

Wasilla Airport Master Plan Update Condition and Needs Assessment

for

Project No. AIP 3-02-0417-026-2022



Prepared for:

City of Wasilla
209 E. Herning Avenue
Wasilla, Alaska 99654

Prepared by:

HDL Engineering Consultants, LLC
1617 S. Industrial Way
Palmer, Alaska 99645
Phone: 907.746.5230



July 2024

The preparation of this document as supported in part with financial assistance through the Airport Improvement Program from the Federal Aviation Administration (AIP Grant Number 3-02-0417-026-2022) as provided under Title 49 USC Section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein, nor does it indicate that the proposed development is environmentally acceptable in accordance with the appropriate public laws.

Table of Contents

1.0 Introduction.....	1
1.1 Airport Management	4
1.2 Airport Classification	4
2.0 Background and History	5
3.0 Condition and Needs Assessment	6
3.1 Airport Inventory and Description of Existing Facilities	6
3.1.1 Airspace	6
3.1.2 Airside Facilities	13
3.1.3 Landside Facilities	22
4.0 Regional Setting and Land Use	25
4.1 Land Ownership and Use	25
4.2 MSB Area Plans and Zoning.....	28
4.3 Potential Future Use.....	30
4.3.1 City of Wasilla Comprehensive Plan.....	30
4.3.2 Wasilla Comprehensive Economic Development Strategy.....	30
4.3.3 Matanuska-Susitna Borough Long Range Transportation Plan	31
4.3.4 Matanuska-Susitna Regional Aviation System Plan	31
4.3.5 Meadow Lakes Comprehensive Plan.....	32
4.3.6 Jacobsen Lake Management Plan	32
4.4 Future Opportunities	32
4.4.1 Land Needs for Long-term Airport and Economic Development.....	33
5.0 Preliminary Environmental Overview.....	34
5.1 Air Quality	36
5.2 Biological Resources	37
5.2.1 Threatened and Endangered Species	37
5.2.2 Migratory Birds and Eagles’ Nests	37
5.2.3 Anadromous Water Bodies and Essential Fish Habitat	38
5.2.4 Invasive Species.....	38
5.2.5 Terrestrial Environment	39

5.3 Climate Change.....	39
5.4 Coastal Resources	39
5.5 Department of Transportation Act Section 4(f) Resources.....	40
5.6 Farmlands.....	40
5.7 Hazardous Waste	40
5.8 Historic Properties, Archaeological and Cultural Resources	41
5.9 Natural Resources and Energy Supply.....	41
5.10 Noise and Compatible Land Use	41
5.11 Socioeconomic Impacts	41
5.12 Visual Impacts	42
5.13 Water Resources	42
5.13.1 Navigable Waters.....	42
5.13.2 Wetlands and Other Waters of the U.S.....	43
5.13.3 Floodplain and Regulatory Floodway.....	43
5.13.4 Water Quality.....	44
5.13.5 Wild and Scenic Rivers	44
6.0 Socioeconomic Evaluation.....	46
6.1 Population and Growth.....	46
6.1.1 Seasonality of Population.....	49
6.2 Economy	50
6.2.1 Employment.....	50
6.2.2 Occupations	50
6.3 Key Industries	51
6.3.1 General Aviation & Tourism	53
6.3.2 Outlook.....	55
7.0 Financial Assessment And Maintenance Cost Generation.....	56
7.1 Airport Revenues and Expenses	56
7.1.1 Inflation-Adjusted Airport Revenues and Expenses.....	59
7.2 Other Factors Affecting Operations and Operating Costs.....	59
8.0 Current and Forecasted Aviation Activity.....	62
8.1 Terminology	62

8.2 Other Airport Activity Forecasts	63
8.2.1 2011 Alaska AASP Forecasts.....	63
8.2.2 2012 Wasilla AMP.....	64
8.2.3 FAA TAF Forecast.....	66
8.3 Aviation Activity Data for Wasilla Airport	66
8.3.1 Enplanements.....	66
8.3.2 Air Carrier Operations	67
8.3.3 Air Taxi Operations.....	67
8.3.4 GA Operations.....	67
8.4 Forecast Methodology – GRA Model.....	67
8.5 Population and Aircraft Registration Growth Projections	68
8.6 Based Aircraft.....	69
8.7 Aviation Activity Forecast.....	69
8.7.2 Potential Future Use of Wasilla Airport.....	71
8.8 Comparison to Other Airport Activity Forecasts	72
8.9 Critical Aircraft.....	72
8.10 Runway Capacity.....	73
9.0 Facility Standards	74
9.1 Airfield	74
9.1.1 Critical Aircraft.....	74
9.1.2 Airport Classification.....	74
9.1.3 Airspace	74
9.2 Airside Facilities.....	75
9.2.1 Runways.....	75
9.2.2 Heliport.....	83
9.2.3 Taxiways and Taxilanes.....	84
9.3 Visual Aids and Navigation	86
9.3.1 Markings.....	86
9.3.2 Signage.....	87
9.3.3 Visual and Approach Aids	87
9.3.4 Weather Equipment.....	89

9.3.5 General Aviation Facilities.....	90
9.4 Other Aircraft Facilities.....	92
9.4.1 Ski-Plane Facilities	92
9.4.2 Glider Facilities.....	93
9.4.3 Seaplane Facilities.....	93
9.5 Landside Facilities	94
9.5.1 Lease Lots	94
9.5.2 Access Roads	95
9.5.3 Parking	95
9.5.4 Building and Land Use Requirements.....	96
9.6 Airport Security/Access.....	98
9.6.1 Security Fencing and Gates.....	98
9.7 Airport Services and Support Facilities	98
9.7.1 Aircraft Fueling.....	98
9.7.2 Utilities	99
9.7.3 Snow Removal.....	99
9.7.4 Airport Maintenance.....	100
9.7.5 Fire and Rescue.....	101
9.8 Summary of Facility Requirements.....	102
References	103

List of Tables

Table 1: AIP Grants Accepted for the Wasilla Airport	5
Table 2: Existing Airspace Surfaces.....	8
Table 3: Existing Runway Conditions	13
Table 4: Existing Apron Pavement Conditions.....	20
Table 5: Population Estimates for MSB and City of Wasilla, 2000–2022.....	47
Table 6: Projected Change in Population for Alaska, the MSB, and the Study Area, 2021–2050.....	49
Table 7: Summary of Wasilla Airport’s Revenues and Expenses, \$, FY 2012–2022.....	56
Table 8: Wasilla Airport Revenue Detail, \$, FY 2012–2022	57
Table 9: Wasilla Airport Expense Detail	58
Table 10: Wasilla Airport Revenues and Expenses, Real 2022 Dollars, \$, FY 2012–2022.....	59
Table 11: 2011 AASP Forecast for Wasilla Airport.....	64
Table 12: 2012 Wasilla AMP Forecast.....	65
Table 13: Wasilla Enplanements (FAA ACAIS Database)	67
Table 14: Annualized Historical and Projected Population and Aircraft Registration Growth Rates, 2022–2050.....	68
Table 15: Aviation Growth Rate Scenarios, 2022-2050.....	68
Table16: Aviation Activity Projects for Year 2023, 2025, 2030, 2035, and 2040.....	70
Table 17: Comparison of Airport Forecast to Previous Forecasts.....	72
Table 18: FAA Design Standards for Allowable Crosswind Components	77
Table 19: Crosswind Coverage at the Wasilla Airport.....	77
Table 20: Taxiway Design Requirements.....	84
Table 21: Taxilane Design Requirements	85

List of Figures

Figure 1: Wasilla Airport	2
Figure 2: Wasilla Airport Facilities	3
Figure 3: Wasilla Airspace Sectional Chart.....	7
Figure 4: Runway 04 Approach	11
Figure 5: Runway 22 Approach	12
Figure 6: Runway 04/22	15
Figure 7: Runway 04S/22S.....	16
Figure 8: Runway 04/22 RSA Non-frangible Threshold Markers	17
Figure 9: Location of MSB and Wasilla Airport within the State of Alaska	25
Figure 10: Land Ownership	27
Figure 11: Zoning Around the Wasilla Airport & Wasilla City Limits	29
Figure 12: Environmental Study Boundary	34
Figure 13: Study Area Wetlands	45
Figure 14: Cities and CDPs near the City of Wasilla, 2020.....	47
Figure 15: Population Trends for MSB and City of Wasilla, 2010–2022	48
Figure 16: Population Projection for the Matanuska-Susitna Borough, 2021–2050	48
Figure 17: Labor Force, Employment, and Unemployment in Matanuska-Susitna Borough,....	50
Figure 18: Unemployment Rate in Matanuska-Susitna Borough, 1990–2022	50
Figure 19: Occupations in Matanuska-Susitna Borough, 2020.....	51
Figure 20: Seasonality of Employment by Private Industry in Matanuska-Susitna Borough,....	52
Figure 21: Seasonality of Employment in Matanuska-Susitna Borough, 2015–2021	53
Figure 22: Industry Employment Related to Aviation, 2015–2021	54
Figure 23: Industry Employment Related to Tourism, 2015–2021	55
Figure 24: Wasilla Airport Operating Revenues and Expenses Before Depreciation, 2012–2022	57
Figure 25: Wasilla Airport Operating Revenue Detail, FY 2012–2022	58
Figure 26: Wasilla Airport Operating Expense Detail, FY 2012–2022	59
Figure 27: All Weather Wind Rose for Wasilla Airport, 10.5 Knot Wind Speed (2013–2022).....	77
Figure 28: All Weather Wind Rose for Wasilla Airport, 13 Knot Wind Speed (2013–2022)	78

Appendices

Appendix A	Wasilla Airport Inventory Report
Appendix B	Utility As-builts
Appendix C	Land Use Assessment and Economic Development Report
Appendix D	GRA Model Calculation Sheet
Appendix E	Summary of Relevant Facility Standards
Appendix F	Runway Protection Zone and Airport Boundary Map

List of Abbreviations

AAC.....	Aircraft Approach Category
AASP	Alaska Aviation System Plan
AC.....	Advisory Circular
ACIAS	Air Carrier Activity Information System
ADA.....	Americans with Disabilities Act
ADG.....	Airplane Design Group
ADEC	Alaska Department of Environmental Conservation
ADF&G.....	Alaska Department of Fish and Game
ADIP	Airport Data and Information Portal
ADNR.....	Alaska Department of Natural Resources
AGL.....	Above Ground Level
AHFC.....	Alaska Housing Finance Corporation
AIP.....	Airport Improvement Program
ALP.....	Airport Layout Plan
AMP.....	Airport Master Plan
APRC.....	Approach Reference Code
APV.....	Approach with Vertical Guidance
ARRC.....	Alaska Railroad Corporation
ATCT.....	Air Traffic Control Tower
AWC.....	Anadromous Waters Catalog
AWOS.....	Automated Weather Observation System
BTS	U.S. Department of Transportation Bureau of Transportation Statistics
CDP	Census Designated Place
CFR.....	Code of Federal Regulations
City	City of Wasilla
COVID-19.....	Coronavirus 19
CTAF.....	Common Traffic Advisory Frequency
DCRA.....	Division of Community and Regional Affairs
DOLWD.....	Alaska Department of Labor and Workforce Development
DOT.....	U.S. Department of Transportation
DOT&PF.....	Alaska Department of Transportation & Public Facilities
DPRC.....	Departure Reference Code
EPA.....	Environmental Protection Agency
FAA.....	Federal Aviation Administration
FEMA.....	Federal Emergency Management Agency
FTE.....	Full-time equivalent
FY.....	Fiscal Year
GA.....	General Aviation

HDL.....	HDL Engineering Consultants, LLC
IFP.....	Instrument Flight Procedures
IFR.....	Instrument Flight Rules
IYS.....	FAA Airport Identifier for Wasilla Airport
M&O.....	Maintenance & Operations
MIRL.....	Medium Intensity Runway Edge Lighting
MITL.....	Medium Intensity Taxiway Edge Lighting
MLCC.....	Meadow Lakes Community Council
MSA.....	Metropolitan Statistical Area
MSB.....	Matanuska-Susitna Borough
MTOW.....	Maximum Certified Takeoff Weight
NAAQS.....	National Ambient Air Quality Standards
NAS.....	National Air Space System
NEPA.....	National Environmental Policy Act
NPI.....	Non-Precision Instrument
NPIAS.....	National Plan for Integrated Airport Systems
NRHP.....	National Register of Historic Places
OFA.....	Object Free Area
OFZ.....	Obstacle Free Zone
PAPI.....	Precision Approach Path Indicator
PCI.....	Pavement Condition Index
QTY.....	Quantity
RASP.....	Regional Aviation System Plan
RDC.....	Runway Design Code
REIL.....	Runway End Identifier Light
ROW.....	Right of Way
RPZ.....	Runway Protection Zone
RSA.....	Runway Safety Area
RVR.....	Runway Visual Range
SPB.....	Sea Plane Base
SREB.....	Snow Removal Equipment Building
STOL.....	Short Takeoff and Landing
TAF.....	Terminal Area Forecast
TDG.....	Taxiway Design Group
TERPS.....	Terminal Instrument Procedures
TFMSC.....	Traffic Flow Management System Counts
TLOFA.....	Taxilane Object Free Area
TOFA.....	Taxiway Object Free Area
TSA.....	Taxiway Safety Area
USACE.....	U.S. Army Corps of Engineers

USC U.S. Code
USCB.....U.S. Census Bureau
USFWS U.S. Fish and Wildlife Service
VFR.....Visual Flight Rules
Wasilla Airport.....Airport

1.0 INTRODUCTION

The purpose of this Condition and Needs Assessment Report is to document the existing conditions of the Wasilla Airport, determine its current and forecasted uses, and identify areas needing improvement to increase safety and better meet the needs of the airport operators, users, and other stakeholders. This report summarizes findings from studies completed in association with Phase 1 of the Airport Master Plan (AMP) in regard to the airport's existing conditions, aviation forecasts, and issues identified.

The Wasilla Airport (airport) (Federal Aviation Administration [FAA] identifier: IYS) is owned and operated by the City of Wasilla (City). The airport is a general aviation (GA) airport located in southcentral Alaska, approximately 30 miles north of Anchorage (Figure 1). It serves a regional role for the City, as well as the surrounding communities of Meadow Lakes, Knik-Fairview, Big Lake, Houston, and Willow. Figure 2 shows the airport's key facilities, buildings, and access roads. The Alaska Department of Transportation and Public Facilities (DOT&PF) constructed the airport in 1992 with funding from the FAA. The site was selected by DOT&PF in conjunction with FAA after a study of a number of potential sites and completion of an FAA-approved environmental assessment. Upon completion of the new airport, its ownership was conveyed from the State of Alaska to the City of Wasilla.

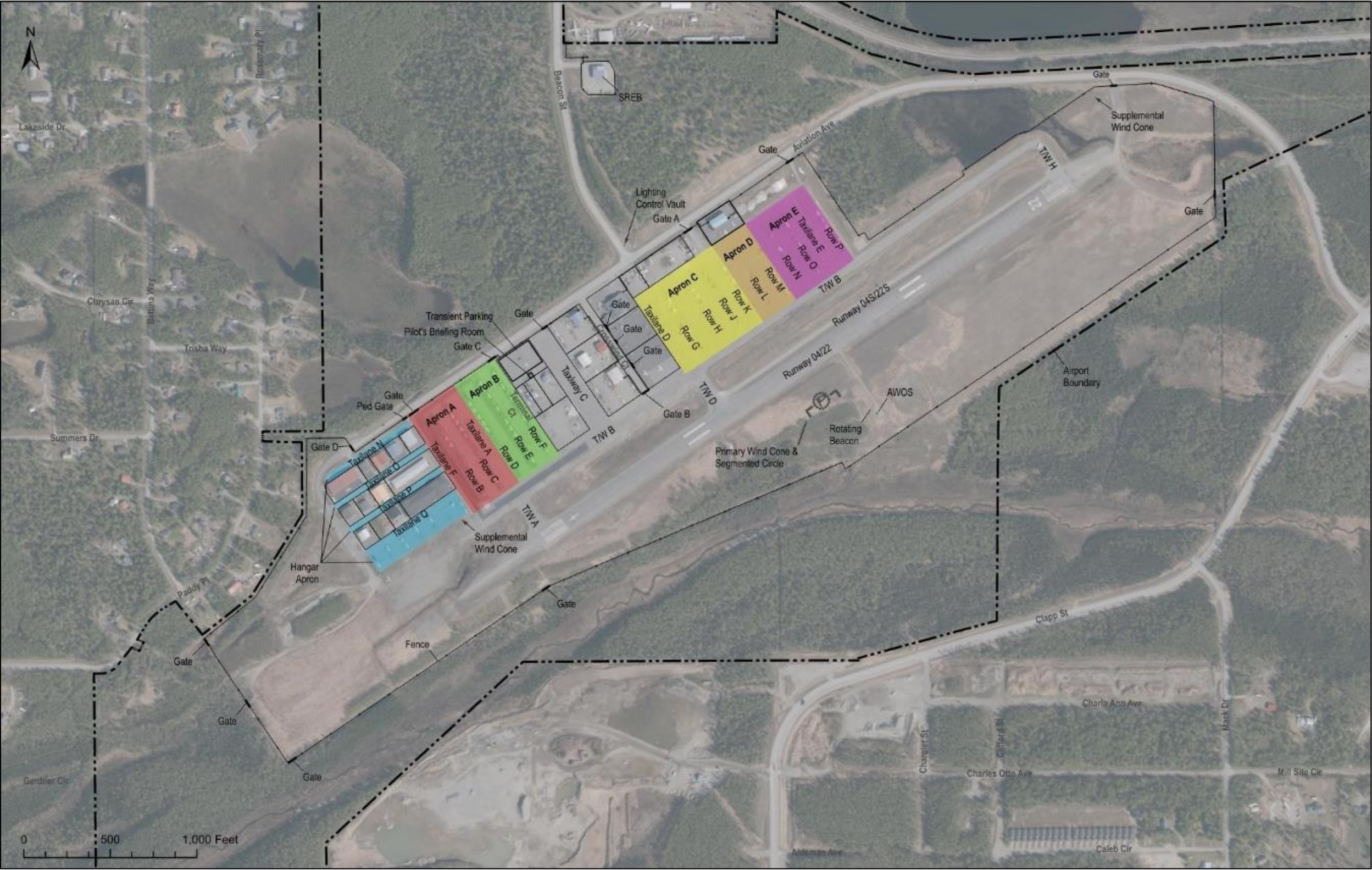
An AMP is the City's strategy for the long-term development of the airport. The most recent AMP for the Wasilla Airport was completed in 2012 (USKH, 2012). Since the completion of the AMP, private development at the airport has continued with the construction of GA aprons and individual and multiple-unit hangars, reducing the developable land available for lease. The FAA requires airport sponsors to maintain and operate facilities safely, efficiently, and in accordance with specified conditions (FAA, 2019).

The City has contracted HDL Engineering Consultants, LLC (HDL) to update the AMP and Airport Layout Plan (ALP) to reflect current and forecasted uses, design standards, and development goals. The first phase of the AMP update is the completion of this Condition and Needs Assessment Report.

Figure 1: Wasilla Airport



Figure 2: Wasilla Airport Facilities



1.1 Airport Management

The airport is owned and operated by the City and is managed by the City's Public Works Director. The Public Works Director serves as the Airport Manager and there is not currently a stand-alone Airport Manager Position at the City. Leasing of lease lots and tie-downs is managed by the City's Department of Public Works and billing for lease lots and tie-downs is managed by the City's Department of Finance.

1.2 Airport Classification

The airport is classified as a non-primary, local GA airport by the FAA (FAA, 2022a). The Alaska Aviation System Plan (AASP) identifies Wasilla Airport as a Local High Activity airport (DOT&PF, 2023). Local Airports generally serve the general aviation community in and around the urban areas in Alaska and supplement communities by providing access to primarily intrastate and some interstate markets. The "High Activity" designation means that the airport is included in the National Plan of Integrated Airport Systems (NPIAS), does not meet the definition of an International, Regional, or Community class airport, and has 20 or more based aircraft.

Per the 2020 ALP (HDL, 2020), the Runway Design Code (RDC) for Runway 04/22 (main runway) is B-II-4000, meaning the main runway is designed to serve aircraft with an Aircraft Approach Category (AAC) of B (based on approach speed), an Airplane Design Group (ADG) of II (based on wingspan and tail heights), and a Runway Visual Range (RVR) of 4,000 feet (based on $\frac{3}{4}$ mile approach minimums).

The RDC for Runway 04S/22S (gravel runway) is A-I-Vis, meaning the runway is designed to serve aircraft with an AAC of A (based on approach speed), an ADG of I (based on wingspan and tail heights), and a visual approach with $\frac{3}{4}$ mile approach minimums.

2.0 BACKGROUND AND HISTORY

Table 1 includes a list of FAA AIP grants for airport improvements at the Wasilla Airport since the initiation of the program in 1982. Minor airport improvements such as surface preservation, striping, equipment acquisition, and pavement marking have also occurred throughout the history of the airport. In addition to the projects listed below, the City has also spent approximately \$1.6 million to construct access from Clapp Street (Aviation Avenue) and extend municipal water service to the airport.

Table 1: AIP Grants Accepted for the Wasilla Airport

Federal Fiscal Year	Grant Number	Project Description	Total Cost
2023	3-02-0417-028-2023	Update Airport Master Plan or Study	\$431,200
2023	3-02-0417-027-2023	Expand Apron	\$3,978,420
2022	3-02-0417-026-2022	Develop New Master Plan or Study	\$762,495
2022	3-02-0417-025-2022	General ARPA	\$32,000
2021	3-02-0417-024-2021	Seal Runway and Taxiway Pavement Surface/Pavement Joints	\$374,904
2020	3-02-0417-023-2020	CARES Act Funds	\$0
2019	3-02-0417-022-2019	Install Perimeter Fencing Not Required by 49 CFR 1542, Replace Gate and Gate Control, Install Fiber Optic Control System.	\$362,110
2018	3-02-0417-021-2018	Expand Apron. Expand East Apron, Apron E: 18 Public Use Tie-Downs	\$3,871,038
2014	3-02-0417-020-2014	Acquire Safety and/or Security Equipment	\$564,005
2011	3-02-0417-019-2011	Conduct Environmental Study Environmental Phase 1	\$189,420
2011	3-02-0417-018-2011	Construct Apron Construction, Apron D (Phase 2)	\$1,173,734
2011	3-02-0417-017-2011	Acquire Snow Removal Equipment Acquire SRE	\$779,832
2010	3-02-0417-016-2010	Construct Apron Construction, Apron D (Phase 1)	\$1,016,148
2009	3-02-0417-015-2009	Conduct Aeronautical Survey for WAAS Approach Airport Survey and Update Airport Master Plan Study	\$474,709
2008	3-02-0417-014-2008	Expand Snow Removal Equipment Building Expand SREB and Install Perimeter Fencing	\$1,340,495
2007	3-02-0417-013-2007	Construct Taxiway	\$1,060,330
2006	3-02-0417-012-2006	Construct Runway 03-/21 and Phase 1 Apron Construction	\$4,048,990
2005	3-02-0417-011-2005	Construct Apron (Design)	\$287,440
2004	3-02-0417-010-2004	Expand Apron	\$1,996,879
2003	3-02-0417-009-2003	Construct Apron (Design) Phase 1	\$199,999
2002	3-02-0417-008-2002	Install Perimeter Fencing	\$264,264
2001	3-02-0417-007-2001	Conduct Airport Master Plan Study	\$407,072
1999	3-02-0417-006-1999	Construct Runway 03-21 and Install Perimeter Fencing	\$1,037,323
1998	3-02-0417-005-1998	Construct Runway 03-21	\$102,772
1992	3-02-0417-004-1992	Improve Snow Removal Equipment Building and Acquire Snow Removal Equipment	\$499,450
1991	3-02-0417-003-1991	Noise Mitigation Measures for Public Buildings within 75 DNL	\$925,850
1990	3-02-0417-002-1990	Construct Runway 03-3/21, Taxiway, Apron, Install Runway Lighting, and Improve Access Road	\$3,801,685
1988	3-02-0417-001-1988	Acquire Land for Development	\$2,056,280

Source: DOT&PF (2024)

3.0 CONDITION AND NEEDS ASSESSMENT

HDL conducted an onsite inspection of Wasilla Airport on October 21, 2022. Two follow-up site visits and coordination with City airport maintenance personnel occurred on November 9 and 10, 2022. The Airport Inspection Report is included in Appendix A. During the inspection, HDL interviewed the City Roads and Airports Maintenance Supervisor, Keith Jones, to gain a better understanding of the operations and maintenance of the airfield. Additional interviews were also conducted with tie-down holders, hangar associations, existing airport users, and based and non-based commercial operators.

3.1 Airport Inventory and Description of Existing Facilities

An inventory of existing facilities and a determination of critical aircraft are necessary to determine if current facilities are able to accommodate forecasted airport activity. The comparison of the current facility capacities to the forecasted aviation activity provides the basis and recommended timeline for necessary airport improvements.

The following information summarizes the existing conditions of the airport including existing airport facilities, visual aids, navigational aids, and airspace, as well as relevant features of the community and the airport environment.

3.1.1 Airspace

The airspace at Wasilla Airport is classified as Class E controlled airspace starting at 700 feet above ground level (AGL) (Figure 3). Class G uncontrolled airspace is present below the Class E airspace from ground level to 700 feet. Class A controlled airspace is present above 18,000 feet mean sea level. The Wasilla airspace abuts airspace for the Palmer and Big Lake Airports, which are also designated as Class E controlled airspace. The airspace surrounding the Class E controlled Airspace, including the Birchwood Airport south of Wasilla, is classified as Class E controlled airspace with a floor of 1,200 feet AGL. Figure 3 depicts the airspace surrounding the Wasilla Airport (FAA, 2022b). Class E controlled airspace requires aircraft operating under instrument flight rules (IFR) to have air traffic control clearance. Aircraft operating under Visual flight rules (VFR) do not need to be in contact with air traffic control.

Figure 3: Wasilla Airspace Sectional Chart



Airspace Surfaces

The airspace for an airport is regulated by the FAA with regard to airport airspace (Title 14 Code of Federal Regulations [CFR] Part 77, 2010), threshold siting (FAA, 2022c), and terminal instrument procedures (FAA, 2023a). These regulations establish imaginary airspace surfaces and standards for determining obstructions to air navigation. The geometry and slopes of imaginary surfaces are governed by the airport category (Utility or Other than Utility), the type of instrument approach procedures planned, and visibility minimums. Utility runways are intended for use by aircraft with a gross weight of less than 12,500 pounds (14 CFR Part 77, 2010). The term “utility” is used in this document to classify both the aircraft and the weight capacity of the runway they use. Table 2 summarizes existing airspace surfaces for the airport.

Table 2: Existing Airspace Surfaces

	RUNWAY 04	RUNWAY 22	RUNWAY 04S	RUNWAY 22S
	(NPI)	(NPI¹)	(Visual, Small/Utility²)	(Visual, Small/Utility²)
Primary Surface (Part 77)	1,000' wide ³ centered on runway to 200' off runway end	1,000' wide ³ centered on runway to 200' off runway end	250' wide centered on runway to 200' off runway end	250' wide centered on runway to 200' off runway end
Approach Surface (Part 77)	10,000' outward and upward at 34:1 from Primary Surface width: 1,000' ³ – 4,000' ⁵	10,000' outward and upward at 34:1 from Primary Surface width: 1,000' ³ – 4,000' ⁵	5,000' outward and upward at 20:1 from Primary Surface ⁴ width: 250' – 1,250'	5,000' outward and upward at 20:1 from Primary Surface ⁴ width: 250' – 1,250'
Approach Surface (AC 150/5300-13B) Surface 2	N/A	N/A	2,250' outward and upward at 20:1 from inner width of 250' at runway threshold to width of 700'; 2,750' outward and upward at 20:1 maintaining 700' width width: 250' – 700'	2,250' outward and upward at 20:1 from inner width of 250' at runway threshold to width of 700'; 2,750' outward and upward at 20:1 maintaining 700' width width: 250' – 700'
Approach Surface (AC 150/5300-13B) Surface 5	10,000' outward and upward at 20:1 from inner width of 400' at Primary Surface to outer width of 3,400' width: 400' – 3,400'	10,000' outward and upward at 20:1 from inner width of 400' at Primary Surface to outer width of 3,400' width: 400' – 3,400'	N/A	N/A
Approach Surface (AC 150/5300-13B) Surface 6	10,200' outward and upward at 30:1 from inner width of 275' at threshold to outer width of 1,520' width: 275' – 1,520'	10,200' outward and upward at 30:1 from inner width of 275' at threshold to outer width of 1,520' width: 275' – 1,520'	N/A	N/A
Transitional Surface (Part 77)	7:1 from Primary and Approach Surfaces	7:1 from Primary and Approach Surfaces	7:1 from Primary and Approach Surfaces	7:1 from Primary and Approach Surfaces
Horizontal Surface (Part 77)	10,000' arc, 150' above airport elevation	10,000' arc, 150' above airport elevation	5,000' arc, 150' above airport elevation ⁶	5,000' arc, 150' above airport elevation ⁶
Conical Surface (Part 77)	4,000' at 20:1 outward and upward from horizontal surface	4,000' at 20:1 outward and upward from horizontal surface	4,000' at 20:1 outward and upward from horizontal surface ⁶	4,000' at 20:1 outward and upward from horizontal surface ⁶

	RUNWAY 04	RUNWAY 22	RUNWAY 04S	RUNWAY 22S
Departure Surface (AC 150/5300-13B)	Section 1: 12,152' outward and upward at 40:1 from inner width of 75' to outer width of 6,587' Section 2: Extends from each runway edge, laterally to a point 500' from runway centerline and 150' above threshold elevation. Surface follows Section 1 at a 40:1 slope until leveling out at an elevation of 304'. Outer width is 7,512'	Section 1: 12,152' outward and upward at 40:1 from inner width of 75' to outer width of 6,587' Section 2: Extends from each runway edge, laterally to a point 500' from runway centerline and 150' above threshold elevation. Surface follows Section 1 at a 40:1 slope until leveling out at an elevation of 304'. Outer width is 7,512'	N/A ⁷	N/A ⁷

¹ Non-precision instrument (NPI) runway applies to runways with an approved instrument approach procedure.

² Small/Utility runways are intended for use by aircraft less than 12,500 pounds gross weight.

³ Width of the Primary Surface and the inner edge of the Approach Surface need to be updated on the ALP.

⁴ Part 77 Approach Surface for Runway 04S/22S not shown on the ALP.

⁵ Width of outer edge of the Part 77 Approach Surface needs to be updated on the ALP.

⁶ Not shown on the 2020 ALP. ALP needs to be updated.

⁷ Runway departure threshold siting applies to runways used for instrument operations. Runway 04S/22S has no published procedures.

Obstructions

Title 14 CFR Part 77 provides guidance for identifying obstructions to air navigations consisting of the primary, approach, transitional, horizontal, and conical surfaces. United States Standard for Terminal Instrument Procedures (TERPS), described in FAA Order 8260.3F (FAA, 2023a), provides the standardized methods for designing and evaluating instrument flight procedures (IFPs) by specifying the minimum measure of obstacle clearance to provide a satisfactory level of vertical protection from obstructions to Instrument Flight Rules (IFR) procedures and establishes the standard takeoff and landing minimums for instrument runways. Runway approach and departure surfaces, as described in FAA Advisory Circular (AC) 150/5300-13B, outline the criteria for evaluating runways serving only visual operations and provides basic planning surfaces for instrument runways to protect select TERPS surfaces (FAA, 2022c).

Airspace obstructions identified during the 2011 aeronautical survey for Wasilla Airport, as reflected in the 2020 ALP, are noted below:

Runway 04/22: The ALP denotes eight instances where trees penetrate the horizontal surface from approximately 8,651 feet prior to the threshold of Runway 04 to approximately 7,649 feet beyond the threshold of Runway 22, of which the greatest penetration is 52 feet.

- The 34:1 approach surface to Runway 04 is penetrated approximately 17 feet by trees located 5,417 feet prior to the threshold and 532 feet right of the runway centerline. There are three groups of trees on the north side of Runway 22 that penetrate the 34:1 approach surface by as much as 10 feet. The Railroad located just beyond the end of Runway 22 does not penetrate the approach surface by itself; however, any object traveling on the tracks would penetrate the 34:1 approach surface by the full height of the vehicle/railcar.
- There are several groups of trees on the north side of the runway that penetrate the transitional surface of Runway 04/22 by as much as 14 feet. The transitional surface on the southern side of Runway 04/22 has two reported penetrations. The wind cone penetrates the transition surface by 17 feet along with trees located south of Runway 22 with a maximum penetration of 29 feet.

Traffic Patterns

Air traffic at the airport is not controlled by an Air Traffic Control Tower (ATCT). Pilots voluntarily report their position on a common traffic advisory frequency (CTAF) of 122.8 megahertz (AirNav, 2023). Fixed-wing aircraft use a rectangular pattern to the south of the airport. Runway 22 has a standard left-hand traffic (aircraft turns to the left) pattern and Runway 04 has a non-standard right-hand traffic (aircraft turns to the right) pattern.

At uncontrolled airports, FAA regulations recommend that helicopters avoid the flow of fixed-wing aircraft because of the helicopter's slower speed. Helicopters may use a direct path to or from the airport or a mirror image of the fixed-wing pattern on the opposite side of the runway with turns opposite of fixed-wing aircraft to avoid the flow of fixed-wing traffic. The normal helicopter pattern altitude is 500 feet AGL.

During interviews and public comment, users reported the following safety issues related to the existing use and traffic patterns at Wasilla Airport:

- Pilots occasionally operate at the airport without broadcasting their intentions on the radio.
- Simultaneous operations have been witnessed on both Runway 04/22 (main) and Runway 04S/22S (gravel).
- Pilots occasionally land short of the threshold on Runway 04.

Instrument Approach and Departure Procedures

FAA's Air Traffic Division developed two non-precision area navigation global positioning system approaches for Wasilla. The NPI approach with vertical guidance (APV) consists of a holding pattern followed by a straight-in approach with a circling missed approach to Runway 04. Figure 4 shows the published approach for Runway 04 (AirNav, 2023). Runway 22 has an NPI APV consisting of a straight-in approach with a circling missed approach. Figure 5 shows the published approach for Runway 22 (AirNav, 2023).

Figure 4: Runway 04 Approach

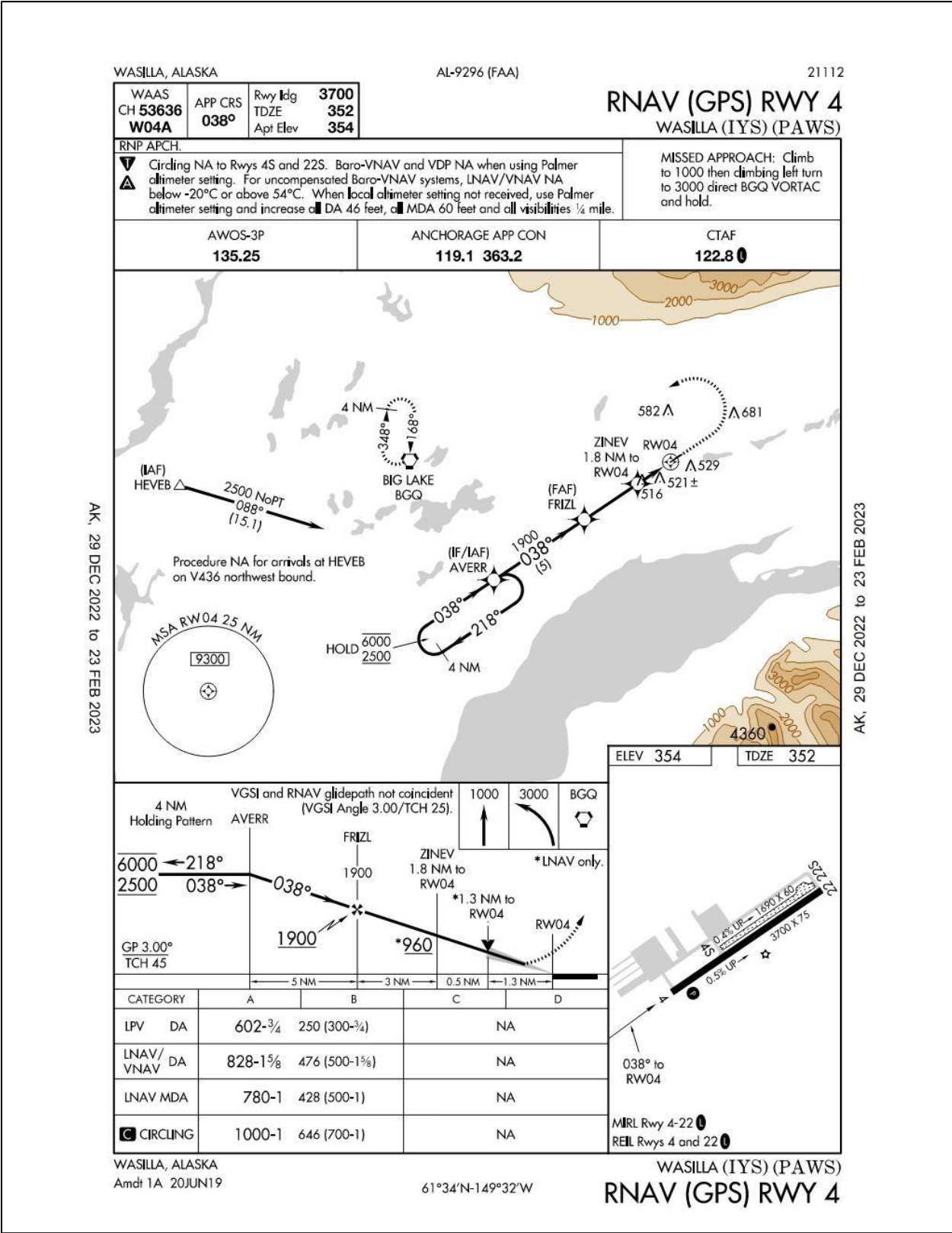
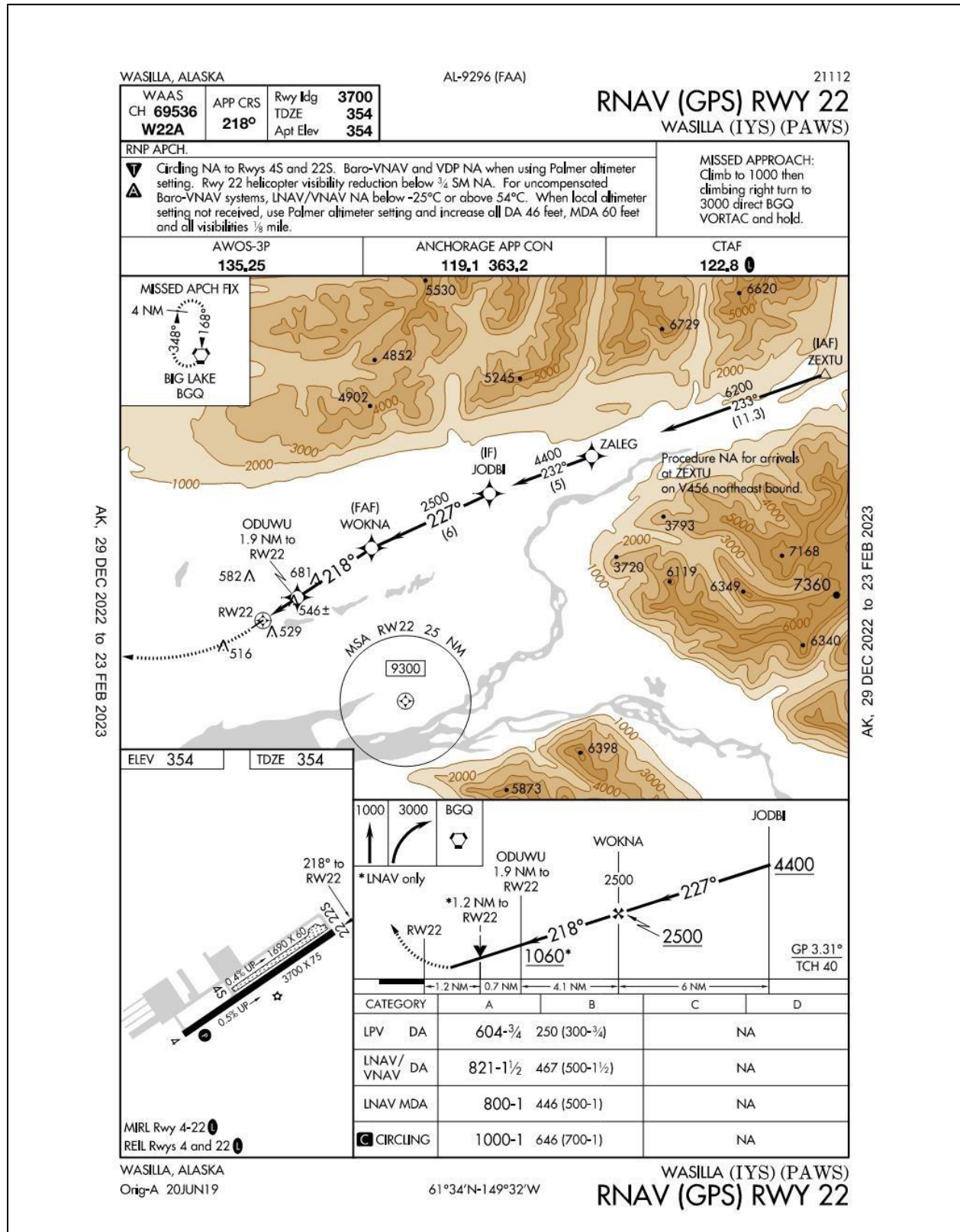


Figure 5: Runway 22 Approach



3.1.2 Airside Facilities

Runways

The existing airfield configuration consists of two runways: paved Runway 04/22 and gravel Runway 04S/22S. Existing runway conditions are summarized in Table 3. The separation between the two runways is approximately 87.5 feet, which does not meet FAA requirements for simultaneous operations. The required separation is 700 feet for simultaneous operations during Visual Flight Rules (VFR) conditions (FAA, 2022c).

Table 3: Existing Runway Conditions

	RUNWAY 04	RUNWAY 22	RUNWAY 04S	RUNWAY 22S
Visibility Minimums	≥ 3/4 mile	≥ 3/4 mile	≥ 3/4 mile	≥ 3/4 mile
Type	NPI	NPI	Visual	Visual
Category	Other than Utility	Other than Utility	Small/Utility ⁸	Small/Utility ⁸
Runway Design Code	B-II-4000	B-II-4000	A-I-VIS	A-I-VIS
Runway Length (feet)	3,700	3,700	1,690	1,690
Runway Width (feet)	75	75	60	60
Runway Shoulder Width (feet)	10	10	10	10
Runway Surface	Paved	Paved	Gravel	Gravel
Allowable Crosswind (knots)	13	13	10.5	10.5
Runway Safety Area				
Length Beyond Departure End (feet)	300	300	240	240
Length Prior to Threshold (feet)	300	300	240	240
Width (feet)	150	150	120	120
Runway Object Free Area				
Length Beyond Departure End (feet)	300	300	240	240
Length Prior to Threshold (feet)	300	300	240	240
Width (feet)	500	500	250	250
Runway Obstacle Free Zone				
Length Prior to Threshold (feet)	200	200	200 ⁹	200 ⁹
Width (feet)	400	400	250	250
Approach Runway Protection Zone				
Length (feet)	1,700	1,700	1,000	1,000
Inner Width (feet)	1,000	1,000	250	250
Outer Width (feet)	1,510	1,510	450	450
Area (acres)	48.978	48.978	8.035	8.035

	RUNWAY 04	RUNWAY 22	RUNWAY 04S	RUNWAY 22S
Departure				
Length (feet)	1,000	1,000	1,000	1,000
Inner Width (feet)	500	500	250	250
Outer Width (feet)	700	700	450	450
Area (acres)	13.770	13.770	8.035	8.035
Runway Separation to:¹⁰				
Hold Position (feet)	200	210	NA	NA
Parallel Runway (feet)	87.5 ¹¹	87.5 ¹¹	87.5 ¹¹	87.5 ¹¹
Parallel Taxiway (feet)	300	300	212.5	212.5
Aircraft Parking (feet)	370	370	282.5	282.5

⁸ Small/Utility runways are intended for use by aircraft less than 12,500 pounds gross weight (14 CFR Part 77, 2010) and (FAA, 2022c)

⁹ The length of the obstacle free zone (OFZ) prior to the thresholds of Runway 04S/22S need to be updated on the ALP.

¹⁰ Distances noted are measured from runway centerline.

¹¹ The necessary separation between parallel runways during VFR conditions is 700 feet for simultaneous approaches (FAA, 2022c).

Runway 04/22: Runway 04/22 is the main visual runway at Wasilla Airport. The runway is a paved, non-precision runway measuring 3,700 feet long by 75 feet wide. The runway is classified as a utility runway and designed to accommodate AAC B and ADG II aircraft. In 1999, the runway, taxiways, and aprons were paved. A runway maintenance project was completed in 2021-2022 that performed crack sealing on the runway surface. The latest pavement condition survey was completed by DOT&PF in 2020, prior to the crack sealing project. At the time, Runway 04/22 was given a pavement condition index (PCI) score of 67. Pavement rehabilitation is recommended for pavement with PCI scores ranging from 55 to 69 (DOT&PF, 2020). The pavement markings were worn and in poor condition during the 2022 inspection performed by HDL, but were recently refreshed during a 2023 Runway striping project. There are four non-frangible threshold markers adjacent to the threshold lights, two at each end, outboard of the threshold lights. The markers are non-standard for lit runways and should be removed. Runway 04/22 is shown in Figure 6.

The current version of the ALP and Master Record lists Precision Approach Pathway Indicator (PAPIs) on the end of Runway 04 and Runway End Identifier Lights (REILs) on both ends of Runway 04/22. However, REILs are not present at either end of Runway 04/22.

Figure 6: Runway 04/22



Runway 04S/22S: Runway 04S/22S was constructed in 2007 to serve tundra tire and ski-equipped aircraft with Short Takeoff and Landing (STOL) capabilities. The “S” in the runway designation indicates its intended use as a STOL runway. The runway was constructed with a 1,690-foot long by 60-foot wide grass surface. The runway is located along the northwest edge of Runway 04/22 between Taxiways D and H. The RDC for Runway 04S/22S is A-I-Vis. Runway 04S/22S is unlit, edges are marked with cones, and the threshold is delineated with threshold markers. Runway surface maintenance, consisting of adding gravel surfacing and reestablishing grade, is performed by airport maintenance personnel on a yearly basis. Through continuous maintenance efforts, the STOL has operated as a gravel runway with nonstandard conditions. To closer align with the FAA standards, the width of the gravel surfacing should be extended to 60 feet, and the edge markers/reflectors (cones) should be offset from centerline an additional 2 feet. Runway 04S/22S is shown in Figure 7.

Figure 7: Runway 04S/22S



Runway Safety Area

The runway safety area (RSA) is specifically graded to allow a deviation from the runway surface without significant damage to the aircraft and risk of injury to the pilot and passengers. Both longitudinal and transverse grades are defined by the FAA. The RSA should provide a suitable safety margin in case of over-shoots, underruns, and excursions adjacent to the runway. RSAs are required to be graded to minimum safe grades, be load-bearing under dry conditions, and be free of non-essential and non-frangible objects. The area should be capable of supporting snow removal equipment, emergency services, and passage of aircraft without causing major aircraft damage under dry conditions (FAA, 2022c).

04/22 RSA: The RSA for Runway 04/22 is 150 feet wide and starts 300 feet prior to the thresholds of Runway 04/22. The standard length for both the RSA prior to the threshold of a B-II runway is 300 feet. The graded portion of the RSA narrows down to approximately 140 feet at the end of each over-run area. There are four non-frangible threshold markers adjacent to the threshold lights, two at each end, outboard of the threshold lights that should be removed (Figure 8). The Master Record and the Alaska Chart Supplement note the non-standard threshold markers (FAA, 2022d; FAA, 2023b).

Runway 04/22 is within the RSA of Runway 04S/22S. Simultaneous operations are not allowed on these runways.

Figure 8: Runway 04/22 RSA Non-frangible Threshold Markers



04S/22S RSA: The RSA for Runway 04S/22S is 120 feet wide and 2,170 feet long. Runway 04S/22S is within the RSA of Runway 04/22. Simultaneous operations are not allowed on these runways.

Runway Protection Zones

The runway protection zones (RPZs) for runways 04/22 and 04S/22S are outlined in Table 3. The purpose of RPZs is to protect people and property on the ground from aircraft operations during final approach and initial take off. The FAA requires that airport sponsors reserve the right to control the height of objects in the RPZ to ensure safety on the ground and in the air. The FAA prefers that airport sponsors secure that right by owning the land inside the RPZ. When that is not possible, an aviation easement or zoning restrictions are acceptable (FAA, 2022e).

Additional research of the airport property boundary is needed to verify that the approach and departure RPZs fall within the existing airport boundary or aviation and hazard easements.

Runway Object Free Areas and Obstacle Free Zone

The object free area (OFA) is the area on the ground, centered on the runway centerline that must remain free of all objects that are non-essential for air navigation and ground movement, such as signs and navigational aids. The obstacle free zone (OFZ) is the volume of airspace located from the ground to 150 feet AGL, within the dimension shown that must remain free of non-essential objects, taxiing

and parked aircraft, and other penetrations, except for frangible navigational aids, which have fixed locations by function. The OFAs and OFZs for Runways 04/22 and 04S/22S appear to be clear of non-frangible objects, with the exception of the four non-standard threshold markers adjacent to the threshold lights on Runway 04/22.

Navigational Aids

There are no navigational aids located on the Wasilla Airport.

Visual and Approach Aids

Visual and approach aids assist pilots on approach to an airport as well as provide information and guidance to pilots navigating around an airfield.

The current version of the ALP and Master Record lists REILs on both ends of Runway 04/22; however, REILs are not present at either end of Runway 04/22. The ALP and Master Record should be updated to reflect current field conditions.

Runway 04 PAPIs (4-box system) are located on the right-hand side of Runway 04 and appear to be operational and in good condition. The current PAPI location is nonstandard but allowable per FAA AC 150/5340-30J (FAA, 2018b).

The lighted wind cone and segmented circle are located on the southeast side of Runway 04 at approximately midfield. The lighted wind cone and pole appear to be in good condition. The segmented circle with traffic pattern indicators consists of buried drums. Runway 04 has the right traffic designated by the indicators. The orange paint on the segmented circle varies from fair to failing. Replacement of the drums with a panel-style segmented circle is recommended.

There are two unlighted supplemental wind cones at the airport. One supplemental wind cone is located beyond the southwest end of Runway 04, and the second supplemental wind cone is located beyond the northeast end of Runway 22. Per FAA AC 150/5340-30J, the preferred location for a supplemental wind cone is on the left side of the runway when viewed from a landing aircraft and 500 feet to 1,000 feet in from the runway end (FAA, 2018). Further, the supplemental wind cones should be lighted as the airport is open for air carrier operations at night. However, given the current size and configuration of the airport, further evaluation is needed to determine if the supplemental wind cones are required.

The rotating beacon and pole are located on the southeast side of Runway 04 at approximately midfield near the FAA's weather station. The beacon is operational, and the foundation, pole, and light appear to be in fair condition. The gravel access trail to the Automated Weather Observation System (AWOS) and rotating beacon is in good condition and easily traversable.

Runway 04/22 has medium intensity runway lights (MIRL) that are 24 inches tall. The system was installed in 1993 and has exceeded its life expectancy; however, the system appears operational and is in fair condition.

Taxiways are lighted with medium intensity taxiway lights (MITL) that are 30 inches tall and appear to be in overall good condition, with the exception of:

- Light cans have jacked out of the ground at Taxiways H and A. The units appear to be in compliance with the 3-inch frangibility requirements (FAA, 2018); however, grade work is recommended to mitigate safety issues.
- One taxiway light, on the corner of Apron E and Taxiway B, is damaged and should be replaced by maintenance.
- A ground rod at the intersection of Taxiway A and Runway 04 has jacked approximately 17 inches out of the ground and appears to no longer be connected to the grounding system. The ground rod should be reinstalled and reconnected to the system.
- The lighting control vault is in deteriorated condition and needs to be replaced, as not under Landside Facilities below.

Signage

All interlink taxiways are marked with lighted signs. The signs are installed at the hold lines and appear to be in good condition.

Taxiways

There are a total of five taxiways on the Wasilla Airport. Taxiway B is a full-length parallel Taxiway. Taxiways A, D, and H are connecting taxiways between Taxiway B and Runway 04/22. Taxiway C connects to Taxiway B on its western half and extends north to Aviation Avenue. The 2020 DOT&PF pavement condition surveys resulted in the following PCI values for the taxiways (DOT&PF, 2020):

- Taxiway A: 60 (rehabilitation)
- Taxiway B west of Taxiway A: 59 (rehabilitation)
- Taxiway B between Taxiway A and D: 73 (preventative/corrective maintenance)
- Taxiway B east of Taxiway D: 88 (preventative maintenance)
- Taxiway C: 70 (preventative/corrective maintenance)
- Taxiway D: 71 (preventative/corrective maintenance)
- Taxiway H: 88 (preventative maintenance)

Preventative maintenance is recommended for pavement with PCI scores ranging from 85 to 100. Preventative and/or corrective maintenance is recommended for pavement with PCI scores ranging from 70 to 84. Rehabilitation is recommended for pavement with PCI scores ranging from 55 to 69. Reconstruction is recommended for pavement with PCI scores of 54 and below.

Recent pavement maintenance (crack sealing) has increased the PCI value on taxiways; however, updated values have not been determined.

Taxiways A and D are 40 feet wide, and Taxiway B is 35 feet wide. All three are characterized by: gravel shoulders transitioning to vegetation; vegetation presence within the gravel surfacing; longitudinal and transverse cracking in the pavement, which was recently sealed; and a centerline marking that is worn and faded. Unlike Taxiways A and D, Taxiway B is denoted by edge markings east of Apron E.

The dimensions that are listed on the current ALP for Taxiway C are incorrect and need to be updated. Taxiway C is paved for its entire width and connects to lease lots on both sides. The taxiway is delineated by worn centerline and edge markings at a 40-foot width. The pavement has transverse and longitudinal cracks that have been recently sealed.

The signage on connecting Taxiway H (as labeled on the ALP) designates the taxiway as the continuation of parallel Taxiway B. Taxiway H is 35 feet wide with gravel shoulders transitioning to vegetation. Vegetation is present within the gravel surfacing. The pavement has longitudinal and transverse cracking, which was recently sealed. Taxiway markings consist of centerline and edge markings that are worn and faded.

Aprons

The airport has six primary aprons: Aprons A, B, C, D, E, and Hanger Apron; and one transient parking area to provide short-term tie-downs for transient pilots. Table 4 summarizes existing pavement conditions for each apron.

Table 4: Existing Apron Pavement Conditions

Apron	Approx. Size (ft x ft)	PCI Range ¹²	Tie-downs ¹³	Lighted	Headbolt Heaters	Current Condition
A	330 x 655	60-64	25 (qty) 24 ft x 20 ft	No	No	Sealed transverse and longitudinal cracks. Includes Taxilane F and A.
B	290 x 655	74	39 (qty) 24 ft x 20 ft	No	No	Sealed transverse and longitudinal cracks. Includes Terminal Court.
C	545 x 530	71-79	26 (qty) 24 ft x 20 ft 6 (qty) 35 ft x 30 ft	Yes	Yes	Sealed transverse and longitudinal cracks. Includes Taxilane D.
D	230 x 530	86	18 (qty) 24 ft x 20 ft	No	No	Unsealed transverse and longitudinal cracks.
E	410 x 530	100	27 (qty) 24 ft x 20 ft	Yes	Yes	Minor unsealed transverse and longitudinal cracks.
Hanger	630 x 635	70-82	14 (qty) 24ft x 19 ft	No	Yes	Sealed transverse and longitudinal cracks. Includes Taxilanes N, O, P, Q, and lease lots.

¹² PCI values: 85-100 is preventative maintenance; 70-84 is preventative/corrective maintenance; 55-69 is rehabilitation; 0-54 is reconstruct.

¹³ Number of tie-downs for use in each area (quantity [qty]) per City records. Additional tie-downs exist, but are not used.

Taxilanes N, O, P, and Q do not meet the current design standards for an ADG II Taxilane as the TSA of 79 feet and the Taxilane Object Free Area (TLOFA) of 110 feet are not present. The existing hangars in combination with fixed/moveable objects do not comply with the aforementioned design standards and the taxilane condition should be noted as a substandard condition.

Lease Lots and Tie-Downs

There are 26 lease lots platted at the airport. There are 13 lease lots in the area of Taxilanes N, O, P, and Q adjacent to Taxilane F. There are 11 lease lots located between Apron B and Apron C, north of Taxiway B. Aprons C and D have one lease lot each on the northern side of the respective apron. Recent development and leasing warrant review and consideration in future airport planning.

The airport currently has 155 leasable tie-down spaces, with all spaces leased and 90 potential lessees on a wait-list. There are nine transient tie-down spaces available on the airport near Apron B. Once Apron E: Phase 2 is constructed (scheduled for 2024), an additional 27 leasable small tie-downs will be available, for a total of 176 small tie-downs and six large tie-downs.

Aircraft Fueling

Crowley Fuels Alaska operates a lease lot at Wasilla Airport and provides a self-serve fueling station for 100 Low Led and Jet A-50 fuel. No inadequacies with the existing fuel service were identified during the site inspection.

Weather Equipment

The airport is equipped with an FAA-owned and maintained AWOS that is located at approximately midfield on the southeast side of Runway 04/22, next to the rotating beacon. The AWOS is reporting data and appears to be in good condition.

Hangars

The tenants at Wasilla Airport include a mixture of private airport users with individual tie-down or hangar leases and aeronautical businesses, maintenance, and hunting or fishing guide charter services.

Ten hangars have been constructed since the 2020 ALP update, and two hangars were currently under construction during the site visit. Some of the hangars have multiple tenants occupying the space.

Soloy Helicopters, LLC is operating on the lease lots between Taxilane D and Crosswind Court with 17 helicopters based at the airport. This lease and hangar were not captured in the 2012 ALP update.

Pilot's Lounge

The pilot's lounge is an 8-foot by 20-foot trailer on concrete blocks located on the south side of the transient aircraft parking lot and adjacent to Apron B.

3.1.3 Landside Facilities

Airport Access

There are four primary access roads inside the airport boundary that facilitate the flow of traffic throughout the airport.

Aviation Avenue provides the primary access to the airport from Clapp Street. The road runs along the northern edge of the airport and provides gated access to the airfield. Aviation Avenue east of Beacon Street is in overall good condition with occasional transverse and longitudinal cracking. Aviation Avenue west of Beacon Street is in worse condition, as evidenced by a higher level of transverse cracking.

Beacon Street is a connector street running north from Aviation Avenue at approximately Taxiway D and connecting into West Museum Drive. The pavement has transverse and longitudinal cracking and appears to be in fair condition.

Crosswind Court provides access to several lease lots and Gate B from Aviation Avenue. The pavement is in fair condition with transverse and longitudinal cracks that are sealed.

Terminal Court is an access road inside of the airport perimeter fencing that runs on the eastern edge of Apron B. The pavement is in fair condition and has transverse and longitudinal cracks that were recently sealed.

Lighting Control Vault

The lighting control vault, housing the airport lighting system and gate operators, is located on the northeast corner of Aviation Avenue and Beacon Street. The building is deteriorated and needs to be replaced. An electrical box on the exterior of the building has a broken cover that has been patched with duct tape, which is falling off and leaving exposed wiring. There is a hole in the floor inside the building entry. Airport maintenance stated that there are no operational issues with the lighting controls.

Security Fencing and Gate Access

There are approximately 15,800 linear feet of 8-foot tall chain link fence with multiple strands of barbed wire running through extension arms, providing perimeter control at the airport. Approximately 5,000 linear feet on the southwestern, southern, and southeastern portions of the perimeter fence are jacked out of the ground, allowing animals to cross underneath. Portions of the fence are jacked to the point that the fence is laid over and no longer provides a positive perimeter barrier. Maintenance has tried patching some of the jacked fencing in an effort to keep animals from passing underneath; however, many sections still allow animal access. The remainder of the fencing appears to be in good condition.

The following is a breakdown of access gates located on the airport.

Gate A provides vehicle access to Apron C via a sliding gate with an automated operator and proximity card reader. Adjacent to the vehicle gate is a manual pedestrian gate with a push-button lock. The access points were closed during the time of inspection but appear to be operational. Access at this gate is monitored by camera.

Gate B is located at the end of Crosswind Court and provides direct access to Apron B. The sliding vehicle gate has an automated operator and proximity card reader. The gate was closed at the time of inspection; however, it appears to be operational.

Gate C's access consists of a sliding vehicle gate with an automated operator and proximity card reader. Adjacent to the vehicle gate is a manual pedestrian gate with a push-button lock. Gate C provides access to Terminal Court. The sliding vehicle gate is on a timer and opens at 7:00 a.m. and closes at 7:00 p.m. Both the vehicle and pedestrian gate appear to be operational and in good condition. The pedestrian gate provides access from the transient aircraft parking area to vehicle parking outside the perimeter fence. Access at this gate is monitored by camera.

Gate D provides access to the airfield off Aviation Avenue. Gate D consists of a sliding vehicle gate with an automated operator and proximity card reader. The vehicle gate is on a timer and opens at 7:00 a.m. and closes at 7:00 p.m. The gate was open during inspections; however, it appears to be operational and in good condition. Access at this gate is monitored by camera.

Access at Taxilane F consists of a sliding gate (with no powered operator) and a pedestrian gate. There is paved access to the sliding gate from Aviation Avenue; the pedestrian gate does not have paved access. The gates were closed at the time of inspection but appear to be operable. Airport maintenance controls access to these gates and noted that they are not regularly used.

The gate access to Taxilane C consists of a sliding gate (with no powered operator) and does not have paved access from Aviation Avenue. The gate was closed at the time of inspection but appears to be operable. Airport maintenance controls access to this gate and noted that it is not regularly used.

There are three unmarked sliding gates providing access to the Soloy Helicopters, LLC lease area that were closed during the time of inspection but appear operational.

Apron E can be accessed from Aviation Avenue by vehicle through a double swing-style gate and gravel access drive. The gate was closed but appears to be operational. Airport maintenance controls access to this gate and noted that it is not regularly used.

There are six additional perimeter gates on the airfield that are controlled and used solely by Airport maintenance as needed.

Snow Removal Equipment Building

The SREB is located north of the airport on the east side of Beacon Street. The facility has three bays: two pull-through equipment bays and a single access bay with an office on the opposite side. The

building houses the airport snow removal equipment and the controls for gate cameras. Maintenance's only issue with the building is that the sewer line freezes each year.

Utilities

In 2014, the City installed a waterline extension on Aviation Avenue from Clapp Street. The waterline extension terminates to the east of Gate A. Currently, there is one tenant, Airforms LLC, which is the only user of the utility. Most tenants obtain water from private wells and dispose of wastewater via on-site septic systems.

Electrical service to the Wasilla Airport is provided by Matanuska Electric Association, the main feed supplied overhead from a distribution pole transitioning to underground on the corner of Beacon Street and Aviation Avenue. Services can be extended to individual lease lots from the underground system.

Natural Gas service is provided by ENSTAR Natural Gas Company. Services can be extended to individual lease lots from the gas line running down Aviation Avenue, stemming from the main service on Beacon Street.

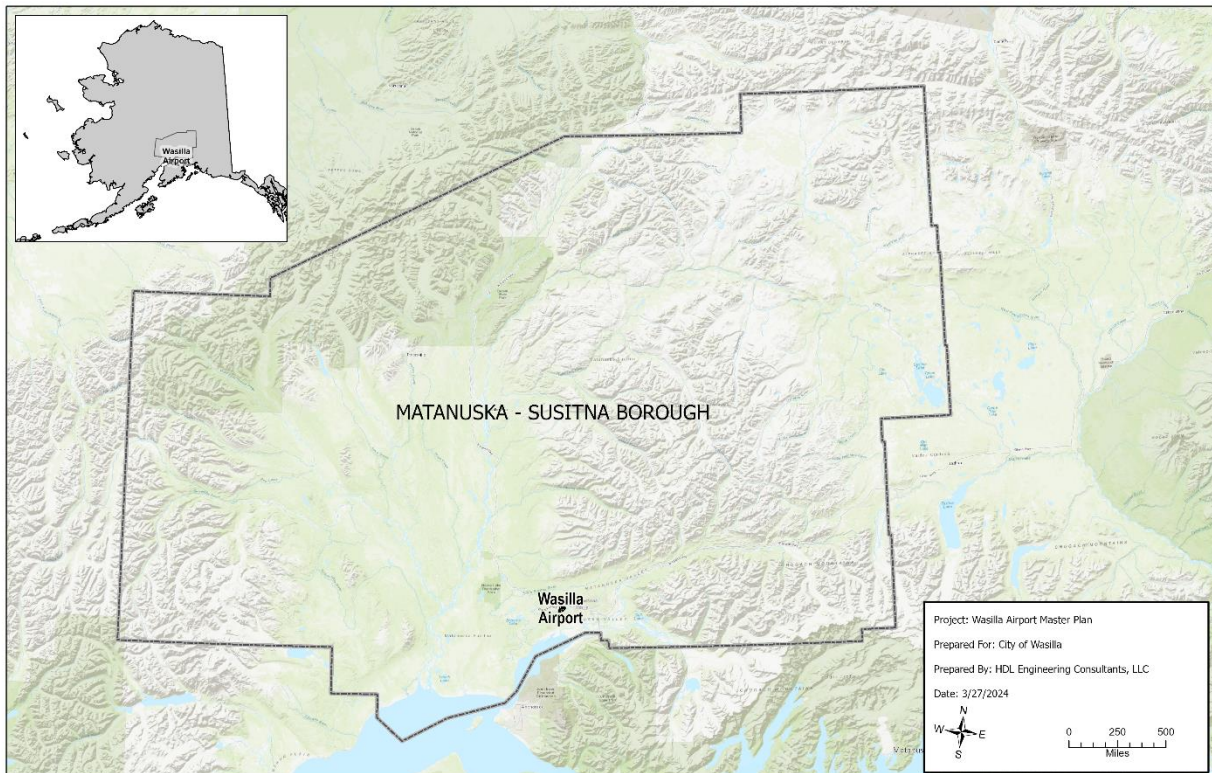
Telecommunication service to the airport is provided by Matanuska Telephone Association and consists of an underground copper and fiber optic cable. The telecommunication services extend from Beacon Street and run down Aviation Avenue from Gate A to Gate D and extend into the lease lots on the airfield.

The utility as-built is included in Appendix B.

4.0 REGIONAL SETTING AND LAND USE

The Wasilla Airport is situated within the city limits of Wasilla, Alaska. Wasilla is located within the Matanuska-Susitna Borough (MSB) (Figure 9).

Figure 9: Location of MSB and Wasilla Airport within the State of Alaska



4.1 Land Ownership and Use

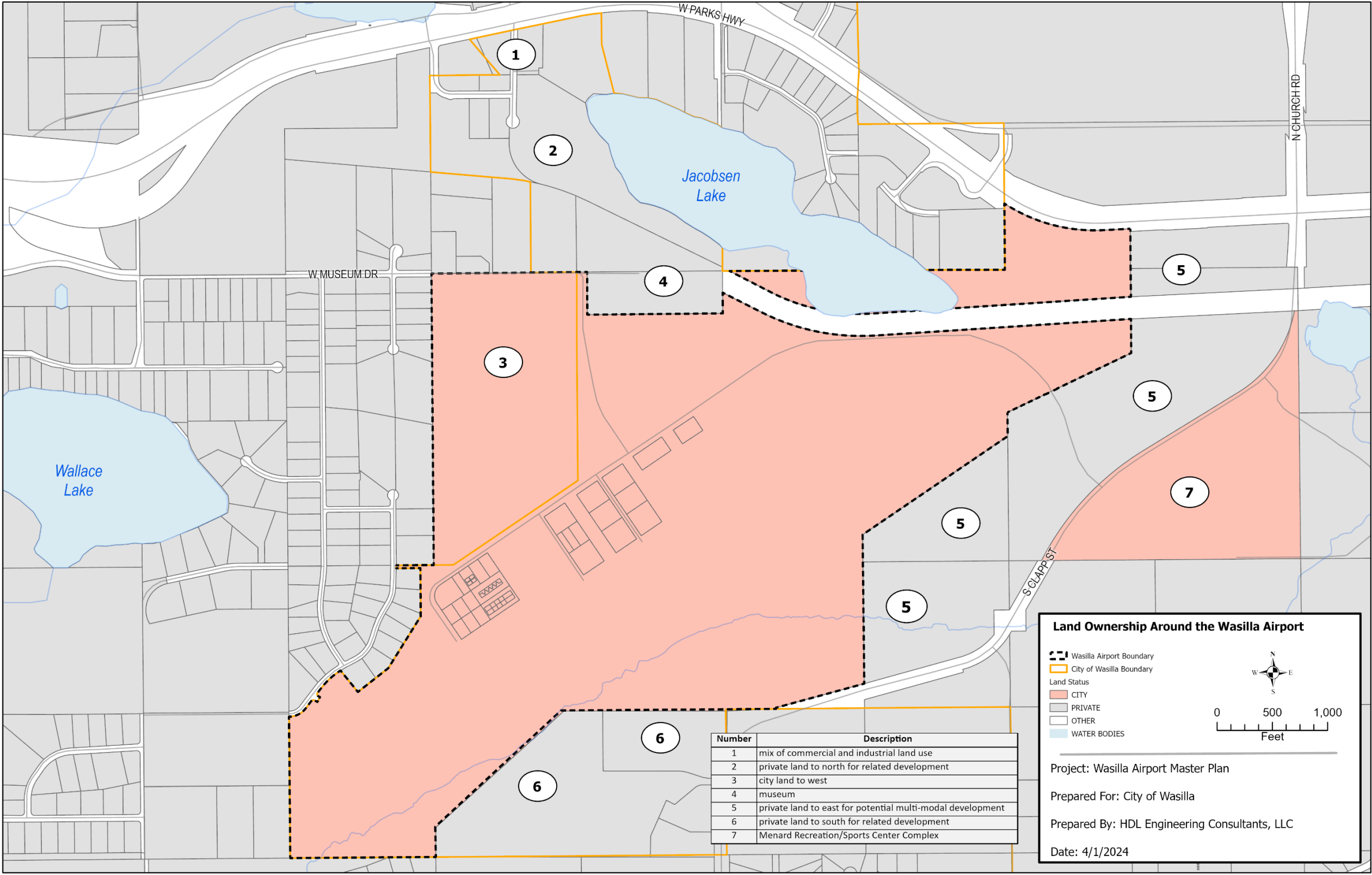
Land use surrounding the airport is composed of undeveloped land, residential land, and light commercial. Undeveloped land includes a mix of public and privately owned parcels. Residential land use in the vicinity of the airport is generally located outside the City limits. Residential parcel sizes range from less than an acre to 40-acre tracts. Commercial land use is primarily arranged along the Parks Highway to the north, with one active material site south of Lucille Creek. The Alaska Railroad right-of-way is adjacent to the airport property boundary (Figure 10 and Figure 11).

The private land immediately to the north of the airport and west of Jacobsen Lake is occupied by the Museum of Alaska Transportation and Industry (labeled #4 in Figure 10). Land to the west of the museum is undeveloped (labeled #2 in Figure 10). North of the museum are consumer-oriented businesses located adjacent to the Parks Highway (Labeled #1 in Figure 10): including a restaurant, insurance agent, and daycare facility. The city-owned land to the east of the airport is occupied by the Curtis D. Menard Memorial Sports Center (Labeled #7 in Figure 10). Private lands between these two city-owned parcels and to the north of the highway (Labeled #5 in Figure 10) are undeveloped. The

city also owns a parcel to the northwest (labeled #3 in Figure 10), which is considered part of the airport property, located outside city boundaries. To the south of the airport and Lucille Creek, there is private land to the west of Clapp St. that appears to be undeveloped (labeled #6 in Figure 10), though there are informal trails across the property. Finally, to the west of the city limits are private parcels that have mostly been developed for residential use.

No plans for development of the private parcels have been identified. However, the privately-owned land between the airport and the Curtis D. Menard Memorial Sports Center may provide suitable areas for development of future multi-modal transportation facilities, as discussed in the City of Wasilla Comprehensive Plan (City, 2011).

Figure 10: Land Ownership



4.2 MSB Area Plans and Zoning

The City land development code classifies land use through zoning under municipal code 16.20.010 (City, 2023a). The airport property is classified as Industrial, which is further described in the code as:

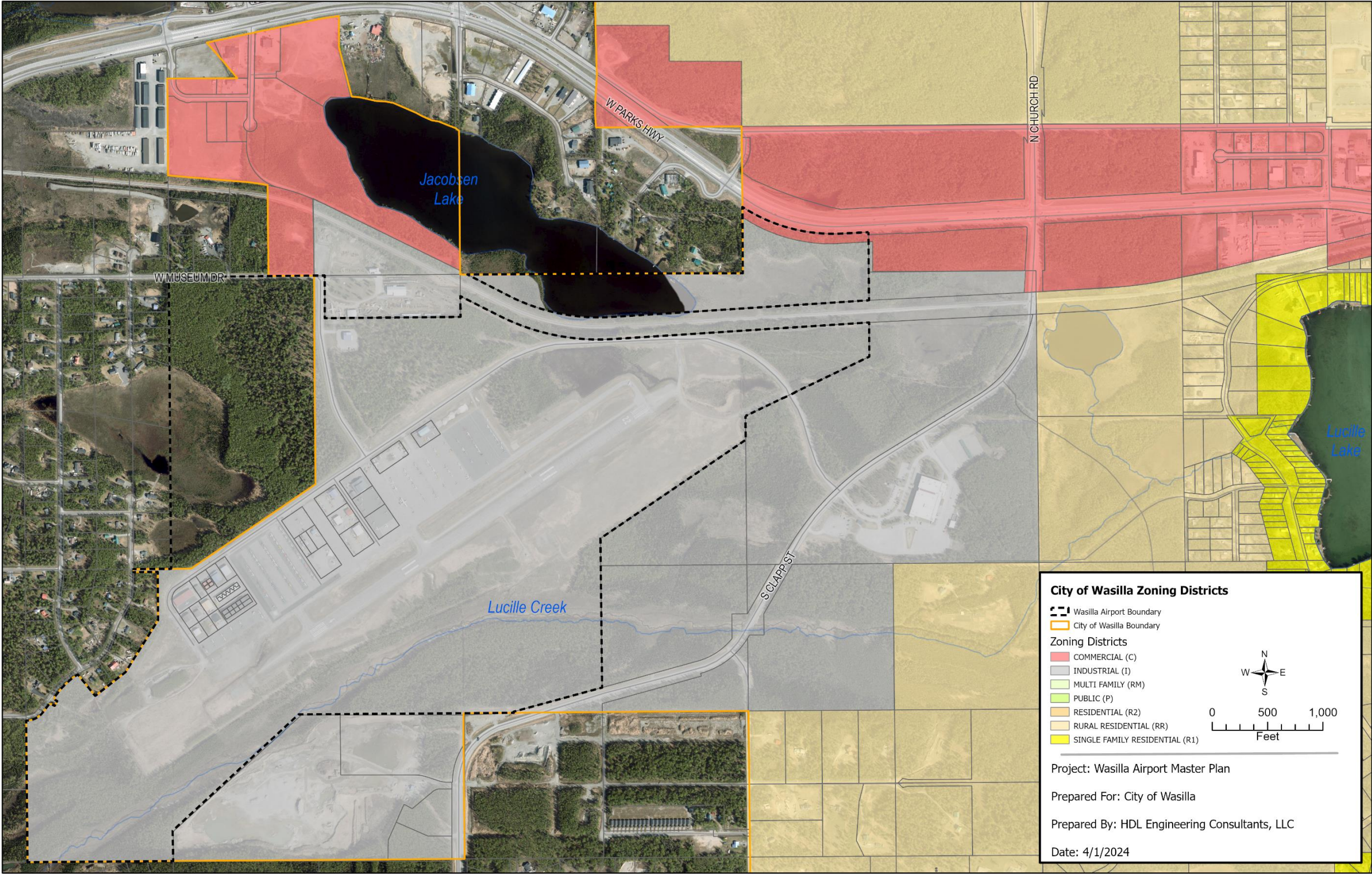
The intent of the industrial district is to provide for and protect productive industrial areas. These areas are usually served by major highways or collector streets, the Alaska Railroad, the airport and public or community water or sewer. The designation of an area as industrial must contain specific provisions for traffic circulation and buffering of nearby non-industrial areas and uses from traffic, noise, dust, vibration, glare, pollution, and unsightly uses or activities.

The bulk of the airport is within the City limits, west of downtown Wasilla. A 70-acre parcel (MSB account ID: 17N02W12D006) owned by the City is adjacent to the airport to the north and considered part of the airport property. This property is outside the City limits, so it could be a potential candidate for annexation by the City. This property is within the Meadow Lakes Community Council (MLCC) area, under the municipal authority of the MSB. The MLCC area borders the airport along the western airport boundary as well as portions of the northern and southern airport boundaries. Proposed projects may necessitate plan reviews for the MLCC, MSB, and the City, and may require construction permits from the MSB and City.

The airport is zoned as industrial land (Figure 11). The surrounding land within the City limits is zoned commercial to the north and rural residential to the east. MSB land located outside the City boundary is not zoned and appears to be used primarily for residential development.

The areas to the north, east, and south of the airport are mostly undeveloped, except for the Museum of Alaska Transportation to the north. The only adjacent development is a single-family residential area immediately to the west.

Figure 11: Zoning Around the Wasilla Airport & Wasilla City Limits



Source: City (2023g)

4.3 Potential Future Use

4.3.1 City of Wasilla Comprehensive Plan

The City of Wasilla Comprehensive Plan (City, 2011) notes the sizeable amount of City-owned industrial land at the airport and provides a desired future condition in which that land will have enhanced multi-modal connections (freight and commuter rail, plane, and road), along with infrastructure and rail connectivity to allow new economic enterprises to grow. These new enterprises would include local product development and manufacturing, high-tech businesses that can take advantage of technical skills and education of former military and North Slope workers, material transport and resource storage/staging, and transit-oriented tourism and connectivity to the Museum of Alaska Transportation and Industry. Additionally, the airport would expand and become a regional hub for small jets and planes while personal floatplane and small plane use safely flourishes.

The plan contains the following goals, objectives, and actions specific to the airport (City, 2011):

- Goal 2. Diversify the economic base and attract new employment generators.
 - 2.1 Continue to expand the City airport and encourage the development of adjacent economic generators on City-owned land.
- Goal 3. Support the City as a transportation hub that provides connecting highways, railroad, and expanded air service.
 - 3.1 Continue to support improved aviation and an expanded airport.
 - 3.1.1 Adopt, implement, and regularly update an AMP to identify future aviation demand and support infrastructure and site development needs.
 - 3.3 Improve road connectivity to the new multi-modal transportation node at the City airport.
 - 3.3.2 Consider a Museum Drive extension and new airport access road.

4.3.2 Wasilla Comprehensive Economic Development Strategy

Public input to the Wasilla Comprehensive Economic Development Strategy (CEDS) (McKinley Research Group, LLC, 2023) showed that 22% of respondents identified the Wasilla Airport as an area of opportunity, higher than any other opportunity. Additionally, many of the other opportunities are linked to the airport, based on the City Comprehensive Plan (City of Wasilla, 2011), namely the opportunities to expand industries and the workforce. The following goals, objectives, and actions were identified that are either related to or could be linked through the comprehensive plan goals for the Wasilla Airport:

- Goal A: Improve Infrastructure to Support Economic Resilience.
 - Objective 2: Develop regional transportation infrastructure.
 - Action c. Adopt AMP to expand cargo and passenger service.
- Goal B: Diversify Local Economy.

- Objective 1: Attract new industries, e.g., manufacturing, logistics, and “value-added.”
 - Action b. Study available incentives to attract new businesses and industries.
 - Action d. Become an Economic Development Administration-designated “Tech Hub.”
 - Action e. Conduct direct marketing and outreach efforts to logistics, manufacturing, and value-added companies.

4.3.3 Matanuska-Susitna Borough Long Range Transportation Plan

The MSB Long Range Transportation Plan is intended to guide transportation solutions, improvements, funding decisions, and policy development by the MSB and the State of Alaska both in the near and long term through 2035 (MSB, 2017a). It contains three recommendations pertinent to the Wasilla Airport:

- Adopt the proposed precision instrument approach to Wasilla Airport, included in the 2012 Wasilla AMP, to address the lack of regularly scheduled airline commuting services or air freight services available for residents.
- Continue to actively support the development, improvement, maintenance, operation, and funding of a system of public airports and seaplane bases (SPB) throughout the MSB, recommending that the two municipal airports (Wasilla and Palmer) be improved to provide for the needs of commercial aviation companies as well as air taxi operators and private pilots.
- Encourage public airport sponsors to investigate the potential for Public-Private Partnerships in the provision and/or operation of airport infrastructure in the MSB.

4.3.4 Matanuska-Susitna Regional Aviation System Plan

The MSB’s Regional Aviation System Plan (RASP) consists of multiple reports focused on the development of aviation in the MSB. The RASP Phase 1 report (MSB, 2008a) notes that the purpose of the RASP is “to identify the current state of aviation in the MSB, how that might change over the next 20 years, and any actions that should be taken to ensure aviation can grow in a positive way for MSB citizens.” The Phase 1 report notes that, for the municipal airports (Wasilla and Palmer), “an optimum land use situation may be difficult because, in some cases, incompatible uses predated the current zoning,” highlighting in Wasilla Airport’s case that there is “existing and planned residential development north and west of the airport.” Residential development to the north of the airport has not yet occurred, though it has taken place to the west. Public input suggested four proposed improvements:

- Extend utilities to lease lots.
- Gravel or grass strip and ski strip (recently completed).
- Extend runway and establish an instrument landing system approach.
- Establish SPB at Jacobsen Lake.

After the initial RASP study identified the need for an SPB in the southern portion of the MSB, the Phase II report (MSB, 2017b) refined the potential for an SPB and recommended a long-term development program for a preferred site. The study reconsidered the Wasilla Airport for an SPB site, noting that in 2008, it had not been recommended for three reasons:

- Use of Jacobsen Lake would require a control tower.
- Community opposition during last Master Plan (City of Wasilla, 2012).
- Current master plan recommends an SPB on Wasilla Airport.

The report identified factors that could affect airspace compatibility, including a future precision approach at the Wasilla Airport. Ultimately, the study identified Sevenmile Lake as the final site.

4.3.5 Meadow Lakes Comprehensive Plan

The Meadow Lakes Comprehensive Plan (MLCC Planning Team, 2005) noted that the southeastern corner of the MLCC boundary wraps around the Wasilla Airport. Although the plan does not provide land use recommendation specific to the airport or adjacent areas, general land use policies identified it this plan would be applicable towards future airport development on MLCC land.

The Meadow Lakes Comprehensive Plan (MLCC Planning Team, 2005) noted that:

The southeastern corner of the Meadow Lakes Community Council boundary wraps around the Wasilla Airport. ... With an extensive but mostly informal trail system, trails in Meadow Lakes have long been used by snowmachines, hikers, dog sleds, horse riders, and skiers; virtually all trails cross what are now private lands, and consequently, these trails are likely to be closed to future public use.

4.3.6 Jacobsen Lake Management Plan

The Jacobsen Lake Management Plan outlines the goals and objectives to balance the physical and social demands of those that live or recreate on Jacobsen Lake and prioritizes maintenance of a healthy and productive lake ecosystem (MSB, 2008b). The plan acknowledges the City's consideration of Jacobsen Lake as a potential SPB site. The site was found to be unsuitable for development of the SPB due to airspace conflicts with Wasilla Airport. Further, the development of the lake to accommodate a floatplane facility is in direct conflict with the goals and objectives of the plan. Property owners and residents support the recommendation of the Jacobsen Lake Management Plan and prefer that no further floatplane development occur at the lake.

4.4 Future Opportunities

Stakeholders envision a future full of opportunities for the Wasilla Airport, with a focus on expansion, improvements, and increased functionality. They desire the airport to become a regional hub that accommodates scheduled airline service to major US hubs. They envision the airport as a center for small businesses, tourism infrastructure, and commercial growth, with amenities such as restaurants,

pilot lounges, and refueling services. Furthermore, stakeholder feedback highlights the need for efficient parking, access to electricity for tie-downs, and improved facilities for pilots and transient users. Overall, these visions represent a collective effort to position the Wasilla Airport as a thriving aviation hub with enhanced services and infrastructure, catering to a diverse range of aviation needs while maintaining a neighborhood-friendly environment. Key aspirations include the following:

- Extension of the runway to accommodate larger aircraft and the provision of additional tie-downs and hangar spaces
- Develop a SPB at the airport
- Address noise abatement concerns and ensuring harmonious coexistence with surrounding residential areas

Based on the adjacent, undeveloped land on three sides of the airport, there appear to be substantial opportunities to expand the current airport to accommodate growth as well as develop a multi-modal node and new economic enterprises. Past studies have identified challenges associated with a SPB linked to Wasilla Airport. Therefore, the concept of a SPB is not being advanced as part of this AMP.

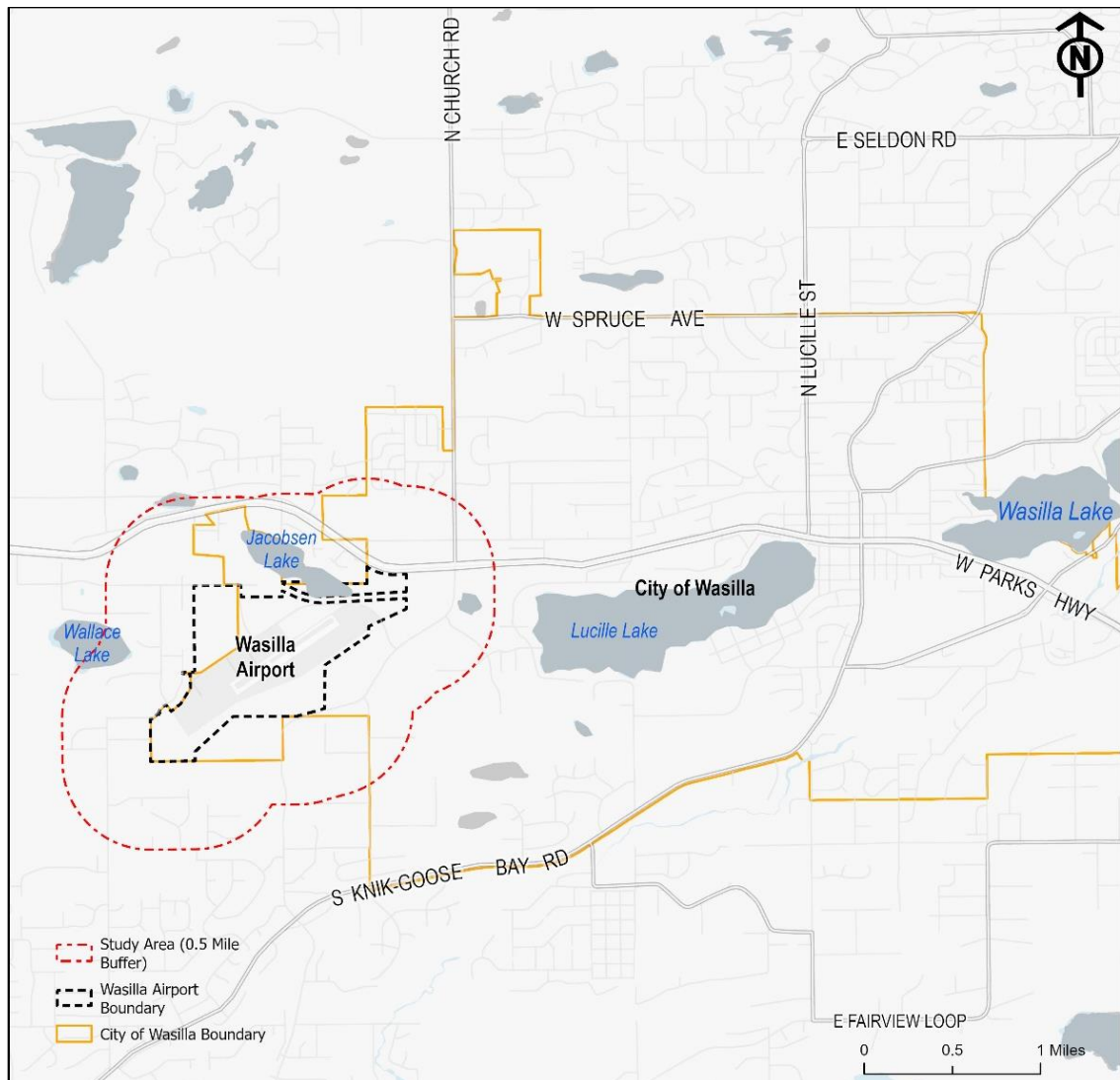
4.4.1 Land Needs for Long-term Airport and Economic Development

The land offering the greatest potential for long-term airport and economic development appears to be the privately owned parcels to the north, east, and south of the existing airport (labeled 2, 5, and 6, respectively, in Figure 10), along with the undeveloped airport property to the west that is outside the City boundary. In particular, the land to the east of the airport (labeled 5 on Figure 10) could support a multi-modal node with access to the airport, local roads, Parks Highway, and the railroad. Land to the north and south (labeled 2 and 6 on Figure 10, respectively) could support the development of related businesses; transit-oriented tourism could be developed to the north (labeled 2 on Figure 10) so it could be tied in with the Museum of Alaska Transportation and Industry and other land around the airport (area 6) could support other economic enterprises.

5.0 PRELIMINARY ENVIRONMENTAL OVERVIEW

The following environmental overview includes an inventory of existing environmental resources in the vicinity of the Wasilla Airport that can be used in the planning stages for airport projects. For the purpose of this master planning effort, reference to the Wasilla Airport includes the area within the airport property boundary, which is approximately 486 acres. References to the “study area or vicinity” are defined as the area within the airport property boundary as well as within a 0.5-mile buffer of the airport, as shown in Figure 12. A project study area will be defined to a more specific geographic location when a proposed project for National Environmental Policy Act (NEPA) analysis is defined along with proposed action items that can be evaluated for impacts on environmental, social, economic, and technical factors.

Figure 12: Environmental Study Boundary



FAA Orders 1050.1F (FAA, 2015a), 5050.4B (FAA, 2006), FAA AC 150/5070-6B *Airport Master Plans* (FAA, 2015b), as well as the Environmental Desk Reference for Airport Actions (FAA, 2007) were used to develop the list of environmental resource topics that may need to be evaluated in a future NEPA document. This review is in accordance with FAA AC 150/5070-6B, which states, “The principal objective of the environmental overview is to document environmental conditions that should be considered in the identification and analysis of airport development alternatives.” The information provided is based on readily available public information.

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, outlines the following categories of potential impact that must be addressed in compliance with the NEPA:

- Air Quality.
- Biological resources.
- Climate.
- Coastal resources.
- Department of Transportation Act, Section 4(f) resources.
- Farmlands.
- Hazardous materials, solid waste, and pollution prevention.
- Historical, architectural, archaeological, and cultural resources.
- Land use.
- Natural resources and energy supply.
- Noise and compatible land use.
- Socioeconomics, environmental justice, and environmental health and safety risks.
- Visual effects (including light emissions).
- Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers).

This environmental overview focuses on the Wasilla Airport and its vicinity. For the purpose of this effort, only categories that apply specifically to the study area are addressed. Categories such as coastal resources and farmlands do not apply to the Wasilla Airport study area.

Airport improvement projects are expected to be developed as funding becomes available from the FAA. The environmental overview provides a brief preliminary analysis of environmental concerns and constraints that could affect future airport development. Some proposed airport improvements may require NEPA documentation, either in the form of Categorical Exclusions, Environmental Assessments, or Environmental Impact Statements, depending on the significance of impacts. Consultation and/or agency approval from federal, state, and local agencies may be required in addition to or independently of NEPA documentation. The following is a preliminary list of agencies that may require regulatory authorization:

- Alaska Department of Environmental Conservation (ADEC), Section 401 Water Quality Certification, Alaska Pollutant Discharge Elimination System Permit, contamination consultation.

- Alaska Department of Fish and Game (ADF&G), Title 16 Fish Habitat Permits.
- Alaska Department of Natural Resources (ADNR), Water Use Permit.
- Alaska State Historic Preservation Office consultation, per Section 106 of the National Historic Preservation Act and the State Historic Preservation Act.
- MSB, Flood Hazard Permit.
- American Society for Testing and Materials Phase 1 Environmental Site Assessment.
- U.S. Army Corps of Engineers (USACE), Section 404 permit.
- U.S. Fish and Wildlife Service (USFWS) concurrence.
- National Marine Fisheries Service concurrence.

5.1 Air Quality

Pursuant to the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six “criteria” air pollutants:

1. Carbon monoxide;
2. Lead;
3. Nitrogen dioxide;
4. Ozone;
5. Particulate matter with a diameter of 10 microns or less (PM10) and a diameter of 2.5 microns or less (PM2.5); and
6. Sulfur dioxide.

The State of Alaska has designated areas that are in attainment (areas that meet the NAAQS), nonattainment (areas where concentration of one or more of the criteria air pollutants is higher than the NAAQS), or maintenance (an area previously designated as nonattainment and re-designated as a maintenance area because of an improvement in air quality) for each of the criteria pollutants.

The MSB is at risk of being designated as an air quality nonattainment area, as air quality monitoring data has indicated that PM2.5 may exceed NAAQS. Additionally, during times when the Matanuska River is low, windy weather suspends large amounts of silt (PM10) in the air. Several air quality alerts are issued each year in the spring and fall because of windblown dust events (ADEC, 2023a). In March 2019, the MSB approved Ordinance 19-032, implementing outdoor burning restrictions and establishing a Greater Butte Area Air Quality District (MSB, 2023d).

Impacts to air quality during potential development projects would likely be short-term, resulting from airborne dust and emissions from construction equipment operations during construction activities. Airport development projects are not anticipated to increase emissions of EPA criteria pollutants nor exceed the maximum allowable increases for particulate matter. Each development project will be evaluated individually under the FAA’s NEPA guidance.

5.2 Biological Resources

This section is an overview of the aquatic and terrestrial environments, including plants, birds, and other wildlife.

5.2.1 Threatened and Endangered Species

There are no threatened or endangered species protected by the USFWS in the vicinity of the airport per the Anchorage Fish and Wildlife Field Office Letter to Agency Representatives regarding Section 7 Consultations in Anchorage and the Matanuska-Susitna Area (November 1, 2012). An additional review of the USFWS Information for Planning and Consultation website (USFWS, 2023a) and the ADF&G special status species website did not identify any species of special concern or their habitats located within the vicinity of the airport (ADF&G, 2023a).

5.2.2 Migratory Birds and Eagles' Nests

Migratory birds and eagles are protected under the Migratory Bird Treaty Act of 1918, as amended (16 United States Code [USC] 703-711), as well as the Bald and Golden Eagle Protection Acts (16 USC 668-668d), and Executive Order 13186. Responsibilities of Federal Agencies to Protect Migratory Birds require all federal agencies to avoid to the extent possible, the "take" of migratory birds and bald and golden eagle, eggs, feathers, or nests.

A review of the USFWS Information for Planning and Consultation webpage (USFWS, 2023a) identified a diversity of migratory bird species in the vicinity of the airport. Therefore, several migratory species may travel through the area and may be disturbed by future vegetation clearing operations. Birds are most sensitive during breeding and nesting, when vegetation clearing, ground disturbance, and other site construction activities can destroy active bird nests, eggs, or nestlings. The most effective way to protect nesting birds is to conduct vegetation clearing and ground disturbance activities before or after the breeding season.

Vegetation clearing associated with future airport improvements is expected to follow USFWS recommended time periods for avoiding clearing in Southcentral Alaska, except as allowed by state, federal, and local laws, and as approved by the Project Engineer (USFWS, 2023b & USFWS, 2023c). Recommended timing windows are listed below:

- Forest/Woodland: May 1st - July 15th (*a, b, c).
- Shrub/Open: May 1st - July 15th (*a, b, c).
- Seabird Colonies: May 10th - September 15th.
- Eagles: March 1st - August 31st (*e).

(*a) Raptors may nest 2+ months earlier than other birds.

(*b) Canada geese and swans begin nesting April 20.

(*c) Black scoter are known to nest through August 10.

- (*e) Eagles and eagle nests have additional protections under the Bald and Golden Eagle Protection Act, and a permit may be required to conduct activities near an eagle nest.

Suitable eagle nesting habitat exists in the general project vicinity. Prior to construction, an eagle's nest survey will be completed to identify whether eagles or eagle nests are sighted within 660 feet of proposed project development. If eagles or eagle nests are present, consultation with the USFWS on how to proceed with the project will be required.

5.2.3 Anadromous Water Bodies and Essential Fish Habitat

Review of the Alaska Fish Resource Monitor (ADF&G, 2023b) identified Lucille Creek (Anadromous Waters Catalog [AWC] code 247-50-10330-2050-3030), an anadromous stream within the airport property boundary. Lucille Creek flows west along the southern portion of the airport property boundary and supports the presence of sockeye (*Oncorhynchus nerka*) and Chinook (*O. tshawytscha*) salmon as well as rearing habitat for coho salmon (*O. kisutch*). Lucille Creek also provides habitat for resident fish species. Since Lucille Creek is a documented anadromous waterbody, it is also classified as Essential Fish Habitat. Involvement of Lucille Creek in future airport development projects may require consultation with National Marine Fisheries Services.

To the east of the airport, within the study area, is an unnamed pond (AWC code: 247-50-10330-2050-3030-4101-0010) and an unnamed tributary (AWC code: 247-50-10330-2050-3030-4101) to Lucille Creek which are cataloged for coho salmon rearing habitat, and also support resident fish. Wallace Lake is situated west of the airport and is documented for resident fish presence. Jacobsen Lake, in the study area to the north, is not documented for fish presence.

The ADF&G has regulatory responsibility for protection of freshwater anadromous fish habitat, as well as fish passage for resident fish. A Title 16 Fish Habitat Permit is required for work within fish-bearing water bodies. Any future projects that involve potential impacts to anadromous waters are required to be conducted during the fish window (May 15 to July 15) to minimize potential impacts to fish species.

5.2.4 Invasive Species

The University of Alaska Anchorage Exotic Plants Information Clearinghouse Invasive Plants Mapper (AKEPIC, 2023) indicates there are two non-native species infestations within the vicinity of the airport. One infestation is located along Aviation Avenue, just east of the intersection between Aviation Avenue and Beacon Street. The second infestation is located on property adjacent to the airport at the northwest end of the airport property. Executive Order 13112 Invasive Species requires the FAA to ensure that ground-disturbing activities are minimized to the extent practicable, and disturbed areas are re-vegetated with seed recommended for the region by ADNR; A Revegetation Manual for Alaska (Alaska Plant Material Center, 2008).

5.2.5 Terrestrial Environment

The undeveloped properties in the airport vicinity are dominated by mixed spruce-birch woodland ecosystems. A natural corridor exists along Lucille Creek, linking green spaces on the margin of Wasilla's more developed areas. The undeveloped properties and natural corridor provide habitat for a variety of land mammals that have small individual ranges and allow wider-ranging species to connect habitat types along Lucille Creek. Portions of the airport property are fenced to prevent intrusion into unauthorized areas, which restricts movement through the area by larger terrestrial species.

The climate of southcentral Alaska is generally considered sub-arctic, with significant variations in temperature and precipitation at different elevations. In Wasilla, the average high temperature in July is 70°F, and the average low is 49°F. The average high temperature in January is 23°F, and the average low is 7°F. The average annual precipitation is 16.65 inches (U.S. Climate Data, 2023).

5.3 Climate Change

The United States Aviation Climate Action Plan (FAA, 2021) is a commitment to action for the federal government to address aviation climate goals. An integral part of the United States' plan to address the climate impacts of aviation is to ensure that the FAA, as the government agency tasked with operating the national airspace system, is also a leader in addressing climate, sustainability, and resilience throughout its programs and activities. In support of Executive Order 13990 Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crises and Executive Orders 14008 Tackling the Climate Crisis at Home and Abroad, the FAA is taking action to address the climate crisis by bolstering and increasing the resilience of FAA facilities, FAA agency operations, and infrastructure to the impacts of climate change.

Climate impacts related to aviation are generally associated with greenhouse gas emissions and their potential to change atmospheric conditions. Aviation emissions come from domestic and international aviation, as well as from airports. The FAA has a goal to reach net-zero greenhouse gas emissions from the U.S. Aviation sector by 2050 (FAA, 2021). Climate change is leading to an increase in the intensity and frequency of severe weather events and higher temperatures. Severe weather impacts air travel with flight delays and interruptions to operations. The FAA has several programs to develop airport resilience to climate change, including ongoing research, energy efficiency assessments, sustainability planning, as well as low- and zero-emission programs. Participation in these programs will establish a baseline and framework for addressing the climate impacts of the Wasilla Airport and assist with developing strategies for sustainability.

5.4 Coastal Resources

Alaska withdrew from the voluntary National Coastal Zone Management Program on July 1, 2011. Therefore, the Coastal Zone Management Act federal consistency provision no longer applies in Alaska.

Federal agencies no longer provide consistency determinations for coastal zone management in Alaska.

5.5 Department of Transportation Act Section 4(f) Resources

Section 4(f) of the Department of Transportation Act states that FAA cannot approve the use of publicly-owned wildlife refuges, parks, and recreation areas, or historic sites eligible for the National Register of Historic Places (NRHP) unless there is no feasible and prudent alternative to using the land and the project includes all possible measures to minimize harm to the property.

One public facility exists in the study area: the Curtis D. Menard Memorial Recreation Center is on adjacent property to the east of the airport. Although there are no NRHP eligible sites on the airport property, several NRHP eligible sites are in the vicinity of the airport. Review of the following resources did not identify additional properties protected under Section 4(f), as defined by FAA Order 1050.1F, located in the vicinity of the airport:

- USFWS National Wildlife Refuge System website (USFWS, 2023d).
- U.S. National Park Service website (NPS, 2023a).
- ADF&G list of state game refuges, sanctuaries, critical habitat areas, and special areas (ADF&G, 2023c).
- ADNR Division of Parks and Recreation website (ADNR, 2023a).
- MSB Public Facilities map viewer (MSB, 2023a).
- U.S. Forest Service website (USFS, 2023).
- The Land and Water Conservation Fund website (The Trust for Public Land, 2023).

5.6 Farmlands

There are no agricultural areas or farmlands considered important and protected by federal, state, and local regulations in Alaska. Therefore, farmlands are not included in this overview. It is worth noting that the Natural Resource Conservation Service Soil Survey Geographic Database classifies certain soil map units as farmland of local importance – none of which are present within the airport property boundary.

5.7 Hazardous Waste

A search of ADEC's Contaminated Sites Program database did not identify any known contaminated sites within the study area or within the immediate vicinity (within 0.10 miles). Consultation with ADEC is recommended should the project encounter an area within the study area that presents recognized environmental conditions that warrant concern regarding environmental contamination (ADEC, 2023b).

5.8 Historic Properties, Archaeological and Cultural Resources

In accordance with Section 106 of the National Historic Preservation Act, the FAA is required to consult with the ADNOR Office of History and Archaeology and local tribal entities regarding potential impacts on cultural and historic resources. The City will be required to develop an Area of Potential Effect associated with any future proposed airport development and coordinate with consulting parties regarding knowledge of past uses of the area that could be culturally significant.

In support of past and present airport improvement projects and in compliance with Section 106 of the historic preservation act, Northern Land Use Research Alaska, LLC and True North Sustainable Development Solutions, LLC have researched the ADNOR Alaska Heritage Resource Survey Integrated Business Suite online database and completed Phase I and II cultural resource evaluations of the various portions of the existing airport property. These evaluations were completed in 2018 and 2022 respectively. To date, no cultural resources have been identified on the airport property.

5.9 Natural Resources and Energy Supply

Natural resource availability in the vicinity of the airport is primarily associated with earth material resource extraction. An existing material source is located on an adjacent 63-acre property to the south of the airport on the opposite side of Lucille Creek. Other material sources exist nearby but are located outside the 0.5-mile airport vicinity.

Energy supply for the airport property is through the established grid with electric power supplied by the Matanuska Electric Association and gas supplied by ENSTAR Natural Gas. Aviation gas and other bulk fuels are provided by Crowley Fuels Alaska.

5.10 Noise and Compatible Land Use

Pursuant to FAA Order 5050.4B (FAA, 2006), a noise analysis may be required for actions involving a new airport location, a new runway, a major runway extension, or runway strengthening or when annual operations exceed 90,000 propeller operations or 700 jet operations, and the project would result in a change in operations.

The compatibility of existing and planned land uses near an airport is typically associated with the extent of the airport's noise impacts. The airport is located on the border of the City limits. Properties outside the City limits are under the municipal authority of the MSB and do not have land use zoning. This could potentially present compatibility challenges for planned land uses, as residential neighborhoods are within the study area in close proximity to the airport.

5.11 Socioeconomic Impacts

The City of Wasilla has a population of approximately 9,500 people. EPA's environmental justice screening tool (EPA, 2023) indicates:

- 32% of the population is low-income,
- 10% are unemployed,
- 23% are people of color,
- 18% are persons with disabilities, and
- Per capita annual income is \$35,755.

There are 3,903 households, and 54% are owner-occupied. Environmental justice indexes evaluating concerns and vulnerability for low-income and people of color show relatively high percentiles (>50th percentile for the state) for indicators such as diesel particulate matter, air toxics, cancer risk, traffic proximity, and superfund proximity (EPA, 2023). Wasilla is well connected by land to surrounding communities. The George Parks Highway and Glenn Highway connect Wasilla to Anchorage, Fairbanks, Palmer, and smaller communities on the road system. The Alaska Railroad serves Wasilla on the Anchorage to Fairbanks route, while MSB Public Transportation provides bus service between Wasilla, Palmer, and Anchorage (Division of Community and Regional Affairs [DCRA], 2022).

Future development and capacity enhancements at the Wasilla Airport will likely have beneficial socioeconomic impacts for the community. Construction and maintenance activities have potential to create employment opportunities for residents. Enhanced airport capacity may offer additional employment for transportation and service industry personnel. Furthermore airport improvements may increase travel options for the local population, such as commercial air service with more connections to other communities.

5.12 Visual Impacts

The Wasilla Airport is located on a flat terrace above Lucille Creek among rolling hills west of downtown Wasilla. The airport is visible from residential areas on higher knolls in the vicinity and appears as an industrial landscape with limited development around the perimeter. The existing runway and taxiways have medium intensity runway and taxiway edge lighting. All lighting systems are pilot-activated by radio frequency upon approach to the airport. This minimizes the lighting during low light or no light conditions. Airport lighting is considered consistent with a small, community airport. Visual impacts that could occur from any proposed project would be evaluated to determine potential effects to sensitive viewers.

5.13 Water Resources

5.13.1 Navigable Waters

Various state and federal agencies define and determine the navigability of water in the study area. State and federal determinations may differ and sometimes conflict. The USACE defines navigable waters of the U.S. as those waters that are subject to the ebb and flow of the tide and/or are presently used or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce while the waterway is in its ordinary condition (USACE, 2023). Section 10 of the Rivers and

Harbors Act of 1899 (33. USC 403) prohibits the unauthorized obstruction of navigable water of the U.S.

The Clean Water Act also uses the terms “navigable waters,” “waters of the U.S.,” and “navigability” to define its applicability. Waters of the U.S. include not only navigable waters but also waters with “a significant connection to navigable waters” (USACE and EPA, 2015). Lucille Creek discharges directly into the Knik Arm of the Cook Inlet, a navigable waterbody.

The ADNR defines navigable waters as water that, at the time the state achieved statehood, was used, or was susceptible of being used, in its ordinary condition as a highway for commerce over which trade and travel were or could have been conducted in the customary modes of trade and travel on water, the use or potential use does not need to have been without difficulty, extensive, or long and continuous (Alaska Statue 38.04.062(g)(1)). For those waters identified as navigable by the State of Alaska, a person may not obstruct or interfere with the free passage or use by a person of any navigable water unless the obstruction or interference is (AS 38.05.128):

- Authorized by a federal or state agency.
- Authorized under a federal or state law or permit.
- Exempt under 33 U.S.C. 1344(f) (Clean Water Act).
- Caused by normal operation of freight barging that is otherwise consistent with law.
- Authorized by the commissioner after reasonable public notice.

Review of ADNR’s Navigable Waters mapper identified Lucille Creek as a non-navigable waterway (ADNR, 2023b).

5.13.2 Wetlands and Other Waters of the U.S.

A review of the MSB Wetlands mapper (MSB, 2023b), the Cook Inlet Wetlands (Gracz, 2013), and the National Wetlands Inventory (USFWS, 2023e) databases identify several wetland complexes within and immediately adjacent to the airport property boundary (Figure 13). Two lakes, Jacobsen and Wallace Lakes, are located 0.30-miles from the airport property boundary. A wetland delineation will be necessary to ground truth identified wetland boundaries, inform design to support avoidance and minimization of impacts to wetlands, and to evaluate impacts where necessary. Should the project involve dredge and/or fill within wetlands and/or waters of the U.S., authorization under USACE Section 404 and ADEC Section 401 will be required.

5.13.3 Floodplain and Regulatory Floodway

Review of the Federal Emergency Management Agency (FEMA) determined Wasilla Airport is located on FEMA Flood Insurance Rate Map 02170C8060F. This map identified a Special Flood Hazard Area south of the Wasilla airport property boundary, which is associated with Lucille Creek. This Special Flood Hazard Area, identified as Zone A, is defined as the area that will be inundated by a flood event

having a 1% chance of being equaled or exceeded in any given year. The 1% annual chance flood is also referred to as the base flood or 100-year flood (FEMA, 2023).

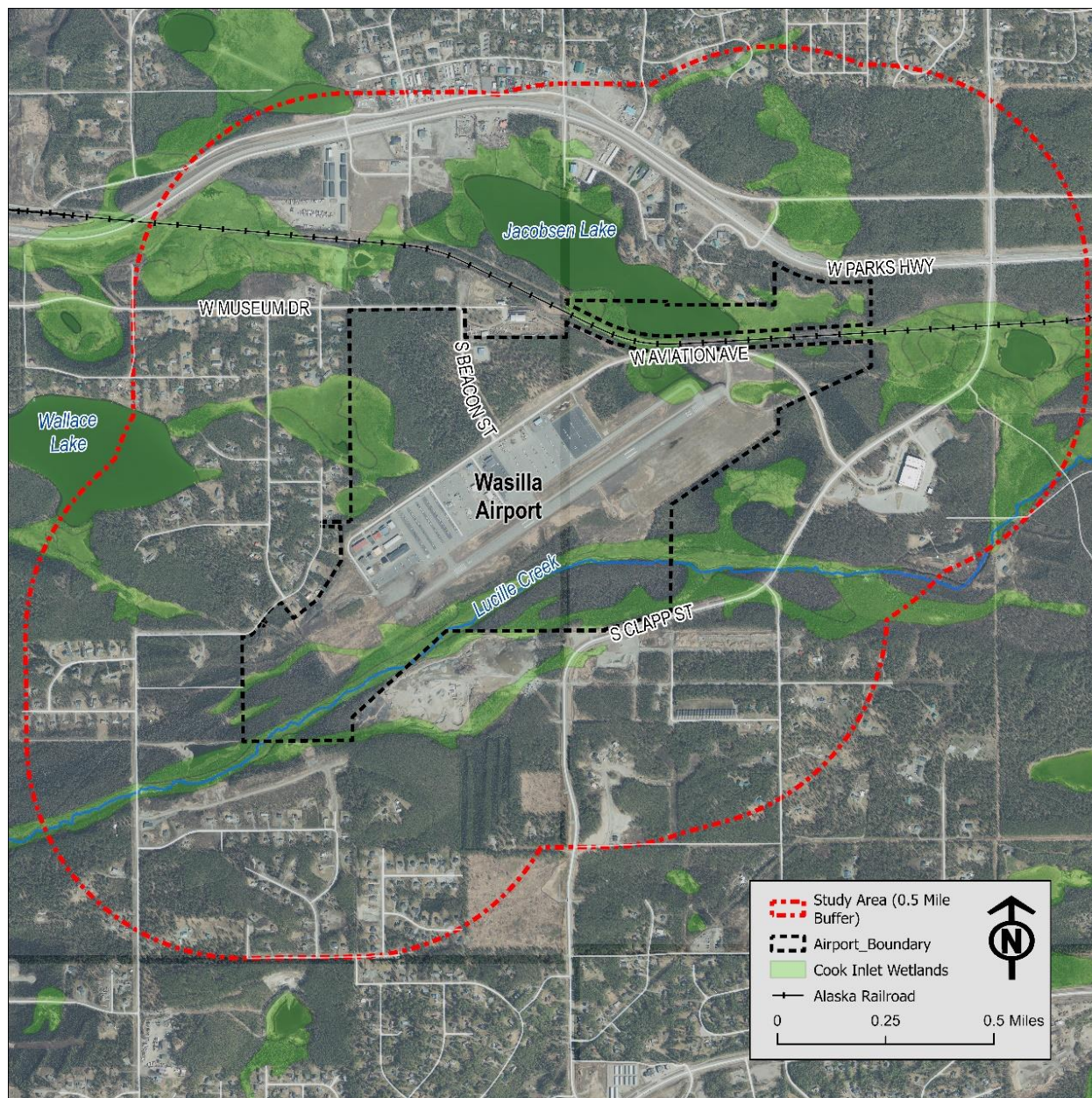
5.13.4 Water Quality

The project is located within the Lucille Creek watershed, which ultimately drains to the Knik Arm of Cook Inlet. Review of Alaska's Final 2022 Integrated Water Quality Monitoring and Assessment Report (approved August, 2022) does not identify any impaired waterbodies in the vicinity of the airport (ADEC, 2023c).

5.13.5 Wild and Scenic Rivers

A review of the National Park Service website for Wild and Scenic Rivers indicated that there are no designated Wild and Scenic Rivers within the study area (NPS, 2023b).

Figure 13: Study Area Wetlands



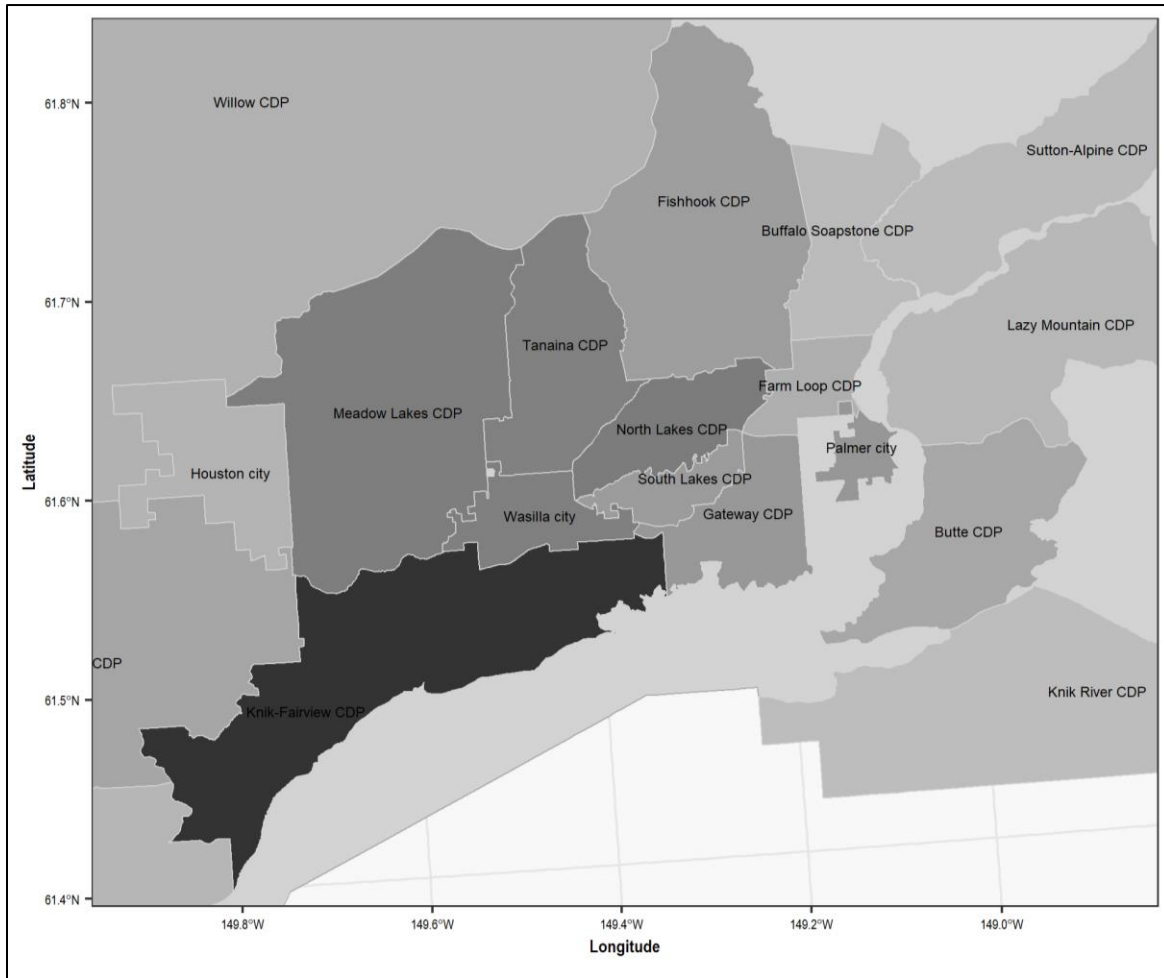
6.0 SOCIOECONOMIC EVALUATION

Northern Economics completed a Socioeconomic Evaluation in June 2023 to provide a socioeconomic profile of the study area, which includes the City of Wasilla as well as the MSB and cities and places within it. The study area also includes unincorporated areas, shown as Census Designated Places (CDPs) to the south and west of Wasilla that have larger populations than the City of Wasilla itself (Alaska Department of Labor and Workforce Development [DOLWD], 2022a). These areas include Knik-Fairview CDP and Meadow Lakes CDP. The socioeconomic profile describes current conditions and forecasts for the population, economy, and key industries, and provides a forecast for aviation growth.

6.1 Population and Growth

Users of the Wasilla Airport are primarily residents of Wasilla and the MSB. Wasilla is the most populous of the three cities in the MSB, followed closely by the City of Palmer. The other city, Houston, had a 2021 population of under 2,000 residents. **Error! Reference source not found.** shows the relative populations of the cities and CDPs near the City, with darker shading indicating increasing population levels.

Figure 14: Cities and CDPs near the City of Wasilla, 2020



Source: DOLWD (2021a) and Northern Economics (2023)

The MSB population reached an estimated population of 111,752 in 2022, and Wasilla is 8.5% of MSB's population (DOLWD, 2023a).¹⁴

The MSB has been steadily growing over time, having nearly doubled in population since 2000 (Table 5).

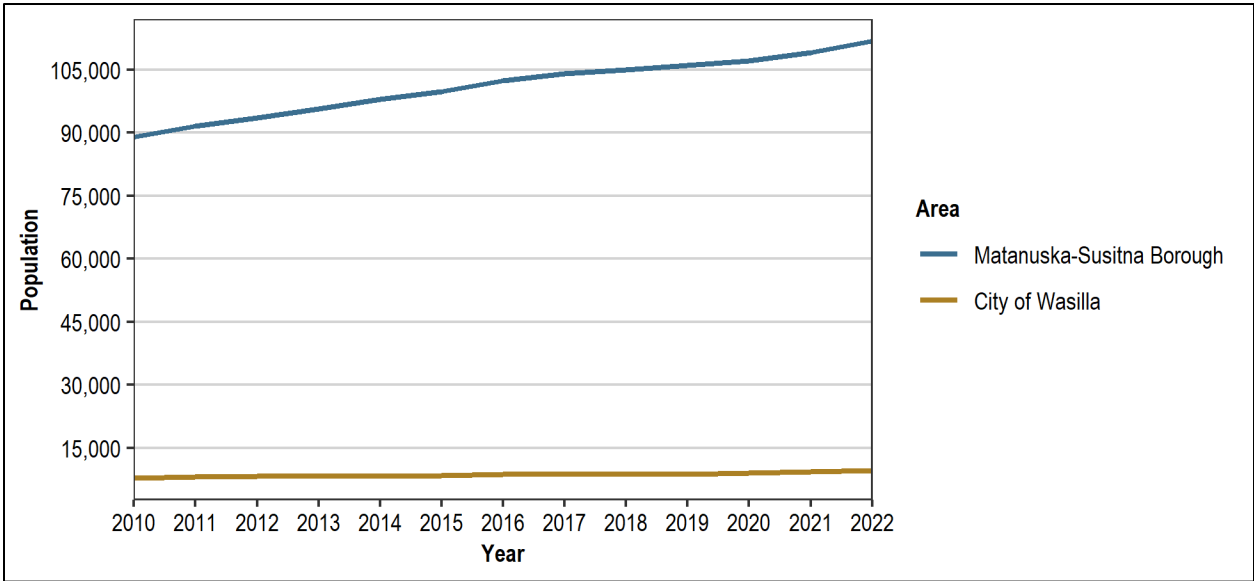
Table 5: Population Estimates for MSB and City of Wasilla, 2000–2022

Area Name	2000	2010	2015	2016	2017	2018	2019	2020	2021	2022
MSB	59,322	88,995	99,715	102,317	103,988	104,971	105,980	107,081	109,086	111,752
Wasilla	5,504	7,831	8,420	8,682	8,809	8,750	8,706	9,054	9,250	9,547

Source: DOLWD (2023)

¹⁴The Socioeconomic Evaluation contained population estimates through 2021. DOLWD has since updated its estimate for 2021.

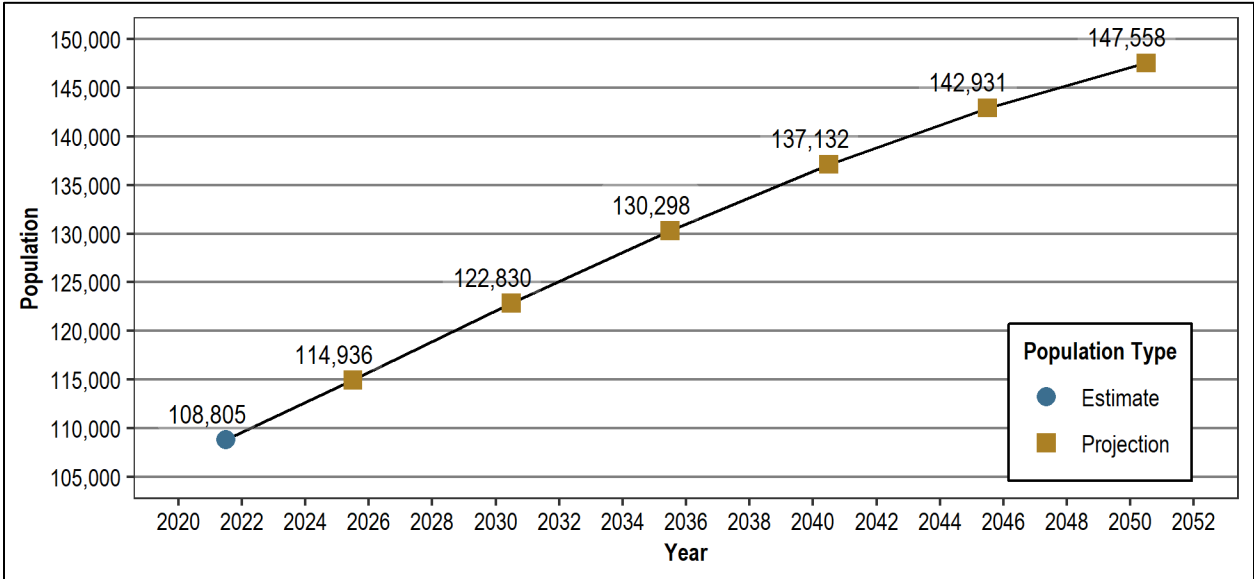
Figure 15: Population Trends for MSB and City of Wasilla, 2010–2022



Source: DOLWD (2023a) and Northern Economics (2023)

DOLWD (2022b) forecasts growth at the borough level and expects the MSB to grow from its population of 108,805 in 2021 to over 147,000 by 2050, as shown in Figure 16. The population is expected to be close to 120,000 in 2028 (five years from the date of this evaluation), over 125,000 in ten years, and approaching 140,000 in twenty years. It is important to note that this population forecast is based on natural changes (births and deaths) and net migration patterns from the MSB's history. Changes to the MSB's economy could also affect the growth it experiences in the future.

Figure 16: Population Projection for the Matanuska-Susitna Borough, 2021–2050



Source: DOLWD (2022b)

Table 6 provides estimated changes in the Alaska, MSB, and study area populations over time through 2050.

Table 6: Projected Change in Population for Alaska, the MSB, and the Study Area, 2021–2050

Area	Total Population Change (%)					
	2021-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Alaska	0.82	1.29	0.80	0.43	0.10	-0.11
MSB	5.63	6.87	6.08	5.24	4.23	3.24
Study Area	8.60	8.81	7.82	6.84	5.73	3.42
City of Wasilla	7.41	7.84	7.05	6.18	5.18	2.93
Knik-Fairview CDP	9.62	9.34	8.25	7.18	6.03	3.67
Meadow Lakes CDP	7.66	8.65	7.69	6.72	5.64	3.33

Source: DOLWD (2022b) for Alaska and MSB; Northern Economics, Inc. internal estimates for City, Knik-Fairview CDP, Meadow Lakes CDP, and the study area; and Northern Economics (2023)

6.1.1 Seasonality of Population

Data is not available to access the seasonality of Wasilla’s resident population. Though the USCB collects quarterly housing vacancy data for metropolitan statistical areas (MSAs), the Anchorage area MSA (which includes the MSB) is not large enough to have data (Callis, 2022). Vacancy data for rental properties, which could speak to seasonal shifts in resident population, are only available on an annual basis from the Alaska Housing Finance Corporation (AHFC). It is worth noting that Wasilla had the lowest rental vacancy rate of any area when measured in 2022, at 2.13% (AHFC, 2022). Seasonality of employment is another potential indicator of the seasonality of resident population, though data is only available for the MSB.

Some Alaska residents are snowbirds, spending winters in a more temperate climate in another state. However, anecdotally, one real estate professional in the MSB thought that the snowbird population within the City limits was very small and only slightly higher in surrounding areas. The rental market is also very tight. He estimated that the seasonal swing in residential population was at most $\pm 5\%$ (Van Diest, 2022). Similarly, the tourist population is higher in the summer months and at certain other times (such as the start of the Iditarod), though the tourist population has a varying effect on airport demand. For example, while much of the highway-based tourism activity common in the summer months may not have as much of an impact on airport demand, the higher visitor numbers do have the potential to affect air taxi and flight seeing operations, especially with the large helicopter presence at the airport.

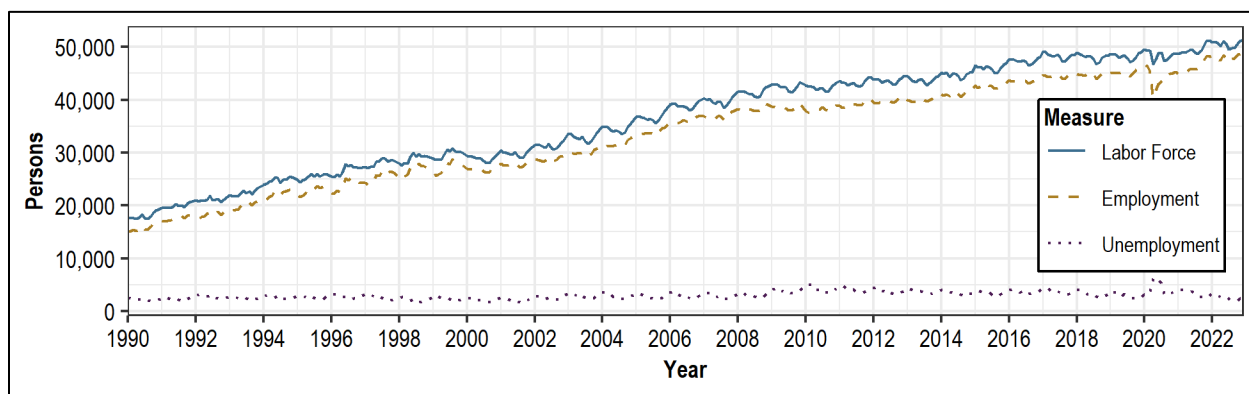
Population trends in and around the study area are discussed in greater detail in the Economic Development Report included in Appendix C.

6.2 Economy

6.2.1 Employment

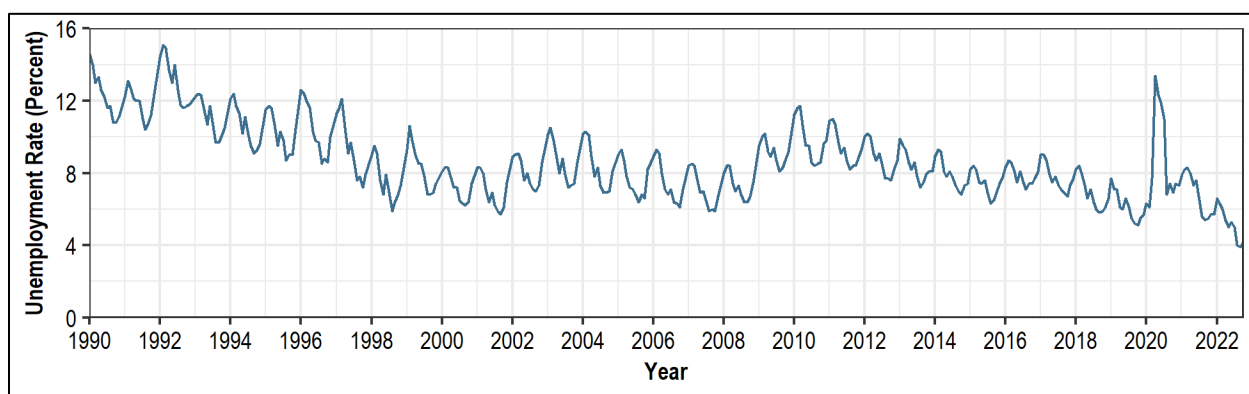
The MSB has experienced a rapidly growing labor force along with its population growth. Presently, there are about 50,000 members in the labor force (see Figure 17), which is slightly less than half of the MSB's population. Employment levels have largely tracked with the labor force, with the most notable exception in early 2020 at the start of the Corona Virus Disease 2019 (COVID-19) pandemic. Since that time, however, the labor force and employment levels are nearly back to the highs they saw at the start of 2020, and the unemployment rate is at a 30-year low (DOLWD, 2022c). Figure 18 provides a closer look at the unemployment rate, which, as of mid-2022, had dropped to only 4% (DOLWD, 2022c).

Figure 17: Labor Force, Employment, and Unemployment in Matanuska-Susitna Borough,



Source: DOLWD (2022c)

Figure 18: Unemployment Rate in Matanuska-Susitna Borough, 1990–2022



Source: DOLWD (2022c)

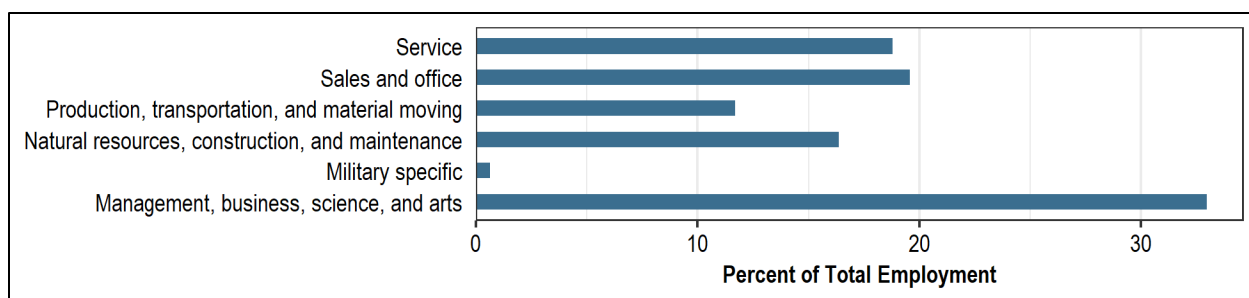
6.2.2 Occupations

The DOLWD compiles data on workers in each of Alaska's boroughs to provide insight into the most common occupations. In 2021, the MSB had an annual average employment of 43,200, 85% of which

was private non-farm employment and 14% was in the public sector. The top five private sector occupations are healthcare and social assistance (5,907 workers), retail trade (5,774 workers), Construction (4,775 workers), accommodation and food service (3,364 workers), and real estate (2,218 workers) (DOLWD, 2022d). Most jobs in the MSB are based on providing services to locals, while many residents are commuting to Anchorage for higher-paying jobs (Fried and Howell, 2020). Notable exceptions are the oil and gas industry, where many workers commute to Alaska’s North Slope, and the MSB’s important agriculture industry that produces goods locally.

USCB’s occupation data show that the largest occupational group in the MSB is the *Management, Business, Science, and Arts*, at one-third of the workforce (USCB, 2022). Together two groups, *Service*, and *Sales and Office* make up slightly more than another third. The remainder of the groups, *Production, Natural Resources, and Military*, complete the occupational view for the MSB (Figure 19).

Figure 19: Occupations in Matanuska-Susitna Borough, 2020

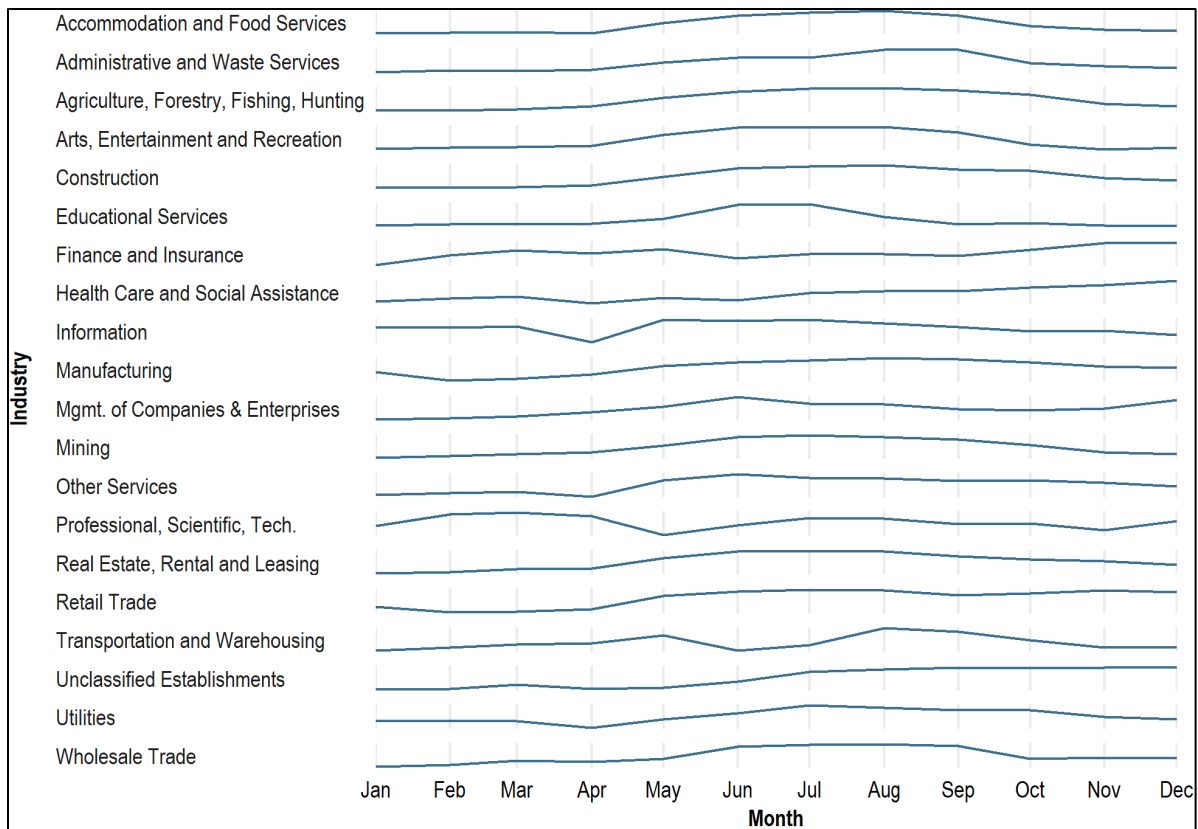


Source: USCB (2022) and Northern Economics (2023)

6.3 Key Industries

The employment levels in most of the MSB’s industries are seasonal. Some industries understandably historically peak during the summer months (e.g., agriculture, forestry, fishing, and hunting; construction; and accommodations and food service), while others historically peak during the winter. Figure 20 shows the seasonality that each industry exhibited from 2015 to 2021. As noted, some industries have traditionally peaked in the winter months (e.g., professional, scientific, and technical), even though that was not the case in 2021.

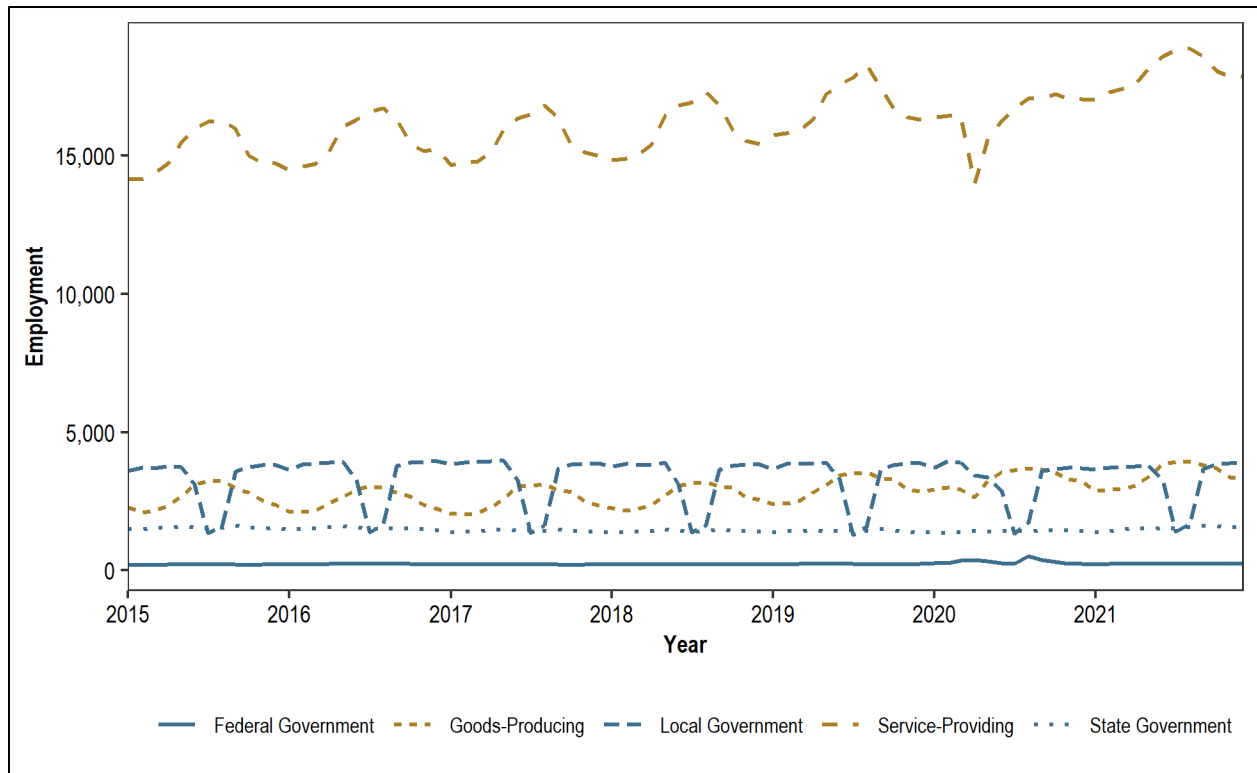
Figure 20: Seasonality of Employment by Private Industry in Matanuska-Susitna Borough,



Sources: DOLWD (2019a, 2019b, 2020a, 2020b, 2021b, 2021c, 2022d) and Northern Economics (2023)

Figure 21 looks more broadly at both public and private employment. The chart shows the seasonality of all industries, including oscillating employment in goods-producing industries, more pronounced changes in the service-providing industries, and the relative stability of federal and state governments. Note that school district employment is captured under local government, which causes local government employment to exhibit seasonality during the summer months when teachers and other school staff do not work.

Figure 21: Seasonality of Employment in Matanuska-Susitna Borough, 2015–2021



Sources: DOLWD (2019a, 2019b, 2020a, 2020b, 2021b, 2021c, 2022d)

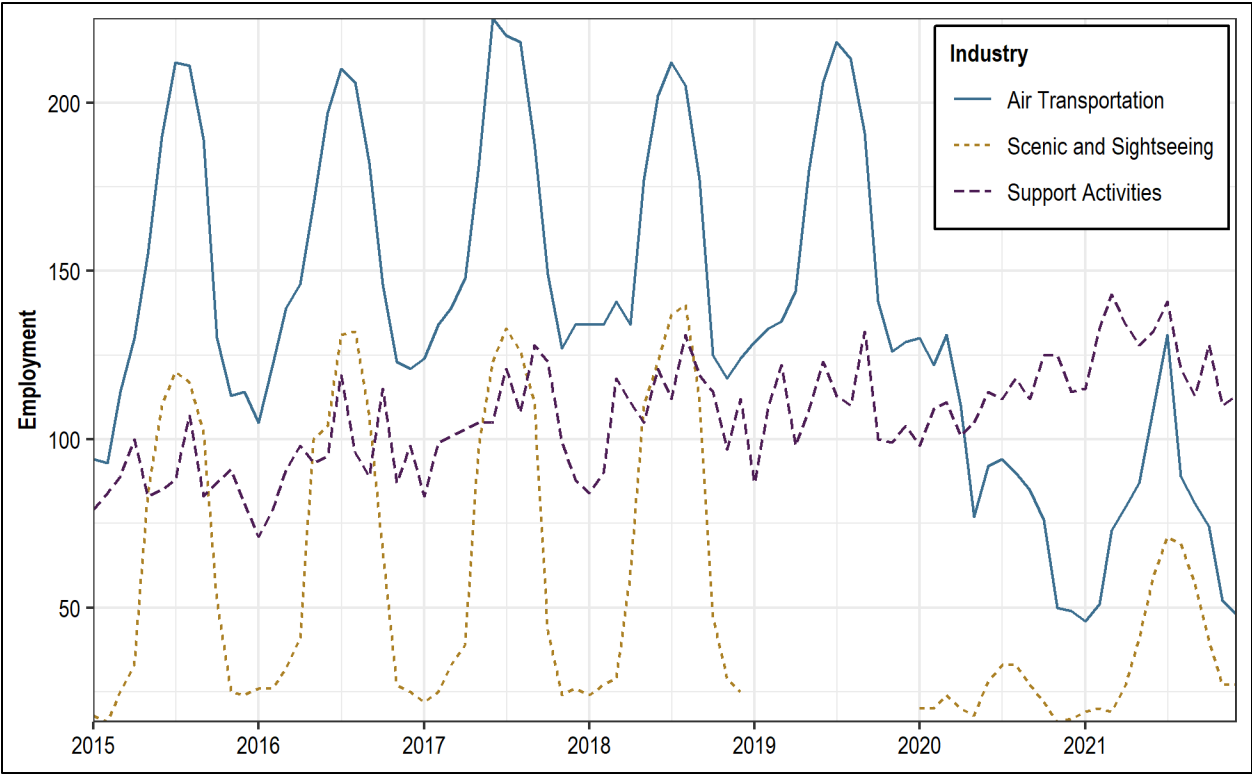
6.3.1 General Aviation & Tourism

The aviation and tourism sectors are important for evaluating GA airports in the MSB. Figure 22 and Figure 23 look at MSB employment in specific industries indicative of the aviation and tourism sectors, respectively. The impact of the pandemic is visible in each figure, though the recovery from it has varied considerably. Employment in aviation-related industries in the MSB had been seasonal but steady over time prior to the pandemic. Since then, however, peak employment in the air transportation and scenic and sightseeing industries has struggled to reach prior years' seasonal lows. However, employment in the support services industry was nearly unaffected by the pandemic and has been on a steady rise.

On the other hand, tourism employment has exhibited a faster return to pre-pandemic levels. Accommodation businesses had a similar number of employees in 2021 as they did in 2015, and scenic and sightseeing employment (shown in Figure 22 but also part of the tourism sector) is still down, but food services and amusement employment has mostly recovered.

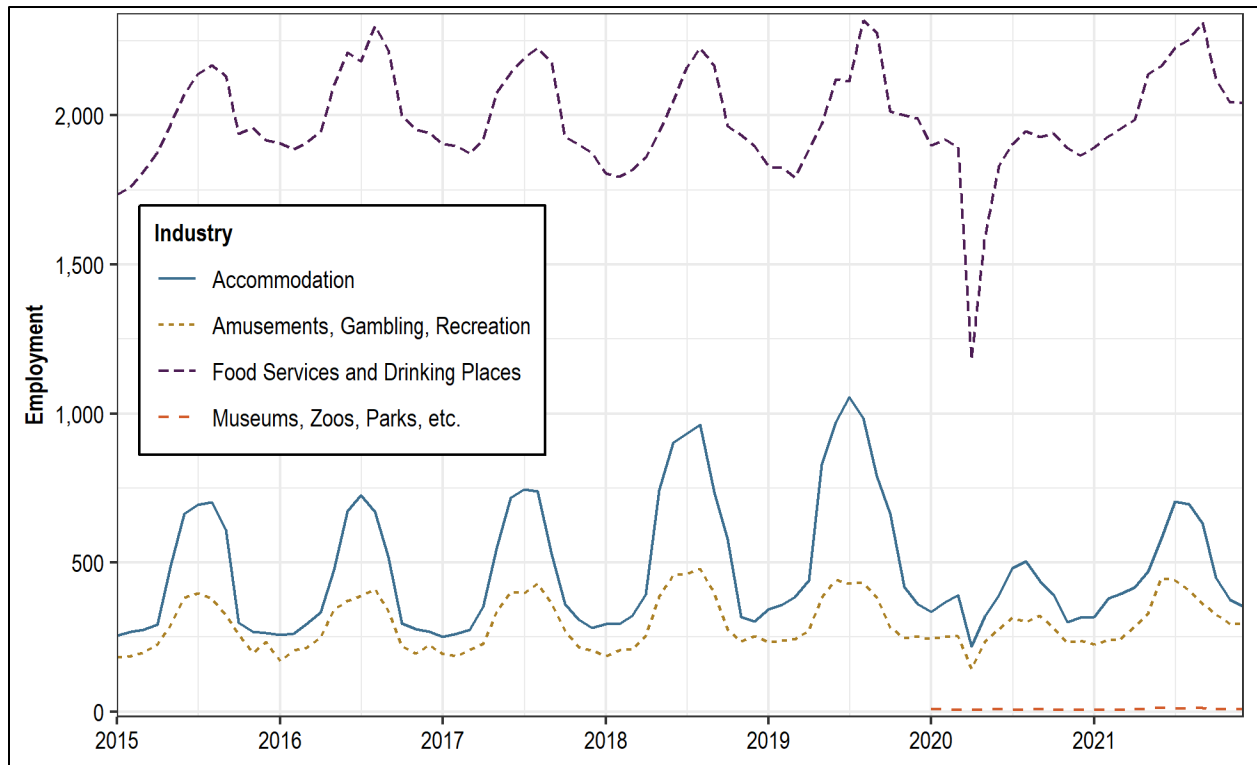
Note that scenic and sightseeing employment was not available in Figure 23 due to confidentiality restrictions based on the number of active companies. Likewise, museum, park, and zoo employment, shown in Figure 23 is not available prior to 2020. That industry peaked at only eight employees in 2020 and 13 employees in 2021.

Figure 22: Industry Employment Related to Aviation, 2015–2021



Sources: DOLWD (2019a, 2019b, 2020a, 2020b, 2021b, 2021c, 2022e)

Figure 23: Industry Employment Related to Tourism, 2015–2021



Sources: DOLWD (2019a, 2019b, 2020a, 2020b, 2021b, 2021c, 2022d)

6.3.2 Outlook

As a GA airport, Wasilla Airport should benefit from continued population growth in the MSB, much of which will likely take place in the fast-growing areas near the airport. Population-based demand for airport and aviation services will likely remain strong and increase with population. This is consistent with the steadily rising employment in the transportation support services industry despite other aviation-related industries having not yet recovered to pre-pandemic employment levels.

7.0 FINANCIAL ASSESSMENT AND MAINTENANCE COST GENERATION

A financial assessment and maintenance cost generation analysis was completed to analyze operating costs and their driving factors at the Wasilla Airport. The information used to develop this analysis was provided by the City's financial reports, other component reports of the Wasilla AMP Update, and financial statements and published aviation forecasts of comparable airports. This analysis is limited to information made available on an annual basis.

7.1 Airport Revenues and Expenses

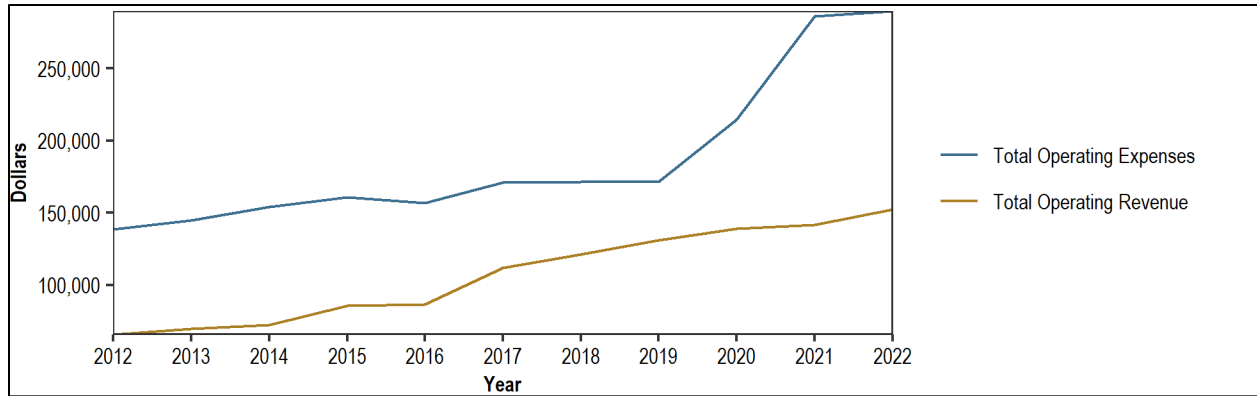
The Wasilla Airport has operated at a loss over the last decade (Table 7 and Figure 24). In each of the two most recent fiscal years (FY) the loss has been approximately \$144,000. Though revenues have been growing steadily, losses are driven by increasing expenses. Recently, revenues have been approximately one-half of operating expenses. Depreciation is a major non-cash (accounting) expense that accounts for wear and tear of assets. In 2022, depreciation expense was \$759,000 and contributed to the Airport Fund's operating loss of \$900,000 (City, 2023b). Detailed revenue and expense information is provided below.

Table 7: Summary of Wasilla Airport's Revenues and Expenses, \$, FY 2012–2022

Fiscal Year	Revenue (\$)	Expenses (\$)	Operating Profit Before Depreciation (\$)	Depreciation (\$)	Operating Profit After Depreciation (\$)
2012	65,849	138,487	-72,638	757,950	-830,588
2013	69,522	144,884	-75,362	670,628	-745,990
2014	72,121	154,106	-81,985	672,169	-754,154
2015	85,669	160,661	-74,992	778,059	-853,051
2016	86,580	156,867	-70,287	778,059	-848,346
2017	111,764	170,840	-59,076	779,778	-838,854
2018	121,189	171,355	-50,166	783,466	-833,632
2019	131,022	171,417	-40,395	792,623	-833,018
2020	139,038	214,392	-75,354	849,485	-924,839
2021	141,549	286,273	-144,724	843,912	-988,636
2022	152,458	296,771	-144,313	759,232	-903,545

Source: Adapted from City (2023b)

Figure 24: Wasilla Airport Operating Revenues and Expenses Before Depreciation, 2012–2022



Source: City of Wasilla (2023)

Lease lots and tie-downs are the primary revenue sources for the Wasilla Airport, contributing 44% and 52% of revenue in 2022, respectively (Table 8 and Figure 25). Transient parking revenues remain a minor portion of total revenues, though they have been growing over the last decade. Miscellaneous revenues primarily consist of fees charged for lost gate keys (paid by the airport customer) and insurance premium refunds when assets are removed from coverage.

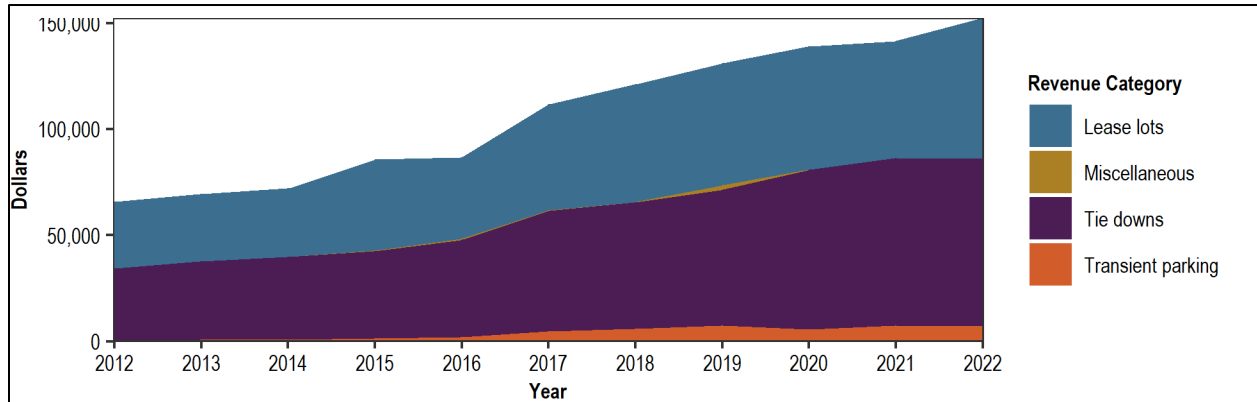
Table 8: Wasilla Airport Revenue Detail, \$, FY 2012–2022

Fiscal Year	Lease Lots (\$)	Tie-Downs (\$)	Transient Parking (\$)	Miscellaneous (\$)	Total Revenue (\$)
2012	31,559	34,139	151	0	65,849
2013	31,737	37,100	685	0	69,522
2014	32,342	38,941	838	0	72,121
2015	42,977	41,110	1,444	138	85,669
2016	38,252	45,746	2,095	487	86,580
2017	49,993	56,613	4,799	359	111,764
2018	55,586	59,521	5,930	152	121,189
2019	57,471	63,987	7,342	2,222	131,022
2020	58,070	75,307	5,497	164	139,038
2021	55,104	79,001	7,444	0	141,549
2022	66,389	79,097	6,972	0	152,458

Source: Adapted from City of Wasilla (2023b)

The rate for tie-downs increased once during the period shown in Table 8. Tie-down space fees were set at \$25 per month, \$125 for six months if paid in advance, and \$250 yearly if paid in advance (City, 1994). The daily transient parking rate were set at \$5 per day after the first six hours and impoundment (\$40 basic fee and \$5 per day storage fee). In 2005, a rate for tie-downs with electrical service was set at \$40 per month (City, 2005). These rates were increased again in 2016, when daily transient aircraft parking was set at \$5 for the first six hours, \$5 per day after the first six hours, and \$75 monthly; monthly tie-down space fees became \$35 per day without power and \$50 per day with power; and impoundment fees increased to \$250 for the basic fee and \$5 per 24 hours of storage (City, 2016a). Since rates remained fixed during 2012–2015 and 2016–present, increases in revenues from tie-downs and transient parking reflect growth in activity during those periods.

Figure 25: Wasilla Airport Operating Revenue Detail, FY 2012–2022



Source: City of Wasilla (2023e)

Expenses at the Wasilla Airport are shown in Table 9 and Figure 26. Salaries and benefits account for a growing portion of the total expenses, reaching 40% of total expenses in 2021 and 39% in 2022. Higher professional services expenses were incurred in 2013–2016 as the City pursued planning level design in support of FAA funding for projects and planning updates: 2017 ALP update, 2017 Apron expansion, 2018 70 Acres purchase for GA expansion, 2019 Apron E expansion, 2021 Runway crack repair, 2022 Master plan update, 2023 Apron E PH II. Maintenance expenses increased because of more apron, more equipment, and more repair of aging equipment. The one-time drop in supplies in 2021 is thought to have been a reallocation to replacement equipment (City, 2023c). Salaries and Benefits have also increased due to the allocation of additional staff time to airport operations.¹⁵

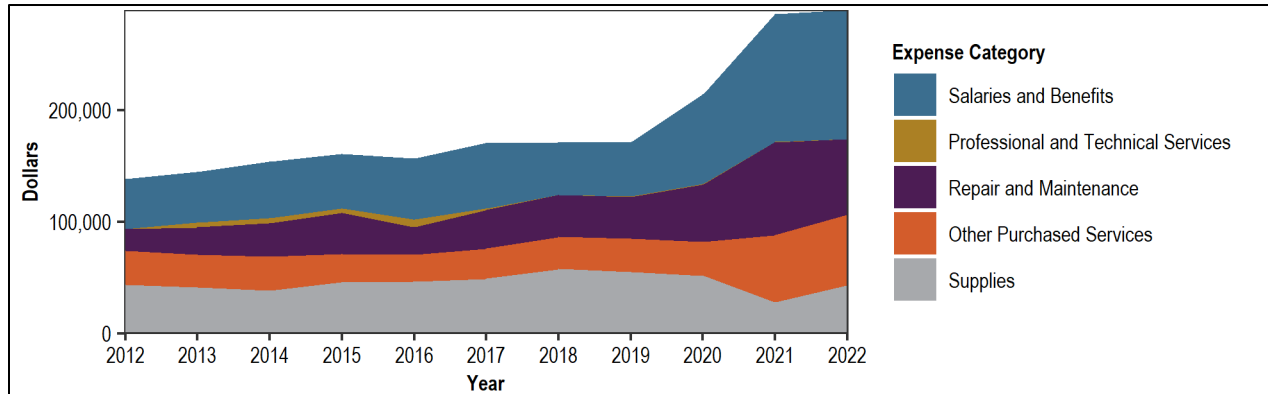
Table 9: Wasilla Airport Expense Detail

Fiscal Year	Salaries and Benefits (\$)	Professional and Technical Services (\$)	Repair and Maintenance (\$)	Other Purchased Services (\$)	Supplies (\$)	Total Expenses (\$)
2012	44,848	160	19,349	30,623	43,507	138,487
2013	45,470	4,461	24,730	29,328	40,895	144,884
2014	50,911	4,504	29,692	30,631	38,368	154,106
2015	48,710	4,027	37,076	25,236	45,612	160,661
2016	55,106	6,498	24,564	24,287	46,412	156,867
2017	59,083	1,287	34,574	27,050	48,846	170,840
2018	47,174	216	37,600	28,785	57,580	171,355
2019	48,701	322	37,644	29,587	55,163	171,417
2020	80,605	381	51,349	30,438	51,619	214,392
2021	114,526	398	83,361	60,093	27,895	286,273
2022	115,638	415	67,759	63,049	43,123	289,984

Source: City (2012, 2013, 2014, 2015, 2016b, 2017, 2018, 2019, 2021a, 2021b, 2023c)

¹⁵The airport's salaries and benefits expense include allocations from other Public Works positions and a Finance position. In FY 2020 and prior, the allocation was 0.25 full-time equivalent (FTE) roads supervisor, 0.05 FTE roads tech II, and 0.05 FTE financial clerk. For FY 2021, the allocated roads tech II position increased to 0.60 FTE.

Figure 26: Wasilla Airport Operating Expense Detail, FY 2012–2022



Source: City (2012, 2013, 2014, 2015, 2016b, 2017, 2018, 2019, 2021a, 2021b, 2023c)

7.1.1 Inflation-Adjusted Airport Revenues and Expenses

Table 10 shows airport revenues and expenses in real 2022 dollars, using the Urban Alaska Consumer Price Index (CPI) to account for inflation. Nominal dollars represent the amount paid or received at the time of the transaction, while real dollars are adjusted by inflation to focus on underlying trends. From 2012 to 2022, nominal revenues increased 8.8% annually, while expenses increased 7.9%. During this period, the CPI increased 2.2% annually; therefore, on a real basis, airport revenues increased 6.4% annually while expenses increased 5.6% annually.

Table 10: Wasilla Airport Revenues and Expenses, Real 2022 Dollars, \$, FY 2012–2022

Fiscal Year	Real Revenues (\$)	Real Expenses (\$)
2012	82,000	172,455
2013	83,939	174,929
2014	85,695	183,111
2015	101,275	189,928
2016	101,919	184,659
2017	130,938	200,149
2018	137,780	194,814
2019	146,920	192,216
2020	157,648	243,088
2021	153,028	309,489
2022	152,458	289,984

Source: City of Wasilla (2023b), BLS (2023), and Northern Economics (2023)

7.2 Other Factors Affecting Operations and Operating Costs

Stakeholder interviews provided feedback on the airport's operations, limitations, and future improvements. This section summarizes the findings of those interviews.

Overall, the main themes of interviewees' responses revolve around airport expansion and development, improved access control and security, better infrastructure maintenance, creating a user-friendly environment, catering to specific aircraft needs, ensuring safety and communication, and facilitating operational efficiency. There were several calls for more tie-downs and more leasable space for hangars. Below is a summary of the items mentioned by interviewees, with italic text indicating the items that would require larger capital or operating expenditures by the City, either through the Airport Fund or another City agency. The information provided here will be one of the inputs in the development of alternatives for the airport. At this point, none of the users' inputs have been evaluated or adopted by the City, nor have the associated costs been determined.

Development and Expansion: *Expansion of facilities, hangars, and land to increase leasable spaces. Runway extension to accommodate larger aircraft. Development of a City-owned terminal building, providing a place for an airport manager. Exploration of float plane basin/seaplane operations.* Utilization of available land for attracting larger leaseholders and development. Development of private parcels adjacent to the airport with airport compatibility in mind.

Access and Security: *Enhanced access controls, fencing realignment, and repairs for better wildlife barriers. Increased operations and facility controls (key fobs, cameras) for monitoring access. Monitoring of aircraft operations (takeoffs/landings) through cameras. Security concerns include theft of fuel and the need for better access monitoring.*

Infrastructure Improvements: *Upkeep and improvement of fencing for security and safety. Maintenance of runways, taxiways, and pavement conditions.* Designated areas for engine run-ups, testing, and training operations. Implementation of a mobile app for transient parking payment with QR codes. Consideration of three-phase electrical power availability.

User-Friendly Environment: *Improved layout of tie-downs, especially for larger aircraft. Adequate snow removal practices to enable smooth operations in winter.* Addressing concerns related to noise complaints and safe navigation around hangar areas. Separate commercial and private activities for increased ease of access.

Aircraft Specific Needs: *Support for various types of aircraft, including float planes, planes on straight skis, gliders, helicopters, and larger aircraft. Provision of space and facilities for aircraft maintenance, including engine run-ups.* Consideration of specific requirements like larger wing clearances for gliders.

Functional Amenities: *Provision of amenities that attract potential leaseholders. Creation of alternate areas for emergency landings or go-arounds.*

Communication and Safety: *Planning for a future fire station and ensuring fire suppression water availability.* Focus on improved communication and operating practices among airport users.

Operational Efficiency: *Clearing and maintenance of grass areas for staging and runway safety.* Implementation of operational practices and infrastructure to accommodate training activities.

User Expansion and Diversity: Consideration of GA, flight schools, and commercial operations.

A Financial Plan, which is one of the components of an AMP and something that is anticipated to be developed for the Wasilla Airport at a future date, would provide a more detailed analysis of the costs associated with improvements considered under the preferred alternative in the plan.

8.0 CURRENT AND FORECASTED AVIATION ACTIVITY

The goal of an aviation activity forecast is to use observed trends at the airport to project the estimated baseline year operations forward to the end of the study period. The forecasted aviation activity is also used to determine the ultimate critical aircraft. In cases where the critical aircraft is expected to change, it is also important to estimate the timing of the change, as this may trigger the need to modify airport facilities, such as runways, taxiways, and aprons.

The aviation forecast prepared for Wasilla Airport will be used to 1) establish the current operational demands of the airport; 2) evaluate historical airport uses and trends that affect aviation activity at the airport; and 3) forecast future operational demands based on the current demand and historical trends.

8.1 Terminology

In aviation activity forecasting, the most critical metric used is aircraft operations. The total number of operations is studied based on the type of operation and the type of aircraft employed. Therefore, it is necessary to use the term consistently during the development of the forecast. The following terminology is used to define the different types of airport operations discussed:

- *Operations*: The FAA guidance regarding what constitutes an operation is defined differently in the FAA ACs, as follows:
 - AC 150/5070-6B, *Airport Master Plans*, provides guidance for airport master planning, including demand-capacity analysis, and defines an aircraft operation as the landing, take-off, or touch-and-go procedure by an aircraft (FAA, 2015b).
 - AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, states that only local and itinerant take-offs and landings qualify as operations for the determination of critical aircraft and regular use. The critical aircraft is the most demanding aircraft that regularly use the airport. The threshold to determine regular use is 500 annual operations. For the determination of design requirements on the airfield, touch-and-go operations and operations by federal government agencies and the military are expressly excluded from operational counts (FAA, 2017).

In this forecast, the term aircraft operation matches the FAA definition in AC 150/5000-17 and refers only to the take-off or landing of a local or itinerant aircraft.

- *Touch-and-Go Operations*: An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.
 - *Training Operations*: Training operations, also called touch-and-go operations, are not included in the operations count per AC 150/5000-17.

- *Itinerant Operations.* These are operations to or from an airport using aircraft based at a different airport. For these visitors, transient parking is provided to allow pilots to park their aircraft at the airport for a short duration.
- *Local Operations.* These are operations to or from an airport using aircraft based at that airport. For this report, 50% of the GA operations were assigned to local operations.
- *Air Carrier Operations.* Air carrier operations are scheduled passenger or cargo operations provided by a certificated air carrier. Air carriers are required to report all their operations to the U.S. Department of Transportation's (DOT) Bureau of Transportation Statistics (BTS) – Office of Airline Statistics monthly (DOT, 2007).
- *Air Taxi Operations.* Air taxi operations are on-demand charter operations provided by a certified air carrier. Air taxi operators voluntarily report operational information annually through the Airport Activity Survey (FAA, 2023c).

8.2 Other Airport Activity Forecasts

When preparing an aviation activity forecast, the FAA requires that Terminal Area Forecast (TAF), previous forecasts, and state or local aviation system plan studies be considered (FAA, 2015b). For the Wasilla Airport, relevant data from the 2011 AASP forecast, the 2012 Wasilla AMP (updated in 2013), and the FAA's TAF were all considered and compared to the baseline data developed in this report. A discussion and comparison of each forecast are included below.

8.2.1 2011 Alaska AASP Forecasts

The AASP is a planning document that establishes the vision for Alaska's aviation network by addressing aviation infrastructure and policy needs. The AASP identifies airport improvements needed and establishes funding priorities. The AASP documents the condition of the aviation system with photos, maps, and data and is continuously updated as planning, design, and construction projects are complete.

The AASP includes a statewide aviation forecast published in 2011 (DOT&PF, 2011), which consists of a high-level forecast for the Wasilla Airport. The AASP forecast is based on historic FAA data for hours flown and based aircraft in Alaska compared to the rest of the United States. The forecast then used the correlation between hours flown and based aircraft to estimate operations for Alaska as a whole. Next, specific data for the Wasilla Airport is derived from the number of based aircraft at the airport. The based aircraft data used in this analysis is derived from the FAA 5010 Airport Master Records data.

The 2011 final AASP forecast reported that there is no reliable year-by-year record of based aircraft by borough or census area. Therefore, the number of based aircraft in each borough was assumed to increase with the population forecast for that borough/census area.

The 2011 Final AASP forecast includes forecasts for 2008-2030 for enplanements, operations, and based aircraft. The AASP identified the Cessna 185 (A-1 Small) as the most common aircraft in Alaska based on registration records; it was therefore assumed to be the critical aircraft at airports that do not have commercial service.

Wasilla Airport lacks commercial service. Therefore, aircraft classified as A-1 Small were identified as the study period's existing and ultimate critical aircraft. The AASP forecasted activity specific to Wasilla Airport is summarized in Table 11 below.

Table 11: 2011 AASP Forecast for Wasilla Airport

Aircraft Operations Forecast				
	Base Year Estimate	Projected		
Category	2008	2015	2020	2030
Air Carrier	3,900	4,800	5,566	7,188
Air Taxi	0	0	0	0
GA	24,186	29,769	34,511	44,547
Military	171	211	245	317
Total operations	28,257	34,780	40,322	52,052
Based Aircraft	307	316	330	367

Source: DOT&PF (2011)

8.2.2 2012 Wasilla AMP

The forecast included in the 2012 Wasilla AMP covered a planning period from 2010 to 2030 and is shown in Table 12 (USKH, 2012). This forecast was completed using the "Model for Estimating General Aviation Operations at Non-Towered Airports Using Towered and Non-Towered Airport Data" (GRA, 2001a); 123 permanently based aircraft were used as the base, with correction variables for other based aircraft and population centers within 100 miles of Wasilla Airport. Using the regression model yielded an estimate of 24,200 GA operations per year and that local and itinerant GA operations were split 50/50. Commercial operations were determined by interviewing air carriers that provided service at Wasilla Airport at the time the forecast was completed.

Table 12: 2012 Wasilla AMP Forecast

Aircraft Operations Forecast ¹⁷						
	Base Year Estimate	Projected				
Category	2010	2011	2015	2020	2025	2030
<u>PASSENGER ENPLANEMENTS</u>						
Commuter/Air Taxi	1,800	1,908	14,867	17,235	19,980	23,162
Total Enplanements	1,800	1,908	14,867	17,235	19,980	23,162
<u>FIXED-WING OPERATIONS (ITINERANT)</u>						
Commuter/Air Taxi	142	151	657	761	882	1,032
Military	32	34	37	42	47	53
GA ¹⁸	24,200	25,652	28,054	32,523	37,703	43,708
GA Seaplane ¹⁹	0	0	0	840	1,124	1,504
Total Itinerant Operations	24,374	25,836	28,748	34,166	39,757	46,288
<u>FIXED-WING OPERATIONS (LOCAL)</u>						
Commuter/Air Taxi	600	636	696	806	935	1,084
GA ²⁰	24,200	25,652	28,054	32,523	37,703	43,708
Seaplane ²¹	0	0	0	8,400	11,241	15,043
Total Local Operations	25,400	26,924	29,466	42,535	50,813	60,918
Total Fixed-Wing Operations	49,774	52,760	58,194	76,701	90,570	107,207
<u>HELICOPTER OPERATIONS</u>						
Commuter/Air Taxi	300	319	348	404	468	541
Military	40	42	46	54	62	72
Total Helicopter Operations	340	360	394	457	530	614
Total Operations	50,114	53,121	58,588	77,158	91,100	107,821

¹⁷ The table above is representative of the published total values. The 2012 forecast as published had rounding errors and summation errors.

¹⁸ GA, Itinerant: Report states "assumed 50% of GA total"; however full GA total was used in the calculation.

¹⁹ Seaplane GA, Itinerant: Assumed 10% of Seaplane Total

²⁰ GA, Local: Report states "assumed 50% of GA total"; however full GA total was used in the calculation.

²¹ Seaplane GA, Local: Assumed 90% of Seaplane Total

Based on a 3% growth rate, the 2012 master plan forecasted 77,158 operations in 2020 with 275 based aircraft and a projected 107,821 operations by 2030 with 419 based aircraft. It should be noted that the report did not split the GA operations 50/50 between local and itinerant but entered the full number of operations under each category. This resulted in double counting the GA operations and caused an over projection in the 2012 AMP. Correcting this calculation error results in a total of 25,914

operations in the base year, 34,826 estimated operations in 2020, and 46,804 estimated operations in 2030.

The 2012 AMP projected the installation of a SPB and 275 based aircraft at Wasilla by 2020. The airfield does not currently have a SPB, and the 2021 based aircraft numbers are 85 aircraft less than the 2020 prediction. Expansion of based aircraft was likely limited due to the unavailability of tie-down spaces, which has a direct correlation to the number of based aircraft. It should also be noted that the 2012 forecast predicted continued commuter/air taxi operation of Grasshopper Aviation and a new service to be provided by Everts Alaska. Grasshopper Aviation is no longer in operation at Wasilla Airport, and Everts Alaska is not providing scheduled carrier service to Wasilla Airport.

The 2012 AMP projected that Wasilla Airport would see a mixture of B-II, B-III, and B-IV category aircraft and concluded that future airport improvements should be designed to B-II standards.

8.2.3 FAA TAF Forecast

The TAF is the official FAA forecast for aviation activity for U.S. airports in the NPIAS and is updated frequently based on historical traffic information. The FAA maintains the TAF for non-primary and non-hub airports using modeling based on the number of based aircraft present at the airport. Wasilla Airport is a non-towered airport, so no direct traffic records are available from air traffic control.

The TAF for non-primary airports, such as Wasilla, is developed by applying a 0% growth rate for the duration of the study period from the baseline operation data obtained from the 5010 Master Record. The operation levels in the 5010 are then held constant unless otherwise specified by a local or regional FAA official. The October 20, 2022, Airport Master Record for Wasilla Airport estimates 49,514 annual operations (FAA, 2022d). The annual operations for Wasilla Airport in the TAF have remained constant since 2011. In these instances, the TAF is not representative of a modeled forecast that considers local trends. The forecast developed for this AMP Update is anticipated to be more accurate because it is based on reported operational data and interviews with air carriers and charter operators.

8.3 Aviation Activity Data for Wasilla Airport

Wasilla Airport does not have an air traffic control tower, so airport activity information must be derived from other sources. A baseline of aviation activity at the airport was established by compiling existing information from published sources regarding scheduled operations, air taxi operations, and local and itinerant operations and analyzing populating growth. Data collected for use as the baseline for estimating aviation activity was supported by data collected by the FAA and airport user interviews.

8.3.1 Enplanements

The Wasilla Airport has no scheduled air service at this time. The reported enplanements (passenger boardings) are from the FAA's Air Carrier Activity Information System (ACAIS), containing revenue

passenger boarding and all-cargo data (FAA, 2023d). The reported enplanements from 2012 to 2021 are shown in Table 13.

Table 13: Wasilla Enplanements (FAA ACAIS Database)

Year	Enplanements
2012	0
2013	208
2014	35
2015	22
2016	17
2017	8
2018	11
2019	7
2020	28
2021	0

8.3.2 Air Carrier Operations

Scheduled airport activity data is collected in the BTS’s “T-100 Domestic Market US Carriers” database. All certified carriers that offer scheduled service are required to submit a report to BTS each month. FAA includes this information in the ACAIS (BTS, 2023). There are no air carrier reports for the Wasilla Airport included in the T-100 database, indicating no scheduled passenger and cargo services operate at the airport. This lack of scheduled passenger and cargo operations at the airport was confirmed through interviews with the City and airport users.

8.3.3 Air Taxi Operations

The BTS T-100 database contains flight data from Part 135 certificated air taxis offering on-demand service. On-demand-only operators are not required to submit monthly reports but may voluntarily provide information. As such, on-demand air carrier operations and enplanements are not likely fully represented in the database. Interviews with the City and airport users indicated that there are only occasional on-demand air taxi operations at Wasilla.

8.3.4 GA Operations

The FAA’s Traffic Flow Management System Counts (TFMSC) database provides information on traffic counts by airport based on flight plans and when flights are detected by the National Airspace System. TFMS contains every flight record constructed, which includes IFRs and voluntarily filed VFR flights. It also includes commercial traffic (air carriers and air taxis) and military operations. This database was used as an indicator to represent the number of IFR operations annually at Wasilla Airport.

8.4 Forecast Methodology – GRA Model

There are several methodologies and techniques for forecasting aviation activity at an airport. The chosen methodology for this forecast is the GRA model, which considers based aircraft, aircraft based

at airports within 100 miles of Wasilla, and population data from the U.S. Census Bureau 2020 census, adjusted for the base year. These methodologies are described in *Forecasting Aviation Activity by Airport* (GRA, 2001b). GA operations are estimated using Equation 13 from the “Model for Estimating General Aviation Operations at Non-Towered Airports Using Towered and Non-Towered Airport Data” (GRA, 2001a). Use of the GRA model for this forecast was approved by the FAA in October 2023.

For the purpose of this forecast, GA operations were split 50%-50% between local and itinerant due to the lack of data to support a weighted distribution. Based on these values, the equation yielded an estimated 45,949 GA operations for the Wasilla Airport in 2021. The calculation sheet is shown in Appendix D.

Note that this forecast was prepared after the COVID-19 pandemic. The effect of COVID-19 on the forecast is discussed in Section 6.2 of this report.

8.5 Population and Aircraft Registration Growth Projections

Looking forward from 2022 to 2050, DOLWD expects an annualized population growth rate of 1.00% for MSB (DOLWD, 2022b), and Northern Economics projects a slightly higher growth rate for the population of Wasilla at 1.15% for the period. Northern Economics also projects aircraft registration growth in Wasilla to be 1.48% annually through 2050, compared to 0.85% for the MSB (Northern Economics, 2023).

Table 14: Annualized Historical and Projected Population and Aircraft Registration Growth Rates, 2022–2050

Location	Annualized Growth of Population (%)		Annualized Growth of Aircraft Registrations (%)	
	Historical	Projected	Historical	Projected
Wasilla	1.94	1.15	2.69	1.48
MSB	2.17	1.00	1.89	0.85

Source: Northern Economics (2023)

Northern Economics provided a series of low, base, and high aviation growth rates, as shown in Table 15 below. For the purpose of this forecast, the base (middle) growth rate was chosen.

Table 15: Aviation Growth Rate Scenarios, 2022-2050

Growth Scenario	Annualized Growth Rate (%)	Basis for Growth Rate
Low	1.15	Northern Economics' population projections for the City
Base	1.48	Linear regression of Wasilla aircraft as a function of population applied to Northern Economics' population projections for the City
High	1.89	Linear regression of MSB aircraft as a function of population applied to DOLWD's (2022c) population projections for the MSB

Source: Northern Economics (2023)

8.6 Based Aircraft

The Master Record for Wasilla Airport shows that there are 132 based aircraft at the airport, one of which is a helicopter, as of information provided in September 2021 (FAA, 2022d). The airport currently has 155 leasable tie-down spaces, all of which are currently leased with 77 potential lessees on a waitlist. Apron E: Phase 2 is scheduled for construction in 2024 and will provide an additional 27 leasable tie-down spaces. Additionally, there are 26 platted leases on the airport, including several hangars housing multiple aircraft and several hangers with unknown contents.

During a 2023 inspection, 16 helicopters were visibly staged on one lease lot, indicating the Master Record information may not be reliable. Based aircraft data gathered from leaseholder-provided information cross-referenced to the extent possible with tie-down information yields an estimated 190 based aircraft (fixed-wing, glider, and helicopter) at Wasilla Airport. This estimated number was used as the baseline for the forecast. An additional 27 aircraft were added to the 2025 based aircraft projection in the forecast to account for increased tie-down availability on the newly constructed Phase 2 on Apron E.

8.7 Aviation Activity Forecast

Aviation activity (operations and enplanements) was projected forward for years 2023, 2025, 2030, 2035, and 2040 using historical and expected population growth rates with adjustments for anticipated changes in current users of the airport and changes in the local economy. The following information was used to develop the forecast represented in Table 16.

Table16: Aviation Activity Projects for Year 2023, 2025, 2030, 2035, and 2040

	AAC	ADG	Base Year			2021	Growth	1.48%
			2021	2023	2025	2030	2035	2040
PASSENGER ENPLANEMENTS								
Commuter/Air Taxi								
From FAA ACAIS (10 yr avg)	-	-	34	35	36	39	42	45
FIXED-WING OPERATIONS								
<u>ITINERANT</u>								
Air Carrier / Air Taxi / Other								
Beechcraft 1900D (combined A/B and I/II)	B	II	6	6	6	7	7	8
Bombardier Learjet 31A & 60	C	I	2	2	2	2	2	3
Bombardier Challenger 600/601/604	C	II	2	2	2	2	2	3
General Aviation								
Itinerant (Fixed-Wing/Glider)	A	I	22,974	23,659	24,365	26,222	28,220	30,371
(Assumed 50% of GA Total)								
Military								
Cessna 172	A	I	2	2	2	2	2	3
Gulfstream GLF6	D	III	2	2	2	2	2	3
TOTAL ITINERANT OPS			22,988	23,673	24,379	26,237	28,235	30,391
<u>LOCAL</u>								
Air Carrier / Air Taxi / Other								
Douglas DC-4	B	III	131	135	139	150	161	173
Identified Demanding Future Aircraft								
Pilatus PC-12	A	II	-	250	257	277	298	321
Cessna 208	A	II	-	50	51	55	60	64
Cessna Citation CJ1+	B	I	-	90	93	100	107	116
Air Tractor 602	B	II	-	480	494	532	573	616
King Air 200	B	II	-	80	82	89	95	103
Beechcraft 1900	B	II	-	80	82	609	655	705
Cessna Skycourier	B	II	-	50	51	55	60	64
Other Jet/turboprop	B	II	-	80	82	89	95	103
General Aviation								
Local (Fixed-Wing/Glider)	-	-	22,974	23,659	24,365	26,222	28,220	30,371
(Assumed 50% of GA Total)								
TOTAL LOCAL OPS			23,105	24,954	25,696	28,178	30,324	32,636
TOTAL FIXED-WING OPS			46,093	48,627	50,075	54,415	58,559	63,027
	AAC	ADG	Base Year			2021	Growth	1.48%
			2021	2023	2025	2030	2035	2040
HELICOPTER OPERATIONS								
Air Carrier / Air Taxi / Other								
Sikorsky SH-60 Seahawk	-	-	2	2	2	2	2	3
Identified Demanding Future Aircraft								
Robinson R44	-	-	-	76	78	84	91	98
General Aviation								
Itinerant	-	-	2,527	2,602	2,680	2,884	3,104	3,341
Local	-	-	2,527	2,602	2,680	2,884	3,104	3,341
Military								
Chinook CH-47	-	-	2	2	2	2	2	3

	AAC	ADG	Base Year			2021	Growth	1.48%
			2021	2023	2025	2030	2035	2040
TOTAL HELICOPTER OPS			5,058	5,284	5,442	5,856	6,303	6,786
TOTAL OPERATIONS			51,151	53,911	55,517	60,271	64,862	69,813
INSTRUMENT OPERATIONS			9	9	10	10	11	12
BASED AIRCRAFT								
Fixed-Wing	-	-	168	173	205	221	237	256
Helicopter	-	-	20	21	21	23	25	26
Glider	-	-	2	2	2	2	2	3
TOTAL BASED AIRCRAFT			190	196	228	246	264	285

8.7.1 Local and Itinerant Operations

The number of air carriers, air taxis, and other operations, along with the number of military operations, were obtained from the TFMSC database (FAA, 2023e). Local itinerant operations at Wasilla Airport do not currently involve regular use by air carriers or military operations. Therefore, the TFMSC database contains limited information for Wasilla. An average number of operations was used over the last 10 years, for the years that data is available, to compute the base year operations for the itinerant air carrier/air taxi/other categories in Table16 above.

8.7.2 Potential Future Use of Wasilla Airport

Interviews with potential future users of Wasilla Airport were conducted as part of this aviation activity forecast. Aviation operators at Ted Stevens Anchorage International, Merrill Field, Talkeetna, Wolf Lake, and Palmer were interviewed to determine interest in the future use of Wasilla Airport. Two of the operators interviewed, Silver Sky Aviation and Ravn Connect, expressed eminent future use of Wasilla Airport.

Silver Sky Aviation is an FAA Part 135 repair station that focuses on small to medium-sized turboprop and corporate jet aircraft. They are in the process of constructing a maintenance facility at Wasilla Airport and anticipate being operational in 2023. In addition to its maintenance facility, Silver Sky Aviation also plans to have over-the-counter part sales and provide fixed-base operator services. Silver Sky estimates that they will increase activity at the Wasilla Airport by approximately 650–1,000 annual operations, including 290 operations with B-II aircraft, in 2023. This projection is included in the breakdown of “Anticipated Future Airport Operations” in Table16.

Ravn Alaska has plans to expand operations for Ravn Connect, their FAA Part 135 carrier. Ravn Connect currently operates a fleet of Beechcraft 1900Ds and specializes in charter, mail, and freight service. Ravn Connect also supplements existing Ravn Alaska routes with additional cargo and passenger capacity. Though Wasilla Airport does not provide scheduled passenger service at this time, Ravn Connect could fulfill charter demand at the airport in the future. For Ravn Connect to supply charter service out of Wasilla Airport, Runway 04/22 needs to be a minimum of 4,000 feet. Ravn stated that the growth in the MSB was appealing to them, and once a 4,000-foot runway was available, they would likely perform a market analysis to determine if expansion to Wasilla could be profitable. Assuming a

4,000-foot runway is constructed by 2030, this forecast projects that Ravn Connect will perform two operations per day, five days per week, using the Beechcraft 1900. These operations are split evenly between local and itinerant operations in Table 16.

8.8 Comparison to Other Airport Activity Forecasts

Table 17 compares the results of the current airport forecast to the 2011 AASP, 2012 AMP Forecast, corrected 2012 AMP Forecast (corrected to account for a 50/50 split of GA local and itinerant operations), and the TAF.

Table 17: Comparison of Airport Forecast to Previous Forecasts

	2020-2021 Forecasted Operations	2030 Forecasted Operations	% Difference vs 2020-2021 AF	% Difference vs 2030 AF
Current Aviation Forecast	51,163	60,284	N/A	N/A
AASP	40,322	52,052	27%	16%
Published 2012 IYS AMP Forecast	77,158	107,821	-34%	-44%
Corrected 2012 IYS AMP Forecast*	34,826	46,804	47%	29%
TAF	49,514	49,514	3%	22%

*Corrected to account for the 50/50 split of GA local and itinerant operations

8.9 Critical Aircraft

The current and future critical aircraft are identified in accordance with AC 150/5000-17 "Critical Aircraft and Regular Use Determination" as the most demanding aircraft or group of aircraft with 500 or more annual operations (FAA, 2017). Therefore, based on the recorded operations and forecasted activity, A-I Small aircraft constitute existing, and B-II aircraft constitute near-term and ultimate critical aircraft at Wasilla Airport:

Existing Critical Aircraft: A-I Small

Near-Term and Ultimate Critical Aircraft: B-II

A-I Small is defined as small aircraft with an approach speed of less than 91 knots (A), a tail height of less than 20 feet, or a wingspan of less than 49 feet, whichever is more restrictive (I), and a Maximum Takeoff Weight (MTOW) of less than 12,500 lbs (Small). The near-term (current) and ultimate critical (future) aircraft for Runway 04/22 is a B-II aircraft, which is an aircraft with an approach speed of 91 knots or more but less than 121 knots (B) and a tail height of 20 feet or more but less or equal to 30 feet or a wingspan 49 feet or more but less than or equal to 79 feet, whichever is more restrictive (II).

The Approach and Departure Reference Codes (APRC and DPRC) for a runway are a measure of the largest aircraft that can operate on the runway while maintaining safety for aircraft simultaneously taxiing on a parallel taxiway (FAA, 2022c). The APRC for Runway 04/22 is B/III/4,000. Similarly, the DPRC for Runway 04/22 is B/III.

Runway 04S/22S is an unlit, visual ski (gravel / STOL) runway that is 1,690 feet in length and 60 feet wide. The Runway Design Code for this runway is A-I-VIS, according to the ALP. The APRC for Runway 04S/22S (visual runway – visibility minimums not lower than $\frac{3}{4}$ mile) is B/I(S)/4000. The DPRC for Runway 04S/22S is B/I(S).

The largest aircraft using Runway 04S/22S is A-I Small. Based on current operations at Wasilla Airport, the A-I Small was determined to be the critical aircraft for Runway 04S/22S. The size or classification of aircraft using the ski runway is not anticipated to change in the near term or ultimately.

8.10 Runway Capacity

Airfield capacity was estimated in accordance with AC 150/5060-5 *Airport Capacity and Delay* using the long-range planning method in Chapter 2. The lowest annual service volume modeled for a single runway configuration is 195,000 operations per year, with a peak hourly capacity of 74 VFR and 57 IFR operations per hour. The capacity of the airfield exceeds the current forecasted demand of 51,163 operations and the future 2040 projection of 69,826 per year. The airport is not currently constrained by this forecast, nor is it projected to be constrained by it.

9.0 FACILITY STANDARDS

The facility standards review takes into consideration the requirements of the airside facilities, visual and navigational aids, GA facilities, landside facilities, airport security and access, and support facilities to meet the needs of the forecasted critical aircraft, the airfield demand, and capacity requirements. Relevant facility standards are summarized in a facilities standards table in Appendix E.

9.1 Airfield

9.1.1 Critical Aircraft

The critical aircraft determination for a runway influences many characteristics of the runway's design and those of adjacent airport surfaces also utilized by the runway's critical aircraft, such as taxiways. As presented in Section 3, the existing critical aircraft for both main Runway 04/22 and gravel Runway 04S/22S at the Wasilla Airport is A-I Small aircraft. This category of aircraft captures most GA aircraft operating at the Wasilla Airport, such as the Piper PA-18 Super Cub, Cessna 172, Cessna 180, and Cessna 206. The airport is forecasted to serve an increasing number of aircraft larger than the A-I Small, such as the Beechcraft 1900D. Due to this anticipated increase, the forecast determined that the near-term and ultimate critical aircraft for main Runway 04/22 is B-II.

9.1.2 Airport Classification

The Wasilla Airport is classified as a public, local GA airport by the FAA 2023-2027 NPIAS (FAA, 2022a) and as a Local High Activity airport in the DOT&PF AASP (DOT&PF, 2023). The NPIAS categorizes GA airports by their function and contribution to adjacent communities and the national airspace system. Local airports are defined as airports that supplement communities by providing access to primarily intrastate communities and some intrastate markets. The GA categorization indicates that the Wasilla Airport is a public-use airport that does not have scheduled services and has less than 2,500 enplanements each year. The AASP High Activity designation indicates that the airport contains more than 20 based aircraft.

Wasilla Airport's current classification may change if one or more Part 135 air carriers, such as Ravn Connect, decide to base operations from the airport. In that event, the NPAIS classification would likely change to a Non-Primary Commercial Service Airport with between 2,500 and 10,000 annual enplanements. The AASP designation would likely remain unchanged.

9.1.3 Airspace

The airport's current airspace classification, as described in Section 3, is not anticipated to change within the planning horizon.

Traffic Pattern

Both Runway 04/22 and 04S/22S utilize the same standard left-hand traffic pattern (aircraft turns to the left) for Runway 22 and a non-standard right-hand traffic pattern (aircraft turns to the right) for Runway 04. The centerlines of existing parallel Runways 04/22 and 04S/22S are separated by approximately 87.5 feet. Per FAA AC 150/5300-13B, simultaneous operations using VFR require a 700-foot minimum separation between runway centerlines. The FAA's Alaska Chart Supplement includes a published remark stating "no simultaneous ops on Runway 04-22 and Runway 04S-22S" (FAA, 2023b), which expressly prohibits simultaneous operations at the airport. Therefore, both runways operate as a single runway and utilize the same traffic pattern. However, airport users have reported pilots performing simultaneous operations on both runways and pilots using incorrect traffic patterns at the airport. These instances are exacerbated when pilots do not broadcast their positions and intentions on the CTAF.

The existing traffic patterns for the airport serve the needs of the current and forecasted users, and no changes to traffic patterns are proposed.

Instrument Approaches

The existing approaches have a minimum visibility requirement of $\frac{3}{4}$ -mile and a decision altitude of 604 feet. These approaches reportedly serve the needs of current and forecasted airport users. According to the 2012 Master Plan Update for the Wasilla Airport (USKH, 2012), the development of a precision instrument approach procedure would be required to reduce minima to $\frac{1}{2}$ -mile visibility with 200-foot decision altitude. This change to the airspace would require reclassification of the current airspace to extend the Class E controlled airspace to the ground. This reclassification would result in a "lock-out" of all VFR traffic when the corresponding VFR visibility minimums for the airspace are not met. Additionally, for the airport to establish precision instrument approaches, the City will need to install approach lighting, establish clear approaches at lower approach angles, and acquire navigation rights to airspace below the airport's traffic pattern. This could potentially interfere with air traffic utilizing the numerous adjacent public and private runways in the vicinity whose existence pre-dates that of the Wasilla Airport (USKH, 2012).

9.2 Airside Facilities

9.2.1 Runways

The Wasilla Airport includes two parallel runways: Runway 04/22 is the airport's 3,700-foot long by 75-foot wide paved non-precision runway with MIRL; Runway 04S/22S is a STOL gravel/turf-surfaced runway that is 1,690 feet long and 60 feet wide and unlit.

Runway Design Code

Per FAA AC 150/5300-13B *Airport Design* (FAA, 2022c), the RDC signifies the basic design standards and characteristics that apply to an existing or planned runway. A runway's RDC is comprised of three components. The first two components are determined by the runway's critical aircraft: the first being the AAC and the second being the aircraft's ADG. The lowest visibility published on an instrument approach for the runway defines the third component of the RDC and is indicated by the RVR.

The current RDC for Runway 04/22 is A-I-4000, meaning the runway serves aircraft with an AAC of A, an ADG of I, and that the runway's RVR is 4,000 feet (based on $\frac{3}{4}$ mile approach minimums). The current RDC for Runway 04S/22S is A-I-VIS, meaning the runway serves aircraft with an AAC of A, an ADG of I, and that the runway only supports VFR operations, as is indicated by "VIS."

The RDC for Runway 04S/22S is adequate for the current and forecasted demand, while the RDC for Runway 04/22 is anticipated to change to B-II-4000 based on the forecasted demand and ultimate critical aircraft.

Approach and Departure Reference Codes

Per FAA AC 150/5300-13B, the APRC and DPRC for a runway are indications of the largest aircraft allowable for concurrent operations on the runway and the runway's parallel taxiway while maintaining safety standards (FAA, 2022c). The APRC mimics the RDC in the naming convention, where the combination of the largest aircraft and corresponding allowable visibility scenario are presented by the AAC, ADG, and RVR. The DPRC has the same naming convention as the APRC, except it does not include an RVR.

The APRC and DPRC for Runway 04/22 are B/III/4,000 and B/III, respectively. The APRC and DPRC for Runway 04S/22S is B/I(S)/4,000 and B/I(S), respectively. APRC and DPRC for both runways are also not anticipated to change based on the current and forecasted demand.

Runway Orientation and Alignment

Runway crosswind coverage at the Wasilla Airport was determined using hourly speed data and direction observations collected over 10 years (2013-2022) and the Windrose Generator tool available on the FAA Airport Data and Information Portal (ADIP) website. Wind data was obtained from the National Oceanic and Atmospheric Administration (NOAA) Integrated Surface Database, as further summarized on the FAA ADIP website.

The results indicated that Runway 04/22 provides greater than 99% crosswind coverage for both smaller aircraft with crosswind capability of 10.5 knots and larger aircraft with crosswind capability of 13 knots. Parallel gravel Runway 04S/22S was not analyzed separately for crosswind coverage as it shares the same alignment as Runway 04/22. No additional crosswind runways or changes to runway alignment are required to provide adequate wind coverage. A summary of the crosswind coverage is shown in Table 18 and Table 19.

Table 18: FAA Design Standards for Allowable Crosswind Components

Runway Design Code	Allowable Crosswind Component (Knots)
A-I and B-I	10.5
A-II and B-II	13
A-III, B-III, C-I through D-III, D-I through D-III	16

Table 19: Crosswind Coverage at the Wasilla Airport

Wind Speed (Knots)		Runway 04/22	
	All Weather	Visual Flight Rules (VFR)	Instrument Flight Rules (IFR)
10.5	99.87%	99.85%	99.96%
13	99.95%	99.94%	99.98%

Figure 27: All Weather Wind Rose for Wasilla Airport, 10.5 Knot Wind Speed (2013-2022)

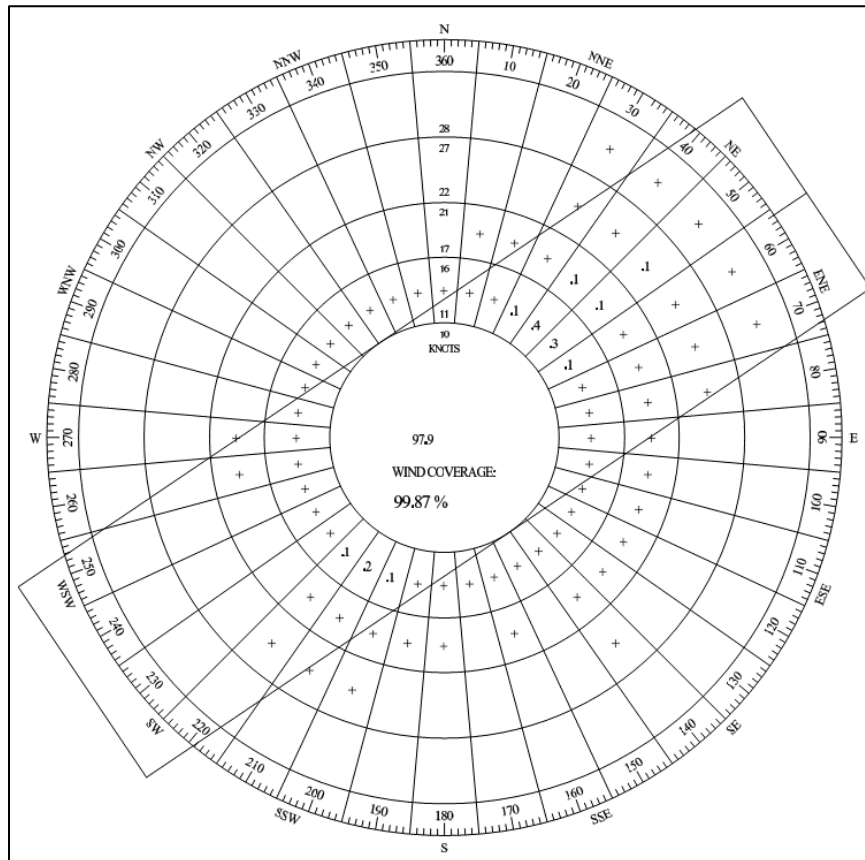
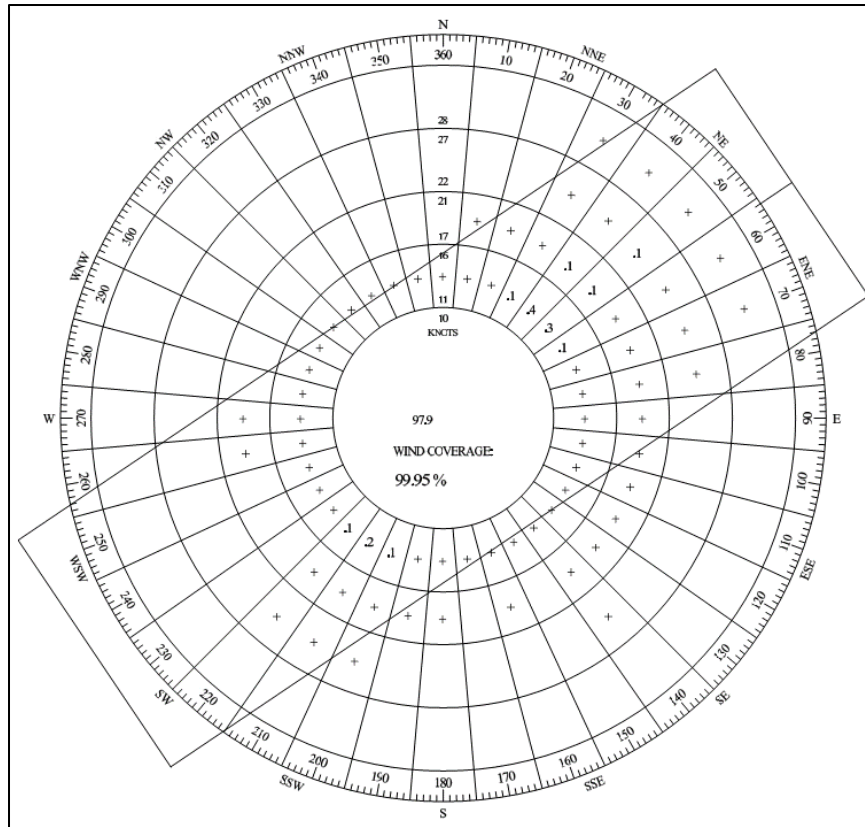


Figure 28: All Weather Wind Rose for Wasilla Airport, 13 Knot Wind Speed (2013-2022)



Runway Designations

Both runways at the Wasilla Airport have a current magnetic azimuth of 55.83 degrees. The “Runway 04/22” designation is currently compliant with the allowable variation of three degrees for runway designations, as detailed in FAA Order 8260.19J Flight Procedures and Airspace (FAA, 2023f). However, if the magnetic declination continues to shift at its current rate, both runways will need to be re-designated as “Runway 05/23” by roughly the year 2031 due to magnetic drift.

Length

FAA AC 150/5325-4B *Runway Length Requirements for Airport Design* (FAA, 2005) provides guidance for determining runway length requirements for various categories of aircraft.

Runway Length Required for Existing Critical Aircraft

The largest aircraft that currently meets the regular use definition for the Wasilla Airport is the A-1 Small, such as the Cessna 206, which has an MTOW of less than 12,500 pounds. Therefore, Figure 2-1, “Small Airplanes with Fewer than 10 Passenger Seats,” of the FAA AC 150/5325-4B was referenced to determine runway length requirements for the existing critical aircraft. Figure 2-1 contains one chart with two sets of data: the first data set covers the length requirements for 95% of the fleet, and the other covers the length required for 100% of the fleet. The FAA AC 150/5325-4B states that 100% of

the fleet is used when the “airport is primarily intended to serve communities located on the fringe of a metropolitan area or a relatively large population remote from a metropolitan area” (FAA, 2005). As such, the “100% of fleet” portion of the figure was used to determine the minimum runway length required. Using an airport elevation of 350 feet (North American Vertical Datum 1988), mean daily maximum temperature of 67 degrees Fahrenheit (NOAA, 2023), no wind, and an aircraft assumed to be at MTOW, the recommended minimum runway length required for this group of aircraft at the Wasilla Airport is 3,450 feet. Runways 04 and 22 provide 3,700 feet of takeoff runway available, which is sufficient for the critical aircraft and occasional use by other aircraft such as the Cessna 208 Caravan. In interviews with airport users, pilots expressed the need to maintain or extend the existing runway length and also stated that reducing runway length would present safety concerns for the current users.

Per FAA Order 5100.38D, *Airport Improvement Program Handbook*, FAA AIP funding is justified and approved based on the needs of the critical aircraft (FAA, 2019). The existing dimensions of Runway 04/22 exceed the requirements of the critical aircraft. FAA AIP funding can be used to maintain and rehabilitate existing runway and taxiway infrastructure that exceed the requirements of the critical aircraft. However, if full-depth runway reconstruction is required, the FAA will need to perform a final determination of the AIP eligibility to reconstruct the existing length at the time of the design. The final eligibility determination will depend on the actual fleet mix and amount of glider activity at the time of reconstruction. If reconstruction of the full length is determined to be non-AIP eligible, other funding sources will be utilized to reconstruct the 250 feet of existing runway length that exceeds the 3,450-foot length required by the critical aircraft.

The current length of Runway 04S/22S of 1,690 feet does not meet the required runway length of 3,450 feet for A-I Small aircraft, as discussed above. The runway is primarily used by small GA tundra tire- and ski-equipped STOL aircraft. Users have stated that the runway is adequate at its existing length for accommodating short-field capability aircraft. For comparison, the gravel STOL runways at the Birchwood Airport and Palmer Municipal Airport are 1,802 feet long and 1,560 feet long, respectively.

Runway Length Required for Near-Term and Ultimate Critical Aircraft

HDL’s FAA-approved Aviation Activity Forecast (HDL, 2023a) determined that the near-term and ultimate critical aircraft for Runway 04/22 is a B-II, such as a Beechcraft 1900D. In accordance with FAA AC 150/5325-4B *Runway Length Requirements for Airport Design* (FAA, 2005), the runway length requirement for the Beechcraft 1900D was determined using Figure 3-1 “75 Percent of Fleet at 60 or 90 Percent Useful Load” (See AC 150/5325-4B for figure 3-1). The figure contains two charts, one that covers the requirements for 75% of the fleet at 60% useful load and another that covers 75% of the fleet at 90% useful load. The “90% useful load” chart was used in the determination. Using the same elevation and weather data used for the Cessna 206 and an aircraft assumed to be at MTOW, the recommended minimum runway length required for a BII aircraft at the Wasilla Airport is 5,850 feet.

Additionally, AC 150/5325-4B allows for runway length adjustment factors to account for the effective gradient of the runway. The effective gradient is defined as the difference between the high point

elevation and low point elevation on the runway divided by the runway length. The effective gradient for existing Runway 04/22 is 0.48%. The AC states that to calculate the length adjustment, “The runway lengths obtained from Figures 3-1 or 3-2 (See AC 150/5325-4B for Figures) are increased at the rate of 10 feet for each foot of elevation difference between the high and low points of the runway centerline”. Currently, there is an 18-foot elevation difference between the runway centerline’s high point (elevation 353.7 feet) located near the Runway 22 threshold and the low point (elevation 335.7 feet) located at the Runway 04 threshold. Therefore, a length adjustment factor of 180 feet applies, making a total recommended minimum runway length of 6,030 feet required for B-II aircraft at Wasilla Airport.

The final eligibility determination for extending Runway 04/22 from its existing length to the recommended runway length will depend on the aircraft fleet mix present at the airport at the time of proposed construction. If, at the time of the proposed extension, the current critical aircraft for the airport has remained the A-I Small, the FAA will likely determine that extending the runway to the recommended ultimate length is not considered AIP eligible. In that event, funding sources other than the AIP program will be necessary to construct the 2,130-foot extension to the existing runway. However, if the B-II is deemed the airport’s critical aircraft at the time of the proposed construction, extending the runway up to 6,030 feet will likely be AIP eligible (FAA, 2019).

Tables summarizing the current and future design requirements for Runways 04/22 and 04S/22S in relation to the runway’s existing conditions can be found in Appendix E of this document.

Width

Runway Width Required for Existing Critical Aircraft

FAA AC 150/5300-13B *Airport Design* (FAA, 2022c) requires that runways intended for use by A-I Small aircraft have a minimum width of 60 feet and 10-foot shoulders. Runway 04/22 is presently 75 feet wide with 10-foot wide unpaved shoulders, exceeding standard requirements for the airport’s critical aircraft. Users have expressed the desire to maintain the current width of 75 feet to provide additional safety, especially considering the high number of training operations that occur at the airport.

Similar to the runway length discussion above, the final determination of AIP eligibility for the full width of the existing runway will need to occur during the design of the runway reconstruction. Also, similar to runway length, the AIP-eligible width will depend on the actual fleet mix at the time of reconstruction. If the reconstruction of the full width is determined to be non-AIP eligible, other funding sources will need to be utilized to reconstruct the 15 feet of existing runway width that exceeds the 60-foot width required by the critical aircraft.

Runway 04S/22S is 60 feet wide (edge marker to edge marker) with 10-foot wide grass shoulders. However, the gravel surfacing of the runway is roughly 22 feet in width, resulting in an inconsistent runway surface. To more closely align with FAA design standards, the gravel surface of Runway 04S/22S

should be widened to 60 feet, and the edge markers should be offset from the centerline an additional 2 feet from their current position.

Runway Width Required for Near-Term and Ultimate Critical Aircraft

The forecast projected that the near-term and ultimate critical aircraft for Runway 04/22 will be the B-II. As such, future improvements to Runway 04/22 should meet the design standards of B-II aircraft. B-II runways have a minimum width of 75 feet and 10-foot shoulders. Runway 04/22 currently meets these requirements.

The critical aircraft for Runway 04S/22S is anticipated to remain the A-I Small. Future improvements to the runway should include upgrading its existing conditions to meet the design standards of the A-I Small.

Runway Object Free Area

The OFA of a runway is the area on the ground, centered on the runway centerline that must remain free of all objects that are non-essential for air navigation and ground movement, such as signs and navigational aids.

The existing OFA for Runway 04/22 should be at least 250 feet wide and extend 240 feet beyond the runway ends to serve A-I Small aircraft with visibility minimums greater than $\frac{3}{4}$ mile. The existing OFA is 500 feet wide and extends 300 feet beyond each threshold, which exceeds the standards for the runway's current critical aircraft. However, these current OFA dimensions are sufficient to meet the needs of B-II aircraft for runways with visibility minimums greater than $\frac{3}{4}$ mile, aligning with the needs of the airport's near-term and ultimate critical aircraft.

The existing OFA for Runway 04S/22S is 250 feet wide and extends 240 feet beyond each threshold. These dimensions meet the requirements for A-I small aircraft for visual runways, aligning with the existing and ultimate critical aircraft for the runway.

The OFAs for Runways 04/22 and 04S/22S appear to be clear of non-frangible objects.

Runway Safety Area

RSAs for a runway are areas located on either side of and beyond each runway that are specifically graded transversely and longitudinally to allow a deviation from the runway surface without significant damage to the aircraft and risk of injury to the pilot and passengers. Both longitudinal and transverse grades are defined by the FAA. The RSA should provide a suitable safety margin in case of over-shoots, underruns, and excursions adjacent to the runway. RSAs are required to be graded to minimum safe grades, be load-bearing under dry conditions, and be free of non-essential and non-frangible objects. The area should be capable of supporting snow removal equipment, emergency services, and passage of aircraft without causing major aircraft damage under dry conditions (FAA, 2022c).

The RSA for Runway 04/22 is 150 feet wide and extends 300 feet beyond each threshold. For runways with visibility greater than $\frac{3}{4}$ mile, the existing RSA dimensions meet the standards for the near-term and ultimate B-II critical aircraft but exceed those of the existing A-I Small critical aircraft, which only require an RSA width of 120 feet extending 240 feet beyond each threshold on runways with the same visibility minimums.

The graded portion of the Runway 04/22 RSA narrows to approximately 140 feet beyond each runway threshold. This condition will need to be corrected in order for the RSA to meet the requirements of the near-term and ultimate B-II critical aircraft.

The RSA for Runway 04S/22S is 120 feet wide and extends 240 feet beyond each runway end, which meets the requirements for an A-I Small visual runway.

Runway 04S/22S is partially within the RSA of Runway 04/22, and simultaneous operations are not allowed on these runways.

Runway Obstacle Free Zone

The OFZ of a runway is the volume of airspace located from the ground to 150 feet AGL, within prescribed dimensions that must remain free of non-essential objects, taxiing and parked aircraft, and other penetrations, except for frangible navigational aids, which have fixed locations by function.

The Runway OFZ for A-I (Small) aircraft on runways with visibility minimums greater than $\frac{3}{4}$ mile should be 250 feet wide and extend 200 feet beyond both ends of the runway. The existing OFZ for Runway 04/22 is 400 feet wide and extends 200 feet beyond each threshold, which exceeds the standards for the current critical aircraft but meets the requirements for the ultimate B-II critical aircraft for runways with visibility minimums greater than $\frac{3}{4}$ mile. The existing OFZ for Runway 04S/22S meets the requirements for A-I Small visual runways.

The OFZs for Runways 04/22 and 04S/22S appear to be clear of non-frangible objects.

Runway Protection Zone

The purpose of RPZ is to protect people and property on the ground from normal airport operations. FAA Grant Assurances require that airport sponsors seek all possible opportunities and take necessary action to restrict land use within RPZs to those compatible with such operations, such as takeoffs and landings. The FAA prefers that airport sponsors secure that right by owning the land inside the RPZ. When ownership of the land within the RPZ is not possible, an aviation easement or zoning restrictions are acceptable (FAA, 2022e).

The existing Runway 04/22 RPZs currently meet the design requirements for A-I Small and B-II runways with visibility minimums not less than $\frac{3}{4}$ -mile. Both of the Runway 04/22 RPZs have an inner width of 1,000 feet, an outer width of 1,510 feet, and a length of 1,700 feet. The current configuration of the Runway 04/22 RPZs aligns with the existing and ultimate critical aircraft.

Per the 2020 City Zoning Map (City, 2020a), multiple portions of the existing Runway 04/22 RPZs fall outside the existing airport boundary. Areas outside the airport boundary where the Runway 04 RPZ overlaps include approximately 28,770 square feet (~0.66 acres) of land within an un-zoned MSB subdivision and approximately 12,420 square feet (~0.30 acres) of land in a privately owned parcel within the City limits that is currently zoned for industrial use.

Areas outside the airport boundary where the Runway 22 RPZ overlaps include approximately 326,165 square feet (~7.50 acres) of the Alaska Railroad Corporation (ARRC) ROW, approximately 1,890 square feet (~0.04 acres) of the Parks Highway ROW, and approximately 27,285 square feet (~0.62 acres) of land within a MSB subdivision. Both areas of overlap with the ARRC and Parks Highway right of way (ROW) lie within City limits and are zoned for industrial and commercial use, respectively. All other portions of the existing Runway 04/22 RPZs lie within the airport boundary.

The existing RPZs for Runway 04S/22S meet the design requirements of A-I Small visual runways. Both of the Runway 04S/22S RPZs have an inner width of 250 feet, an outer width of 450 feet, and a length of 1,000 feet. The current configuration of the Runway 04S/22S RPZs aligns with the existing and ultimate critical aircraft.

The Runway 04S/22S RPZ areas lie within airport property with the exception of the northwest corner of the Runway 22S RPZ, where it overlaps approximately 885 square feet (approx. 0.02 acres) of the ARRC ROW.

More information on the ownership and usage of land within the RPZs can be found in Section 4.1 of this report. Appendix F includes a map detailing the existing RPZ configurations for both Runways 04/22 and Runway 04S/22S with respect to the adjacent land areas.

9.2.2 Heliport

As further detailed in HDL's Aviation Activity Forecast (HDL, 2023a), the number of helicopter operations at Wasilla Airport is projected to steadily increase during the forecast period. The majority of these operations are assumed to be performed by various leaseholder fleets.

Due to the increased helicopter traffic, further separation of rotor-wing and fixed-wing traffic and the establishment of a designated heliport is recommended. The heliport should provide an established location for helicopter transient and training operations, military and medevac helicopter operations, and allow for the development of designated helicopter approaches. Additionally, the development of a heliport able to safely accommodate military and medevac helicopters would allow the airport to serve a more crucial role in the community, as this location could serve as a designated pick-up/drop-off medevac location. Current leaseholders could continue to operate helicopters out of their existing lease lots, but future helicopter-oriented lease development should occur in the vicinity of the site selected for future heliport development.

9.2.3 Taxiways and Taxilanes

FAA AC 150/5300-13B Airport Design (FAA, 2022c) provides the standards for taxiways and taxilanes, which are dictated by the Taxiway Design Group (TDG). The TDG is determined by the most demanding aircraft regularly using the taxiway or taxilane, which can vary across the airfield. The TDG of an aircraft is determined by its undercarriage dimensions, specifically the aircraft's main gear width and the cockpit to main gear distance. Conversely, taxiway safety areas (TSAs) are determined by wingspan and are a function of the ADG of the taxiway's critical aircraft.

Taxiways

There are a total of five taxiways on the Wasilla Airport. Taxiway B parallels both runways and spans approximately 3,850 feet, terminating at Taxiway H (northeast end) and Taxiway F (southwest end). Taxiways A, D, and H are interlink taxiways connecting Taxiway B and Runway 04/22. Taxiways A and H serve as entrance/exit taxiways onto Runway 04 and Runway 22, respectively. Taxiway D connects at the midpoint of the Runway 04/22. Taxiways D and H also serve as entrance/exit taxiways onto Runway 04S and Runway 22S, respectively. Taxiway C connects to Taxiway B and extends northwest to Aviation Avenue, providing access to various lease lots between Aprons B and C.

The existing dimensions of each of the Wasilla Airport's taxiways and corresponding safety areas compared to the FAA dimensional requirements for TDG 2A and ADG II design groups, which apply to the airport's ultimate B-II critical aircraft, are summarized in Table 20.

Table 20: Taxiway Design Requirements

TAXIWAY DATA ²²								
Taxiway	Taxiway Width		Shoulder Width		TSA Width		Taxiway Object Free Area (TOFA) Width	
	Existing	TDG 2A Std.	Existing ²³	TDG 2D Std.	Existing ²³	ADG II Std.	Existing ²³	ADG II Std.
A	40	35	5	15	79	79	131	89
B	40	35	10	15	79	79	131	89
C	40	35	-	15	79	79	131	89
D	40	35	5	15	79	79	131	89
H	35	35	10	15	79	79	131	89

²² All dimensions given in feet.

²³ Existing shoulder, TSA, and TOFA dimensions sourced from Wasilla Airport 2020 ALP.

As shown in Table 20, the dimensions of all taxiways align with FAA design requirements for TDG 2A besides shoulder width. Near-term improvements should include widening existing shoulders to provide the standard shoulder width for taxiways throughout the airport.

Taxilanes

There are a total of eight taxilanes at the Wasilla Airport. Aprons A and B are accessible from Taxiway B via Taxilanes A and F. Aprons C, D, and E in the northeastern terminal area are accessible via Taxilanes D and E. The Hangar Apron in the southwestern terminal area is accessible via Taxilanes N, O, P, and

Q, with Taxilanes N and Q providing access to the northern and southernmost rows of hangars, respectively. Taxilane Q also provides sole access to the Hangar Apron tie-downs.

Existing Taxilanes A, D, F, N, O, P, and Q accommodate GA activity and were designed to serve the airport's existing A-I Small critical aircraft. Taxilanes intended for use by A-I Small aircraft must meet the requirements of design groups TDG 1A and ADG I. It is anticipated that the A-I Small aircraft will remain the critical aircraft for these taxilanes, and therefore, ultimate and near-term improvements to Taxilanes A, D, F, N, O, P, and Q should be designed to the standards of design groups TDG 1A and ADG I.

Existing Taxilane E and the forthcoming taxilane included in the Apron E expansion project were designed to accommodate aircraft of design groups TDG 3 and ADG III to better serve a wider range of aircraft sizes that are anticipated to accompany future commercial development on the northeastern lease lots. However, it should be noted that the tie-down layout of the existing Apron E and the Apron E expansion was designed for GA parking to meet the requirements of A-I Small aircraft.

The existing dimensions of each taxilane and corresponding safety areas compared to those required for the taxilane's ultimate critical aircraft are summarized in Table 21. The ultimate critical aircraft for Taxilanes A, D, F, N, O, P, and Q is the A-I Small, which requires facilities to accommodate TDG 1A and ADG I aircraft design groups. The ultimate critical aircraft for existing Taxilane E is the B-II which requires facilities to accommodate TDG 2A and ADG II aircraft design groups.

Table 21: Taxilane Design Requirements

TAXILANE DATA ²⁴						
Taxilane	Taxilane Width		Taxiway/Taxelane Safety Area Width (TSA)		Taxilane Object Free Area Width (TLOFA)	
	Existing	TDG 1A Std.	Existing ²⁵	ADG I Std.	Existing ²⁵	ADG I Std.
A	40	25	49	49	79	79
D	40	25	49 ²⁶	49	79	79
F	40	25	49	49	79	79
N	35	25	49	49	79	79
O	35	25	49	49	79	79
P	35	25	49	49	79	79
Q	35	25	49	49	79	79
	Existing	TDG 2A Std.	Existing	ADG II Std.	Existing	ADG II Std.
E²⁷	50	35	118	79	158	110

²⁴ All dimensions given in feet.

²⁵ Existing TSA and TLOFA dimensions sourced from Wasilla Airport 2020 ALP.

²⁶ TSA requirement not met at northernmost ~145 feet due to proximity of lease lot.

²⁷ Existing dimensions for Taxilane E and corresponding safety areas are based on TDG 3/ADG III design standards. Information sourced from Construct Apron E, Phase 1 (AIP No. 3-02-0417-021-2018) project documents.

Taxilanes A, D, F, O, and P meet TDG 1A requirements. Hangars along Taxilane N and wingtips of aircraft parked on the Hangar Apron next to Taxilane Q currently lie within the 79-foot wide TLOFA required for TDG 1A aircraft. Some hangars on the Hangar Apron are built to the edge of the TOFA. Therefore, planes and vehicles that park in front of the hangar doors can occasionally block traffic on

the taxilanes or require aircraft to maneuver around the parked obstacle. Future lease lot development should incorporate building setbacks from the TOFA to accommodate aircraft and vehicle parking and snow storage on the lease lots without encroaching onto the traveled taxilanes.

Taxiway E meets TDG 2 requirements and is designed to accommodate larger aircraft that travel through the GA Apron to reach the lease lots on the apron edge.

As the airport expands to meet the requirements of B-II aircraft, the City should expand apron capabilities to accommodate the current and forecasted fleet mix of small GA and larger commercial aircraft. The FAA allows separate areas of an airport to be designed to meet the needs of different aircraft sizes (FAA, 2022c). All facilities within each segregated area must meet the design criteria of the ADG intended to utilize the area. Facilities intended to be used by aircraft of a specific ADG that do not meet the required design standards for that ADG pose a safety risk and should, at minimum, be declared as sub-standard conditions on the ALP. Currently, Taxilanes N and Q do not provide adequate separation requirements for the current critical aircraft of A-I Small and should be noted as having sub-standard conditions.

Moving forward, the City should prioritize the development of new apron and lease areas to meet the demand and separate small GA parking and storage from large commercial operators.

9.3 Visual Aids and Navigation

9.3.1 Markings

Standards for airport marking requirements are provided in FAA AC 150/5340-18G *Standards for Airport Markings* (FAA, 2020a). Runway 04/22 is equipped with standard non-precision runway markings, which include threshold, designator, centerline, and aiming point markings. Markings on parallel Taxiway B, interlinking Taxiways A, D, and H, and all of the taxilanes and the aprons are also standard. Markings on Runway 04/22, the interlink Taxiways A, D, and H, and the Taxiway B centerline were all re-striped in 2023.

The airport includes a marked compass calibration pad located on the southwest corner of Apron A. The existing compass pad markings are not indicative of the current magnetic declination of the airport and, therefore, pose a risk to pilots using it for calibration. In 2023, the compass pad was recalibrated and moved roughly 20 feet inward on Apron A, but it has not yet been painted.

The airport should prioritize the removal of the existing compass pad markings in order to mitigate the risks associated with providing an incorrectly calibrated compass pad for pilot use. Other short-term improvements to the existing airport markings include striping of the new compass calibration pad; removal of the markings from the tie-down closest to the new compass calibration pad; and re-striping of all taxilane and apron markings, with the exception of those on Apron E, which are all extremely faded.

9.3.2 Signage

Standards for airport signage requirements are provided in FAA AC 150/5340-1M *Standards for Airport Sign Systems* (FAA, 2020b). All interlink taxiways (Taxiways A, D, and H) to Runway 04/22 are equipped with lighted destination signs of Size 1/Class 2. All lighted signs are situated in line with the hold position markings on each taxiway, with the exception of the lighted sign on Taxiway D, which is located approximately 20 feet on the airside of the current hold position, in line with the previous holding position markings.

Unlit signage includes:

- Signs on Taxiways A and D indicating the direction of transient parking in relation to each taxiway.
- Signs on Taxiways D and H (entrance/exit taxiways onto Runway 04S/22S) stating "NO SIMULTANEOUS OPERATIONS ON RWY 4-22 AND GRAVEL RWY 4S-22S."

All unlit signs are in line with the hold position markings on each taxiway, with the exception of the sign on Taxiway A, which is approximately 45 feet on the land side of the hold short markings.

All signs are installed on concrete footings and are standard in dimension. The current location of the lighted destination and unlit signs at each holding position meet the minimum separation distances for Size 1 signs, which is 10 to 20 feet from the nearest edge of the pavement to the nearest side of the sign (FAA, 2020b).

A review of the effectiveness of the existing hold short signs should be performed as the size of aircraft regularly using Runway 04/22 increases in the future. As the airport expands, increasing the size of destination signs to Size 2 may be necessary to provide better effectiveness, which would translate to increased separation distance requirements from the edge of the pavement.

Short-term signage improvements needed include moving the lighted destination sign on Taxiway D back in line with the hold short markings to ensure aircraft do not confuse the location of the holding position and removal of the non-standard threshold markers located at either end of Runway 04/22. Ultimate signage improvements should consider the addition of runway destination signs for Runway 04S/22S on Taxiways D and H and additional destination signage on parallel Taxiway B and the aprons to increase locational awareness for transient pilots.

9.3.3 Visual and Approach Aids

Runway 04/22

Runway 04/22 is delineated with MIRLs that are 24 inches tall. The current lighting system was installed in 1993 (HDL, 2023b) and has greatly exceeded its life expectancy; however, the system appears operational and is in fair condition. The airport should consider ultimately upgrading the lighting system.

REILs are not present at either end of the runway, as further described in the Airport Inventory Report (HDL, 2023b). The runway currently has threshold lights located on each side of both runway ends (four sets of three lights total) and non-frangible reflective threshold markers adjacent to each set of threshold lights (four total).

The use of threshold markers is non-standard for lighted runways. To align with current FAA safety standards, the threshold markers should be removed, and REILs should be installed in line with the runway threshold lights on Runways 04 and 22. REILs provide rapid identification of the runway ends, which is of particular importance for runways surrounded by other ground lighting sources, such as edge lighting (FAA, 2022c).

Runway 04S/22S Visual Aids

Runway 04S/22S is delineated with cones, and each threshold is equipped with three frangible reflective threshold markers located on each side of both runway ends (four sets of three markers total). The delineating cones should be replaced and offset from the runway centerline an additional 2 feet to align with FAA safety standards.

Taxiway Lighting

Taxiways are lighted with MITL that are 30 inches tall and appear to be in overall good condition. Recommended short-term improvements include re-grading the taxiway shoulders to cover light cans that have jacked out of the ground and performing repairs to damaged components, as is further detailed in the Airport Inventory Report (HDL, 2023a).

PAPI System

The FAA owns and maintains a four-box PAPI system located on the right-hand side of Runway 04. It appears to be appropriately sited and operating in good condition. Per FAA AC 150/5340-30J *Design and Installation Details for Airport Visual Aids* (FAA, 2018), PAPI systems are intended to be located on the left-hand side of the runway edge. The airport's current non-standard location for the PAPI is allowable as long as the inboard light housing is seen as red and the two outboard light housings are seen as white. Near-term and Ultimate configurations should consider installing a 4-box PAPI on the Runway 22 end.

Lighted Wind Cone and Segmented Circle

The lighted wind cone and 100-foot diameter segmented circle are located on the southeast side of Runway 04/22 at approximately midfield, with its current location bisected by the runway's OFA boundary. All components of the segmented circle appear to be in good condition, except that the orange paint on various components is failing. The non-standard right-hand traffic pattern for Runway 04 is designated by the segmented circles indicators. Orange barrels are currently used in the

segmented circle. Replacement of the drums with a panel-style segmented circle is recommended to shed accumulated snow better.

Supplemental Wind Cones

There are two unlighted supplemental wind cones at the airport. One supplemental wind cone is located beyond the northwest end of Runway 04 adjacent to the Hangar Apron tie-downs, and the second is located beyond the northeast end of Runway 22 near the airport boundary and adjacent to West Aviation Avenue. Both wind cones are clear of the OFA and OFZ of both runways in their current locations.

The preferred location for a supplemental wind cone is on the left side of the runway when viewed from a landing aircraft and 500 feet to 1,000 feet inward toward the runway midpoint from the runway end (FAA, 2018). The current location of the two supplemental wind cones will need to be re-evaluated based on any proposed future extension of Runway 04/22.

Rotating Beacon

The rotating beacon and pole are located on the southeast side of Runway 04 at approximately midfield near the FAA's weather station. The beacon is operational, and the foundation, pole, and light appear to be in fair condition. The gravel access trail to the AWOS and the rotating beacon are in good condition and easily traversable. The current location of the rotating beacon is considered suitable.

Airport Lighting Control

The airport's lighting control vault is located on the northeast corner of Aviation Avenue and Beacon Street. Though maintenance has stated that there are no operational issues with the lighting controls, the building is dilapidated and needs to be replaced. The City should prioritize the replacement of the building in the short term to avoid potential operational issues with the controls that could result from the building's current condition.

9.3.4 Weather Equipment

The current location of the airport's AWOS is not within 500 feet of any buildings, and discrepancies between reported and observed wind directions or speeds have not been recorded according to the available weather data. Trees within a 500-foot radius surrounding the AWOS pad have been recently cleared. However, substantial brush growth has begun to accumulate in the cleared area southeast of the AWOS pad. Lucille Creek and the surrounding floodplain are located directly south of the pad, and the entire area northeast of the pad lying within the airport boundary has remained free of obstruction and brush growth. It is recommended that tree and brush clearing be performed in all areas within 500 feet of the AWOS pad in order for the airport to maintain the FAA siting requirements for the AWOS wind sensors.

9.3.5 General Aviation Facilities

Aircraft Storage

The current GA apron space available for based aircraft is approximately 123,305 square yards (including taxilane areas) and spans six primary aprons: A, B, C, D, E, and the Hanger Apron (located in the southwest corner of the terminal apron area). The Apron E expansion, scheduled to be completed in 2024, will add roughly 25,030 square yards of GA apron space, making the 2024 total GA apron space approximately 148,335 square yards.

As of 2023, the current total amount of leasable GA tie-down spaces available is 155. Tie-downs within Aprons A, B, D, E, and the Hanger Apron are currently designed to meet the design criteria of A-I Small. Apron C is designed predominantly for A-I Small but offers six tie-down spaces that accommodate B-II aircraft, making a total of 149 small tie-downs and six large tie-downs currently available. The Apron E expansion will add 27 small tie-downs, making a total of 176 small tie-downs and six large tie-downs available by 2024.

All 155 of the existing leasable tie-down spaces are occupied, and there are currently 93 potential lessees on the tie-down waitlist (City, 2023d). Incorporating the 27 additional tie-downs included in the Apron E expansion scheduled to be completed in 2024 increases the total number of leasable tie-down spaces to 182 and reduces the waitlist to 66. This results in a total demand of 248 tie-downs in 2024. Using the base growth rates detailed in HDL's approved Aviation Activity Forecast (HDL, 2023a) for the 20-year planning horizon and using the 2024 demand of 248 tie-downs as the present total, 314 GA tie-down spaces at the Wasilla Airport will be required to meet the demand in 2040, eight of which are assumed to be used for large aircraft. However, with the anticipated growth of large aircraft activity at the airport, the need for large aircraft tie-downs is assumed to outpace the need for small aircraft tie-downs, and large aircraft tie-down demand is anticipated to increase to approximately 15 by 2040. This results in a total demand of 322 tie-downs by 2040, including 307 small aircraft tie-downs and 15 large aircraft tie-downs.

For aprons with taxilanes located on the edge of the apron, the FAA's apron space planning guide recommends 755 square yards and 1,075 square yards of apron space for ADG I and ADG II aircraft, respectively, which includes space for the adjacent taxilanes and clearance around the aircraft (FAA, 2022c). Using the 2024 tie-down total of 176 small tie-downs and six large tie-downs and the 2024 apron space available, and assuming that one large aircraft tie-down will utilize roughly 142% of the space used for one small aircraft tie-down, the airport's apron layout provides approximately 804 square yards of available apron space per small tie-down and approximately 1,140 square yards of available apron space per large tie-down.

When using the 2024 demand total of 242 small tie-downs and six large tie-downs and providing each with the FAA recommended areas, there is currently a demand for approximately 189,160 square yards of GA apron space at the Wasilla Airport or approximately 40,825 square yards more than what is currently available.

Using the forecasted projected growth and assuming that 15 of the 322 projected tie-downs will be reserved for larger aircraft such as gliders, there is an estimated need for 247,910 square yards of apron space by 2040. Meeting this demand would require the development of approximately 99,575 square yards of new apron area for tie-down use. To meet the current and forecasted demand for based aircraft, new apron development should plan to continue accommodating predominantly A-I Small GA aircraft with near-term and ultimate configurations, including space to accommodate at least nine additional large aircraft tie-downs.

The majority of potential lessees on the current tie-down waitlist would prefer tie-downs with access to power for head bolt heaters. A variety of other accommodations and improvements to the aprons were requested in interviews with airport tenants, including additional apron lighting, covered parking, and the development of City-owned T-hangars.

Transient Aircraft Parking Aprons

There is currently approximately 4,220 square yards of transient parking apron space located at the northwest end of Taxilane C, immediately northeast of the Apron B limits. The parking area features nine 24-foot by 20-foot tie-down spaces reserved for transient A-I Small aircraft. Guidance from FAA AC 150/5300-13B (FAA, 2022c) and the Airport Cooperative Research Program (ACRP) "Guidebook on General Aviation Facility Planning" (ACRP, 2014) identifies two methods to determine the need for transient apron space: (1) by number of based aircraft or (2) by number of annual operations. The based aircraft method was used to calculate the need for transient aircraft parking at the Wasilla Airport. This method considers multiple characteristics of the airport in addition to the number of based aircraft, such as the size of the airport, the airport's busiest month, and the percentage of itinerant operations at the airport. The Wasilla Airport was considered a small GA airport with an assumed 250 annual operations per based aircraft. Based on the current and assumed future configurations of the transient apron, the guidance recommends 755 square yards of apron space for each small GA transient tie-down, including space for taxilanes.

Considering the current 190 based aircraft, there is a current need for 10 tie-downs dedicated for transient use. Using the recommended 755 square yards of apron space for each A-I aircraft tie-down, this translates to a current need for approximately 7,000 square yards of transient apron area or 2,780 square yards more compared to what is currently available. Based on the forecasted 285 based aircraft, there is a forecasted need for 12 tie-downs dedicated to transient pilots by the year 2040. This would require approximately 8,680 square yards of available transient apron area or an expansion of approximately 4,460 square yards compared to what is currently available.

The City is currently exploring reconfiguration of the apron space adjacent to the current transient apron, which would include the addition of six transient tie-downs (City, 2023d); however, these plans have not yet been finalized and are not reflected in the calculations included in this report.

Terminal Facilities

The City owns a small Pilot's Lounge located on the south side of the transient apron. The building consists of an 8-foot by 20-foot trailer situated on concrete blocks with a portable bathroom and dumpster, both located adjacent to the building. The building is heated and lighted.

The Wasilla Airport does not have any other terminal facilities available. However, considering the rapid population growth of the Wasilla area and the increasing commercial interest in the airport, the City is considering developing a City-owned terminal building with office space for an onsite Airport Manager. The building will also include public restrooms and heated hangar space available for rent.

Users have strongly expressed a desire for a larger terminal facility. Future improvements should consider replacing the existing Pilot's Lounge and establishing an onsite terminal offering additional amenities to transient pilots with possible concession space available for vendors, air taxis, and air carriers.

9.4 Other Aircraft Facilities

9.4.1 Ski-Plane Facilities

Several of the small aircraft at the Wasilla Airport convert to ski operations during the winter months. Currently, these aircraft are based on various tie-downs and leases present throughout the airport. As a result, ski-equipped aircraft frequently need to taxi along plowed apron surfaces to access the runway. Future apron and taxiway improvements should be planned to designate a ski-aircraft apron with tie-down areas and an alternative taxiway to Runway 04S/22S that are not plowed, except where they cross Taxiway B, to better accommodate ski-equipped aircraft.

The airside demand capacity analysis included in the forecast concluded that a parallel runway is not justified based on demand, and Runway 04/22 has sufficient capacity to meet the current and forecasted demand for the airport. However, Runway 04/22 is paved, the snow is cleared regularly, and it cannot accommodate ski-equipped aircraft.

In March and April 2023, interviews were conducted to estimate the level of activity on gravel/ski Runway 04S/22S while the runway was snow-covered. Interviews with 11 pilots were conducted, and it was determined that each plane had an average of approximately 50 ski operations per year. The pilots also indicated that if they go through the trouble of changing from wheels to skis, they will ski fly as much as possible during the season.

A March 3, 2023, site visit identified 18 based aircraft equipped with skis. Applying the average of 50 annual ski operations for each of the 18 aircraft visually identified resulted in a total of 900 annual ski operations per year. This is a conservative number as it does not account for the number of ski-equipped aircraft stored in hangars and operations performed by transient users. This level of use by ski-equipped aircraft on Runway 04S/22S meets the AC 150/5000-17 definition of regular use (FAA, 2017). Ski-equipped A-I (utility) aircraft, such as the Cessna 180, are considered the critical aircraft for

Runway 04S/22S. Future airport improvements and expansions should continue to serve ski-equipped aircraft.

9.4.2 Glider Facilities

According to the Forecast, glider operations at the Wasilla Airport are not forecasted to increase considerably during the 20-year forecasted period. However, the airport should consider establishing level areas in the Runway 04/22 RSA, adjacent to the runway, that are suitable for emergency glider landings. The glider operators stated that this is an important safety concern because a glider is committed to landing on short final and needs a safe area to do so if the planned runway becomes unavailable. The infield area, in its current condition, contains multiple ditches and low spots that are not suitable for glider use.

Other improvements that will increase glider operational safety at the airport include the construction of “staging areas” off of the taxiways at either end of the runway for glider preparation.

9.4.3 Seaplane Facilities

As discussed in Section 4.4.4, the 2017 MSB RASP Phase II stated that there was an unmet demand for a SPB in the southern portion of the MSB (MSB, 2017b). The study evaluated the Wasilla Airport as a possible candidate for future development of a SPB. The Wasilla Airport was favored at the time of the study due to the adjacent airspace availability, land ownership conditions, accessibility, and availability of utilities, and it had the capacity to meet the minimum and ultimate site size requirements. Overall, the airport was ranked number six out of the top 10 possible locations for an MSB-wide SPB. The facility ranked lower due to the lack of nearby accessible waterways that would require development (the study determined that Jacobsen Lake, for instance, would require a control tower), the high number of adjacent wetlands, and the high number of possible environmental impacts. The report identified factors that could affect airspace compatibility, including a future precision approach at the Wasilla Airport. Ultimately, the study identified Sevenmile Lake as the final site.

Airport users expressed a desire for the development of seaplane facilities during the last update to the airport’s master plan (USKH, 2012); however, only a small number of the stakeholders interviewed for this Master Plan Update voiced the desire to establish a SPB at the airport. Due the limited expressed interest and the potential airspace conflicts and land and environmental impacts associated with seaplane base construction, implementation of a SPB at the Wasilla Airport is not recommended. Instead, seaplane facilities in the MSB should be implemented in accordance with the recommendations of the RASP.

9.5 Landside Facilities

9.5.1 Lease Lots

There are 26 existing lease lots platted at the airport. There are 13 lease lots in the area of Taxilanes N, O, P, and Q adjacent to Taxilane F. There are 11 lease lots located between Apron B and Apron C, north of Taxiway B. Aprons C and D have one lease lot each on the northern side of the respective apron. All lease lots are currently under lease, with the exception of the future lease lot area that will be completed in 2024 with the Apron E expansion project.

Wasilla's standard airport leases include language that requires leaseholders to develop the lease property within 2 years of acquiring the lease, or the lease is forfeited and returned to the City. Presently, all occupied lease lots are developed, with three leaseholders (Soloy Helicopters, Silver Sky Aviation, and one private leaseholder) currently planning further development.

The City regularly receives inquiries about lease availability for GA and commercial use. The City indicated that they have received a total of 68 separate inquiries for lease spaces at that airport since 2015, four of which were for potential Part 135 operations (City, 2023d). Conservatively assuming that only 50% of these inquiries would result in new lease lot development if space was currently available, there is an estimated current unmet demand of approximately 34 additional lease lots.

If the ratio of based aircraft to occupied lease lots remains steady and assuming that based aircraft increases to 285 by the year 2040 as projected, there will be a total demand of approximately 81 lease lots. To meet this future demand, approximately 54 additional lease lots will be required to accommodate the growth following the completion of the Apron E expansion. Based on these considerations, a minimum of 54 lease lots should be planned to meet the current and forecasted demand for hangar development.

The size of the existing lease lots varies greatly at the Wasilla Airport, with the smallest lots measuring about 14,400 square feet and the largest lot measuring roughly 1.4 acres. The City has stated that they prefer two configurations for future commercial or large GA (T-hangar) lease lots: 200 feet long by 225 feet wide or 150 feet long by 400 feet wide. These lease dimensions would provide a 50-foot building set back from the taxilane or apron with roughly 150 feet by 225 feet or 100 feet by 400 feet of buildable space, respectively (City, 2023d). The preferred future single GA lease lot size is 150 feet long by 125 feet wide, which would provide a 50-foot building set back from taxilanes or apron edge with roughly 125 feet by 100 feet of buildable space (City, 2023d). When using the preferred dimensions and assuming that 70% of the future lease lots will accommodate single GA operations (assume 38 additional lots total) and 30% accommodating large GA (T-hangar) or commercial use (assume 16 additional lots total), approximately 33 to 39 acres of new lease lot space is anticipated to be required to meet the forecasted demand.

Based on the growing commercial demand and feedback from airport users, future improvements at the airport should make an effort to separate commercial activity and GA activity by establishing a

designated commercial apron. New apron development should include the construction of a large aircraft apron adjacent to future commercial lots. Segregating aircraft of different sizes will provide an overall safer environment for airport users by allowing future development of the terminal areas to be designed to meet the specific needs of each design group.

There is airport land available north and south of the airport for the development of new GA and aviation lease areas. The near-term and ultimate improvement should consider alternatives that efficiently utilize this land to separate the GA and commercial uses and meet the current and forecast demand for lease space.

9.5.2 Access Roads

The existing airport access roadways meet the current demands of the airport, with the only exceptions being poor ease of access for pedestrian and bicycle traffic due to the lack of nearby trails and pathways along Aviation Avenue. Airport users have expressed a need for future airport development to include the construction of pathways around the airport perimeter to eliminate pedestrian traffic on-field. Alternatives that consider expanding the runway and acquiring additional airport property to the west should also include consideration for further extension of Aviation Avenue. The road extension would need to be located outside of the future Runway 04/22 RSA and constructed at a height such that a 15-foot object would not present an obstruction to the approach.

9.5.3 Parking

Leaseholders have reported that vehicle parking is adequate on existing lease lots for lease lot businesses and activities, with the exception of vehicles parked in front of the hangars on the Hangar Apron, which have the potential to encroach on Taxiways N, O, P, and Q. Additionally, there are 30 vehicle parking spaces adjacent to the transient tie-downs, including two handicap spaces. The spaces are inside the security fencing and interfere with the three westernmost tie-down spaces. These vehicle spaces overlap the tie-downs such that the planes and vehicles are unable to use these spaces concurrently. Users have expressed a desire to establish designated public vehicle parking areas outside of the fence line at each apron.

A corresponding increase in available vehicle parking should be considered with future tie-down apron development projects. The ACRP recommends that one parking space be provided for every other tie-down space (ACRP, 2014). The City should consider the addition of at least 39 vehicle parking spots adjacent to the western side of the terminal area to support the vehicle parking needs of the Hangar Apron and Aprons A and B and at least 52 vehicle parking spots adjacent to the eastern side of the terminal area to support the parking needs of existing Aprons C, D, and E and the forthcoming Apron E expansion.

The 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design states that parking facilities with one to 25 parking spaces must provide at least one handicap-accessible space, and parking facilities with 51 to 75 parking spaces must provide at least three handicap-accessible spaces

(DOJ, 2010). ADA standards further state that for every fraction of six handicap-accessible spaces required per parking facility, at least one shall be a van-accessible handicap space (DOJ, 2010). This translates to a minimum of three handicap-accessible parking spaces provided for the eastern terminal area parking, one of which is van-accessible, and at least two handicap-accessible spaces provided for the western terminal area parking, one of which is van-accessible.

The City has explored possible reconfiguration of the transient apron, which would add an additional 20 long-term vehicle parking spaces in the area and 12 long-term specialty parking spaces that could accommodate longer vehicles or truck and trailer combinations (City, 2023d); however, these plans have not yet been finalized and are not reflected in the calculations included in this report.

9.5.4 Building and Land Use Requirements

Land Use within Runway Protection Zones

To enhance the protection of people and property on the land adjacent to the airport, FAA Grant Assurances require that airport sponsors seek all possible opportunities and take necessary action to restrict land use within RPZs to those compatible with normal airport operations. Ideally, airport sponsors secure land via fee simple acquisition to fulfill this requirement.

As is further detailed in Section 3.2.2 of this report, the current configuration of the Runway 04/22 RPZs is designed to the standards of A-I Small and B-II aircraft with greater than $\frac{3}{4}$ -mile visibility minimums. Runway 04S/22S RPZs are designed to the standards of A-I Small aircraft for visual runways. Appendix F contains a map of the RPZ limits for each runway with respect to the adjacent land and zoning districts, according to the City's 2020 Zoning Map (City, 2020a) and MSB parcel data (MSB, 2023c). Land within the airport's RPZ areas that fall outside the existing airport boundary are further described below.

Existing Land Use within the Runway 04/22 RPZs

Approximately 0.30 acres of land along the southeast edge of the Runway 04 RPZ lies outside the airport boundary and within the City limits. The lot is currently zoned for industrial use and is privately owned. Approximately 0.66 acres of land in the northwest corner of the Runway 04 RPZ lies outside the City limits and overlaps two lots within the MSB Saska's Meadows subdivision. The City currently has avigation and hazard easements for this area (Tract 3 Parcels D and E) acquired through AIP No. 03-02-0417-01 (HDL, 2020).

Roughly 1,620 feet of the Alaska Railroad bisects the Runway 22 RPZ perpendicular to the runway centerline, and the Runway 22 RPZ overlaps approximately 7.50 acres of the ARRC ROW. The northwest corner of the Runway 22 RPZ overlaps approximately 0.04 acres of the Parks Highway ROW. Both of them lie within City limits and are currently zoned for industrial and commercial use, respectively. There are approximately 0.63 acres on the northwest edge of the Runway 22 RPZ that fall outside the City limits and overlap one lot within the MSB McCallister subdivision. The City currently has avigation and

hazard easements established for the ARRC ROW (Tract 4 Parcel B) and the MSB McCallister subdivision lot (Tract 4 Parcel D), which were acquired through AIP No. 03-02-0417-01 (HDL, 2020).

Existing Land Use within the Runway 04S/22S RPZs

All portions of the Runway 04S/22S RPZs lie within the airport boundary except for the northwest corner of the Runway 22S RPZ, which overlaps approximately 0.02 acres of the ARRC ROW. This area of the ARRC ROW falls within the City limits and is currently zoned for industrial use. This portion of overlap is also within the existing aviation and hazard easement area (Tract 4 Parcel B) that the City has established with ARRC (HDL, 2020).

Other Land Adjacent to the Airport Boundary

Land immediately north of the airport boundary and north of Jacobsen Lake lies outside City limits and consists of un-zoned MSB subdivisions. Land to the immediate northeast of the airport boundary, including the Parks Highway ROW, lies within City limits and is zoned for commercial use. Land northwest of the airport boundary and along the northwest edge of Jacobsen Lake also lies within the City limits and is zoned for commercial use.

The majority of land to the immediate west, south, and southeast of the airport boundary lies outside the City limits, with areas to the west and south consisting mainly of un-zoned MSB subdivisions and un-zoned and undeveloped private land beyond the subdivisions. Land to the south of the airport boundary includes a large privately owned lot within the City limits currently zoned for industrial use. This lot is flanked to the south and east by the City's boundary line, with the surrounding land area consisting of undeveloped and unzoned private MSB parcels.

Land east of the airport boundary lies within the City limits. Privately owned undeveloped land currently zoned for industrial use borders the eastern edge of the airport boundary, with one City-owned parcel located just beyond the private land. The Curtis D. Menard Memorial Sports Center is located on this City-owned parcel, and the land is currently zoned for industrial use. This parcel is also listed for potential airport expansion according to MSB parcel data (MSB, 2023c).

City of Wasilla zoning is shown in Figure 11, and land ownership surrounding the airport boundary is shown in Figure 10.

Short and Near-Term Land Use Recommendations

The MSB subdivision lots where the Runway 04/22 RPZs overlap are currently occupied, according to MSB parcel data. It is unlikely that the City will be able to ultimately acquire ownership of these lots or the land within the ARRC and Parks Highway ROWs via fee simple acquisition. As such, it is recommended that the City prioritize maintaining sufficient interest in these areas through the previously established aviation easements with the MSB subdivision lots and ARRC and acquiring an aviation easement for the small portion of the RPZ within the Parks Highway ROW. In the short-term,

the City should also prioritize establishing an aviation easement with the privately owned industrial-zoned lot within a small portion of the Runway 04 RPZ, with the ultimate and near-term goal of acquiring ownership of that land via fee simple acquisition.

It is recommended that the City formally incorporate the undeveloped City-owned parcel located on the west side of the airport boundary limits and zone the parcel for industrial use. As the Wasilla Airport and adjacent communities continue to expand, the development of a noise exposure map and noise compatibility program should be considered by the City.

9.6 Airport Security/Access

9.6.1 Security Fencing and Gates

The Wasilla Airport is surrounded by approximately 15,800 linear feet of 8-foot-tall chain link fence topped with barbed wire. There are 16 perimeter gates located throughout the fence line. A detailed inventory of the gates and locations can be found in HDL's Inventory Report (HDL, 2023b).

Airport access is generally uncontrolled during the daytime hours. Aprons are accessible via Gate D (automated gate), located at the northeast corner of Apron B, which remains open during business hours. Airport users have expressed the desire for additional gates to remain open during business hours to relieve congestion at Gate C. All gates are closed after normal business hours. Airport leaseholders and those with tie-downs have key cards for access control after normal business hours.

Approximately 5,000 linear feet of the perimeter fencing along the southern side of the airport boundary have begun to heave out of the ground, allowing access to animals. Various points are also vulnerable to snow drift accumulation in the winter, allowing moose to enter into the airport boundary.

Airport users expressed a desire for improved after-hours access to the aprons by upgrading the existing security gate controls for better usability. Other users suggested leaving certain security gates open at all times.

Some commercial leaseholders requested additional security measures be implemented to deter theft and vandalism. They also suggested that a security system be installed for use only by commercial leaseholders be installed with the anticipated influx of commercial development.

The City should upgrade the security and gate system to keep pace with future airport expansion and, as needed, to support commercial development.

9.7 Airport Services and Support Facilities

9.7.1 Aircraft Fueling

Crowley Fuels Alaska operates a lease lot on the Wasilla Airport, which provides an unattended self-serve fueling station for 100LL and Jet A-50 fuel. The fueling station is located adjacent to the southwest corner of Taxiway C, next to Apron B. The existing fuel service is reported to be in good

working condition, and the fuel provided is approved for the forecasted demand; however, airport users expressed the need for more efficient fuel services by way of an additional fueling station on the northwest side of the airport or a mobile refueling service to avoid taxiing to the current fuel pump.

9.7.2 Utilities

Utilities currently offered at the airport include electrical power, natural gas, and telecommunication. A City waterline extension installed along West Aviation Avenue terminates on the northeastern side of the airport just before Gate A. Further information on the utilities located on and adjacent to Wasilla Airport and the utility as-builts can be found in HDL's Inventory Report (HDL, 2023b).

Weatherproof outlets for tie-down users are available on the Hangar Apron and Aprons C and E and will also be available on the tie-downs included in the expansion of Apron E, which is anticipated to be constructed by 2024.

Individual lease lots are currently able to obtain underground natural gas, electrical, and telecommunication service extensions from the existing underground utility networks within or adjacent to the airport boundary. However, Airforms, LLC is the only lease lot currently able to access City water through the recently installed waterline extension. The majority of other lease lots obtain fresh water and dispose of wastewater via private wells and septic systems within the airport boundary.

The City's existing sanitary sewer system extends to the Curtis D. Menard Memorial Sports Center, according to the South Mack Drive Water and Sewer Extension Project as-builts (USKH, 2004), which is the last known sewer system extension project in the area. The water and sewer utilities map currently provided on the City's website indicates that there is a proposed sewer main connection from the existing facilities near the Menard Sports Center adjacent to the Clapp Street-Aviation Avenue intersection that would extend northwest along West Aviation Avenue, terminating at Beacon Street (City, 2020b).

Presently, the development costs and overall maintenance and acquisition burden required to obtain water and sewer capabilities at lease lots on the airport is considerable as these services are only accessible to leaseholders by means of private development. The City should consider extending City water and sewer service along Aviation Avenue towards the southwest terminal area within the next planning period. Providing these utilities will advance growth at the airport by creating a more attractive environment for potential private and commercial development.

9.7.3 Snow Removal

Airport snow removal on the paved surfaces and unpaved safety areas is performed by the City. During the winter months, the City dedicates one full-time Operator to airport snow management and provides additional support when the roadway snow management team is available. Removal and storage of snow accumulated on lease lots is the responsibility of the lease tenants. The airport has an

SREB located just north of the airport on the east side of Beacon Street. The current snow removal equipment fleet is assumed to meet the current demand at the airport.

Snow removal at the airport is performed by priority. First priority areas include both runways, Taxiway B, and the interlink Taxiways A, D, and H. The northwestern and southeastern terminal areas are considered the second and third priority areas, respectively. Snow removed from first priority zones is stored in the infield areas south of the main runway. Snow removed from the northwestern terminal area is stored at the northern limits of Apron E, and the southern limits of Aprons C and D. Snow removed from the southeastern terminal area is stored at the southern limits of Aprons A and B and the western and southern limits of the Hangar Apron. Maintenance staff manage the height of snow piles with snow blowers throughout the winter. Future airport developments should designate additional snow storage areas on the east and west of the airport to avoid the need to truck snow for disposal.

Maintenance staff report that snow management becomes increasingly more troublesome towards the end of winter as snow storage areas reach capacity. Airport users have complained about delayed snow removal on taxilanes and taxiways and have reported that snow accumulation occasionally blocks aircraft access. Often, leaseholders clear snow from their lease lots onto adjacent taxilanes. This creates an additional burden for maintenance staff and occasionally results in blocked taxilanes. Ordinance 13.20.220 B. of the Wasilla Municipal Code states that lessees are responsible for providing sufficient area within their property lines for snow storage (City, 2023e). In order to reduce the potential for snow from lease areas to block the airport's landside traveled ways, it is recommended that the City issue frequent notifications to leaseholders stating that removal and storage of snow accumulated on lease lots is the responsibility of the leaseholder. The City should inform leaseholders that pushing snow from lease lots onto the taxilanes, taxiways, and aprons is hazardous and delays airport-wide snow removal. This snow may not be removed by Airport Maintenance if the area was previously cleared, which will result in blocked travelways. Additionally, the City should frequently communicate the order of snow removal priority to airport users and leaseholders so they understand that snow removal on taxilanes and GA aprons will not be addressed until the runway and main taxiways are cleared and usable.

The City should consider the importance of both increased snow storage and more frequent snow management in future development alternatives due to the forecasted increases in based aircraft and lease activity and a larger ultimate aircraft. The development of additional dedicated snow storage space should be a priority as the airport continues to expand to meet the current and future demand.

9.7.4 Airport Maintenance

General airport maintenance at the Wasilla Airport is based out of the SREB, located north of the airport on Beacon Street. Maintenance is performed by two City personnel shared with the Roads Department. A full-time maintenance person is dedicated to the airport in the winter to facilitate snow removal. The maintenance personnel plow and maintain the paved surfaces and unpaved safety areas and perform

routine maintenance on airport property. Maintenance vehicles and equipment currently located at the airport include:

- John Deere 930M Z-trac mower
- Case 821E loader
- Oshkosh snow blower
- Case 380 skid steer
- Ford F-350, two snow plow attachments
- Diamond brush cutter attachment
- Schulte brush cutter
- Metal Pless plow attachment
- ATV trailer
- Polaris Ranger
- Airfield lighting bench tester
- Greer 1,000-gallon fuel tank
- Two runway closure markers

Though the SREB facility provides adequate for housing all of the current airport maintenance and snow removal equipment (SRE) in addition to acting as an office space, maintenance staff report that the sewer line to the building freezes every winter, and a project is needed to repair the sewer connection.

Airport users have expressed the need for more timely maintenance of airport facilities and surfaces, such as snow removal in the winter and maintenance of grassed areas in the summer. Airport users have also expressed the need for better storage of non-aviation equipment in order to reduce the potential for damage to aircraft on the aprons.

As the airport continues to expand, the City should plan to ultimately provide year-round, full-time staff to address and manage the airport's day-to-day maintenance and operational needs. A full-time airport manager and maintenance personnel will improve the City's response time to operational or functionality problems related to the airport facilities, such as lighting outages and snow removal. This will translate to increased efficiency, reliability, and higher operational and safety standards for the airport, which will be necessary with the growing demand.

9.7.5 Fire and Rescue

The Wasilla Airport lies within the MSB fire service area #130 (MSB, 2023c). Fire and rescue services are currently provided by the MSB Central Fire Department based out of Central Mat-Su Fire Department Station 62 and West Lakes Fire Department Station 81. As the airport continues to grow and accommodate larger aircraft, the City should begin discussions with the MSB to establish onsite Aircraft Rescue and Firefighting (ARFF) capabilities. The Wasilla Airport currently does not have any based air carriers and is not Part 139 certificated. As the airport attracts air carriers, it may eventually become Part 139 certificated. Part 139 certificated airports are required to have an ARFF facility on site with

specialized fire retardants and equipment, per Title 14 Part 139.317 (Title 14 CFR Part 139, 2004). The MSB owns one ARFF vehicle that was reportedly obtained from Joint Base Elmendorf-Richardson. However, fire and rescue personnel are not trained on the ARFF vehicle, and it is not currently used.

A Part 139 certificated airport is indexed by the length of the longest air carrier aircraft operating at the airport and the average daily departures of that aircraft. Assuming that the Beech 1800D will be the aircraft predominantly used for air carrier operations within the 20-year planning period, the Wasilla Airport would be grouped within Index A for air carrier aircraft operating at the airport less than 90 feet in length. If longer aircraft are used for air carrier operations, average daily operations must not exceed five, or the magnitude of the airport's ARFF capabilities must increase to the index of which the longer aircraft is grouped.

One ARFF vehicle is needed for Index A Part 139 certificated airports. The vehicle needs a minimum capacity of 500 pounds of sodium-based dry chemical, halon 1211, or clean agent, or 450 pounds of potassium-based dry chemical and water with a commensurate quantity of Aqueous Film Forming Foam (AFFF) to total 100 gallons for simultaneous dry chemical and AFFF application (Title 14 CFR Part 139, 2004).

The City and the MSB should develop a plan to expand the MSB's Fire and Rescue service at the airport to match the airport's anticipated growth. This plan should include specialized airfield training for first responders, acquisition and training of ARFF equipment, and decisions pertaining to the need for onsite fire and rescue facilities at the airport prior to, and if and when, the airport becomes Part 139 certificated.

9.8 Summary of Facility Requirements

The Wasilla Airport serves a burgeoning population and currently plays a crucial role in the community. The airport is anticipated to become increasingly more vital as the MSB expands. For these reasons, key topics of this planning process are centered on improvements that will facilitate future expansion of the airport, with particular emphasis on commercial development, expansion for larger aircraft, and enhancing safety and operational standards.

During interviews with airport users, recurring requests included improvements to landside amenities and the need for full-time airport staff. Providing a full-time operational staff for the airport in the near term is strongly encouraged and will be critical as the airport expands. The City should also prioritize addressing present safety risks associated with existing facilities and fostering a culture of safety amongst pilots to ensure that the Wasilla Airport continues to offer a safe environment for airport users and maintains eligibility for future airport improvements through the FAA's AIP.

REFERENCES

- 14 CFR Part 77. 2010. Title 14, Chapter I, Subchapter E, Part 77—Safe, Efficient Use, And Preservation Of The Navigable Airspace. eCFR.gov.
- 14 CFR Part 139. 2004. Title 14, Chapter I, Subchapter G, Part 139 – Certification of Airports. <https://www.ecfr.gov>
- ACRP. 2014. ACRP Report 113: Guidebook on General Aviation Facility Planning. Published 9/11/2014.
- ADEC. 2023a. Division of Air Quality Air Non-Point & Mobile Sources. Accessed November 16, 2023. <https://dec.alaska.gov/air/anpms/>.
- . 2023b. Alaska DEC Contaminated Sites. Accessed November 8, 2023. <https://www.arcgis.com/apps/mapviewer/index.html?webmap=315240bfbaf84aa0b8272ad1cef3cad3>.
- . 2023c. Integrated Water Quality Monitoring and Assessment Report. Accessed November 7, 2023. <https://dec.alaska.gov/water/water-quality/integrated-report/>.
- ADF&G. 2023a. Threatened, Endangered, and Diversity Program. Accessed November 7, 2023. <https://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.main>.
- . 2023b. Anadromous Waters Catalog. Accessed November 6, 2023. <https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=main.interactive>.
- . 2023c. Refuges, Sanctuaries, Critical Habitat Areas & Wildlife Ranges. Accessed November 6, 2023. <https://www.adfg.alaska.gov/index.cfm?adfg=conservationareas.locator>.
- AirNav. 2023. Wasilla Airport. Retrieved from Airnav.com. <https://www.airnav.com/airport/PAWS>
- ADNR. 2023a. Division of Parks & Outdoor Recreation. Accessed November 6, 2023. <https://dnr.alaska.gov/parks/index.htm>.
- . 2023b. Alaska Mapper. Accessed November 6, 2023. <https://mapper.dnr.alaska.gov/map#map=4/-16632245.12/8816587.34/0>.
- AHFC. 2022. Unrestricted Rental Costs and Vacancy Rates 2022. <https://dnr.alaska.gov/ag/akpmc/pdf/RevegManual.pdf>
- AKEPIC. 2023. Alaska Exotic Plants Information Clearing House. Accessed November 7, 2023. <https://accs.uaa.alaska.edu/invasive-species/non-native-plants/>.
- Alaska Plant Materials Center 2008. A Revegetation Manual For Alaska <https://dnr.alaska.gov/ag/akpmc/pdf/RevegManual.pdf>
- BTS. 2023. Bureau of Transportation Statistics. <https://www.transtats.bts.gov/DataIndex.asp>. Accessed on January 2023.

- Callis, Robert. 2022. Chief, Financial and Market Characteristics Branch, Social, Economic, and Housing Statistics Division, U.S. Census Bureau. E-mail communication with Northern Economics, Inc. December 12, 2022.
- City of Wasilla. 1994. Resolution No. WR94-76. December 12, 1994.
- . 2005. Resolution Serial No. 05-05. February 14, 2005.
- . 2011. City of Wasilla Comprehensive Plan. <https://www.cityofwasilla.gov/home/showpublisheddocument/4714/635079287572000000>. Accessed November 30, 2023.
- . 2012. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2012. <https://www.cityofwasilla.gov/home/showpublisheddocument/6316/635088968291900000>. Accessed October 9, 2023.
- . 2013. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2013. <https://www.cityofwasilla.gov/home/showpublisheddocument/9029/635259140586870000>. Accessed October 9, 2023.
- . 2014. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2014. <https://www.cityofwasilla.gov/home/showpublisheddocument/10420/635586630828470000>. Accessed October 9, 2023.
- . 2015. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2015. https://www.cityofwasilla.gov/?splash=http%3a%2f%2fwww.cityofwasilla.com/%2fhome%2fshowdocument%3fid%3d12506&__isexternal=true. Accessed October 9, 2023.
- . 2016a. Resolution Serial No. 16-03. March 21, 2016.
- . 2016b. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016. <https://www.cityofwasilla.gov/home/showpublisheddocument/14430/636184423731030000>. Accessed October 9, 2023.
- . 2017. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2017. <https://www.cityofwasilla.gov/home/showpublisheddocument/18444/636491940175830000>. Accessed October 9, 2023.
- . 2018. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2018. <https://www.cityofwasilla.gov/home/showpublisheddocument/21526/636796913213800000>. Accessed October 9, 2023.
- . 2019. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2019. https://www.cityofwasilla.gov/?splash=https%3a%2f%2fwww.cityofwasilla.com/%2fhome%2fshowdocument%3fid%3d22494&__isexternal=true. Accessed October 9, 2023.
- . 2020. 2020 City of Wasilla Zoning Map.

- . 2021a. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2020. <https://www.cityofwasilla.gov/home/showpublisheddocument/23719/637486317455130000>. Accessed October 9, 2023.
 - . 2021b. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2021. <https://www.cityofwasilla.gov/home/showpublisheddocument/24391/637755879338270000>. Accessed October 9, 2023.
 - . 2023a. Wasilla Municipal Code Title 16. Code Publishing Company
 - . 2023b. City of Wasilla Airport Revenue Expense Summary, received as printed summary. May 26, 2023.
 - . 2023c. E-mail communication from Deputy Director of Public Works. December 1, 2023.
 - . 2023d. Robert Walden, Deputy Director of Public Works, City of Wasilla. Personal Communications Regarding Most Recent Aircraft Tie-Down Waitlist, Lease Lot Information, Informal Plans for future Transient Apron Reconfiguration, and Snow Removal Plan for the Wasilla Airport.
 - . 2023e. Wasilla Municipal Code Title 13. Code Publishing Company.
 - . 2023f. City of Wasilla -- Zoning Districts - Draft vers. 1. <https://cowak.maps.arcgis.com/apps/webappviewer/index.html?id=3ae01b1851754304ac7c61e830b77042>. Accessed January 29, 2024.
- DCRA, 2022. Community Story Maps. Accessed November 8, 2023. <https://dcra-cdo-dcced.opendata.arcgis.com/>
- DOJ. 2010. 2010 ADA Standards for Accessible Design. Published 9/15/2010. <https://www.ada.gov/law-and-regs/design-standards/2010-stds/>
- DOT&PF. 2011. Alaska Aviation System Plan Forecasts. https://www.alaskaasp.com/admin/Docs/AASP%20Forecast%20Report%2006%2013_2011R.pdf
- . 2020. Wasilla Airport Alaska Airport Pavement Inspection Report. https://dot.alaska.gov/edocs/api/document/index.cfm?key=92E6FA070B762B3ECF9CA064DCF74DD4&docid=DOT-ANC_120759.
- . 2023. Alaska Aviation System Plan Site 50870.3*A. Retrieved 2023. https://internal.alaskaasp.com/Facilities/Default.aspx?tab=general&id=188&siteid=50870.3*A.

- . 2024. Alaska Aviation Database, Wasilla: API Grants. https://internal.alaskaasp.com/Facilities/Default.aspx?tab=grants&id=188&siteid=50870.3*A. December 14, 2022.
- DOLWD. 2019a. Quarterly Census of Employment and Wages (QCEW), 2015. <https://live.laborstats.alaska.gov/qcew/annual.xls>. Accessed December 7, 2022.
- . 2019b. Quarterly Census of Employment and Wages (QCEW), 2016. <https://live.laborstats.alaska.gov/qcew/ee16.xlsx>. Accessed December 7, 2022.
- . 2020a. Quarterly Census of Employment and Wages (QCEW), 2017. <https://live.laborstats.alaska.gov/qcew/ee17.xlsx>. Accessed December 7, 2022.
- . 2020b. Quarterly Census of Employment and Wages (QCEW), 2018. <https://live.laborstats.alaska.gov/sites/default/files/2021-09/2018.xlsx>. Accessed December 7, 2022.
- . 2021a. GIS Data, 2020 Census Shapefiles. Accessed December 6, 2022.
- . 2021b. Quarterly Census of Employment and Wages (QCEW), 2019. https://live.laborstats.alaska.gov/sites/default/files/2021-09/2019_0.xlsx. Accessed December 7, 2022.
- . 2021c. Quarterly Census of Employment and Wages (QCEW), 2020. <https://live.laborstats.alaska.gov/sites/default/files/2022-11/2020.xlsx>. Accessed December 7, 2022.
- . 2022a. Alaska Population Estimates by Borough, Census Area, City, and Census Designated Place (CDP). Accessed December 6, 2022.
- . 2022b. Alaska Population Projections 2021 to 2050. <https://live.laborstats.alaska.gov/pop/projections/data/BCAProjections.xls>. Accessed December 6, 2022.
- . 2022c. Alaska Labor Force Data, Not Seasonally Adjusted. <https://live.laborstats.alaska.gov/labforce/csv/AKlaborforce.csv>. Accessed December 7, 2022.
- . 2022d. Quarterly Census of Employment and Wages (QCEW), 2021. <https://live.laborstats.alaska.gov/sites/default/files/2022-11/2021%20Excel%20File.xlsx>. Accessed December 7, 2022.
- . 2023. Alaska Population Estimates by Borough, Census Area, City, and Census Designated Place. Accessed November 9, 2023.
- EPA. 2023. EJScreen Environmental Justice Screening and Mapping Tool (Version 2.2). Accessed November 8, 2023. <https://ejscreen.epa.gov/mapper/>.
- FAA. 2005. Advisory Circular 150/5325-4B Runway Length Requirements for Airport Design. https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5325-4B.pdf

- . 2006. Order 5050.4B. NEPA Implementing Instructions for Airport Projects. Accessed November 3, 2023. https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentid/14836
- . 2007. Environmental Desk Reference for Airport Actions. Accessed November 3, 2023. https://www.faa.gov/airports/environmental/environmental_desk_ref.
- . 2015a. Order 1050.1F. Environmental Impacts: Policies and Procedures. Accessed November 3, 2023. https://www.faa.gov/documentlibrary/media/order/faa_order_1050_1f.pdf.
- . 2015b. Advisory Circular 150/5070-6B Change 2 Airport Master Plans. https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5070-6B_with_chg_1&2.pdf
- . 2017. Advisory Circular 150/5000-17 Critical Aircraft and Regular Use Determination. https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_500017.pdf
- . 2018. Advisory Circular 150/5340-30J. Design and Installation Details for Airport Visual Aids.
- . 2019. FAA Order 5100.38D Change 1 Airport Improvement Program Handbook. Published 2/26/2019. https://www.faa.gov/airports/aip/aip_handbook/media/AIP-Handbook-Order-5100-38D-Chg1.pdf.
- . 2020a. Advisory Circular 150/5340-1M Standards for Airport Markings (Consolidated to include Change 1). https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5340-1M-Chg-1-Airport-Markings.pdf
- . 2020b. Advisory Circular 150/5340-18G Standards for Airport Sign Systems (Consolidated to include Change 1) https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5340-18G-Chg-1-Airport-Signs.pdf
- . 2021. United States 2021 Aviation Climate Action Plan. Accessed November 3, 2023. https://www.faa.gov/sites/faa.gov/files/2021-11/Aviation_Climate_Action_Plan.pdf.
- . 2022a. National Plan of Integrated Airport Systems (2023-2027). Washington. D.C.: The Secretary of Transportation.
- . 2022b. Sectional Chart: VFR Raster Charts. Retrieved from FAA Airtraffic: https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/vfr/.
- . 2022c. Advisory Circular 150/5300-13B. Airport Design. https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5300-13B-Airport-Design.pdf.
- . 2022d. Airport Master Record, Form 5010 for Wasilla Airport. <https://adip.faa.gov/agis/portal/#/airportData/TYS>. Accessed October, 2022.

- . 2022e. Advisory Circular 150/5190-4B Airport Land Use Compatibility Planning https://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5190_4b_Land_Use_Compatibility.pdf.
- . 2023a. FAA Order 8260.3F United States Standard for Terminal Instrument Procedures (TERPS) https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/1042118
- . 2023b. Chart Supplemental Alaska.
- . 2023c. Airport Activity Survey with Form 1800-31. https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/activity_survey/. Accessed February, 2023.
- . 2023d. Passenger Boarding (Enplanement) and All-Cargo Data for U.S. Airports (ACIAS). https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger. Accessed January, 2023.
- . 2023e. Traffic Flow Management System Counts (TFMSC). <https://aspm.faa.gov/tfms/sys/main.asp>. Accessed January, 2023.
- . 2023f. FAA Order 8260.19J Flight Procedures and Airspace. https://www.faa.gov/documentLibrary/media/Order/Order_826019J.pdf
- FEMA. 2023. FEMA Flood Map Service Center. Accessed November 7, 2023. <https://msc.fema.gov/portal/search?AddressQuery=Wasilla#searchresultsanchor>.
- Fried, Neal and David Howell. 2020. Economist and Demographer, Alaska Department of Labor and Workforce Development (DOLWD). Personal Communication with Northern Economics, Inc. September 3, 2020.
- Gracz. 2013. Cook Inlet Wetlands. Accessed November 3, 2023. <https://www.kenaiwatershed.org/science-in-action/past-projects/cook-inlet-wetlands/>.
- GRA. 2001a. Model for Estimating General Aviation Operations at Non-towered Airports Using Towered and Non-towered Airport Data.
- . 2001b. Forecasting Aviation Activity by Airport.
- HDL. 2020. Wasilla Airport As-Built ALP. HDL. 2020. Wasilla Airport As-Built Airport Layout Plan.
- . 2023a. Wasilla Airport Master Plan Update Aviation Forecast.
- . 2023b Wasilla Airport Master Plan Update Inventory Report.
- Matanuska-Susitna Borough (MSB). 2008a. Matanuska-Susitna Borough Regional Aviation System Plan. <https://matsugov.us/docs/plans/14341/rasp.pdf>. Accessed December 6, 2023.

- . 2008b. Jacobson Lake Lake Management Plan. <https://matsugov.us/docs/general/21346/Jacobsen-Lake-Management-Plan.pdf>.
- . 2017a. 2035 Matanuska-Susitna Borough Long Range Transportation Plan 2035. <https://matsugov.us/docs/general/13985/Combined-Document.pdf>. Accessed December 8, 2022.
- . 2017b. Matanuska-Susitna Regional Aviation System Plan Study, Phase II. <https://matsugov.us/docs/general/14341/20170531d61440raspfinal-report.pdf>. Accessed November 30, 2023.
- . 2023a. MSB Code Title 8. Code Publishing Company.
- . 2023b. Infrastructure Public Facilities Viewer. Accessed November 8, 2023. <https://data1-msb.opendata.arcgis.com/datasets/MSB::infrastructure-public-facilities/explore?location=61.570294%2C-149.510877%2C14.27>
- . 2023c. Wetland Viewer. Accessed November 3, 2023. <https://msb.maps.arcgis.com/apps/webappviewer/index.html?id=15658472427f459ab6d73b1d3ca5ab77>.
- . 2023d. Matanuska-Susitna Borough Parcel Viewer. Accessed December, 2023. https://mapping.matsugov.us/Html5Viewer/index.html?viewer=MSB_Parcel_Viewer
- McKinley Research Group, LLC. 2023. Wasilla Comprehensive Economic Development Strategy. <https://www.cityofwasilla.gov/home/showpublisheddocument/25300/638237250345670000>. Accessed July 10, 2023.
- Meadow Lakes Community Council Planning Team. 2005. Meadow Lakes Comprehensive Plan. <https://matsugov.us/docs/general/14144/meadow-lakes-comp-plan.pdf>
- NOAA. 2023. xmACIS2 Data Inquiry Tool. Accessed December, 2023. <https://xmacis.rcc-acis.org/>
- Northern Economics, 2023. Wasilla Airport Master Plan Update: Socioeconomic Evaluation.
- NPS. 2023a. Alaska. Accessed November 3, 2023. <https://www.nps.gov/state/ak/index.htm>.
- . 2023b. Interactive Map of NPS Wild and Scenic Rivers. <https://nps.maps.arcgis.com/apps/View/index.html?appid=ff42a57d0aae43c49a88daee0e353142>
- The Trust for Public Land. 2023. The Land and Water Conservation Fund Map Viewer. Accessed November 8, 2023. <https://lwcf.tplgis.org/mappast/>.
- USACE. 2023. Navigable Waters. Accessed November 3, 2023. <https://www.poa.usace.army.mil/Portals/34/docs/regulatory/NavWat.pdf>.

- USACE & EPA. 2015. Clean Water Rule: Definition of "Waters of the United States." Accessed November 8, 2023. <https://www.govinfo.gov/content/pkg/FR-2015-06-29/pdf/2015-13435.pdf>.
- U.S. Bureau of Labor Statistics (BLS). 2023. Consumer Price Index for All Urban Consumers: All Items in Urban Alaska (CBSA) (CUUSA427SA0)
- USCB. 2022. 2020 American Community Survey 5-year estimates. Accessed December 7, 2022.
- US Climate Data. 2023. U.S Climate Data: Climate Wasilla – Alaska. Accessed November 3, 2023. <https://www.usclimatedata.com/climate/wasilla/alaska/united-states/usak0264>.
- U.S. DOT. 2007. T-100 Traffic Reporting Guide. <https://www.bts.gov/sites/bts.dot.gov/files/docs/explore-topics-and-geography/topics/airlines-and-airports/219466/t100-guide-april-2007.pdf>. Accessed January, 2023.
- USFS. 2023. Welcome to the Alaska Region! Accessed November 8, 2023. <https://www.fs.usda.gov/r10>.
- USFWS. 2023a. Information for Planning and Conservation (IPaC). Accessed November 3, 2023. <https://ipac.ecosphere.fws.gov/location/index>.
- . 2023b. Alaska Migratory Birds Office; Eagles & Raptors. Accessed November 3, 2023. <https://www.fws.gov/office/alaska-migratory-birds/eagles-and-raptors>.
- . 2022c. Planning Ahead to Protect Nesting Birds. Accessed November 6, 2023. <https://www.fws.gov/alaska-bird-nesting-season>.
- . 2023d. National Wildlife Refuge System. Accessed November 8, 2023. <https://www.fws.gov/our-facilities?type=%5B%22National%20Wildlife%20Refuge%22%5D>.
- . 2023e. National Wetland Inventory. Accessed November 3, 2023. <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>.
- USKH. 2004. City of Wasilla South Mack Drive Water and Sewer Extension Project As-Built. Wasilla, Alaska, USA: City of Wasilla.
- . 2012. Wasilla Airport Master Plan Update 2013.
- Van Diest, Marty. 2022. Personal communication with Northern Economics, Inc. December 15, 2022.

Appendix A

Wasilla Airport Inventory Report

Wasilla Airport Master Plan Update Inventory Report

for

Project No. AIP 3-02-0417-026-2022



Prepared for:

City of Wasilla
209 E. Herning Avenue
Wasilla, Alaska 99654

Prepared by:

HDL Engineering Consultants, LLC
202 W. Elmwood Ave.
Palmer, AK 99645
Phone: 907.746.5230



June 6, 2023

TABLE OF CONTENTS

1.0 INTRODUCTION	2
1.1 Airport Management	3
1.2 Airport Management	3
1.3 Airport Classification	4
2.0 BACKGROUND AND HISTORY	5
3.0 INVENTORY AND DESCRIPTION OF EXISTING FACILITIES	6
3.1 Airport Inspection.....	6
3.2 Airspace.....	6
3.2.1 Airspace Surfaces.....	7
3.2.2 Obstructions.....	7
3.2.3 Traffic Patterns.....	9
3.2.4 Instrument Approach and Departure Procedures	10
3.3 Airside Facilities.....	13
3.3.1 Runway	13
3.3.2 Runway	16
3.3.3 Runway Protection Zones	17
3.3.4 Runway Object Free Areas and Obstacle Free Zone.....	17
3.3.5 Navigational Aids	18
3.3.6 Visual and Approach Aids.....	18
3.3.7 Signage.....	19
3.3.8 Taxiways	19
3.3.9 Aprons	20
3.3.10 Lease Lots and Tie Downs	20
3.3.11 Aircraft Fueling.....	21
3.3.12 Weather Equipment.....	21
3.3.13 Hangars.....	21
3.3.14 Pilot's Lounge.....	21
3.4 Landside Facilities.....	22
3.4.1 Airport Access.....	22
3.4.2 Lighting Control Vault	22
3.4.3 Security Fencing and Gates	22
3.4.4 Snow Removal Equipment Building.....	23
3.4.5 Utilities.....	23
4.0 REFERENCES.....	25

FIGURES

Figure 1: Wasilla Airport Existing Conditions	3
Figure 2: Wasilla Airspace Sectional Chart (FAA 2022b)	6
Figure 3: Runway 04 Approach	11
Figure 4: Runway 22 Approach	12
Figure 5: Runway 04/22	15
Figure 6: Runway 04S/22S	16
Figure 7: Runway 04/22 RSA	17

TABLES

Table 1: AIP Grants Accepted for the Wasilla Airport	5
Table 2: Existing Part 77 and 150/5300-13B Surfaces	7
Table 3: Existing Runway Conditions	13
Table 4: Existing Apron Conditions	20

APPENDICES

Appendix A	SITE VISIT NOTES
Appendix B	UTILITY AS-BUILTS

ABBREVIATIONS

AAC.....	Aircraft Approach Category
AC.....	Advisory Circular
ADG.....	Airplane Design Group
AGL.....	Above Ground Level
AIP.....	Airport Improvement Program
ALP.....	Airport Layout Plan
AMP.....	Airport Master Plan
APV.....	Approach with Vertical Guidance
ATCT.....	Air Traffic Control Tower
AWOS.....	Automated Weather Observation System
CFR.....	Code of Federal Regulations
CTAF.....	Common Traffic Advisory Frequency
DOT&PF.....	Alaska Department of Transportation & Public Facilities
FAA.....	Federal Aviation Administration
FO.....	Fiber Optic Cable
GA.....	General Aviation
GPS.....	Global Positioning System
HDL.....	HDL Engineering Consultants, LLC
IFP.....	Instrument Flight Procedures
IFR.....	Instrument Flight Rules
IYS.....	FAA Airport Identifier for Wasilla Airport
M&O.....	Maintenance & Operations
MIRL.....	Medium Intensity Runway Edge Lighting
MITL.....	Medium Intensity Taxiway Edge Lighting
NPI.....	Non-Precision Instrument
OFA.....	Object Free Area
OFZ.....	Obstacle Free Zone
PAPI.....	Precision Approach Path Indicator
PCI.....	Pavement Condition Index
RDC.....	Runway Design Code
REIL.....	Runway End Identifier Lights
RPZ.....	Runway Protection Zone
RSA.....	Runway Safety Area
RVR.....	Runway Visual Range
SREB.....	Snow Removal Equipment Building
STOL.....	Short Takeoff and Landing
TERPS.....	Terminal Instrument Procedures
TLOFA.....	Taxilane Object Free Area
TSA.....	Taxiway Safety Area
VFR.....	Visual Flight Rules

The preparation of this document as supported in part with financial assistance through the Airport Improvement Program from the Federal Aviation Administration (AIP Grant Number 3-02-0417-026-2022) as provided under Title 49 USC Section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein, nor does it indicate that the proposed development is environmentally acceptable in accordance with the appropriate public laws.

1.0 INTRODUCTION

Wasilla Airport (Federal Aviation Administration identifier: IYS) is owned and operated by the City of Wasilla. The airport is a general aviation (GA) airport located in southcentral Alaska, approximately 30 miles north of Anchorage. The airport serves a regional role for the City of Wasilla, as well as the surrounding communities of Meadow Lakes, Knik-Fairview, Big Lake, Houston, and Willow and was constructed by the Alaska Department of Transportation and Public Facilities (DOT&PF) in 1992 with funding from the Federal Aviation Administration (FAA). Commercial operations on the field include flight instruction, aircraft maintenance, fuel sales, charter, and guide services for hunting and fishing. Operations also include ultra-light aircraft, and glider aircraft.

An Airport Master Plan (AMP) is the sponsor's strategy for long-term development of the airport. The most recent AMP for the Wasilla Airport was completed in 2012 (USKH 2012). Since completion of the AMP, private development at the airport has continued with construction of GA aprons, and individual and multiple unit hangars, reducing the developable land available for lease. The FAA requires airport sponsors to maintain and operate facilities safely, efficiently, and in accordance with specified conditions (FAA 2019).

The City of Wasilla has contracted HDL Engineering Consultants, LLC (HDL) to update the AMP with current aviation activity forecasting, update the Airport Layout Plan (ALP) to current design standards, and conduct an aeronautical survey.

An inventory of existing facilities and a determination of critical aircraft are necessary to determine if current facilities are able to accommodate forecasted activity at an airport. The comparison of the current facility capacities to the forecasted aviation activity provides the basis and recommended timeline for necessary airport improvements. This information will be presented in the updated AMP and ALP.

This Facilities Inventory Report documents existing airport facilities, visual aids, nav aids, and airspace, and relevant features of the community and the airport environment and contains the following:

- A review of the airport classification and facility design criteria standards, including the runway design code (RDC)
- Airport airspace
- Runways: including pavement condition, runway edge and pavement markings, signage, runway safety areas (RSA), obstacle free zones (OFZ), object free areas (OFA), and runway protection zones (RPZ)
- Taxiways: including pavement condition, taxiway edge and pavement markings, taxiway safety areas (TSA), and taxiway OFA
- Aprons: including pavement condition and tie-down information
- Airfield electrical system for visual aids: including airfield lighting, Runway 04 Precision Approach Path Indicator (PAPI), wind cone, airport beacon, apron lighting, and weather station
- Landside facilities: including perimeter fence, access gates, access roads, and snow removal equipment building (SREB)

An inventory of existing facilities and a determination of critical aircraft are necessary to determine if the existing airport facilities are able to accommodate forecasted aviation activity at an airport. An onsite inspection at Wasilla Airport was conducted by HDL on October 21, 2022, to inventory and

assess the condition of existing airport facilities. Findings from the onsite inspection are detailed in Section 3.0 and in Appendix A.

1.1 Airport Management

The airport is owned and operated by the City of Wasilla. The airport is managed by the Public Works Director and does not have an onsite Airport Manager or full-time maintenance staff. Leasing of lease lots and tie-downs is managed by Public Works and billing is managed by the Finance Department.

1.2 Airport Maintenance

Maintenance at the Wasilla Airport is provided by the City of Wasilla with two personnel split with the Roads Department. The SREB is located just north of the airport on Beacon Street. This facility is used to store and maintain maintenance and snow removal equipment. The maintenance personnel plow and maintain the paved surfaces and unpaved safety areas and perform routine maintenance on airport property. Maintenance vehicles and equipment currently located at the airport include; John Deere 930M Z-trac mower, Case 821E loader, Oshkosh snow blower, Case 380 skid steer, Ford F-350, two snow plow attachments, Diamond brush cutter attachment, Schulte brush cutter, Metal Pless plow attachment, atv trailer, Polaris Ranger, airfield lighting bench tester, Greer 1,000-gallon fuel tank, and two runway closure markers.

Figure 1 provides an overview of the airport identifying runways, taxiways, taxilanes, aprons, and the location of the facilities covered in this inventory.

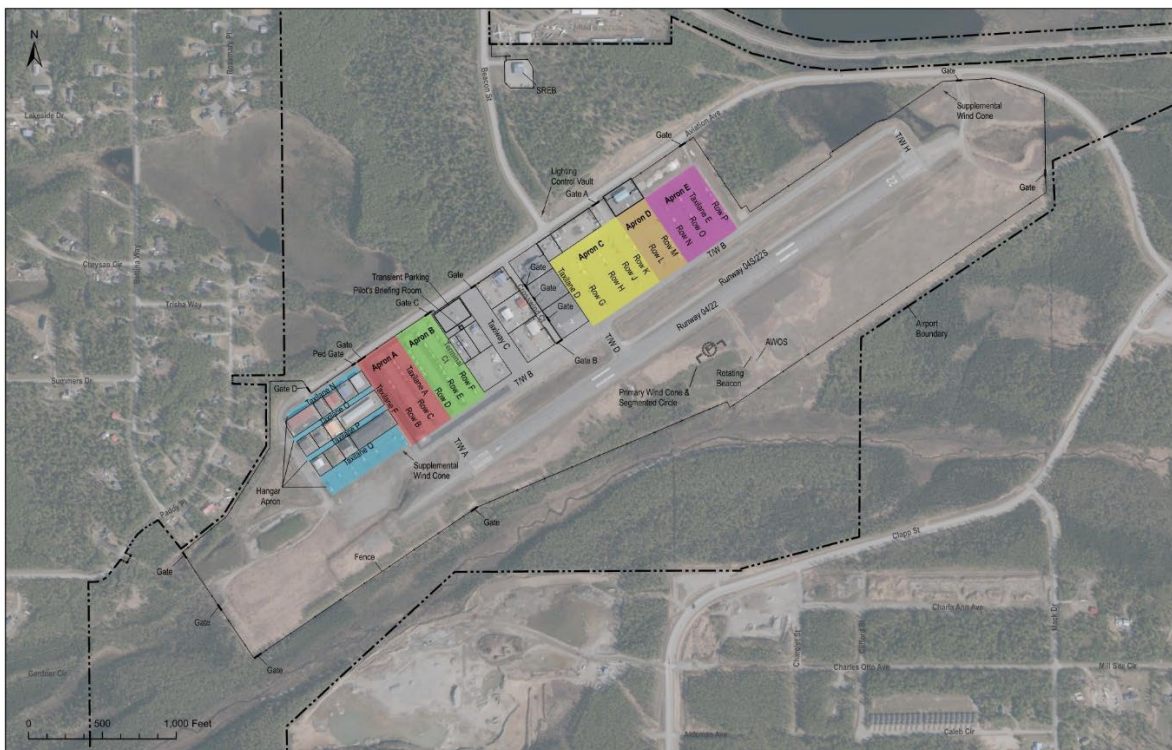


Figure 1: Wasilla Airport Existing Conditions

1.3 Airport Classification

The airport is classified as a non-primary, local general aviation airport by the FAA (FAA 2022a). Per the 2020 ALP, the RDC for Runway 04/22 at the Wasilla Airport is B-II-4000, meaning the main runway is designed to serve aircraft with an Aircraft Approach Category (AAC) of B (based on approach speed), an Airplane Design Group (ADG) of II (based on wingspan and tail heights), and a Runway Visual Range (RVR) of 4,000 (based on $\frac{3}{4}$ mile approach minimums).

Per the 2020 ALP, the RDC for Runway 04S/22S at the Wasilla Airport is A-I-Vis, meaning the runway is designed to serve aircraft with an AAC of A (based on approach speed), an ADG of I (based on wingspan and tail heights), and a visual approach with $\frac{3}{4}$ mile approach minimums.

2.0 BACKGROUND AND HISTORY

The main runway, at the Wasilla Airport was originally constructed by the DOT&PF in 1992 using FAA funding. Table 1 includes a list of FAA AIP grants for airport improvements at the Wasilla Airport since the initiation of the Airport Improvement Program in 1982. airport is classified as a non-primary, local general aviation airport by the FAA (FAA 2022a). Per the 2020 ALP, the RDC for Runway 04/22 at the Wasilla Airport is B-II-4000, meaning the main runway is designed to serve aircraft with an Aircraft Approach Category (AAC) of B (based on approach speed), an Airplane Design Group (ADG) of II (based on wingspan and tail heights), and a Runway Visual Range (RVR) of 4,000 (based on ¾ mile approach minimums).

Table 1: AIP Grants Accepted for the Wasilla Airport

Federal Fiscal Year	Grant Number	Project Description	Total Cost
2021	3-02-0417-024-2021	Seal Runway and Taxiway Pavement Surface/Pavement Joints	\$374,904
2020	3-02-0417-023-2020	CARES Act Funds	\$0
2019	3-02-0417-022-2019	Install Perimeter Fencing Not Required by 49 CFR 1542 Replace Gate and Gate Control, Install Fiber Optic Control System.	\$362,110
2018	3-02-0417-021-2018	Expand Apron Expand East Apron Apron E: 18 Public Use Tie-Downs	\$3,871,038
2014	3-02-0417-020-2014	Acquire Safety and/or Security Equipment	\$564,005
2011	3-02-0417-019-2011	Conduct Environmental Study Environmental Phase 1	\$189,420
2011	3-02-0417-018-2011	Construct Apron Construction, Apron D (Phase 2)	\$1,173,734
2011	3-02-0417-017-2011	Acquire Snow Removal Equipment Acquire SRE	\$779,832
2010	3-02-0417-016-2010	Construct Apron Construction, Apron D (Phase 1)	\$1,016,148
2009	3-02-0417-015-2009	Conduct Aeronautical Survey for WAAS Approach Airport Survey and Update Airport Master Plan Study	\$474,709
2008	3-02-0417-014-2008	Expand Snow Removal Equipment Building Expand SREB and Install Perimeter Fencing	\$1,340,495
2007	3-02-0417-013-2007	Construct Taxiway	\$1,060,330
2006	3-02-0417-012-2006	Construct Runway 03/21 and Phase 1 Apron Construction	\$4,048,990
2005	3-02-0417-011-2005	Construct Apron (Design)	\$287,440
2004	3-02-0417-010-2004	Expand Apron	\$1,996,879
2003	3-02-0417-009-2003	Construct Apron (Design) Phase 1	\$199,999
2002	3-02-0417-008-2002	Install Perimeter Fencing	\$264,264
2001	3-02-0417-007-2001	Conduct Airport Master Plan Study	\$407,072
1999	3-02-0417-006-1999	Construct Runway 3-21 and Install Perimeter Fencing	\$1,037,323
1998	3-02-0417-005-1998	Construct Runway 03-21	\$102,772
1992	3-02-0417-004-1992	Improve Snow Removal Equipment Building and Acquire Snow Removal Equipment	\$499,450
1991	3-02-0417-003-1991	Noise Mitigation Measures for Public Buildings within 75 DNL	\$925,850
1990	3-02-0417-002-1990	Construct Runway 3/21, Taxiway, Apron, Install Runway Lighting, and Improve Access Road	\$3,801,685
1988	3-02-0417-001-1988	Acquire Land for Development	\$2,056,280

Chart source: Alaska Aviation System Plan

https://internal.alaskaasp.com/Facilities/Default.aspx?tab=grants&id=188&siteid=50870.3*A (DOT&PF 2022)

Minor airport improvements such as surface preservation, striping, equipment acquisition, and pavement marking have also occurred throughout the history of the airport. The airport was constructed to replace a sub-standard gravel airstrip located in downtown Wasilla. Ownership of the airport was transferred to the City of Wasilla upon completion of construction.

3.0 INVENTORY AND DESCRIPTION OF EXISTING FACILITIES

3.1 Airport Inspection

HDL conducted an onsite inspection of Wasilla Airport on October 21, 2022. Two follow-up site visits and coordination with City of Wasilla airport maintenance personnel occurred on November 9 and 10, 2022. During the inspection, HDL interviewed the City of Wasilla Roads and Airports Maintenance Supervisor, Keith Jones, to gain a better understanding of the operations and maintenance of the airfield. Additional interviews were conducted with tie-down holders, hangar associations, existing airport users, and based and nonbiased commercial operators.

3.2 Airspace

The airspace at Wasilla Airport is classified as Class E uncontrolled airspace starting at 700 feet above ground level (AGL) and laterally abuts 1,200 feet or higher Class E airspace. Class G uncontrolled airspace is present below the Class E airspace from ground level to 700 feet. Class A controlled airspace is present above 18,000 feet mean sea level. The Wasilla airspace abuts airspace for the Palmer and Big Lake airports, which share also designated as Class E uncontrolled airspace. The Birchwood airport operates to the south of Wasilla and is classified as Class G uncontrolled airspace.



Figure 2: Wasilla Airspace Sectional Chart (FAA 2022b)

3.2.1 Airspace Surfaces

The airspace for an airport is regulated by the FAA with regard to airport airspace (Title 14 Code of Federal Regulations [CFR] Part 77, 2010), threshold siting (FAA, 2022.c), and terminal instrument procedures (FAA, 2018a). These regulations establish imaginary airspace surfaces and standards for determining obstructions to air navigation. The geometry and slopes of imaginary surfaces are governed by the airport category (Utility or Other than Utility), the type of instrument approach procedures planned, and visibility minimums. Utility runways are intended for use by aircraft with a gross weight of less than 12,500 pounds (14 CFR Part 77, 2010). The term “utility” is used in this document to refer to both the aircraft and the runway. Table 2 summarizes existing airspace surfaces for the airport.

3.2.2 Obstructions

Title 14 CFR Part 77 provides the guidance for identifying obstructions to air navigations consisting of the primary, approach, transitional, horizontal and conical surfaces. United States Standard for Terminal Instrument Procedures (TERPS) provides the standardized methods for designing and evaluating instrument flight procedures (IFPs) by specifying the minimum measure of obstacle clearance to provide a satisfactory level of vertical protection from obstructions to IFR procedures and establishes the standard takeoff and landing minimums for instrument runways. Runway approach and departure surfaces as described in AC 150/5300-13B outline the criteria for evaluating runways serving only visual operations and provides basic planning surfaces for instrument runways to protect select TERPS surfaces.

Airspace obstructions identified during the 2011 aeronautical survey as reflected in the 2020 ALP are noted below:

Runway 04/22: The ALP denotes eight instances where trees penetrate the horizontal surface from approximately 8,651 feet prior to the threshold of Runway 04 to approximately 7,649 feet beyond the threshold of Runway 22, of which the greatest penetration is 52 feet.

The 34:1 approach surface to Runway 04 is penetrated approximately 17 feet by trees located 5,417 feet prior to the threshold and 532 feet right of the runway centerline. There are three groups of trees on the north side of Runway 22 that penetrate the 34:1 approach surface by as much as 10 feet. The Railroad located just beyond the end of Runway 22 does not penetrate the approach surface by itself; however any object traveling on the tracks would penetrate the 34:1 approach surface by the full height of the vehicle/railcar.

There are several groups of trees on the north side of the runway that penetrate the transitional surface of Runway 04/22 by as much as 14 feet. The transitional surface on the southern side of Runway 04/22 has two reported penetrations. The wind cone penetrates the transitions surface by 17 feet along with trees located south of the Runway 22 with a maximum penetration of 29 feet.

Table 2: Existing Part 77 and 150/5300-13B Surfaces

	RUNWAY 04	RUNWAY 22	RUNWAY 04S	RUNWAY 22S
	(NPI¹)	(NPI¹)	(Visual, Small/Utility²)	(Visual, Small/Utility²)

Primary Surface (Part 77)	1,000' wide ³ centered on runway to 200' off runway end	1,000' wide ³ centered on runway to 200' off runway end	250' wide centered on runway to 200' off runway end	250' wide centered on runway to 200' off runway end
Approach Surface (Part 77)	10,000' outward and upward at 34:1 from Primary Surface width: 1,000' ³ – 4,000' ⁵	10,000' outward and upward at 34:1 from Primary Surface width: 1,000' ³ – 4,000' ⁵	5,000' outward and upward at 20:1 from Primary Surface ⁴ width: 250' – 1,250'	5,000' outward and upward at 20:1 from Primary Surface ⁴ width: 250' – 1,250'
Approach Surface (AC 150/5300-13B) Surface 2			2,250' outward and upward at 20:1 from inner width of 250' at runway threshold to width of 700'; 2,750' outward and upward at 20:1 maintaining 700' width width: 250' – 700'	2,250' outward and upward at 20:1 from inner width of 250' at runway threshold to width of 700'; 2,750' outward and upward at 20:1 maintaining 700' width width: 250' – 700'
Approach Surface (AC 150/5300-13B) Surface 5	10,000' outward and upward at 20:1 from inner width of 400' at Primary Surface to outer width of 3,400' width: 400' – 3,400'	10,000' outward and upward at 20:1 from inner width of 400' at Primary Surface to outer width of 3,400' width: 400' – 3,400'		
Approach Surface (AC 150/5300-13B) Surface 6	10,200' outward and upward at 30:1 from inner width of 275' at threshold to outer width of 1,520' width: 275' – 1,520'	10,200' outward and upward at 30:1 from inner width of 275' at threshold to outer width of 1,520' width: 275' – 1,520'		
Transitional Surface (Part 77)	7:1 from Primary and Approach Surfaces	7:1 from Primary and Approach Surfaces	7:1 from Primary and Approach Surfaces	7:1 from Primary and Approach Surfaces
Horizontal Surface (Part 77)	10,000' arc, 150' above airport elevation	10,000' arc, 150' above airport elevation	5,000' arc, 150' above airport elevation ⁶	5,000' arc, 150' above airport elevation ⁶
Conical Surface (Part 77)	4,000' at 20:1 outward and upward from horizontal surface	4,000' at 20:1 outward and upward from horizontal surface	4,000' at 20:1 outward and upward from horizontal surface ⁶	4,000' at 20:1 outward and upward from horizontal surface ⁶

Departure Surface (AC 150/5300-13B)	Section 1: 12,152' outward and upward at 40:1 from inner width of 75' to outer width of 6,587' Section 2: Extends from each runway edge, laterally to a point 500' from runway centerline and 150' above threshold elevation. Surface follows Section 1 at a 40:1 slope until leveling out at an elevation of 304'. Outer width is 7,512'	Section 1: 12,152' outward and upward at 40:1 from inner width of 75' to outer width of 6,587' Section 2: Extends from each runway edge, laterally to a point 500' from runway centerline and 150' above threshold elevation. Surface follows Section 1 at a 40:1 slope until leveling out at an elevation of 304'. Outer width is 7,512'	N/A⁷	N/A⁷
--	---	---	------------------------	------------------------

¹ Non-precision instrument (NPI) runway applies to runways with an approved instrument approach procedure.

² Small/Utility runways are intended for use by aircraft less than 12,500 pounds gross weight.

³ Width of the Primary Surface and the inner edge of the Approach Surface need to be updated on the ALP.

⁴ Part 77 Approach Surface for Runway 04S/22S not shown on the ALP.

⁵ Width of outer edge of the Part 77 Approach Surface needs to be updated on the ALP.

⁶ Not shown on the 2020 ALP. ALP needs to be updated.

⁷ Runway departure threshold siting applies to runways used for instrument operations. Runway 04S/22S has no published procedures.

3.2.3 Traffic Patterns

Air traffic at the airport is not controlled by an Air Traffic Control Tower (ATCT). Pilots voluntarily report their position on a common traffic advisory frequency (CTAF) of 122.8 megahertz (AirNav, 2022). Runway 22 has standard left-hand traffic (aircraft turns to the left) pattern and Runway 04 has a non-standard right-hand traffic (aircraft turns to the right) pattern. FAA's Air Traffic Division mandated the non-standard traffic pattern on the south side of the runway during negotiations with DOT&PF during the original location study to de-conflict airspace with Jacobsen Lake and other pre-existing private airstrips near the airport.

At uncontrolled airports, FAA regulations recommend that helicopters avoid the flow of fixed-wing aircraft because of the helicopter's slower speed. Helicopters may use a direct path to or from the airport, or a mirror image of the fixed wing pattern on the opposite side of the runway with turns opposite of fixed-wing aircraft to avoid the flow of fixed-wing traffic. The normal helicopter pattern altitude is 500 feet above ground level.

During interviews and public comment, users reported the following safety issues related to the existing use and traffic patterns at the Wasilla Airport:

- Pilots occasionally operate at the airport without broadcasting their intentions on the radio.
- Simultaneous operations have been witnessed on both the main Runway 04/22 and the gravel runway 04S/22S.
- Pilots occasionally land short of the threshold on Runway 04.

3.2.4 Instrument Approach and Departure Procedures

FAA's Air Traffic Division developed two non-precision RNAV global positioning system (GPS) approaches for Wasilla. The NPI approach with vertical guidance (APV) consists of a holding pattern followed by a straight-in approach with a circling missed approach to Runway 04. Figure 3 shows the published approach for Runway 04 (AirNav, 2022). Runway 22 has a NPI APV consisting of a straight-in approach with a circling missed approach. Figure 4 shows the published approach for Runway 22 (AirNav, 2022).

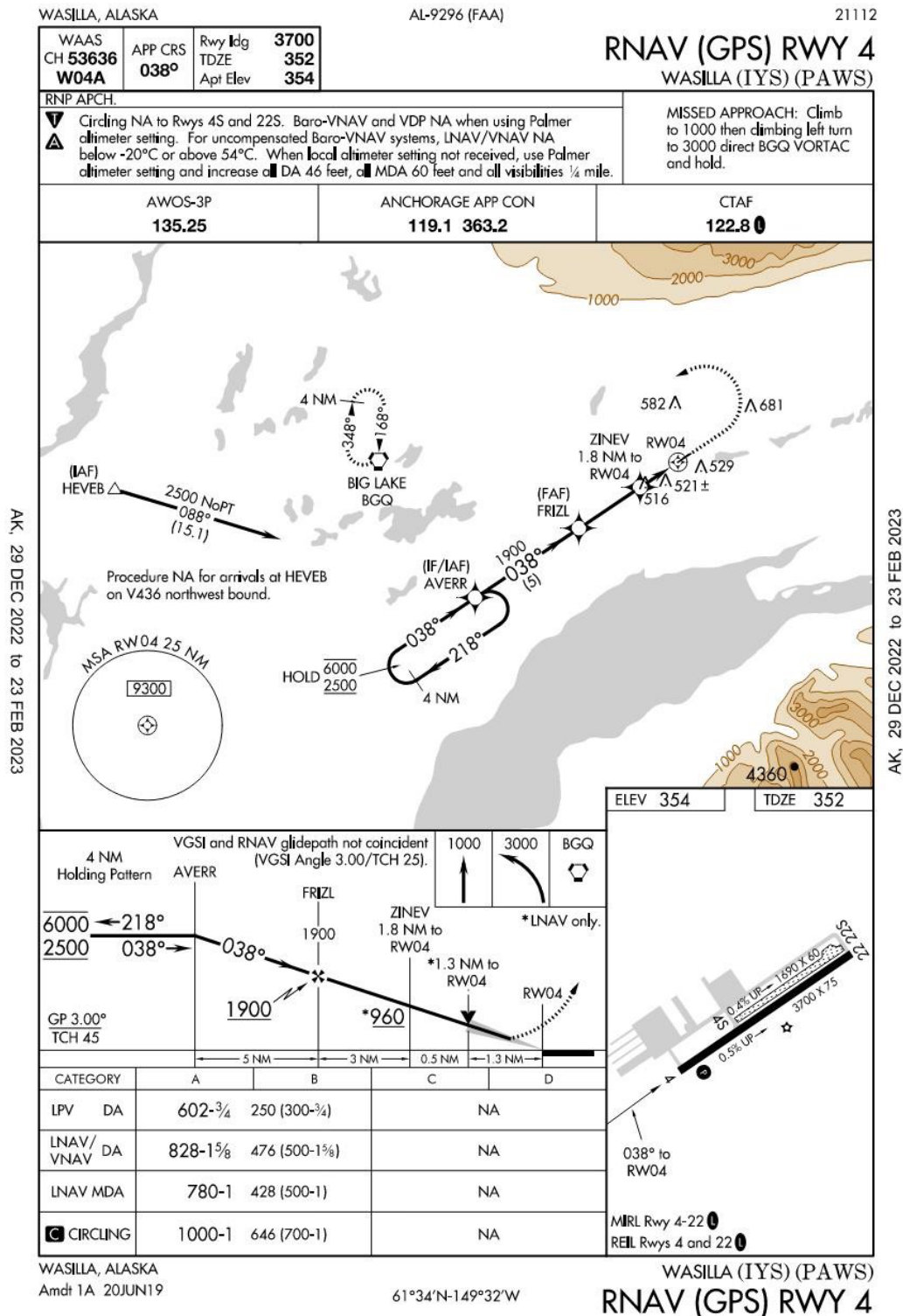


Figure 3: Runway 04 Approach

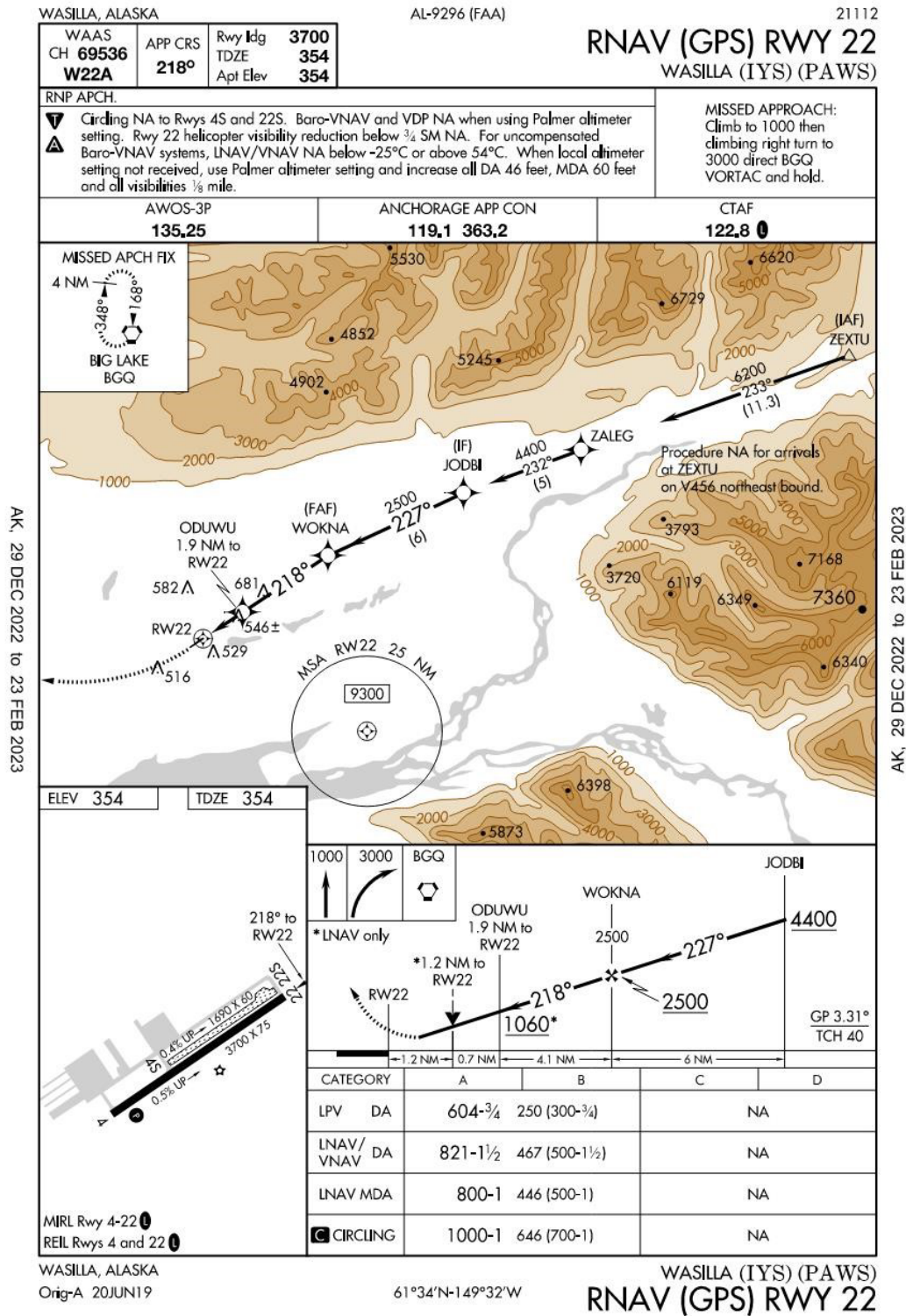


Figure 4: Runway 22 Approach

3.3 Airside Facilities

3.3.1 Runway

The existing airfield configuration consists of two runways: paved Runway 04/22 and gravel Runway 04S/22S. Existing runway conditions are summarized in Table 3. The separation between the two runways is approximately 87.5 feet, which does not meet FAA requirements for simultaneous operations. The required separation is 700 feet for simultaneous operations during VFR conditions (FAA, 2022c).

Table 3: Existing Runway Conditions

	RUNWAY 04	RUNWAY 22	RUNWAY 04S	RUNWAY 22S
Visibility Minimums	≥ 3/4 mile	≥ 3/4 mile	≥ 3/4 mile	≥ 3/4 mile
Type	NPI	NPI	Visual	Visual
Category	Other than Utility	Other than Utility	Small/Utility ¹	Small/Utility ¹
Runway Design Code (RDC)	B-II-4000	B-II-4000	A-I-VIS	A-I-VIS
Runway Length	3,700	3,700	1,690	1,690
Runway Width	75	75	60	60
Runway Shoulder Width	10	10	10	10
Runway Surface	Paved	Paved	Gravel	Gravel
Allowable Crosswind	13 kt	13 kt	10.5 kt	10.5 kt
Runway Safety Area (RSA)				
- Length Beyond Departure End	300	300	240	240
- Length Prior to Threshold	300	300	240	240
- Width	150	150	120	120
Runway Object Free Area (OFA)				
- Length Beyond Departure End	300	300	240	240
- Length Prior to Threshold	300	300	240	240
- Width	500	500	250	250
Runway Obstacle Free Zone (OFZ)				
- Length Prior to Threshold	200	200	200 ³	200 ³
- Width	400	400	250	250
Approach Runway Protection Zone (RPZ)				
- Length	1,700	1,700	1,000	1,000
- Inner Width	1,000	1,000	250	250
- Outer Width	1,510	1,510	450	450
- Area (Acres)	48.978	48.978	8.035	8.035
Departure (RPZ)				
- Length	1,000	1,000	1,000	1,000
- Inner Width	500	500	250	250

	RUNWAY 04	RUNWAY 22	RUNWAY 04S	RUNWAY 22S
- Outer Width	700	700	450	450
- Area (Acres)	13.770	13.770	8.035	8.035
Runway Separation to: ²				
- Hold Position	200	210	NA	NA
- Parallel Runway	87.5 ⁴	87.5 ⁴	87.5 ⁴	87.5 ⁴
- Parallel Taxiway	300	300	212.5	212.5
- Aircraft Parking	370	370	282.5	282.5

1 Small/Utility runways are intended for use by aircraft less than 12,500 pounds gross weight (14 CFR Part 77, 2010) and (FAA, 2022a)

2 Distances noted are measured from runway centerline.

3 The length of the OFZ prior to the thresholds of Runway 04S/22S need to be updated on the ALP.

4 The necessary separation between parallel runways during VFR conditions is 700 feet for simultaneous approaches (FAA 2022a).

Runway 04/22: Runway 04/22 is the main visual runway at the Wasilla Airport. The runway is a paved, non-precision runway measuring 3,700 feet long by 75 feet wide. The runway is classified as a utility runway and designed to accommodate Approach Category B and Design Group II aircraft. In 1999 the runway, taxiways, and aprons were paved. A runway maintenance project was completed in 2021-22 that performed crack sealing on the runway surface. The latest pavement condition survey was completed by DOT&PF in 2020, prior to the crack sealing project. At the time, Runway 04/22 was given a pavement condition index (PCI) score of 67. Pavement rehabilitation is recommended for pavement with PCI scores ranging from 55 to 69 (DOT&PF, 2022). Pavement markings are worn and in poor condition. Additionally, there are four non-frangible threshold markers adjacent to the threshold lights, two at each end, outboard of the threshold lights. The markers are non-standard for lit runways and should be removed. Runway 04/22 is shown in Figure 5.



Figure 5: Runway 04/22

The current version of the ALP and Master Record lists PAPIs on the end of Runway 04 and Runway End Identifier Lights (REIL) on both ends of Runway 04/22. However, REILs are not present at the either end of Runway 04/22.

Runway 04S/22S: Runway 04S/22S was constructed in 2007 to serve tundra tire and ski equipped aircraft with Short Takeoff and Landing (STOL) capabilities. The "S" in the runway designation indicates its intended use as a STOL runway. The runway was constructed with a 1,690-foot long by 60-foot wide grass surface. The runway is constructed along the northwest edge of Runway 3-21 between taxiways D and H. The RDC for Runway 04S/22S is A-I-Vis. Runway 04S/22S is unlit, edges are marked with cones, and the threshold is delineated with threshold markers. Runway surface maintenance, consisting of adding gravel surfacing and reestablishing grade, is performed by airport maintenance personnel on a yearly basis. Through continuous maintenance efforts over the years, the STOL has operated as a gravel runway with nonstandard conditions. To closer align with the FAA standards, the width of the gravel surfacing should be extended to 60 feet and the edge markers/reflectors (cones) should be offset from centerline an additional two feet. Runway 04S/22S is shown in Figure 6



Figure 6: Runway 04S/22S

3.3.2 Runway

The RSA are specifically graded to allow a deviation from the runway surface without significant damage to the aircraft and risk of injury to the pilot and passengers. Both longitudinal and transverse grades are defined by FAA. The RSA should provide a suitable safety margin in case of over-shoots, underruns, and excursions adjacent to the runway. RSA's are required to be graded to minimum safe grades, be load bearing under dry conditions, and free of non-essential and non-frangible objects. The area should be capable of supporting snow removal equipment, emergency services, and passage of aircraft without causing major aircraft damage under dry conditions (FAA, 2022c).

04/22 RSA: The RSA for Runway 04/22 is 150 feet wide and starts 300 feet prior to the thresholds of Runway 04/22. The standard length for both the RSA prior to the threshold of a B-II runway is 300 feet. The graded portion of the RSA narrows down to approximately 140 feet at the end of each over-run area. There are four non-frangible threshold markers adjacent to the threshold lights, two at each end, outboard of the threshold lights that should be removed. The Master Record and the Alaska Chart Supplement note the non-standard threshold markers.

Runway 04/22 is within the RSA of Runway 04S/22S. Simultaneous operations are not allowed on these runways.



Figure 7: Runway 04/22 RSA

04S/22S RSA: The RSA for Runway 04S/22S is 120 feet wide and 2,170 feet long. Runway 04S/22S is within the RSA of Runway 04/22. Simultaneous operations are not allowed on these runways.

3.3.3 Runway Protection Zones

The RPZ for runways 04/22 and 04S/22S are outlined in Table 3.

The purpose of RPZs is to protect people and property on the ground from aircraft operations during final approach and initial take off. The FAA requires that airport sponsors reserve the right to control the height of objects in the RPZ to ensure safety on the ground and in the air. The FAA prefers that airport sponsors secure that right by owning the land inside the RPZ. When that is not possible, an aviation easement or zoning restrictions are acceptable (FAA, 2022a).

Additional research of the airport property boundary is needed to verify that the approach and departure RPZs fall within the existing airport boundary or aviation and hazard easements.

3.3.4 Runway Object Free Areas and Obstacle Free Zone

The OFA and OFZ for Runway 04/22 and 04S/22S are outlined in Table 3. The OFA is the area on the ground, centered on the runway centerline that must remain free of all objects that are non-essential for air navigation and ground movement, such as signs and navigational aids. The OFZ is the volume of airspace located from the ground to 150 feet AGL, within the dimension shown in that must remain free of non-essential objects, taxiing and parked aircraft, and other penetrations, except for frangible navigational aids, which have fixed locations by function. The OFAs and OFZs for Runways 04/22 and

04S/22S appear to be clear of non-frangible objects, with the exception of the four non-standard threshold markers adjacent to the threshold lights on Runway 04/22.

3.3.5 Navigational Aids

There are no navigational aids located on the Wasilla Airport.

3.3.6 Visual and Approach Aids

Visual and approach aids assist pilots on approach to an airport as well as provide information and guidance to pilots navigating around an airfield.

The current version of the ALP and Master Record lists REILs on both ends of Runway 04/22; however, REILs are not present at the either end of Runway 04/22. The ALP and Master Record should be updated to reflect current field conditions.

Runway 04 PAPIs (4 box system) is located on the right hand side of Runway 04 and appears to be operational and in good condition. The current PAPI location is nonstandard, but allowable per FAA Advisory Circular (AC) 150/5340-30J (FAA, 2018b).

The lighted wind cone and segmented circle are located on the southeast side of Runway 04 at approximately midfield. The lighted wind cone and pole appear to be in good condition. The segmented circle with traffic pattern indicators consist of buried drums. Runway 04 has right traffic designated by the indicators. The orange paint on the segmented circle varies from fair to failing. Replacement of the drums with a panel style segmented circle is recommended.

There are two unlighted supplemental wind cones at the airport. One supplemental wind cone is located beyond the southwest end of Runway 04 and the second supplemental wind cone is located beyond the northeast end of Runway 22. Per FAA AC 150/5340-30J the preferred location for a supplemental wind cone is on the left side of the runway when viewed from a landing aircraft and 500 feet to 1,000 feet in from the runway end. Further, the supplemental wind cones should be lighted as the airport is open for air carrier operations at night. However, given the current size and configuration of the airport, further evaluation is needed to determine if the supplemental wind cones are required.

The rotating beacon and pole is located on the southeast side of Runway 04 at approximately midfield near the FAA's weather station. The beacon is operational and the foundation, pole, and light appear to be in fair condition. The gravel access trail to the Automated Weather Observation System (AWOS) and rotating beacon is in good condition and easily traversable.

Runway 04/22 has medium intensity runway lights (MIRL) that are 24 inches tall. The system was installed in 1993, and has exceeded its life expectancy; however, the system appears operational and is in fair condition.

Taxiways are lighted with medium intensity taxiway lights (MITL) that are 30 inches tall and appear to be in overall good condition, with the exception of:

- Light cans that appear to have jacked out of the ground at Taxiways H and A. The units appear to be in compliance with the three inch frangibility requirements; however grade work is recommended to mitigate safety issues.

- One taxiway light, on the corner of Apron E and Taxiway B is damaged and should be replaced by maintenance.
- A ground rod at the intersection of Taxiway A and Runway 04 has jacked approximately 17 inches out of the ground and appears to no longer be connected to the grounding system. The ground rod should be reinstalled and reconnected to the system.

3.3.7 Signage

All interlink taxiways are marked with lighted signs. The signs are installed at the hold lines and appear to be in good condition.

3.3.8 Taxiways

There are a total of five taxiways on the Wasilla Airport. Taxiway B is a full length parallel Taxiway. Taxiways A, D, and H are connecting taxiways between Taxiway B and Runway 04/22. Taxiway C connects to Taxiway B on its western half and extends north to Aviation Avenue. The 2020 DOT&PF pavement condition surveys resulted in the following PCI values for the taxiways (DOT&PF 2022):

- Taxiway A: 60 (rehabilitation)
- Taxiway B west of Taxiway A: 59 (rehabilitation)
- Taxiway B between Taxiway A and D: 73 (preventative/corrective maintenance)
- Taxiway B east of Taxiway D: 88 (preventative maintenance)
- Taxiway C: 70 (preventative/corrective maintenance)
- Taxiway D: 71 (preventative/corrective maintenance)
- Taxiway H: 88 (preventative maintenance)

Preventative maintenance is recommended for pavement with PCI scores ranging from 85 to 100. Preventative and/or corrective maintenance is recommended for pavement with PCI scores ranging from 70 to 84. Rehabilitation is recommended for pavement with PCI scores ranging from 55 to 69. Reconstruction is recommended for pavement with PCI scores 54 and below.

Recent pavement maintenance (crack sealing) has increased the PCI value on taxiways; however, updated values have not been determined.

Taxiways A and D are 40 feet wide and Taxiway B is 35 feet wide. All three are characterized by: gravel shoulders transitioning to vegetation; vegetation presence within the gravel surfacing; longitudinal and transverse cracking in the pavement, which was recently sealed; and a centerline marking that is worn and faded. Unlike Taxiways A and D, Taxiway B is denoted by edge markings east of Apron E.

The dimensions that are listed on the current ALP for Taxiway C are incorrect and need to be updated. Taxiway C is paved for its entire width and connects to lease lots on both sides. The taxiway is delineated by worn centerline and edge markings at a 40 foot width. The pavement has transverse and longitudinal cracks that have been recently sealed.

The signage on connecting Taxiway H (as labeled on the ALP) designates the taxiway as the continuation of parallel Taxiway B. Taxiway H is 35 feet wide with gravel shoulders transitioning to vegetation. Vegetation is present within the gravel surfacing. The pavement has longitudinal and

transverse cracking, which was recently sealed. Taxiway markings consist of centerline and edge markings that are worn and faded.

3.3.9 Aprons

The airport has six primary aprons: A, B, C, D, E, and hanger apron; and one transient parking area to provide short term tie-downs for transient pilots. Table 4 summarizes existing conditions at the airport.

Table 4: Existing Apron Conditions

Apron	Approx. Size (ft x ft)	PCI Range ¹	Tie-downs ²	Lighted	Headbolt Heaters	Current Condition
A	330 x 655	60-64	25 (qty) 24 ft x 20 ft	No	No	Sealed transverse and longitudinal cracks. Includes Taxilane F and A.
B	290 x 655	74	39 (qty) 24 ft x 20 ft	No	No	Sealed transverse and longitudinal cracks. Includes Terminal Court.
C	545 x 530	71-79	26 (qty) 24 ft x 20 ft 6 (qty) 35 ft x 30 ft	Yes	Yes	Sealed transverse and longitudinal cracks. Includes Taxilane D.
D	230 x 530	86	18 (qty) 24 ft x 20 ft	No	No	Unsealed transverse and longitudinal cracks.
E	410 x 530	100	27 (qty) 24 ft x 20 ft	Yes	Yes	Minor unsealed transverse and longitudinal cracks.
Hangar	630 x 635	70-82	14 (qty) 24ft x 19 ft	No	Yes	Sealed transverse and longitudinal cracks. Includes Taxilanes N, O, P, Q, and lease lots.

1 PCI values: 85-100 is preventative maintenance; 70-84 is preventative/corrective maintenance; 55-69 is rehabilitation; 0-54 is reconstruct.

2 Number of tie-downs for use in each area per City of Wasilla records. Additional tie-downs exist, but are not used. Taxilanes N, O, P, and Q do not meet the current design standards for an ADG II Taxilane as the TSA of 79 feet and the Taxilane Object Free Area (TLOFA) of 110 feet are not present. The existing hangars in combination with fixed/moveable objects do not comply with the aforementioned design standards and the taxilane condition should be noted as a substandard condition.

3.3.10 Lease Lots and Tie Downs

There are 26 lease lots platted at the airport. There are 13 lease lots in the area of Taxilanes N, O, P, and Q adjacent to Taxilane F. There are 11 lease lots located between Apron B and Apron C, north of Taxiway B. Aprons C and D have one lease lot each on the northern side of the respective apron. Recent development and leasing warrant review and consideration in future airport planning.

The airport currently has 155 leasable tie-down spaces, with all spaces leased, and 90 potential lessees on a wait list. There are 9 transient tie-down spaces available on the airport near Apron B.

3.3.11 Aircraft Fueling

Crowley Fuels Alaska operates a lease lot on the Wasilla Airport and provides a self-serve fueling station for 100LL and Jet A-50 fuel. No inadequacies with the existing fuel service were identified during the site inspection.

3.3.12 Weather Equipment

The airport is equipped with an FAA-owned and -maintained AWOS that is located at approximately midfield on the southeast side of Runway 04/22, next to the rotating beacon. The AWOS is reporting data and appears to be in good condition.

3.3.13 Hangars

The tenants at Wasilla Airport include a mixture of private airport users with individual tie-down or hangar leases; and aeronautical businesses, maintenance, and hunting or fishing guide charter services.

Ten hangars have been constructed since the 2020 ALP update and two hangars were currently under construction during the site visit. Some of the hangars have multiple tenants occupying the space.

Soloy Helicopters, LLC is operating on the lease lots between Taxilane D and Crosswind Court with 17 helicopters based at the airport. This lease and hangar was not captured in the 2012 ALP update.

3.3.14 Pilot's Lounge

The pilot's lounge is an 8-foot by 20-foot trailer on concrete blocks located on the south side of the transient aircraft parking lot and adjacent to Apron B.

3.4 Landside Facilities

3.4.1 Airport Access

There are four primary access roads inside the airport boundary that facilitate the flow of traffic throughout the airport.

Aviation Avenue provides the primary access to the airport from Clapp Street. The road runs along the northern edge of the airport and provides gated access to the airfield. Aviation Avenue east of Beacon Street is in overall good condition with occasional transverse and longitudinal cracking. Aviation Avenue west of Beacon Street is in worse condition as evident by higher level of transverse cracking.

Beacon Street is a connector street running north from Aviation Avenue at approximately Taxiway D and connecting into West Museum Drive. The pavement has transverse and longitudinal cracking and appears to be in fair condition.

Crosswind Court provides access to several lease lots and Gate B from Aviation Avenue. The pavement is in fair condition with transverse and longitudinal cracks that are sealed.

Terminal Court is an access road inside of the airport perimeter fencing that runs on the eastern edge of Apron B. The pavement is in fair condition and has transverse and longitudinal cracks that were recently sealed.

3.4.2 Lighting Control Vault

The lighting control vault, housing the airport lighting system and gate operators, is located on the northeast corner of Aviation Avenue and Beacon Street. The building is deteriorated and needs to be replaced. An electrical box on the exterior of the building has a broken cover that has been patched with duct tape, which is falling off and leaving exposed wiring. There is a hole in the floor inside the building entry. Airport maintenance stated that there are no operational issues with the lighting controls.

3.4.3 Security Fencing and Gates

There is approximately 15,800 linear feet of 8-foot tall chain link fence with multiple strands of barbed wire running through extension arms providing perimeter control at the airport. Approximately 5,000 linear feet on the southwestern, southern, and southeastern portion of perimeter fence is jacked out of the ground and is allowing animals to cross underneath. Portions of the fence are jacked to the point that it is laid over and no longer providing a positive perimeter barrier. Maintenance has tried patching some of the jacked fencing in an effort to keep animals from passing underneath; however many sections still allow animal access. The remainder of the fencing appears to be in good condition and maintenance personnel have no concerns. Maintenance personnel reported drifting snow on the southern edge of the perimeter fencing allowing moose to pass overtop the fence.

The following is a breakdown of gates located on the airport.

Gate A provides vehicle access to Apron C via a sliding gate with an automated operator and proximity card reader. Adjacent to the vehicle gate is a manual pedestrian gate with a push button lock. The

access points were closed during the time of inspection, but appear to be operational. Access at this gate is monitored by camera.

Gate B is located at the end of Crosswind Court and provides direct access to Apron B. The sliding vehicle gate has an automated operator and proximity card reader. The gate was closed at the time of inspection; however, it appears to be operational.

Access at Gate C consists of a sliding vehicle gate with an automated operator and proximity card reader. Adjacent to the vehicle gate is a manual pedestrian gate with a push button lock. Gate C provides access to Terminal Court. The sliding vehicle gate is on a timer and opens at 7:00 am and closes at 7:00 pm. Both the vehicle and pedestrian gate appear to be operational and in good condition. The pedestrian gate provides access from the transient aircraft parking area to vehicle parking outside the perimeter fence. Access at this gate is monitored by camera.

Gate D provides access to the airfield off Aviation Avenue. Gate D consists of a sliding vehicle gate with an automated operator and proximity card reader. The vehicle gate is on a timer and opens at 7:00 am and closes at 7:00 pm. The gate was open during inspections; however it appears to be operational and in good condition. Access at this gate is monitored by camera.

Access at Taxilane F consists of a sliding gate (with no powered operator) and a pedestrian gate. There is paved access to the sliding gate from Aviation Avenue; the pedestrian gate does not have paved access. The gates were closed at the time of inspection, but appear to be operable. Airport maintenance controls access to these gates and noted that they are not regularly used.

The gate access to Taxilane C consists of a sliding gate (with no powered operator) and does not have paved access from Aviation Avenue. The gate was closed at the time of inspection, but appears to be operable. Airport maintenance controls access to this gate and noted that it is not regularly used.

There are three unmarked sliding gates providing access to the Soloy Helicopters, LLC lease area that were closed during the time of inspection, but appear operational.

Apron E can be accessed from Aviation Avenue by vehicle through a double swing style gate and gravel access drive. The gate was closed, but appears to be operational. Airport maintenance controls access to this gate and noted that it is not regularly used.

There are six additional perimeter gates on the airfield that are controlled and used solely by Airport maintenance as needed.

3.4.4 Snow Removal Equipment Building

The SREB is located north of the airport on the east side of Beacon Street. The facility has three bays: two pull through equipment bays and a single access bay with an office on the opposite side. The building houses the airport snow removal equipment and the controls for gate cameras. Maintenance's only issue with the building is that the sewer line freezes each year.

3.4.5 Utilities

In 2014 the City of Wasilla installed a waterline extension on Aviation Avenue from Clapp Street. The waterline extension terminates to the east of Gate A. Currently there is one tenant, Airforms LLC, is

the only user of the utility. Most tenants obtain water from private wells and dispose of wastewater via on-site septic systems.

Electrical service to the Wasilla Airport is provided by Matanuska Electric Association (MEA) the main feed being supplied overhead from a distribution pole transitioning to underground on the corner of Beacon Street and Aviation Avenue. Services can be extended to individual lease lots from the underground system.

Natural Gas service is provided by ENSTAR Natural Gas Company. Services can be extended to individual lease lots from the gas line running down Aviation Avenue stemming from the main service on Beacon Street.

Telecommunication service to the airport is provided by Matanuska Telephone Association and consists of an underground copper and fiber optic (FO) cable. The telecommunication services extend from Beacon Street and run down Aviation Avenue from Gate A to Gate D and extending into the lease lots on the airfield.

The utility as-built is included in Appendix B.

4.0 REFERENCES

14 CFR Part 77. 2010. Title 14, Chapter I, Subchapter E, Part 77—Safe, Efficient Use, And Preservation Of The Navigable Airspace. eCFR.gov.

AirNav. 2022. Wasilla Airport. Retrieved from Airnav.com: <https://www.airnav.com/airport/PAWS>.

DOT&PF. 2022. Alaska Aviation System Plan Site 50870.3*A. Retrieved 2022. https://internal.alaskaasp.com/Facilities/Default.aspx?tab=general&id=188&siteid=50870.3*A.

FAA. 2015. Advisory Circular 150/5070-6B Change 2 Airport Master Plans. https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5070-6B_with_chg_1&2.pdf.

FAA. 2018a. Advisory Circular 150/5340-30J. Design and Installation Details for Airport Visual Aids.

FAA. 2018b. United States Standard for Terminal Instrument Procedures. FAA Order 8260.3D.

FAA. 2019. FAA Order 5100.38D Change 1 Airport Improvement Program Handbook. Published 2/26/2019. https://www.faa.gov/airports/aip/aip_handbook/media/AIP-Handbook-Order-5100-38D-Chg1.pdf.

FAA. 2022a. National Plan of Integrated Airport Systems (2023-2027). Washington. D.C.: The Secretary of Transportation.

FAA. 2022b. Sectional Chart: VFR Raster Charts. Retrieved from FAA Airtraffic: https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/vfr/.

FAA. 2022c. Advisory Circular 150/5300-13B. Airport Design.

HDL. 2020. Wasilla Airport As-Built ALP.

USKH. 2012. Wasilla Airport Master Plan Update 2012.

Appendix A – Site Visit Notes

Appendix B – UTILITY AS-BUILTS

Appendix B

Utility As-builts

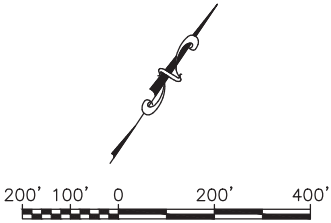
H:\jobs\20-024 Wasilla Airport Term (COW)\07 Master Plan\CAD\Drawings\Exhibits\Utility As-Built\20024_07_Uilities.dwg, 1" = .1667', 12/05/2023 at 10:54 by JSE
LAYOUT: GAS
XREF: 17033_07_BD01



NATURAL GAS LEGEND	
	UNDERGROUND NATURAL GAS
	NATURAL GAS METER

NOTES:

1. ALL NATURAL GAS FACILITIES ARE OWNED BY ENSTAR NATURAL GAS.
2. UTILITY SURVEY WAS OBTAINED IN RESPONSE TO DESIGN LOCATE REQUEST(S) ON OCTOBER 20, 2022.
3. UTILITY SURVEY DATA WAS COLLECTED THROUGH GPS SURVEY CONDUCTED BY HDL ENGINEERING CONSULTANTS, LLC IN OCTOBER OF 2020.



REVISIONS	
MARK	DATE
1	
2	
3	
4	
5	

HDL ENGINEERING
Consultants LLC

civil - geotechnical - surveying - environmental - material testing
ANCHORAGE 907.564.2120
MAT-SU 907.746.5230
KENAI 907.283.2051
3335 Arctic Boulevard, Suite 100 Anchorage, AK 99503
www.HDLalaska.com
AECL861

MASTER PLAN
WASILLA MUNICIPAL AIRPORT
WASILLA, ALASKA

SHEET TITLE
UTILITY ASBUILT
NATURAL GAS

SHEET
1 OF 4

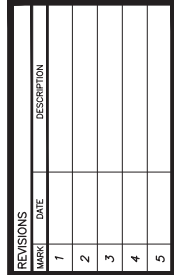
DRAWN BY:
JSE

CHECKED BY:

DATE:
MAY 2023

SCALE:
1"=200'

JOB NUMBER:
20-024



MASTER PLAN
WASILLA MUNICIPAL AIRPORT
WASILLA, ALASKA

NOTES:

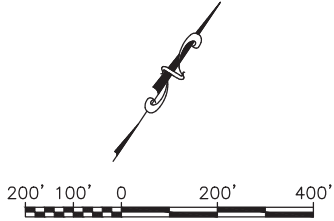
-

H:\jobs\20-024 Wasilla Airport Term (COW)\07 Master Plan\CAD\Drawings\Exhibits\Utility As-Built\20024_07_Uilities.dwg, 1" = .1667', 12/05/2023 at 10:54 by JSE
LAYOUT: COMMUNICATIONS
XREF: 17033_07_BD01



TELECOMMUNICATION LEGEND	
FO	UNDERGROUND FIBER OPTIC
UT	UNDERGROUND TELECOMMUNICATIONS
△	TELECOMMUNICATIONS PEDESTAL
FO	FIBER OPTIC VAULT
□	TELECOMMUNICATION SERVICE BOX

- NOTES:
1. THE TELECOMMUNICATION FACILITIES SHOWN ARE OWNED BY MATANUSKA TELEPHONE ASSOCIATION (MTA). ALL OTHERS ARE OWNED BY THE FEDERAL AVIATION ADMINISTRATION (FAA) OR THE CITY OF WASILLA.
 2. UTILITY SURVEY WAS OBTAINED IN RESPONSE TO DESIGN LOCATE REQUEST(S) ON OCTOBER 20, 2022.
 3. UTILITY SURVEY DATA WAS COLLECTED THROUGH GPS SURVEY CONDUCTED BY HDL ENGINEERING CONSULTANTS, LLC IN OCTOBER OF 2020.



REVISIONS	MARK	DATE	DESCRIPTION
1			
2			
3			
4			
5			

HDL ENGINEERING
Consultants LLC
civil - geotechnical - surveying - environmental - material testing
ANCHORAGE MAT-SU KENAI
907.564.2120 907.746.5230 907.283.2051
3335 Arctic Boulevard, Suite 100 Anchorage, AK 99503
www.HDLalaska.com

MASTER PLAN
WASILLA MUNICIPAL AIRPORT
WASILLA, ALASKA

SHEET TITLE
UTILITY ASBUILT
TELECOMMUNICATIONS

SHEET
3 OF 4

DRAWN BY:
JSE

CHECKED BY:

DATE:
MAY 2023

SCALE:
1"=200'

JOB NUMBER:
20-024

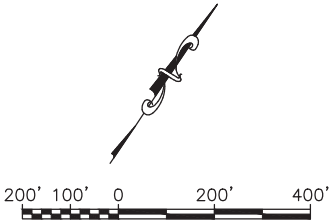
H:\jobs\20-024 Wasilla Airport Term (COW)\07 Master Plan\CAD\Drawings\Exhibits\Utility As-Built\20024_07_Utillities.dwg, 1" = .1667', 12/05/2023 at 10:54 by JSE
LAYOUT: OTHERS
XREF: 17033_07_BD01



ONSITE SEPTIC, WATER AND STORM DRAIN UTILITIES LEGEND			
	SEPTIC CLEANOUT OR INSPECTION STANDPIPE		STORM DRAIN MANHOLE
	WATER WELL		WATER VALVE BOX
	WATER SERVICE KEY BOX		WATER HYDRANT
	SANITARY SEWER SERVICE CLEANOUT		CULVERT
	STORM DRAIN FIELD INLET		

NOTES:

- UTILITY SURVEY WAS OBTAINED IN RESPONSE TO DESIGN LOCATE REQUEST(S) ON OCTOBER 20, 2022.
- UTILITY SURVEY DATA WAS COLLECTED THROUGH GPS SURVEY CONDUCTED BY HDL ENGINEERING CONSULTANTS, LLC IN OCTOBER OF 2020.



REVISIONS		DATE	DESCRIPTION
1			
2			
3			
4			
5			

HDL ENGINEERING
Consultants LLC

civil - geotechnical - surveying - environmental - material testing
ANCHORAGE
907.564.2120
MAT-SU
907.746.5230
KENAI
907.283.2051
3335 Arctic Boulevard, Suite 100 Anchorage, AK 99503
www.HDLalaska.com
AECL861

MASTER PLAN
WASILLA MUNICIPAL AIRPORT
WASILLA, ALASKA

SHEET
4 OF 4

DRAWN BY:
JSE

CHECKED BY:

DATE:
MAY 2023

SCALE:
1"=200'

JOB NUMBER:
20-024

UTILITY ASBUILT
ONSITE WATER, SEPTIC
AND STORM DRAIN

Appendix C

Land Use Assessment and Economic Development Report

Wasilla Airport Master Plan Update Land Use Assessment and Economic Development Report

Prepared for:

City of Wasilla



January 2024

Prepared by:

Northern Economics, Inc.

PO Box 110914

Anchorage, Alaska 99511



P.O. Box 1109140

Anchorage, Alaska 99511

Phone: 907-274-5600

Fax: 907-290-2464

www.northerneconomics.com

On behalf of:

HDL Engineering Consultants, LLC

3335 Arctic Boulevard

Anchorage, Alaska 99503



Table of Contents

1	Introduction	1
2	Demographic Profile and Trends.....	2
2.1	Population.....	2
2.2	Personal Income	3
2.3	Employment and Economy	4
3	Land Use.....	5
3.1	Current Use of the Wasilla Airport.....	5
3.1.1	Land Ownership and Uses	5
3.1.2	Lease Lots	6
3.1.3	Tie-Down System	6
3.2	Ownership and Current/Potential Future Use of Adjacent Lands	7
3.3	Area Land Use Plan Goals and Zoning	8
3.3.1	City of Wasilla Comprehensive Plan (2011)	9
3.3.2	Wasilla Comprehensive Economic Development Strategy (2023)	10
3.3.3	Matanuska-Susitna Borough Long Range Transportation Plan (2017).....	10
3.3.4	Matanuska-Susitna Regional Aviation System Plan (2008–2017).....	11
3.3.5	Meadow Lakes Comprehensive Plan (2005)	11
3.3.6	Summary of Existing Plans.....	12
3.4	Future Opportunities.....	12
3.4.1	Availability of Land for Long-term Airport and Economic Development	12
3.5	Recommendations	13
3.5.1	Existing Structures and Conformance with Proposed Land Use	13
4	Economic Activity at the Wasilla Airport.....	13
4.1	Businesses Operating at the Airport	13
4.1.1	Employment at the Airport	13
4.2	Estimated Economic Impact of the Airport.....	14
5	Projected Population and Personal Income	14
5.1	Factors Affecting the Projections	16
6	References	16

List of Abbreviations

BEA.....	Bureau of Economic Analysis
CDP.....	Census Designated Place
CEDS	Comprehensive Economic Development Strategy
DOLWD.....	Alaska Department of Labor and Workforce Development
MSB	Matanuska-Susitna Borough
RASP.....	Regional Aviation System Plan
SPB	seaplane base

1 INTRODUCTION

The City of Wasilla is conducting an update to its Airport Master Plan for the Wasilla Municipal Airport. This report describes existing and planned land use and current and anticipated economic development efforts that affect the airport. It includes a forecast of population and personal income in the Matanuska-Susitna Borough (MSB) under three growth scenarios.

The Socioeconomic Evaluation contains more information about the demographics and economy of the MSB, City of Wasilla, and areas in the vicinity of the airport, including the two adjacent Census Designated Places (CDPs), Knik-Fairview and Meadow Lakes.

Economic indicators presented in this report help to establish a base for current use of airport facilities and predict future demand. Significant changes to the economy of the area could affect demand for aviation activity at the Wasilla Airport. This analysis provides population projections for the MSB, based on published Alaska Department of Labor and Workforce Development (DOLWD) projections. Population projections are also used to project personal income. Interviews with airport stakeholders are used to inform the economic forecast.

Figure 1 shows the location of the MSB and Wasilla Airport within Alaska. Figure 2 provides an area map of the Wasilla Airport (reproduced from the Socioeconomic Evaluation report).

Figure 1. Location of MSB and Wasilla Airport within the State of Alaska

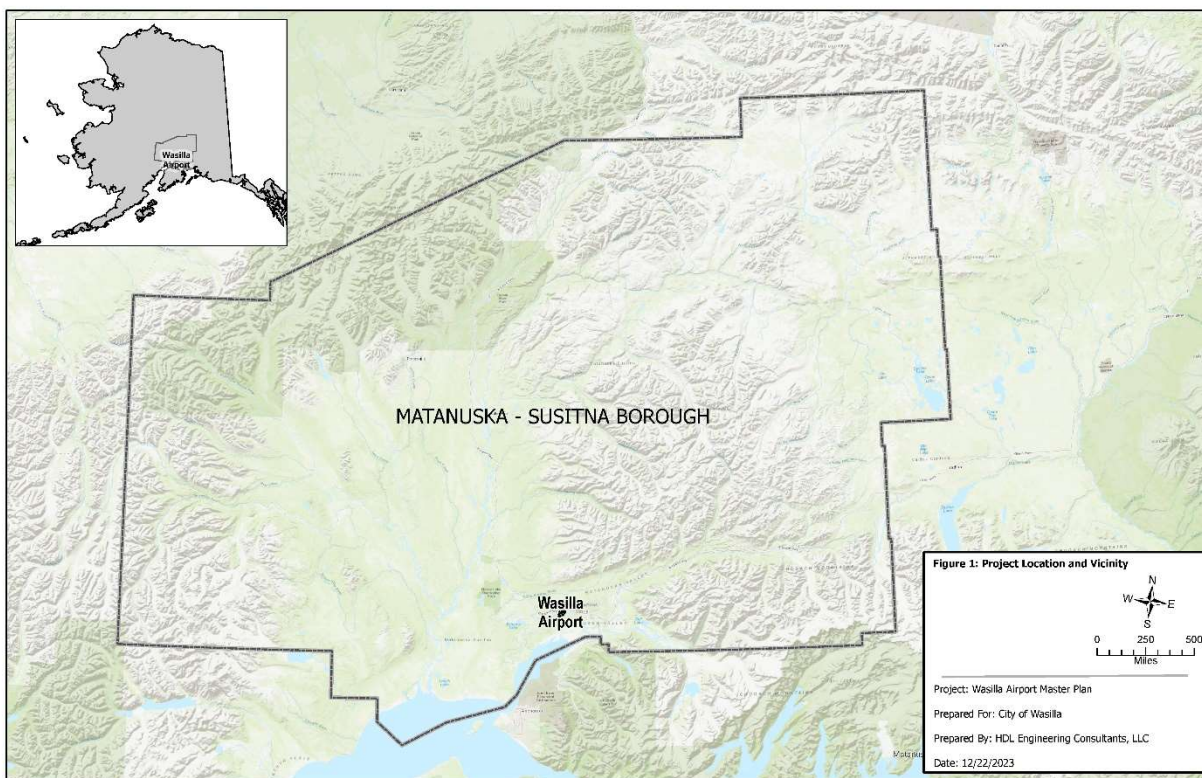
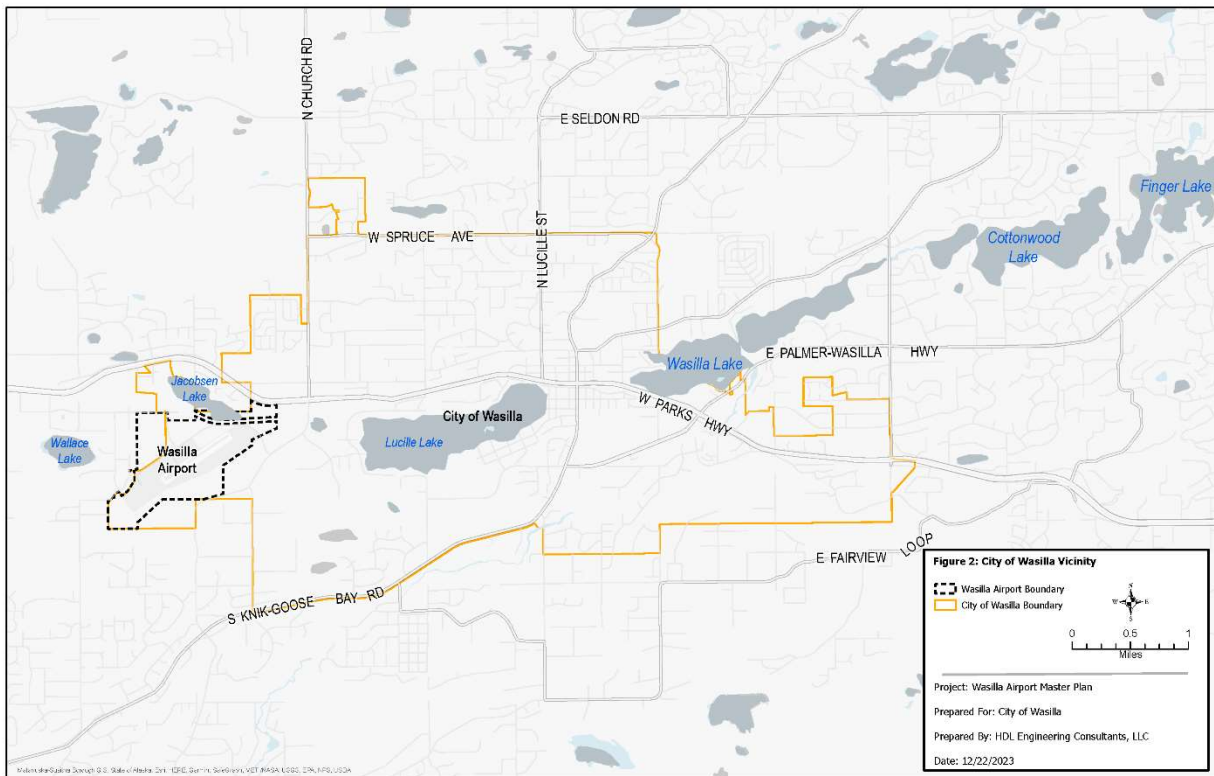


Figure 2. Area Map of the Wasilla Airport



2 DEMOGRAPHIC PROFILE AND TRENDS

The Wasilla Airport primarily serves residents of the City of Wasilla and the adjacent Knik-Fairview and Meadow Lakes areas.

2.1 Population

The MSB population reached an estimated 111,752 in 2022, and Wasilla is 8.5% of MSB's population (DOLWD 2023a).¹ The MSB has been steadily growing over time, having nearly doubled in population since 2000 (Table 1).

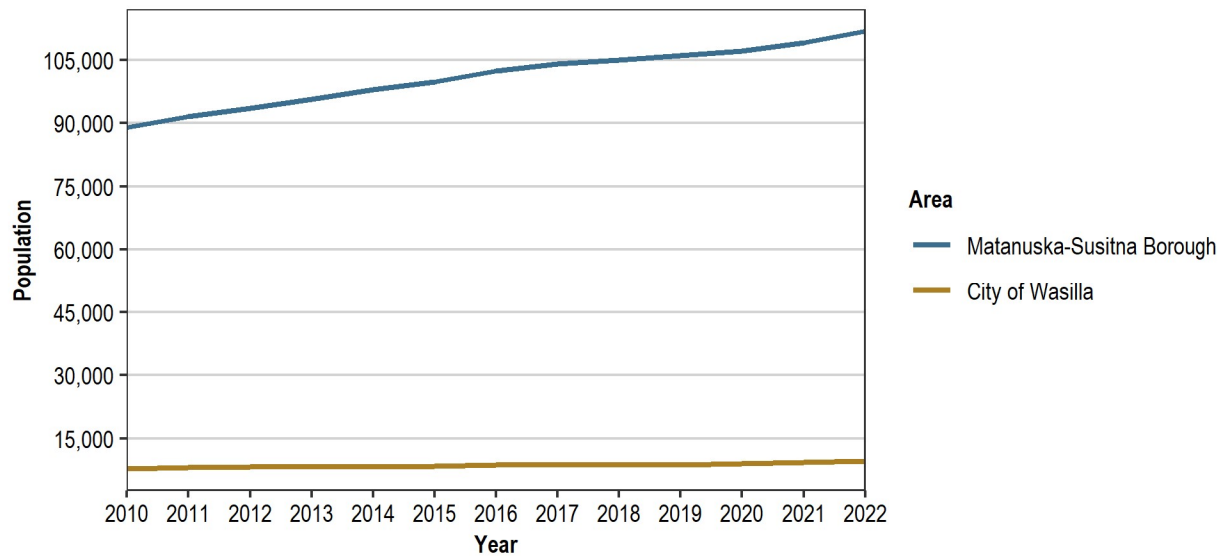
Table 1. Population Estimates for MSB and City of Wasilla, 2000–2022

Area Name	2000	2010	2015	2016	2017	2018	2019	2020	2021	2022
Matanuska-Susitna Borough	59,322	88,995	99,715	102,317	103,988	104,971	105,980	107,081	109,086	111,752
City of Wasilla	5,504	7,831	8,420	8,682	8,809	8,750	8,706	9,054	9,250	9,547

Source: DOLWD (2023)

¹ The Socioeconomic Evaluation contained population estimates through 2021. DOLWD has since updated its estimate for 2021.

Figure 3. Population Trends for MSB and City of Wasilla, 2010–2022



Source: DOLWD (2023a) and Northern Economics analysis

2.2 Personal Income

Personal income is the total of “all wages, proprietors' income, dividends, interest, rents, and other income received by local residents,” which includes the Permanent Fund Dividend. Total personal income in the MSB has grown from \$3.6 billion in 2010 to nearly \$6 billion in 2021, while the per capita income rose from \$40,500 to \$54,200 in that period (Table 2).

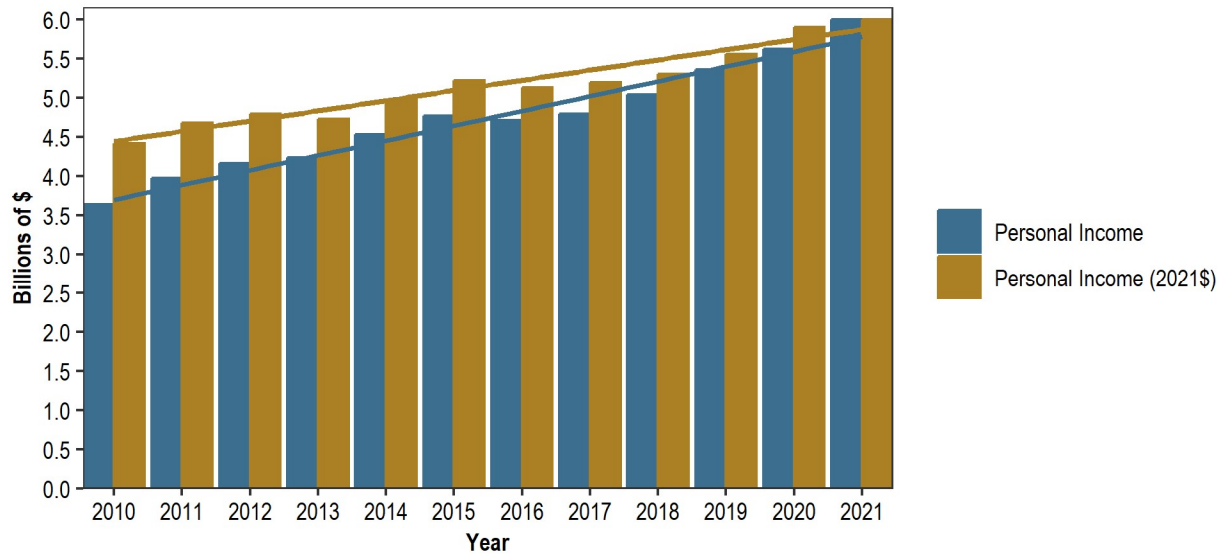
Table 2. MSB Personal Income and Per Capita Personal Income, Bureau of Economic Analysis (BEA) County Level Data, 2010–2021

Year	Total (\$1,000s)	Per Capita Income (\$)
2010	3,635,536	40,541
2011	3,971,466	43,425
2012	4,157,145	44,608
2013	4,231,464	44,465
2014	4,527,491	46,603
2015	4,770,871	47,780
2016	4,712,454	45,904
2017	4,792,210	45,841
2018	5,038,554	47,914
2019	5,355,170	50,459
2020	5,623,966	52,335
2021	5,999,994	54,207

Source: BEA (2022a)

Expressed in 2021 dollars, total personal income has grown at an average annual rate of 2.8%.

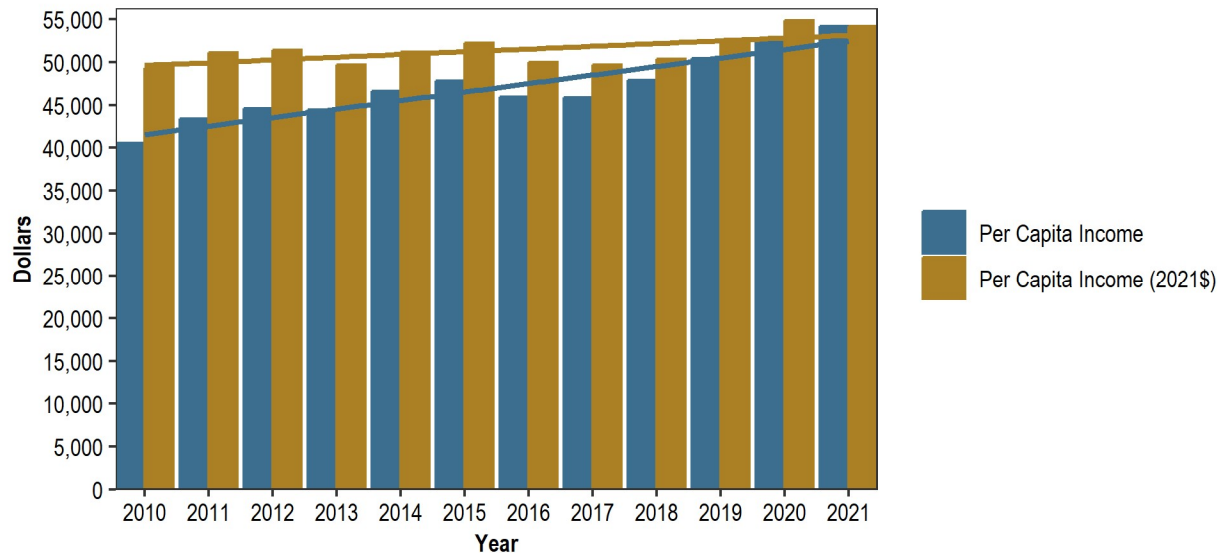
Figure 4. MSB Total Personal Income Trends, 2010–2021



Source: BEA (2022a), DOLWD (2023b), and Northern Economics analysis

Per capita income, adjusted for inflation, grew from \$49,300 in 2010 to \$54,200 in 2021.

Figure 5. MSB Per Capita Personal Income Trends, 2010–2021



Source: BEA (2022a), DOLWD (2023b), and Northern Economics analysis

2.3 Employment and Economy

In 2021, the MSB had an annual average employment of 43,200, 85% of which was private non-farm employment and 14% was in the public sector. The top private sector, based on share of employment, was health care and social assistance, followed by retail trade and construction (Table 3).

Table 3. Employment by Sector in Level and Share of Employment, MSB, 2021

	Employment Count	Share of Total Employment (%)
Farm employment	645	1
Nonfarm employment	42,555	99
Private nonfarm employment	36,638	85
Forestry, fishing, and related activities	671	2
Mining, quarrying, and oil and gas extraction	515	1
Utilities	357	1
Construction	4,775	11
Manufacturing	877	2
Wholesale trade	316	1
Retail trade	5,774	13
Transportation and warehousing	1,732	4
Information	614	1
Finance and insurance	1,269	3
Real estate and rental and leasing	2,218	5
Professional, scientific, and technical services	2,056	5
Management of companies and enterprises	129	<1
Administrative, support, waste management, and remediation services	1,493	3
Educational services	787	2
Health care and social assistance	5,907	14
Arts, entertainment, and recreation	1,140	3
Accommodation and food services	3,364	8
Other services	2,644	6
Government and government enterprises	5,917	14
Federal civilian	245	1
Military	752	2
State and local	4,920	11
State government	1,547	4
Local government	3,373	8

Source: BEA (2022b) and Northern Economics analysis

3 LAND USE

The City of Wasilla is conducting a land use assessment to support the Wasilla Airport Master Plan update, which includes evaluating adjacent land for potential acquisition to better serve airport users. This assessment looks at spatial constraints of the current airport layout, permitted uses of adjacent land, and where compatibilities exist to ensure the optimal future use of the airport.

3.1 Current Use of the Wasilla Airport

3.1.1 Land Ownership and Uses

The Wasilla Airport property is owned by the City of Wasilla and is surrounded by private property that is used commercially and residentially. The airport is zoned as Industrial land. The

surrounding land within city limits is zoned, but outside of city limits it is not zoned. That unzoned land appears to be used primarily for residential development.

The airport includes two runways. Runway 04/22 is paved, 3,700 feet long, and 75 feet wide. Runway 04S/22S is gravel and turf, 1,690 feet long, and 60 feet wide. The airport inventory report estimated that there are currently 190 based aircraft, including multiple helicopters. Figure 6 shows the current layout of the airport.

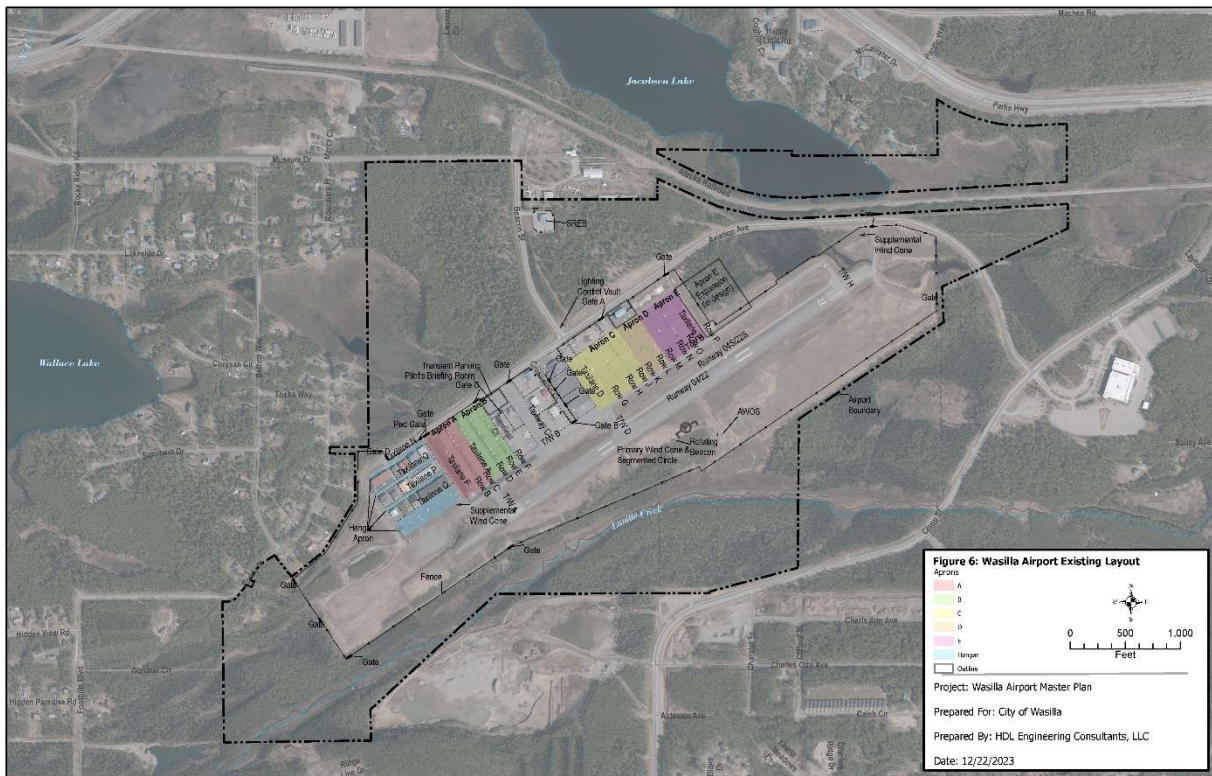
3.1.2 Lease Lots

There are 26 platted leases on the Wasilla Airport, including several hangars housing multiple aircraft and several hangars with unknown contents. Ten hangars have been constructed since the 2020 ALP update and two hangars were currently under construction in late 2022. Some hangars have multiple tenants occupying the space. All lease lots are currently under lease, except for a future lease lot area that will be completed in 2024.

3.1.3 Tie-Down System

Currently the airport has 155 leasable tie-down spaces, all of which are currently leased with 93 potential lessees on a waitlist as of mid-December 2023. There are 149 small tie-downs and 6 that can accommodate larger aircraft. Once Apron E: Phase 2 is constructed (scheduled for 2024), an additional 27 leasable small tie-downs will be available, for a total of 176 small tie-downs and six large tie-downs.

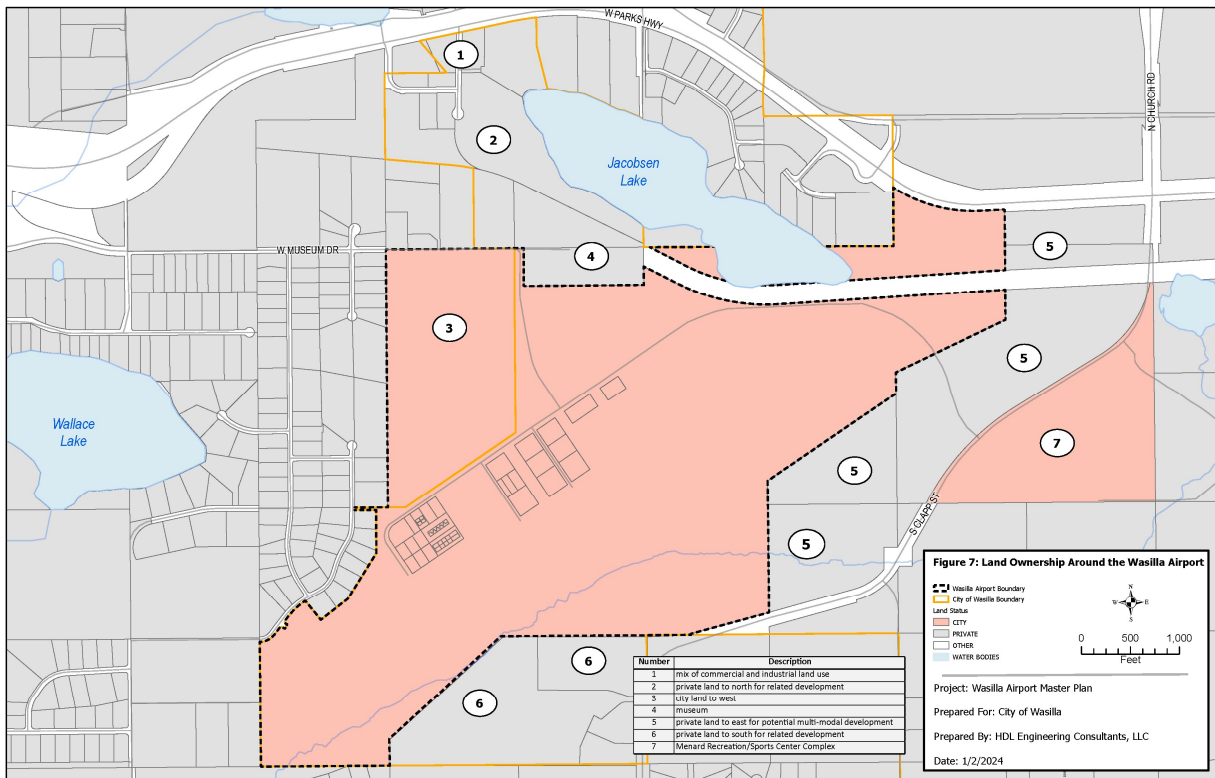
Figure 6. Current Layout of the Wasilla Airport



3.2 Ownership and Current/Potential Future Use of Adjacent Lands

The Wasilla Airport is surrounded by privately-owned land that is used commercially and residentially, as shown in Figure 7 with areas of interest labeled. The private land immediately to the north of the airport and west of Jacobsen Lake is occupied by the Museum of Alaska Transportation and Industry (#4). Land to the west of the museum is undeveloped (#2). North of the museum are consumer-oriented businesses located adjacent to the Parks Highway (#1): a restaurant, insurance agent, and daycare facility. The city-owned land to the east of the airport is occupied by the Curtis D. Menard Memorial Sports Center (#7). Private lands between these two city-owned parcels and to the north of the highway (#5) are undeveloped. The city also owns a parcel to the northwest (#3), which is considered part of the airport property, that is located outside city boundaries. To the south of the airport and Lucille Creek, there is private land to the west of S. Clapp St. that appears to be undeveloped (#6), though there are informal trails across the property. Finally, to the west of the city limits are private parcels that have mostly been developed for residential use.

Figure 7. Land Ownership Around the Wasilla Airport

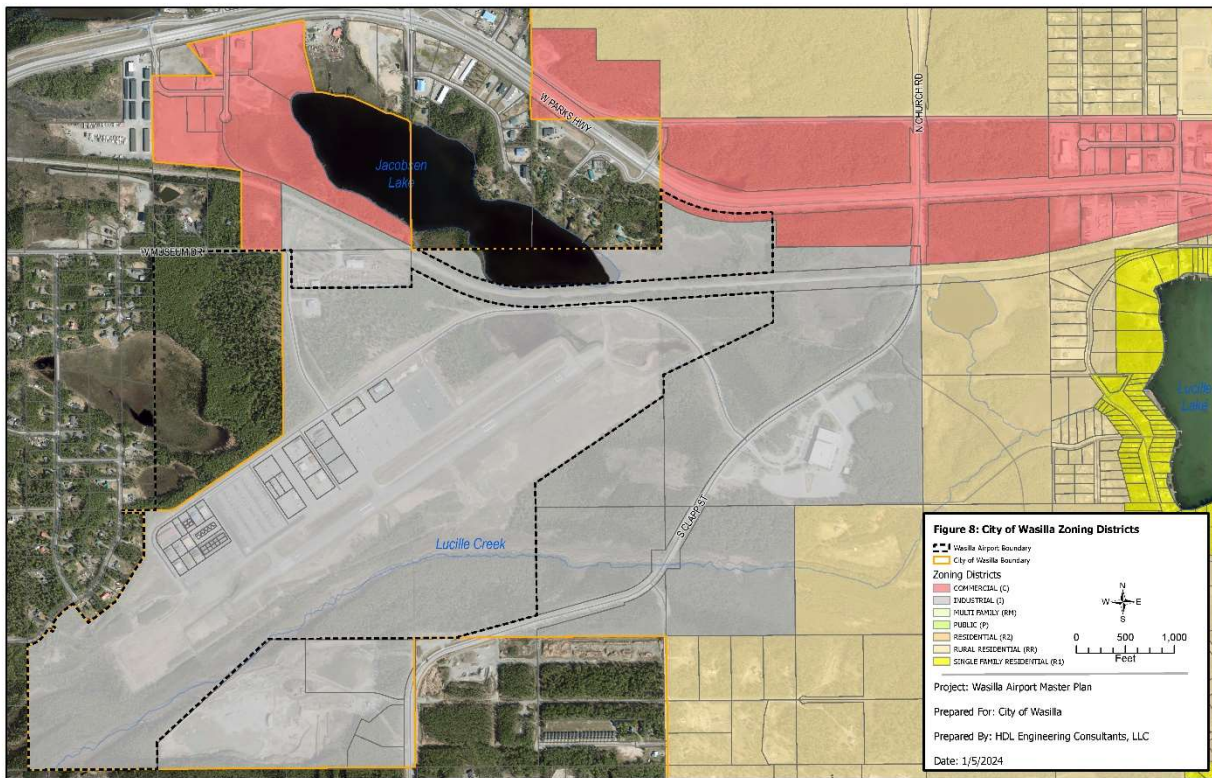


No plans for development of the private parcels have been identified. However, the privately-owned land between the airport and the Curtis D. Menard Memorial Sports Center may provide suitable areas for development of multi-modal transportation facilities, as discussed in the City of Wasilla Comprehensive Plan (City of Wasilla 2011; see Section 3.3.1).

3.3 Area Land Use Plan Goals and Zoning

The Wasilla Airport property is zoned industrial, with commercial zoning to the north and rural residential to the east. Land outside the City of Wasilla boundary (marked with a dashed red line) is not zoned by the MSB. Figure 8 shows zoning around the Wasilla Airport. Area land use plans by the City of Wasilla and MSB that pertain to the Wasilla Airport Master Plan are summarized in the subsections following the figure.

Figure 8. City of Wasilla Zoning Around the Wasilla Airport & Wasilla City Limits



Source: City of Wasilla (2023)

3.3.1 City of Wasilla Comprehensive Plan (2011)

The City of Wasilla Comprehensive Plan (City of Wasilla 2011) notes the sizeable amount of City-owned industrial land at the airport and provides a desired future condition in which that land will have enhanced multi-modal connections (freight and commuter rail, plane, and road), along with infrastructure and rail connectivity to allow new economic enterprises to grow. These new enterprises would include local product development and manufacturing, high-tech businesses that can take advantage of technical skills and education of former military and North Slope workers, material transport and resource storage/staging, and transit-oriented tourism and connectivity to the Museum of Alaska Transportation and Industry. Additionally, the airport would expand and become a regional hub for small jets and planes, while personal floatplane and small plane use safely flourishes.

The plan contains the following goals, objectives, and actions specific to the airport (City of Wasilla 2011):

- Goal 2. Diversify the economic base and attract new employment generators.
 - 2.1 Continue to expand the City airport and encourage development of adjacent economic generators on City-owned land.
- Goal 3. Support the City as a transportation hub that provides connecting highways, railroad, and expanded air service.

- 3.1 Continue to support improved aviation and an expanded airport.
 - 3.1.1 Adopt, implement, and regularly update an Airport Master Plan to identify future aviation demand and support infrastructure and site development needs.
- 3.3 Improve road connectivity to the new multi-modal transportation node at the City airport
 - 3.3.2 Consider a Museum Drive extension and new airport access road.

3.3.2 Wasilla Comprehensive Economic Development Strategy (2023)

Public input to the Wasilla Comprehensive Economic Development Strategy (CEDS) (McKinley Research Group, LLC 2023) showed that 22% of respondents identified the Wasilla Airport as an area of opportunity, higher than any other opportunity. Additionally, many of the other opportunities are linked to the airport, based on the City of Wasilla Comprehensive Plan (City of Wasilla 2011), namely the opportunities to expand industries and the workforce. The following goals, objectives, and actions were identified that are either related to or could be linked through the comprehensive plan goals to the Wasilla Airport:

- Goal A: Improve Infrastructure to Support Economic Resilience
 - Objective 2: Develop regional transportation infrastructure
 - Action c. Adopt airport master plan to expand cargo and passenger service
- Goal B: Diversify Local Economy
 - Objective 1: Attract new industries, e.g., manufacturing, logistics, and “value-added”
 - Action b. Study available incentives to attract new business and industries
 - Action d. Become an Economic Development Administration-designated “Tech Hub”
 - Action e. Conduct direct marketing and outreach efforts to logistics, manufacturing, value-add companies

3.3.3 Matanuska-Susitna Borough Long Range Transportation Plan (2017)

The MSB Long Range Transportation Plan is intended to guide transportation solutions, improvements, funding decisions, and policy development by the MSB and the State of Alaska both in the near and long term through 2035 (MSB 2017a). It contains three recommendations pertinent to the Wasilla Airport:

- Adopt the proposed precision instrument approach to Wasilla Airport, included in the 2012 Wasilla Airport Master Plan, to address the lack of regularly scheduled airline commuting services or air freight services available for residents.
- Continue to actively support the development, improvement, maintenance, operation, and funding of a system of public airports and seaplane bases (SPB) throughout the MSB, recommending that the two municipal airports (Wasilla and Palmer) be improved to

provide for the needs of commercial aviation companies as well as air taxi operators and private pilots.

- Encourage public airport sponsors to investigate the potential for Public-Private Partnerships in the provision and/or operation of airport infrastructure in the MSB.

3.3.4 Matanuska-Susitna Regional Aviation System Plan (2008–2017)

The MSB’s Regional Aviation System Plan (RASP) consists of multiple reports focused on the development of aviation in the MSB. The RASP Phase 1 report (MSB 2008) notes that the purpose of the RASP is “to identify the current state of aviation in the Matanuska-Susitna Borough, how that might change over the next 20 years, and any actions that should be taken to ensure aviation can grow in a positive way for Matanuska-Susitna Borough citizens.” The phase 1 report notes that, for the municipal airports (Wasilla and Palmer), “an optimum land use situation may be difficult because, in some cases, incompatible uses predated the current zoning,” highlighting in Wasilla Airport’s case that there is “existing and planned residential development north and west of the airport.” Residential development to the north of the airport has not yet occurred, though as discussed in Section **Error! Reference source not found.**, it has taken place to the west. Public input suggested four proposed improvements:

- Extend utilities to lease lots
- Gravel or grass strip and ski strip (recently completed)
- Extend runway and establish an instrument landing system approach
- Establish floatplane facility at Jacobsen Lake

After the initial RASP study identified the need for an SPB in the southern portion of the MSB, the Phase II report (MSB 2017b) refined the potential for an SPB and recommended a long-term development program for a preferred site. The study reconsidered the Wasilla Airport for an SPB site, noting that in 2008 it had not been recommended for three reasons:

- Use of Jacobsen Lake would require a control tower
- Community opposition during last Master Plan (City of Wasilla 2012)
- Current master plan recommends an SPB on Wasilla Airport

The report identified factors that could affect airspace compatibility, including a future precision approach at the Wasilla Airport. Ultimately the study identified Sevenmile Lake as the final site.

3.3.5 Meadow Lakes Comprehensive Plan (2005)

The Meadow Lakes Comprehensive Plan (The Meadow Lakes Community Council Planning Team 2005) noted that:

The southeastern corner of the Meadow Lakes Community Council boundary wraps around the Wasilla Airport. ... With an extensive, but mostly informal trail system, trails in Meadow Lakes have long been used by snowmachines, hikers, dog sleds, horse riders and skiers; virtually all trails cross what are now private lands, and consequently these trails are likely to be closed to future public use.

3.3.6 Summary of Existing Plans

The City of Wasilla Comprehensive Plan (City of Wasilla 2011) prioritizes the development of the airport as a multi-modal transportation hub, with economic development including local product development and manufacturing, high-tech businesses, material transport and resource storage/staging, and transit-oriented tourism. The plan also saw the airport becoming a regional hub that serves small jets, seaplanes, and other aircraft. The CEDS (McKinley Research Group, LLC 2023) identified actions in support of these goals, finding that the airport was the top area of opportunity for the city. The MSB's plans (2008, 2017a, 2017b) expressed that the MSB should support development of aviation facilities throughout the MSB.

3.4 Future Opportunities

Stakeholders envision a future full of opportunities for the Wasilla Airport, with a focus on expansion, improvements, and increased functionality. They desire the airport to become a regional hub and accommodate scheduled airline service to major US hubs. Key aspirations include the extension of the runway to accommodate larger aircraft and the provision of additional tie downs and hangar spaces. A number of stakeholders expressed interest in a float plane base at the airport, but past studies have identified challenges associated with a base linked to the Wasilla Airport and it is not being advanced by this plan. Stakeholders emphasize the importance of addressing noise abatement concerns and ensuring harmonious coexistence with surrounding residential areas. They envision the airport as a center for small businesses, tourism infrastructure, and commercial growth, with amenities such as restaurants, pilot lounges, and refueling services. Furthermore, stakeholder feedback highlights the need for efficient parking, access to electricity for tie downs, and improved facilities for pilots and transient users. Overall, these visions represent a collective effort to position the Wasilla Airport as a thriving aviation hub with enhanced services and infrastructure, catering to a diverse range of aviation needs while maintaining a neighborhood-friendly environment.

Based on the adjacent, undeveloped land on three sides of the airport, there appear to be substantial opportunities to expand the current airport to accommodate growth as well as develop a multi-modal node and new economic enterprises.

3.4.1 Availability of Land for Long-term Airport and Economic Development

The land offering the greatest potential for long-term airport and economic development appears to be the privately-owned parcels to the north, east, and south of the existing airport (areas 2, 5, and 6, respectively, in Figure 6), along with the undeveloped airport property to the west that is outside the city boundary. In particular, the land to the east of the airport (area 5) could support a multi-modal node, with access to the airport, local roads, Parks Highway, and the railroad. Land to the north and south (areas 2 and 6, respectively) could support development of related businesses; transit-oriented tourism could be developed to the north (area 2) so it could be tied in with the Museum of Alaska Transportation and Industry and other land around the airport (area 6) could support other economic enterprises.

3.5 Recommendations

No changes to land use within the existing airport are recommended. Areas recommended for expansion of the airport and supporting businesses are properly zoned for and consistent with the proposed development opportunities.

3.5.1 Existing Structures and Conformance with Proposed Land Use

Existing airport structures fit with recommended land uses.

4 ECONOMIC ACTIVITY AT THE WASILLA AIRPORT

4.1 Businesses Operating at the Airport

Tenants of the Wasilla Airport include a mixture of private airport users with individual tie-down or hangar leases; and aeronautical businesses, maintenance, and hunting or fishing guide charter services. A sample of the businesses and other organizations operating out of the airport is shown in Table 4.

Table 4. Businesses and Organizations Using the Wasilla Airport

Business/Organization	Use of Wasilla Airport
Airforms	Aviation manufacturing
AK State Troopers	Aircraft operations
Alaska Air Fuel Inc.	Maintenance base for operations
Alaskan Safaris LLC	Serves mining operations with fuel deliveries
Crowley Fuels	Fuel provider
Glider AK Mt Soaring	Glider operations
Great Northern Aircraft Service	Performs aircraft maintenance and provides aircraft storage
Heli Alaska, Inc	Helicopter tours and charters
Iliamna Air Taxi	Silver Sky provides maintenance
North Star	Provides maintenance and fuel for turbine aircraft
Pillar Mountain Airframes	Performs maintenance on light commercial aircraft
Ray's Aircraft Service	Performs maintenance and annuals on Cessna 206 and smaller
Sea Fury LLC	Leases hangars to Alaska State Troopers and Pillar Mountain Airframes
Silver Sky Aviation	In late stages of finalizing plans to begin construction at IYS in 2023
Soloy Helicopters	Base of operations/maintenance

Source: HDL

4.1.1 Employment at the Airport

Northern Economics (2011) estimated that Wasilla Airport was responsible for 21 jobs in 2009, of which 20 were attributed to leaseholders. These jobs received wages and benefits of \$0.44 million. Non-labor expenditures, including capital and operating, were \$0.67 million for leaseholders and \$1.38 million for the operator (City of Wasilla). More recent employment information is not available.

4.2 Estimated Economic Impact of the Airport

Multiple studies have been completed that look at the economic impact of airports in Alaska, including the Wasilla Airport specifically.

Based on data collected for 2009, Northern Economics (2011) estimated that direct jobs at the Wasilla Airport received wages and benefits of \$0.44 million. Non-labor expenditures, including capital and operating, were \$0.67 million for leaseholders and \$1.38 million for the operator (the City of Wasilla). The airport generated an estimated \$3.73 million in statewide economic output each year while supporting 30 jobs within MSB (with additional jobs statewide, estimated to be fewer than 10) and generating \$1.44 million of labor income.

This was a lower overall economic output than other regional airports due to its being home to more general aviation aircraft and having no air taxi companies (Northern Economics 2016). At the time, it had six leaseholders: two each of aircraft services companies, airlines (passenger and/or cargo), and passenger concessions/other. The airport's economic impact is expected to be much larger today due to the increase of leaseholders and business activity that exists there at present, compared to 2009.

5 PROJECTED POPULATION AND PERSONAL INCOME

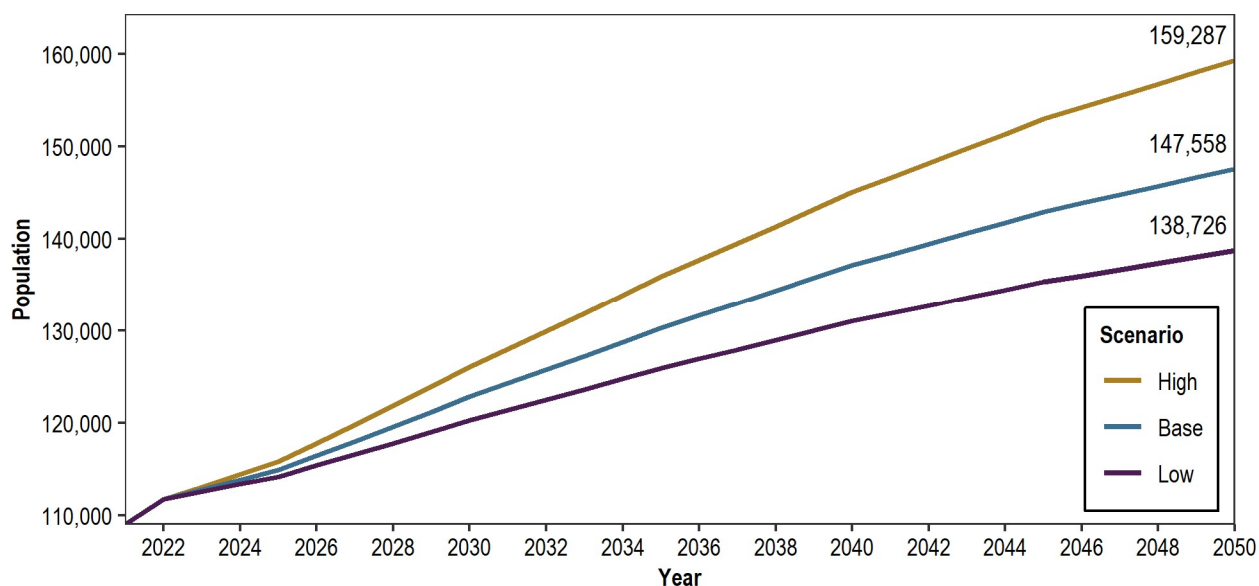
The projected rise in MSB population will lead to an increase in the MSB's population of over 38,000 residents, or 35% over the 2021 population, by 2050. Population is expected to be a driver of activity at the airport. Table 5 and Figure 9 present low and high population forecasts, in addition to the base forecast presented in the Socioeconomic Evaluation report.

Table 5. Projected Population, MSB, All Scenarios, 2021–2050 in 5-year Increments

Year	Low	Base	High
2021	109,086	109,086	109,086
2025	114,221	114,936	115,829
2030	120,280	122,830	126,063
2035	125,933	130,298	135,916
2040	131,042	137,132	145,071
2045	135,331	142,931	152,942
2050	138,726	147,558	159,287

Source: DOLWD (2022, 2023a) and Northern Economics analysis

Figure 9. Projected Population, MSB, All Scenarios



Source: DOLWD (2022, 2023a) and Northern Economics analysis

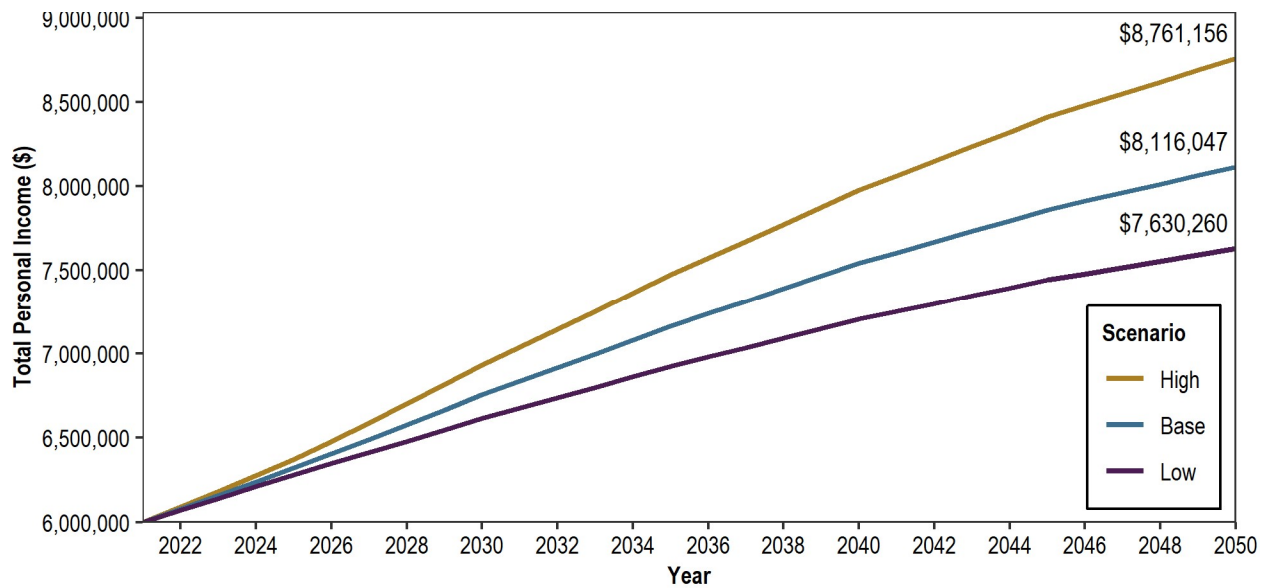
Between 2021 and 2050, the projected income growth rate for all three scenarios is, on average, 1.07% annually in the MSB. The increase in per capita income is projected to be \$19,100 by 2050, but the rate of growth will decline over time. While not directly linked, increasing income is expected to be associated with a higher level of activity at the airport (Table 6 and Figure 10).

Table 6. Projected Total Personal and Per Capita Income, MSB, All Scenarios, 2021–2050, 5-year Increments

Year	Low Growth Scenario		Base Growth Scenario		High Growth Scenario	
	Personal Income (\$1,000s)	Per Capita Income (\$)	Personal Income (\$1,000s)	Per Capita Income (\$)	Personal Income (\$1,000s)	Per Capita Income (\$)
2021	5,999,994	54,207	5,999,994	54,207	5,999,994	54,207
2025	6,282,425	56,759	6,321,758	57,114	6,370,855	57,558
2030	6,615,709	59,770	6,755,947	61,037	6,933,788	62,643
2035	6,926,603	62,578	7,166,705	64,748	7,475,698	67,539
2040	7,207,602	65,117	7,542,592	68,144	7,979,270	72,089
2045	7,443,557	67,249	7,861,551	71,025	8,412,161	76,000
2050	7,630,260	68,936	8,116,047	73,325	8,761,156	79,153

Source: BEA (2022a), DOLWD (2022, 2023a), and Northern Economics analysis

Figure 10. Projected Total Personal Income, MSB, All Scenarios



Source: BEA (2022a), DOLWD (2022, 2023a), and Northern Economics analysis

5.1 Factors Affecting the Projections

The analysis projects population growth for the MSB. External factors can affect Alaska's population, such as Alaska's economic conditions and opportunities compared to elsewhere in the Lower 48. Locally, different conditions in each region can have similar effects. The MSB has long been an attractive place and it has grown from substantial in-migration over time.

State Demographer David Howell's population projections for 2021–2050 suggest that the MSB will see a 35.6% population increase during that period (an annual average growth of 1.05%). This places it as the top growth area in the state by population and the second by percent change. The MSB will continue to see positive net migration in addition to natural increases (births minus deaths). The state overall is projected to gain almost 25,000 people by 2050, a 3.4% increase from 2021's estimated population and 0.11% annually (DOLWD 2023a).

Personal income is heavily impacted by changes in population, since the growth or decline of the MSB's personal income is linked to the growth or decline of wage and salary employment in the MSB. Annual Permanent Fund Dividend payments vary in size but can also contribute a substantial amount to personal income.

6 REFERENCES

- DOLWD. 2022. Alaska Population Projections 2021 to 2050. <https://live.laborstats.alaska.gov/pop/projections/data/BCAProjections.xls>. Accessed November 9, 2023.
- . 2023a. Alaska Population Estimates by Borough, Census Area, City, and Census Designated Place. Accessed November 9, 2023.

———. 2023b. Consumer Price Index. https://live.laborstats.alaska.gov/cpi/csv/Alaska_CPI.csv. Accessed November 9, 2023.

BEA. 2022a. CAINC1 County and MSA personal income summary: personal income, population, per capita personal income. <https://apps.bea.gov/iTable/?reqid=70&step=1&acrdn=6#eyJhcHBpZCI6NzAsInN0ZXBzIjpbMSwyOSwyNSwzMSwyNiwyNywzMF0sImRhdGEiOltbIlRhYmxlSWQiLCIyMCJdLFsiTWFqb3JfQXJIYSIsIjQiXSxbIIN0YXRllixbIjAyMDAwIl1dLFsiQXJIYSIsWyIwMjE3MCJdXSxbIIN0YXRpc3RyYyIsWyItMSJdXSxbIlVuaXRfb2ZfbWVhc3VyZSIsIkxldmVscyJdLFsiWWVhciIsWyItMSJdXSxbIlIlYXJCZWdpbiIsIi0xIl0sWyJZZWFyX0VuZCIsIi0xIl1dfQ==>. Accessed November 9, 2023.

———. 2022b. CAEMP25N Total full-time and part-time employment by NAICS industry. <https://apps.bea.gov/iTable/?reqid=70&step=1&acrdn=#eyJhcHBpZCI6NzAsInN0ZXBzIjpbMSwyOSwyNSwzMSwyNiwyNywzMF0sImRhdGEiOltbIlRhYmxlSWQiLCIzMjE3MCJdLFsiTWFqb3JfQXJIYSIsIjQiXSxbIIN0YXRllixbIjAyMDAwIl1dLFsiQXJIYSIsWyIwMjE3MCJdXSxbIIN0YXRpc3RyYyIsWyItMSJdXSxbIlVuaXRfb2ZfbWVhc3VyZSIsIkxldmVscyJdLFsiWWVhciIsWyItMSJdXSxbIlIlYXJCZWdpbiIsIi0xIl0sWyJZZWFyX0VuZCIsIi0xIl1dfQ==>. Accessed November 9, 2023.

City of Wasilla. 2011. City of Wasilla Comprehensive Plan. <https://www.cityofwasilla.gov/home/showpublisheddocument/4714/635079287572000000>. Accessed November 30, 2023.

———. 2012. Wasilla Airport Master Plan. <https://www.cityofwasilla.gov/home/showpublisheddocument/22577/637124334249000000>. Accessed November 30, 2023.

———. 2023. City of Wasilla -- Zoning Districts - Draft vers. 1. <https://cowak.maps.arcgis.com/apps/webappviewer/index.html?id=3ae01b1851754304ac7c61e830b77042>. Accessed January 29, 2024.

MSB. 2008. Matanuska-Susitna Borough Regional Aviation System Plan. <https://matsugov.us/docs/plans/14341/rasp.pdf>. Accessed December 6, 2023.

———. 2017a. Matanuska-Susitna Borough Long Range Transportation Plan. <https://matsugov.us/docs/general/13985/Combined-Documnt.pdf>. Accessed November 30, 2023.

———. 2017b. Matanuska-Susitna Regional Aviation System Plan Study, Phase II. <https://matsugov.us/docs/general/14341/20170531d61440raspfinal-report.pdf>. Accessed November 30, 2023.

———. 2023. Parcel Viewer. https://mapping.matsugov.us/Html5Viewer/index.html?viewer=MSB_Parcel_Viewer. Accessed December 7, 2023.

McKinley Research Group, LLC. 2023. Wasilla Comprehensive Economic Development Strategy. <https://www.cityofwasilla.gov/home/showpublisheddocument/25300/638237250345670000>. Accessed July 10, 2023.

Northern Economics, Inc. 2011. Economic Contributions of Alaska Airports: The Wasilla Airport. <https://www.alaskaasp.com/admin/Docs/AASP-12%20Airports-Wasilla-final.pdf>. October 2011.

———. 2016. Economic Contributions of Matanuska-Susitna Borough Airports. Prepared for the Matanuska-Susitna Borough. <https://matsugov.us/docs/plans/14341/msb-airports-economic-impact-report-final.pdf>. January 2016.

The Meadow Lakes Community Council Planning Team. 2005. Meadow Lakes Comprehensive Plan. <https://matsugov.us/docs/general/14144/meadow-lakes-comp-plan.pdf>. Accessed November 30, 2023.

Appendix D

GRA Model Calculation Sheet

**GA Operations Regression Equation, Equation 13, All 232 Airports,
Dummy Variable for Towered, (GRA, Inc., July 2001)**

Factor	Variable	Variable for Palmer	Result
-571	x 1		-571
355	x BA	190	67,450
-0.46	x BA2	36,100	-16,606
-40,510	x %in100mi	0.069730586	-2,825
3,795	x VITFSnum	0	0
0.001	x Pop100	398,807	399
-8,587	x WACAORAK	1	-8,587
24,102	x Pop25/100	0.277542771	6,689
13,674	x TOWDUM	0	0

45,949 *Total OPS*

Variable Definition

OPS	Annual GA Operations at an airport
BA	Total Based Aircraft at an airport
BA2	Based Aircraft squared, which is included since airport operations tend to increase as the number of based aircraft increases, but at a slower and slower rate
Pop25	Population within 25 miles, by U.S. Census
Pop100	Population within 100 miles, by U.S. Census
Pop25/100	Ratio of Pop25 to Pop100, proportion, between 0 and 1, by census tract, U.S. Census
TOWDUM	1 if towered airport, 0 otherwise, from TAF
%in100mi	Percentage of based aircraft among based aircraft at GA airports within 100 miles, Proportion, between 0 and 1, from TAF and Mapinfo software
VITFSnum	Number of FAR141 certificated pilot schools on airport, 1 if FAR141 certificated pilot school present,
WACAORAK	1 if state is CA, OR, WA, or AK, 0 otherwise

Appendix E

Summary of Relevant Facility Standards

Design Standards Table for Runway 04/22 - Existing Critical Aircraft (A-I Small such as Cessna 206)

	RUNWAY 04/22 EXISTING CONDITIONS	FAA DESIGN STANDARD A-I SMALL AIRCRAFT*
RUNWAY DESIGN		
Runway Length (ft.) ¹	3,700	3,450 ²
Runway Width (ft.)	75	60
Runway Shoulder Width (ft.)	10	10
Blast Pad Width (ft.)	N/A	80
Blast Pad Length (ft.)	N/A	60
Crosswind	13 kt	10.5 kt
RUNWAY PROTECTION		
Runway Safety Area (RSA)		
Length Beyond Departure End (ft.)	300	240
Length Prior to Threshold (ft.)	300	240
Width (ft.)	150	120
Runway Object Free Area (ROFA)		
Length Beyond Runway End (ft.)	300	240
Length Prior to Threshold (ft.)	300	240
Width (ft.)	500	250
Runway Obstacle Free Zone (ROFZ)		
Length Prior to Threshold (ft.)	200	200
Width (ft.)	400	250 ³
Approach Runway Protection Zone (RPZ)		
Length (ft.)	1,700	1,700
Inner Width (ft.)	1,000	1,000
Outer Width (ft.)	1,510	1,510
Departure Runway Protection Zone (RPZ)		
Length (ft.)	1,000	1,000
Inner Width (ft.)	500	250
Outer Width (ft.)	700	450
RUNWAY SEPARATION		
Runway Centerline to:		
Parallel Runway Centerline (ft.)	87.5	N/A – No Simultaneous Ops ⁴
Hold Position (ft.)	200	125
Parallel Taxiway (ft.)	300	150
Aircraft Parking (ft.)	~360	Refer to AC 150/5300-13B par. 5.4.1.2

* Design Standards for Runways with visibility minimums not lower than ¾ mile.

¹ FAA Standard Runway Length determined using FAA AC 150/5325-4B. Noted length based on an approx. airport elevation of 350 ft. and mean daily maximum temperature of 67 °F for IYS.

² Minimum length required to serve Cessna 182 (small aircraft with fewer than 10 passenger seats), 100% of fleet.

³ Based on Cessna 206 which meets conditions stated in FAA AC 150/5300-13B par. 3.11.2.1.1b.

⁴ Minimum separation between parallel runways at non-towered airports for simultaneous independent operations is 700 ft. using VFR, per FAA AC 150/5300-13B par. 3.9.2.1.

Design Standards Table for Runway 04/22 – Ultimate Critical Aircraft (B-II such as Beechcraft 1900D)

	RUNWAY 04/22 EXISTING CONDITIONS	FAA DESIGN STANDARD B-II AIRCRAFT*
RUNWAY DESIGN		
Runway Length (ft.) ¹	3,700	6,030 ²
Runway Width (ft.)	75	75
Runway Shoulder Width (ft.)	10	10
Blast Pad Width (ft.)	N/A	95
Blast Pad Length (ft.)	N/A	150
Crosswind	13 kt	13 kt
RUNWAY PROTECTION		
Runway Safety Area (RSA)		
Length Beyond Departure End (ft.)	300	300
Length Prior to Threshold (ft.)	300	300
Width (ft.)	150	150
Runway Object Free Area (ROFA)		
Length Beyond Runway End (ft.)	300	300
Length Prior to Threshold (ft.)	300	300
Width (ft.)	500	500
Runway Obstacle Free Zone (ROFZ)		
Length Prior to Threshold (ft.)	200	200
Width (ft.)	400	400 ³
Approach Runway Protection Zone (RPZ)		
Length (ft.)	1,700	1,700
Inner Width (ft.)	1,000	1,000
Outer Width (ft.)	1,510	1,510
Departure Runway Protection Zone (RPZ)		
Length (ft.)	1,000	1,000
Inner Width (ft.)	500	500
Outer Width (ft.)	700	700
RUNWAY SEPARATION		
Runway Centerline to:		
Parallel Runway Centerline (ft.)	87.5	N/A – No Simultaneous Ops ⁴
Hold Position (ft.)	200	200
Parallel Taxiway (ft.)	300	240
Aircraft Parking (ft.)	~360	Refer to AC 150/5300-13B par. 5.4.1.2

* Design Standards for Runways with visibility minimums not lower than ¾ mile.

¹ FAA Standard Runway Length determined using FAA AC 150/5325-4B. Noted length based on an approx. airport elevation of 350 ft. and mean daily maximum temperature of 67 °F for the Wasilla Airport.

² Minimum length required to serve Beechcraft 1900D, 75% of fleet at 90% useful load with 18 ft. elev. difference between existing RWY high and low points.

³ Based on Beechcraft 1900D which meets conditions stated in FAA AC 150/5300-13B par. 3.11.2.1.2.a.

⁴ Minimum separation between parallel runways at non-towered airports for simultaneous independent operations is 700 ft. using VFR, per FAA AC 150/5300-13B par. 3.9.2.1.

Design Standards Table for Runway 04S/22S – Existing & Ultimate Critical Aircraft (A-I Small such as Cessna 180)

	RUNWAY 04S/22S (A-I Small)	FAA DESIGN STANDARD A-I SMALL AIRCRAFT*
RUNWAY DESIGN		
Runway Length	1,690	3,450 ²
Runway Width (ft.)	60	60
Runway Shoulder Width (ft.)	10	10
Blast Pad Width (ft.)	N/A	80
Blast Pad Length (ft.)	N/A	60
Allowable Crosswind	10.5 kt	10.5 kt
RUNWAY PROTECTION		
Runway Safety Area (RSA)		
Length Beyond Departure End (ft.)	240	240
Length Prior to Threshold (ft.)	240	240
Width (ft.)	120	120
Runway Object Free Area (ROFA)		
Length Beyond Runway End (ft.)	240	240
Length Prior to Threshold (ft.)	240	240
Width (ft.)	250	250
Runway Obstacle Free Zone (ROFZ)		
Length Prior to Threshold (ft.)	200	200
Width (ft.)	250	250 ³
Approach Runway Protection Zone (RPZ)		
Length (ft.)	1,000	1,000
Inner Width (ft.)	250	250
Outer Width (ft.)	450	450
Departure Runway Protection Zone (RPZ)		
Length (ft.)	1,000	1,000
Inner Width (ft.)	250	250
Outer Width (ft.)	450	450
RUNWAY SEPARATION		
Runway Centerline to:		
Parallel Runway Centerline (ft.)	87.5	N/A – No Simultaneous Ops ⁴
Hold Position (ft.)	N/A	125
Parallel Taxiway (ft.)	212.5	150
Aircraft Parking (ft.)	~270	Refer to AC 150/5300-13B par. 5.4.1.2

* Design Standards for Visual Runways.

¹ FAA Standard Runway Length determined using FAA AC 150/5325-4B. Noted length based on an approx. airport elevation of 350 ft. and mean daily maximum temperature of 67 °F for the Wasilla Airport.

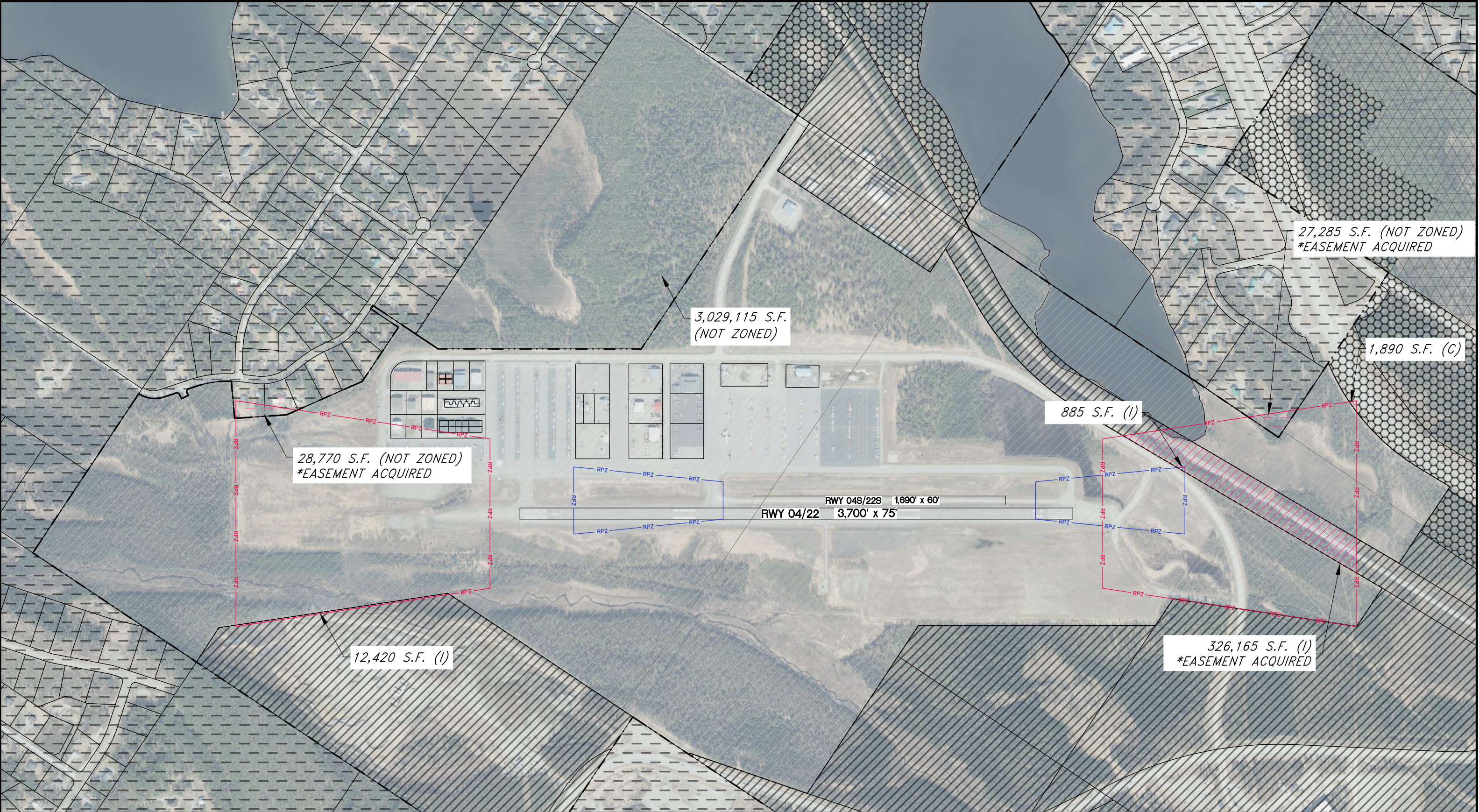
² Minimum length required to serve Cessna 180 (small aircraft with fewer than 10 passenger seats), 100% of fleet.

³ Based on Cessna 180 which meets conditions stated in FAA AC 150/5300-13B par. 3.11.2.1.1b.

⁴ Minimum separation between parallel runways at non-towered airports for simultaneous independent operations is 700 ft. using VFR, per FAA AC 150/5300-13B par. 3.9.2.1.

Appendix F

Runway Protection Zone and Airport Property Boundary Map

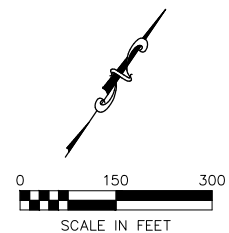


LEGEND

- WASILLA CITY LIMITS
- - - AIRPORT BOUNDARY
- RPZ A-I SMALL RUNWAY PROTECTION ZONE (RPZ)
- RPZ B-II RPZ
- RUNWAY SURFACE

CITY OF WASILLA ZONING DISTRICTS

- AREA OUTSIDE CITY LIMITS (NOT ZONED)
- COMMERCIAL (C)
- INDUSTRIAL (I)
- RURAL RESIDENTIAL (RR)
- RPZ AREA OUTSIDE AIRPORT BOUNDARY (I/C/NOT ZONED)



WASILLA AIRPORT MASTER PLAN UPDATE RUNWAY PROTECTION ZONES OUTSIDE AIRPORT BOUNDARY CITY OF WASILLA WASILLA, ALASKA		
DATE: DECEMBER 2023	DRAWN BY: EF	SHEET: 1
SCALE: 1" = 300	CHECKED BY: MS	JOB NO.: 20-024