

# Valdez Pioneer Field Airport Master Plan Update

February 2019  
State Program Number NFAPT00291

**Inventory, Forecast, and Issues**

**Prepared for:**

State of Alaska  
Department of Transportation & Public Facilities, Northern Region  
2301 Peger Road  
Fairbanks, Alaska 99709

**Prepared by:**

Stantec Consulting Services Inc.  
725 E Fireweed Lane, Suite 200  
Anchorage, AK 99503

## TABLE OF CONTENTS

TABLE OF CONTENTS .....	II
LIST OF FIGURES .....	III
LIST OF TABLES.....	IV
LIST OF ACRONYMS .....	V
1 INTRODUCTION.....	1-1
2 INVENTORY.....	2-1
2.1 BACKGROUND.....	2-1
2.2 AIRFIELD/AIRSPACE .....	2-3
2.3 PASSENGER TERMINAL FACILITIES .....	2-14
2.4 GENERAL AVIATION FACILITIES.....	2-16
2.5 CARGO FACILITIES.....	2-16
2.6 SUPPORTING AIRPORTS .....	2-17
2.7 SUPPORT FACILITIES .....	2-18
2.8 MAINTENANCE AND OPERATIONS .....	2-19
2.9 ACCESS, CIRCULATION AND PARKING.....	2-20
2.10 UTILITIES.....	2-20
2.11 LAND USE .....	2-22
3 FORECAST AND AVIATION ACTIVITY .....	3-1
3.1 CHARACTERISTICS OF VALDEZ.....	3-1
3.2 AIRPORT OPERATIONS FORECAST .....	3-1
4 ISSUES .....	4-1
5 REFERENCES.....	5-1
ATTACHMENT A: ECONOMICS ANALYSIS.....	1
1 DEMOGRAPHIC PROFILE .....	1
1.1 POPULATION CHARACTERISTICS.....	1
1.2 HOUSING.....	3
1.3 EMPLOYMENT AND INCOME.....	3
2 ECONOMIC INDICATORS .....	5
2.1 FISHERIES .....	10
3 DEMOGRAPHICS-BASED POPULATION PROJECTION .....	12

## LIST OF FIGURES

Figure 1-1.	Location & Vicinity Map .....	1-2
Figure 1-2.	Study Area .....	1-3
Figure 1-3.	Robe Lake Map .....	1-4
Figure 1-4.	Thompson Pass Airport .....	1-5
Figure 1-5.	Whittier Airport .....	1-6
Figure 2.2.1-1.	VDZ Sectional .....	2-4
Figure 2.2.8-1.	Instrument Approach to VDZ (LDA/DME-H) .....	2-8
Figure 2.2.8-2.	Instrument Departure from VDZ (Naked Six) .....	2-9
Figure 2.2.8-3.	Instrument Departure from VDZ (JMAAL Three) .....	2-10
Figure 2.2.9-1.	East and West (right) Views from the Airport (FAA, 2018b) .....	2-12
Figure 2.2.9-2.	East and Northwest (right) Views of Terrain Surrounding Airport. ....	2-12
Figure 2.3-1.	Terminal Floor Plan .....	2-15
Figure 2.9-1.	Commonly Used Gates .....	2-22
Figure 2.11-1.	Land Use .....	2-24
Figure 2.11-2.	Airport Lease Lots .....	2-25
Figure 3.2.1-1.	Number of Commercial Flights at Valdez Airport, 2002–2017 .....	3-3
Figure 3.2.1-2.	Number of Passengers at Valdez Airport, 2002–2017 .....	3-4
Figure 3.2.1-3.	Average Passengers per Flight at Valdez Airport, 2002–2017 .....	3-4
Figure 3.2.2-1.	Estimated General Aviation and Military Operations, 2002–2017 .....	3-6
Figure 3.2.4-1.	Annual Number of Flights, excluding Grant Aviation Flights, and Population of Five Communities .....	3-9
Figure 3.2.5-1.	Number of Commercial Flights History and Projections, 2002–2030 .....	3-11
Figure 3.2.5-2.	Number of Passengers History and Projections, 2002–2030 .....	3-14
Figure 3.2.6-1.	Comparison of Historic and Forecast Enplanements from Northern Economics and TAF, 2002- 2030 .....	3-15
Figure A-1.1-1.	Population Trends in Valdez Area Communities, 2008–2017 .....	2
Figure A-2-1.	Number of Establishments by Industry in Valdez-Cordova Census Area, 2002 and 2012 .....	6
Figure A-2-2.	Real Value of Services by Industry in Valdez-Cordova Census Area, 2002 and 2012 .....	7
Figure A-2-3.	Number of Employees by Industry in Valdez-Cordova Census Area, 2002 and 2012 .....	8
Figure A-2-4.	Number of People in Civilian Labor Force in Valdez-Cordova Census Area, 2010–2017 .....	9
Figure A-2-5.	Unemployment Rate for Valdez-Cordova Census Area, 2010–2017 .....	9
Figure A-2-6.	Number of Private Establishments for All Industries in Valdez-Cordova Census Area, 2010– 2017 .....	10
Figure A-2.1-1.	Estimated Pounds of Salmon Landed by Commercial Fishers Based in Valdez, 2010–2017 .....	11
Figure A-3-1.	Estimated and Projected Populations for Valdez and Surrounding Communities, 2010–2045 ...	13

## LIST OF TABLES

Table 2.2.10-1.	Valdez Weather Data Period of Record: 2/01/2002 to 03/6/2013 .....	2-13
Table 2.3-1	Valdez Airport Terminal Subleases.....	2-14
Table 2.3-2.	Terminal Facility Space.....	2-16
Table 2.8-1.	Valdez Airport Equipment List .....	2-19
Table 2.9-1.	Parking Facilities .....	2-20
Table 2.11-1.	Structures at the Airport .....	2-26
Table 2.11-2.	Valdez Airport Lease Lots.....	2-27
Table 3.2.1-1.	Number of Commercial Flights, Passengers, and Passengers per Flight, 2002–2017 .....	3-3
Table 3.2.2-1.	Estimated General Aviation and Military Operations, 2002-2017 .....	3-5
Table 3.2.3-1.	Airport Reference Code.....	3-7
Table 3.2.3-2.	Valdez Airport Commercial Operations by Type of Aircraft, 2009-2017.....	3-8
Table 3.2.4-1.	Commercial Flights Excluding Grant Aviation and Population of Five Communities, 2002–2017 .....	3-9
Table 3.2.4-2.	Regression Statistics .....	3-10
Table 3.2.4-3.	Regression Estimates .....	3-10
Table 3.2.5-1.	Projected Number of Commercial Flights, 2018–2030 .....	3-11
Table 3.2.5-2.	Projected Number of Commercial Passengers and Commercial Flights, 2018–2030 .....	3-13
Table 3.2.5-3.	Projected Number of Enplanements, 2018–2030 .....	3-14
Table A-1.1-1.	Estimated Population of Valdez Area Communities, 2008–2017 .....	1
Table A-1.1-2.	Age and Gender Groups in Valdez and Surrounding Communities, 2010 .....	2
Table A-1.2-1.	Average Household and Family Size, 2010 .....	3
Table A-1.2-2.	Housing Units Occupancy Status, 2010 .....	3
Table A-1.3-1.	Estimated Labor Force Participation and Employment, 2016 .....	4
Table A-1.3-2.	Estimated Number of People Employed by Industry in the City of Valdez, 2016 .....	4
Table A-1.3-3.	Sum of Real Personal Income in Valdez-Cordova Census Area, 2010–2016.....	5
Table A-2-1.	Number of Establishments, Value of Services, and Number of Employees in Valdez-Cordova Census Area, 2002 and 2012 .....	5
Table A-2-3.	Trends in Economic Indicators for Valdez-Cordova Census Area, 2010–2017 .....	8
Table A-2.1-1.	Participation of Commercial Fishers Based in Valdez, 2010–2017 .....	11
Table A-2.1-2.	Sablefish Records for Commercial Fishers Based in Valdez, 2010–2017.....	12

## LIST OF ACRONYMS

AC	Advisory Circular
ADCCED	Alaska Department of Commerce, Community, and Economic Development
ADEC	Alaska Department of Environmental Conservation
ADF	Automatic Direction Finder
ADF&G	Alaska Department of Fish and Game
ALS	Approach Lighting System
ADOLWD	Alaska Department of Labor and Workforce Development
ARC	Airport Reference Code
ARFF	Airport Rescue and Fire Fighting
ARTCC	Air Route Traffic Control Center
AST	Aboveground Storage Tank
ATCT	Air Traffic Control Tower
AWOS	Automated Weather Observation System
CFEC	Alaska Commercial Fisheries Entry Commission
CFR	Code of Federal Regulations
CTAF	Common Traffic Advisory Frequency
CVEA	Copper Valley Electric Association, Inc.
DOT&PF	Alaska Department of Transportation and Public Facilities
DME	Distance Measuring Equipment
DNR	Department of Natural Resources
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FSS	Flight Service Station
HIRLs	High Intensity Runway Light
IFR	Instrument Flight Rules
ILS	Instrument Landing System
LDA	Landing Distance Available
lf	linear footage
M&O	Maintenance and Operations
MALS	Medium Intensity Approach Lighting System with runway Alignment
MHz	Mega-Hertz
MITL	Medium Intensity Taxiway Lights
MLS	Microwave Landing System
NAVAIDs	Navigational Aids
NDB	Non-Directional Beacon
NPIAS	National Plan of Integrated Airport Systems
PAPI	Precision Approach Path Indicator
PBR	Plane, Boat, Recreational
PCI	Pavement Condition Index
PCN	Pavement Classification Number
RAP	Recycled Asphalt Pavement
RCO	Remote Communications Outlet
REIL	Runway End Identification Light
ROFA	Runway Object Free Area
RSA	Runway Safety Area
Runway OFZ	Runway Obstacle Free Zone
RW	Runway
sf	square foot
SREB	Snow Removal Equipment Building
STOL	Short Takeoff and Landing
TAF	Terminal Area Forecast
TAPS	Trans Alaska Pipeline System
TCH	Threshold Crossing Height

TW.....Taxiway  
USBLS..... U.S. Bureau of Labor Statistics  
USBTS..... U.S. Bureau of Transportation Statistics  
USDOT..... U.S. Department of Transportation  
UST ..... Underground Storage Tank  
VASI..... Visual Approach Slope Indicator  
VDZ..... Valdez Pioneer Field  
VHF..... Very High Frequency  
VOR..... VHF Omnidirectional Range

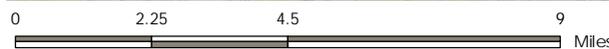
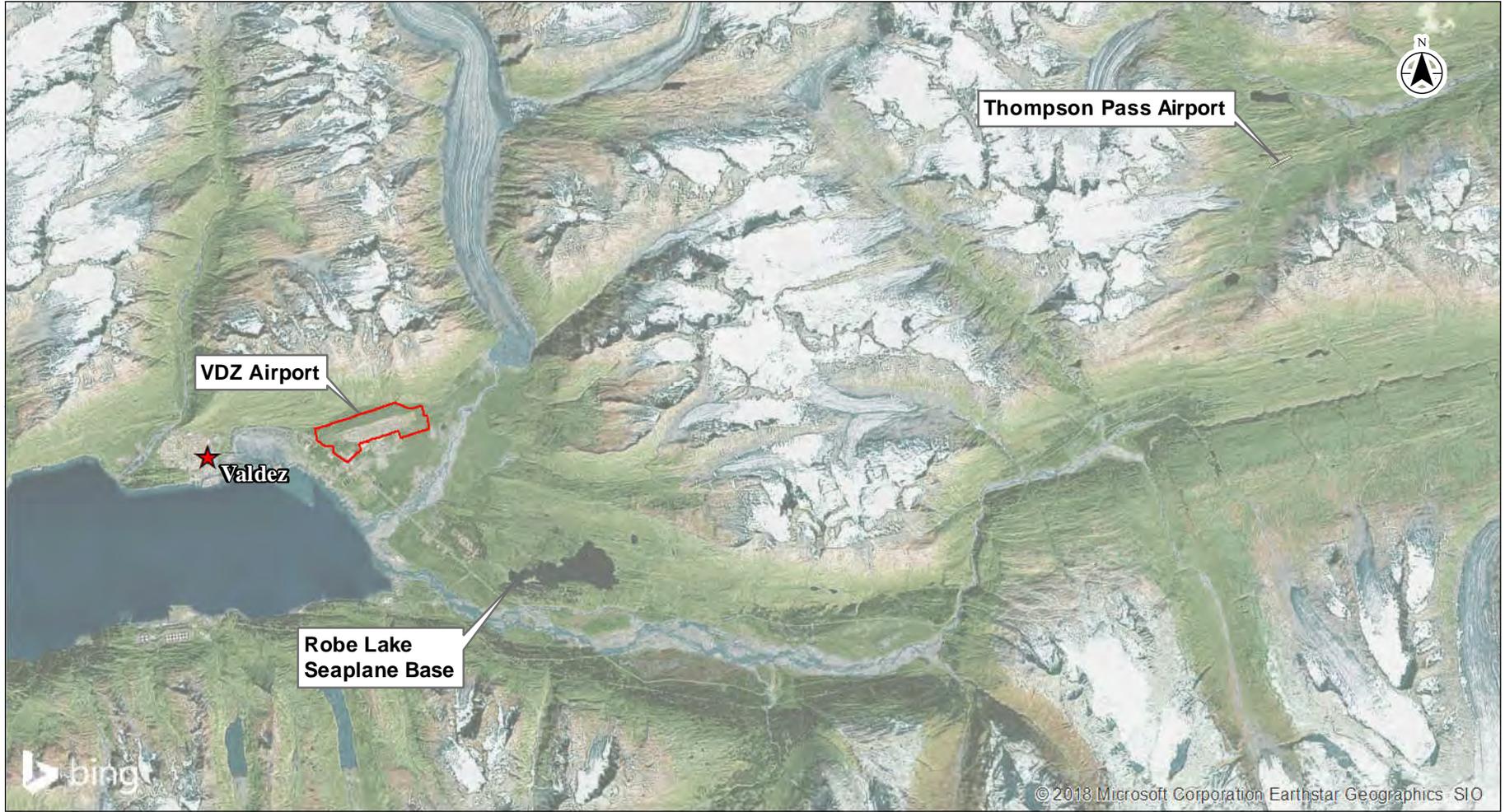
## 1 INTRODUCTION

The Alaska Department of Transportation and Public Facilities (DOT&PF) and the Federal Aviation Administration (FAA) are conducting an Airport Master Plan Update for the Valdez Pioneer Field (VDZ) (Figure 1-1, 1-2). Supporting airports include Robe Lake (L93), Thompson Pass Airport (K55) and Whittier (PAWR); all of which are discussed in the Master Plan (Figure 1-1, 1-3, 1-4, 1-5). This Master Plan Update adheres to requirements set out in FAA Advisory Circular (AC) 150/5070-6B, Changes 1 and 2, Airport Master Plans.

The last VDZ Airport Master Plan was completed in 2004. An airport Master Plan is a comprehensive study of an airport and describes the development plans to meet future aviation demand. Master Plans support the modernization or expansion of existing airports. The goal is to provide the framework needed to guide future airport investment over the next 20 years that will cost-effectively satisfy current and future aviation demand, while considering potential environmental and socioeconomic impacts.

VDZ is of strategic and economic importance to the State of Alaska. The airport serves the Trans-Alaska Pipeline System (TAPS), Valdez Marine Terminal, City of Valdez, and the Greater Copper Valley basin.

In the event of the construction of an Alaska natural gas pipeline or an event like the Exxon Valdez Oil Spill of 1989, the airport must handle a large amount of heavy payload aircraft over an extended period of months to years. Accordingly, the airport is kept in an advanced state of readiness, and a Master Plan Update is needed to evaluate issues associated with such events.



Project Origin: Valdez, Alaska  
 Township 8S, Range 8W  
 Section 35, and 36  
 Copper River Meridian  
 Valdez Airport  
 USGS: VALDEZ (A-7, A-6) ALASKA  
 61.1342 N -146.2447 W



Graphics developed by Stantec Consulting Services, Inc.

STATE OF ALASKA  
 Department of Transportation and Public Facilities  
 Northern Region - Aviation  
 2301 Peger Road Fairbanks, AK 99709

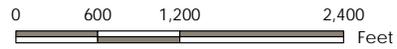
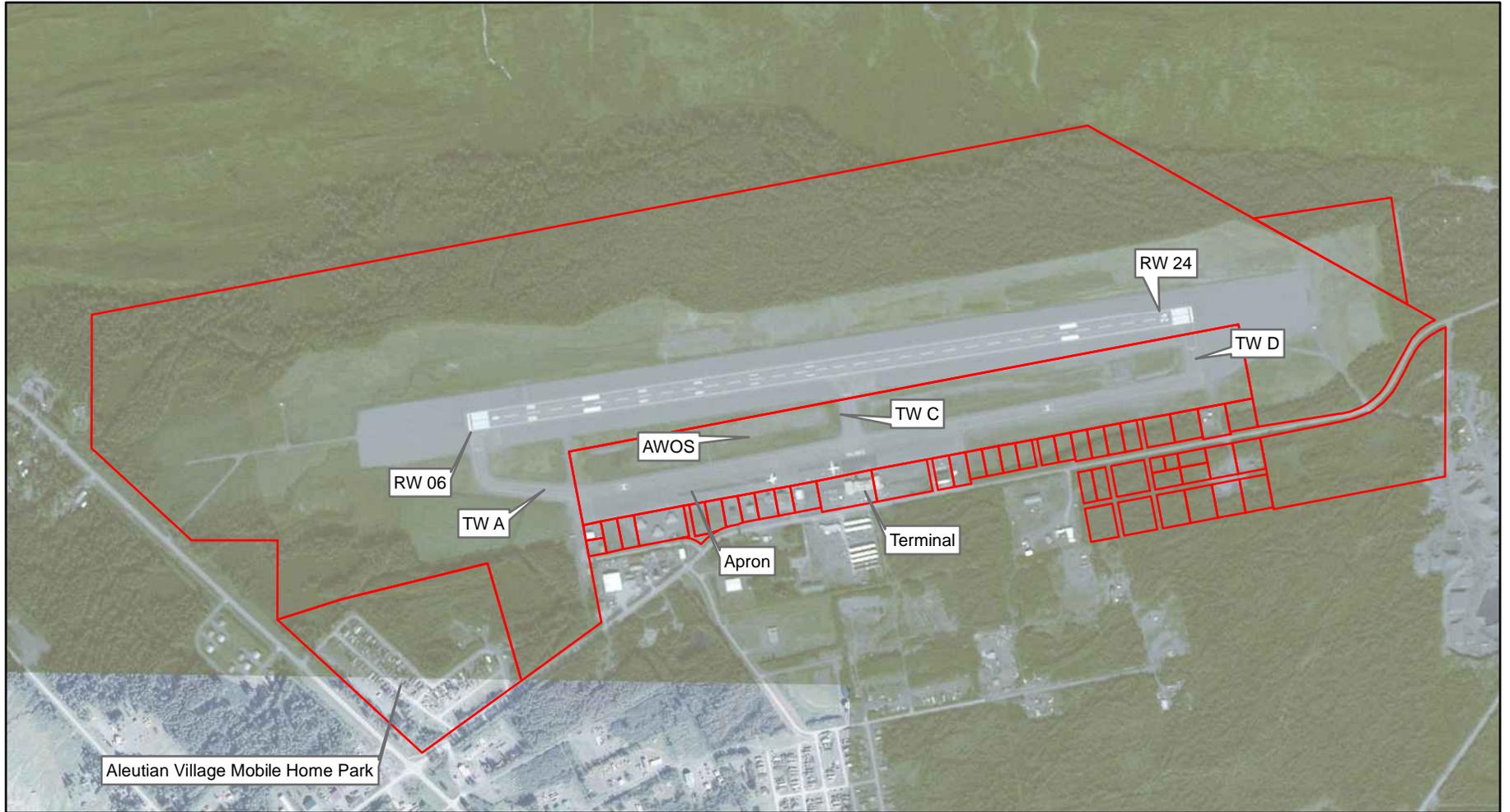
VALDEZ PIONEER FIELD AIRPORT  
 VALDEZ, ALASKA  
**Airport Master Plan Update  
 Location & Vicinity Map**

DATE: October, 2018

FIGURE 1-1

U:\2018\706\3700\GIS\mxd\Figures\airport\_mastpln\inventory\_report\2018\706\3700\_amp\Fig\_1\_1\_loc\_vic.mxd Revised: 2018-10-10 By: cparham

\\US13084601\Shared\_projects\2017061300\GIS\mxd\figures\airport\_master\_plan\_inventory\_2018\2017061300\_omp\_fig\_1\_2\_Study\_Area.mxd Reviewed: 2018-10-25 By: rycocoper



**Legend**

- Airport Property
- TW = Taxiway
- RW = Runway

Graphics developed by Stantec Consulting Services, Inc.

STATE OF ALASKA  
 Department of Transportation and Public Facilities  
 Northern Region - Aviation  
 2301 Peger Road Fairbanks, AK 99709

VALDEZ PIONEER FIELD AIRPORT  
 VALDEZ, ALASKA  
**Airport Master Plan Update  
 Study Area**

DATE: October, 2018

FIGURE 1-2



Graphics developed by Stantec Consulting Services, Inc.



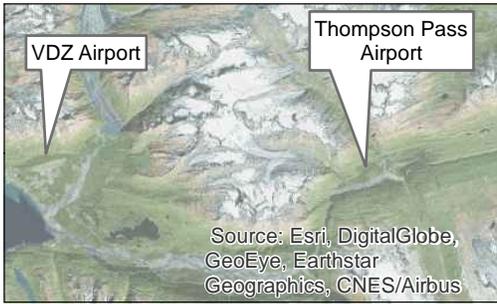
Robe Lake Map Series:  
 Vicinity (Upper Left), Detail (Upper Right), and Overview (center)  
 Note: This is a 2009 Image,  
 Currently there are no facilities at Robe Lake

STATE OF ALASKA  
 Department of Transportation and Public Facilities  
 Northern Region - Aviation  
 2301 Peger Road Fairbanks, AK 99709

VALDEZ PIONEER FIELD AIRPORT  
 VALDEZ, ALASKA  
**Airport Master Plan Update  
 Robe Lake Map**

DATE: October, 2018

FIGURE 1-3



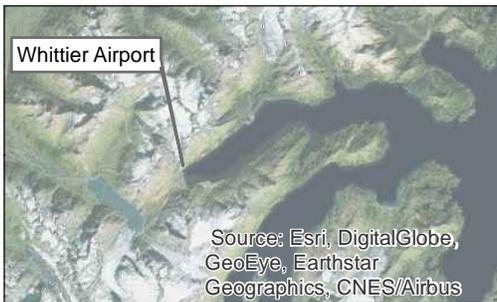
Graphics developed by Stantec Consulting Services, Inc.

STATE OF ALASKA  
 Department of Transportation and Public Facilities  
 Northern Region - Aviation  
 2301 Peger Road Fairbanks, AK 99709

VALDEZ PIONEER FIELD AIRPORT  
 VALDEZ, ALASKA  
**Airport Master Plan Update  
 Thompson Pass Airport**

DATE: October, 2018

FIGURE 1-4



Graphics developed by Stantec Consulting Services, Inc.

STATE OF ALASKA  
 Department of Transportation and Public Facilities  
 Northern Region - Aviation  
 2301 Peger Road Fairbanks, AK 99709

VALDEZ PIONEER FIELD AIRPORT  
 VALDEZ, ALASKA  
**Airport Master Plan Update**  
**Whittier Airport**

DATE: October, 2018

FIGURE 1-5

## 2 INVENTORY

VDZ is a regional Part 139 airport that supports a regularly scheduled commuter service from Anchorage, Alaska. VDZ has a single, asphalt concrete paved runway 6,500 feet long. It has one instrument approach with a 5-mile visibility minimum due to surrounding topography. The aircraft with the most operations in 2017 was the De Havilland Dash-8, although larger aircraft can use it to respond to industrial requirements.

This Master Plan Update includes an inventory of the current airport conditions. The inventory was conducted from May to July 2018 to provide for identification of needs, development of alternatives, and publication of the final Master Plan in 2019. As such, some sections may not reflect current conditions at the publication of the final Master Plan.

### 2.1 Background

The first airstrip in Valdez was built in near the center of Old Valdez in the mid-1920s. The runway was about 1,200 feet long, narrow, rough, and gravel-surfaced. Airfield facilities were not greatly improved until 1951, when the federal government recognized that the airfield was barely usable. A new site (the present site) was selected on public domain land, and in 1952, the State of Alaska Department of Aviation constructed a gravel-surfaced 4,400-foot-long by 150-foot-wide runway and apron.

The second largest earthquake ever recorded in the world struck a few miles west of Valdez in 1964. Tsunamis generated by the earthquake destroyed Old Valdez, and the community was rebuilt in a more sheltered location, 4 miles to the west.

In 1969 Valdez was selected for the construction of the Trans-Alaska Pipeline System (TAPS) terminal. This construction effort dramatically increased airport operations. In 1973 the State built a new 5,000-foot-long by 150-foot-wide runway, incorporated the existing runway into an apron and parallel taxiway, constructed three connecting taxiways, and expanded the apron. The FAA installed an air traffic control tower (ATCT) and flight service station (FSS) in 1974. A new terminal building was constructed with private funds in 1975.

In 1981 the DOT&PF lengthened the runway to 6,500 feet, constructed a taxiway connecting the west end of the runway with the parallel taxiway, and installed runway and taxiway lights. During this time, three air taxi operators and one air carrier (flying Boeing-727 jet aircraft) provided commercial service.

After the completion of the pipeline, the number of operations fell dramatically. The ATCT was decommissioned and the City of Valdez purchased the Airport Terminal Building.

The Exxon Valdez Oil Spill in March 1989 had a dramatic effect on the airport and the City of Valdez. The airport was a crucial transportation link during the cleanup effort. The apron was at capacity within two days of the spill. The ATCT was re-opened by FAA and operating within days and remained operational until the cleanup effort traffic subsided. The airport is maintained in a continued state of readiness to respond to a similar event.

Weather minimums are an issue, due to confining terrain. A microwave landing system (MLS) was commissioned in May 1994. The MLS provided precision navigation guidance for exact alignment and descent of aircraft on approach. The system required aircraft to be specially equipped and pilots to be specially trained. The system was decommissioned on August 23, 2000.

The 2004 Runway Safety Area (RSA) and Runway Extension project improved the RSA to 500 feet wide and 1,000-feet beyond the thresholds to meet C-III ARC (Airport Reference Code standards). This was accomplished by shifting the runway east to avoid impacts to Loop Road No 2 Creek which is an anadromous fish stream. Taxiway A was relocated to the new Runway (RW) 6 threshold, Taxiway B was removed, all pavements at the airport resurfaced, and new airfield lighting installed.

A 2007 RSA extension project resurfaced the new RSA, extended the RW 24 RSA to accommodate grading requirements for the localizer antenna, relocated Taxiway D to the RW 24 threshold, and improved the security perimeter fencing.

In 2014, VDZ played a critical role in responding to the Keystone Canyon Avalanche Dam, which blocked the only road connecting Valdez to the highway system for 12 days. As a result, the airport and harbor were the only transportation links for essential community supplies. VDZ saw 15% increase in annual operations that year for its primary aircraft (De Havilland Dash-8) and a 9% increase in total passengers. This was despite a local economic slowdown; which decreased overall airport activity and caused the exit of an air carrier who had recently entered the local market (see Forecast and Aviation Activity, Section 3.0).

### ***2.1.1 Role in National Aviation System***

VDZ is listed as a regional airport in the Alaska Aviation System Plan. It is a primary, non-hub airport in the National Plan of Integrated Airport Systems (NPIAS). It is owned by the DOT&PF, which provides

Maintenance and Operations (M&O) and Airport Rescue and Fire Fighting (ARFF) service. The terminal is owned and operated by the City of Valdez.

### ***2.1.2 Role in Community***

VDZ is located on the north shore of Valdez Arm, a deep-water fjord in Prince William Sound, with 807 acres of land at 61° 07' N Latitude and 146° 14' W Longitude. It lies 305 road miles east of Anchorage, and 364 road miles south of Fairbanks. The Port of Valdez lies a mile to the southwest, and the City of Valdez is 3.5 miles west of the airport.

The rugged Chugach Mountains rise sharply along the northern property line and less than 2 miles from the eastern boundary of the airport. The topography restricts potential approach and departure minimums.

The City of Valdez hosts the Valdez Fly-In and Air Show every May. This is the premier bush flying event in Alaska demonstrating Alaskan bush flying skills, including Short Takeoff and Landings (STOL). This event was created by the City of Valdez to boost economic activity during the slow spring shoulder season. This effort requires a collaborative effort between the local community and regional DOT&PF resources.

## **2.2 Airfield/Airspace**

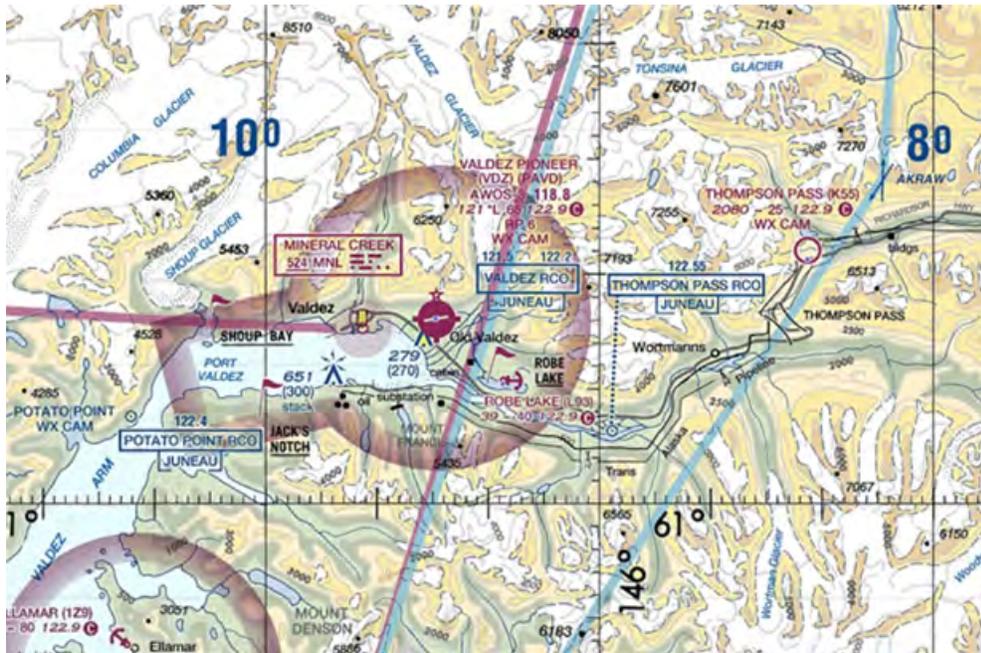
### ***2.2.1 Runways***

VDZ has a single, asphalt concrete paved runway 6,500 feet long and 150 feet wide (Figure 2.2.1-1). The runway lies within 10 degrees magnetic alignment of 06/240 degrees and is designated Runway 6/24. Aircraft approaching from the west are said to be using Runway 6 and Runway 24 from the east.

The runway has an effective gradient of 1.08 percent and a strength of 200,000 pounds for dual gear aircraft. The Pavement Classification Number (PCN) is 54 F/B/X/T. The approach surface for Runway 6 is 34:1 and 20:1 for Runway 24.

According to the 2013 Alaska Airport Pavement Inspection Report, Runway 6/24 has a weighted average Pavement Condition Index (PCI) of 88, which indicates preventative maintenance is needed. All taxiways and apron areas are also in good condition with a PCI of 89 or greater.

Figure 2.2.1-1. VDZ Sectional



## 2.2.2 Taxiways

The airport has three taxiways, A, C, and D. The taxiways are in good condition. Taxiways C and D, originally constructed in 1974, are oriented approximately north-south, and lead from the parallel Taxiway A to the runway. Taxiway C is 698 feet long and 90 feet wide with 30-foot-wide paved shoulders. Taxiway D was relocated in 2007 and is 612 feet long and 90 feet wide with 30-foot-wide paved shoulders.

Beginning at Taxiway D, Taxiway A is parallel and adjacent to the apron for 5,484 feet, it angles toward the runway for 875 feet and is perpendicular for 550 feet where it ends at the RW6 threshold. Its width varies between 75 and 90 feet with 30 to 37.5 foot paved shoulders.

## 2.2.3 Aprons

VDZ has one large terminal apron of 740,760 square feet. This serves the main terminal and the developed lease lots. The last PCI rated the apron as needing preventative maintenance.

#### **2.2.4 Safety Areas**

An RSA is a graded area surrounding the runway serving a function like that of a highway shoulder. Under dry conditions, the RSA must be capable of supporting the occasional passage of aircraft, thereby reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from the runway. It also provides accessibility for ARFF equipment during such incidents. FAA standards require the RSA be cleared, graded, and drained. In accordance with FAA 150/5300-13A Chg 1 Airport Design, for an RDC of C-III-Visual, the RSA is to extend 1,000 feet beyond the runway threshold and be 500 feet wide.

The Runway 6 RSA surface is made of compacted recycled asphalt pavement (RAP), and the width and length meet standards. The length beyond Runway 24 is approximately 945 feet, which is short of standard by 55 feet due to a nearby stream.

The runway object free area (ROFA) provides a clear area around the runway to protect aircraft during landing and takeoff. The ROFA should be clear of all aboveground objects protruding above the RSA edge elevation. Objects required for air navigation or aircraft maneuvering may be in the ROFA, provided they are constructed on frangible (breakable) mounted supports. The ROFA extends 1,000 feet beyond each runway threshold (but never longer than the existing RSA) and is 800 feet wide. The ROFA complies with FAA standards.

The runway obstacle free zone (Runway OFZ) is designed to provide protection to aircraft landing and takeoff. The Runway OFZ is a volume of airspace centered on the runway centerline with elevations matching the nearest point on the runway at any point. The Runway OFZ extends 200 feet beyond each runway threshold and is 400 feet wide. The Runway OFZ complies with FAA standards.

The Inner-approach OFZ is a volume of airspace centered on the approach area and applies to runway ends with approach lighting system (ALS). It applies only to Runway 6, which has an ALS. The Inner-approach OFZ begins 200 feet from the runway threshold at the same elevation as the runway threshold and extends 200 feet beyond the last light unit of the ALS. It is 400 feet wide and rises at a slope of 50 (horizontal) to 1 (vertical).

#### **2.2.5 Lightings, Marking, and Signing**

The runway is lighted with high intensity runway lights (HIRLs) installed in 2004. The HIRLs outline the edges of the runway during periods of darkness or low visibility.

There are medium intensity taxiway lights (MITLs) that line both sides of taxiways A, C, and D. MITLs are only on the north side of Taxiway A along the apron. These lights were also installed in 2004.

Taxiway D lights were installed in 2007. Hold position markings include enhanced taxiway centerlines and surface painted holding position signs indicating the runway designations.

Runway 6 has precision instrument markings and Runway 24 has non-precision instrument markings, which are in good condition.

Illuminated signs were installed throughout the airport in 2007.

### **2.2.6 Navigational Aids**

The Juneau Flight Service Station (Juneau FSS) provides service to aircraft operating within the Valdez area using the Valdez Remote Communications Outlet (RCO). Pilots communicate with other pilots and advise their intentions on the Common Traffic Advisory Frequency (CTAF) frequency 122.9 mega-hertz (MHz). The automated weather observation system (AWOS) automated reports are broadcast on frequency 118.8 MHz. The Mineral Creek Non-Directional Beacon (NDB) is located in the town of Valdez, and the Johnstone Point Very High Frequency (VHF) Omnidirectional Range (VOR) is located in Prince William Sound.

VDZ is served by the Anchorage Center Air Route Traffic Control Center (ARTCC). The controllers are primarily concerned with aircraft operating under instrument flight rules (IFR). An ATCT building exists; however, it is no longer operational.

VDZ is serviced by a localizer and Distance Measuring Equipment (DME) antenna at the Runway 24 end, providing azimuth and distance instrument. There is no glideslope antenna at VDZ to make the system a full instrument landing system (ILS).

### **2.2.7 Visual Approach Aids**

Runway 6 has a PAPI with a 3- degree visual glide angle and a 29-foot TCH. The PAPI system consists of four equally spaced light units color-coded to provide a visual indication of an aircraft's position relative to the designated glide slope for the runway. Runway 24 does not currently have a PAPI or VASI.

A medium intensity approach lighting system with runway alignment (MALSR) serves Runway 6. This system was installed in 1999 and modified in 2004.

Runway end identification lights (REILs) are present on Runway 24. This system provides rapid and positive identification of the runway during periods of reduced visibility. Runway 6 is not equipped with REILs since they are not compatible with the MALSR system. Lights are pilot activated by the CTAF.

### ***2.2.8 Instrument Approach Procedures***

VDZ has a straight-in Landing Distance Available /DME-H (LDA/DME) approach. This approach is not aligned with the runway. The approach utilizes the localizer antenna LDA and DME to provide pilots with azimuth and distance data to align with the Runway 6 as well as the Mineral Creek NDB. The published minimums are 4,460-foot ceiling and 5 miles visibility (Figure 2.2.8-1).

Valdez also has a special LDA-G that is open to qualified users of the public. This provides a minimum 1,300-foot ceiling with a 1.5-mile visibility and requires the Johnston VOR to be operational. When the Johnston VOR is inoperable, the approach is not available.

The “Naked Six” departure procedure uses the Johnstone Point VOR (Figure 2.2.8-2). This Runway 6 departure requires a minimum 2,000-foot ceiling with 3-mile visibility.

Valdez also has an established departure procedure for obstacle clearance (Figure 2.2.8-2). The “JMAAL Three Departure (Obstacle)” procedure requires a 1,200-foot ceiling with 3-mile visibility minimum for Runway 6 and standard takeoff minimums for Runway 24. Aircraft are required to be equipped with an automatic direction finder (ADF) and DME. As with the Naked 6 procedure, JMAAL Three uses the Johnston VOR and neither departure is applicable at night.

Figure 2.2.8-1. Instrument Approach to VDZ (LDA/DME-H)

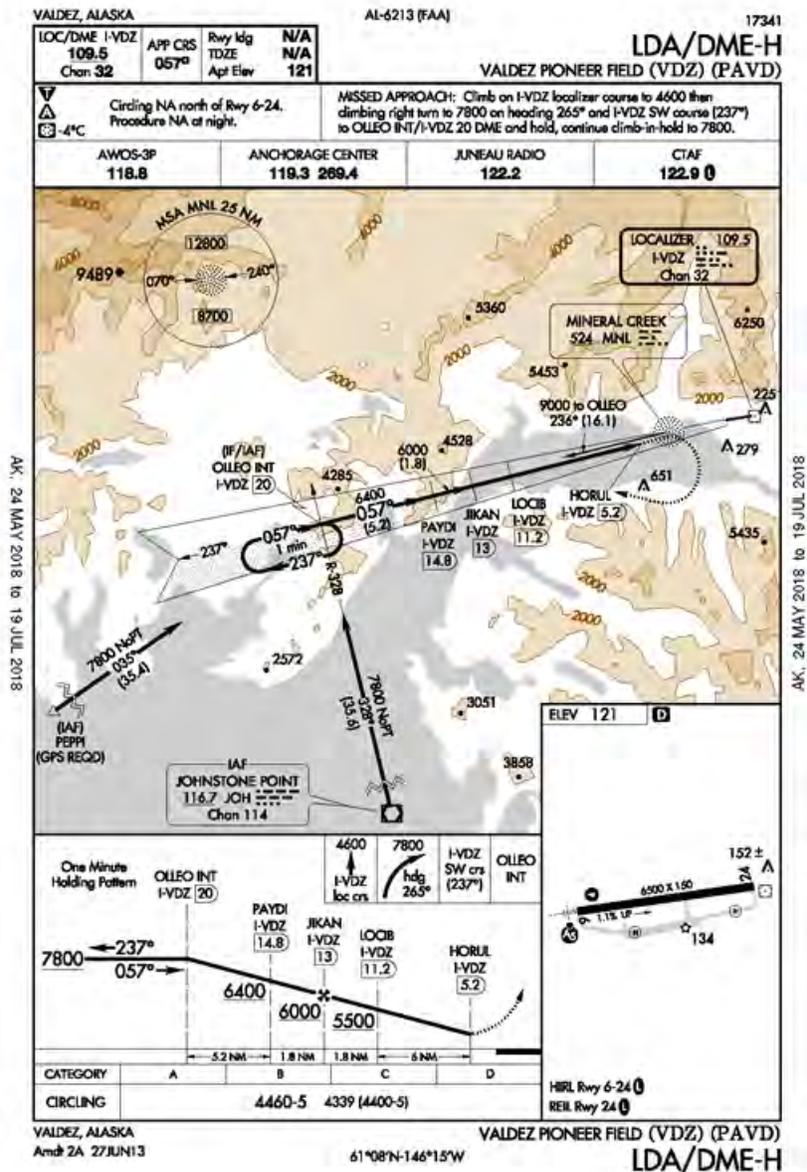


Figure 2.2.8-2. Instrument Departure from VDZ (Naked Six)

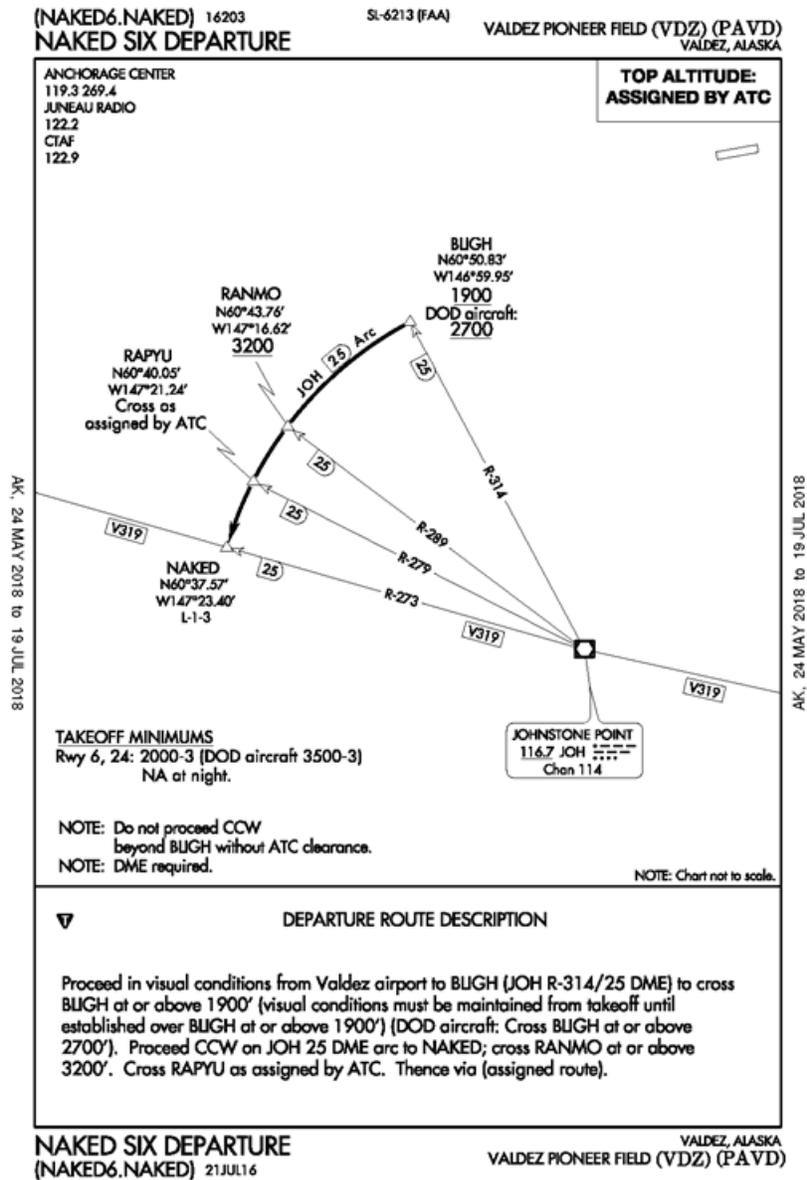
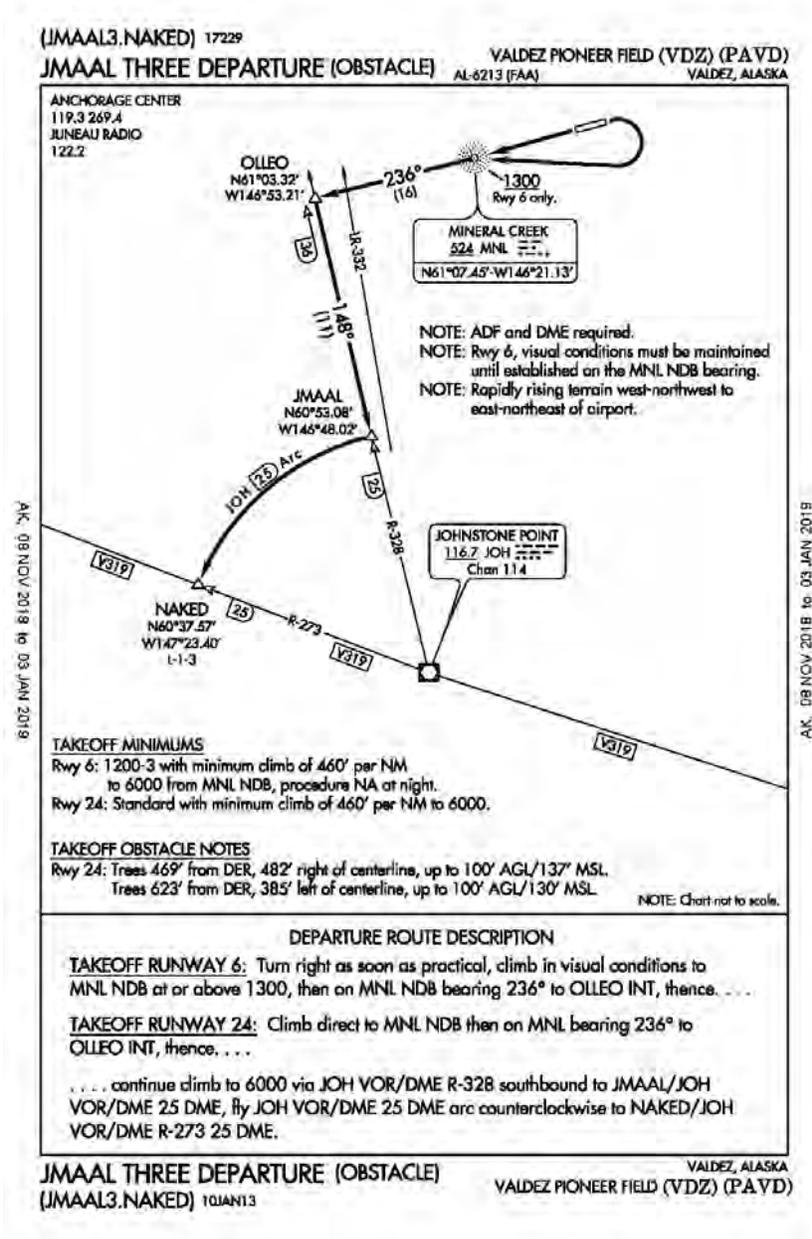


Figure 2.2.8-3. Instrument Departure from VDZ (JMAAL Three)



### **2.2.9 *Airspace and Air Traffic Management***

14 Code of Federal Regulations (CFR) Federal Aviation Regulation (FAR) Part 77 establishes standards for determining obstructions to air navigation. It applies to existing and proposed manmade objects, objects of natural growth, and terrain. To determine whether an object is an obstruction to air navigation, several imaginary surfaces are established with relation to the airport and to each runway end. The dimensions of the imaginary surfaces depend on the category of the runway and the type of approach the runway ends.

Current airspace for Runway 6 can support a non-straight in instrument approach with visibility minimum not lower than 3/4-statue mile, and visual approaches for Runway 6 and 24. The ultimate approach for Runway 24 is a non-precision instrument approach with visibility minimum not lower than or equal to 3/4-statute mile. Except for the Runway 6 approach surface (as noted below), the current existing and planned ultimate imaginary surfaces are the same. The appropriate standards applicable to the VDZ Part 77 surfaces are as follows:

- **Primary Surface:** The primary surface is longitudinally centered on the runway. It is 500 feet wide and extends 200 feet beyond each runway end. The elevation of the primary surface is identical to the elevation of the nearest corresponding point on the runway centerline.
- **Horizontal Surface:** The horizontal surface is a horizontal plane 150 feet above the established airport elevation, the perimeter of which is established by swinging 10,000-foot radius arcs from the center of each end of the primary surface and connecting each arc with lines tangent to those arcs.
- **Conical Surface:** The conical surface is a surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 horizontal to 1 vertical for a horizontal distance of 4,000-foot.
- **Approach Surface:** The approach surface is longitudinally centered on the extended runway centerline and extends outward and upward from each end of the primary surface. The approach surface to Runway 6 extends outward and upward at a slope of 34 (horizontal) to 1 (vertical) for a horizontal distance of 10,000 feet. The existing outer edge of the Runway 6 approach surface is 3,500 feet and the ultimate is 4,000 feet. The existing approach surface to Runway 24 extends outward and upward at a slope of 20 (horizontal) to 1 (vertical) for a horizontal distance of 5,000 feet with an outer edge of 1,500 feet. The ultimate approach surface to Runway 24 extends outward and upward at a slope of 34 (horizontal) to 1 (vertical) for a horizontal distance of 10,000 feet with an outer edge of 3,500 feet.

- **Transitional Surface:** The transitional surfaces extend outward and upward at right angles to the runway centerline and the extended runway centerline at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces.

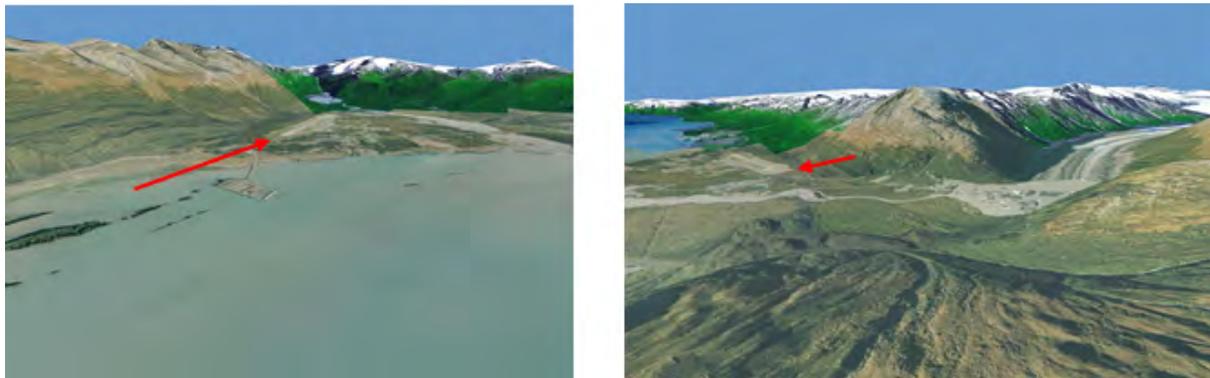
The imaginary surfaces described above are penetrated by the Chugach Mountains located north of the airport, with nearly the entire transitional, horizontal, and conical surfaces penetrated. The ultimate Runway 24 approach surface is obstructed by existing ground and trees. No other objects are known to penetrate either the primary, existing approach surfaces, or the imaginary surfaces south of the airport.

**Figure 2.2.9-1. East and West (right) Views from the Airport (FAA, 2018b)**



\*Note the visible shoulder of the large ~5,000 ft confining mountains immediately north of the runway. Also note the high mountains directly off the east end of the runway.

**Figure 2.2.9-2. East and Northwest (right) Views of Terrain Surrounding Airport.**



\*Note the confining valley at the east end of the airport. This restricts missed approaches when on approach for RW06 and restricts approaches from RW24. Airport is at red arrows.

### **2.2.10 Weather**

The airfield is equipped with an AWOS-3P observation system located in the infield between the runway, Taxiways A and C, and the apron. This measure precipitation in addition to visibility, cloud, and ceiling data.

A primary wind cone and segmented circle are located near the AWOS. It is within the ROFA and will be relocated in 2018. A secondary wind cone is in the infield between the runway, Taxiways C and D, and the apron. It is also located within the ROFA and will be relocated.

VDZ has terrain which produces strong local weather and climate. Prince William Sound and the Pacific Ocean push humid air up the Valdez Arm into Valdez. The airport is bounded on three sides by steep mountains and glaciers; providing cold air, lifting force, and strong katabatic winds against the warm, humid marine air. Table 2.2.10-1 shows the average weather. Reports from the airport include regular winter winds of more than 100 knots, capable of flipping airplanes.

The wind speed and direction can often surprise pilots approaching Runway 24. The winds over the entire length of the airfield can differ from the AWOS, due to terrain. This can lead to strength and direction wind changes over the length of the runway which the pilots are unaware of (personal communication Harold Townsend, 2018). During strong northerly winds, the winds at midfield and at the east end of the runway may be significantly higher than the winds detected at the AWOS.

**Table 2.2.10-1. Valdez Weather Data Period of Record: 2/01/2002 to 03/6/2013**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
<b>Average Max. Temperature (°F)</b>	24.9	29.4	32.9	42.6	51.9	58.6	60.2	59.1	53	43.3	31	26.8	42.8
<b>Average Min. Temperature (°F)</b>	12	16	18.2	28.4	36.8	43.9	46.6	44.9	39.6	31.8	21.1	15.6	29.6
<b>Average Total Precipitation (in.)</b>	5.41	5	3.47	3.15	2.66	2.59	4.55	5.97	9.01	7.62	6.02	5.97	61.43
<b>Average Total Snow Fall (in.)</b>	50.2	46.6	26	12.3	1	0	0	0	0.3	7.9	25.9	52.6	223
<b>Average Snow Depth (in.)</b>	61	86	86	60	10	0	0	0	0	1	7	28	28

Source: Western Regional Climate Center, [www.wrcc.dri.edu](http://www.wrcc.dri.edu).

Wind data collected at VDZ from 2008 to 2017 indicate that 91 percent of the observations had velocities lower than 6 knots (FAA, 2018a). Winds that exceeded 13 knots predominantly came from the northeast quadrant. All winds exceeding 27 knots come from the northeast. Wind coverage for the appropriate (13-knot) crosswind at the airport is 99.64 percent, indicating the runway is appropriately aligned with the prevailing winds.

Weather greatly affects VDZ operations. For example, the primary air service operator reported both 2017 and 2018 (Year to Date) had an 81% completion rate (personal communication Harold Townsend, 2018).

For example, in 2017 there were 149 flights canceled due to weather, and 20 flights diverted due to weather.

### 2.3 Passenger Terminal Facilities

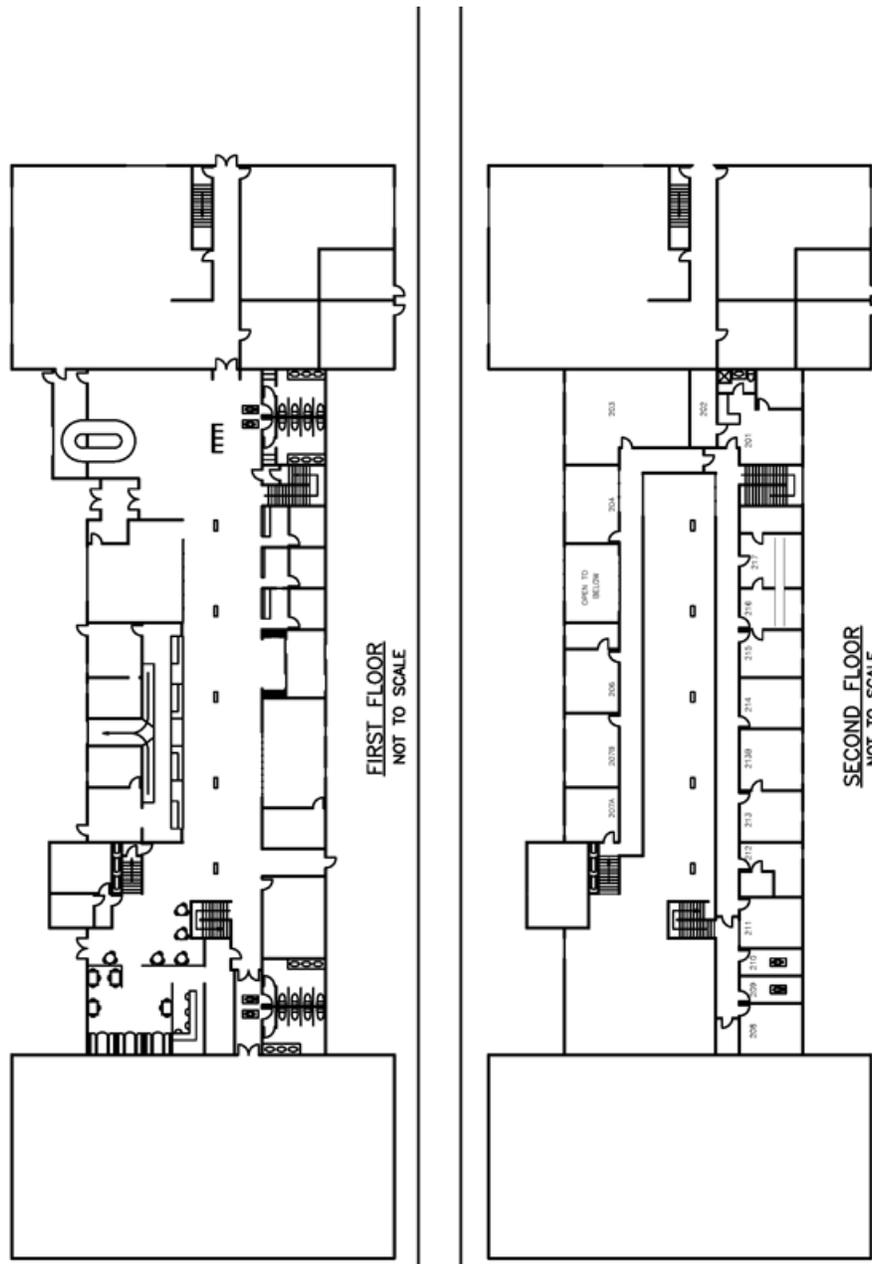
The City manages the building and leases the land from the State. The building was constructed to serve multiple purposes, including: passenger service, light cargo operations, office space, and a multipurpose room. The lower level hosts airline offices, ticket counters, a gift shop, a restaurant and bar, arrival and departure areas, and a baggage claim area. The second-floor hosts office space. Figure 2.3-1 shows the airport terminal floor plan. Table 2.3-1 lists the lease holders. Table 2.3-2 lists the square or linear footage (sf or lf) of facilities in the terminal building.

There is one rental car company located at VDZ. There is no city bus. Private tour companies and some hotels provide shuttles to and from the airport. Visitor information, brochures, and direct connections to some hotels are provided at the airport.

**Table 2.3-1 Valdez Airport Terminal Subleases**

Lessee	Location	Date Expires
City of Valdez Finance Dept.	1,778 sq. ft. office (Rooms 205, 26, 207A, 211, 212, 213, 213B, 214, 215)	
City of Valdez Engineering Dept.	2,326 sq. ft. office (Rooms 201, 202, 203, 204, 216, 217)	
Civil Air Patrol	1,029.6 sq. ft. office space in tower	12/31/2018
Dean Cummings' H2O Guides	615 sq. ft. office space (Room 122 & 123)	12/31/2018
ERA Aviation, Inc.	2,912 sq. ft. - 576 sq.ft. counter/1,400 sq.ft. freight (Room 111) /936 sq.ft. cargo	12/31/2018
FAA	18 sq. ft. tower, ERA ticket counter, roof antenna	12/31/2019
FAA	271 sq. ft. office (Room 207B)	12/31/2019
Jeff Johnson & Linda Brandenburg	184 sq. ft. office (Room 104) gift shop	12/31/2018
The Landing Lights	478 sq. ft. concourse	12/31/2018
Seed Media	30 sq. ft. ground floor wall space	12/31/2018
Valdez Expediting, Inc.	176 sq. ft. office (Room 105) storage/ATM	12/31/2018
Valdez U-Drive	184 sq. ft. office (Room 103)	12/31/2018
Vertical Solutions LLC	265 sq. ft. garage space	12/31/2019
Vertical Solutions LLC	456 sq. ft. - 170 sq. ft. counter/286 sq. ft. office (Rooms 114 & 115)	12/31/2019
Wrangell Mountain Technical Services	10 sq. ft. tower, antenna space	12/31/2018

Figure 2.3-1. Terminal Floor Plan



**Table 2.3-2. Terminal Facility Space**

Facility	Space
Bag Belt	38 lf
Baggage Area	1020 sf
Boarding Area	644 sf
Concession Counters	25 sf
Rental Car Counter	21 sf
Air Carrier Counter	28 lf

## 2.4 General Aviation Facilities

VDZ operators and leaseholders include:

- Ravn Airlines: Scheduled commercial passenger service to Anchorage, Alaska
- Vertical Solutions, Inc
- Maritime Helicopters
- Hard Luck Aviation
- Civil Air Patrol
- Aleut Real Estate LLC
- Harris Sand and Gravel, Inc.
- William Stevenson
- FAA
- Valdez Airmen's Association, Inc
- GA Operations

The approximate number of based aircraft include:

- 25 single engine aircraft
- 1 multi-engine aircraft
- 7 helicopters
- 2 ultralights

There are 28 aircraft registered with a Valdez mailing address in mid-2018 (FAA 2018c). This differs slightly due to the difference in owners mailing addresses and physical location of airplanes.

## 2.5 Cargo Facilities

Basic cargo handling occurs at the airport. Most of the packages handled are either ultimately destined for or originate in Valdez. Freight is not repacked or palletized, each item is individually loaded onto the

aircraft. Freight is not trucked to Valdez to be loaded onto aircraft. Cargo facilities are located at the eastern part of the terminal building.

## **2.6 Supporting Airports**

### **2.6.1 *Robe Lake (L93)***

Historically, floatplane operations have been supported at Robe Lake, 5 road miles southeast of the airport on the Richardson Highway. A wooden dock built to support the response to the Exxon Valdez Oil Spill had been used to support floatplane operations. There were significant security issues with vandalism of floatplanes being common. The dock was removed at the request of DNR, and floatplane operations are no longer supported. There are currently no based aircraft, utilities, lighting, signage, or NAVAIDs at Robe Lake. Aircraft that do use Robe Lake undergo float/wheel conversions to operate seasonally at either VDZ or Robe Lake.

There is a strong history of local volunteers working on airport issues in Valdez. This support has been formally organized around the Valdez Airmen's Association, which is a hangar/tenant association for the hexagon hangars at VDZ. The Valdez Airmen's Association is leading an effort to see if there is interest in reorganizing a seaplane base at Robe Lake. There may be a commercial operator that currently flies into Robe Lake, and there are historic ties of flying sea planes from Fairbanks and Anchorage into the facility.

Robe Lake is owned by the Alaska Department of Natural Resources (DNR). The surrounding land is owned by the City of Valdez and DOT&PF. Stakeholders expressed that seaplane bases may be better facilitated on property owned or leased by the DOT&PF. Further discussion of issues and potential Robe Lake alternatives are discussed in the respective sections of the Master Plan.

### **2.6.2 *Thompson Pass Airport (K55)***

Thompson Pass Airport is a backcountry airstrip used for an emergency landing strip when the pass is closed for aircraft flying from the North. It is also used on a regular basis for heliskiing operations and to practice backcountry flying for fixed wing aircraft. The airport is on DNR lands.

### **2.6.3 *Whittier Airport (PAWR)***

Whittier's airport is located across Prince William Sound at Portage Pass. Portage Pass is a key geographic route for general aviation aircraft. PAWR is the only viable airstrip in the vicinity when the

pass is closed. This is an important emergency alternative for small aircraft transiting to/from Valdez. PAWR is on Alaska Railroad Corporation lands, but has historically been managed by DOT&PF.

## **2.7 Support Facilities**

### **2.7.1 Airport administration**

Airport administration offices are located inside the terminal and the ARFF and Snow Removal Equipment Building (SREB). These facilities house the airport manager, M&O staff, and associated administration staff. Standard airport maintenance duty hours are: November – April: 0600 – 1600 Monday – Saturday; 0600 – 1500 Sunday. May – October: 0700 – 1730 Friday – Saturday, 0900 – 1700 Sunday.

### **2.7.2 Aircraft Rescue and Fire Fighting (ARFF)**

VDZ operates an Index A ARFF facility with prior arrangement. The airport has a 2015 Rosenbauer Panther 6x6. The vehicle has the capacity of 3,000 gallons of water, 400 gallons of aircraft fire fighting foam (ARFF), and 500 pounds of dry chemical. The City provides police and additional fire protection on an as-needed basis.

### **2.7.3 Hangars**

Currently, there are three private hexagonal hangars, managed by the Valdez Airmen's Association, each with six spaces. There are also five private hangars (Table 2.11-1).

### **2.7.4 Fuel Storage**

DOT&PF has:

- 2,000 gallon, Double Walled, Combination, Adjacent to Sand Shed
- 1,000 gallon, Double Walled, Behind Old SREB
- 2,000 gallon, Double Walled, Equipment Fuel, Next to Urea Shed

There are two abandoned underground storage tanks (USTs) at VDZ.

- 2,000 gallon, Adjacent to Old SREB
- 2,000 gallon, Adjacent to New SREB

Aboveground storage tanks (ASTs) are also located adjacent to the Terminal, Era Helicopters facility, and the Vertical Solutions facility. Fuel is also stored in a tanker truck (1,000-gallon nominal capacity).

### 2.7.5 Chemical Materials

A 10,000-gallon single walled AST located behind the SREB contains liquid de-icing fluids (potassium acetate).

## 2.8 Maintenance and Operations

Airport maintenance facilities are necessary to house airport equipment (Table 2.8-1) and personnel required to provide operation of the airport. Maintenance personnel are responsible for all airfield facilities; terminal and general aviation parking aprons; access roadways; terminal area parking lots; and ARFF, maintenance, and snow removal equipment.

**Table 2.8-1. Valdez Airport Equipment List**

ID	Status	Year	Description
35021	WN	2004	Chevrolet Utility Wagon Mid 4X4
50329	WN	2003	Triton Trailer/Cargo
38102	W07	2011	Ford Crew Cab 4X4 3/4 Ton
39633	WN	2015	Rose ARFF Vehicle
39538	WN	2015	OKH Okiw ARPT 4 x 4
34887	W15	2003	Case Tractor W/Shultz Mower
39368	WN	2011	Case Loader Whl 4.5-5 C
34608	WN	2003	Caterpillar 160H Grader
6512	WX	1983	Rex SP15T Roller SP1100B Roller
37316	WN	2009	MBB Broom Runway Towed
10426	WN	1995	MB Push Broom 7618MP
50803	WN	2011	FRR Travel TRLR
50355	N10	2003	Findlay Trailer
36550	WN	2008	Oshkosh Rotary Plow 5000
39877	WN	2016	MB2 Plow Truck
11748	NN	2017	Passenger Ramp TW3025

VDZ M&O mows the vegetation to a height of about 6 to 10 inches. This length deters birds from congregating in the mowed areas and reduces the overall maintenance effort. All areas that have been cleared of trees and heavy brush are mowed.

Snow removal and deicing is a large maintenance effort due to the region's heavy snowfalls. Snow is plowed into and stored on vacant lease lots. Lessees are responsible for clearing snow on their own lease

lot. Primary snow storage areas are between the DOT&PF shop and terminal, terminal and Era hangar, airfield outfields, west of Taxiway A, and off the ends of the runway thresholds.

Runway friction can be increased by using deicing fluid. A small amount of sand is used in front of the terminal building to minimize icy conditions on the walkways; but it is not used on the runway, taxiway, or aircraft parking aprons.

## 2.9 Access, Circulation and Parking

Airport Road provides access to the airport and the airport terminal. Hangar Way provides access to the western hangars, with a gate at the Maritime Helicopter hangar.

Parking is provided on the south side of the terminal (Table 2.9-1). VDZ appears to be qualify for grandfather protection for the 1991 American with Disabilities Act requirements, which requires 1 space for every 8 parking spaces. VDZ satisfies those requirements for the marked stalls.

**Table 2.9-1. Parking Facilities**

Type	Space
15-day	14,000 sf unpaved, unmarked
72-hour	50 stalls, paved, marked
1-hour	12 stalls, paved, marked
Accessible	2 stalls, paved, marked
20-min	4 stalls, paved, marked
Rental Cars	30,000 sf unpaved, unmarked

VDZ's fence borders the east, west, and south sides of the airport. The fence is in good condition. There is no northern fence, due to maintenance difficulties. Fencing does not provide adequate security in the winter because the snow gets so high that fences can be easily traversed. Also, snow loads and snow removal activities put loads and stresses on the fencing, which significantly reduce their useful life.

A limited number of gates provide access into the airfield, for discussion purposes we have labeled only commonly used gates (Figure 2.9-1). Other gates are for emergency ARFF access to the runway.

## 2.10 Utilities

VDZ is connected to the municipal water and sewer systems. The sewage treatment plant is located 0.8 miles from the runway. This is closer than the FAA recommended distance of 5 miles and mandated 5,000/10,000 feet (AC 150/5200-33B).

The Copper Valley Electric Association, Inc. (CVEA), supplies power to the airport. There are emergency generators for the ARFF building and NAVAIDs.

Individual lease holders are responsible for extending utilities to their lots if desired. Unimproved lots do not have utility service.

**Figure 2.9-1. Commonly Used Gates**



\* Maritime (Red), Hexagon Hangars (Yellow), Civil Air Patrol (Black), Vertical Solutions (Orange), DOT&PF (Green)

## 2.11 Land Use

Aeronautical land is land that involves, makes possible, or supports the operation of aircraft or contributes to or is required for the safety of such operations (Figure 2.11-1). Land acquisition and retention should consider planning for the future of the airport. Land use planning also includes providing the means (e.g. buffer zones) to minimize negative externalities (e.g. noise, traffic) to the local community. Land disposal can be used to allow lands unlikely to be used for aeronautical purposes to be used by the community.

Airports reserve land for planned aeronautical use related to operations. This includes primary infrastructure (e.g. runways, taxiways, and aprons); and indirect use (e.g. parking, access roads, snow storage, and future improvements).

Land use should be planned to prevent negative impacts to the community. Unique to Alaska, many communities have grown up immediately adjacent to, and surrounding their airports. In these towns, residential and community buildings may tightly surround the runway and airport facilities (e.g., Aniak and Kotzebue). For Valdez, the Aleutian Mobile Home Park, residences, a campground, and recreational trails surround the airport or are under the primary/departure routes. The negative effect of this occurs when landowners prioritize non-aviation uses for aeronautical land. For example, no additional land may be available for aviation facilities (e.g., runways, safety areas, parking, hangars). This can create safety risks and noise complaints.

### ***2.11.1 VDZ Zoning***

Planning by the City of Valdez has prioritized a variety of compatible land uses (Figure 2.11-1). The City has introduced a new zoning effort, supporting 'PBR' (Plane, Boat, Recreation) use. This is to encourage compatible land use development; supporting commercial, residential, and light industrial uses.

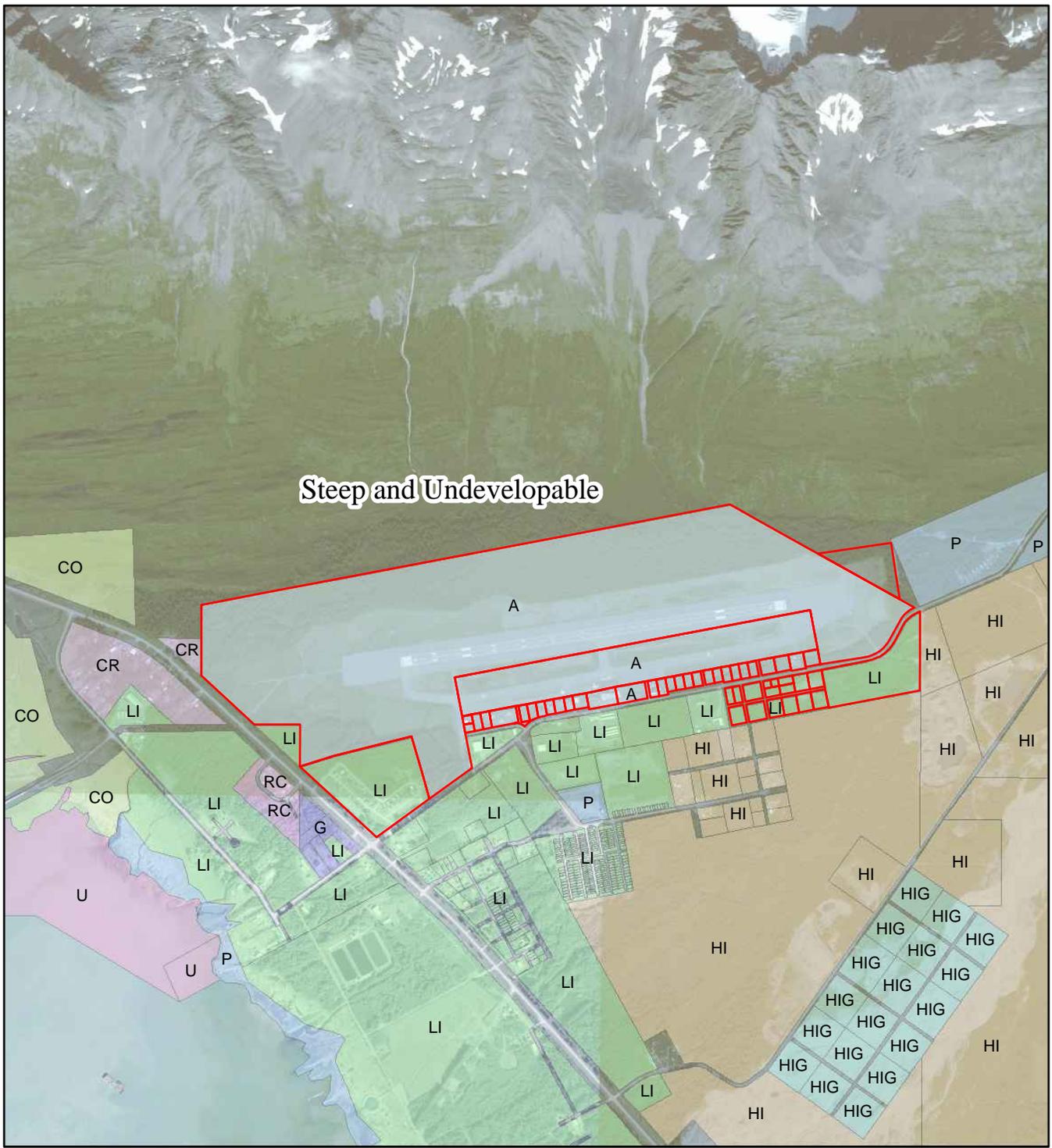
The airport land is on a 1964 Interagency Land Management Transfer to the DOT&PF from the DNR.

### ***2.11.2 VDZ Land Use***

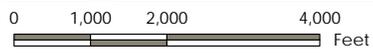
While land use around VDZ is not congested, the community does utilize adjacent areas for residential, commercial, and industrial purposes. Most development is centered along the southern boundary of the airport. Additional land use is summarized as follows:

- The northern boundary has no development and is constrained by mountains and streams.
- The eastern boundary hosts the Glacier Campground, a facility owned by the City of Valdez. A glacier lake recreation area is located 1.7 miles east of the runway.
- The western boundary (located 3,000 feet west of the Runway 6 threshold) is zoned as commercial/residential. This area is under the approach airspace, but far enough off the end of the runway to not hamper future runway extensions.
- The southwestern corner of airport property is owned by the State of Alaska and leased to the Aleut Corporation (Parcel E, 27.7 acres) as the Aleutian Mobile Home Park, residential non-aeronautical land use 2,000 feet from the runway. It contains approximately 68 households and up to 200 Valdez residents. In 2015, the Aleut Corporation began efforts to close the property, which involved removing the mobile homes to return the land to the State of Alaska. The City has intervened to facilitate buying the land to facilitate sale to private parties for continued residential use.
- The informal trail network on airport property, east and north of the runway, is not recognized by the City. The land is zoned by the City for airport use.

\\US1308-401\shared\_projects\2017063003\GIS\mxd\Figures\airport\_master\_plan\_inventory\_report\2017063003\_amp\_fig\_2.11-1\_Land\_Use.mxd Revised: 2018-10-18 By: rycoper



Steep and Undevelopable

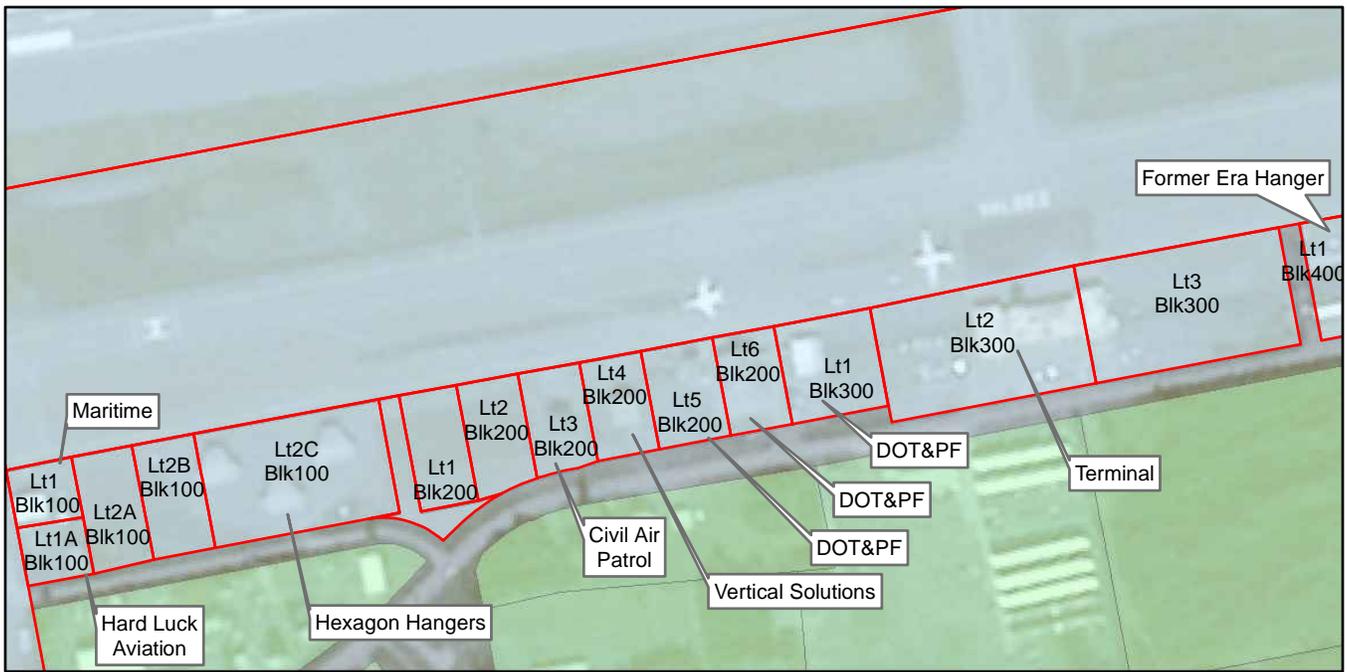


**Legend**

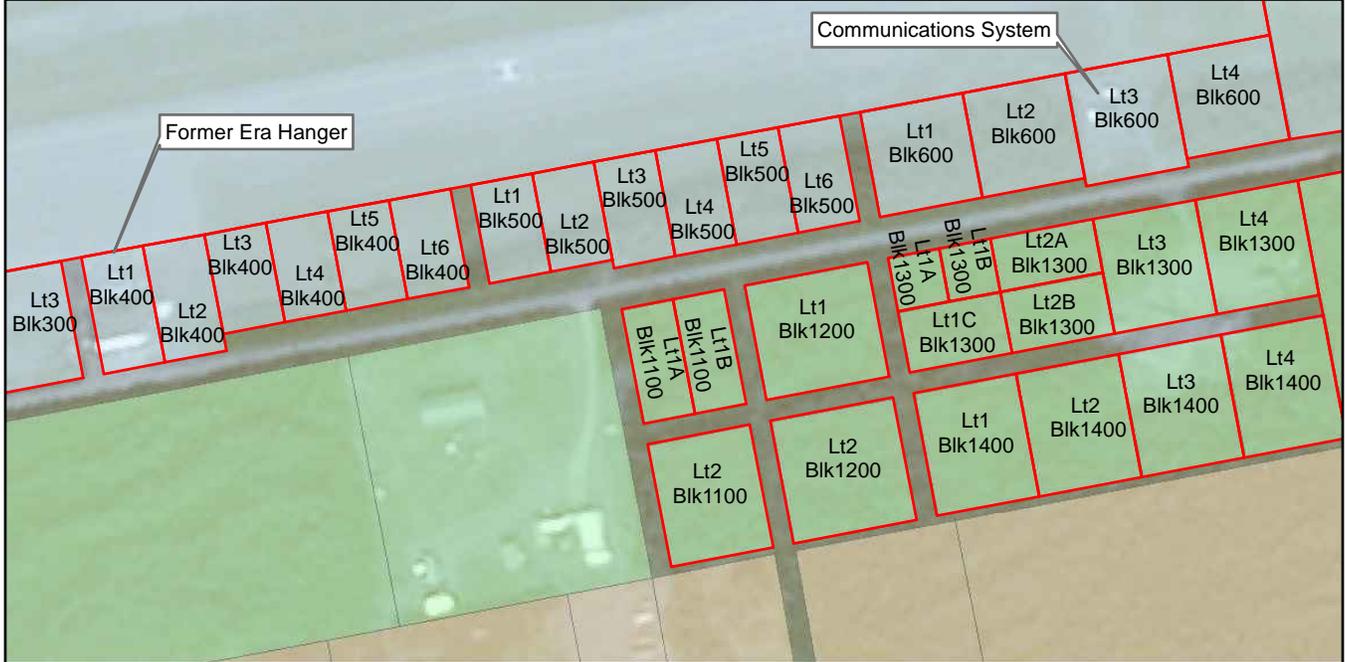
- Airport Property
- HI: Heavy Industrial
- HIG: Heavy Industrial Gravel
- LI: Light Industrial
- A: Airport District
- RC: Multiple-Family Residential
- CR: Commercial Residential
- P: Public Lands
- CO: Conservation Zone
- U: Unclassified Lands
- G: General Commercial

Graphics developed by Stantec Consulting Services, Inc.

<p>STATE OF ALASKA          Department of Transportation and Public Facilities          Northern Region - Aviation          2301 Peger Road Fairbanks, AK 99709</p>	
<p>VALDEZ PIONEER FIELD AIRPORT          VALDEZ, ALASKA  <b>Airport Master Plan Update          Land Use</b></p>	
<p>DATE: October, 2018</p>	<p>FIGURE 2.11-1</p>



West End Airport



East End Airport



Graphics developed by Stantec Consulting Services, Inc.

STATE OF ALASKA  
 Department of Transportation and Public Facilities  
 Northern Region - Aviation  
 2301 Peger Road Fairbanks, AK 99709

VALDEZ PIONEER FIELD AIRPORT  
 VALDEZ, ALASKA  
**Airport Master Plan Update**  
**Airport Lease Lots**

DATE: October, 2018	FIGURE 2.11-2
---------------------	---------------

\US3198-101\airland\_projects\3047063700\GIS\mxd\Figures\airport\_master\_plan\_inventory\_report\3047063700\_amp\_fig\_2.11-2\_Airport\_LeaseLots.mxd  
 Revised: 2018-10-25 by: cycloper

**Table 2.11-1. Structures at the Airport**

 <p>Alaskan NAS Interfacility Communications System Block 600, Lot 3</p>	 <p>DOT&amp;PF SREB Block 200, Lot 6</p>	 <p>Hexagonal Hangars (3) Block 100, Lot 2C</p>
 <p>'Era Helicopters' Hangar Block 400, Lot 1</p>	 <p>DOT&amp;PF Sand Storage Shed Block 200, Lot 5</p>	 <p>Maritime Helicopters Hangar Block 100, Lot 1B</p>
 <p>City of Valdez Terminal Block 300, Lot 2&amp;3</p>	 <p>Vertical Solutions Hangar Block 200, Lot 4</p>	 <p>Hard Luck Aviation Hangar Block 100, Lot 1B</p>
 <p>DOT&amp;PF Maintenance Shop Block 200, Lot 6</p>	 <p>Civil Air Patrol Hangar Block 200, Lot 3</p>	 <p>Aleutian Mobile Home Park Aleut Real Estate LLC, Parcel E</p>

**2.11.3 Aviation Lease Lots**

The southern boundary has lease lots adjoining aprons (~0.8 million square feet), the terminal, and parking (Figure 2.11-2). Lease lots are about 240 feet deep and 150 feet wide. There are currently three empty lease lots with apron access.

If additional lease lots are needed, there is room for expansion on airport property. East of the apron, there is more than 2,000 linear feet of undeveloped lease lots adjoining Taxiway A. West of the apron, there is at least 500 linear feet of suitable land, accessible via Hangar Way.

**Table 2.11-2. Valdez Airport Lease Lots**

Lease Lot Holder	Property	Term End
Alaska Wing Civil Air Patrol	Block 0200 Lot 003	09/30/21
Aleut Real Estate LLC	Parcel E	09/15/60
City of Valdez	Block 300 Lot 2 & 3	01/01/21
Hard Luck Aviation	Block 100 Lot 1A	07/01/20
Harris Sand and Gravel, Inc.	Parcel F Item 15	05/01/22 05/01/22
Maritime Helicopters	Block 100 Lot 1B	01/01/44
William Stevenson	Block 400 Lot 1 & 2	04/01/36
FAA	Block 600 Lot 3 Item 6, 7, 9, 11, 12, 14	09/30/32 09/30/32
Valdez Airmen's Association, Inc.	Block 100 Lot 2C	6/20/22
Vertical Solutions, Inc	Block 200 Lot 4	11/15/36

### 2.11.4 Support Airports

Robe Lake and Thompson Pass airports are on lands currently owned by the DNR:

- State Tentatively Approved or Patented
  - Robe Lake: File Number: GS 1164
  - Thompson Pass: File Number: GS 1515
- The lands surrounding Robe Lake Seaplane Base are Municipal Entitlement to the City of Valdez:
  - Robe Lake: File Number: ADL 225451

### **3 FORECAST AND AVIATION ACTIVITY**

#### **3.1 Characteristics of Valdez**

Valdez is situated in Prince William Sound at the end of the TAPS and the Richardson Highway. Valdez experienced large population increases during military activity in the 1940s and 1950s and the construction of TAPS in the 1970s (Alaska Department of Labor and Workforce Development [ADOLWD] 2016). Today, TAPS plays an important role in Valdez's economy, employing many residents and bringing in out of town workers who use the airport and other local services. Almost half of those employed in the census area live outside of it (Rodrigues 2016). Many of the non-resident employees work for the Alyeska Pipeline Service Company and work on a bi-weekly schedule. Additionally, the summer fishing season brings in non-local employees as deck hands and fish processors (Ables and Talbott 2018). These employees are unaccounted for by community population statistics but contribute to the number of airport operations and the region's economic activity. The tourism industry also plays an important role in Valdez's economy and employs seasonal summer workers. Tourists arrive mostly by road or ship including small cruise ships out of Whittier and tour buses out of Anchorage (Ables and Talbott 2018).

Weather is a major limiting factor in airport activity. Valdez receives an average of 27 feet of snow every winter and 5 feet of rain every summer (U.S. Climate Data 2018). When the weather is bad, departing flights are grounded and incoming flights canceled. Bad weather makes flying unreliable and expensive, so locals usually drive when traveling for shopping or appointments (Dunning 2018). The FAA recently changed its weather decision matrix, resulting in an increased frequency of flights limited by conditions and an increase in canceled flights (Dunning 2018).

See Attachment A for a detailed economics analysis of the region, which drives our Airport Forecast projection (below).

#### **3.2 Airport Operations Forecast**

Currently, the only commercial airline operating at the airport is Ravn Alaska, which has flights to and from Anchorage (Ravn Alaska 2018). To reach smaller communities around Valdez such as Tatitlek or Cordova, residents must use a private plane or air taxi. In this section, airport activity level is measured in the number of commercial, private, and military flights and the number of passengers traveling in and out of the airport each a year. Passengers include those that depart from or arrive in Valdez, rather than making connecting flights through Valdez.

### ***3.2.1 Commercial Operations Profile***

Pipeline, seafood processing, and other non-resident employees rely on the airport to arrive to and get home from their rotational shifts. As a result, airport operations increase when there is more activity for pipeline and fishing workers. In 2006, flooding in Valdez caused damage to the highway and the pipeline requiring extensive repairs that continued through 2007 (Alyeska Pipeline Service Company, 2016). This increase in activity explains the increase in airport operations during those years. Since a significant part of airport activity is driven by the oil and fishing industries, future activity will depend on the health of these industries in the community.

Currently, Ravn Alaska is the only commercial airline operating in Valdez, but from May 2010 to March 2013 Grant Aviation provided service to Valdez. While Grant was operating in Valdez, the number of flights nearly doubled while the number of passengers increased only slightly. When Grant stopped operation in 2013, the number of flights returned to 2009 levels.

Helicopter operations represent a significant component of airport activity at VDZ and provide a variety of services in the region, including heli-skiing. These are not incorporated in FAA or U.S. Bureau of Transportation Statistics (USBTS) databases. In 2017, helicopter operators report that they collectively accounted for approximately 2,000 additional airport operations (takeoffs and landings) with 3,000 additional passengers. While they are not reflected in the following tables and figures (similar to GA and military flights), they do contribute to increased aviation activity.

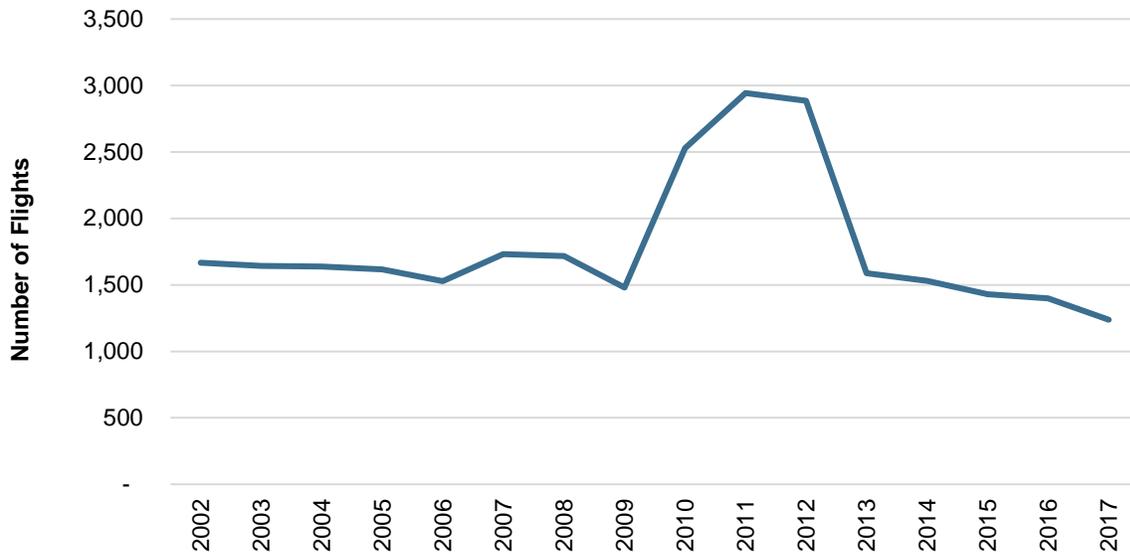
The number of commercial flights, passengers, and passengers per flight are presented in Table 3.2.1-1 and Figures 3.2.1-1 through 3.2.1-3. The number of passengers per flight noticeably decreased when Grant Aviation was competing with Ravn Alaska, and this decrease is visible in Figure 3.2.1-2.

**Table 3.2.1-1. Number of Commercial Flights, Passengers, and Passengers per Flight, 2002–2017**

Year	Total Commercial Flights	Total Passengers	Passengers Per Flight
2002	1,666	36,479	21.9
2003	1,644	32,753	19.9
2004	1,637	34,441	21.0
2005	1,617	31,190	19.3
2006	1,528	30,724	20.1
2007	1,731	32,043	18.5
2008	1,718	29,487	17.2
2009	1,479	28,362	19.2
2010	2,528	30,829	12.2
2011	2,943	31,941	10.9
2012	2,884	31,884	11.1
2013	1,588	26,571	16.7
2014	1,530	28,996	19.0
2015	1,431	27,617	19.3
2016	1,399	25,326	18.1
2017	1,238	22,583	18.2

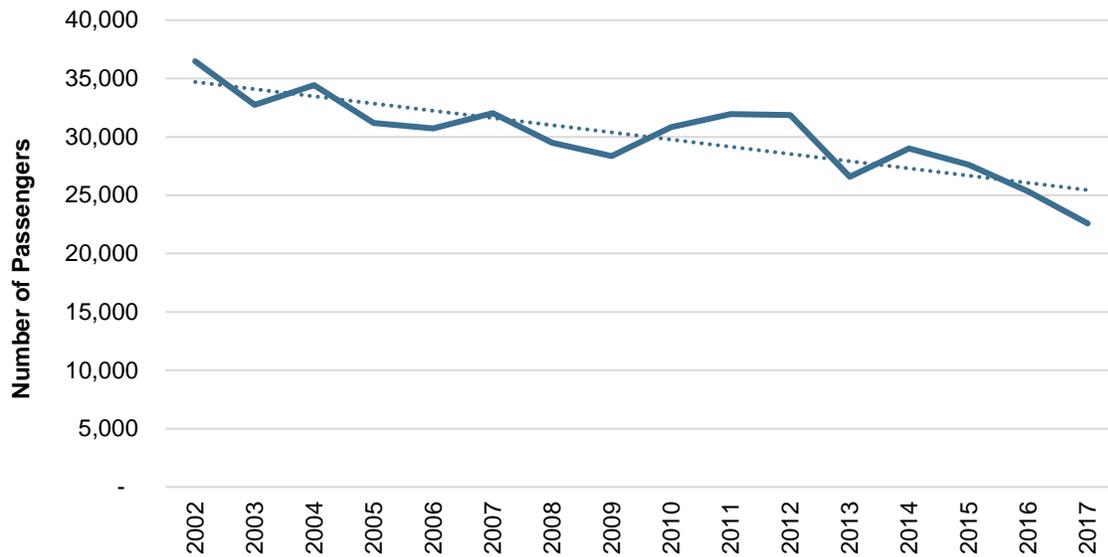
Source: U.S. Bureau of Transportation Statistics (USBTS) (2018), Northern Economics, Inc. Analysis, and ADOLWD (2017).

**Figure 3.2.1-1. Number of Commercial Flights at Valdez Airport, 2002–2017**



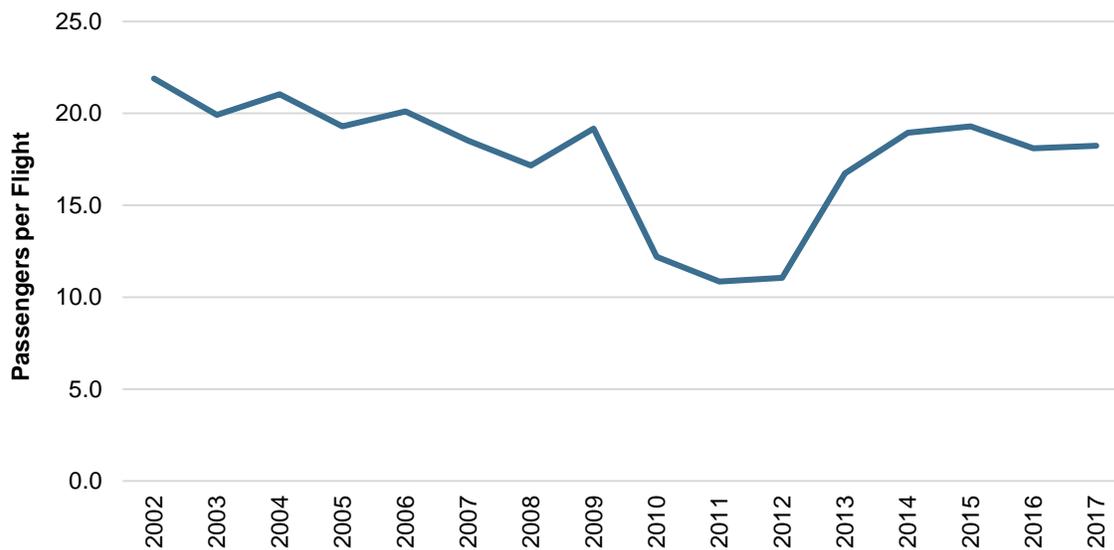
Source: USBTS (2018).

**Figure 3.2.1-2. Number of Passengers at Valdez Airport, 2002–2017**



Source: USBTS (2018).

**Figure 3.2.1-3. Average Passengers per Flight at Valdez Airport, 2002–2017**



Source: USBTS (2018).

### **3.2.2 General Aviation and Military Operations**

Valdez has fewer local aircraft owners on a per capita basis than other communities in the state, with just 28 aircraft registered with a Valdez mailing address in mid-2018 (FAA 2018c). Talbott (2018) suggested that Valdez would have more locally registered aircraft if there were more hangar space available. Additionally, he suggested that more readily available fuel would encourage more residents to own an

aircraft, and that a connection directly from the airport to the adjacent camping area could increase fly-in camping use (Talbot 2018).

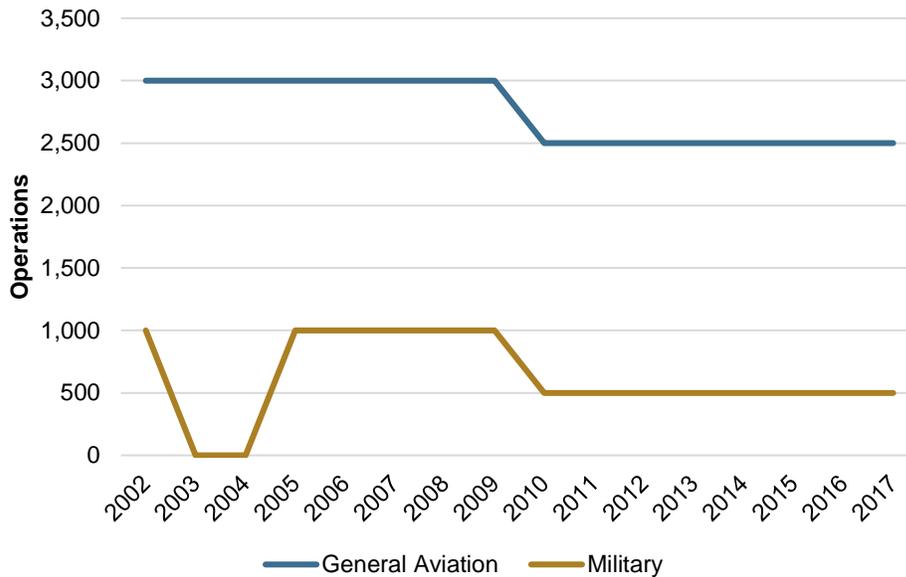
The FAA periodically publishes estimates of general aviation and military operations at U.S. airports. General aviation operations include privately owned aircraft arriving and departing from Valdez. Pilots from around Alaska fly private planes into and out of Valdez for recreation and for visiting friends and relatives. Additionally, the Valdez Fly-In and Airshow brings up to 200 planes to Valdez every May, accounting for about 400 annual General Aviation operations (Prax 2017). Military operations are driven by military trainings and exercises in Valdez and a small US Coast Guard station. The FAA estimates suggest that about 46 percent of airport operations are general aviation, 44 percent are commercial aviation, and 10 percent are military. Table 3.2.2-1 shows the FAA estimates for general aviation and military operations and Figure 3.2.2-1 presents the information in a graph. The estimates do not include detailed information but suggest that the number of both military and general aviation operations has been steady since 2010. Military and general aviation operations are expected to remain steady and make up about the same proportion of airport operations in the future.

**Table 3.2.2-1. Estimated General Aviation and Military Operations, 2002-2017**

<b>Fiscal Year</b>	<b>General Aviation</b>	<b>Military</b>
2002	3,000	1,000
2003	3,000	0
2004	3,000	0
2005	3,000	1,000
2006	3,000	1,000
2007	3,000	1,000
2008	3,000	1,000
2009	3,000	1,000
2010	2,500	500
2011	2,500	500
2012	2,500	500
2013	2,500	500
2014	2,500	500
2015	2,500	500
2016	2,500	500
2017	2,500	500

Source: FAA (2017)

**Figure 3.2.2-1. Estimated General Aviation and Military Operations, 2002–2017**



Source: FAA (2017)

### 3.2.3 Critical Aircraft

Critical aircraft are the most demanding aircraft types, or grouping of aircraft with similar characteristics, that make regular use of the airport. Per AC 150/5000-17 regular use is defined as at least 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. The Airport Reference Code (Table 3.2.3-1) categorizes aircraft by aircraft design requirements, specifically approach speed and wingspan. Between 2009 and 2017, only two aircraft have had more than 500 annual operations, the De Havilland Dash-8 (B-III) and Beech 200 (B-II). Table 3.2.3-2 shows the number of operations by each aircraft type since 2009. The De Havilland Dash-8 is currently used for regularly scheduled commuter service by Ravn Alaska. The Beech 200 was used by Grant Aviation when they operated in Valdez between 2010 and 2013. No change in forecasted operations is expected to change the critical aircraft regularly using the airport in the short, medium, or long term, nor is there expected to be a change in the relative future number of and type of based aircraft. Due to Valdez’s strategic location, unforecasted critical events require more demanding aircraft to use the airport.

Section 47106 of Title 49, United States Code addresses when the Secretary of Transportation may approve a project grant. The proposed FAA Reauthorization Act of 2018 proposes to amend this Section by adding at the end, the following (FAA Reauthorization Act of 2018, 2018):

“(h) Evaluation Of Airport Master Plans.— When evaluating the master plan of an airport for purposes of this subchapter, the Secretary shall take into account—

- “(1) the role the airport plays with respect to medical emergencies and evacuations; and
- “(2) the role the airport plays in emergency or disaster preparedness in the community served by the airport.”

VDZ plays an essential role in the response to medical emergencies for the community. Medical emergencies that cannot be addressed in Valdez must travel via aircraft, usually to Anchorage to Seattle. VDZ is at least 5.5 hours from Anchorage by ground transportation. Medical emergencies for Valdez and the greater Copper Valley communities rely on the medical transport available through VDZ. Medical aircraft typically require C-I capacity (Learjets stationed in Anchorage).

VDZ is also essential for disaster preparedness for the community. Due to Valdez’s strategic location, ground transportation is often not available during emergencies. VDZ has been required to host larger aircraft to respond to a series of disasters (1964 earthquake, 1969-1986 TAPS construction, 1989 Exxon Valdez Oil Spill, 2014 Keystone Canyon Avalanche Dam). In the event of an emergency, higher approach speed C-III aircraft such as a Boeing 737 and McDonnell Douglas DC-9 will be required to land at the airport. C-III capable runways and taxiways are needed to allow VDZ to continue to serve this community need.

For these reasons the designation for VDZ should remain C-III, as the facility is currently designated.

**Table 3.2.3-1. Airport Reference Code**

Category	Approach Speed (knots)	Design Group	Wingspan (ft)
A	<90	I	To 48
B	91-120	II	49-78
C	121-140	III	79-117
D	141-165	IV	118-170
E	166 or more	V	171-213
		VI	214-262

Source: USBTS (2018)

**Table 3.2.3-2. Valdez Airport Commercial Operations by Type of Aircraft, 2009-2017**

Aircraft	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>De Havilland DHC8-100 Dash-8</b>	1,26	1,127	1,133	1,042	1,083	1,247	1,214	1,361	1,153
<b>Beech 200 Super Kingair</b>	-	952	1,496	1,429	176	2	-	-	-
<b>Beech 1900 A/B/C/D</b>	303	474	350	422	333	313	237	44	3
<b>Cessna 208 Caravan</b>	-	3	-	-	26	-	4	-	-
<b>Pilatus PC-12</b>	-	-	4	2	-	-	-	12	2
<b>Beechcraft Beech 18 C-185</b>	-	-	-	-	-	9	2	-	-
<b>Piper PA-31 (Navajo)/T-1020</b>	4	-	-	4	-	-	-	-	-
<b>Saab-Fairchild 340/B</b>	-	-	-	4	-	2	-	2	-
<b>Shorts 330</b>	4	-	-	-	-	4	-	-	-
<b>Lockheed L100-30/L-382E</b>	4	2	-	-	-	-	-	-	-
<b>Helio H-250/295/395</b>	2	1	2	-	-	-	-	-	-
<b>McDonnell Douglas DC-8-72</b>	-	-	-	2	-	-	-	-	-
<b>Cessna C26/207/209/210</b>	-	1	-	-	-	-	-	-	-

Source: USBTS (2018)

Note: This table does not include operations that are not reported in USBTS data.

### **3.2.4 Regression Analysis of Commercial Airport Operations**

A regression analysis is used to estimate how closely the population of Valdez and surrounding communities predicts the number of commercial flights at the airport each year. Since pipeline and fishing activity are inherently volatile and difficult to predict, population is the only readily available predictor of airport activity. Interviews with stakeholders (Hunsinger 2018, Dunning 2018, Ables and Talbott 2018) suggested that half of aviation activity is related to employment or construction projects, which are less-predictable and subject to greater fluctuation from year to year.

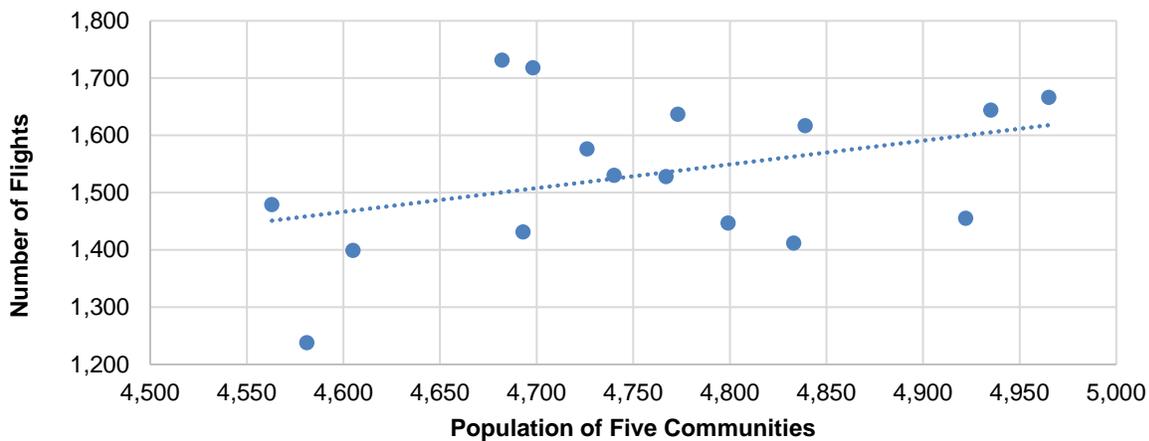
Grant Aviation flights present an anomaly in the data, so they were omitted from the regression in order to more accurately estimate future airport operations. Data on the number of commercial flights from 2010 to 2013 include all commercial and private carriers that arrived at the airport, excluding Grant Aviation. Table 3.2.4-1 and Figure 3.2.4-1 show the number of flights each year compared to the population for that year.

**Table 3.2.4-1. Commercial Flights Excluding Grant Aviation and Population of Five Communities, 2002–2017**

Year	Total Flights Excluding Grant Aviation	Population of Five Communities
2002	1,666	4,965
2003	1,644	4,935
2004	1,637	4,773
2005	1,617	4,839
2006	1,528	4,767
2007	1,731	4,682
2008	1,718	4,698
2009	1,479	4,563
2010	1,576	4,726
2011	1,447	4,799
2012	1,455	4,922
2013	1,412	4,833
2014	1,530	4,740
2015	1,431	4,693
2016	1,399	4,605
2017	1,238	4,581

Source: USBTS (2018) and ADOLWD (2017)

**Figure 3.2.4-1. Annual Number of Flights, excluding Grant Aviation Flights, and Population of Five Communities**



Source: USBTS (2018) and ADOLWD (2017).

A regression analysis indicates that population does not explain much of the variation in airport activity from year to year. The R-Square value in Table 3.2.4-2 indicates that only about 14 percent of variation in the number of flights can be attributed to changes in population. Population and the number of flights move in the same direction, both decreasing over time, but otherwise they are not highly correlated. The Valdez District Manager for the DOT&PF, Robert Dunning, estimated that half of airport operations are

crew changeouts for pipeline and fishing employees. Since these employees are not included in population statistics, they likely account for a large amount of the remaining variation in airport operations.

**Table 3.2.4-2. Regression Statistics**

Regression Statistics	
<b>R Square</b>	0.14
<b>Standard Error</b>	128.51
<b>Observations</b>	16

Source: Northern Economics, Inc. Analysis (2018).

**Table 3.2.4-3. Regression Estimates**

	Coefficients	Standard Error	P-value
<b>Intercept</b>	-442.116	1295.24	0.74
<b>Population of Five Communities</b>	0.41489	0.27	0.15

Source: Northern Economics, Inc. Analysis (2018).

### 3.2.5 Airport Operations Forecast

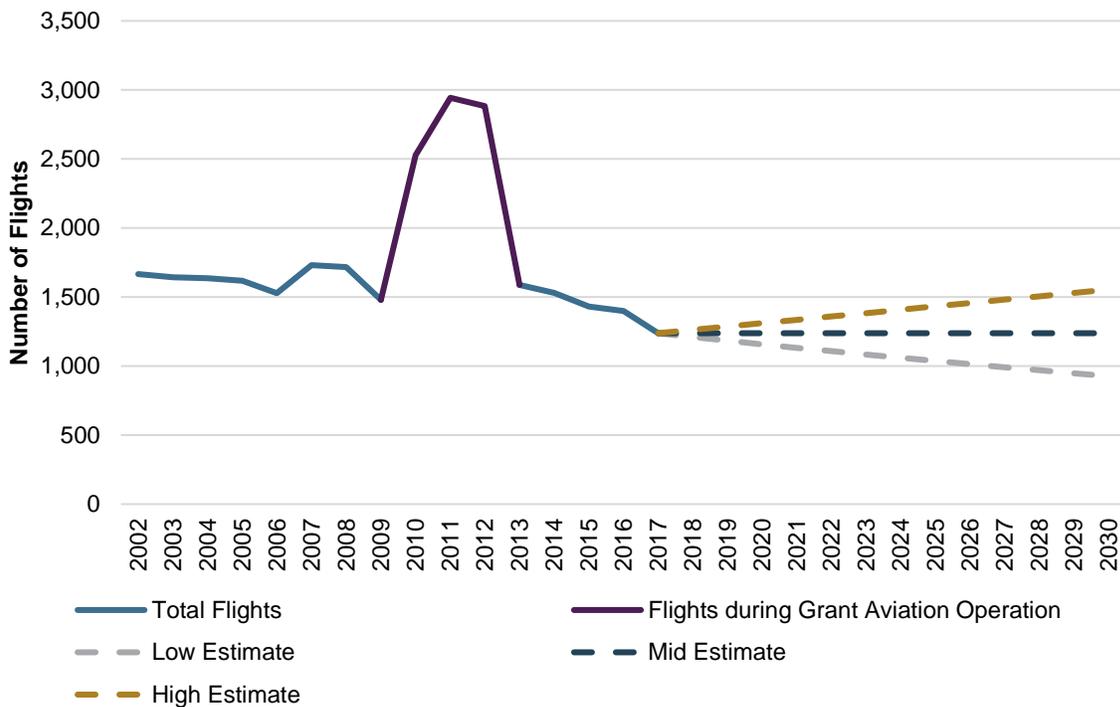
Since the population of Valdez and its surrounding communities is not a good predictor of commercial airport operations, projections for airport activity are based on past trends for the number of flights and number of passengers per flight. Three projections—low (-2%), middle (0%), and high (2%)—are presented in Table 3.2.5-1 and Figure 3.2.5-1. The low projection is based on the annual rate of change from 2002 to 2017, excluding Grant Aviation years, and predicts that airport operations will continue to decrease at the same rate. The middle projection predicts that airport operations will remain steady from their 2017 levels. The high projection predicts that airport operations will return to their average level over the last 15 years, excluding Grant Aviation years. The number of flights, passengers, and passengers per flight from 2002 to 2017 can be found in Table 3.2.1-1. General aviation and military operations are expected to remain steady and make up about the same proportion of airport operations based on the FAA estimates presented in Table 3.2.2-1.

**Table 3.2.5-1. Projected Number of Commercial Flights, 2018–2030**

Year	Low Projection	Middle Projection	High Projection
2018	1,211	1,238	1,262
2019	1,184	1,238	1,287
2020	1,158	1,238	1,311
2021	1,133	1,238	1,335
2022	1,108	1,238	1,360
2023	1,083	1,238	1,384
2024	1,059	1,238	1,408
2025	1,036	1,238	1,432
2026	1,013	1,238	1,457
2027	991	1,238	1,481
2028	969	1,238	1,505
2029	948	1,238	1,530
2030	927	1,238	1,554

Source: Northern Economics, Inc. analysis

**Figure 3.2.5-1. Number of Commercial Flights History and Projections, 2002–2030**



Source: USBTS (2018) and Northern Economics, Inc. analysis

The same projections for flights were used to create projections for the number of passengers and enplanements<sup>1</sup>. The average number of passengers per flight in 2017 (18.2) was applied to the low, middle, and high flight projection estimates to project the number of passengers at the same rates of change as the flight projections. The projections for the number of passengers are presented in Table 3.2.5-2 and Figure 3.2.5-2. Table 3.2.5-3 shows the projected number of enplanements.

---

<sup>1</sup>The number of passengers includes both passengers flying to (deplaning) in Valdez as well as passengers flying out (enplaning). Since there are multiple ways to Valdez, enplanements are close to but not exactly one-half of the number of passengers.

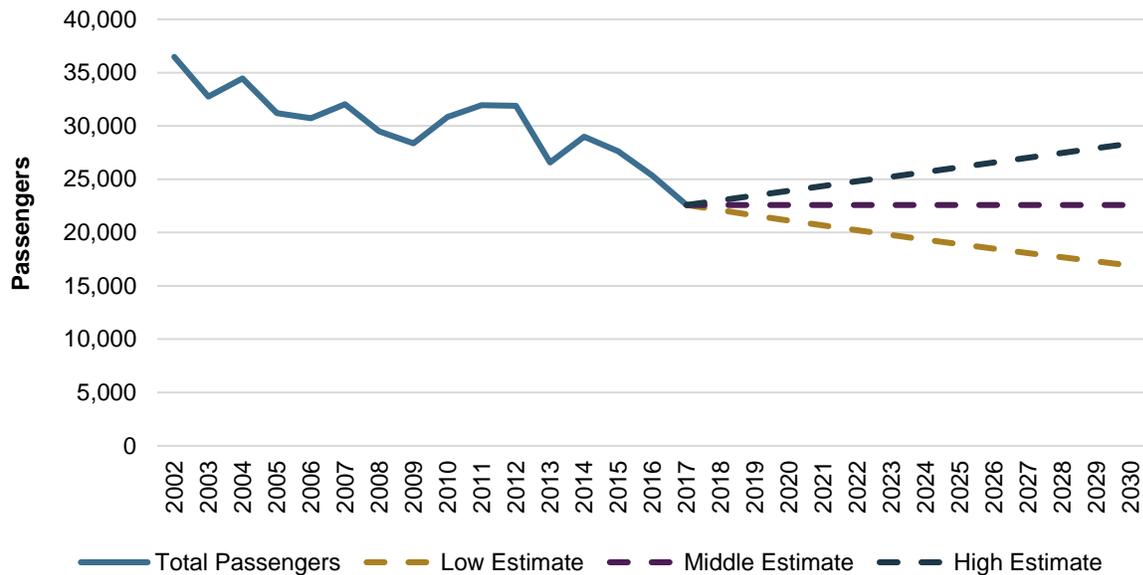
**Table 3.2.5-2. Projected Number of Commercial Passengers and Commercial Flights, 2018–2030**

Year	Total Commercial Flights			Total Passengers		
2002	1,666			36,479		
2003	1,644			32,753		
2004	1,637			34,441		
2005	1,617			31,190		
2006	1,528			30,724		
2007	1,731			32,043		
2008	1,718			29,487		
2009	1,479			28,362		
2010	2,528			30,829		
2011	2,943			31,941		
2012	2,884			31,884		
2013	1,588			26,571		
2014	1,530			28,996		
2015	1,431			27,617		
2016	1,399			25,326		
2017	1,238			22,583		
Projection	Low (-2%)	Middle (0%)	High (2%)	Low (-2%)	Middle (0%)	High (2%)
2018	1,211	1,238	1,262	22,086	22,583	23,026
2019	1,184	1,238	1,287	21,600	22,583	23,470
2020	1,158	1,238	1,311	21,125	22,583	23,913
2021	1,133	1,238	1,335	20,660	22,583	24,357
2022	1,108	1,238	1,360	20,260	22,583	24,800
2023	1,083	1,238	1,384	19,761	22,583	25,243
2024	1,059	1,238	1,408	19,327	22,583	25,687
2025	1,036	1,238	1,432	18,901	22,583	26,130
2026	1,013	1,238	1,457	18,486	22,583	26,574
2027	991	1,238	1,481	18,079	22,583	27,017
2028	969	1,238	1,505	17,681	22,583	27,461
2029	948	1,238	1,530	17,292	22,583	27,904
2030	927	1,238	1,554	16,912	22,583	28,347

Note: Does not include helicopter (2017: 3,000 passengers with 2,000 operations), GA (2017: 2,500 operations), or military (2017: 500 operations) data.

Source: Northern Economics, Inc. analysis.

**Figure 3.2.5-2. Number of Passengers History and Projections, 2002–2030**



Source: USBTS (2018) and Northern Economics, Inc. analysis

Note: Does not include helicopter (2017: 3,000 passengers with 2,000 operations), GA (2017: 2,500 operations), or military (2017: 500 operations).

**Table 3.2.5-3. Projected Number of Enplanements, 2018–2030**

Year	Low Projection	Middle Projection	High Projection
2018	11,059	11,240	11,530
2019	10,815	11,240	11,752
2020	10,577	11,240	11,974
2021	10,345	11,240	12,196
2022	10,117	11,240	12,418
2023	9,895	11,240	12,640
2024	9,677	11,240	12,862
2025	9,464	11,240	13,084
2026	9,256	11,240	13,36
2027	9,052	11,240	13,528
2028	8,853	11,240	13,750
2029	8,658	11,240	13,972
2030	8,468	11,240	14,194

Source: Northern Economics, Inc. analysis

Note: Does not include helicopter (2017: 1,500), GA, or military data.

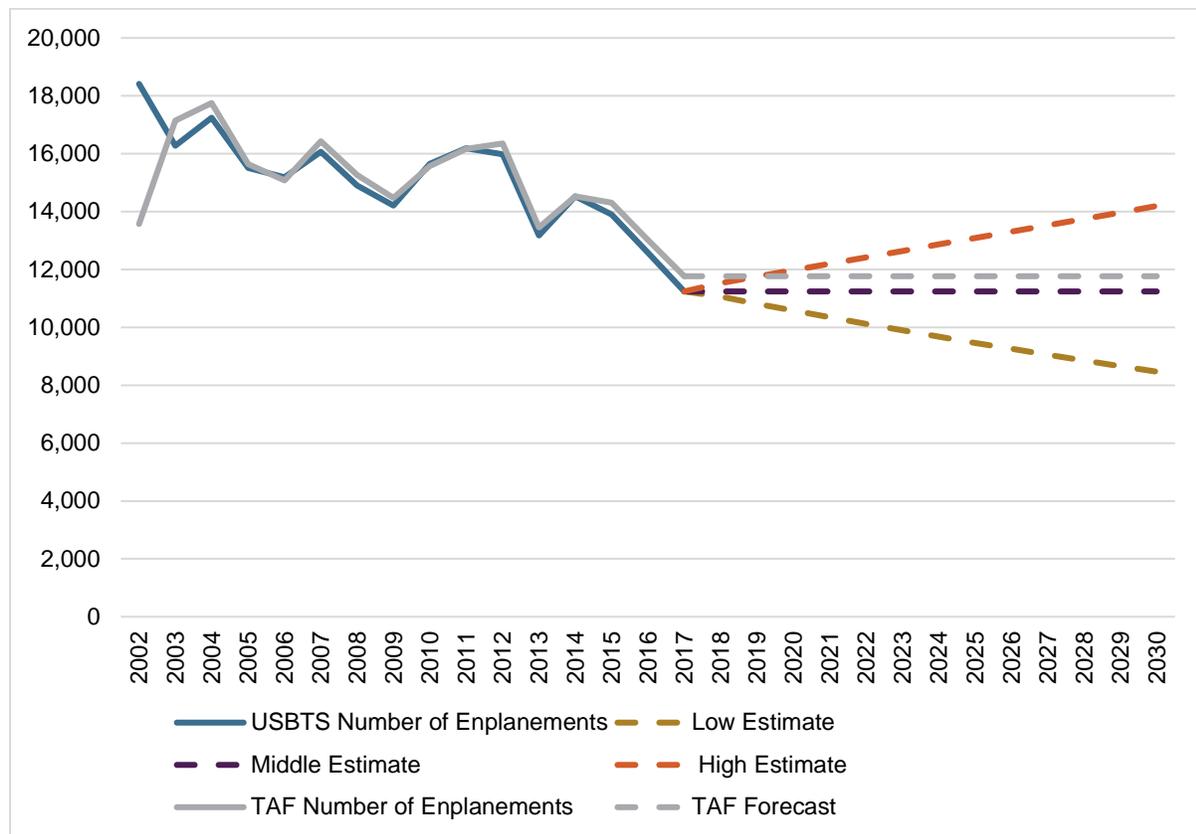
### 3.2.6 Comparison with Federal Aviation Administration Forecast

The FAA (2018d) publishes a forecast of aviation activity for U.S. airports called the Terminal Area Forecast (TAF). The most recent TAF was published in 2017 and predicts that Valdez airport operations

will be flat with no major increases or decreases over the next thirty years. The TAF report includes historic and forecasted data of total enplanements, or passengers departing from Valdez. Our forecast of total enplanements is based on data from the U.S. Bureau of Transportation Statistics (USBTS) T-100 records, which are slightly different from but follow roughly with the TAF.

Figure 3.2.6-1 compares our forecast for enplanements to the TAF forecast for enplanements. A comparison of our middle estimate forecast and the TAF shows that both predict a flat level of enplanements over the next decade. Since industry factors such as oil output and fishery activity both affect the airport, there are some unknowns about its future. Both the TAF and our analysis conclude that the best prediction is that there will be no major change in airport operations over the next decade, though we have also added high and low estimates to account for uncertainty in the economic drivers of airport demand.

**Figure 3.2.6-1. Comparison of Historic and Forecast Enplanements from Northern Economics and TAF, 2002-2030**



Source: USBTS (2018), FAA (2017), and Northern Economics, Inc. Analysis (2018)

Note: Does not include helicopter, GA, or military data

## 4 ISSUES

The following is a summary of the primary issues developed during the inventory and scoping:

- 1. Leasing**
  - a. Maintain affordable leasing rates
  - b. Develop smaller lease lots (e.g. 100'x100' plots)
  - c. Plan for additional hangar facilities
- 2. Land Use**
  - a. Allow the sale of Aleutian Village Mobile Home Park parcel
  - b. In general, divest airport property for private development
  - c. Incorporate City Zoning efforts (Plane/Boat/Recreation Zoning)
  - d. Determine status of recreational trail network
- 3. Approach**
  - a. Improve/develop better instrument approach
  - b. Remove fix "RUNOC" on the LDA DME-G for safety
- 4. Weather Reporting**
  - a. Add 2<sup>nd</sup> AWOS wind sensor at another location
- 5. Support Valdez Fly-In**
  - a. Allow camping and recreation use of apron during Fly-In
  - b. Improve tie down system
- 6. Robe Lake (L93)**
  - a. Implement land use agreement with DNR to allow facilities at Robe Lake
  - b. Facilitate volunteer led effort to provide dock facilities
- 7. Thompson Pass Airport (K55)**
  - a. Support the maintenance of Thompson Pass Airport
- 8. Increased Aircraft Demands**
  - a. Maintain facilities which can accommodate increased/larger aircraft
- 9. Infrastructure**
  - a. Improve fencing and gates while maintaining access
  - b. Off Asphalt Operations
    - i. Provide location for gravel operations
    - ii. Provide location for snow operations
  - c. New SREB
  - d. New sand and urea shed
  - e. Runway resurfacing
  - f. Shift segmented circle and wind cone
  - g. Address lighting/electrical issues
  - h. Add 600' runway marks to facilitate STOL practice
  - i. Update taxiway alignment and location for safety
    - i. Taxiway Bravo and Charlie
  - j. Increase runway length to 7,500'

## 5 REFERENCES

- Ables, Janessa. 2018. Port Operations Manager, City of Valdez. Personal communication with Northern Economics, Inc. June 18, 2018.
- Alaska Department of Commerce, Community, and Economic Development (ADCCED). 2012. 2012 Alaska Economic Performance Report. Available at [www.commerce.alaska.gov/web/Portals/6/pub/2012%20Alaska%20Economic%20Performance%20Report%20-%20FINAL.pdf](http://www.commerce.alaska.gov/web/Portals/6/pub/2012%20Alaska%20Economic%20Performance%20Report%20-%20FINAL.pdf).
- Alaska Department of Fish and Game (ADF&G). 2017. 2016 Prince William Sound Area Finfish Management Report. Available at [www.adfg.alaska.gov/FedAidPDFs/FMR17-37.pdf](http://www.adfg.alaska.gov/FedAidPDFs/FMR17-37.pdf).
- Alaska Department of Labor & Workforce Development (ADOLWD). 2016. Alaska Economic Trends: Valdez-Cordova Census Area. Alaska Economic Trends.
- Alaska Department of Labor & Workforce Development (ADOLWD). 2018. Population Estimates, Places and Other Areas, Cities and Census Designated Places (CDPs), 2010 to 2017. Available at [live.laborstats.alaska.gov/pop/](http://live.laborstats.alaska.gov/pop/). Last updated January 10, 2018.
- Alyeska Pipeline Service Company. 2016. 2016 Fact Book. p. 110. Available at [www.alyeska-pipe.com/assets/uploads/pagestructure/NewsCenter\\_MediaResources\\_FactSheets\\_Entries/636100447544232756\\_2016FactBook.pdf](http://www.alyeska-pipe.com/assets/uploads/pagestructure/NewsCenter_MediaResources_FactSheets_Entries/636100447544232756_2016FactBook.pdf).
- Commercial Fisheries Entry Commission (CFEC). 2017. Permit & Fishing Activity by Year, State, Census Area, or City. Available at [www.cfec.state.ak.us/gpbycen/2017/MenuMain.htm](http://www.cfec.state.ak.us/gpbycen/2017/MenuMain.htm).
- Dunning, Robert. 2018. Valdez District Manager, Alaska Department of Transportation and Public Facilities. Personal communication with Northern Economics, Inc. June 18, 2018.
- FAA. 2018a. AEM, Area Equivalent Method Version 2c SP2. User's Guide. [https://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/research/models/aem\\_model/media/aem\\_2c\\_sp2\\_users\\_guide.pdf](https://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/aem_model/media/aem_2c_sp2_users_guide.pdf)
- FAA. 2018b. Alaska Aviation Weather Cams. Valdez (VDZ) – Site Detail. Clear Day Picture for the East and West Cameras. Accessed on October 4, 2018 at <https://avcams.faa.gov/>

- FAA. 2018c. Aircraft Registry, Releasable Aircraft Database Download. Available at [www.faa.gov/licenses\\_certificates/aircraft\\_certification/aircraft\\_registry/releasable\\_aircraft\\_download/](http://www.faa.gov/licenses_certificates/aircraft_certification/aircraft_registry/releasable_aircraft_download/). Accessed June 18, 2018.
- FAA. 2017. Terminal Area Forecast Database, 2017. Download Available at [www.faa.gov/data\\_research/aviation/taf/](http://www.faa.gov/data_research/aviation/taf/). Accessed June 26, 2018.
- FAA Reauthorization Act of 2018, H.R. 4, 115th Congress. 2018. Retrieved from <https://www.congress.gov/bill/115th-congress/house-bill/4/text#toc-HCBB59C8EE9604701843CCC9347736842>.
- Federal Reserve Economic Data (FRED). 2018. Available at [fred.stlouisfed.org/](http://fred.stlouisfed.org/).
- Hunsinger, Eddie. 2018. State Demographer, Alaska Department of Labor and Workforce Development. Personal communication with Northern Economics, Inc. June 15, 2018.
- Peter Pan Seafoods. 2018. Valdez Facility. Available at [www.ppsf.com/location/valdez](http://www.ppsf.com/location/valdez).
- Prax, Joe. 2017. 2017 Fly-In Review. Valdez Fly-In and Air Show, 2017.
- Ravn Alaska. 2018. Destinations. Available at [www.flyravn.com/flying-with-ravn/route-map/](http://www.flyravn.com/flying-with-ravn/route-map/).
- Rodrigues, Alyssa. 2016. Valdez-Cordova: Vast census area covers towns with broad range of identities. Alaska Economic Trends. Available at [labor.alaska.gov/research/trends/aug16art3.pdf](http://labor.alaska.gov/research/trends/aug16art3.pdf). August 2016.
- Talbott, Jeremy. 2018. Ports & Harbor Director, City of Valdez. Personal communication with Northern Economics, Inc. June 18, 2018.
- Townsend, Harold. 2018. Personal Communication. Vice President of Operations Corus Airlines.
- U.S. Bureau of Labor Statistics (USBLS). 2016. Labor Statistics by County. Available at [www.bls.gov/lau/laucnty16.txt](http://www.bls.gov/lau/laucnty16.txt).
- USBLS. 2018. Consumer Price Index, 2018. Available at [www.bls.gov/cpi/data.htm](http://www.bls.gov/cpi/data.htm). Accessed June 7, 2018.
- U.S. Bureau of Transportation Statistics. 2018. TranStats: Valdez Pioneer Field, Flights. Available at [www.transtats.bts.gov/Data\\_Elements.aspx?Data=5](http://www.transtats.bts.gov/Data_Elements.aspx?Data=5).

U.S. Census Bureau. 2002. Economic Census, 2002. Available via American Factfinder at [factfinder.census.gov/faces/nav/jsf/pages/index.xhtml](http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml).

U.S. Census Bureau. 2010. 2010 Census. Available via American Factfinder at [factfinder.census.gov/faces/nav/jsf/pages/index.xhtml](http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml).

U.S. Census Bureau. 2012. Economic Census, 2012. Available via American Factfinder at [factfinder.census.gov/faces/nav/jsf/pages/index.xhtml](http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml).

U.S. Climate Data. 2018. “Valdez, Alaska Climate.” Available at [www.usclimatedata.com/climate/valdez/alaska/united-states/usak0258](http://www.usclimatedata.com/climate/valdez/alaska/united-states/usak0258).

## ATTACHMENT A: ECONOMICS ANALYSIS

### 1 DEMOGRAPHIC PROFILE

#### 1.1 Population Characteristics

Five communities (Valdez, Chitina, Kenny Lake, Tonsina, and Willow Creek) were reviewed due to the regional nature of Valdez, and the number of residents who work in Valdez and live in surrounding communities.

Over the last 10 years the populations of Valdez and Willow Creek have remained relatively stable. Meanwhile, Chitina and Kenny Lake experienced decreases of over 20 percent, and Tonsina experienced a population increase of 18 percent. The decreasing populations of Chitina and Kenny Lake are consistent with that of the Copper River region, which has consistently negative levels of net migration and a decreasing population (Hunsinger 2018). Tonsina has the smallest population of the five communities, so an increase of a dozen people looks like a large change, but it may not be reflective of the community’s long-term trajectory. Valdez has the largest population in the census area and follows a pattern closer to the state as a whole than to the Copper River region. During the national economic recession, Alaska’s population increased due to the relative availability of jobs compared to other states (Hunsinger 2018). This increased in-migration lasted from about 2009 to 2012. The statewide increase in population is consistent with Valdez’s population, which peaked in 2012 and has since decreased.

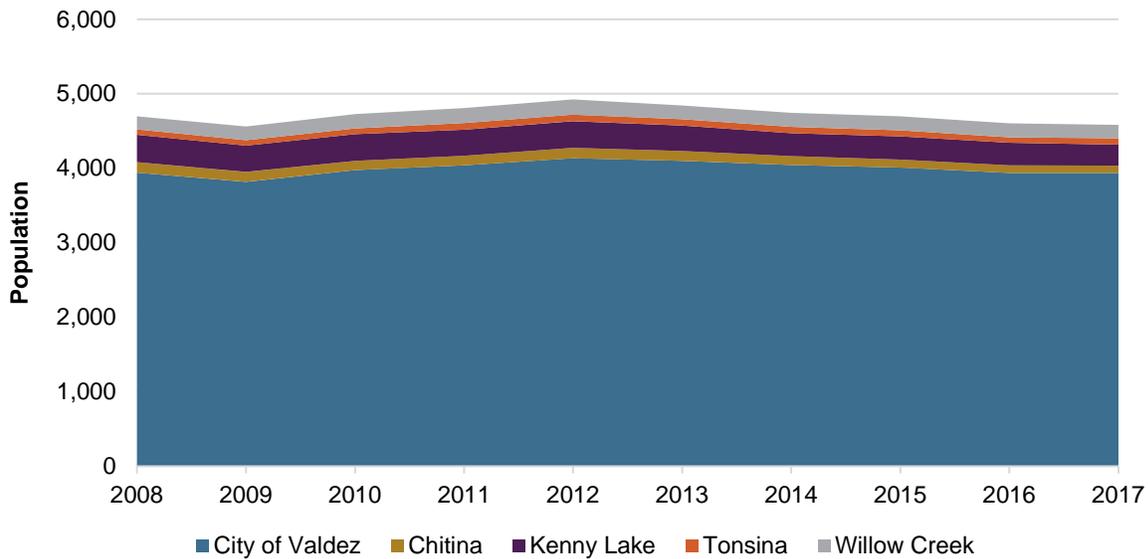
Subsequently, the state recession, which began in 2015, led to a decrease in jobs and negative net migration into the state (Hunsinger 2018). Valdez has had a decreasing population since 2012, but it may be somewhat sheltered from the full effects of the state’s recession. Employees that do not live in a community year-round are not included in the population statistics. If temporary residents were included, population statistics would be higher, and might experience more fluctuations reflecting the volatile fish harvest and oil production levels. Table A-1.1-1 and Figure A-1.1-1 show the estimated year-round population for each community over the last 10 years.

**Table A-1.1-1. Estimated Population of Valdez Area Communities, 2008–2017**

Place	Year										
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<b>City of Valdez</b>	3,941	3,819	3,976	4,039	4,136	4,101	4,046	4,011	3,937	3,937	
<b>Chitina</b>	140	133	126	131	139	132	118	108	104	97	
<b>Kenny Lake</b>	370	352	355	349	357	341	308	310	301	284	
<b>Tonsina</b>	71	73	78	89	89	86	85	82	76	84	
<b>Willow Creek</b>	176	186	191	199	204	182	187	186	187	179	

Source: ADOLWD (2017)

**Figure A-1.1-1. Population Trends in Valdez Area Communities, 2008–2017**



Source: ADOLWD (2017)

The age range in each community reflects historic economic activity and continuing population changes. The median age varies widely between communities, with an older population in Kenny Lake, Tonsina, Willow Creek, and Valdez and a younger population in Chitina. Kenny Lake, Willow Creek, and Tonsina each have lower economic activity today than they did in the past, which contributes to their aging populations. Valdez also has an aging population, although to a lesser extent. Valdez currently has an estimated 220 people over the age of 65, but that number will increase as the population ages. Chitina has a larger proportion of people under the age of 18 as well as more seasonal fishing activity, which may bring more young people to the community. Except for Chitina, all communities have more men than women. Table A-1.1-2 shows the population by age group and gender where age ranges approximately correspond to people who are young and not working (under 18), working (18–64), and retired (65 and over).

**Table A-1.1-2. Age and Gender Groups in Valdez and Surrounding Communities, 2010**

Community	Median Age	Under 18	18 to 64 Years	65 Years and Over	Male Population	Female Population
Valdez	36.7	1,004	2,752	220	2,120	1,856
Kenny Lake	44.5	90	218	47	186	169
Tonsina	49.3	12	59	7	44	34
Willow Creek	49.3	34	125	32	102	89
Chitina	28	48	72	6	61	65

Source: U.S. Census Bureau (2010)

## 1.2 Housing

Table A-1.2-1 shows the average household and average family size in each community based on 2010 census data. Tonsina, Willow Creek, and Valdez tend to have fewer people in a family, while Chitina tends to have more. Notably Chitina also has a younger population and more people under the age of 18. Valdez's smaller household size is reflective of its aging population and lower birth rate (Hunsinger 2018).

**Table A-1.2-1. Average Household and Family Size, 2010**

Community	Average household size	Average family size
<b>Chitina</b>	2.42	3.45
<b>Kenny Lake</b>	2.45	3.16
<b>Tonsina</b>	2	3.6
<b>Valdez</b>	2.43	3.04
<b>Willow Creek</b>	2.08	2.72

Source: U.S. Census Bureau (2010)

In Valdez about 90 percent of housing units are occupied, and about 70 percent of those are owned by the occupant. The occupancy rate in Valdez is much higher than in the surrounding communities, in which less than 60 percent of housing units are occupied. Valdez's high occupancy rate reflects the fact that its population today is like what it was in 2008. If the population of Valdez and surrounding communities decreases as expected, more housing units will become vacant. Table A-1.2-2 shows the status of housing units in 2010 including if they were occupied, and if they were rented or owned.

**Table A-1.2-2. Housing Units Occupancy Status, 2010**

Community	Total Housing Units	Occupied Housing	Vacant Housing	Vacant Due to Seasonal Use	Owner-Occupied	Renter-Occupied
<b>Chitina</b>	96	52	44	27	27	25
<b>Kenny Lake</b>	258	145	113	70	105	40
<b>Tonsina</b>	79	39	40	21	33	6
<b>Valdez</b>	1,763	1,573	190	50	1,080	493
<b>Willow Creek</b>	152	92	60	32	80	12

Source: U.S. Census Bureau (2010)

## 1.3 Employment and Income

Valdez has a higher rate of labor force participation among the population 16 years old and over compared to the surrounding communities. However, Valdez and Chitina both had unemployment rates well above the national average in 2016, which was four to five percent (U.S. Bureau of Labor Statistics [USBLS] 2016). An estimated one in three people in Chitina were unemployed when the survey was conducted. The two communities' high unemployment rates suggest that their economies are weaker than

the national average and provide relatively fewer jobs. However, Valdez’s unemployment rate is not unusual for towns in Alaska; in 2016, 40 percent of Alaska’s organized boroughs had unemployment rates above 10 percent (USBLS 2016). Table A-1.3-1 shows the estimated rates of labor force participation and unemployment for Valdez, Chitina, and Kenny Lake based on the 2016 American Communities Survey.

**Table A-1.3-1. Estimated Labor Force Participation and Employment, 2016**

Community	Labor Force Participation Rate; Population 16 years and over	Unemployment rate; Population 16 years and over
Valdez	68.2	10.7
Chitina	42.0	33.3
Kenny Lake	42.7	-

Source: U.S. Census Bureau (2016)

Table A-1.3-2 presents the primary industries in which people are employed in the City of Valdez. While there is a wide range of industries, public administration employs the most with about 25 percent in this category. The category “professional, scientific, and management, and administrative and waste management services” includes many of the workers who service the TAPS but may not include those who reside outside the census area and fly in for work. Some of the other industries in the city are also supported by pipeline activity including transportation and food services while tourism supports industries such as recreation and accommodation.

**Table A-1.3-2. Estimated Number of People Employed by Industry in the City of Valdez, 2016**

Industry	Number of Employees	Percent of Total
Transportation and warehousing, and utilities	195	12
Professional, scientific, and management, and administrative and waste management services	299	18
Educational services, and health care and social assistance	236	14
Arts, entertainment, and recreation, and accommodation and food services	127	8
Public administration	407	24
Other	411	25

Source: U.S. Census Bureau (2016)

Table A-1.3-3 shows the total personal income for the entire Valdez-Cordova Census Area from 2010 to 2016. During this period the real value of personal income increased by about 5 percent. Even though Valdez’s unemployment rate is higher than the national average, it still had a growing amount of personal income during this period, which may have been driven by increased migration to the area between 2010 and 2012.

**Table A-1.3-3. Sum of Real Personal Income in Valdez-Cordova Census Area, 2010–2016**

Year	2010	2011	2012	2013	2014	2015	2016
Sum of Personal Income	575.7	598.2	556.7	579.3	610.2	629.5	66.8

Source: Federal Reserve Economic Data (2018) and U.S. Bureau of Labor Statistics (2018)

## 2 ECONOMIC INDICATORS

The best available economic indicators are reported by a census area (i.e. Valdez-Cordova Census Area), which is a larger area than the five communities. Between 2002 and 2012, the number of establishments in the Valdez-Cordova Census Area generally declined across industries but the real value of services and the number of employees generally increased. These data come from the U.S. Economic Census and are presented in Table A-2-1 and broken down in the figures that follow. While more recent data from the Census have yet to be released, the information gives a general sense that over a 10-year period the region’s economy grew and added more jobs.

**Table A-2-1. Number of Establishments, Value of Services, and Number of Employees in Valdez-Cordova Census Area, 2002 and 2012**

Industry	Number of Establishments		Real Value of Services (\$ thousands)		Number of Employees	
	2002	2012	2002	2012	2002	2012
<b>Accommodation and food services</b>	23	26	14,382	21,574	163	213
<b>Administrative, support, waste, and remediation services</b>	8	4	3,973	1,155	34	7
<b>Arts, entertainment, and recreation</b>	8	7	2,326	2,704	26	22
<b>Health care and social assistance</b>	12	10	12,983	26,496	140	508
<b>Other services (except public administration)</b>	8	10	-	-	-	-
<b>Professional, scientific, and technical services</b>	12	9	14,339	12,565	55	59
<b>Real estate, rental, and leasing</b>	7	3	2,909	2,764	15	17
<b>Retail trade</b>	28	17	43,586	46,707	156	165

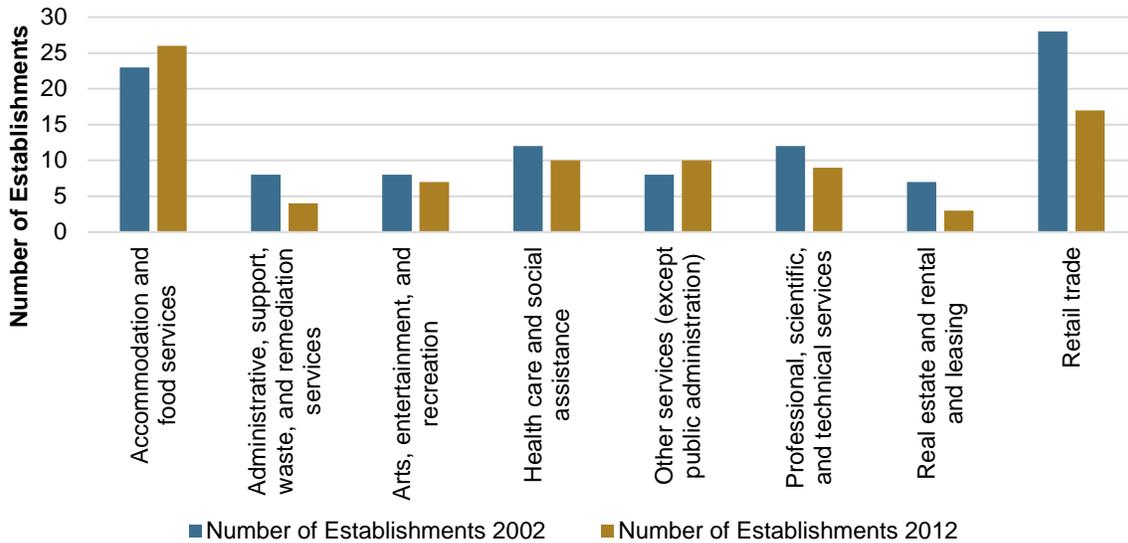
Source: U.S. Census Bureau (2002, 2012) and U.S. Bureau of Labor Statistics (2018)

Note: Real value adjusted to 2018 dollars

The number of establishments indicates how many businesses are operating in the census area. For accommodation, food service, and establishments listed as “other,” there was an increase in the number of establishments, but for all other industries there was a decrease. Accommodations and food service are tied to both the tourism industry and spending by pipeline employees. An increase in the number of pipeline employees or an increase in tourism would explain the increase in the number of establishments in accommodations and food service in this period. Overall, the number of establishments in the census area decreased from 16 in 2002 to 86 in 2012. A decrease in the number of establishments doesn’t

necessarily indicate a weak economy but may instead suggest that more people are employed by larger companies such as the Alyeska Pipeline Service Company. Figure A-2.1 presents the change in the number of establishments in the census area between 2002 and 2012.

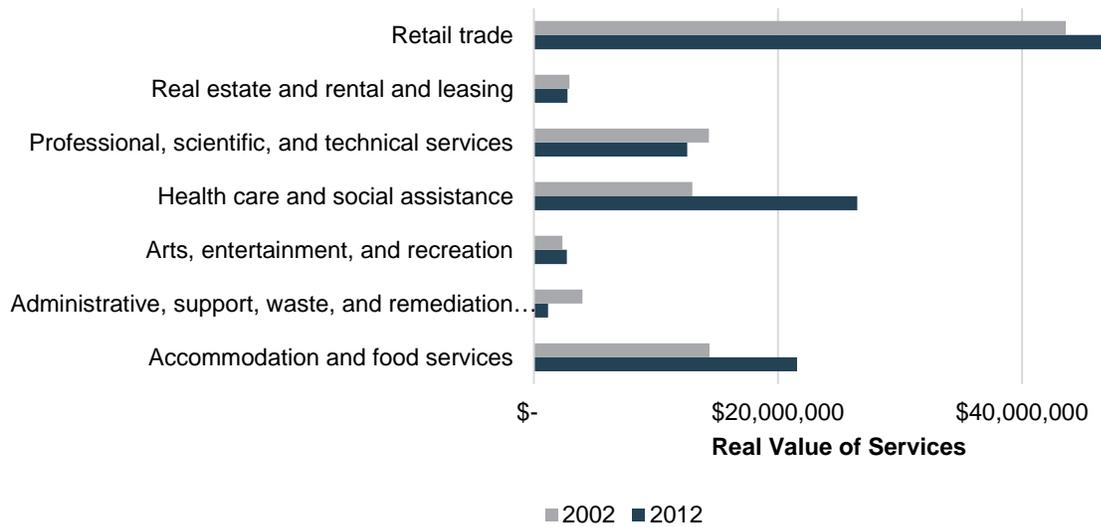
**Figure A-2-1. Number of Establishments by Industry in Valdez-Cordova Census Area, 2002 and 2012**



Source: U.S. Census Bureau (2002, 2012)

Figure A-2-2 shows the change in the real value of services in the census area, adjusted to 2018 dollars. Overall, the real value of services increased from \$94 million in 2002 to \$113 million in 2012. Most of the growth occurred in retail trade, health care and social assistance, and accommodation and food services. Growth in health care and social assistance may be driven by the region’s aging population (ADOLWD 2016). Additionally, growth in retail, food service, and accommodations may be driven by an increase in tourism. Statewide, the number of visitors to Alaska increased by 21 percent between 2002 and 2012 (Alaska Department of Commerce, Community, and Economic Development [ADCCED] 2012). Tourism is expected to grow in Valdez with hotels adding more rooms and more cruise ships are scheduled for summer 2019 (Ables and Talbott 2018).

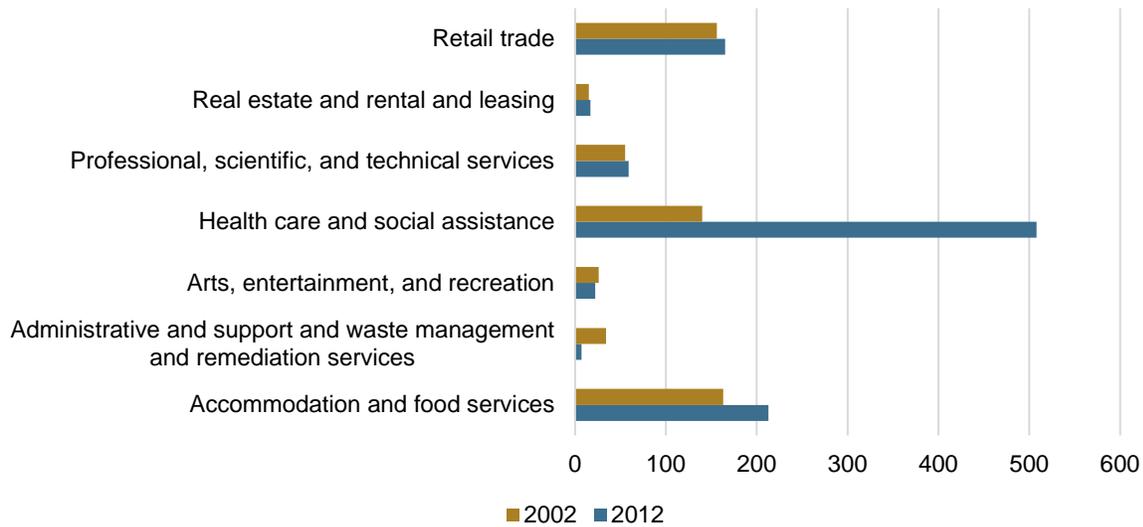
**Figure A-2-2. Real Value of Services by Industry in Valdez-Cordova Census Area, 2002 and 2012**



Source: U.S. Census Bureau (2002, 2012) and U.S. Bureau of Labor Statistics (2018)  
 Note: Real value adjusted to 2018 dollars

Figure A-2-3 depicts the change in the number of employees in each industry across the census area. There are no data for the number of the employees in the “other” category and some employees are likely unaccounted for in the data. While these data may not represent the whole labor force, they do suggest that there was an increase in the number of people employed in health care and social assistance, and in accommodation and food services. These figures are consistent with the data for the number of establishments that experienced increases in health care and social assistance and accommodation and food services as well. These figures may reflect an increase in tourism and an aging population (Hunsinger 2018).

**Figure A-2-3. Number of Employees by Industry in Valdez-Cordova Census Area, 2002 and 2012**



Source: U.S. Census Bureau (2002, 2012)

Table A-2-3 lists several economic indicators across the Valdez-Cordova Census Area from 2010 to 2017. The indicators suggest that the region has experienced economic growth over the seven-year period marked by an increase in the civilian labor force, a decrease in the unemployment rate, and an increase in the number of private establishments. These indicators are further analyzed in Figure A-2-4 through Figure A-2-6.

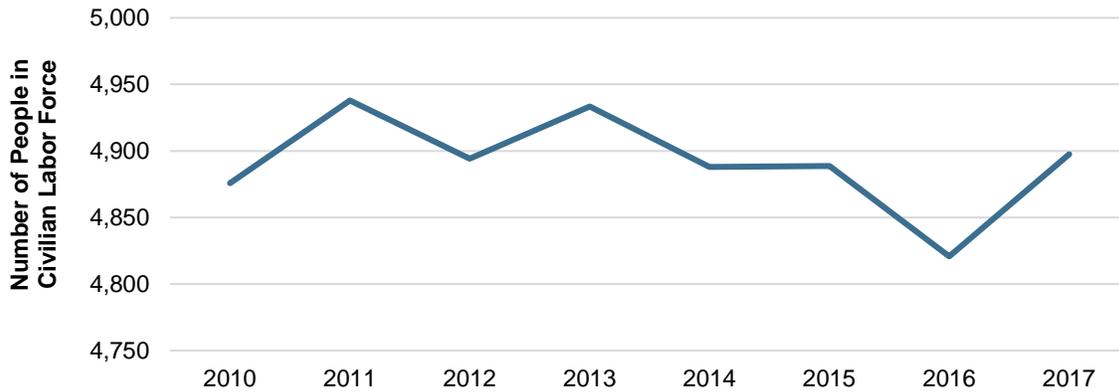
**Table A-2-3. Trends in Economic Indicators for Valdez-Cordova Census Area, 2010–2017**

Indicator	2010	2011	2012	2013	2014	2015	2016	2017
<b>Number of People in Civilian Labor Force</b>	4,876	4,938	4,894	4,934	4,888	4,889	4,821	4,897
<b>Unemployment Rate (%)</b>	9.6	10.2	10.0	10.2	9.9	9.0	8.9	8.3
<b>Number of Private Establishments for All Industries</b>	426	440	445	454	456	462	458	461

Source: Federal Reserve Economic Data (2018)

The size of the labor force reflects the region’s population and its age structure. Additionally, the labor force may decrease during times of economic recession because discouraged workers stop looking for jobs and are no longer included in unemployment numbers. The number of civilians in the labor force has remained at about 4,900 people for the entire census area. These numbers show that there was little change in the civilian labor force despite the national and state recessions. The size of the labor force is consistent with population statistics, which were also relatively stable during this time. Figure A-2-4 shows the number of people in the civilian labor force in the census area, which has fluctuated but overall increased since 2010.

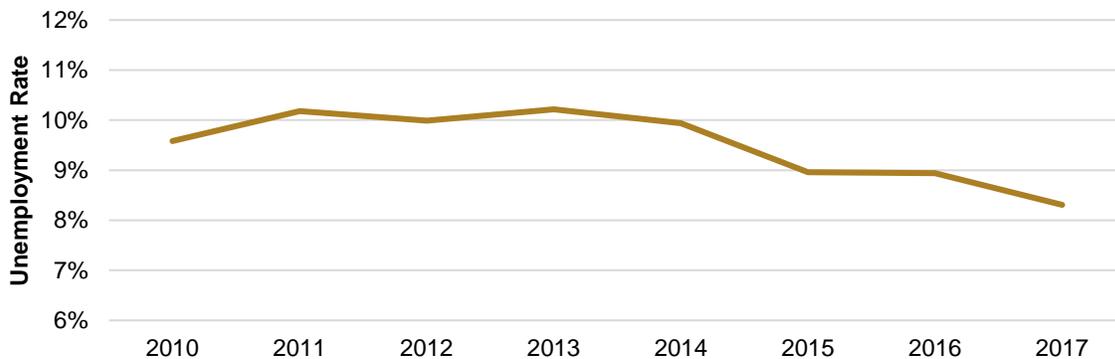
**Figure A-2-4. Number of People in Civilian Labor Force in Valdez-Cordova Census Area, 2010–2017**



Source: Federal Reserve Economic Data (2018)

The unemployment rate reflects the availability of jobs in the region and its overall economic health. The unemployment rate in the census area is similar to that of the City of Valdez at around 10 percent, but has decreased since 2014, reflecting an increase in jobs and a stronger economy. The unemployment rate actually fell during the first three years of the State of Alaska recession, which began in 2015. This suggests that unlike most of the rest of the state, the Valdez-Cordova Census Area employment rate has not been negatively affected by the decrease in oil prices or the decrease in state funding. It is possible that Valdez has yet to feel the effects of less oil running through the pipeline or that layoffs affected more out of state workers who are not counted by the census area (Hunsinger 2018). Figure A-2-5 shows the change in the unemployment rate for the Valdez-Cordova Census Area since 2010.

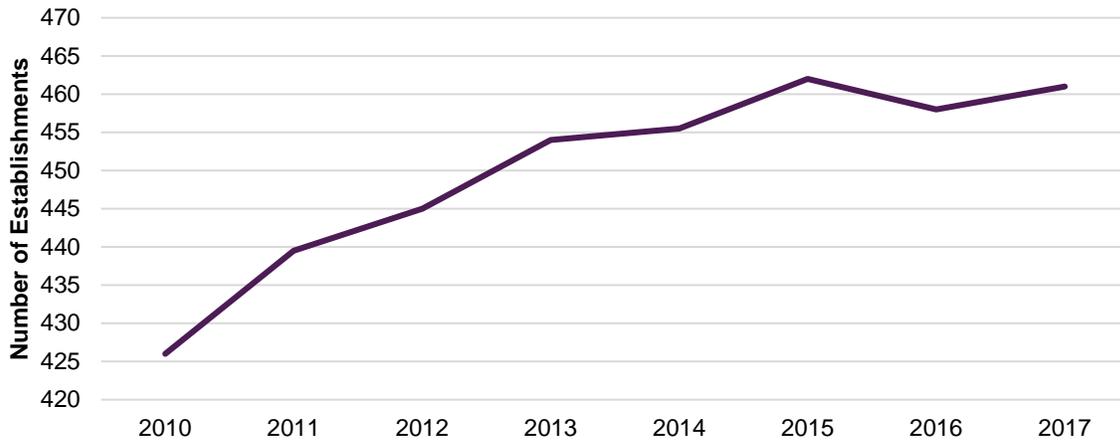
**Figure A-2-5. Unemployment Rate for Valdez-Cordova Census Area, 2010–2017**



Source: Federal Reserve Economic Data (2018)

Figure A-2-6 shows the number of private establishments in the Valdez-Cordova Census Area, which have been gradually increasing since 2010. The increase in the number of private establishments is contrary to the decreasing trend observed between 2002 and 2012. Both tourism and spending by out of state workers present business opportunities for those wishing to start new establishments in the region.

**Figure A-2-6. Number of Private Establishments for All Industries in Valdez-Cordova Census Area, 2010–2017**



Source: Federal Reserve Economic Data (2018)

## 2.1 Fisheries

The best data on how fisheries impact the airport is for the City of Valdez, which is the largest fishing community in the study area and the only one for which non-confidential commercial permit records are available. Cordova fisheries are served by the Cordova Airport.

The species harvested by boats based in Valdez include salmon, sablefish, halibut, herring, and shrimp; salmon and sablefish are the most profitable and have the most participation. Both species are affected by environmental factors from season to season and their catch limits are regulated through permits allotted by the Alaska Commercial Fisheries Entry Commission (CFEC 2017). The fishing industry employs many people on fishing boats and at fish-processing facilities. The largest fish processor in the city, Peter Pan Seafoods, recently expanded its operations from approximately 200 employees in 2017 to approximately 400 in 2018 (Peter Pan Seafoods 2018 and Ables and Talbott 2018).

Table A-2.1-1 shows trends in commercial fishery participation in Valdez over the last eight years, including the number of people who fished, the estimated gross earnings, and estimated pounds of fish landed. These estimates are based on the earnings per person and pounds per person who fished in the entire Valdez-Cordova Census Area. The records are for commercial fishers based in Valdez and do not include recreational fishing or commercial fishers that live elsewhere but land their fish in Valdez.

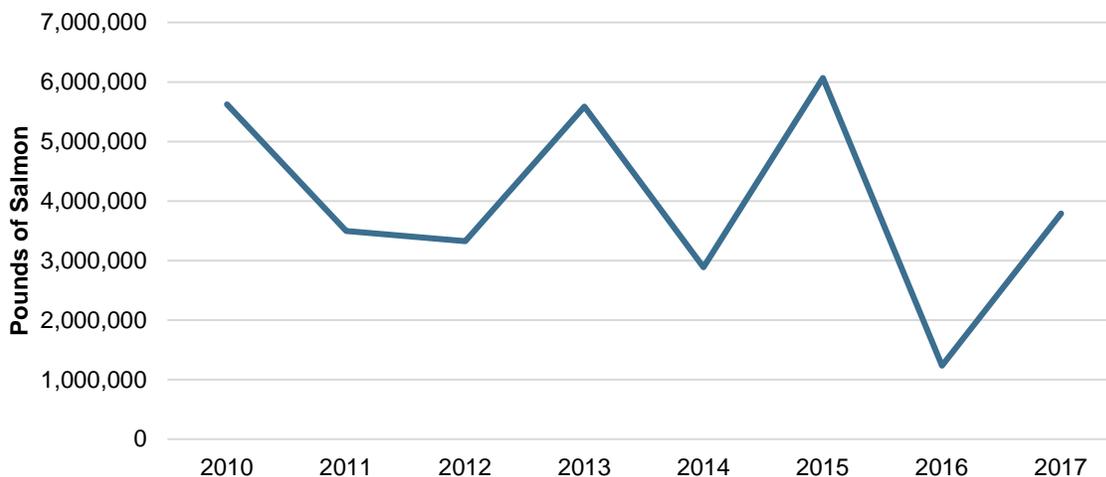
**Table A-2.1-1. Participation of Commercial Fishers Based in Valdez, 2010–2017**

Year	Number of People Who Fished for Salmon	Estimated Earnings from Salmon (\$)	Estimated Pounds of Salmon Landed
2010	18	2,945,216	5,625,568
2011	23	2,969,570	3,497,265
2012	21	2,96,725	3,325,943
2013	18	3,378,292	5,583,783
2014	18	2,176,628	2,888,973
2015	18	2,173,244	6,66,982
2016	17	1,211,852	1,234,558
2017	16	2,156,673	3,789,410

Source: CFEC (2017) and Northern Economics, Inc. analysis

The catch fluctuates widely from year to year but does not appear to be measurably decreasing or increasing over time. While the catch in 2016 was markedly smaller than the previous year’s, the numbers seem to recover in 2017. An Alaska Department of Fish and Game (ADF&G) report for Prince William Sound noted that in 2016 “*runs of sockeye, coho, and pink salmon were well below forecast,*” which matches the low number of pounds landed for that year (ADF&G 2017). Figure A-2.1-1 presents the estimated pounds of salmon landed over the eight-year period.

**Figure A-2.1-1. Estimated Pounds of Salmon Landed by Commercial Fishers Based in Valdez, 2010–2017**



Source: CFEC (2017) and Northern Economics, Inc. analysis

The sablefish fishery is much smaller than the salmon fishery, with gross annual earnings under \$500,000. There are typically only a few people who fish for sablefish each year. Table A-2.1-2 shows the trends in the sablefish fishery in Valdez from 2010 to 2017.

**Table A-2.1-2. Sablefish Records for Commercial Fishers Based in Valdez, 2010–2017**

Year	Number of People Who Fished for Sablefish	Estimated Earnings from Sablefish (\$)	Estimated Pounds of Sablefish Landed
2010	5	36,412	88,176
2012	4	291,486	75,092
2013	3	141,329	51,524
2014	4	238,930	73,218
2015	2	183,541	51,154
2016	3	268,825	70,015
2017	3	315,708	71,953

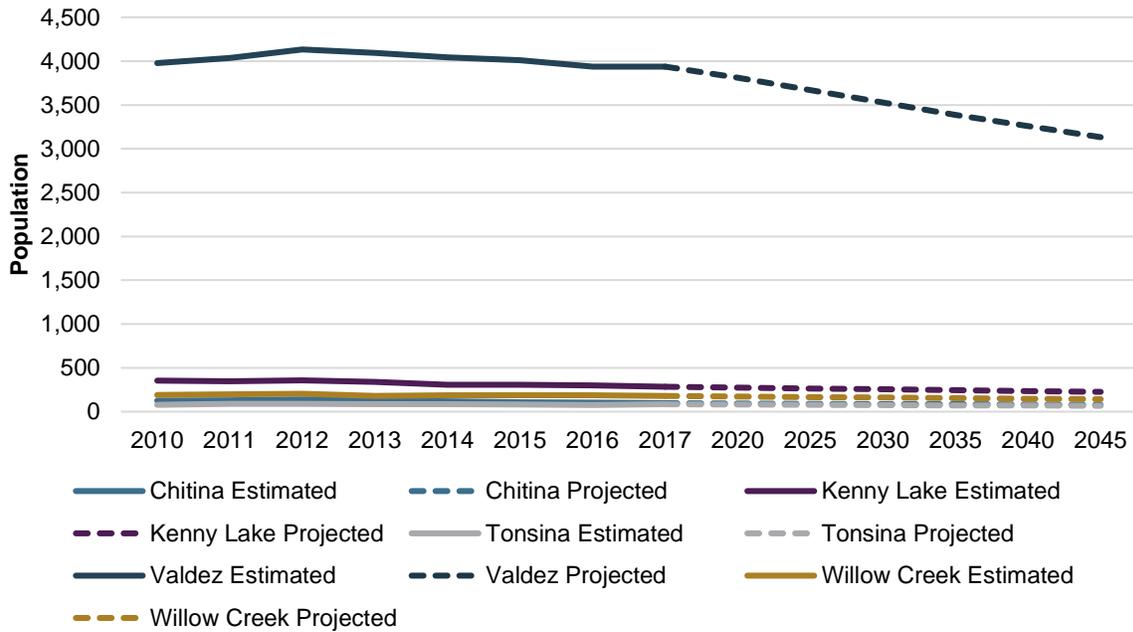
Source: CFEC (2017) and Northern Economics, Inc. analysis  
 Note: Data is unavailable for 2011 due to confidentiality.

### 3 DEMOGRAPHICS-BASED POPULATION PROJECTION

Based on ADOLWD’s projections, the population of the Valdez-Cordova Census Area is expected to decrease over the next 30 years. Every two years, ADOLWD creates population projections at the census-area level based on birth rates, death rates, and net migration rates. The projections shown in Figure A-3-1 are based on these projections, but with the growth rate from the census area projection applied to the 2017 population of each of the five communities in the study area. The death rate in the census area is expected to increase while the birth rate is expected to decrease, reflecting an aging population and a national trend of lower birth rates (Hunsinger 2018).

Currently, the census area has a high level of migration with between 8 and 10 percent of the population arriving and leaving every year (Hunsinger 2018). This high level of turnover may be due to economic trends like the national and state recessions or shifting levels of output in the fishing and oil industries. The number of people leaving the census area is expected to be high over the next three years, especially in the Copper Valley (Hunsinger 2018). The state recession and low oil flow through the pipeline are contributing to high levels of migration in the region. Between 2020 and 2045 the rate of net migration is expected to slow but remain negative for the census area. This continued decrease in population reflects fewer economic opportunities in the region and the process of urbanization, as more people move to larger cities in search of opportunities. Figure A-3-1 shows the estimated population of Valdez and surrounding communities since 2010 and the projected population through 2045. Since the projections are only available at the census-area level, other communities in the census area (e.g. Tatitlek, Chenega, Whittier, Cordova, Glennallen) are anticipated to experience a similar trend.

**Figure A-3-1. Estimated and Projected Populations for Valdez and Surrounding Communities, 2010–2045**



Source: ADOLWD (2018), and Northern Economics, Inc. analysis

Note: Projected population is calculated from ADOLWD projected growth rate for the Valdez-Cordova Census Area applied to the estimated population of each community in 2017