 2. Additional information regarding the Airport Police and Fire Department facilities and operations are included in this section.

Figure 2.44
Airport Police and Fire Department (ARFF) Station No. 2 (Building 335)



Source: DOWL HKM, 2014.

Airport Police and Fire Department – Police Shooting Range
(Building 391)

Located near the ARFF Training Facility and west of Taxiway Z in the South Airpark, the Airport Police and Fire Department has a dedicated police shooting range. The shooting range was constructed in the 1960s and recently upgraded in 2012. The range allows officers to maintain firearm certification on site. Firearms certification is a mandatory practice and serves to directly support the security requirements of both the FAA and the TSA.

7.9 OTHER STATE-ADMINISTERED FACILITIES

DOT&PF Ted Stevens Anchorage International Airport
Construction (East Airpark - Buildings 211 & 212)

DOT&PF Airport Construction facilities, shown in Figure 2.45, are located adjacent to International Airport Road and north of West 50th Avenue. The facilities are maintained in a space totaling approximately

1.37 acres and in two buildings with a footprint of 5,118 square feet. The buildings are used by Airport staff for the management of Airport construction projects.

Figure 2.45
DOT&PF Anchorage International Airport Construction (Buildings 211 & 212)



Source: HDR, 2014.

Electrical Vault (West Airpark - Building 402)

Located just south of the AFSC Fuel Storage Facility is an electrical vault that is owned and maintained by the DOT&PF.

Former ARFF Station No. 2 (West Airpark - Building 403)

The former ARFF Station No. 2 (Building 403) is located south of the fuel farm. This facility was vacated in 1991 when the existing Police and Fire Department station was constructed. The facility is currently being used for warm storage of equipment and deicing materials in addition to storage areas within the QTF (Buildings 165 and 167). The building is also used to store excess firefighting chemicals and Police and Fire Department vehicles.

DOT&PF Materials Lab (East Airpark - Buildings 220 & 222)

The DOT&PF materials testing laboratory, shown in Figure 2.46, is located in the northern part of the East Airpark at the intersection of International Airport Road and South Aircraft Drive. The lot encompasses approximately 1.83 acres, and the two buildings comprise a footprint totaling approximately 9,000 square feet. The facility is used

for testing in support of the agency's effort to provide technical expertise in materials and engineering services. Direct AOA access is not provided from the lot.

Figure 2.46
DOT&PF Materials Lab (Buildings 220 & 222)



Source: HDR, 2014.

7.10 FAA FACILITIES

The FAA owns land in the Airport vicinity, as well as leases land from DOT&PF. Described in this section are those FAA owned / leased areas with buildings where FAA employees work on a day-to-day basis. FAA equipment / infrastructure on the airfield are not described in this section.

Airport Traffic Control Tower (Terminal - Building 504)

The existing FAA ATCT, shown in Figure 2.47, is located north of West International Airport Road nearly equidistant between the north and south passenger terminals. Constructed and placed into operation in 1977, the FAA ATCT facilities consist of a tower containing ATC equipment and FAA offices, and a 12,000 square-foot base building accommodating additional offices. The facility grounds are surrounded by a security fence, with gates at the main and employee entrances. The vehicle parking area has approximately 34,000 square feet supporting 75 vehicle parking spaces.

In October of 1991, the Airport ATCT was separated into two operational facilities: the Anchorage ATCT and the TRACON. The two operational facilities function administratively as one facility known as the Anchorage International Airport ATCT. Currently, the Anchorage International Airport ATCT is classified as a Level 8 Limited Radar Approach Control Tower, while the Anchorage International Airport TRACON is a Level 9 TRACON.

Figure 2.47
Airport Traffic Control Tower (Building 504)



Source: HDR, 2014.

Federal Aviation Administration Flight Inspection Building and Hangar (East Airpark - Buildings 274 & 275)

The FAA owns land in the East Airpark near the intersection of Old International Airport Road and South Aircraft Drive. This land area comprises 3.86 acres and is not owned by the DOT&PF. This land area is also referred to as the FAA in-holding lot. Buildings 274 and 275 are, respectively, an approximately 15,000-square-foot office / storage building for FAA Flight Inspection operations, and an approximately 42,000-square-foot hangar. The hangar, shown in **Figure 2.48**, is between 35 and 40 years old and functions to store aircraft used by the FAA to test and calibrate its navigational aids. Direct access to the AOA is provided to the south. The combined lease lot area comprises 2.07 acres and a small building with a footprint of approximately 1,100 square feet.

Figure 2.48
FAA Hangar and Flight Inspection Office (Building 275)



Source: HDR, 2014.

The centrally located lot could have revenue generation potential for the Airport if it were not owned by the federal government. The function of the FAA facility does not appear to be dependent on this particular location on Airport property. FAA has explored the possibility of exchanging the current site for facilities within the Kulis Business Park, but to date has elected not to do so. FAA has also considered, but rejected, a proposal to alter the western boundary of their lot to provide access from Old International Airport Road. An access would not provide the office building with a sufficient setback to avoid damage from vehicle traffic in the resulting access corridor.

Federal Aviation Administration Building (East Airpark - Building 226)

The FAA subleases space in Building 226 from William and Lorraine Brooks. The sublease is located in the East Airpark in a building footprint totaling 17,504 square feet on a lot totaling 1.90 acres. Direct AOA access is not provided.

7.11 OTHER FACILITIES

A number of facilities are present on the Airport property that are typically not used for aeronautical purposes (e.g., the USFWS building and MOA snow storage area) or for both on-and off-Airport needs (e.g., rental car storage facilities and utility right-of-ways and corridors). This section provides a brief summary of some of those facilities.

United States Postal Service (North Airpark - Buildings 175 & 176)

The U.S. Post Office (Buildings 175 and 176) is located on a 22.7-acre site in the North Airpark off of Postmark Drive, just south of Lake Hood Drive. Building 175 is shown in **Figure 2.49** and Building 176 is shown in **Figure 2.50**. The facility's primary role is to store mail and freight. The main building has a footprint totaling approximately 273,000 square feet. However, the facility is also used for public retail postal services on the south side of the building. This facility has no direct airside access, but a special use access road directly connects the facility to North Tug Road across Postmark Drive. This allows airside vehicles (e.g., GSE vehicles) to access the U.S. Post Office facility without traveling on public roads. The northern lot also has a building with a footprint totaling approximately 9,170 square feet. Direct AOA access is not provided.

Figure 2.49
U.S. Post Office (Building 175)



Source: HDR, 2014.

Figure 2.50
U.S. Post Office (Building 176)



Source: HDR, 2014.

Avis, Budget, Alamo / National, Hertz Vehicle Storage (East Airpark
- Buildings 213, 214, 231, 232, & 250)

Avis, Alamo / National, and Budget vehicle storage facilities are located in a cluster of lots along West 50th Avenue in the East Airpark. A combined total of about 700 cars are maintained and stored long-term on

these lots. Vehicle rentals, short-term vehicle storage, and vehicle returns occur in the consolidated car rental facility adjacent to the main passenger terminal.

Avis subleases two buildings (Buildings 213 and 214) on conjoined sites in the East Airpark from Alaska Rent-A-Car. The facility is located near the intersection of West 50th Avenue and South Aircraft Drive. Building 214 is the main building and is two stories tall. The building is used as office space and as a maintenance garage. The lot is used for vehicle storage and also has a car wash facility.

Budget facilities (Building 231) are located southeast of the Avis facilities. The Budget building is used as office space. The lot is used for vehicle storage.

Alamo / National subleases space (Building 232) from Alaska Sales and Services, Inc. for vehicle storage. The facilities are located south of West 50th Avenue, across the street from Avis. Direct AOA access is not provided for these facilities.

Hertz car storage facilities (Building 250) are located along Old International Airport Road. In addition to the vehicle storage lot, Building 250 is used for vehicle maintenance.

Great Pacific Seafoods, Inc. (East Airpark - Building 262)

The Great Pacific Seafoods facility is used for seafood processing and freight consolidation. The facility is located along Old International Airport Road in the East Airpark. The facility includes processing and consolidation, frozen and cold storage, warehousing, and administrative space. Great Pacific Seafood receives raw and processed products via truck and air freight. The air freight is transported by Everts Air Cargo from Kotzebue to Anchorage.

The company ships nearly all its fresh product to the Lower 48 States. In addition, about half of its frozen product is shipped domestically, and the remaining half is shipped internationally. Northern Air Freight and Lynden Air Cargo provide outbound freight service; FedEx provides seafood logistics services for product delivery.

ABC Motorhome and Car Rentals / Fly-In Restaurant (East Airpark - Buildings 267 & 268)

The ABC Motorhome & Car Rentals and Fly-In Restaurant occupy single-story buildings in the East Airpark. The Fly-In Restaurant has been in operation since 1992 and serves American and Asian cuisine. ABC Motorhome & Car Rentals is a family operated business that has been in operation since 1985. It offers sales and rentals of motorhomes and other vehicles.

Aero Anchorage (East Airpark - Building 286)

The Aero Anchorage building (Building 286) is located in the East Airpark. Aero Anchorage subleases space to various subtenants. Subtenants utilizing the facility for cargo purposes include Evergreen, Delta Airlines, Northern Air Cargo, Arctic Circle Enterprises, Frontier Flying Service, and Nippon Cargo Airlines. Aero Anchorage subleases space to companies for other purposes. These subtenants include Equant and Aeronautical Radio. Equant provides communications equipment for those working within the AOA.

Alaska State Troopers (East Airpark - Buildings 233, 287, & 288)

The Alaska State Troopers sublease building space in the Signature Flight Support facility (Building 287 and 288), shown in Figure 2.51, along Old International Airport Road in the East Airpark. The State Troopers also sublease a secure office building (Building 233) along West 50th Avenue in the western portion of the East Airpark. The north side of the building is two stories tall and the south side is one story. It is believed that emergency response and rescue functions are performed using these facilities.

Figure 2.51
Alaska State Troopers (Donald R. Rogers) (Building 233)



Source: HDR, 2014.

U.S. Department of Commerce (South Airpark - Buildings 342 & 343)

The U.S. Department of Commerce leases a total of 11 acres in the South Airpark along Sand Lake Road. The facilities (Buildings 342 and 343), shown in **Figure 2.52**, consist of two buildings with a combined footprint of about 24,000 square feet. The western portion of the site includes a tower that is topped with meteorological observation equipment.

The facility is used for the National Oceanic and Atmospheric Administration (NOAA) Anchorage Forecast Office. The office includes the Alaska Aviation Weather Unit, the Alaska River Forecast Center, and various electronics and maintenance units. The facility does not have AOA access, and its use is limited to meteorological observation and reporting.

Figure 2.52
U.S. Department of Commerce (Building 343)



Source: DOWL HKM, 2014.

U.S. Fish and Wildlife Service (South Airpark - Building 344)

The USFWS leases 2.3 acres along Sand Lake Road, adjacent to the NOAA facility. The facility, shown in Figure 2.53, is comprised of a warehouse and storage yard used to store equipment and perform maintenance. The facility does not have AOA access, and its use is limited to storage and maintenance functions.

Figure 2.53
U.S. Fish and Wildlife Service (Building 344)



Source: DOWL HKM, 2014.

7.12 INFRASTRUCTURE AND UTILITY SERVICES

This section describes the utility infrastructure and services used at the Airport. Utilities covered include electrical, natural gas, stormwater, public water, sewer, solid waste and recycling, and telecommunication services.

Electrical Services

Electricity is supplied to all developed areas of the Airport by the Chugach Electric Association. A distribution substation west of Spenard Road at the intersection of Old International Airport Road is the primary source of distribution for the Airport. Chugach Electric Association has a number of substations on Airport property. The Woronzof transmission substation is one such station that straddles the

Airport boundary just north of the Asplund Wastewater Treatment Facility.

Additional electrical service comes from the Woronzof Substation located north of the Asplund Wastewater Treatment Facility. Chugach Electric Association is the electrical supplier for most of the Metropolitan Statistical Area with the exception of the Municipal Light & Power, which provides power to the northwest West Anchorage Planning Area.

Natural Gas Services

Natural gas is supplied by ENSTAR Natural Gas Company, serving nearly all developed areas on the Airport. ENSTAR installs and upgrades the natural gas infrastructure as needed.

Stormwater Services

The stormwater drainage system is owned, operated, and maintained by the DOT&PF. Rainwater and other runoff is collected in the stormwater drainage system.

Three drainage basins and nine drainage systems make up the Airport watershed. The stormwater is eventually discharged to surrounding bodies of water allowed by the NPEDS permit issued by the USEPA but subsequently transferred to ADEC. The permit requires mechanisms be in place to control discharge of pollutants into receiving waters.

The existing stormwater drainage system is shown on **Figure 2.54**. For more information about the stormwater services, refer to the *Ted Stevens Anchorage International Airport Storm Drainage Master Plan*, dated November 2000.

Stormwater drainage at the Airport is conveyed through five drainage areas, designated A, B, C, D, and E.⁴⁰ The Airport has implemented a stormwater diversion program in these drainage areas to control runoff containing aircraft and pavement deicing materials. The primary purpose of the stormwater diversions is to reduce biochemical oxygen demand and nitrogen loading to Lakes Hood and Spenard. The diversions are operated on a continuous basis.⁴¹

Stormwater from Drainage Area C is re-routed by gravity back-up from two corrugated metal pipes at Aircraft Drive to Drainage Area D using an irrigation gate. The gate is anticipated to remain in place for the foreseeable future.⁴²

⁴⁰ Amendment to 2004 Water Body Recovery Plan, 2011.

⁴¹ Limno-Tech Inc. *Deicing Management Program Plan*, 2004.

⁴² Ibid.

Figure 2.54 Stormwater Drainage System



Source: RS&H and HDR, 2014.

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Public Water and Sewer Services

AWWU provides public water and sewer service to the Airport. The main water lines (16-inch pipe) are located along Old International Airport Road and Northern Lights Boulevard. These two water lines supply water to the passenger terminals and North Airpark area and are connected by another water line along Postmark Drive. Another main water line includes a 12-inch pipe that enters the Airport near the Lake Hood gravel strip along Aircraft Drive. This line connects back to the 16-inch pipe previously mentioned. Finally, a 30-inch pipe water line on the south side of the Airport provides water along Raspberry Road to the Kulis Business Park and the South Airpark. There are a number of smaller water lines branching off the main water lines.

AWWU has its Asplund Wastewater Treatment Facility located off Airport property and west of Runway 15-33. Sewer lines run from various Airport areas into the main 96-inch sewer line heading to the Asplund Wastewater Treatment Facility. Following primary treatment of wastewater, the water is discharged to the Cook Inlet and other marine waters. In the future, a secondary treatment facility may be added pending USEPA review of the facility's current discharge permit. A 75-acre land area south of the treatment facility is currently reserved for future AWWU wastewater treatment facility expansions.

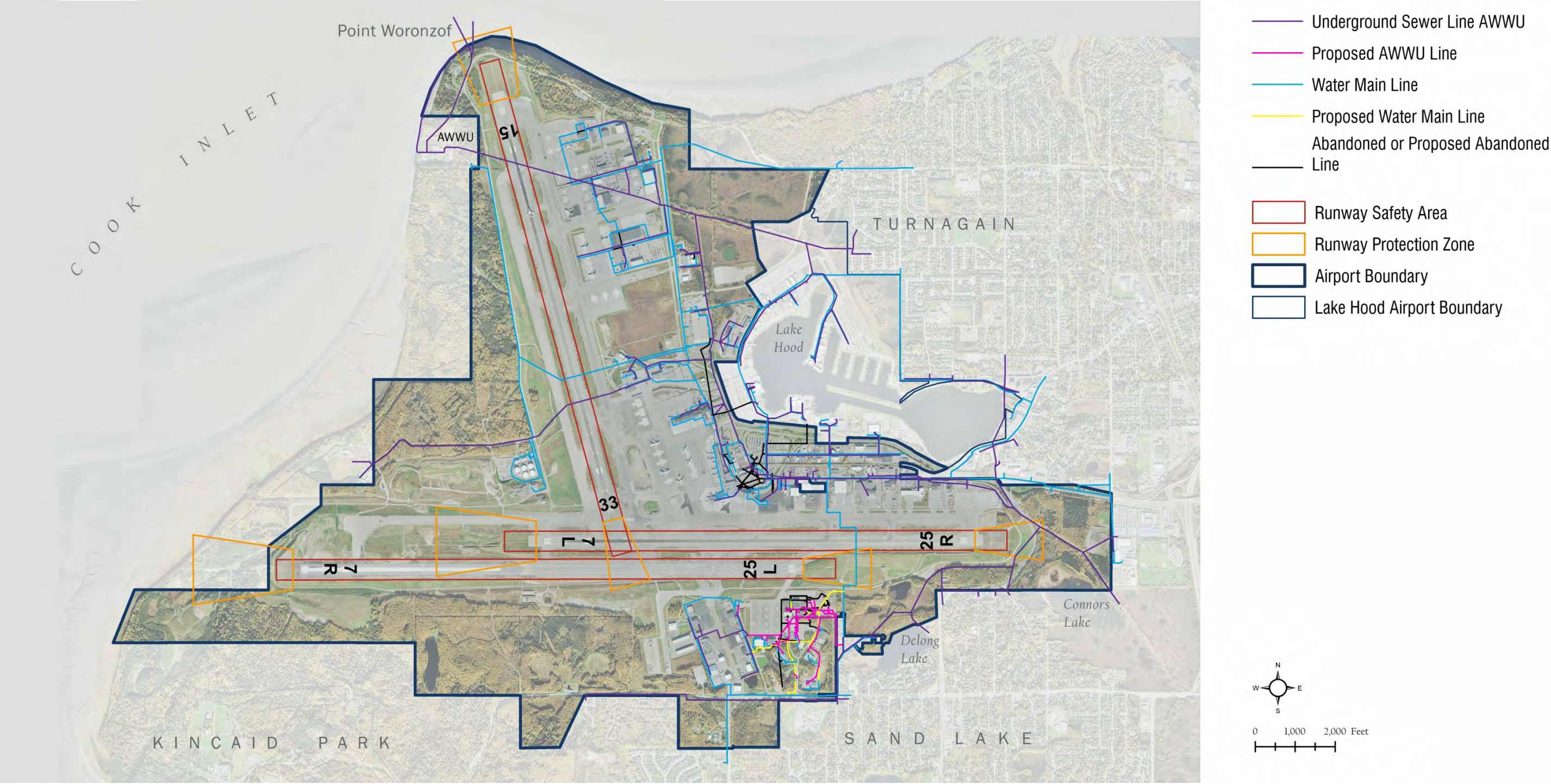
In the future, should the South Airpark expand westward, sewer lines will need to be extended. Likewise, if the West Airpark is developed, water lines will need to be extended to the West Airpark from Point Woronzof Drive and Kincaid Road. Also, concerns have been raised regarding sewer and water lines under the FedEx taxiway and ramp area. Since the pavement areas under the taxiway have been reinforced to accommodate the weight of aircraft, AWWU maintenance employees find it difficult to access and costly to maintain the underground sewer and water lines. Generally, there are concerns that the connections between public and private water and wastewater lines have been piecemealed and should be addressed in future AWWU master plans and infrastructure realignment plans.

South of the Airport, AWWU owns the Kincaid Reservoir. Constructed in 1993, this reservoir provides water storage and is important for Airport firefighting functions.

The existing water and sewer line systems are shown on **Figure 2.55**. The 2005 AWWU *Anchorage Water Master Plan* and the 2006 AWWU *Anchorage Wastewater Master Plan* provide greater detail about the AWWU wastewater treatment facility.

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Figure 2.55 Water and Sanitary
Sewer Systems



Source: RS&H and HDR, 2014.
Note: AWWU = Alaska Water and Wastewater Utility

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Solid Waste and Recycling Services

Solid waste and recycling services are provided by Alaska Waste and the MOA Solid Waste Services.

Telecommunication Services

Telephone service is provided by Alaska Communications Systems. Alaska Communications Systems leases a 0.04 acre site immediately south of the NOAA facility along Sand Lake Road. The facilities at this location consist only of equipment shelters (Figure 2.56). Within the West Anchorage Planning Area, service is widely available except near Kincaid Park. Cellular tower heights are regulated by the Anchorage Municipal Code (AMC) 21.45.265.

Figure 2.56
Alaska Communications Equipment Shelters



Source: DOWL HKM, 2014.

7.13 WILDLIFE HAZARD MANAGEMENT

In 2009, the Airport completed a full Wildlife Hazard Assessment (WHA). The WHA analyzed wildlife hazards over the past 13 years and evaluated seasonal wildlife control efforts and formalized wildlife surveys during 2007 and 2008. The WHA provided recommendations for habitat modification. A revised Wildlife Hazard Management Plan (WHMP), completed in January 2013, recognizes the ongoing cooperative relationship with the U.S. Department of Agriculture-Wildlife Services (USDA-WS) program to provide daily wildlife hazard mitigation services.

Since 1996, the Airport has contracted with the USDA-WS program for Wildlife Hazard Management. During this time, USDA-WS employed many techniques, primarily nonlethal, to reduce the threat posed by wildlife to aircraft and human health and safety. These techniques include:

- Habitat modification / management
- Exclusionary devices
- Repulsion techniques
- Removal techniques

USDA-WS patrols the Airport property continuously during the summer field season (April through October), and 40 hours per week during the winter season. Wildlife Specialists patrol the airfield, continually vigilant against aircraft-wildlife conflicts. Between November and March, when USDA-WS is not present 24 hours a day, the Airport Wildlife Coordinator (Operations Manager) performs airfield wildlife patrols.

The Airport maintains several permits necessary to comply with federal and state laws governing wildlife control actions. The USFWS Anchorage Field Office issues a federal depredation permit under the Migratory Bird Treaty Act (50 CFR, Part 21.41), which is required for the destruction of birds at Alaskan airports. As required by the Bald and Golden Eagle Protection Act (50 CFR, Part 22.23), the Airport currently has a valid Eagle Depredation Permit that allows non-lethal harassment of eagles. Lastly, Alaska State Regulations (AS 16.05.920, AAC 92.033, and AAC 93.020) require a permit for the taking of game species at the Airport that is necessary for wildlife control operations. The Airport currently has a Public Safety Permit from ADF&G for this purpose.

7.13.1 HABITAT MODIFICATION / MANAGEMENT

Habitat modification is the alteration of habitat features (e.g., food, water, and cover) that support and attract wildlife. The removal and / or reduction of food sources are important actions taken to reduce attractants for hazardous wildlife. The Airport is constantly working to remove attractive habitat and replace it with an aesthetically pleasant

environment that is naturally unappealing to hazardous wildlife. Examples at the Airport include the removal of low-lying areas that occasionally collect standing water, maintaining grass heights at the recommended 6 to 10 inches, removing shrubs and woodlands, seeding new construction areas with non-attractive vegetation, and modifying the consistency of existing grass stands.

7.13.2 EXCLUSIONARY DEVICES

Exclusionary devices are implements that exclude wildlife from an area, often consisting of physical barriers. Examples of exclusionary devices include the continuous 8-foot security fence that surrounds the AOA, and grating over culverts, which limits access to wildlife. Other permanent devices that are effective include grid wires, floating plastic balls, and floating covers.

Several areas of bog habitat on Airport property have fences installed with one-way moose gates to direct moose into enclosures that prevent them from being a hazard to aircraft. Smaller mammals regularly gain access into the Airport by climbing over the fence, through small openings under the fence, and at gates. Sections of the fence that need to be replaced or repaired in the future may include consideration of addition of a buried skirt to prevent wildlife intrusion.

7.13.3 REPULSION TECHNIQUES

Repulsion techniques are those that scare away wildlife. Such techniques include visual, physical, and vehicle harassment; Mylar tape and balloons (effigies); acoustic (e.g., pyrotechnics, sirens, propane cannons, distress and alarm calls); and alternative techniques (e.g., lasers, paintball guns). USDA-WS recently started using highly trained dogs to search out and harass bird nest sites. Wildlife harassment is the most active and direct component of the WHMP at the Airport.

Postmark Bog is actively hazed throughout the open water season to disperse the larger-bodied birds such as geese, ducks, and cranes. Moose are also hazed from Postmark Bog area and portions of Turnagain Bog near Lake Hood.

7.13.4 REMOVAL TECHNIQUES

Removal techniques used by the Airport include both non-lethal and lethal methods. Most of the non-lethal techniques employed remove the offending individual(s) or prevent nesting or habituation. Non-lethal techniques primarily consist of live capture and relocation. Lethal techniques include firearm use, nest / egg destruction or removal, falconry, and lethal trapping. The Airport uses lethal techniques as a last resort and only as reinforcement for other non-lethal harassment techniques, or in emergency situations.

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SECTION 8

FINANCIAL OVERVIEW

This section provides an overview of the financial management practices of Ted Stevens Anchorage International Airport (Airport). The following sections present the Airport's financial history and the management structure under which it operates. In addition, this section describes the Capital Improvement Plan (CIP) funding process.

8.1 AIRPORT OWNERSHIP AND OPERATION

The Airport and Fairbanks International Airport are owned by the State of Alaska and are together operated by the State of Alaska Department of Transportation and Public Facilities as an enterprise fund. The Alaska International Airport System (AIAS) was established by Chapter 88 of the Session Laws of Alaska in 1961.

The AIAS is currently the State's largest enterprise fund and prepares its financial statements in accordance with generally accepted accounting principles applicable to State and local government entities. Because the accounting and financial reporting treatment applied to a fund is determined by its measurement focus, AIAS accounts are reported using the flow of economic resources measurement focus, which distinguishes operating activities from non-operating items.

AIAS produces independently audited stand-alone financial statements each year to meet several requirements, including its obligations to bondholders through its debt covenants and in conformance with its AIAS Passenger Terminal Lease and Operating Agreement obligations to its signatory airline customers.

AIAS financial statements are also included in the proprietary fund section of the State's comprehensive annual financial report, and its accounts are also subject to annual single audit in conformity with the Single Audit Act of 1984 and the U.S. Office of Management and Budget's Circular A-133 requirements.

In addition to the State oversight, AIAS also operates under the regulations of the Federal Aviation Administration (FAA). Key provisions of the FAA's financial regulations include the requirements that AIAS be as economically self-sustaining as possible, enterprise fund revenues must not be transferred outside the AIAS, and Airport Improvement Program (AIP) and Passenger Facility Charges (PFC) funds are limited to eligible projects only.

8.2 ALASKA INTERNATIONAL AIRPORTS SYSTEM FINANCIAL STRUCTURE

As a sponsor that accepts FAA grants or receives federal property for Airport purposes, the AIAS must conform with the financial management and operating regulations of the FAA Airport Compliance Program. *FAA Order 5190.6B, FAA Airport Compliance Manual*, details these rules and regulations. In addition, the Airport complies with State of Alaska regulations and prepares its financial statements in accordance with accounting principles generally accepted in the United States of America.

The AIAS is managed as a financially self-sustaining unit with revenues equal to or exceeding expenses over the long term. Within the parameters of its regulations and its approved State operating and capital budgets, the AIAS has the authority to set rental rates and charges for its tenants and users, as well as to control its own expenses. AIAS rates and fees are influenced by its debt service coverage ratio covenant, which by law must be met each year (1.25 times annual debt service). Additionally, the AIAS is authorized under its budgets to enter long-term contracts and through its statutes to borrow funds to finance capital projects.

Outside of FAA-administered programs that provide significant capital project support (i.e., AIP and PFC) and occasional Transportation Security Administration (TSA)-funded security projects, AIAS does not receive support from federal, State, or local tax revenues. It generally operates in a self-sufficient manner, producing sufficient revenues to cover operating and portions of its capital expenses. The FAA restricts the use of airport revenues to AIAS purposes only. Therefore, the AIAS may not use such funds for non-airport purposes as defined by the FAA.

In addition, the FAA also requires that AIAS aeronautical rates and charges be “reasonable.” This reasonableness test generally requires that the rates and charges be based on a methodology that is reasonably reflective of the Airport’s operating cost and that there is not an excessive accumulation of excess revenues over expenses or the Airport’s airline customers agree to the imposition of such rates and charges.

FAA rules permit airports owned by the same entity to combine financially into one accounting unit. The Airport and Fairbanks International Airport operate as a combined enterprise fund financially, and as somewhat an integral operating unit with respect to matters involving system planning, service levels, rates and fees, and airline diversion support. This means that neither airport has to be financially self-sufficient by itself. Consequently, the combined two-airport organization has a goal of self-sufficiency, and can interact with respect to revenues and expense budgeting and capital funding requirements.

8.3 HISTORICAL OPERATING REVENUE AND EXPENSES

This section presents the operating revenues and expenses of the AIAS over the past five years. Additionally, the historical cash flow (or, as defined in the Annual Audit report, “Changes in Net Assets”) is discussed.

The AIAS Fiscal Year (FY) runs from the calendar days of July 1 through June 30. For the past five fiscal years, annual operating revenue was close to, or exceeded, \$100 million.

The following detail the largest sources of operating revenue based on FY 2012 operating results.

- **Landing Fees** - The AIAS derives the single largest source of operating revenue from the collection of landing fees. These fees are paid by airlines to use the airfield, based upon the maximum weight of the aircraft. This results in heavier aircraft paying more than lighter aircraft
- **Fuel Flowage Fees** - The second largest source of revenue is the fuel flowage fee, derived from an amount added to each gallon of fuel pumped into an aircraft. As the Airport is a frequent trans-Pacific refueling location for large aircraft, the Airport has higher fuel flowage than other facilities.
- **Terminal Rents** - The third largest source of revenue comes from rent paid by airlines and other tenants who lease passenger terminal space or Airport land.
- **Concessions** - The Airport charges concessionaires such as food/beverage, news/gifts, and duty free businesses, a percentage of their total receipts. These charges represent the fourth largest source of Airport revenue.
- **Vehicle Parking** - Fees charged for using the automobile parking lots represent the fifth largest revenue source.
- **Aircraft Parking** - Aircraft parking fees are charged to air carriers who park aircraft on airfield aprons.
- **Other** - Miscellaneous charges and various fees and rents represent “other” Airport revenue.

Table 2.26 presents the five most recent years of operating revenues by source.

From 2008-2012, the AIAS operating expenses ranged between \$64.4 million and \$79.8 million. Management identifies and categorizes expenses for the AIAS based upon operational functions. Although not shown separately, personnel expenses such as salaries, wages, and employee benefits, constitute the majority of operating costs. Other operating costs such as supplies, materials, insurance, and contractor costs represent a smaller component of operating costs.

Table 2.26
Historical Operating Revenue (in \$)

Revenue Source	2012	2011	2010	2009	2008
Landing Fees	43,073,897	38,966,877	41,936,788	39,122,668	51,262,548
Fuel Flowage Fees	19,857,728	22,985,123	21,863,358	17,779,182	24,391,850
Terminal Rents	18,570,598	18,922,841	18,580,308	17,123,970	18,586,099
Concessions	10,660,512	10,631,459	9,339,919	8,922,677	10,109,152
Vehicle Parking	7,432,421	7,362,187	6,934,861	6,357,137	6,185,166
Aircraft Parking	3,133,832	3,642,723	3,203,139	3,306,406	4,252,871
Other	4,035,189	4,092,765	3,582,787	2,631,085	4,086,035
Total	106,764,177	106,603,975	105,441,160	95,243,125	118,873,721

Source: State of Alaska, n.d.

Table 2.27 shows the last five years of operating expenses by functional category.

Table 2.27
Historical Operating Expenses (in \$)

Expense Category	2012	2011	2010	2009	2008
Facilities	25,703,447	23,109,247	21,509,192	23,027,380	21,863,421
Maintenance	20,708,468	17,064,285	14,077,162	16,265,043	16,778,637
Safety	13,016,910	12,739,865	11,267,271	12,271,145	10,854,112
Administration	11,720,821	10,679,622	9,312,326	10,794,152	11,467,957
Operations	3,825,170	4,176,313	3,736,341	3,871,001	4,595,819
Environmental	1,093,216	1,030,216	965,728	1,325,577	2,344,715
Other	3,702,175	3,403,899	3,499,856	4,609,736	4,148,585
Total	79,770,207	72,203,447	64,367,876	72,164,034	72,053,246

Source: State of Alaska, n.d.

Comparing Operating Revenue against Operating Expense demonstrates the AIAS generated positive cash result over the past five fiscal years. Accounting for Depreciation (a non-cash expense), Non-operating Expenses and Revenues, Capital Contributions in the form of FAA grants, Transfers In from Other Funds, and one-time Gain on Conversion describes the historical record of Change in Net Assets. As a note, the collection of Passenger Facility Charges (PFC), a fee charged on each enplaned commercial passenger at the Airport, derives additional receipts. PFCs serve the purpose of funding pre-approved capital projects. Table 2.28 presents the last five years' Changes in Net Assets.

Table 2.28
Changes in Net Assets (in \$)

Category	2012	2011	2010	2009	2008
Operating Revenue	106,764,177	106,603,975	105,441,160	95,243,125	118,873,721
Operating Expense	79,770,207	72,203,447	64,367,876	72,164,034	72,053,246
Operating Income	26,993,970	34,400,528	41,073,284	23,079,091	46,820,475
Depreciation	(59,476,206)	(58,894,138)	(47,368,342)	(44,094,128)	(39,471,395)
Non-operating Revenue	4,603,556	7,112,961	9,504,650	11,599,298	14,638,483
Non-operating Expense	(30,561,550)	(24,245,958)	(29,588,818)	(27,037,080)	(20,793,814)
Capital Contribution	88,964,528	34,514,986	65,182,629	56,480,811	58,346,672
Transfers In	3,368,241	2,242,588	1,381,401	3,333,927	3,221,069
Gain on Conversion	0	0	0	3,828,213	0
Change in Net Assets	33,892,539	(4,869,033)	40,184,804	27,190,132	62,761,490

Source: State of Alaska, n.d.

8.4 SOURCES OF OPERATING REVENUE

FAA policy requires that airports be as financially self-sufficient as possible. The AIAS maintains financial self-sufficiency by adjusting its user rates and charges to cover all costs of operating and developing the airports.

The primary source of revenue comes from passenger and all-cargo airlines that use the facilities of the AIAS. Rates and charges are adjusted as necessary to match the level of aviation traffic and anticipated AIAS costs. Table 2.29 shows examples of the various user charges effective July 1, 2012. These charges are subject to change at any time. Additionally, various charges may also apply.

Table 2.29
Sample AIAS Rates and Charge Amounts

Type of Charge	Unit of Measurement	Amount
Terminal Lease Rate	Per square foot per year	\$61.50
Aircraft Landing Fee	Per 1,000 pounds of aircraft weight	\$1.58
Fuel Flowage Fee	Per gallon pumped	\$0.027
Aircraft Ramp Fee	Per square foot per year	\$0.99
Federal Inspection Fee	Per passenger	\$4.04
Aircraft Parking Fee	Per narrow body aircraft (4 hours)	\$77.26
Common Use Space Fee	Per enplaned passenger	\$1.88
Passenger Loading Bridge	Per narrow body aircraft (turn)	\$404.74

Source: Alaska International Airport System (AIAS), Effective July 1, 2012.

8.5 AIRLINE LEASE AND USE AGREEMENT (AIRLINE OPERATING AGREEMENT)

Airports typically sign contracts with their major users (the scheduled airlines) to formalize the business relationships needed to operate an airport and fund capital improvements. The AIAS currently has 10-year leases with its major passenger and cargo airlines that are effective through June 30, 2023. The current agreements are considered “residual agreements,” which means any deficit in funding the Airports will be made-up by the airlines.

The AIAS is able to operate without airline operating agreements because it has the right to set user fees and charges. However, having airline operating agreements is considered good business practice.

The airline rates and charges presented in the previous section are usually determined and changed based upon the methodology identified in the airline operating agreement.

8.6 SOURCES OF CAPITAL FUNDS

A variety of sources are available for airports to fund capital projects. The section below identifies and briefly describes the principal sources of capital funds.

- **FAA Entitlement Grants** – An important source of capital improvement project funding for airports are FAA entitlement grants. The federal government taxes aviation users at the national level on tickets and fuel, as well as other items. This money is returned to airports in the form of federal grants. The amount each airport receives in entitlement grants is based upon the number of passenger boardings and total landed weight of cargo aircraft. A brief summary of historical entitlement grant amounts is presented in Table 2.30. The grant funds can only be used on improvements that are eligible and approved by the FAA. FAA grants seldom fund the entire project cost and, therefore, local AIAS funds must contribute a portion of the cost.

Table 2.30
Annual Airport Improvement Program Entitlement Grant Fund (in Millions)

Fiscal Year	Cargo Entitlement Funds	Enplaned Passenger Entitlement Funds
2009	\$15.4	\$3.5
2010	\$14.9	\$3.6
2011	\$14.5	\$3.4
2012	\$16.1	\$3.1
2013	\$14.8	\$3.3
2014	\$13.9	\$3.2

Source: Alaska International Airport System data, n.d.

- **FAA Discretionary Grants** – Additional grant funds may be available for specific projects determined by the FAA to be high-priority. Typically, the FAA offers discretionary grants for major airfield (runway and taxiway) projects. The AIAS receives FAA Airport Improvement Program discretionary grants in most years.
- **FAA Specialty Discretionary Grants** – Certain other types of FAA discretionary grants are occasionally available, such as those that fund unique noise mitigation and air pollution reduction initiatives. The Airport has received approximately \$3.0 million in discretionary noise mitigation grants per year for the last 10 years.
- **Other Federal Grants** – Other types of federal grants (e.g., highway, environmental, economic stimulus, TSA security, etc.) for airports are occasionally available but are rare. For example, during the recent recession, numerous job-creation economic-stimulus grants were awarded to airports nationwide.
- **State or Economic Development Grants** – Individual states occasionally fund specific airport projects. States typically award such grants to stimulate jobs, help depressed areas, or for other specific purposes. The applicability of these types of grants to the AIAS varies according to unique circumstances of each potential project.
- **Passenger Facility Charges** – The FAA permits airports to charge up to \$4.50 per enplaned passenger to fund specific, pre-approved capital projects. The currently approved FAA applications authorize the AIAS to collect a PFC (\$3.00 per enplanement at the Airport and \$4.50 per enplanement at Fairbanks International Airport), from which AIAS obtains approximately \$4.3 million at the Airport and \$1.2 million at Fairbanks International Airport annually. The AIAS applies its annual Airport PFC collections to offset existing debt service associated with previous Airport terminal improvement projects and currently plans to use at least the current level of receipts through approximately 2026. If the level of annual PFC revenue receipts were to increase substantially due to increased FAA collection rates or significant growth in passenger enplanements, AIAS will review use of the increased amounts as they occur.
- **Customer Facility Charges** – A private developer constructed a consolidated rental car facility on Airport property, which opened in 2007. The Alaska Industrial Development and export Authority issued conduit financing bonds to fund the construction of the facility, and customer facility charges (CFCs) are imposed on rental car customers by the car rental agencies. The CFC collected are not Airport funds, but are deposited into funds overseen by an independent bond trustee for payment of operating and capital expenses. While the State

reviews the proposed CFC rates imposed on rental car customers, the conduit bonds sold to finance the facility are not obligations of AIAS or the State of Alaska.

- **Airport Operating Revenue** – Almost all types of grants and fees require a local match or contribution. Furthermore, projects that do not qualify for federal funding must be paid in full with Airport funds. Thus, operating revenue generated by Airport users and tenants becomes a vital funding element for virtually all capital projects.
- **Private or Tenant Funds** – Airport users and tenants often fund their own capital improvements in whole or part. Examples include airline office upgrades, concession equipment, and aircraft hangars.
- **Airport Revenue Bonds** – The AIAS also borrows funds to make capital improvements by issuing General Airport Revenue Bonds (GARBs). While borrowing is often cited as a source of capital funding, in reality, the borrowing is repaid chiefly by Airport operating revenue, PFCs, and CFCs described above.

The AIAS capital borrowing program is generally similar to the plan of capital borrowing at other major airports. The predominance of funds borrowed to date has been needed to fund large and non-recurring capital projects, primarily passenger terminal renovations. The subsequent debt service (principal and interest payments) is paid using a combination of Airport revenues, PFCs, and CFCs.

The FAA maintains a database of financial information on U.S. commercial service airports through its Compliance Activity Tracking System (CATS). This summary financial information is self-reported by the airports in predetermined categories and accessible to the public. CATS data for Calendar Year 2012 for the 36 medium hub airports and the Airport are compared in the following Table 2.31.

Table 2.31
Generalized Long Term Debt Comparison (in Millions)

	2012
Long-Term Debt (typically Bonds)	
Average for 36 Medium Hub Airports	\$361.5
Ted Stevens Anchorage International Airport	\$579.6
Annual Debt Service (principal and interest)	
Average for 36 Medium Hub Airports	\$31.7
Ted Stevens Anchorage International Airport	\$41.2

Source: Federal Aviation Administration, *Compliance Activity Tracking System (CATS)* website, <http://cats.airports.faa.gov/>, n.d.

The Airport's debt situation is reflective of its recent terminal expansion program. Given that the majority of the 36 medium hub airports in the table have not recently undertaken an extensive terminal program (which requires a sizable debt load), it is expected that Airport debt and debt service would be somewhat greater than the average. The underlying structure of AIAS debt is such that the annual debt service will rise to approximately \$51 million per year by 2018, remain relatively constant for the next 10 years, and fall significantly in 2029 (assuming that the debt is not restructured or retired early). The general conclusion relative to the Ted Stevens Anchorage International Airport Master Plan Update (Master Plan Update) is that an aggressive plan of additional borrowing prior to 2029 without significant restructuring of the existing outstanding debt would move the Airport further away from the averages exhibited by the 36 medium hub airports, would place considerable pressure on Airport operating revenues and PFCs to service the debt, and would likely result in the need to proportionately increase airline charges and other tenants and users' fees and rents.

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SECTION 9

ENVIRONMENTAL SETTING

This section documents environmental conditions at the Ted Stevens Anchorage International Airport (Airport) considered during the Airport master planning process. *Federal Aviation Administration (FAA) Advisory Circular 150/5070-6B, Airport Master Plans*, states “the principal objective of an environmental overview is to document environmental conditions that should be considered in the identification and analysis of airport development alternatives.” The aim is to develop airport alternatives with the subsequent environmental processes in mind and to consider environmental data in the evaluation of the alternatives. Any future Airport development project should consider the impacts to these environmental resources.

While this section primarily considers the baseline environmental conditions at the Airport, it also considers some environmental resources adjacent to Airport property. For instance, water quality considerations at the Airport extend to Lakes Hood and Spenard, even though these resources exist outside of the main Airport boundary but within the Lake Hood Airport. Additionally, social considerations also extend outside of the Airport boundary.

9.1 AIR QUALITY

The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for six air pollutants. The pollutants are: carbon monoxide (CO); nitrogen dioxide (NO₂); sulfur dioxide (SO₂); ozone (ground-level O₃); lead (Pb); and two sizes of particulate matter—matter with a diameter of 10 microns or less (PM-10) and matter with a diameter of 2.5 microns or less (PM-2.5). These pollutants are known as criteria pollutants because a health-based air quality standard has been established for them. Compliance with NAAQS means that these pollutants are at levels that are safe for human health, public welfare, and the environment. The Municipality of Anchorage (MOA) currently meets NAAQS for all six of the air pollutants.⁴³ Levels of PM-10 currently occasionally approach federal limits; however, the particulate matter is generally associated with road dust during winter break up in the spring and freeze-up in the fall and is not associated with Airport operations.

Airport staff consults with the MOA and Alaska Department of Environmental Conservation (ADEC) concerning CO and other air quality issues. The Airport currently operates under an “Owner Requested Limit” permit under the state’s air quality regulations (Alaska

⁴³ Municipality of Anchorage, *Air Quality Program* website, 2012.

Statute 46.14 and 18 AAC50.225). Under this permit, the Airport submits an annual report to the ADEC to document that the Airport complies with the regulations and did not have any excess emissions or deviations from its permit.

9.1.1 ATTAINMENT OF AIR QUALITY STANDARDS

States must identify geographic areas that do not meet the NAAQS for each criteria pollutant. States must develop a State Implementation Plan (SIP) for these non-attainment areas that includes a variety of emission control measures that the state deems necessary to attain the applicable standard(s) in the future. An area previously designated non-attainment pursuant to the CAA Amendments of 1990 and subsequently re-designated as attainment, is termed a maintenance area. A maintenance area must have a maintenance plan in a revision to the SIP to ensure attainment of the air quality standards.

9.1.2 EXISTING AND HISTORIC CONDITIONS

The Airport is partially located within the MOA CO maintenance area boundary (Figure 2.57). A portion of the Anchorage area was historically classified as a non-attainment area for CO, from the early 1970s to the 1990s. The last CO violation occurred in 1996. As a result, a number of efforts were made to bring Anchorage into compliance. Anchorage was re-designated as a “maintenance area,” and an USEPA-approved SIP for CO maintenance was enacted in 2004. Motor vehicles are the primary source of CO in the Anchorage area.⁴⁴ This pollution results from “cold-start” emissions coupled with inversions of air layers during cold winter temperatures that trap pollutants near the ground.

In 2002, the MOA Air Quality Program conducted a study to address concerns by West Anchorage residents about the effects of air pollutant emissions from the Airport. Volatile organic compounds (VOCs) were measured in and around the Airport and compared to measurements from other parts of the Anchorage Bowl, farther away from the Airport. Generally, VOC concentrations in the vicinity of the Airport were lower than most parts of the Municipality. The study was unable to link specific pollutants with odor complaints in the Airport area.⁴⁵

An inventory compiled for the Anchorage Bowl area for 2007 estimated that 79% of winter season CO emissions in Anchorage were from motor vehicles; only 7.8% of the CO emitted came from the Airport.⁴⁶ More recently, the MOA produced a report in October 2011 summarizing air monitoring data and trends in Anchorage. The three PM-10 monitoring sites were located at 8th Avenue and L Street, East Tudor Road, and East 16th Street. The study indicated that more than 90% of PM-10 was attributable to vehicle traffic on paved and unpaved roadways. The

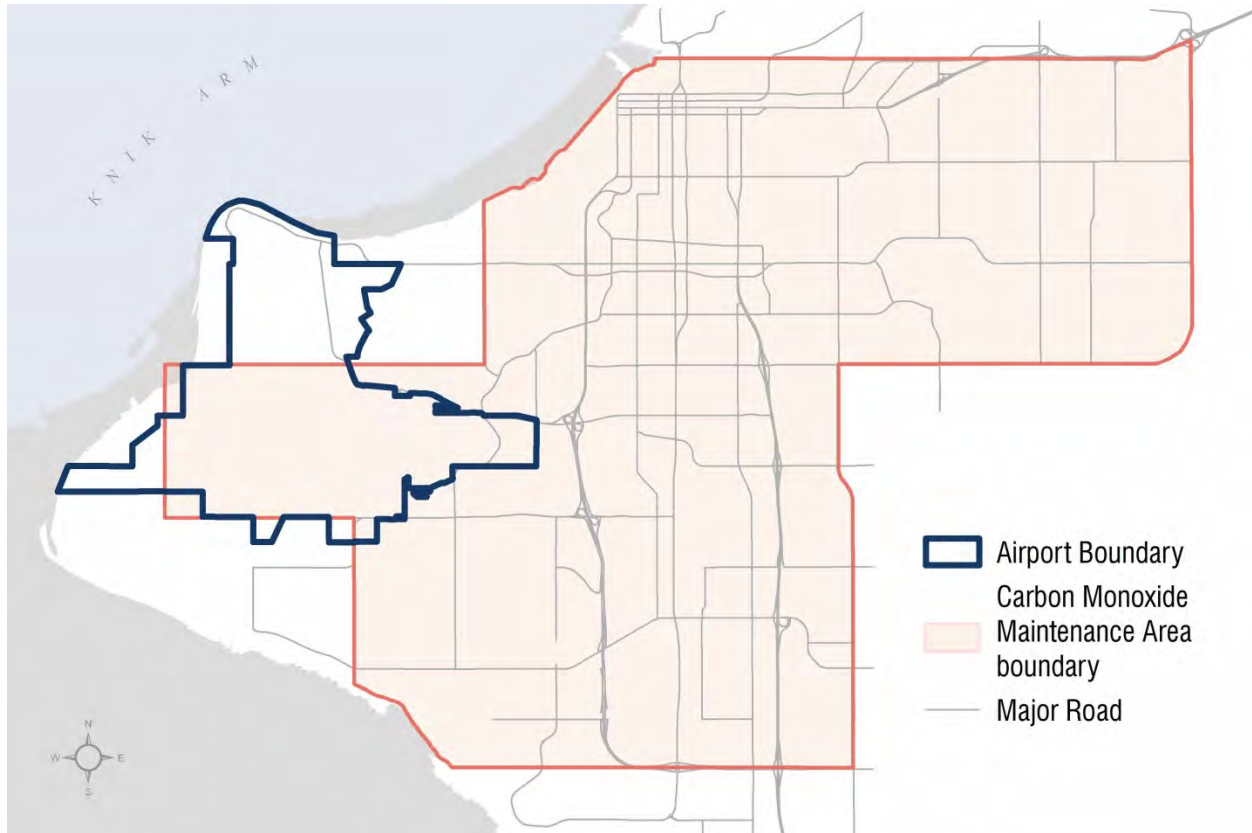
⁴⁴ Municipality of Anchorage, *Summary of Air Monitoring Data and Trends 1980-2012*, 2011.

⁴⁵ Ted Stevens Anchorage International Airport, *Air Toxics Monitoring Study*, 2003.

⁴⁶ Municipality of Anchorage, *Summary of Air Monitoring Data and Trends 1980-2012*, 2011.

combined impact of other sources, such as emissions from industrial sources, emissions from wood stoves and fireplaces, and automobile emissions, amount to less than 10% of the particulate mass. No information was available about what would be attributable to the Airport due to the lack of monitoring sites on or adjacent to the Airport.

Figure 2.57
Carbon Monoxide Maintenance Boundary in Anchorage



Source: RS&H and HDR, 2014.

9.2 BIOTIC RESOURCES

Biotic resources on or near the Airport include vegetation, hydrologic features such as lakes, bald eagle nests, some wildlife species, and the Anchorage Coastal Wildlife Refuge. Sections 9.18 and 9.19 discuss water quality and wetlands, respectively.

9.2.1 VEGETATION

Vegetation within the Airport boundary consists of both disturbed and undisturbed upland and wetland communities comprised of vegetation types commonly found in the Anchorage area. Upland communities include mixed needleleaf / deciduous forests consisting primarily of paper birch, as well as white and black spruce. These communities are commonly in the north, northeast, and western sections of Airport

property. Wetland communities on the Airport predominantly include shrub-ericaceous bogs, in addition to black spruce forests.

Lakes and Spenard are located at the Lake Hood Airport, near the eastern portion of the Airport. Aquatic vegetation in a water body used for floatplanes can be problematic for aircraft users and Airport managers. An overgrowth of vegetation and weeds can affect navigation on a lake and pose a potential safety hazard by catching on floats and water rudders. The Airport conducted aquatic vegetation studies in 2004, and an *Aquatic Vegetation Management Plan* was published in 2005 for Lakes Hood and Spenard. Currently, the Airport's management approach to controlling vegetation on Lake Hood is to continue operating a floating harvester in the open water, while individual slip owners take care of their own slip areas. The Airport conducted a supplemental aquatic vegetation study in 2011 and identified Nuttall's waterweed (*Elodea nuttallii*), an invasive species of concern, in Delong Lake, though not in Lakes Hood or Spenard.⁴⁷ There is concern that this species could easily be spread between water bodies by floatplanes in Alaska.

9.2.2 BIRDS

Resident and Migrant Birds

The mixed needleleaf / deciduous forest on portions of the Airport provides habitat for a variety of resident and migrant songbirds. Resident songbirds include black-capped chickadee (*Poecile atricapillas*), common redpoll (*Acanthis flammea*), pine siskin (*Spinus pinus*), common raven (*Corvus corax*), black-billed magpie (*Pica hudsonia*), red-breasted nuthatch (*Sitta canadensis*), Steller's jay (*Cyanocitta stelleri*), downy woodpecker (*Picoides pubescens*), and hairy woodpecker (*Picoides villosus*).

Migratory songbirds begin arriving in the Anchorage area in early May and are the most numerous bird species found in the area during the summer. Migratory songbirds found on the Airport include the ruby-crowned kinglet (*Regulus calendula*), American robin (*Turdus migratorius*), Hermit thrush (*Catharus guttatus*), orange-crowned warbler (*Vermivora celata*), yellow-rumped warbler (*Dendroica coronata*), white-crowned sparrow (*Zonotrichia leucophrys*), olive-sided flycatcher (*Contopus cooperi*), and alder flycatcher (*Empidonax alnorum*). Mew gulls (*Larus canus*) may also nest in wetland areas of the Airport.

Bald Eagles

Bald eagles (*Haliaeetus leucocephalus*) are present year-round at the Airport. Surveys conducted by the U.S. Fish and Wildlife Service

⁴⁷ Restoration Science & Engineering, LLC, *Lake Hood Aquatic Plan Survey and Control Methods*, 2011.

(USFWS) identified four bald eagle nests within the Airport area.⁴⁸ Bald eagle nest locations include: west of Point Woronzof Drive near Taxiway Y, south of Point Woronzof Drive adjacent to the east end of Taxiway Q, and west of Runway 7R. Other bald eagle nests have been located along the Tony Knowles Coastal Trail (Coastal Trail); however, these are located outside of the Airport property.

Bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA; 16 USC 668–668c) and the Migratory Bird Treaty Act. BGEPA protects bald eagles by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds. USFWS generally recommends no clearing of vegetation within 330 feet of any nest. No activity should occur within 660 feet of any nests between March 1 and June 1. Between June 1 and August 31, no activity should occur within 660 feet of active eagle nests until after juvenile birds have fledged, unless specifically authorized by USFWS.⁴⁹

Some activities and projects are eligible for federal permits under the BGEPA. The regulation set forth in 50 CFR § 22.26 allows permits to be issued to “take” bald and golden eagles where the taking is associated with, but not the purpose of, the activity and cannot practicably be avoided. Most takings authorized under this section are in the form of disturbance; however, permits may authorize non-purposeful takings that result in mortality (50 CFR § 22.26).

Birds of Conservation Concern

While no federally listed threatened, endangered, candidate, or proposed bird species occur at the Airport,^{50,51} various agencies and nonprofit groups have identified several species on or near the Airport as “birds of conservation concern.” Table 2.32 lists species of conservation concern that occur on the Airport. The list includes *USFWS Birds of Conservation Concern*, *Alaska Department of Fish & Game (ADF&G) Featured Species*, and *Alaska Audubon’s Watch List*.

The USFWS developed Birds of Conservation Concern, provides a list of migratory and non-migratory bird species that represent the highest conservation priorities.⁵² The Audubon Alaska Watch List identifies Alaska birds that are vulnerable or declining, and therefore warrant special conservation attention.⁵³

⁴⁸ Department of Transportation and Public Facilities, 2009.

⁴⁹ U.S. Department of Interior, Fish and Wildlife Service, National Bald Eagle Management Guidelines, n.d.

⁵⁰ U.S. Department of Interior, Fish and Wildlife Service, Alaska Region, *Endangered Species* website, <http://www.fws.gov/alaska/fisheries/endangered/>, 2009.

⁵¹ Alaska Department of Fish and Game, *Our Wealth Maintained: A Strategy for Conserving Alaska’s Diverse Wildlife and Fish Resources*, 2006.

⁵² U.S. Fish and Wildlife Service, *Birds of Conservation Concern*, 2008.

⁵³ Kirchhoff, M. and V. Padula, *The Audubon Alaska Watch List*, 2010.

Table 2.32
Special Status Bird Species that May Be Present On or Near the Airport

Common Name	Scientific Name	Conservation Status ¹
Bald eagle	<i>Haliaeetus leucocephalus</i>	FS
Bank swallow	<i>Riparia riparia</i>	FS
Belted kingfisher	<i>Megasceryle alcyon</i>	FS
Boreal owl	<i>Aegolius funereus</i>	FS
Boreal chickadee	<i>Poecile hudsonicus</i>	FS
Brown creeper	<i>Certhia americana</i>	FS
Common loon	<i>Gavia immer</i>	FS
Dark-eyed junco	<i>Junco hyemalis</i>	FS
Great-horned owl	<i>Bubo virginianus</i>	FS
Hairy woodpecker	<i>Picoides villosus</i>	FS
Hermit thrush	<i>Catharus guttatus</i>	FS
Horned grebe	<i>Podiceps auritus</i>	BCC, FS,
Lesser yellowlegs	<i>Tringa flavipes</i>	BCC, FS, WL
Merlin	<i>Falco columbarius</i>	FS
Northern goshawk	<i>Accipiter gentilis</i>	FS
Northern hawk owl	<i>Surnia ulula</i>	FS
Olive-sided flycatcher	<i>Contopus cooperi</i>	BCC, FS, WL
Pacific loon	<i>Gavia pacifica</i>	FS
Pine grosbeak	<i>Pinicola enucleator</i>	FS
Pine siskin	<i>Spinus pinus</i>	FS
Red-breasted nuthatch	<i>Sitta canadensis</i>	FS
Red-necked grebe	<i>Podiceps grisegena</i>	FS,
Rusty blackbird	<i>Euphagus carolinus</i>	WL, BCC, FS
Solitary sandpiper	<i>Tringa solitaria</i>	BCC, FS, WL
Varied thrush	<i>Ixoreus naevius</i>	WL, FS
Violet-green swallow	<i>Tachycineta thalassina</i>	FS
White-winged crossbill	<i>Loxia leucoptera</i>	FS
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	FS
Wilson's warbler	<i>Wilsonia pusilla</i>	FS

Notes:

1 - Conservation Status:

FS = Featured Species (Alaska Department of Fish and Game, *Our Wealth Maintained: A Strategy for Conserving Alaska's Diverse Wildlife and Fish Resources*, 2006), BCC = Birds of Conservation Concern (U.S. Fish and Wildlife Service, *Birds of Conservation Concern*, 2008), WL = Watch List Species (Kirchhoff, M. and V. Padula, *The Audubon Alaska Watch List*, 2010).

The State of Alaska no longer maintains a list of Species of Special Concern. It uses its Comprehensive Wildlife Conservation Strategy (sometimes referenced as its Wildlife Action Plan) to assess the conservation needs of particular species.⁵⁴ The plan also specifically identifies featured species.

The ADF&G developed its featured species list based on a set of 11 criteria that includes: declines in abundance or productivity; deformity, disease, or other mortality; rarity; at-risk species; endemics; seasonal use of restricted local range; sensitivity to environmental disturbance; status of species is unknown; species is representative of a broad array of other species in a particular habitat; and international importance.⁵⁵

9.2.3 FISH

The Alaska blackfish (*Dallia pectoralis*), and the three-spine stickleback (*Gasterosteus aculeatus*) are species of interest in the area, but a fish survey conducted by ADF&G in 2011 found neither fish residing in Lakes Hood or Spenard at the time of the survey.⁵⁶ Alaska blackfish likely reside in Little Campbell Lake, Meadow Lake, and Delong Lake. These lakes are located along the southern portion of the Airport boundary. ADF&G stocks Little Campbell Lake with coho salmon (*Oncorhynchus kisutch*) and rainbow trout (*Oncorhynchus mykiss*).⁵⁷ According to the ADF&G online Lake Stocking Database, Delong and Little Campbell lakes are also stocked with arctic char, Chinook salmon, rainbow trout, and salmonid species. Northern pike, an invasive species, resides in Delong Lake.

9.2.4 WILDLIFE

Some of the areas within the Airport boundary provide habitat for small mammals such as red squirrel (*Tamiasciurus hudsonicus*), coyotes (*Canis latrans incolatus*), snowshoe hare (*Lepus americanus*), ermine (*Mustela spp.*), shrews (*Sorex spp.*), and a variety of other small rodents. Small numbers of black bear (*Ursus americanus*) and red fox (*Vulpes vulpes*) reside in forested areas adjacent to the Airport. In association with a wide variety of forest, shrub (willow), and wetland habitat, moose (*Alces alces*) are common year-round near the Airport. Due to a high number of incidents involving wildlife and the significant wildlife population in the vicinity of the Airport, the FAA adopted and approved a wildlife hazard management plan (WHMP) in 1997.

⁵⁴ Alaska Department of Fish and Game, *Special Status Species* website, <http://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.main>, 2013.

⁵⁵ Alaska Department of Fish and Game, *Our Wealth Maintained: A Strategy for Conserving Alaska's Diverse Wildlife and Fish Resources*, 2006.

⁵⁶ Ted Stevens Anchorage International Airport, *Airtimes*, Winter Newsletter, 2012.

⁵⁷ Alaska Department of Fish and Game, *Online Lake Stocking Database* website, <http://www.adfg.alaska.gov/index.cfm?adfg=fishingSportStockingHatcheries.lakesdatabase>, 2013.

9.2.5 ANCHORAGE COASTAL WILDLIFE REFUGE

The Anchorage Coastal Wildlife Refuge, managed by ADF&G, is located just beyond the western and southwestern border of the Airport, occupying the tidal mud flat area below the bluff. The refuge encompasses approximately 32,000 acres and extends 16 miles from Point Woronzof southeast to Potter Creek and includes Potter Marsh. The Refuge includes extensive wetlands which support a diversity of bird species. U.S. Department of Agriculture-Wildlife Services (USDA-WS) does not conduct hazing on the Anchorage Coastal Wildlife Refuge. Although the Anchorage Coastal Wildlife Refuge attracts birds, it is not considered in conflict with Airport operations.

9.3 COASTAL BARRIERS

The Federal Coastal Barriers Resources Act of 1982, as amended, addresses undeveloped coastal barriers along the coasts of the Atlantic Ocean and the Gulf of Mexico. As defined by the Act, there are no coastal barriers in Alaska; therefore, the Act does not apply to the Airport.

9.4 COASTAL ZONE MANAGEMENT

9.4.1 ALASKA COASTAL ZONE MANAGEMENT

The Federal Coastal Zone Management Act (CZMA) of 1972 authorizes each state to review federal activities and federally permitted activities within or affecting the coastal zone. Between 1979 and 2011, coastal districts in Alaska operated under the Alaska Coastal Management Program. However, the program and its authorities expired under a sunset clause on June 30, 2011. As of July 1, 2011, the related regulations and the local coastal management plans are without statutory authority and therefore unenforceable.

In early 2012, the State House introduced a bill to re-establish a coastal management program in Alaska, but the measure failed. Subsequently, voters also rejected the measure in a ballot vote in August 2012. It is possible, but not likely in the near future, that some type of state coastal zone management program / plan may be re-instituted.

9.4.2 ANCHORAGE COASTAL ZONE MANAGEMENT PLAN

The MOA prepared an Anchorage Coastal Management Plan (ACMP) in 1979, and updated it in 2007. The MOA cannot effectively implement the ACMP without the state's coastal management program to monitor the implementation of local district plans. Without the state's coastal management program in effect, the policies listed in the ACMP are moot. While the ACMP is no longer enforceable, the plan did list the bluffs along Point Woronzof as an item of importance that should be preserved. It is important to note that the *Anchorage Wetlands Management Plan* still covers freshwater wetlands.

9.4.3 COASTAL EROSION

Coastal erosion is a serious problem facing Alaska. Near the Airport, coastal erosion has been a long-time problem, particularly at Point Woronzof. The ongoing erosion of Point Woronzof is a serious concern because of the potential impact to the runway safety area (RSA) of Runway 33, the primary departure runway. A reduction in runway length due to resolving the RSA may impact the Airport's ability to accommodate the Asia-North America air cargo traffic.

The University of Alaska Anchorage prepared a study in 2008 that assessed the coastal erosion at Point Woronzof. The study indicated a variety of possible causes for the erosion and suggested a possible solution of a revetment at the base of the cliff to help stabilize the slope and halt the erosion.

In late 2012, the Airport requested assistance from the U.S. Army Corps of Engineers under Section 103 of the 1962 River and Harbor Act, as amended, to help reduce the threat of erosion and storm damage at Point Woronzof.

The MOA and community members are also concerned with the coastal erosion at Point Woronzof because it threatens two other community assets: the Coastal Trail and Point Woronzof Drive. The Coastal Trail is adjacent to the bluff, and Point Woronzof Drive is between the bluff and the runway. In the 1990s, a section of the Coastal Trail was relocated due to erosion. Point Woronzof Drive is the only roadway access the MOA has to the Salvation Army Clitheroe Center, a Chugach Electric Association substation, the Asplund Wastewater Treatment Facility, and other developable land west of the Airport.

9.5 COMPATIBLE LAND USE

9.5.1 OVERVIEW

Incompatible land use is one of the largest threats to airports today, causing conflict between airports and their adjacent communities. Development adjacent to airports often encroaches upon them and limits their service capabilities. When incompatible land uses encroach upon airports, FAA requirements for airspace and land use protection become key concerns. If airports fail to meet FAA and state requirements, they can lose access to significant grant-in-aid funds, impacting local economies and airport services.

FAA has specific definitions, regulations, and assurances to enforce airspace protection; aircraft safety; and airport design, management, and operations. Moreover, federal grant assurances require airport sponsors to comply with specific airport performance measures. Airport sponsors accept these assurances as a condition of receiving federal funds. The Airport has received FAA funds and is, therefore, subject to all FAA grant assurances.

9.5.2 AIRPORT ENVIRONS, LAND USES AND ZONING REGULATIONS

Land use in the MOA is guided by the *Anchorage 2020: Anchorage Bowl Comprehensive Plan* (Anchorage 2020), adopted in 2001. The plan contains policies and strategies for shaping development through the year 2020.

On July 10, 2012, the MOA Assembly adopted the *West Anchorage District Plan* (WADP), which is considered a “step-down” plan to *Anchorage 2020* for the area in West Anchorage. The intent of the WADP is to “bridge the vision and goals set forth in *Anchorage 2020*.” Chapter 4.3 and Appendix A of the WADP specifically address the Airport. The plan recognizes the important economic and transportation contributions the Airport provides to the community and state.

The Airport was an active participant during the process of developing the WADP. Airport management participated in several planning group special sessions that focused on community concerns and discussions regarding land parcels adjacent to the Airport. The WADP discusses in-depth the land use compatibility issues in West Anchorage where residential neighborhoods and the Coastal Trail adjoin the Airport boundary. The WADP states, “[t]he community wants land within the Airport designated for buffers while the Airport maintains that it should not be penalized because the MOA allowed incompatible uses to develop there”.⁵⁸ Chapter 5 of the WADP suggests a number of implementation actions related to the Airport.

In 2007, the MOA Planning and Zoning Commission approved the draft Anchorage Bowl Land Use Plan Map. As of 2012, a finalized version has not yet been approved. Conceptual approval means that public officials and community members will continue to have an opportunity to review, discuss, and revise the draft Land Use Plan Map before it is adopted as an amendment to *Anchorage 2020*.

The *Anchorage 2020* Concept Land Use Plan Map designates the Airport as a “major transportation facility,” meaning that it is essential to Anchorage’s economy.⁵⁹ The Concept Land Use Plan Map also designates some areas on the Airport property as special study areas due to conflicting ideas on land use designation between the Airport, the MOA, and adjacent community councils. Within the Concept Land Use Plan Map, these special study areas include the areas near Turnagain Bog and Connor’s Bog.⁶⁰

Other special study areas adjacent to the Airport property include:

- The area near Kincaid Park that contains Little Campbell Lake

⁵⁸ Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.

⁵⁹ Municipality of Anchorage, *Anchorage Bowl Land Use Plan Map Narrative*, 2006.

⁶⁰ Ibid.

- Municipal land southwest of Point Woronzof Park that includes the Coastal Trail
- Municipal land just east of the Asplund Wastewater Treatment Facility that abuts the Airport property⁶¹

Zoning is a type of land use regulation that delineates a community into districts and imposes development requirements within each area (zone). Zoning typically regulates allowable land uses, building and site requirements, and the allowable density of each use. The zoning designations indicate the MOA-intended use for the land within its jurisdiction; it does not necessarily reflect how it is currently used.

Land use surrounding the Airport, and the Anchorage Bowl in general, is governed by the implementation of MOA zoning regulations found in Title 21 of the Anchorage Municipal Code. The MOA has applied several different zones to Airport land, including: Public Lands and Institutional District (PLI), Parks and greenbelts in the PLI district (PLI-p), Light Industrial (I-1), and Transition (T). Amendments to Title 21 (known as “Title 21 Rewrite”) were adopted in December 2013. The Title 21 Rewrite established an airport district. The Airport will be excluded from the Title 21 Rewrite and temporarily remain subject to current (pre-existing) Title 21 land use regulations and zoning, until the new airport district is completed.⁶² However, since the State of Alaska, and not the municipal government, owns the Airport, the MOA does not directly operate or control the development or operational decisions made there.⁶³

9.5.3 EXISTING LAND USE

The Airport is the predominant land use in west Anchorage. Existing land use northeast of the Airport is predominantly residential mixed with some institutional use. Industrial and commercial uses, interspersed with residential areas, line the major arterials to the east (Spenard and International Airport roads). Adjacent land use to the south and southeast of the Airport is residential development and park / open space lands. Kincaid Park occupies the land southwest of the Airport. Parks / open space and the Asplund Wastewater Treatment Facility border the western boundary of the Airport.

The Airport discussed land use considerations in specific areas at and near the Airport in two recent plans:

- *Kulis Land Use Plan*⁶⁴

⁶¹ Municipality of Anchorage, *Anchorage Bowl Land Use Plan Map Narrative*, 2006.

⁶² Municipality of Anchorage staff, *Title 21 Rewrite*, 2013.

⁶³ Municipality of Anchorage and URS Corporation, *West Anchorage District Plan*, 2012.

⁶⁴ DOWL HKM, *Kulis Land Use Plan*, 2011.

- *Lake Hood and Anchorage International Airport General Aviation Master Plan*⁶⁵

The Kulis Business Park existed on the Airport property from the 1950s until February 2011, when the Air National Guard's operations relocated to Joint Base Elmendorf-Richardson (JBER). The State of Alaska received the property in October 2011 and has been preparing it for lease.

In addition, the Airport prepared a general aviation master plan for the Lake Hood Airport and the Airport in 2006. The plan suggested various near-term development projects related to aviation safety and infrastructure preservation. The near-term program included: acquiring land within the Runway 14/32 Runway Protection Zone, bank stabilization of Lakes Hood and Spenard, and creating a new pedestrian pathway around portions of the Lake Hood perimeter separate from aircraft and vehicles. Additional detail is located in the *Lake Hood Seaplane Base General Aviation Master Plan* (December 18, 2006).

9.5.4 PARKS, OPEN SPACE, AND RECREATION RESOURCES

One of Anchorage's greatest assets is its accessibility and close proximity to parks, natural open space, and recreational opportunities. The Airport recognizes the significant benefit of these resources to the community. In turn, the MOA also has recognized the significant benefit of the Airport to the community. Strategic management of Airport land will allow the Airport to coexist within a community that places tremendous value on the recreational uses near, and sometimes on, land owned by the Airport.

One of the key issues that polarize the community and the Airport is the issue of recreation uses on or near the Airport.

Several public parks and trails border the Airport: Earthquake Park to the northeast, Point Woronzof Park to the west, Connor's Lake Park (Connor's Bog) to the southeast, and Kincaid Park to the southwest. There are also numerous recreational trails nearby, including the Coastal Trail and several other trails associated with Kincaid Park. The Coastal Trail is one of the area's most popular recreational assets. It traverses from north of the Airport boundary, along the west side of the Airport, continuing south into Kincaid Park. The Coastal Trail crosses Airport property in several locations.

Several other park-like facilities and / or park uses occur within or adjacent to the Airport boundary. Generally, the Airport owns these parcels; however, the Airport grants other uses on these parcels through leases or permit agreements. Although some of the permits or leases have expired, the Airport continues to grant these uses on a monthly basis. Over the years, this has resulted in complicated land use issues.

⁶⁵ ASCG Inc. of Alaska, *Lake Hood and Anchorage International Airport General Aviation Master Plan*, 2006.

The Airport leases a number of parcels to the MOA for public use. These parcels are described thoroughly in Chapter 4.3 of the WADP. Although the parcels are not formally dedicated parks, the MOA includes some of the facilities within its park inventory (Point Woronzof Overlook and DeLong Lake Park) and has designated at least one a park (Connor's Lake Park). The parcels owned by the Airport include:

- **Little Campbell Lake Park** - This parcel consists of parking spaces and provides access to Kincaid Park.
- **Point Woronzof Overlook** - The MOA includes this parcel in its parks inventory. The area contains part of the Coastal Trail.
- **Connor's Lake Park** - The far southeast end of the Airport property abuts Connor's Lake Park (Connor's Bog). The MOA has designated this parcel as a park although it is not officially dedicated. Park-like features occur there, including access to the park area that is outside the Airport boundary, a dog park, and a sledding hill (used for snow storage).
- **DeLong Lake Park** - The DeLong Lake Park parcel is designated as a park, but the lease / permit granting its use has expired. The MOA includes it in its parks inventory.

While located within the Lake Hood Airport, there are two other parcels considered to have park-like uses. One parcel is located on the northwest corner of Lake Spenard. This parcel shares ownership between the Airport and the MOA / Heritage Land Bank (HLB). Sometimes referred to as the Lions Club Picnic Area, the Airport maintains a trail and picnic tables in this area.

The other parcel, owned exclusively by the Airport, contains the Spenard Beach Park area. The MOA has given this parcel park designation, but the lease / permit granting use has expired. The beach area contains playground equipment.

As part of its drop-down plan to the MOA's comprehensive land use planning document, the 2011 WADP considered the existing and future land uses of each of these parcels that abut Airport property. The public process for the WADP and the Airport's *Kulis Land Use Plan* both resulted in the public requesting a buffer area and continued use of many recreational areas on Airport-owned land. The Airport remains publicly committed to maintaining a contiguous Coastal Trail.⁶⁶

The primary long-range recreational planning document in the Anchorage Bowl is the 2006 *Anchorage Bowl Park, Natural Resource, and Recreation Facility Plan*. Relevant to the Airport, the plan recommends that the city acquire a permanent trail easement corridor along the Airport for the Coastal Trail.

⁶⁶ Airport staff, 2012.

9.6 PARKS AND RECREATIONAL FACILITIES

Section 4(f) of the Department of Transportation (DOT) Act of 1966 (re-codified at 49 U.S.C. 303(c)) was adopted to protect public parks and recreation lands, wildlife and waterfowl refuges, and historic sites from encroachment by public transportation facilities.

Federally funded transportation programs and projects, such as those at the Airport either using federal funds or requiring approval from a federal DOT agency, may not use Section 4(f) lands unless there is no other “prudent and feasible” alternative, or the project impacts to the protected lands are “de minimis.” Any project that uses land protected under Section 4(f) must consider all possible planning options to minimize harm to these areas. Federally funded projects that may use areas protected under Section 4(f) require an evaluation to document the effects, alternatives, and means of minimizing impacts. Use occurs when land from a Section 4(f) property is acquired, when temporary occupancy has adverse effects, or when proximity impacts of the project on the Section 4(f) property are so great that the purposes for which the Section 4(f) site exists are substantially impaired.

FAA must determine whether Section 4(f) applies to public parks and recreation lands, wildlife and waterfowl refuges, and historic sites whenever a project may impact those properties. The FAA makes that determination, in part, based on consultation with the manager of the subject property. For the Runway 7R extension project in 2009, FAA determined that the Section 4(f) resources in that project’s immediate vicinity included the following:

- **Kincaid Park** – This is one of the MOA’s major municipal parks and it adjoins the Airport to the southwest. The park includes more than 50 miles of trails used for Nordic skiing, running, mountain biking, and walking. The park also includes a motorsports area, soccer fields, biathlon shooting ranges, an archery range, viewpoints, and a major public use building. Some of the associated trails that extend outside of the park north onto Airport or HLB property (i.e., Sisson Loop trail) are also considered Section 4(f). The Sisson Loop trail is used as a groomed ski trail. Similar to other trails in Kincaid Park, pedestrians and bikers use this trail in summer.
- **Tony Knowles Coastal Trail** – This trail runs adjacent to and through the northern and western portions of the Airport property, with many portions accommodated via easements and Airport maintenance agreements. It is a municipal trail recognized as part of the National Trails System and runs along the coastal bluff from Kincaid Park south of the Airport to downtown Anchorage, a distance of approximately 11 miles. It is one of the most heavily used trails in the MOA, used year-round by commuters and recreationalists. However, the FAA has not made a determination regarding the Section 4(f) status on the portions of the Coastal Trail located on Airport lands.

- **Anchorage Coastal Wildlife Refuge** – This state game refuge encompasses coastal wetlands, mudflats, and some forested areas along the entire western edge of the Airport and south of Kincaid Park.

For any given project, it is possible that land status or significance of the property could change, and Section 4(f) may not continue to apply.

Other publicly owned areas, such as Point Woronzof and Earthquake parks, may be subject to Section 4(f) analysis. Earthquake Park, owned by the MOA, is located adjacent to the Airport's northeast boundary. Point Woronzof Park, owned by the MOA, is located northwest of the Airport boundary. Connor's Lake Park (Connor's Bog), also owned by the MOA, is located adjacent to the southeast corner of the Airport.

9.7 FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES

There are no state or federally listed threatened or endangered terrestrial mammal species that occur at the Airport.⁶⁷ The Distinct Population Segment of beluga whale (*Delphinapterus leucas*) that inhabits Cook Inlet is a listed endangered species under the Endangered Species Act and is also considered a depleted stock under the Marine Mammal Protection Act.⁶⁸ A portion of the Airport property boundary extends into Cook Inlet. The Airport property boundary that extends into Cook Inlet is located immediately adjacent to Designated Area 1 Critical Habitat for beluga whales.

9.8 ENERGY SUPPLIES, NATURAL RESOURCES, AND SUSTAINABLE DESIGN

FAA Order 1050.1E, Environmental Impacts, Policies and Procedures, states that airport improvement projects “will be examined to identify any proposed major changes in stationary facilities or the movement of aircraft and ground vehicles that would have a measurable effect on local supplies of energy or natural resources.” *FAA Order 1050.1E* requires coordination with environmental stakeholders and energy producers should potential impacts be identified. *FAA Order 1050.1E*, Appendix A, Section 13 identifies two applicable policies regarding energy supplies, natural resources, and sustainable design. Executive Order 13123, *Greening the Government through Efficient Energy Management*, 1) encourages the expansion of the use of renewable energy; and 2) requires federal agencies to reduce petroleum use, energy use, air emissions, and water consumption.

⁶⁷ U.S. Department of Interior, Fish and Wildlife Service Alaska Regional *Endangered Species* website, <http://www.fws.gov/alaska/fisheries/endangered/index.htm>, 2009; Alaska Department of Fish and Game *Special Status Species* website, <http://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.main>, 2013.

⁶⁸ National Oceanic and Atmospheric Administration, Fisheries, Office of Protected Resources, *Species Information* website, <http://www.nmfs.noaa.gov/pr/>, 2013.

Energy supply considerations include:

- AFSC handles the majority of fuel services at the Airport.
- The Chugach Electric Association provides electricity to the Airport.
- ENSTAR provides natural gas to the developed areas.
- ACS provides telephone service.
- AWWU provides water and sewer service.

In its 2012 master plan update, AWWU identified the need for a future transmission main project near and at the Airport. The West Air Park Water Extension project, located between Point Woronzof Drive and Kincaid Park, would consist of extending the water main to the west side of the Airport.⁶⁹ This would require a bore under the Airport runway.

Currently no common sustainability guidelines or measurement standards specifically apply to airports. Many United States and international airports have implemented sustainability programs specific to their airport, using Leadership in Energy and Environmental Design guidelines as a basis to define sustainability.

The Airport has implemented a number of measures to reduce energy consumption, including installing automated light switches in buildings, replacing low efficiency lighting with high efficiency lighting, and replacing traditional boilers with high efficiency boilers. In 2012, the Airport replaced its existing fuel dispensing system and upgraded the fueling controls and fuel management system at the Quick-Turnaround Facility Fueling Canopy. This will result in reduced travel time and fuel usage for refueling.

Cardboard recycling alone, from Airport tenants and State of Alaska operations, prevented more than 150,000 pounds of cardboard from going to the landfill in 2010 and 300,000 pounds in 2011. Other materials recycled from the Airport include newspaper, office paper, scrap metals, reclaimed / reground asphalt and concrete, used oil, printer and toner cartridges, and other materials.

9.9 FARMLANDS

There are no “prime and unique farmlands,” no “farmlands of statewide importance,” or “farmland of local importance” within the Anchorage Bowl as defined under federal definitions.⁷⁰

⁶⁹ Anchorage Water and Wastewater Utility, *Anchorage Water Master Plan*, 2012.

⁷⁰ U.S. Department of Agriculture, Natural Resource Conservation Service, *Prime and Important Farmlands, Alaska* website, http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ak/soils/surveys/?cid=nrcs142p2_035988, 2012.

9.10 FLOODPLAINS

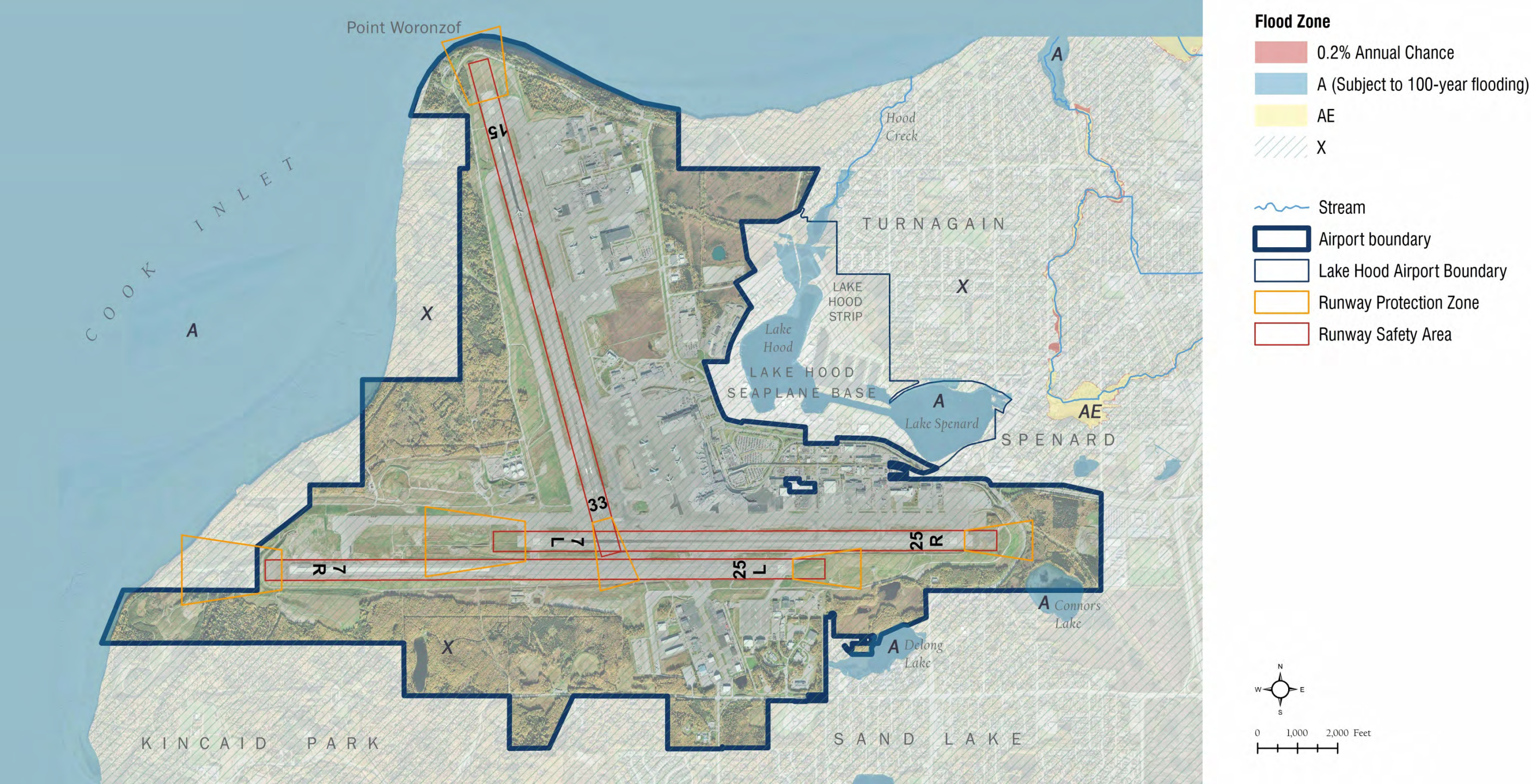
Executive Order 11988 directs federal agencies to take action to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and to restore and preserve the natural beneficial values served by floodplains. Floodplains are the lowland and relatively flat areas adjoining inland and coastal waters, including flood prone areas of offshore islands that are subject to a 1% or greater chance of flooding in any given year.

The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Maps (FIRMs) that show currently regulated areas subject to flooding. These maps are available through FEMA's Map Service Center as well as on the MOA's Watershed Management website. The FIRMs indicate that the majority of the Airport is located within Zone X, which indicates areas are outside the 0.2% annual chance floodplain.⁷¹ There are a few areas within the Airport property boundary that are subject to 100-year floods, and are designated as Zone A (Figure 2.58). These areas include a pond within South Turnagain Bog north of an area used as snow storage, Connor's Lake to the southeast, and the entirety of Knik Arm to the west and northwest. Other areas subject to 100-year floods on property adjacent to the Airport include Delong Lake to the south and the following water-bodies located on the Lake Hood Airport: Jones Lake, Lake Hood, and Lake Spenard.

⁷¹ Federal Emergency Management Agency, *Flood Insurance Rate Map*, 2009.

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Figure 2.58 Floodplains



Source: RS&H and HDR, 2014.

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9.11 HAZARDOUS MATERIALS

The regulatory law applicable to airports regarding hazardous waste is the Resource Conservation and Recovery Act of 1976 (RCRA). Through this legislation, the U.S. Congress directed the USEPA to develop and implement programs meant to protect human health and welfare, as well as the environment, from improper hazardous waste management practices. RCRA is applicable to any party who generates or transports hazardous waste, as well as those parties who own or operate a facility for the storage, treatment, or disposal of hazardous wastes. Procedures required by RCRA include comprehensive record keeping practices, placing hazardous wastes into proper containers bearing appropriate warning labels and placards, and creating transport manifests.

Some of the hazardous materials present within Airport property boundaries include aviation fuel, hydraulic fluids, antifreeze, and deicing fluids. When these materials have been used, or are discarded unused, they may become hazardous waste regulated by RCRA. The Airport is currently regulated as a RCRA Large Quantity Generator, generating more than 1,000 kilograms of hazardous waste monthly.

A database search of both federal and state records identified environmental conditions associated with petroleum, hydrocarbon, and / or hazardous substances within the Airport boundary.

Contaminated sites are locations where hazardous materials have been spilled, improperly disposed of, or stored in such a way that the physical site characteristics (soil, groundwater, or both) have been impaired. Contaminated sites may pose a threat to public health or the environment, and are often costly and time consuming to remediate. ADEC's database of contaminated sites reports on the status of these sites as "Cleanup Complete," "Cleanup Complete-Institutional Controls," or "Open."

A search of the ADEC Contaminated Sites database yielded 32 contaminated sites within the Airport boundary and several more in close proximity in the Lake Hood area and along major roads east of the Airport. Of these 32 sites, the ADEC database classifies 21 sites as "Cleanup Complete" or "Cleanup Complete-Institutional Controls." Table 2.33 summarizes the remaining 11 open contaminated sites. An "open" status indicates that remediation is ongoing at the site, and that the ADEC is actively involved with the site's cleanup. Contamination at the site may be stable or continuing from an on- or off-site source, if known.

ADEC keeps records of contaminated and Leaking Underground storage tank (LUST) sites in the state. ADEC maintains a database of known LUST sites and assigns an "Open" or "Closed" status.

Table 2.33
Open Contaminated Sites on the Airport

Hazard ID	Site Name	Location	Notes
595	Airport North Terminal	North of Airport	Petroleum contamination from 1989 jet fuel release identified in site soil and groundwater.
1193	FAA Flight Inspection Field Office	4620 W. International Airport Road	Petroleum contaminated soil identified in 1991 during 500-gallon diesel fuel tank removal; also listed on the Contaminated Sites database.
1212	Airport Tank #8 Heating Oil	Airport	Petroleum contamination identified in soil and groundwater during a 1991 underground storage tank removal. Contamination has migrated under C Concourse and proximal to Hazard ID 2728.
1780	Airport B Concourse	Airport	Diesel-contaminated soils identified from underground fuel pipeline and vault releases; minor groundwater contamination detected.
2009	AFSC Former Fuel Vault	6050 Rockwell Avenue	Petroleum contamination from 1994 hydrant valve fuel spill identified in site soil and groundwater.
2728	Airport C Concourse	Airport	Petroleum contamination resulting from leaking underground fuel pipeline and vault releases identified in site soil and groundwater.
2740	Airport Landspreading Area	K Taxiway and Runway 6L	Petroleum contaminated soil was spread at this site in October 1997, with ADEC consent, following excavation from B Concourse reconstruction project. Contaminated soil and groundwater present.
2742	AFSC Former Bulk Fuel Tank Farm	4565 W. International Airport Road	Petroleum contamination from surface and subsurface releases, including a release associated with the 1964 earthquake, has impacted the site's soil and groundwater.
3734	Airport North Terminal Gate N2	Airport North Terminal	Petroleum contamination identified during N2 Gate reconstruction. Impacted soil and groundwater present.
3745	Airport Long-Term Parking Lot	Long term parking lot	Petroleum contamination identified during 2005 storm drain construction. Impacted soil was excavated; no record of transport or treatment. Current site status unknown.
25860	AFSC Kilo Gates Hydrant System	Kilo Gates	2011 investigation associated with site construction identified petroleum contaminated soil and groundwater on site, likely from past fuel spills from pipelines or hydrant systems.

Source: Alaska Department of Environmental Conservation, Division of Spill Prevention and Response, Contaminated Sites Program Database, <http://dec.alaska.gov/applications/spar/CSPSearch/default.asp>.
Notes: ADEC = Alaska Department of Environmental Conservation, AFSC = Anchorage Fueling and Service Company, Airport = Ted Stevens Anchorage International Airport, FAA = Federal Aviation Administration.

A closed LUST site indicates that the LUST has been either removed or purged of its contents, and the impacted material (soil, groundwater, or both) has been removed from the ground. An open LUST site is similar to an open status for a contaminated site, indicating that remediation is ongoing and the site's cleanup activities are actively monitored by ADEC.

A search of the ADEC LUST sites database on December 28, 2012 yielded 64 LUST sites within the Airport boundary, and dozens more in the nearby Lake Hood area. Of these 64 sites, the ADEC database classifies 57 as "Cleanup Complete." Table 2.34 lists the remaining seven open LUST sites.

Table 2.34
Active Underground Storage Tank Sites on the Airport

Hazard ID	Site Name	Location	Notes
22993	Airport DOT&PF Tank #9	110 feet north of C Concourse	Petroleum contaminated soil and groundwater present. Multiple underground storage tanks present.
23289	Era Aviation, Inc.	6160 Carl Brady Drive	Petroleum contaminated soil and groundwater identified during 1997 removal of underground storage tank.
23369	Unocal - #5057 Former (306450)	4351 W. International Airport Road	Petroleum contaminated soil and groundwater present. Former fueling station closed in 1988.
23383	Alaska Rent-A-Car	4900 Aircraft Road	Petroleum contaminated soil and groundwater present.
23908	FAA Flight Inspection Field Office	4620 W. International Airport Road	Petroleum contaminated soil identified in 1992. Current site status not available.
23973	Airport C Concourse Terminal LUST	Airport	Petroleum contaminated soil identified during removal of fuel storage tank. Impacted soil and groundwater present.
24091	National Car Rental	4540 W. 50 th Avenue	Petroleum contaminated soil and groundwater present on site. Total extent of contamination is unknown.

Source: Alaska Department of Environmental Conservation, Division of Spill Prevention and Response, *Contaminated Sites Program Database*, <http://dec.alaska.gov/applications/spar/CSPSearch/default.asp>.

Notes: Airport = Ted Stevens Anchorage International Airport, DOT&PF = (Alaska) Department of Transportation and Public Facilities, FAA = Federal Aviation Administration, LUST = Leaking Underground Storage Tank.

A query of two other additional database searches provided further information. The National Priorities List (NPL) is a record of properties identified by the USEPA as having highest national cleanup priority. The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) identifies sites under or formerly under USEPA investigation for possible inclusion on the NPL. The USEPA also keeps records of facilities that treat, store, or dispose of hazardous waste

under the RCRA. The Airport and adjacent properties were not identified during the NPL or CERCLIS searches.

9.12 ARCHAEOLOGICAL AND HISTORIC RESOURCES

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations found in 36 CFR 800, require Federal agencies to take into account the effects of their undertakings on historic properties (i.e., any prehistoric or historic district, site, building, structure, object, or Traditional Cultural Property [TCP] included in or eligible for inclusion in the National Register of Historic Places [NRHP]), per 36 CFR 800.16(1)). The NHPA established a national preservation program through the creation of the Advisory Council on Historic Preservation (ACHP) and the NRHP. Section 106 of the NHPA also requires coordination with other regulatory processes such as the National Environmental Policy Act (NEPA), which requires federal agencies to consider the effects of their actions on the cultural environment.

The Alaska Historic Preservation Act (AHPA; Alaska Statute [AS] 41.35.010-41.35.240) similarly addresses the treatment of cultural resources by undertakings under state jurisdiction, such as those requiring state permits, licenses, lands, or approvals. AHPA is a law that establishes state title to all historic, prehistoric, and archaeological resources located on state-owned or -controlled land including structures, buildings, ruins, sites, graves, artifacts, or fossils.

The Dena'ina have resided in this area for at least the last 1,500 years.^{72, 73} Two prehistoric Dena'ina sites located within or adjacent to the project study area have been recorded in the Alaska Heritage Resource Survey (AHRS). Point Woronzof is a prehistoric / historic village site; recorded as a summer fish camp, place-name evidence identifies the importance of this location, with the name *Nuch'ishtunt* ("Place Protected from the Wind"). A fishing platform, or *tanik'edi*, was also set at Point Woronzof for dip netting as salmon runs commenced. Associated with *tanik'edi* is *Q'is Kaq*, a natural fresh-water spring that was reported as located adjacent to a summer fish camp.^{74, 75} Both Native Village of Eklutna and Knik Tribal Council have expressed the importance of this area during Airport planning.

Twenty-seven AHRS sites are associated with the Kulis Air National Guard Base. All but one of these associated sites ("Building 3") has been

⁷² Fall, Davis and Dena'ina Team, *An Overview of Dena'ina Athabascan Uses of Sites on and near Elmendorf Air Force Base, Alaska*. 2003.

⁷³ Kari and Fall, *Shem Pete's Alaska: The Territory of the Upper Cook Inlet Dena'ina*, University of Alaska Press, 2003.

⁷⁴ Fall, Davis and Dena'ina Team, *An Overview of Dena'ina Athabascan Uses of Sites on and near Elmendorf Air Force Base, Alaska*. 2003.

⁷⁵ Kari and Fall, *Shem Pete's Alaska: The Territory of the Upper Cook Inlet Dena'ina*, University of Alaska Press, 2003.

determined not eligible for listing in the NRHP.⁷⁶ “Building 3” comprises a hanger and aero port, and has been determined eligible for listing in the NRHP for its role during the Cold War, rescue operations following the Good Friday Earthquake of 1964, and for its distinctive architecture.^{77, 78}

Cultural resource surveys have been conducted in the Airport vicinity since the 1930s. The Point Woronzof area, which was identified as an area of concern to local Tribes during consultation, has been surveyed on several different occasions. Section 106 compliance surveys, Cold War Air Defense military installation historic building and structure surveys, and Native ethnographic and historic land use studies have also been conducted in the Airport vicinity. While cultural resource investigations have been conducted within and adjacent to the Airport, it is likely that undocumented cultural resources may be located on or adjacent to the Airport.

If and when the time comes for the Airport to consider implementation of a project or projects recommended in the Master Plan Update that would potentially impact cultural sites, the Airport and FAA are required by federal law to conduct an environmental review process under NEPA and Section 106 of the NHPA. These two processes are separate, but the Section 106 process is coordinated with NEPA and contributes to its development and analysis. Consultation with the State Historic Preservation Officer (SHPO), Tribal governments, and identified consulting parties will be required pursuant to Section 106 of the NHPA. Opportunities to avoid, minimize, and mitigate impacts resulting from Airport development will be addressed in these processes.

9.13 LIGHT EMISSIONS AND VISUAL EFFECTS

Light emitting sources at the Airport include airfield, aircraft approach, parking lot, building, and street lighting. Airport light emissions are persistent because the Airport operates 24 hours per day, requiring lighting at the terminals and other operational areas. The Airport does not typically light the undeveloped areas outside of the main operational area.

With regard to visual effects, the geographic region where the Airport is located is atypical of the Anchorage Bowl and is generally a combination of delta outwash from previous glaciers combined with vegetation-covered sand dunes that produce undulating terrain adjacent to Cook Inlet. Airport property generally includes two distinct terrain characters: the undulating terrain perched on a plateau, and lower and flatter lowland adjacent to Cook Inlet. The upper area provides views of distant mountains and overlooks the lower terrain and Inlet.

⁷⁶ National Guard Bureau, *Historic Context Study: Alaska Air National Guard and Cultural Resource Survey of Kulis Air National Guard Base*, 2007.

⁷⁷ Ibid.

⁷⁸ HDR, *Ted Stevens Anchorage International Airport Runway 7R Extension Project Cultural Resource Survey Compliance Report*, 2009.

9.14 NOISE

9.14.1 OVERVIEW

Title 14 of CFR Part 150, Airport Noise Compatibility Planning regulates airport noise associated with air operation. Part 150 requires the use of day-night average sound level (DNL), to determine existing and potential (projected to occur in the future) noise levels based on forecasts. The FAA Integrated Noise Model (INM) generates the DNL noise contours. The INM is a complex computer model that evaluates noise impacts in the vicinity of an airport, taking into account fleet mix, numbers of operations, flight tracks, and time of day.

The purpose of a Federal Aviation Regulation Part 150 Study is to identify existing and potential future noise exposure, evaluate various alternatives, and make recommendations on viable noise abatement or mitigation measures. The Part 150 Study process has two steps:

- 1) Establish Noise Exposure Maps (NEMs), which identify the levels of airport noise in areas around the airport
- 2) Develop a Noise Compatibility Program (NCP) designed to reduce the number of people and/or incompatible land uses within the airport's noise contours

The NEMs are submitted to the FAA for acceptance, and the NCP is submitted to FAA for approval. If they are approved, the NCP measures or recommendations are eligible for implementation and federal funding. Airports are not required to complete Part 150 studies, but there are financial incentives for doing so as federal funds are available to prepare Part 150 studies and for implementing measures recommended in the NCP. For example, the NCP allowed the Airport to receive federal funding to implement a Residential Sound Insulation Program (RSIP) and other measures. Part 150 studies generally have a 5-year planning horizon and identify / evaluate current and future noise / land use.

The most recently FAA-accepted NEMs and FAA-approved NCP are from 2000. The Airport is currently updating its existing Part 150 Noise Compatibility Study. While this is an entirely separate process from the Master Plan Update, the Airport is conducting it concurrently. An update to the Part 150 Study is warranted as there have been changes in aircraft fleet mix, aircraft noise levels, aircraft activity levels, as well as the release of an updated version of the INM.

9.14.2 NOISE EXPOSURE MAPS (NEMS) / DRAFT CONTOUR LINES

Part 150 regulations identify the requirements for developing NEMs and the information that must be included in them. NEMs must show noise contours (65, 70, and 75 DNL) and identify non-compatible land uses (e.g., residences, schools, churches, health care facilities, etc.) within these contours for both existing conditions and for a 5-year forecast

condition. Noise contour maps must depict the average annual DNL in areas around the airport. DNL is the primary metric for assessing the environmental impact of noise exposure computed for the Annual Average Day (AAD) of operations for the year of interest. Since DNL contours represent annual average conditions, the noise levels that people hear (single event levels) are different than the metric used in the analysis.

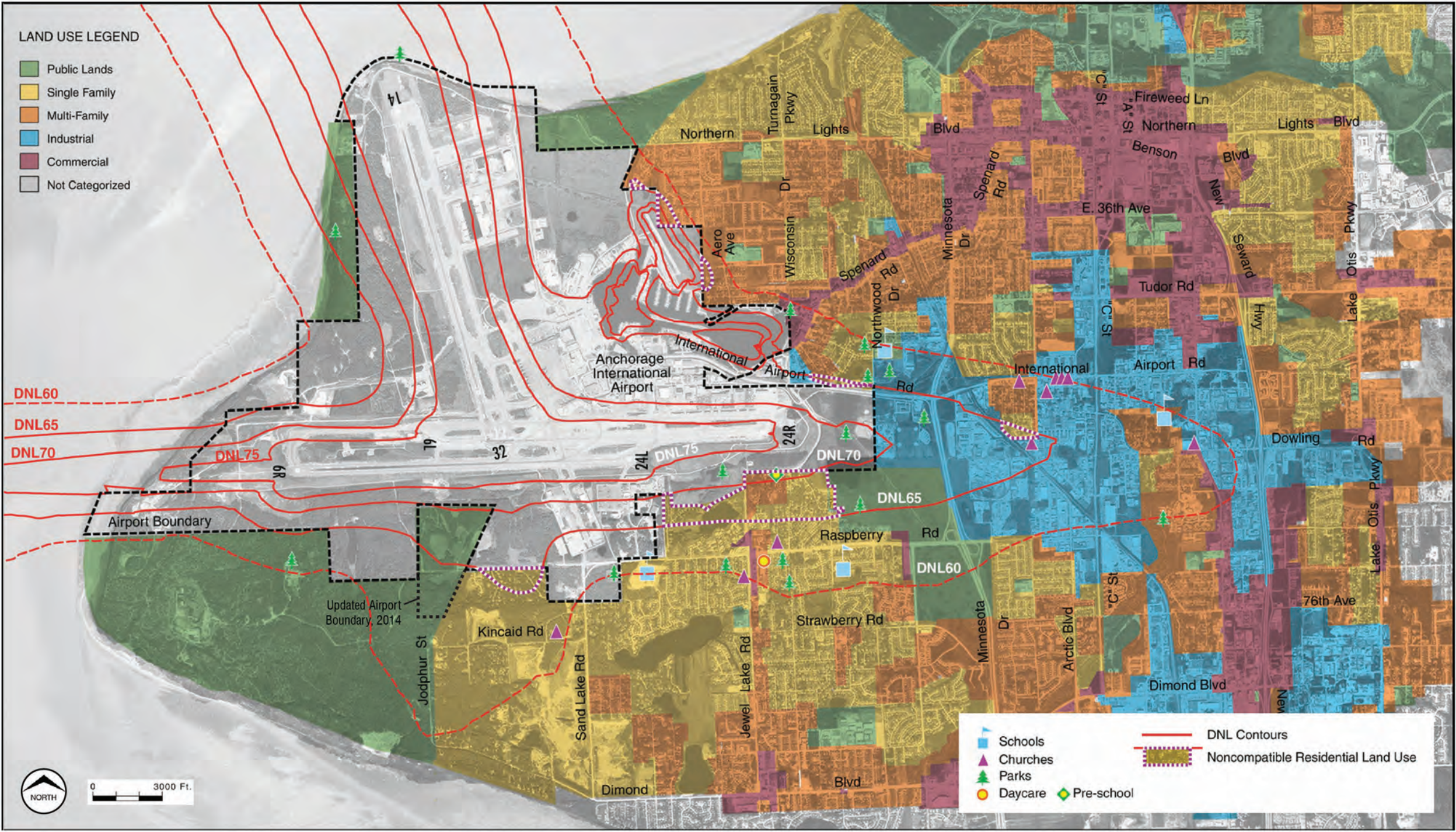
DNL is based upon the type of aircraft operated, the number of operations, the runways used, the aircraft flight tracks, and the timing of operations. The FAA considers noise levels of less than 65 DNL compatible with residential and other noise-sensitive land uses, and levels of 75 DNL and less compatible with parks, resorts, camps, and recreation lands. Only those noise sensitive uses within the 65 DNL and greater contours are eligible for federal funding for mitigation measures (e.g., acquisition or insulation).

The Airport previously prepared NEMs illustrating the noise contours for 1997. The 1997 noise exposure map from the 1999 *Part 150 Noise Study*, as shown in the WADP, is illustrated in **Figure 2.59**. The 1997 noise exposure map shows that 11.25 square miles of land is located within the 60 DNL and higher noise contour (5.66 square miles of land is outside the Airport boundary).

The Airport is currently updating the Part 150 Noise Study. Noise concourse for the 2009 base year and future 2020 noise contours are being developed. The Part 150 Study is anticipated to be completed following the completion of the Master Plan Update.

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Figure 2.59 1997 Noise Exposure
Map



Source: RS&H and HDR, 2014.
Note: DNL = Day-night Average Sound Level.

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9.14.3 NOISE COMPATIBILITY PROGRAM (NCP)

The NCP includes all the measures that are recommended for reducing noise impacts and non-compatible land uses within the Airport's noise contours. There are two main types of measures included in NCPs:

- 1) Operational or noise abatement measures (i.e., changes in Airport facilities and / or Air Traffic Control procedures intended to reduce noise exposure to the surrounding community)
- 2) Land use measures and administrative measures (i.e., changes in land use or land use regulations to reduce construction or operation of non-compatible uses within the Airport's noise contours)

As discussed earlier, the most recent NCP was completed in 1999 and approved by FAA in 2000.

The approved 1999 NCP proposed several noise abatement elements to reduce the amount of noise generated at the Airport or shift the noise from noise sensitive areas. The Airport has an active and comprehensive noise program to address Airport noise and land use compatibility in the Airport area. The program indicates departures from Runways 7R, 7L, and 15 result in the most severe noise impacts and suggests using these runways for departures only when operational or safety considerations limit the use of Runways 33, 25L, and 25R. In addition, the Airport has established a voluntary preferential runway use program to minimize noise impacts on nearby residential areas. The normal flow of traffic operations, contingent upon weather and pilot judgment, includes arrivals to the east or south and departures to the north or west. It is likely that this measure has played the greatest role in minimizing noise impacts.

Other potential noise abatement measures at the Airport include thrust cutbacks for departures from Runways 7R, 7L, and 15; a proposed new departure track for commuter aircraft departing from Runway 7; voluntary restrictions on flight-training operations (i.e., touch and go and other training operations); land use initiatives (e.g., compatible use zoning, sound barriers, and comprehensive planning); acquisition of vacant residential-zoned lands within high noise areas; and continuing programs such as a noise advisory committee, noise and operations monitoring system, and noise web page. The Airport researches and responds to noise complaints; communicates with local planners about appropriate land use to encourage compatible development surrounding the Airport; and works cooperatively with Air Traffic Controllers, the airlines, and the local community to minimize impacts whenever possible.

In 2001, the Airport implemented a RSIP to reduce inside noise levels for homes within the 65 DNL contour. The RSIP makes soundproofing

improvements, which include installing acoustically rated windows and doors, to eligible homes to reduce interior noise to or below 45 DNL. Under the RSIP, the Airport sound insulated more than 880 homes impacted by aircraft noise since 2001.⁷⁹ Funding for the last area of homes within the previous eligibility boundaries was granted and the homes owned by residents who applied for coverage were soundproofed in Fiscal Year (FY) 2013. The Airport completed construction in the summer of 2013 with post construction testing and financial close out extending into FY 2014.

9.14.4 OTHER STUDIES

To further investigate noise sources beyond the scope of the modeling of the Part 150 studies, the Airport completed a Ground Noise Study in 2002 to investigate the noise sources and types of operations contributing to the overall ground noise environment at the Airport as well as identify potential mitigation measures to address ground noise created by Airport operations. The 2002 Ground Noise Study identified noise sources, including start of takeoff, reverse, thrust, taxiing and idle, auxiliary power units, maintenance run-ups, general aviation aircraft start-up and departure, and field maintenance equipment. Recommendations for reducing noise impacts included: improving operational procedures (e.g., intersection departures, revisions to operations bulletins, and changes in how run-ups are reported), structural abatement measures (e.g., construction of high-speed taxiways and an engine run-up pad located west of Runway 15-33), and other mitigation measures (e.g., aircraft orientation).

9.15 SOCIAL ENVIRONMENT

Council on Environmental Quality regulations require environmental documents be prepared for federally funded projects to address potential social impacts. The evaluation of a proposed project on the social / human environment should address the following items: disproportionate impacts to low-income and minority populations, impacts on health and safety risks to children, potential relocation of homes or businesses, division or disruption of an established community, disruptions to orderly planned development, and notable project-related changes in employment. As improvement projects are developed, the Airport should analyze the potential impacts to the social environment.

9.15.1 ENVIRONMENTAL JUSTICE

Concern that minority and / or low-income populations bear a disproportionate amount of adverse health and environmental effects from projects led to the issuance of *Executive Order 12898, Environmental Justice*, in 1994. This order requires federal agencies to determine and take necessary steps to identify and address disproportionately high and

⁷⁹ Airport staff, 2014.

adverse effects on the health or environment of minority and low-income populations. These populations are defined as any readily identifiable group(s) of minority or low-income persons who live in geographic proximity to a project. If circumstances warrant, effects on geographically dispersed / transient persons are also considered.

The Airport is adjacent to four census tracts (Census Tracts 22.01, 23.01, 23.02 and 24; see Table 2.35). These census tracts are located in the following community council boundaries: Turnagain, Sand Lake, and Spenard. Census data for these census tracts indicate that the percentage of minorities or those in poverty is comparable to or even lower than the statewide and MOA rates.

Three of the four census tracts have a lower percentage of the population below poverty compared to the state and MOA averages. The remaining census tract has a higher percent in poverty (8.8%) compared to the MOA (7.8%) but less than the state (9.5%). In general, about one-third of the population in the census tracts, state, and MOA are non-white. The four census tracts have a higher median household income as compared with the state or MOA.

Table 2.35
Minority and Low-Income Populations, 2007-2011 5-Year Estimates

	Population Estimate	% below Poverty Level	Race (% Non-white)	Median Household Income (\$)¹
Alaska	684,608	9.5	33	69,014
Municipality of Anchorage	281,124	7.8	33	75,485
Census Tract 22.01 (Turnagain)	4,967	3.3	34	79,276
Census Tract 23.01 (Sand Lake)	7,664	1.8	29	106,364
Census Tract 23.02 (Sand Lake)	5,001	7.2	27	76,447
Census Tract 24 (Spenard)	2,929	8.8	32	76,895

Source: U.S. Census Bureau, 2007-2011 American Community Survey 5-Year Estimates, n.d.

Note:

1- Median Household Income in the past 12 months (in 2011 inflation-adjusted dollars)

9.15.2 CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Executive Order 13045, Protection of Children from Environmental Health and Safety Risks, signed in 1997, requires federal agencies to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. Environmental health risks and safety risks include risks that are attributable to products or substances that a child is likely to contact or ingest, such as air, food, drinking water, recreational waters, and soil. While there are hazardous wastes and contaminated sites on the Airport, children do not have access to these areas and are not exposed to them.

9.15.3 RESIDENTIAL OR BUSINESS DISRUPTIONS OR RELOCATIONS

If any relocation of residential or commercial properties is required by future Airport project developments, compensation shall be made under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended by the Surface Transportation and Uniform Relocation Act of 1987 and its implementing regulations (49 CFR Part 24).

9.16 SOCIOECONOMICS

The socioeconomic situation in a community or region can have a significant impact on the future demand for air travel and air traffic activity. Local population, employment, and income are key socioeconomic factors that affect aviation demand. However, a large portion of the activity at the Airport is associated with international air cargo and non-Alaska visitors, as reported by the University of Alaska Anchorage Institute of Social and Economic Research (ISER) in 2007.⁸⁰ The contribution of the Airport to the economy of the community and the state goes beyond the generation of jobs and payroll from providing air transport and other services. The Airport is part of the transportation system that links Alaskans and Alaska businesses to each other and to the rest of the world.

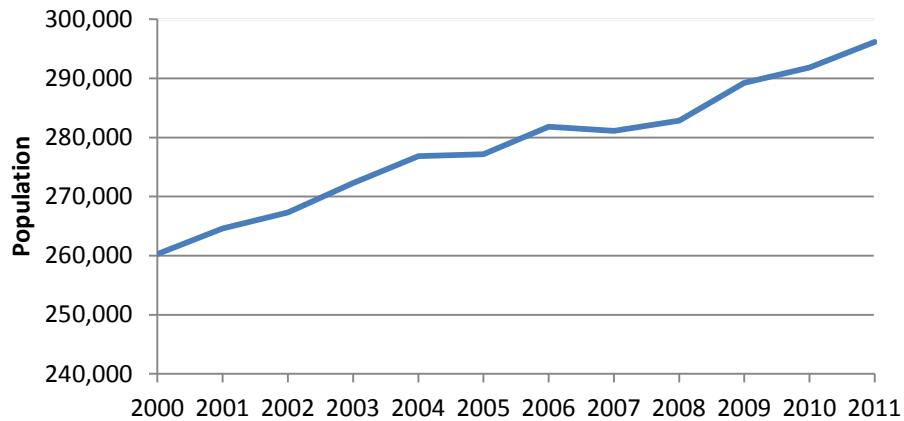
9.16.1 POPULATION

Population size and potential growth are normally key features in forecasting needs for air transportation service. A community's historic population trends are normally useful in indicating a demand for air traffic.

The MOA has demonstrated continued population growth over the last decade (between 2000 and 2010), as reflected in **Figure 2.60**. According to the Alaska Department of Labor and Workforce Development (ADOLWD), the MOA's population was 296,197 in 2011 compared to 260,283 in 2000. The population for the State of Alaska was 626,932 in 2000 and the estimated population in 2011 was 722,190. The MOA accounts for approximately 40% of Alaska's population. **Table 2.36** shows historic and projected population for the MOA and Alaska.

⁸⁰ Institute of Social and Economic Research, *Ted Stevens Anchorage International Airport: Economic Significance*, 2007.

Figure 2.60
 Historic Population for the Municipality of Anchorage, 2000-2011



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section, 2012.

Table 2.36
 Projected and Historic Population for the Municipality of Anchorage and Alaska

	MOA	Alaska
Historic		
2000	260,283	626,932
2010	291,826	710,231
2011	296,197	722,190
Projected		
2015	311,311	759,244
2020	328,097	802,762
2025	343,086	842,899
2030	356,480	879,823
2035	368,801	915,211

Source: Alaska Department of Labor and Workforce Development, *Alaska Population Projections 2010-2035*, 2012.

Note: MOA = Municipality of Anchorage.

9.16.2 ECONOMY AND EMPLOYMENT

With nearly half the state's population in Anchorage, the MOA is the center of commerce for the State of Alaska. Many statewide industries, including oil and gas, finance and real estate, transportation, communications, and governmental agencies have their headquarters in Anchorage. In 2011, the MOA's five largest employment sectors by

industry were: trade, transportation and utilities, education and health services, leisure and hospitality, professional and business services, and government (see Table 2.37). In 2011, the trade, transportation, and utilities industry comprised 22% of MOA's employment market.

Table 2.37
 Historic Employment Number of Workers by Industry for Municipality of Anchorage, 2007-2011

	2007	2008	2009	2010	2011
Trade, Transportation, and Utilities	29,538	29,989	29,219	28,723	28,903
Educational and Health Services	16,586	17,076	17,755	18,693	19,474
Leisure and Hospitality	13,934	14,418	14,144	14,544	14,929
Professional and Business Services	13,526	14,203	14,384	14,819	14,609
Local Government	11,365	11,598	11,640	11,699	11,469
State Government	8,576	8,910	8,927	9,140	9,137
Financial Activities	7,717	7,701	7,597	7,745	7,690
Construction	7,393	7,373	7,335	7,036	6,760
Natural Resources and Mining	4,858	5,350	5,232	5,257	5,130
Other	4,398	4,836	5,006	5,185	4,952
Information	3,818	3,869	3,545	3,548	3,642
Manufacturing	2,193	2,192	2,089	2,061	2,034
Unknown	19	161	311	405	68

Source: Alaska Department of Labor and Workforce Development, Alaska Local and Regional Information, n.d.

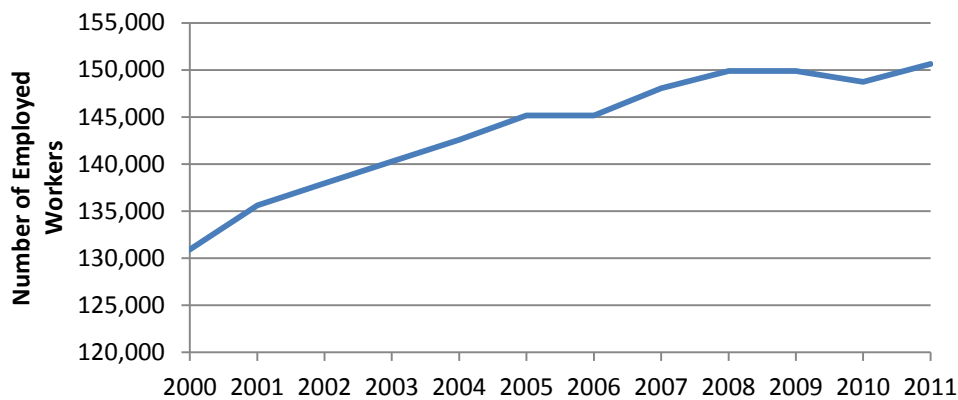
Historically, the State of Alaska has been a resource-based economy, relying heavily on oil development for several decades. However, as the production of North Slope oil has declined in recent years, other industries such as tourism, mining, and air cargo have made up for some of the decline. Federal spending for infrastructure and military activities has also helped to offset the reduction, although those sources may decline in the future. ISER reports that in the foreseeable future the Alaska export base will continue to be dominated by commodity-producing industries combined with tourism, national defense, and most applicably for the Airport, the movement of international freight.⁸¹ It is these industries—petroleum, mining, tourism, and international freight—that ISER believes hold the most potential for employment growth. The seafood industry is expected to remain constant. Military activities also greatly influence the Anchorage area, with thousands of military personnel assigned to JBER.

⁸¹ Institute of Social and Economic Research. *Economic Projections for Alaska and the Southern Railbelt 2005-2030*, 2005.

Employment characteristics of an area are good indicators of its economic development and can largely affect the potential for generating air traffic. Despite the recent national recession, the MOA has had relatively strong employment rates. According to the ADOLWD Employment Forecast for 2011, “from the beginning of the national recession in December 2007 to its official end in June 2009, the nation lost six percent (6%) of its wage and salary jobs, while Anchorage shed less than one percent (1%).” This reflects similar statewide trends of lower job loss than the national average during the recession.

Overall, employment within the MOA has steadily increased for the last 10 years. The ADOLWD tracks total employment for the MOA on a quarterly basis. Total employment is the total number of workers who were employed by the same employer in both the reference quarter and the previous quarter. (Tracking quarterly employment is the closest thing available to counting actual jobs, as opposed to estimates.) Figure 2.61 depicts the quarterly average by year over the last decade.

Figure 2.61
Average Quarterly Employment for Municipality of Anchorage, 2000-2011



Source: Alaska Department of Labor and Workforce Development, n.d.

The Airport is recognized as the air transportation gateway to the state, as well as one of the most important economic generators for the MOA and Southcentral Alaska. In its 2012 Economic Trends publication, the ADOLWD reports that about 50% of Alaska’s air transportation employment is in Anchorage.

As discussed below, several published reports within the past five years examined the direct and indirect economic impacts of the Airport.

- A report prepared for Anchorage Economic Development Corporation (McDowell Group) found that in 2011 an estimated 9,123 employees worked directly for the Airport or Airport

tenants located at the Airport.⁸² These employees earned \$724 million. See Table 2.38.

- ISER produced a report in 2007 that also looked at the economic significance of the Airport. According to ISER, the Airport provided 10,222 jobs in 2007 and generated an annual payroll of \$562 million. The 2007 report found that this represented about 7% of all the wage and salary jobs in Anchorage and 9% of the total payroll.⁸³

The Airport also contributes to substantial off-site employment resulting from local spending by Airport workers; purchasing of goods and services by the businesses and government agencies at the Airport; and to a lesser extent, purchases by layover flight crews. Adding the offsite jobs generated by Airport businesses making purchases and workers spending their earnings within the community, the total economic importance of the Airport is significant. Combined with indirect and induced impacts of the economic activity the Airport supports, the Airport generated 15,577 jobs and \$1.0 billion in earnings in the Anchorage economy in 2011. For 2007, the ISER report found the indirect influence contributed to 18,434 jobs with a payroll of \$850 million.⁸⁴

Table 2.38
 Airport Direct and Indirect Employment and Payroll, 2007 and 2011

	2007 ¹	2011 ²
Direct employment	10,222 jobs	9,123 jobs
Direct annual payroll	\$562 million	\$724 million
Indirect employment	18,434 jobs	15,577 jobs
Indirect annual payroll	\$850 million	\$1.0 billion

Notes:

1 - Institute of Social and Economic Research, *Ted Stevens Anchorage International Airport: Economic Significance*, 2007.

2 - Alaska Economic Development Corporation, *Economic Impacts of the Ted Stevens Anchorage International Airport*, 2012.

9.16.3 INCOME

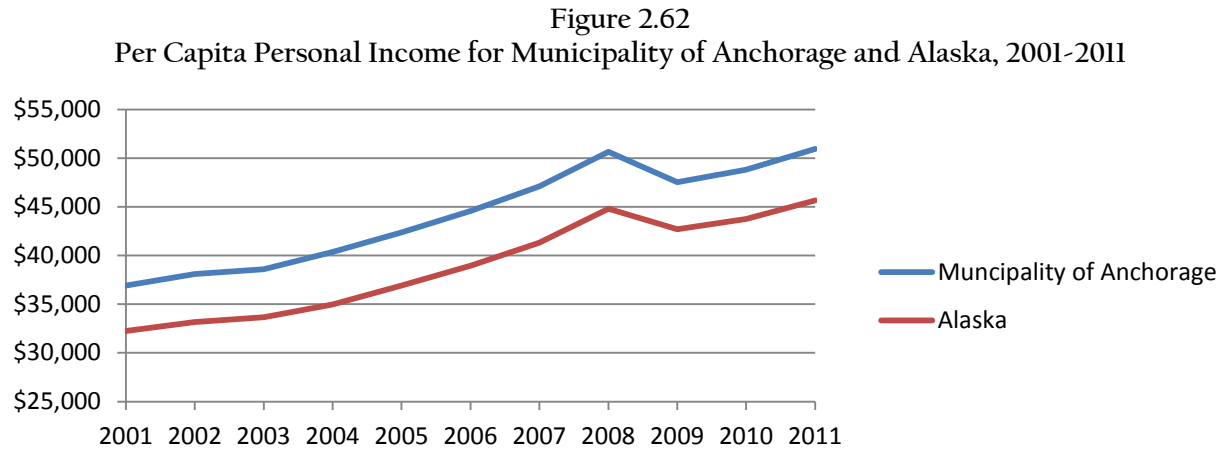
The personal income available to residents over time is a good indicator of their financial ability to travel. Per capita income in the MOA has been consistently higher than for the State of Alaska. That suggests there is more disposable income in the MOA than in Alaska overall. According to the U.S. Department of Commerce, Bureau of Economic Analysis, the MOA's per capita personal income in 2011 was \$50,958 compared to

⁸² McDowell Group, *Economic Impacts of the Ted Stevens Anchorage International Airport*, 2012.

⁸³ Institute of Social and Economic Research, *Ted Stevens Anchorage International Airport Economic Significance*, 2007.

⁸⁴ Ibid.

\$45,665 for the state. Figure 2.62 depicts historic per capita personal income for the MOA and Alaska. Between 2001 and 2011, per capita personal income for the MOA and Alaska grew at an average of 3.27% and 3.54%, respectively. The slump in 2009 reflects the national recession.



Source: U.S. Bureau of Economic Analysis, Regional Economic Accounts, n.d.

9.16.4 INDUCED SOCIOECONOMICS

Induced socioeconomic impacts address those secondary impacts on the local and surrounding communities that relate to proposed Airport development. A typical definition of induced socioeconomic impacts describes disruptions to surrounding communities, such as shifts in patterns of population movement and growth, changes in public service demands, loss of tax revenue, and changes in employment and economic activity stemming from airport development.

Assessment of induced socioeconomic impacts is usually associated with large airport development projects that might involve extensive terminal building improvements or roadway alignment. Positive or negative impacts may take the form of direct, indirect, and induced economic benefits generated from the airport.

9.17 SOLID WASTE

There are no open landfills within five miles of the Airport. The closest landfill, the Anchorage Regional Landfill is located more than five miles away. The Anchorage Central Transfer Station is located approximately three miles east of the Airport. Solid waste disposal sites have the potential to attract wildlife and are incompatible if located within 10,000 feet of a runway planned to be used by turbo-jet aircraft.⁸⁵

⁸⁵ FAA Advisory Circular 150/5200-33 Hazardous Wildlife Attractants on or Near Airports, 1997.

A 15-acre parcel of land located northwest of Taxiway K was the previous site for the Anchorage Regional Composting Facility. It was in operation from the early 2000s through 2007, when the MOA decided to terminate the lease for a variety of reasons. A separate business ran a glass crushing / recycling facility on the property. Those activities no longer occur on the property as of early 2013. HLB, an agency within the MOA, owns and manages the property. In early 2012, HLB hired a contractor to remove all the glass and crushing machinery and to clean up the materials left by the lessee.

The Airport removes solid waste generated at the Airport in accordance with ADEC's Solid Waste Program.

9.18 WATER QUALITY

9.18.1 OVERVIEW

Ensuring the quality of the water bodies on and near the Airport is one of the primary goals of the Airport's Environmental section. The Airport has prepared a number of water-quality related plans that affect Airport operations.

To make sure operations at the Airport do not degrade nearby water bodies, the Airport implemented a comprehensive Stormwater Pollution Prevention Plan (SWPPP) that contains a number of best management practices (BMPs). The most recent SWPPP was prepared in 2009. The SWPPP has two purposes: 1) to integrate other Airport environmental compliance programs to prevent stormwater pollution and 2) to meet requirements of the Airport's 2009 National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit, which subsequently transferred to the Alaska Pollutant Discharge Elimination System (APDES)⁸⁶

The Airport prepared a Drainage Master Plan in 2000 that assessed the conditions of the existing drainage facilities at the Airport and developed a comprehensive plan for upgrading and constructing future drainage facilities.

The Airport prepared a Deicing Management Program Plan in 2004 to continue and expand the prior deicing season's efforts to reduce biochemical oxygen demand and nitrogen loading in stormwater discharges from the Airport to Lakes Hood and Spenard.

9.18.2 SURFACE WATER

The Airport is generally located adjacent to the Knik and Turnagain arms of Cook Inlet. Water bodies and larger surface waters found on or immediately adjacent to the Airport include:

⁸⁶ Ted Stevens Anchorage International Airport, *Ted Stevens Anchorage International Airport Storm Water Pollution Prevention Plan*, 2009.

- Lake Spenard
- Lake Hood
- Turnagain Bog
- Postmark Bog
- Little Campbell Lake
- South Airpark Pond (also known as Sullivan Pond)
- Northwest Air Guard / Raspberry Road wetlands, located southwest of DeLong Lake
- DeLong Lake / Meadow Lake
- Connor's Bog

Lakes Hood and Spenard are on the Alaska 303(d) list of impaired water-bodies in 1992 for fecal coliform bacteria, and in 2002 / 2003 for low dissolved oxygen (DO).⁸⁷ Fecal coliform in the lakes is generally attributed to the concentration of waterfowl found on and around the lakes, whereas much of the pollution causing low DO is attributed to the Airport. In particular, aircraft deicing fluid (ADF), used to prepare airplanes for take-off during winter, makes its way into the lakes through drainage and snowmelt containing ADF. In the natural process of decomposition, the glycol found in ADF converts into water and carbon dioxide, which reduces the DO in the lake water.⁸⁸ The lack of DO potentially stunts the growth of aquatic organisms in Lakes Hood and Spenard.

In 2004, a Water Body Recovery Plan was developed to reverse the negative impacts on the lakes. One aspect of the near-term control is diversion of runoff containing ADF from the lakes. Since implementation of the Water Body Recover Plan in 2005, the water quality of the lakes has steadily improved. The Airport and ADEC have been working together for several years to improve the water quality of Lakes Hood and Spenard. As of 2012, the lakes meet or exceed the standard required by ADEC.⁸⁹

9.18.3 GROUND WATER

The area near the Airport generally includes a shallow, unconfined aquifer and a deep, confined aquifer. The relatively impermeable clay fraction of the Bootlegger Cove Formation significantly influences drainage and water quality in the vicinity of the Airport.⁹⁰ On most Airport property and throughout most of the surrounding region, a

⁸⁷ Alaska Department of Environmental Conservation, DRAFT *Integrated 2012 Integrated Water Quality Monitoring and Assessment Report*, 2012.

⁸⁸ Ted Stevens Anchorage International Airport, *Airtimes*, Winter Newsletter, 2012.

⁸⁹ Ted Stevens Anchorage International Airport, *Airtimes* Winter Newsletter, 2012; Alaska Department of Environmental Conservation, DRAFT *Integrated 2012 Integrated Water Quality Monitoring and Assessment Report*, 2012.

⁹⁰ HNTB Corporation, *Ted Stevens Anchorage International Airport Master Plan Update*, 2002.

shallow, unconfined aquifer is perched above the extensive cohesive deposits of the Bootlegger Cove formation. Beneath the Bootlegger Cove deposits is a confined aquifer kept under pressure by the impervious clay cap.⁹¹

Groundwater is sometimes pumped into Lakes Hood and Spenard on an as-needed basis to replace diverted surface runoff and maintain required water elevations. According to the 2006 *Lake Hood and Anchorage International Airport General Aviation Airport Master Plan*, storm drain diversion structures have been constructed to reduce pollutant flows into the lakes. However, diverting stormwater runoff also results in reducing the quantity of water the lakes receive. This is why pumping the groundwater into the lakes is sometimes necessary.

9.18.4 WASTEWATER

AWWU owns and operates the public wastewater system on the Airport. The major collection line runs north along Satellite Drive, and its branches serve the passenger terminal buildings and the East Airpark. The line extends north, parallel to and east of Postmark Drive, and connects into the AWWU 96-inch main trunk line. This trunk line collects the majority of the sewage from the whole of Anchorage. The trunk line runs northwest across the north side of the Airport and ends at the Asplund Wastewater Treatment Facility west of the Airport and Point Woronzof Drive.⁹²

9.18.5 STORMWATER AND DRAINAGE

The Airport's watershed or drainage area, covers approximately 5,000 acres, and includes five sub-watersheds. Each of these sub-watersheds drains to a separate discharge point in Lake Spenard, Lake Hood, Knik Arm or Turnagain Arm. The five stormwater drainage areas at the Airport are designated as A, B, C, D, and E. The Airport receives little stormwater runoff from the surrounding area.⁹³

Existing storm drain structures at the Airport include both closed conduits and open channels.⁹⁴ These range from a series of ditches and culverts to closed conduit drainage systems that convey runoff from the Airport to either Cook Inlet or Lake Hood / Lake Spenard. Sub-drain systems are located beneath some runways and taxiways to direct groundwater from the structural prism in the storm drain system.⁹⁵ The most recent SWPPP was prepared in 2009.

Snow disposal practices play a key role in water quality at the Airport. The Airport practices snow separation where airside snow mixes with

⁹¹ Ibid.

⁹² HNTB Corporation, *Ted Stevens Anchorage International Airport Master Plan Update*, 2002.

⁹³ Ted Stevens Anchorage International Airport watershed website, <http://dot.state.ak.us/anc/>, n.d.

⁹⁴ HNTB Corporation, *Ted Stevens Anchorage International Airport Master Plan Update*, 2002.

⁹⁵ Ibid.

deicing waste and non-airside snow is disposed of in separate designated areas. Airside and landside snow dumps have areas where natural biological treatment can occur prior to entering the stormwater drainage system. For the 2010-2011 winter season, a new airside snow dump opened that utilizes part of the Postmark Bog as a biofilter.

In 2013, the Airport has plans to construct two stormwater drainage projects. The East Airpark Storm Drainage extension will consist of 1.7 miles of new storm drain from Drainage Basin A to Basin D. The federally funded project will also construct a new pump station and modify an existing lift station. The \$9 million project will involve three borings, a gravity storm sewer, a force main, roadway and parking area pavement replacement and marking, and a curb and gutter. A separate state-funded project will repair or replace approximately 2,000 feet of corrugated polyethylene storm drain pipe along Postmark Drive.

The Airport uses passive treatment systems to treat stormwater. These systems include passive and active skimming systems, grassy swales, settling ponds, settling channels, and several oil / grit separators.

9.18.6 AIRCRAFT AND RUNWAY DEICING

The Airport conducts deicing operations on aircraft and airfield pavement (i.e., runways) to ensure the safety of passenger and cargo flights.

To reduce the amount of ammonia and biochemical oxygen demand loads, the Airport is phasing out the use of urea as a pavement deicer after spring 2013.⁹⁶

The amount of aircraft deicing fluid used at the Airport is shown in Table 2.39.

Table 2.39
Amount of Aircraft Deicing Fluid Used at the Airport, 2007-2012

	Glycol (gallons)
2007-2008	562,023
2008-2009	363,767
2009-2010	523,405
2010-2011	584,395
2011-2012	797,293
5-year average	566,177

Source: Airport Environmental Section, 2012.

⁹⁶ Airport staff, 2012.

9.18.7 NPDES PERMIT AND SWPPS

The USEPA requires the Airport to have a permit that allows discharges under certain conditions, because runoff from rain and snowmelt from the Airport's facilities flows into United States waters, Lakes Hood and Spenard, and streams and wetlands within and adjacent to the Airport. This permit was originally authorized under the USEPA's NPDES multi-sector general permit (MSGP) for stormwater discharges associated with industrial activities. Subsequently, ADEC took primacy of the USEPA's NPDES permit program, and the Airport now operates under the APDES system administered by ADEC. The 2009 MSGP expired in 2013, but has been administratively extended by ADEC until a new MSGP is issued. The Airport is classified as an air transportation facility under Standard Industrial Classification Code 4581, and as such is regulated under Sector S of the NPDES stormwater discharge permit. Sector S is the subpart of the MSGP that specifies regulations for air transportation activity. It provides guidance and metrics for which the Airport can use to manage effluent runoff. A SWPPP for the Airport, as required by the MSGP, is in place and updated as appropriate. The SWPPP is intended to integrate other Airport environmental compliance programs that minimize stormwater pollution and to meet requirements of the Airport's NPDES stormwater discharge permit. "Regulated" facilities are those areas of Airport industrial activity that have been identified as areas where pollutants might mix with stormwater.

The SWPP contains a complete list of BMPs used at the Airport. The list of BMPs, based on operations at the Airport, includes guidelines for the following:

- Loading and unloading materials or liquids
- Outdoor storage of materials
- Runway and taxiway maintenance and pavement painting
- Snow removal and deicing
- Vehicle maintenance
- Grounds maintenance
- Runoff management
- Safety and firefighting training
- Waste management

The USEPA Effluent Limitations Guidelines that were released in May 2012, to which the Airport is obligated, apply only to pavement deicing activities and do not directly affect aircraft deicing operations or ADF-contaminated runoff management (Federal Register 2012, 40 CFR 449).

9.19 WETLANDS

The MOA's *Anchorage Wetlands Management Plan* (AWMP), as updated in 2012, identifies a number of AWMP-mapped wetlands located on

Airport property. See **Figure 2.63** for general wetland locations. The MOA AWMP identified the following wetland locations:

- Turnagain Bog
- Postmark Drive West (commonly referred to as Postmark Bog)
- Little Campbell Lake
- South Airpark Pond (also known as Sullivan Pond)
- Northwest Air Guard / Raspberry Road, located southwest of Delong Lake
- Delong Lake / Meadow Lakes
- Connor's-Strawberry Bog (also known as Connor's Bog)

These wetlands offer a variety of values and functions, some of which may include water surface flow, migratory and nesting bird habitat, fish habitat, water quality functions, seasonal flood water conveyance, and / or aquifer recharge.

The runway extension project in 2009 also identified additional field-delineated wetlands west of Runway 7R.

Coastal wetlands are found below portions of the coastal bluff. Coastal wetlands and marshes are very important and offer rare habitat for migrating water birds as staging, feeding, and resting areas along the Pacific Flyway. The coastal marshes within the Airport property are related to other coastal marshes in the Upper Cook Inlet area and represent an important habitat for local wildlife. These coastal wetlands and marshes (as depicted on **Figure 2.63**) are a part of the much larger Anchorage Coastal Wildlife Refuge.

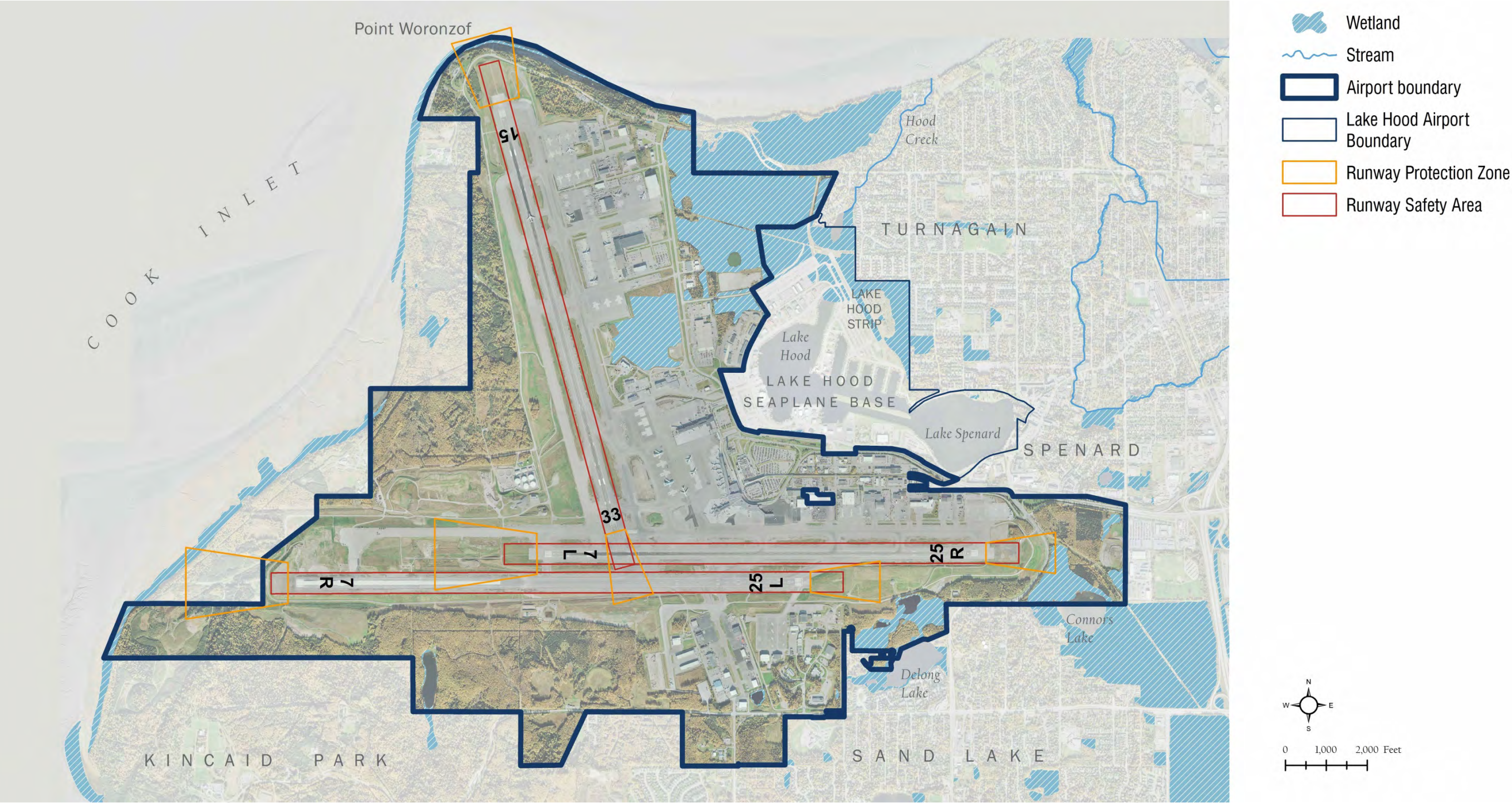
Future projects that potentially impact wetlands identified in the AWMP may require a wetland delineation, an Army Corps of Engineers Jurisdictional Determination, and a Clean Water Act Section 404 permit for fill within wetlands.

9.20 WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act provides for the preservation of free-flow conditions of certain selected rivers of the nation and protection of these rivers' immediate environments for the benefit and enjoyment of future generations. A review of the National Park Service website indicates that there are no designated wild and scenic rivers on or adjacent to the Airport or within the MOA.

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Figure 2.63 Wetland Locations



Source: RS&H and HDR, 2014.

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